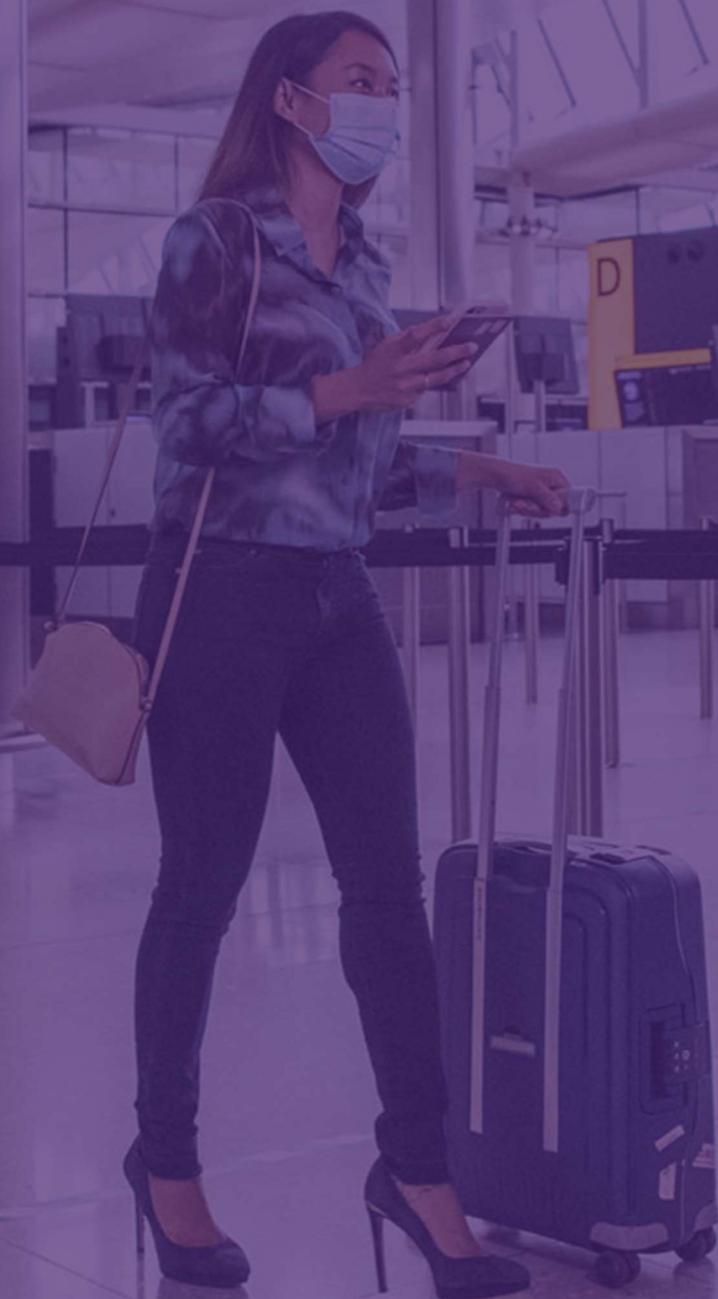


HEATHROW AIRPORT H7 REVISED BUSINESS PLAN (DETAILED)

December 2020



Heathrow

Whilst this H7 Revised Business Plan has been compiled with the principles of regulation in mind, it is a good faith commercial document and not a formal regulatory submission. If there are inconsistencies between this plan and previous regulatory submissions relating to matters of regulatory policy, then those submissions take primacy.

In developing the H7 Revised Business Plan, we have taken an approach to assurance which is both comprehensive and appropriate. However, given the inherent uncertainties that the aviation industry is currently facing, it is likely that material updates will be necessary during 2021.

Heathrow Airport Limited will not accept or assume any responsibility or liability for the accuracy or correctness of the information or of any figures provided, calculations or any assumptions that may be drawn from them.

TABLE OF CONTENTS

Chapter Number	Chapter Title	Page Number
2.1	Impact of Covid-19 on Heathrow	1
2.2	Market Insights	8
2.3	Consumer Insights	46
2.4	Constructive Engagement	90
3	Passenger Experience	104
4	Building Back Better	121
5	Demand	146
6	Capital Investment	181
7.1	Operating Costs	210
7.2	Commercial Revenues	264
7.3	Resilience	314
7.4	Surface Access	328
8.1	Financial Principles	362
8.2	WACC	379
8.3	Depreciation	422
9.1	Regulatory Framework	434
9.2	Measures, Targets and Incentives	460
9.3	Capital Governance	505
9.4	Other Regulated Charges	524
10.1	Outcomes: Conclusions	537
10.2	Outcomes: Next Steps	554
11	Assurance	570

2 – INSIGHTS

2.1 – IMPACT OF COVID-19 ON HEATHROW

Chapter Overview

- Covid-19 has had an unprecedented impact on passenger demand at Heathrow, being a far deeper and longer lasting shock than any historical passenger demand shock events.
- A slower than anticipated recovery of demand has led to forecasts for 2021 and beyond being revised downwards, with no certainty around when and if passenger demand will return to 2019 levels.
- This fall in demand has ultimately led to a substantial fall in both Heathrow's aeronautical and commercial revenues and an increase in operating costs per passenger.
- Heathrow has taken swift and decisive action to mitigate against the impacts of Covid-19, including accessing and drawing on all sources of liquidity, reducing capital expenditure and delivering significant operating efficiencies in order to protect liquidity.
- Mothballed assets will be costly to return to operational status leading to higher costs in the medium term.
- Heathrow has also proposed a regulatory approach to manage the impact of the Covid-19 crisis, through the Covid-related adjustment to the Regulated Asset Base.
- A CAA decision to not grant an adjustment to the RAB will limit both capital and operating expenditure into H7, and increase airport charges, resulting in worse outcomes for consumers. It also risks a further downgrade of Heathrow's credit rating which will have serious implications for financeability.

2.1.1 The impact of Covid-19 on passenger demand at Heathrow

The impact of Covid-19 on passenger numbers at Heathrow has been significant and sustained, with the reality of a far more delayed recovery than initially forecast becoming increasingly apparent as we have progressed through 2020. Furthermore, there is no guarantee that air travel will return to pre-Covid levels and Heathrow is also more exposed than other UK and European airports to long-haul and business markets that will recover more slowly.

At the time of publishing our Investor Report in June 2020, passenger numbers had dropped by 96% for the second quarter of the year and we had forecast 29.2m and 62.8m passengers for 2020 and 2021, respectively. Since then, the early signs of recovery that we witnessed in August have stalled, with September and October passenger numbers remaining at 82% down on 2019 levels. Additionally, what had previously been considered a worst-case scenario materialised in November, with a second national lockdown further restricting demand to levels

seen at the start of the pandemic. The outturn of this is that our outlook for passenger numbers has now been revised down significantly to 22.3m for 2020 and to 37.1m for 2021.

The wider industry outlook on future passenger demand is consistent with our downward revisions to our 2020/2021 passenger forecasts and also with our view of a delayed and slow longer-term recovery. IATA have stated that they expect the deep losses of 2020 to continue into 2021¹, highlighting that the crisis caused by Covid-19 is “*devastating and unrelenting*”. With regards to the longer-term outlook, IATA forecasts *that “the road to recovery is expected to be long and difficult. Passenger volumes are not expected to return to 2019 levels until 2024 at the earliest, with domestic markets recovering faster than international services.”*²

The nature of the shock to passenger demand is multi-faceted and more complex than during previous demand shock events, with three distinct key elements to consider:

1. Travel restrictions – enforced by governments as an immediate response to controlling the Covid-19 pandemic, which have served to artificially suppress demand for the periods that they have been imposed.
2. Consumer behaviour – in the absence of any prevailing government restrictions on travel, consumer behaviour, and crucially consumer confidence to travel, in the wake of the pandemic will be the dominating driver of passenger demand.
3. Economic impact – economic damage, driven by national and international responses to contain the spread of Covid-19, is likely to be the dominant driver of passenger demand once the impact of travel restrictions and consumer behaviour have subsided, as the slower process of economic recovery plays out.

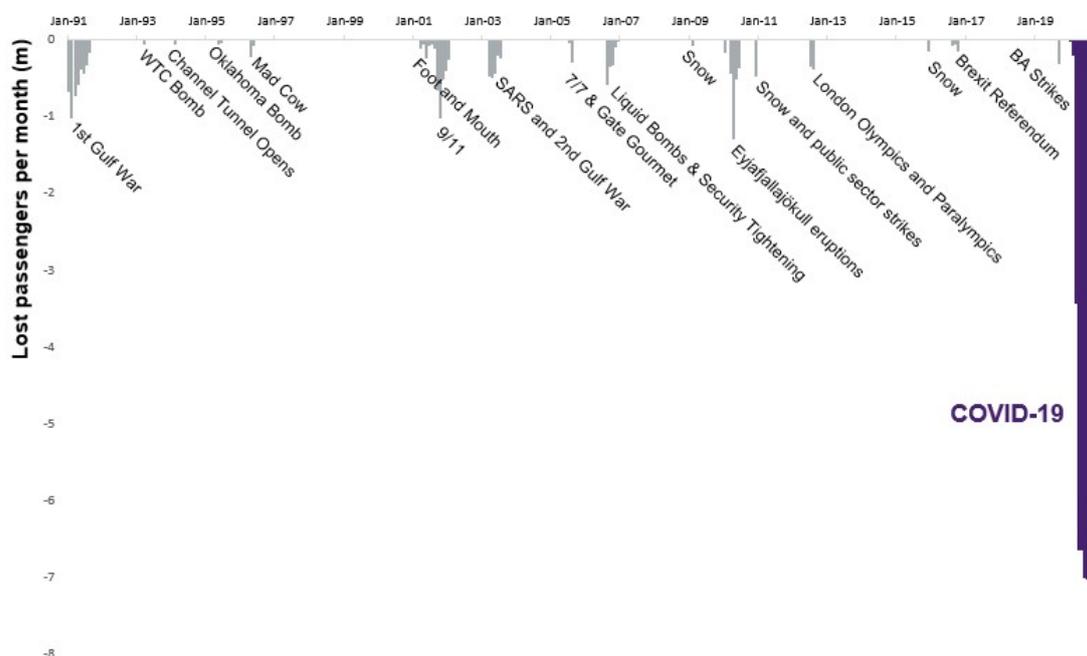
Figure 1 below shows current passenger numbers relative to previous shocks faced since 1991 and it serves to demonstrate that the Covid-19 pandemic is indeed an exceptional occurrence in the wider historical context.

¹ [IATA - Deep Losses Continue Into 2021](#)

² [IATA - Deep Losses Continue Into 2021](#)

2.1.2 The impacts of Covid-19 on Heathrow's revenues

Figure 1: Covid-19 dwarfs all other Heathrow passenger shocks of the last 30 years



Source: Heathrow

The large and unprecedented fall in both aeronautical and commercial revenues as a result of the Covid-19 pandemic has had significant implications for profitability, financial stability and long-term returns for Heathrow. Heathrow's aeronautical revenue has fallen dramatically in line with the fall in passenger volumes described in the previous section. Furthermore, our commercial revenues, which are a core building block of the single till and accounted for approximately a third of Heathrow's total revenues in 2019, have also taken a significant hit.

Having enjoyed a period of high commercial revenue growth over Q6, we do not expect this trend to continue into H7. Rather, we anticipate significantly depressed commercial revenues, driven primarily by lower passenger numbers as a result of Covid-19 and compounded by the Government's decision to withdraw both airside tax-free sales of all non-excise goods and the VAT Retail Export scheme for all passengers from January 2021.

We have worked with our commercial business partners to be flexible on commercial terms and have had to balance the income impact resulting from revised terms with sustainable occupancy levels in the short and longer terms. Additionally, several of our commercial partners have had to terminate contracts early as a result of business failure; this has left a number of empty retail units across our terminals and we are now in a position where any new deals that we are able to strike in order to fill these units will be materially less attractive than in the past. Further detail around the impact of Covid-19 on our commercial revenues can be found in Chapter 7.2 – Commercial Revenues.

2.1.3 Immediate actions taken by Heathrow in response to the impact of Covid-19

Faced with a collapse in passenger numbers and associated aeronautical and commercial revenues, Heathrow has acted quickly to manage and mitigate the impact of the Covid-19

pandemic. We have taken extensive and prudent action, which has involved often difficult decisions being made in order to deliver on our key short term objectives of protecting the business, managing our liquidity, saving jobs for colleagues and above all ensuring that we continue to deliver for consumers in the wake of the pandemic.

Actions we have taken to deliver on the above objectives include:

1. Accessing and drawing on all sources of liquidity

- Suspension of all dividends in 2020 and 2021 (now a condition of our financial waivers) and leaning on shareholder support, even as they have seen over three quarters of their investment lost.
- Drawing down all liquidity facilities and obtaining covenant waivers for 2020/21.
- Raising £1.4 billion across three public bond transactions.
- Injecting capital into the Heathrow regulated group with a new £750m facility.

2. Preserving liquidity

- Cutting our capital programme for 2020 from £1.9bn to £428m (nominal, over £300m of which had already been spent in H1 2020 before the full impact of Covid-19 had become clear) and to £374m (nominal) for 2021.

3. Delivering significant cost savings

- We have identified and executed at least £300m (nominal) of cost savings, equivalent to an annualised saving of over 30% – and over 60% on controllable costs – achieved through:
 - Consolidating operations onto one runway and into Terminals 2 and 5, allowing us to cut operating costs and defer capital expenditure on terminal maintenance.
 - People cost savings including temporary pay reductions of 10-25% for all colleagues; a company-wide reorganisation where over 1,800 colleagues (c.25%) will soon have left the business; furloughing over 50% of our colleagues; and removing legacy terms and conditions.
 - Renegotiating or cancelling almost every supplier contract.
 - Stopping all non-essential spend including difficult but necessary decisions to suspend our free travel zone and passenger ambassadors.

Further to the above, we have also taken actions to help protect the businesses of airlines at Heathrow. We have driven efficiencies to lower our Other Regulated Charges, while parking charge alleviations have reduced the financial burden on airlines of having large portions of their fleets parked at the airport. We made a Relocation Support Fund (with a discount against property rents) available to all airlines temporarily relocating to a different terminal.

Heathrow was already efficient before Covid-19, and the actions described above have made us yet more efficient, but we are still in a position of losing over £5 million every day. This level of losses is not sustainable indefinitely and this is not a crisis that can be solved through cost-cutting alone. Indeed, further cuts would come at the expense of consumer outcomes, resilience and our local community. A tension therefore exists between actions required to ensure survival of the business in the short term and actions that are in the interests of consumers in the long term.

2.1.4 The proposed Covid-related RAB Adjustment and CAP1966

Heathrow and the CAA now face serious choices for consumers over the next 12 months and beyond. The uncertainty around the length and depth of the crisis means that both capital and operating expenditure have had to be constrained heavily in order to preserve liquidity against this uncertain future. The question now is whether the necessary short-term actions can be scaled in such a way as to minimise the impact on longer-term investment, and therefore the impact on consumers.

With a view to easing this tension, Heathrow proposed a Covid-related adjustment to the Regulated Asset Base (RAB) to the CAA.

With this proposed adjustment to the RAB, Heathrow would be able to recover an appropriate proportion of the losses experienced as a result of Covid-19 over a period of 30 years. The adjustment would restore confidence in the regulator and regulatory framework, acting to ensure risk and reward is balanced and calibrated. This would in turn help to mitigate increases in the cost of capital and create the possibility of higher investment, and the opportunity to reduce the rate of regulatory depreciation. The adjustment is therefore integral to delivering consumer outcomes and keeping the charge competitive.

We were disappointed with the approach taken by the CAA in CAP1966 and its view that urgent regulatory intervention was not warranted at this time.³ If no action is taken now, it significantly increases the likelihood of a credit rating downgrade - with the additional cost of the debt raised during a potential two-year recovery period totalling £300m over its life. This is also against the backdrop of European airports – against which Heathrow and the UK compete - which have all been either recipients of state aid or benefitted from regulatory action to address the impact of the pandemic.

The timing of decisions becomes critical as reversing the alternative protective measures Heathrow would have to take would postpone our ability to deliver meaningful investment for at least two to three years. Symmetry and consistency are key to maintain investor's confidence. Long-term investors in infrastructure are prepared to accept low returns if the risk they bear is low and the rules are not changed to their detriment in the middle of the game.

As a yardstick for UK infrastructure investment, the combined effect of Government policies and the CAA's decisions put at risk how inward investors view the UK and their willingness to invest in critical infrastructure projects. Heathrow faces a serious set of choices going into 2021, which will have major impacts for airport users for years to come. These choices - and the direct impact of decisions by the Government and the regulator upon these choices - will determine whether the UK continues to enjoy a world leading hub airport and a world leading environment for investment.

Without the prospect of regulatory action to allow proportionate adjustment to support the basic assumptions of the RAB-based regulatory model, investment, operations and financing in 2021 and early 2022 will be more heavily curtailed than if the adjustment is made. The inevitable consequence would be a negative impact on consumer outcomes.

We will have to further constrain capital expenditure in iH7 beyond our initial reduction responding to Covid-19 if there is no successful CAA intervention regarding the Covid-related RAB adjustment. In March 2020, we took drastic action to protect our liquidity and reduced forecast capital investment to £802m (nominal) over iH7. This included a forecast spend of £445m in 2020 and £357m in 2021 (nominal). Since March, with the slower than anticipated

³ CAA, CAP1966, Page 31, Paragraph 2.18

recovery in passenger demand and the indication that the CAA may not make an adjustment to the RAB, our forecast for 2020 has now fallen to £428m (nominal, a further £15m reduction) and 2021 would fall further to £321m (nominal, down £36m from March) without the adjustment. This reduction in investments threatens our programme for critical asset replacement but would be essential in order to protect the business.

Deferred projects include those shown in Table 1 below:

Table 1: Examples of projects deferred in 2020/21

Project	Amount Deferred 2020/21
Upgrade of the T5 Track Transit System	[REDACTED]
Kilo Apron Development Works	[REDACTED]
T4 Hold Baggage Screening Completion of Works	[REDACTED]
T3 Pier 7 Airbridge Replacement	[REDACTED]
Manual Handling Aids	[REDACTED]

Source: Heathrow

Recovery from the low level of expenditure in 2021 and the need to rebalance our finances would significantly constrain capital expenditure in H7. The key impact of this on capital expenditure will be in line with that set out for 2021 and will be:

- To delay the delivery of schemes delivering benefits for consumers such as the security improvements that will be delivered by the introduction of CT scanners;
- To defer the return to four terminal operation / full capacity as long as possible;
- To squeeze maintenance expenditure leading to increases in service risk and higher future costs;
- To increase hurdle rates on opex efficiency and commercial revenue schemes reducing the long-term effectiveness of the airport; and
- To delay progress on moving towards delivery of the third runway or new capacity.

It may be the case that certain infrastructure remains consolidated in the H7 period – but that is dependent on how passenger volumes return.

There are several implications in H7 of a reduced live operational environment on the capital portfolio in 2020/21:

- 1) We have deferred a number of key projects including regulated security compliance, baggage resilience, cargo and sustainability projects, plus non-urgent asset replacement. This has stored up c. £400m of asset replacement needs for H7 and in the medium-term risks increasing maintenance opex.
- 2) If passenger volumes do not return, certain infrastructure may remain mothballed for a portion or the whole of the H7 period. While this may suppress capital expenditure requirements in semi-operational years, there may be a “ballooning” of capital required to return mothballed assets back to a fully operational state, along with a spike in critical maintenance and operational readiness – particularly if this was required at speed.

We will continue to spend the minimum capital required for the airport to be safe, compliant and operational. This is the basis for our minimum scenario detailed in Chapter 10.2 – Next

Steps. Likewise, it is key there is clear prioritisation within the capital that is discretionary and dependant on the strength of the recovery.

If the CAA were to implement an adjustment to the RAB before the end of 2021, we would seek to bring forward investment and change into 2021 where there is a strong business case (e.g. security improvements). Reinforcing the regulatory settlement would also mean that both our organisational capability and efficient financial platform would be sustained, making it far more likely that Heathrow enters H7 with the ability to raise and invest capital efficiently.

Bringing forward targeted investments means the improvements to consumer outcomes in our plan are delivered sooner. Most importantly it will ensure Heathrow can support a faster recovery – being able to deliver what consumers want, sustaining service levels and allowing us to reopen capacity during 2021 and 2022. Being able to bring forward targeted investments therefore means that Heathrow will be doing what is in its control to hasten recovery. As we explain elsewhere in the RBP, a recovery which is more rapid than the central case in this plan will deliver far superior outcomes for consumers in the long-run. This is why a RAB adjustment is clearly in the interests of consumers.

2.2 – MARKET INSIGHTS

Chapter Overview

- Covid-19 has caused an unprecedented and asymmetric effect on the world economy.
- Economic volatility will remain until public policy mitigates the health components of the crisis, and uncertainties persist about when and how this will be achieved.
- Governments have responded with massive spending packages, but direct support to aviation has varied wildly by country, potentially distorting competitive dynamics.
- External financing is necessary, but the cost of financing is increasing. Heathrow must maintain its investment grade credit rating to ensure our plans will remain financeable.
- Consumer priorities have evolved in aviation-related industries, indicating that Heathrow will have to adapt our passenger experience proposition to continue delivering against consumer expectations.
- Airlines have gained some relief against fuel costs and benefit from an increase in air freight prices helping to offset some of the financial pressures they experience.
- Global passenger demand is expected to drop by 60%, and forecasts for recovery by major players vary wildly with expectations ranging between 2024 - 2027
- Individual demand segments are more exposed to travel restrictions with long-haul, international connecting and premium traffic recovering slowest, constraining Heathrow's competitive position.
- Airline fares are reflective of the balance in supply and demand as well as the future demand mix which remain distorted by travel restrictions.
- These effects will have implications on Heathrow's Business Plan for the H7 regulatory period.

2.2.1 Introduction

Since the delivery of Heathrow's Initial Business Plan (IBP) last year, the world has been hit by a major and unprecedented health crisis through the Covid-19 virus, sparking global economic decline. Recovery will vary by industry, with aviation and those industries most reliant on tourism and air travel among the most affected.

Recovery of aviation demand has been constrained by the measures that governments have taken to restrict travel in order to mitigate the spread of the virus. This has impacted the passenger mix, with long-haul, international connecting and premium segments among the most exposed. These segments were once our strength, but will now likely mean Heathrow will be one of the slowest of the London system airports to recover.

Airport competitive dynamics will change during recovery as airlines gain bargaining power through reduced switching costs as a result of excess capacity. Airport ability to differentiate on destination choice and premium capacity will depend on how airlines decide to restore route networks, which in turn will be constrained by how individual countries lift travel restrictions. Airports will also experience pressure on their ability to drive economies of scale

due to a reduced ability to offset high fixed costs in a prolonged period of reduced passenger numbers. Airport profitability will be affected as reduced passenger numbers, changing passenger mix and spending habits, and the performance of retail partners under this new market context will directly affect airport non-aeronautical revenues. UK airport profitability will also be impacted by the Government's decision to repeal the VAT Retail Export scheme, which will reduce demand to travel to the UK to engage in airport retail offerings.

All this means that Heathrow's market position, its bargaining power, and the overall competitive dynamics in the market, are clearly fundamentally changed from the pre-pandemic situation.

The unprecedented volatility in market conditions and demand will have implications for the type of regulation which can be appropriately imposed on Heathrow in the upcoming price control period and for Heathrow's Business Plan itself. As we have noted in the Regulatory Framework chapter 9.1, the structural changes we are seeing in the aviation market due to Covid-19 mean that, there are questions about whether the CAA's assessment of market power still holds.

This chapter lays out the challenges that Heathrow faces as a result of the extraordinary change to market conditions that have been brought on by the impact of Covid-19 and the measures undertaken to contain its spread. Impacts must be considered for each building block in order for Heathrow to be satisfied that the regulatory arrangements for the next price control period are fair, proportionate and consistent with the CAA's statutory duties.

2.2.2 Covid-19 has redefined the market context for Aviation

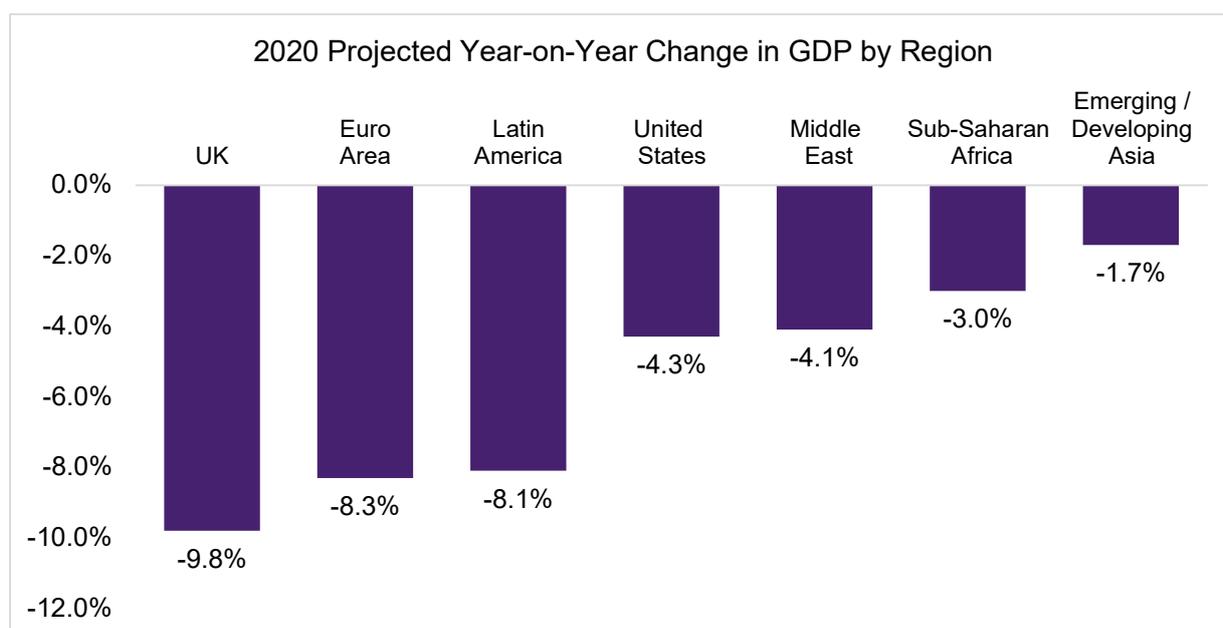
2.2.2.1 Covid-19 continues to have an unprecedented effect on the Global Economy and the timing of the most promising exit strategies remain uncertain

Since the delivery of Heathrow's Initial Business Plan (IBP) last year, the world has been hit by a major and unprecedented economic and health crisis induced by the onset, spread, and subsequent measures to contain the Covid-19 virus. The fluidity of this situation makes it difficult to quantify the full social, economic and health impacts of the virus and the measures put in place to contain it. Throughout 2020, there have been continual downgrades in GDP expectations. Latest estimates suggest a -4.4 and -4.6%¹ drop in Global GDP compared to 2019, highlighting the magnitude, volatility and severity of this crisis. Aviation has been among the worst affected industries and the impact on passenger demand due to Covid-19 is anticipated to be more than 13 times as great as on global GDP².

¹ *IMF Forecast, October 2020; OECD Economic Outlook Interim Update, September 2020, Fitch Global Economic Outlook, September 2020*

² *ACI, advisory bulletin: The impact of Covid-19 on the airport business, August 2020 (for passenger demand); IMF Forecast, October 2020 (for GDP)*

Figure 1: Projected year-on-year change in GDP by region



Source: IMF³

Measures to contain the spread of the virus have been uncoordinated and variable, resulting in a disparity in impact between different countries. We do not yet know how long the Covid-19 pandemic will last and, despite recent vaccine optimism, the timeline for fully exiting the crisis is not yet obvious. We do know that, until the health components of this crisis are mitigated, we may suffer from multiple waves of the pandemic. We also do not know how this will affect passengers' willingness to travel in the long run.

By November 2020, we saw evidence of a second wave in Europe, with many countries including Belgium, France, England and Germany entering a second national lockdown to contain the disease⁴. The USA is also experiencing a surge in cases over the winter, with hospitalisations exceeding 85,000⁵. In contrast, China has seen the fastest recovery despite being the first country to experience the disease, although minor outbreaks appear to be resurging. We cannot assume that all countries will follow a similar recovery path; domestic connectivity and size of the domestic travel market, passenger profiles, government intervention and the pace at which a permanent alternative to disruptive quarantines and travel restrictions becomes widely available all matter in this regard.

It has become apparent that consumers are unwilling to book far in advance due to being uncertain as to whether they will ultimately be able to travel, and are reluctant to travel at all if they know they will have to quarantine on arrival, return or both. When travelling abroad, the vast majority of UK passengers would prefer to cancel their trip rather than quarantine, with between 70 - 93% of UK origin passengers indicating they were likely to cancel their trip depending on whether they were required to quarantine on arrival or return⁶. This consumer

³ IMF, *Global Forecast*, October 2020

⁴ BBC, *Covid: Merkel warns of 'long, hard winter' as lockdowns return*, October 2020: <https://www.bbc.co.uk/news/world-europe-54728893>

⁵ <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>

⁶ YouGov, *Most European travellers would rather cancel their holiday than go into quarantine*, August 2020: <https://yougov.co.uk/topics/travel/articles-reports/2020/08/04/most-european-travellers-would-rather-cancel-their>

sentiment has translated to increased uncertainty in capacity planning, with UK airlines only indicating intentions to operate a maximum of between 30-40% of their 2019 capacity during Q4 2020 and making adjustments at short notice⁷, as it is becoming increasingly difficult for airlines and airports to forecast demand and plan their resourcing efficiently.

Overall consumer sentiment for leisure travel remains depressed across all age groups, however, there remains demand to travel with younger adults the most likely to want to do so. 31% of all consumers surveyed will still consider taking a holiday in Europe within the next 12 months, down from 54% in the absence of Covid-19. Only 20% of consumers surveyed will consider taking a holiday outside of Europe in the next 12 months, down from 38% in the absence of Covid-19⁸.

Currently, the most optimistic exit strategy from quarantines and lockdowns involves the successful and widespread adoption of a vaccination that would mitigate the spread of the disease. Whilst the recent UK vaccine approval has boosted confidence that the recovery from the crisis is within sight, (with the most optimistic estimate of a return to a semblance of normality being Winter 2021⁹), there remain several uncertainties that would affect the pace and effectiveness of recovery. Multilateral regulatory approval is required for vaccines and if individual countries dispute the effectiveness and safety of any vaccine candidates, then this could create a disparity in the restoration of aviation connectivity as the speed with which different countries manage to control the pandemic would be very different.

Despite good progress on vaccines with the UK launching the world's first mass vaccination programme in December¹⁰ and Canada approving the Pfizer vaccine¹¹, there remain some uncertainties around how quickly a vaccine would become a permanent alternative to travel restrictions. For example, questions remain on the vaccine's performance such as how long any immunity would last, how quickly a vaccination could be supplied to the entire population (causing further disparity in the restoration of connectivity as different countries will likely be able to conduct immunisation programmes at very different speeds), and whether taking the vaccination limits individuals from spreading the disease as well as developing severe symptoms. Furthermore, there is a possibility that further strains of the virus may occur due to its capacity to mutate¹² and these may not be accommodated by any current vaccine candidates. It is therefore not yet clear how quickly flying would return to meaningful levels as a result of any global vaccination rollout and it is possible that airport testing would need to supplement any inoculation programme for a significant period after the launch of a vaccine.

To date, government responses to Covid-19 and many other issues impacting aviation have been uncoordinated and contradictory. There is an absence of clear policy on several issues, which will impact both recovery and passenger demand including:

⁷ This is Money, *Lead time for booking flights reduces drastically thanks to coronavirus* September 2020: <https://www.thisismoney.co.uk/money/holidays/article-8713727/Airlines-continue-trim-schedules-consumer-confidence-wavers.html>

⁸ Ipsos MORI, *Political Pulse Tracker*, August 2020, N=1,119

⁹ BBC, *Covid-19: Normal life back next winter, says vaccine creator*, November 2020: <https://www.bbc.co.uk/news/health-54949799>

¹⁰ BBC, *Covid-19 vaccine: First person receives Pfizer jab in UK*, December 2020: <https://www.bbc.co.uk/news/uk-55227325>

¹¹ BBC, *Covid: Canada latest country to approve Pfizer-BioNTech vaccine*, December 2020: <https://www.bbc.co.uk/news/world-us-canada-55251830>

¹² BBC, *Mutated coronavirus may 'jump back an forth' between animals*, November 2020: <https://www.bbc.co.uk/news/science-environment-54918267>

Travel corridors and quarantines – Each of the four UK nations currently has its own list of travel corridor countries, which are exempt from the quarantine rules. Countries have been added and removed with haste, often causing confusion and panic for consumers. Even though the self-isolation period has dropped from 14 days to 10 days for passengers returning from countries deemed higher risk, many consumers are deterred from booking trips further in advance. This impacts both airlines' and airports' ability to schedule capacity.

Testing - The UK has been late to implement testing either as an alternative to quarantine or as a means to reduce the time travellers spend in self-isolation. The infrastructure had been made available at Heathrow and other UK airports months before any announcement from the Government. A coordinated and risk-based approach could have supported Christmas travel, providing a key lifeline for the aviation sector.

Brexit deal – British travellers could be barred from entering the EU from 1st January, even if there is a trade deal. To date there has been no comment from Downing Street. An absence of an agreement would allow EU hub airlines to gain enormously, both through tourism and connecting hub traffic.

Duty free – The decision to end duty free at the end of the Brexit transition period will make the UK less attractive to international visitors. Again, it is expected that many visitors will chose to spend their money elsewhere in Europe causing further economic disruption.

In summary:

- There remains no forecast date for when a sufficient number of international countries will have administered a vaccine to enough of their population to fully remove travelling restrictions.
- The role of quarantine and travel restrictions could therefore still remain a factor in the early years of H7. So too could requirements for social distancing and enhanced cleanliness that limit airport capacity and drive up costs.
- Airport volumes are unlikely to recover to anywhere near pre-Covid levels until the end of the H7 period and are highly sensitive to the success of any vaccine roll out, the financial strength of the airlines and the ability of the global economy to recover quickly.

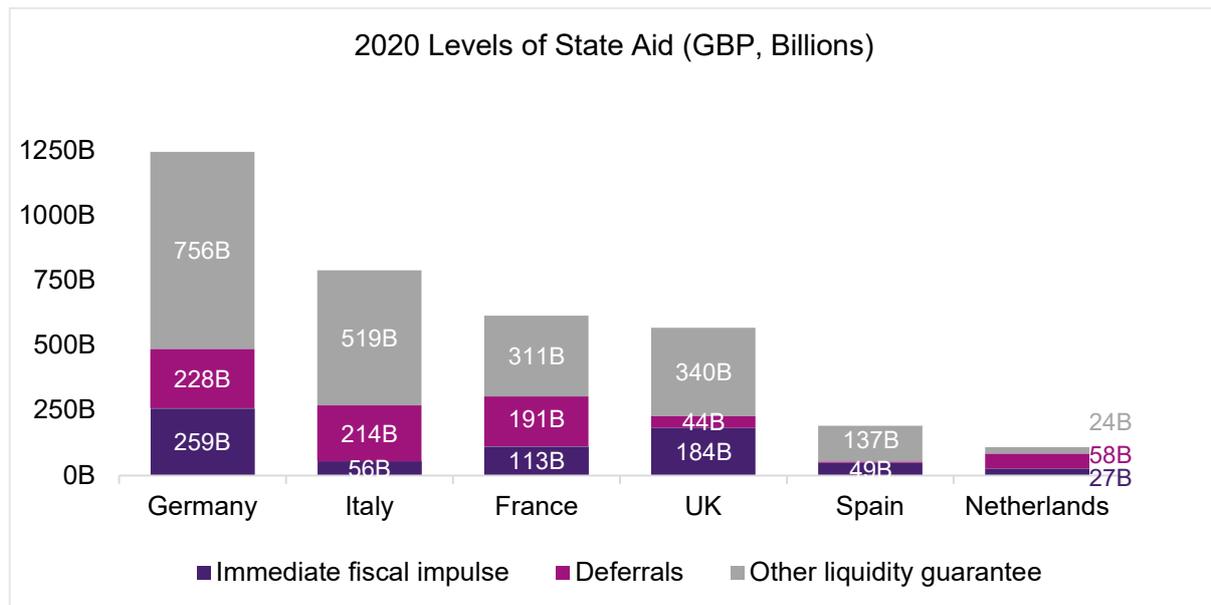
2.2.2.2 Governments have responded with massive spending packages, but support to aviation has varied by country, distorting competitive dynamics

There is significant variation in the size and scope of the fiscal policies; financial support and state aid, that countries have implemented to mitigate the economic impacts of Covid-19. Among the top six European countries by air passenger traffic in 2019¹³, the variance in the size of state interventions have been vast (ranging from 15% – 50% of 2019 GDP¹⁴), however each country has chosen to focus these investments on different industries, creating a distorting effect on competitive landscapes.

¹³ Eurostats, *Air passenger transport between reporting countries*
https://ec.europa.eu/eurostat/databrowser/view/AVIA_PAOCC_custom_196627/default/table?lang=en

¹⁴ Bruegel Datasets, *The fiscal response to the economic fallout from the coronavirus*, November 2020: <https://www.bruegel.org/publications/datasets/covid-national-dataset>

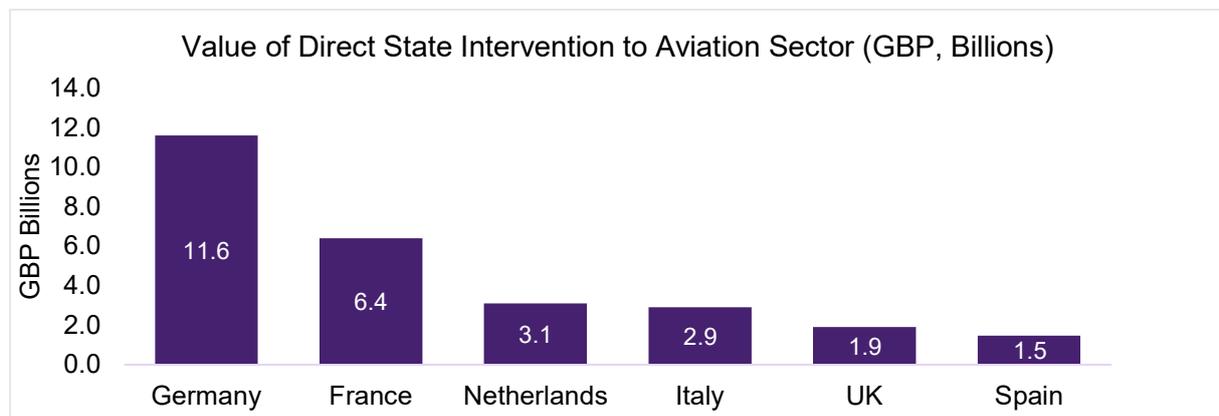
Figure 2: Scale of state aid provided by European Hub countries



Source: Bruegel¹⁵

There has also been disparity in the value of direct aviation packages that individual countries have provided. This may allow the individual beneficiaries of state support packages to emerge from the pandemic in a much stronger position than they entered relative to similarly placed competitors, fundamentally distorting the nature of competition within Europe. Conditions attached to state packages have also varied significantly, including, but not limited to sustainability targets, slot divestments and operating cost targets¹⁶.

Figure 3: Value of direct state intervention to Aviation sector for top European countries by 2019 air passenger traffic



Source: Various Press Releases¹⁷

¹⁵ Bruegel Datasets, *The fiscal response to the economic fallout from the coronavirus*, November 2020: <https://www.bruegel.org/publications/datasets/covid-national-dataset> (Euros converted to GBP using following rate: 1 GBP = 1.1 Eur)

¹⁶ Dentons, *Flying through the storm: COVID-19 state aid and other EU competition law updates*, August 2020: <https://www.dentons.com/en/insights/articles/2020/august/6/flying-through-the-storm-covid19-state-aid-and-other-eu-competition-law-updates>

¹⁷ Various press releases. This is the value of publicly announced state aid at time of submitting the RBP. Excludes value of wage support schemes and other schemes that are available to multiple sectors. Exchange rate used (where figures were announced in Euros) 1 GBP = 1.1 Euros.

State-funded support to airlines has also differed. While the estimated value of publicly announced state support packages to airlines across the world is nearly £100bn (almost 15% of global 2019 revenues)¹⁸, this has not been distributed equally across all airlines. This has meant certain airlines have needed to make greater changes to cost base through reductions and delays in capital investment and targeting operational cost efficiencies.

Table 1: European airline response to Covid-19

Airline Group	Government sponsored Financial Interventions	Achieved reduction of FTE's by end of 2020 (as share of 2019 workforce) *
Lufthansa	£10.0bn	10.0% (further ~3% currently in consultation)
Air France – KLM	£9.5bn	10.6%**
IAG	£1.2bn	13.8%
Ryanair	£0.6bn	Announced up to 17.1%, (expected to be revised down through use of alternative cost reduction measures)
easyJet	£0.6bn	Announced up to 30.0% (currently in consultation – not yet finalised)
Virgin Atlantic	None	35.0% (further 11% currently in consultation)

Source: Airline websites, news articles¹⁹

A combination of cost-cutting actions and state funded support have allowed airlines to somewhat limit the threat of bankruptcy thus far. Airline failures remain at near-typical annual levels, with an estimated 43 airlines collapsing since the start of 2020, compared to between 35 – 55 airlines failing annually over the past six years²⁰. Furthermore, the near-term outlook for airlines will be challenged as demand is suppressed through governments returning to stricter travel restrictions during the Winter 2020 season, and there is no guarantee of any further sector specific state support to help weather the crisis.

Beyond state funded support, further distortions within the European aviation sector may arise if the UK and the EU fail to reach an agreement on aviation connectivity at the end of the post-Brexit transition period. Whilst it is expected that contingency measures would be implemented if no deal was arranged, there remains a possibility that no agreement on EU-UK aviation connectivity will be made. In this circumstance, UK airports and airlines with the highest

¹⁸ Various press releases, IATA economics – Est. 2019 Airline total revenue was \$838bn (exchange rate 1GBP = 1.29 USD), Heathrow analysis. Excludes the value of wage support schemes (only the value of direct packages to airlines).

¹⁹ Airline websites, various news sites. GBP to Euro exchange rate used – 1 GBP: 1.1 EUR.

* compared with equivalent period in 2019 (Sep/Oct 2020 vs Sep/Oct 2019) **this is AF-KLM's combined target FTE reduction by close of 2020 – total achieved at time of writing was 6.5%,

²⁰ CNBC, *Over 40 airlines have failed so far this year – and more are set to come*, October 2020: <https://www.cnbc.com/2020/10/08/over-40-airlines-have-failed-in-2020-so-far-and-more-are-set-to-come.html>

exposure to EU traffic are expected to be the worst affected²¹. There is also a risk that any agreed deal for aviation would be on worse terms than the UK currently enjoy with the EU and may affect certain types of traffic/demand such as connecting traffic. The combination of low state support to the sector and the threat of losing connectivity to a significant market would leave the prospects of UK aviation sector recovery challenged and could mean UK aviation loses its leading position within Europe.

In summary:

- The UK's aviation sector, with its comparative absence of state support, is likely to be slower to recover than other countries.
- The distribution of state support amongst airlines has been unequal, potentially resulting in a distortion of competitive dynamics throughout recovery.
- State support has contributed to limiting the threat of bankruptcy faced by airlines so far, but there is no guarantee of any further support to the sector. If a Post-Brexit deal for aviation is not agreed, the UK's aviation sector's ability to recover will be challenged and it would likely lose its leading position within Europe.

2.2.2.3 External financing is necessary, but the cost of financing is increasing

Containment measures to limit the spread of the virus have resulted in pressures on corporate liquidity, due to sources of revenue drying up. This is particularly true for industries reliant on social interaction, such as transport and tourism. Companies that are beneficiaries of state intervention have managed to head off near-term liquidity challenges, but uncertainties remain about how long governments will be willing to intervene, as the fiscal costs to government are enormous (estimated at 25% of eurozone GDP for European countries²²).

Whilst state support has been vital for supporting companies that are pressured by the crisis, utilising private funding has also been necessary, particularly for companies that have not benefitted from state interventions. Heathrow has remained privately funded throughout the Covid-19 crisis to date.

Access to private sources of funding and liquidity have been challenged by financial market volatility. Credit rating declines and investor risk aversion have resulted in bond yields spiking and remaining above pre-crisis levels, effectively raising the cost of debt.

Companies with lower credit ratings have been particularly exposed, especially those with speculative grade credit ratings. The disparity in ability to raise liquidity based on credit rating is highlighted by European investment grade companies increasing net debt by 8% in the first half of 2020, whilst speculative grade companies only managed to raise net debt by 4%²³. Solvency will likely become a growing threat to speculative-grade companies with unsupportable capital structures, particularly once state interventions taper off. Investor perception of risk has changed in response to the crisis, affecting the cost of financing for many companies.

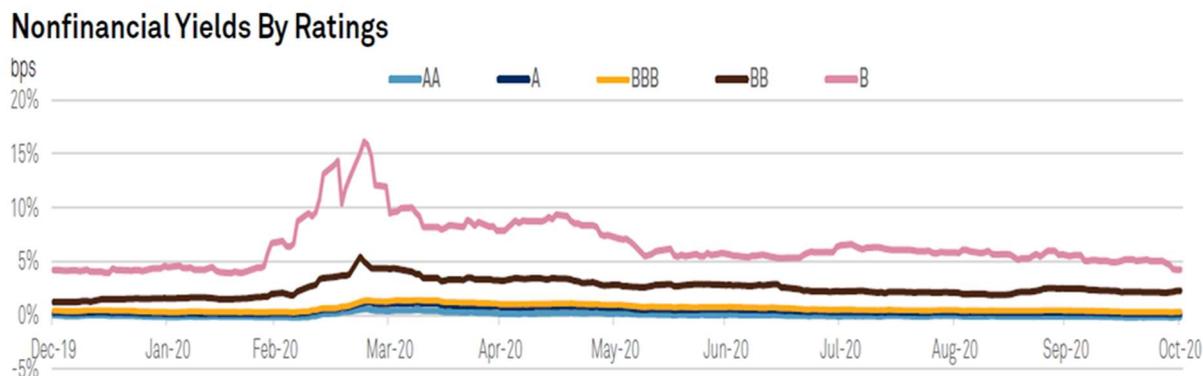
²¹ Fitch Ratings, *Troubles for European Aviation to Mount in No-Deal Brexit*, October 2020: <https://www.fitchratings.com/research/infrastructure-project-finance/troubles-for-european-aviation-to-mount-in-no-deal-brexit-22-10-2020>

²² S&P Global Ratings, *Credit Conditions Europe: ill prepared for winter*, September 2020

²³ Ibid

As described in Chapter 8.2 (WACC), investor perception of airport risk has increased, raising their expectations on returns (as measured by an increase in asset betas)²⁴. Airport cost of financing has increased, therefore, it will be vital for Heathrow to maintain our Investment Grade credit rating to ensure we can efficiently deliver our plan for the H7 regulatory period.

Figure 4: Impact to European bond yields over time by credit rating



Source: S&P Global Ratings²⁵

In summary:

- Raising external funding will be essential for companies to remain solvent, particularly amongst industries most exposed to the effects of virus containment measures.
- However, the cost of financing has increased due to changing investor risk perceptions and credit rating declines.
- Companies with lower credit ratings are most exposed to an increase in the cost of financing, particularly those with speculative grade ratings.
- Airport cost of financing has increased; therefore, Heathrow must retain an investment grade credit rating to ensure we can efficiently deliver our H7 plan.

2.2.3 The pace of recovery from Covid-19 will vary by industry

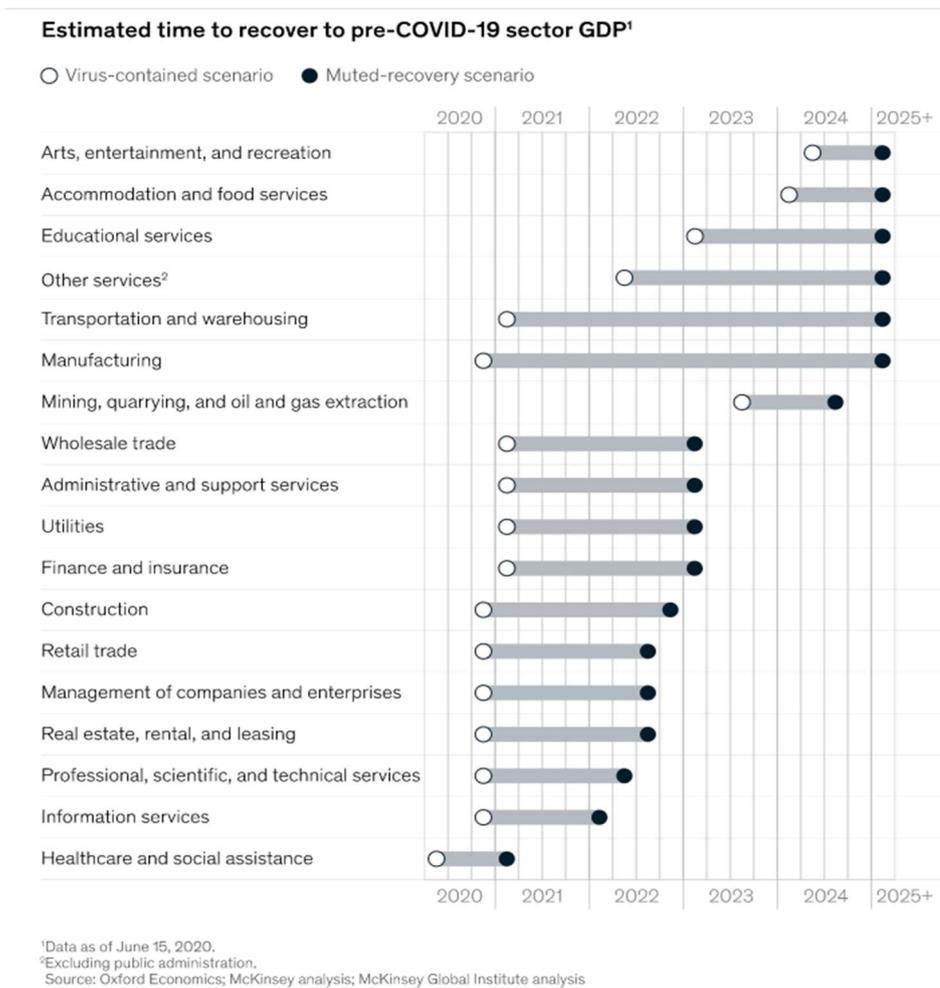
To navigate the financial impacts of this unprecedented crisis, extreme measures have been necessary across multiple industries. According to McKinsey²⁶, the industries that are seeing the most detrimental impact from Covid-19 and will therefore need to make the biggest changes are those most exposed to the effects of movement restrictions implemented by governments, as well as those most reliant on cargo. The McKinsey analysis highlights that transportation and warehousing, manufacturing and accommodation and food services, which are highly exposed to government measures to restrict movement, could be amongst the slowest industries to recover, depending on how long it takes to contain the virus and subsequently lift restrictions.

²⁴ ACI, COVID-19: Rising financial risks in the airport industry, September 2020: <https://blog.aci.aero/covid-19-rising-financial-risks-in-the-airport-industry/>

²⁵S&P Global Ratings, Credit Conditions Europe: ill prepared for winter, September 2020

²⁶Oxford Economics, McKinsey analysis, McKinsey Global Institute analysis, McKinsey survey of 2,174 global executives, June 1–5, 2020.

Figure 5: Estimated recovery time to pre-Covid-19 levels of GDP



Note: Aviation included in Transportation and Warehousing
 Source: Oxford Economics & McKinsey ²⁷

The challenge of unprecedented and disparate reductions in market access, consumer confidence and supply chain issues has impacted all industries in some way. Aviation, and airports specifically are impacted significantly by trends in other industries; retail, hospitality, travel and logistics and many others.

2.2.3.1 Consumers in other related industries are changing the way they prioritise their needs

2.2.3.1.1 Retailers

Restrictions to mitigate the spread of Covid-19 have resulted in an evolution of consumer spending behaviour, and a change in the prioritisation of their needs. Personal safety in physical stores has become more important as the ability to social distance has become a bigger priority for than half (57%) of consumers²⁸. In response, retailers are seeing an

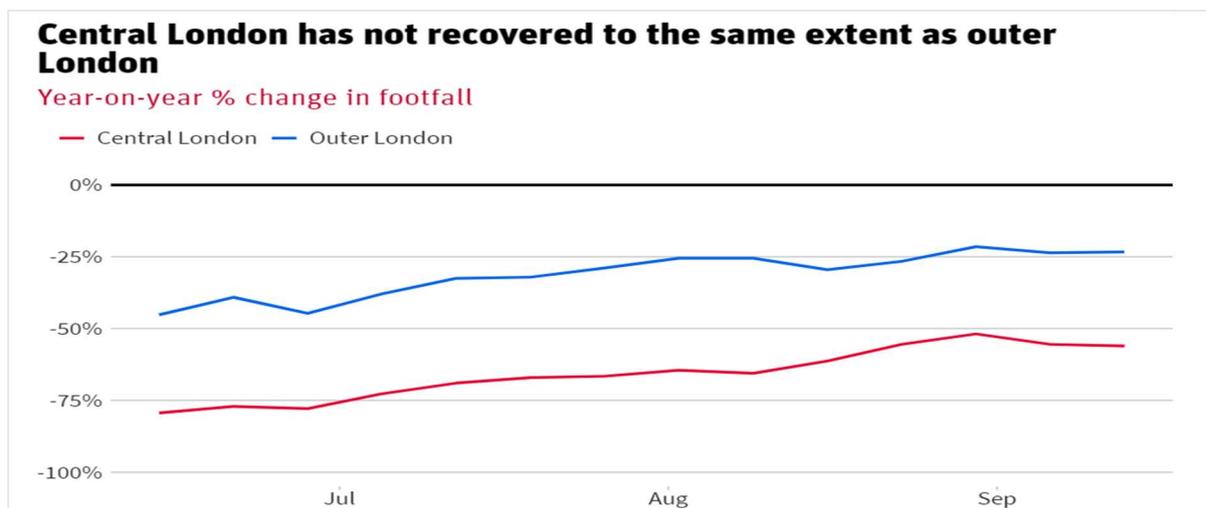
²⁷ Oxford Economics, McKinsey analysis, McKinsey Global Institute analysis, McKinsey survey of 2,174 global executives, June 1–5, 2020.

²⁸ YouGov, *How has Covid-19 impacted shopping habits?*, N=2152

acceleration of consumers transitioning to online and digital shopping, with an estimated 17.2 million British consumers expected to make permanent shifts in their shopping behaviour due to Covid-19²⁹. Internet sales as a share of total sales in the UK rose to 26.1% in September from 18.1% in the same period last year³⁰, whilst convenience has become a bigger priority for two in five consumers (37%)³¹. A quarter of consumers (27%) say the pandemic has made price more important, as half of workers have lost some income since March³². Responding to the spike in demand for digital retail, and navigating the restrictions applied on physical stores, retailers have had to innovate to either strengthen existing or develop new digital offerings. For example, supermarket chain Aldi have partnered with the food delivery service Deliveroo to offer an online grocery shopping product. As described in Chapter 2.3, some consumers' airport needs are now heightened, which Heathrow will have to respond to with our refreshed passenger experience proposition.

As lockdowns have lifted, retailers have reopened physical stores cautiously. They have needed to accommodate social distancing in-store and prioritise the health and safety concerns of both customers and colleagues. However, the rise of home working has resulted in a reduction in commuters to city centres, particularly London.

Figure 6: Recovery of Footfall in Central London vs Outer London



Source: Springboard/New Statesman³³

The reintroduction of movement restrictions within the UK have suppressed the recovery of footfall, with the centre of London remaining the worst affected in terms of relative levels of footfall.

²⁹ Alvarez & Marsal and Retail Economics, The shape of retail: Consumers and the new normal

³⁰ ONS Retail Sales Index Time Series

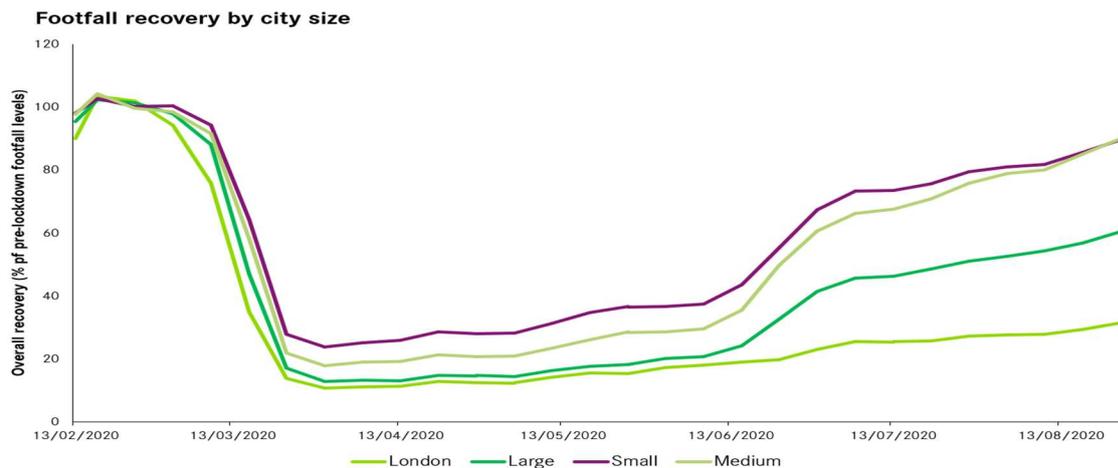
³¹ YouGov, *How has Covid-19 impacted shopping habits?*, N=2152

³² Ibid

³³ New Statesman, *Has Covid-19 revived Britain's local high streets?*, September 2020:

<https://www.newstatesman.com/politics/2020/09/covid-coronavirus-revive-local-shopping-high-streets-corner-shops-customers>

Figure 7: Footfall Recovery by City Size (UK)



Source: Centre for cities High Street recovery tracker³⁴

Should this ‘Polo-mint’ effect, where city centres are slower to recover than suburbs and other regions, prove to be lasting as more workers continue remote working, retailer investment focus may shift in favour of high streets and towns. A shift in this investment may make London a less attractive place to shop, reducing tourist appeal. In 2019, there were 19 million international visitors to London, making it the third most visited city destination behind Bangkok and Paris. It’s estimated that US\$16.47 Billion was spent by these visitors³⁵ - a valuable contribution to the economy. A reduction in visitors also means a prolonged period of reduced footfall in the airport, which would pressure non-aeronautical revenues. This is compounded by the Government’s proposals to abolish duty-free sales. In addition, convenience would likely become a greater factor for consumers, as emphasised by the increase in digital and delivery offerings that have already been observed. The potential for long-term changes mean Heathrow’s commercial offering would need to adjust, as described in Chapter 7.

2.2.3.1.2 Hospitality

The hospitality sector has been among the most exposed to Covid-19 measures, and the implications of restrictions on travel and of consumer activity on demand have been acute. As lockdown measures have been implemented, the industry has effectively been brought to a standstill and, although measures have become lighter, structural challenges will remain until the crisis is fully resolved.

The impact of Covid-19 measures on demand for hospitality has varied across the sector. The latest forecasts suggest that hotel occupancy rates in London will drop to 28.8% in 2020, recovering to 52.4% by 2021 (a drop of 31% compared to 2019). London recovery is expected to be slower than the rest of the UK, which is expected to recover to 59.2% by 2021 (a drop of 16.2% compared to 2019), driven primarily by suppression of international travel due to movement restrictions, reduction in domestic business travel due to furloughing and

³⁴ Centre for Cities, *High Street Recovery Tracker August update: what have we learnt from this month’s update?*, September 2020

³⁵ Mastercard, *Global Destination Cities Index*, 2019

technology substitutes and a growing popularity in staycations³⁶. 17% of arts, entertainment and recreation businesses in the UK are temporarily closed or have stopped trading, whilst 68% of those businesses have experienced a decrease in turnover compared to the same period in the previous year³⁷. The accommodation and food services industry have the highest share of firms at severe risk of insolvency in the UK at 5%³⁸. Similar to the point outlined above for retail, there is a chance of a permanent reduction in the appeal of London/the UK as a centre for tourism, with challenges in terms of more limited accommodation capacity as well as social and leisure activities.

The UK Government has cut VAT across the hospitality and leisure sector and the value of this measure is estimated at £2bn³⁹. The Government's Eat Out to Help Out scheme provided a vital lifeline to the sector during the summer, valued at ~£0.5bn, to stimulate demand. The hospitality sector has been the largest beneficiary of the Government's Coronavirus Job Retention Scheme with 41% of the arts, entertainment and recreation industry and 29% of the accommodation and food services industry workforces on partial or full furlough leave⁴⁰.

2.2.3.1.3 Public Transport

Public transport has also been heavily affected by accommodating measures to mitigate the spread of Covid-19. Train operating companies (TOCs) have been impacted by a significant reduction in passenger volumes, with the latest available data at the time of writing suggesting that National Rail and London Underground journeys are at ~ 20-30% of the equivalent period last year⁴¹. Post-lockdowns, demand for public transport has been much slower to recover than private transport options, pressuring TOC revenues. Private transport use remains more attractive than public use as consumers continue to prioritise health and safety.

³⁶ PWC, *UK Hotels Forecasts 2020 – 2021: From endurance to recovery*, October 2020. N.B These forecasts are predicated on a vaccine being available and distributed throughout 2021

³⁷ ONS, *Coronavirus and the economic impacts on the UK*, September 2020

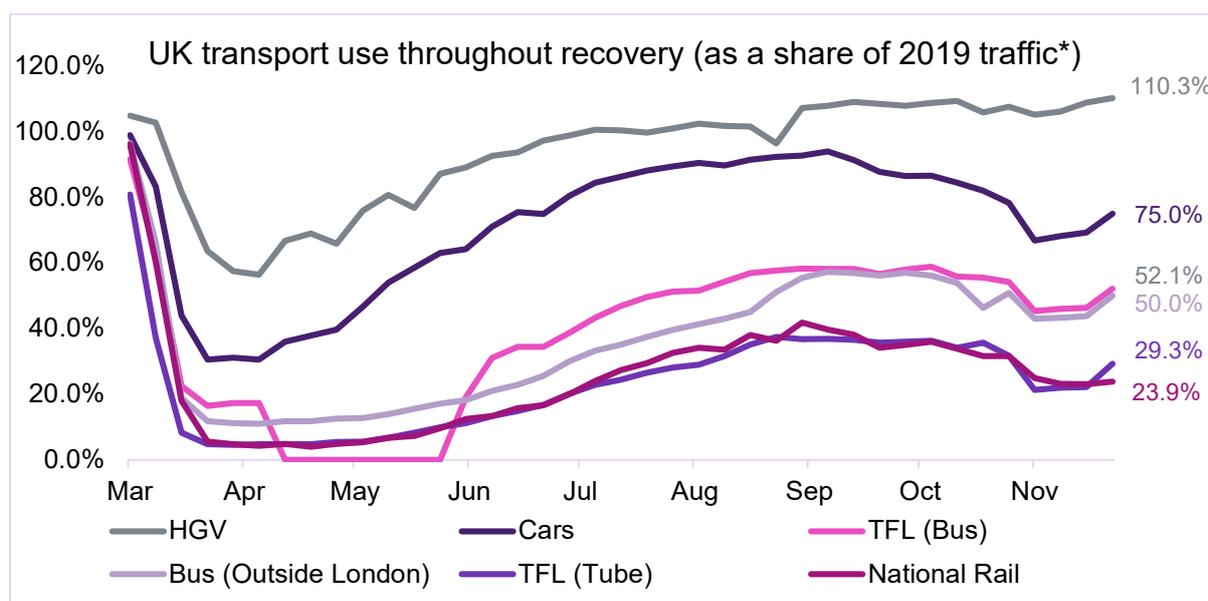
³⁸ VisitEngland & STR: England Room and Bedspace occupancy

³⁹ PWC, *UK Economic Update*, September 2020

⁴⁰ ONS, *Coronavirus and the economic impacts on the UK*, September 2020.

⁴¹ Dft, *Use of transport modes: Great Britain*, since 1 March 2020

Figure 8: UK transport recovery by mode



Source: Department for Transport⁴²

Demand for commuting has dropped due to persistently high levels of home working and potentially also consumer confidence challenges⁴³.

Demand for commercial property such as offices has also fallen. Vacancy rates within London have risen to their highest levels since 2009 (at around 6.5%)⁴⁴. Investment in commercial properties within Central London declined to £312m in October (almost 26% of the ten-year monthly average) indicating suppressed demand for office space⁴⁵. In a Royal Institute of Chartered Surveyors (RICS) survey, the net balance of respondents believed a fall in London commercial property prices was likely⁴⁶, whilst the OBR forecast a 13.8% reduction in commercial office prices in the 2020-21 financial year across the UK⁴⁷. Furthermore, 93% of UK respondents to a RICS survey are seeking to scale back their office space requirements in some way. This may have a longer-lasting impact on the origination and surface access mode that passengers may choose to reach airports. As described in Chapter 7.4, Heathrow will have to balance the change in how passengers will choose to travel to the airport with our own sustainability aspirations.

To preserve public transport services, the UK government has repealed rail franchising, announcing plans to extend financial support to TOCs by at least 6 – 18 months. Franchising has been replaced by transitional contracts (Emergency Measures Agreements), which pave the way for industry-level reform that prioritise tougher performance targets, lower management fees and driving down high capital costs. Government support to TOCs to

⁴² Department for Transport (*note that private modes are benchmarked to equivalent period in 2019, whilst public modes are benchmarked to February 2020 to reflect schedule changes).

⁴³ London & Partners, *Coronavirus insight update*, September 2020

⁴⁴ CBRE, *United Kingdom offices Q3 2020*, November 2020

⁴⁵ CBRE, *Central London Office Marketview October 2020*, November 2020

⁴⁶ RICS, *UK Economy and Property Market Chart Book*, Q3 2020, September 2020

⁴⁷ OBR, *Fiscal sustainability report*, July 2020

mitigate Covid-19 effects has reached ~£3.5 billion, with significantly more investment expected, depending on the pace of passenger recovery⁴⁸.

In summary:

- London's appeal as a tourist destination may reduce as retailers and hospitality providers may seek to invest in areas with faster recovering footfall, which could constrain Heathrow's Commercial Revenues.
- Consumers are making different surface access choices during the crisis, which Heathrow will need to accommodate in balance with our sustainability aspirations.
- Heathrow's commercial offerings will need to adapt to the shift in Consumer prioritisation, constrained passenger volumes and evolution of surface access choices.

2.2.3.2 Due to changes in the economics of related industries, airlines have experienced some relief on revenues and costs

2.2.3.2.1 Manufacturers

Covid-19 has had an unprecedented effect on global trade, with estimates of world merchandise volumes dropping 18.5% in the second quarter of 2020 compared to the same period in the previous year⁴⁹. The resilience of global supply chains has been tested by lockdown measures, which have brought on an initial supply shock, followed by variable shocks to demand. Multinational production companies have found themselves with variable and unpredictable access to their core suppliers, resulting in product shortages. However, world trade is expected to be slightly more resilient than expected, as full year expectations have been revised from a 12.9% reduction to a 9.2% reduction in world merchandise volumes compared to 2019⁵⁰.

In light of these challenges, air cargo has been vital in maintaining international trade volumes, particularly for delivering essential goods between countries. In line with the effects on global trade, air cargo volumes are expected to drop by ~12% by the end of 2020 compared to the previous year⁵¹. This shows the fundamental differences between the air passenger market and the cargo market, evidencing the need for cargo to be treated differently to passenger flights as part of Heathrow's regulatory framework.

However, recovery of air cargo volumes has been constrained by the shift in capacity dynamics. Historically, nearly half of air cargo has been transported by belly hold, meaning the shock to passenger volumes has limited the available belly hold cargo capacity⁵². As a result, air cargo capacity remains 22.6% lower in October compared with the same period in 2019, despite efforts to deploy passenger aircraft for cargo-only flights⁵³. The consequence of this has been cargo yields and load factors remaining elevated compared to 2019 levels, which

⁴⁸ UK Government, *Rail franchising reaches the terminus as a new railway takes shape*, September 2020

⁴⁹ WTO press release, *Trade falls steeply in first half of 2020*, June 2020

⁵⁰ WTO press release, *Trade shows signs of rebound from COVID-19, recovery still uncertain*, October 2020

⁵¹ IATA, *Air Cargo Market Analysis*, October 2020

⁵² WTO, *Trade costs in the time of the pandemic*, August 2020

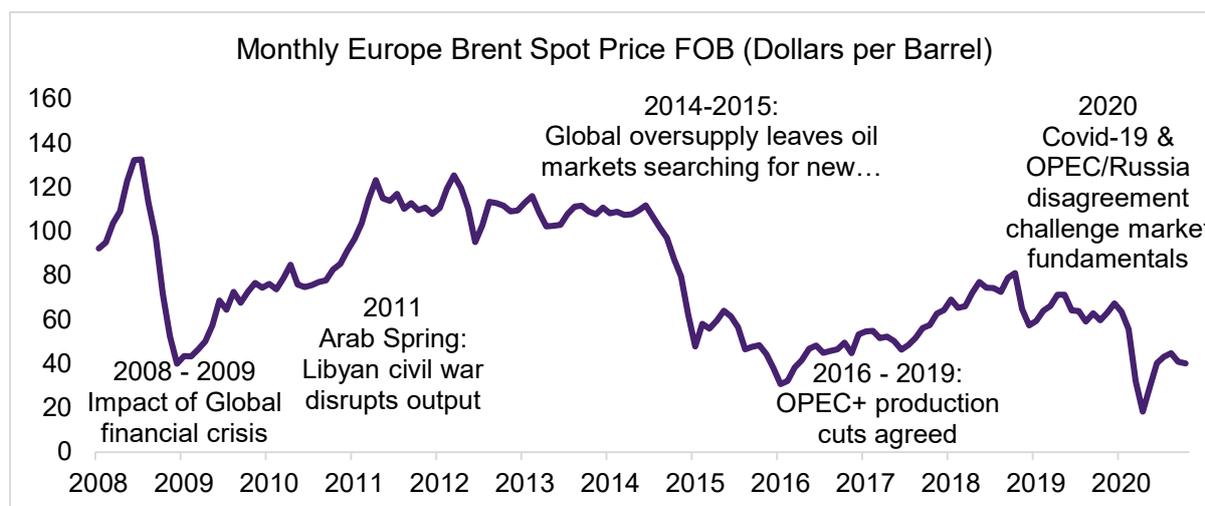
⁵³ Ibid

are expected to enable a nearly 15% year on year growth in airline cargo revenues despite a reduction in volumes transported.

2.2.3.2.2 Oil and Gas

The oil and gas industry faces a two-pronged crisis: an oil price war, and the impact of Covid-19 on overall demand. Supply pressures due to a failure between OPEC and Russia to reach an agreement on production cuts has caused oil prices to slip to their lowest levels in over a decade. Demand for oil in 2020 is expected to fall by 8.8mb/d compared to 2019, which would be the largest drop in history and bring demand back to 2013 levels^{54 55}.

Figure 9: Monthly oil price 2008 - 2020



Source: U.S. Energy Information Administration⁵⁶

Major players expect that fossil fuel demand has been permanently weakened by the effects of Covid-19, coupled with the impact of strengthening climate policy. For example, forecasts from BP's 2020 Energy Outlook indicate a fundamental structural shift in energy demand is expected with a declining role for fossil fuels, offset by the increasing importance of renewables⁵⁷. This may indicate a pivotal moment for energy transition, as major players have started to increase the priority they place on renewables whilst slashing investment in fossil fuel assets. For example, four of the largest fossil fuel producing companies (Total, Repsol, BP, and Shell) have laid out plans to achieve net-zero emissions by 2050⁵⁸. Major investment plans have been announced, such as BP's commitment to increase low carbon spending by \$5 billion/year, whilst cutting oil and gas output by up to 40% compared to 2019⁵⁹.

However, suppressed travel demand has limited airline capacity to exploit lower fuel prices which were expected to make up around 20% of an airline's operating costs and are typically variable or semi-fixed in the short run⁶⁰. Major European airlines have not immediately benefitted from lower fuel prices due to hedging between 65 -90% of their 2020 fuel bill at

⁵⁴ IEA, *Oil Market Report* – November 2020

⁵⁵ WE Forum, *This is how the drop in oil demand compares to previous recessions*, 12 May 2020

⁵⁶ U.S. Energy Information Administration, *FOB – Free on-board price*, 30 September 2020.

⁵⁷ BP, *2020 Energy Outlook*, 14 September 2020

⁵⁸ Worldoil, *Supermajors all have ambitious, and widely varying, net-zero goals*, 12 May 2020

⁵⁹ Reuters, *BP to cut fossil fuels output by 40% by 2030*, August 2020

⁶⁰ IATA, *Fuel Fact Sheet*, December 2019

2019 prices⁶¹. In the near-term this constrains European airlines' ability to discount fares due to incurring higher than anticipated short-run semi-fixed costs. However, these airlines have a lower share of their 2021 fuel hedged at an average of ~40% of their expected 2021 bill, suggesting they may see more benefit from lower fuel costs next year. Additionally, should a prolonged and permanent weakening of oil demand occur, then European airlines could expect to benefit from reduced operating costs in the longer-term, particularly if fuel hedging strategies are revised in light of new market conditions.

In summary:

- Air cargo has become more important for airlines as a growing source of revenue due to improvements in yields.
- Airlines are likely to experience some relief on fuel costs due to a significant drop in the oil price, even if hedging choices limit the ability for some to benefit in the near-term.

2.2.4 Aviation recovery will be volatile until travel restrictions are lifted or mitigated permanently

2.2.4.1 The uncertainty brought on by Covid-19 has invalidated all previous forecasts

Prior to Covid-19, all key players within the aviation industry expected year-on-year growth to continue in 2020. Forecasts from major original equipment manufacturers (OEMs), airlines and airports had all concluded that passenger traffic was set to nearly double over the next twenty years, fuelled on the basis of growing economic prosperity (particularly in emerging economies), improved access to aviation, proven industry resilience to past economic shocks and the progressing affordability of aviation.

Table 2: Pre-Covid-19 forecasts of passenger growth

Stakeholders	Forecaster	Forecast range	Total passenger growth over forecast period	Annual growth rate (CAGR)
OEM	Airbus	2019 - 2038	2.3x	4.3%
	Boeing	2019 - 2038	2.5x	4.6%
Airlines	IATA	2019 - 2039	2.1x	3.7%
Airports	ACI	2019 - 2040	2.0x	3.4%

Source: Airbus, Boeing, IATA & ACI analysis⁶²

⁶¹ Eurofinance, *Covid-19 puts airline hedge strategies under new focus*, April 2020:

<https://www.eurofinance.com/news/covid-19-puts-airline-hedge-strategies-under-new-focus/>. Note that the effect of experiencing hedging losses will depend on the type of contract that airlines negotiated, which could mean that despite significant hedging, some airlines may not be obligated to purchase fuel at the agreed delivery time.

⁶² Airbus Market outlook 2019 -2038, Boeing market outlook 2019 -2038, IATA 20-year passenger forecast, 2020, ACI world airport traffic forecasts 2019 - 2040

The Covid-19 crisis has subverted growth assumptions in the near-term as global passenger volumes have already dropped by more than 60% in the first half of 2020 when compared with the same period in 2019⁶³. Full year expectations for global passenger volumes remain between 53 – 60% down on 2019⁶⁴.

Evidence from previous major shocks indicates that recovery to previous peak levels is typically slow. However, there is no basis for how a health-induced crisis may play out:

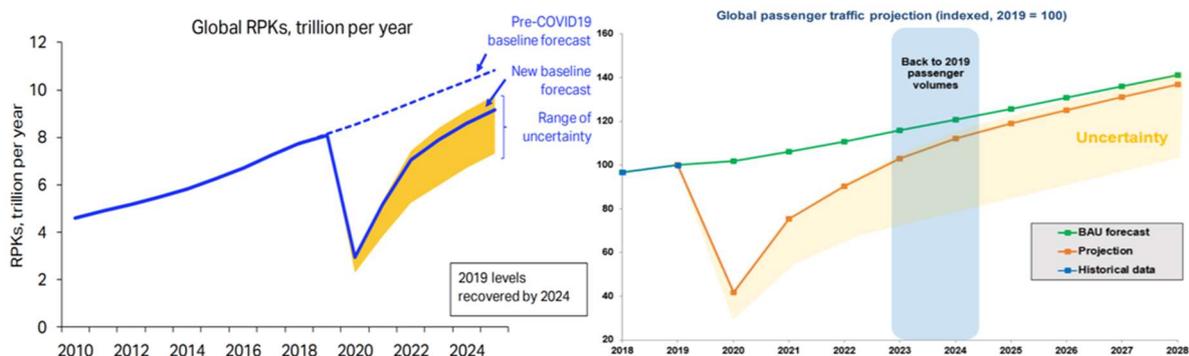
Table 3: Impact of demand shocks and recovery period

Previous Major Event	Time to Recover (start of crisis to regained peak)
Global Financial Crisis (2008)	36 months
9/11 (2001)	29 months
Gulf War (1990 – 91)	16 months

Source: ACI World⁶⁵

Leading industry forecasters have acknowledged high levels of uncertainty within their own models, highlighting how difficult it is to predict the exact path of industry recovery from this crisis.

Figure 10: The large range of uncertainties in third party demand forecasts



Source: IATA economics, ACI⁶⁶

Despite the uncertainty, there is consensus amongst airlines and third parties that global recovery to 2019 levels will take at least as long as other major previous crises. Expectations on recovery to 2019 levels vary drastically, ranging between 2024 - 2027, with international and business traffic expected to experience additional delays in recovery due to a slower return in market access.

⁶³ ACI, *Advisory bulletin: The impact of Covid-19 on the airport business*, August 2020

⁶⁴ ICAO, *Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis*, May 2020

⁶⁵ ACI, *World Monthly passenger traffic statistics*

⁶⁶ IATA/Tourism Economics, *'Air Passenger Forecasts' July 2020 and ACI Advisory bulletin*, August 2020

“Traffic is not expected to return to 2019 levels globally until 2024, with the pace of recovery diverging across regions.”

Fitch⁶⁷

“...we anticipate that it will take until at least 2023 or 2024 for passenger demand to recover to 2019 levels.”

IAG⁶⁸

“I think demand sort of starts to recover in earnest end of next year, beginning of 2022, and business demand getting back to normal is, I would guess, 2024, but I think it will come back to normal”

United Airlines⁶⁹

“...the aviation industry is not predicted to reach previous levels of demand until at least 2024.”

easyJet⁷⁰

“...the group confirms that traffic for Paris Aéroport could return to the level reached in 2019 at the end of the period between 2024 and 2027”

Aéroports De Paris⁷¹

“Global passenger traffic (revenue passenger kilometres or RPKs) will not return to pre-Covid-19 levels until 2024, a year later than previously projected.”

IATA⁷²

In summary:

- All forecasts prior to the Covid-19 crisis have been invalidated as a result of significant volatility brought on by uncoordinated and widespread restrictions on travel, a collapse in consumer confidence in the safety of flying and a substantial economic contraction.
- Evidence from previous shocks suggests that recovery to 2019 peak volumes will likely be slow.
- Leading industry forecasters acknowledge high levels of uncertainty in their own models of recovery.
- There is consensus among major players that demand recovery will take at least as long as previous crisis, but the estimated point of full recovery varies between 2024-2027.

⁶⁷ Fitch press release, *Outbreaks, Travel Limits to Delay Global Air Traffic Recovery*, October 2020

⁶⁸ Reuters, *IAG shareholders back \$3.3 billion rights issue as Walsh steps down*, September 2020: <https://www.reuters.com/article/us-iag-finances-votes-idUSKBN25Z1U5>

⁶⁹ The Hill, *United CEO: Business demand for airline travel won't return until 2024*, October 2020: <https://thehill.com/policy/transportation/aviation/521251-united-ceo-business-demand-for-air-travel-wont-return-until>

⁷⁰ *easyjet annual report and accounts 2020*, November 2020

⁷¹ *Aéroports de Paris Q3 2020 results*, October 2020

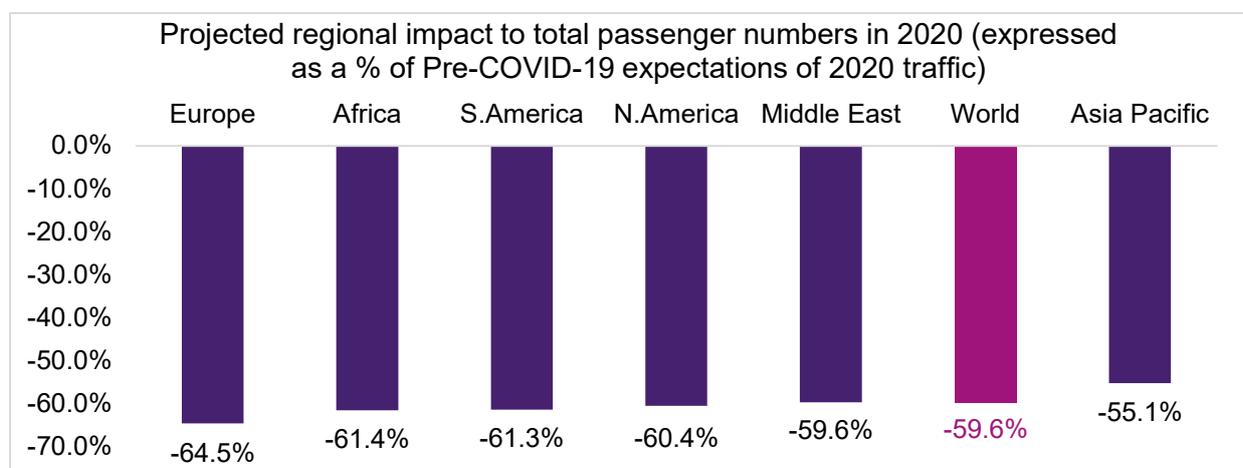
⁷² IATA press release, *Recovery delayed as international travel remains locked down*, July 2020

2.2.4.2 Uncoordinated travel restrictions will continue to distort the traffic mix recovery, until a permanent and robust alternative is implemented

Regional resilience and recovery in passenger volumes has been distorted by the disparity of where the disease has spread and the variability in the success of measures to contain the virus and mitigate further waves. Additionally, the mix of traffic has also played a part, as those regions with greater exposure to international traffic are more impacted by virus containment measures, due to that segment being more exposed to more complex travel restrictions.

This has created a highly complicated and dynamic scenario in which Europe is expected to experience the greatest relative loss in annual traffic in 2020. This has been driven by a greater share of international demand and the apex of the measures to contain the first wave of the virus striking during the summer period (when Europe’s highest share of demand is expected).

Figure 11: Covid-19 Impact to regional passenger demand

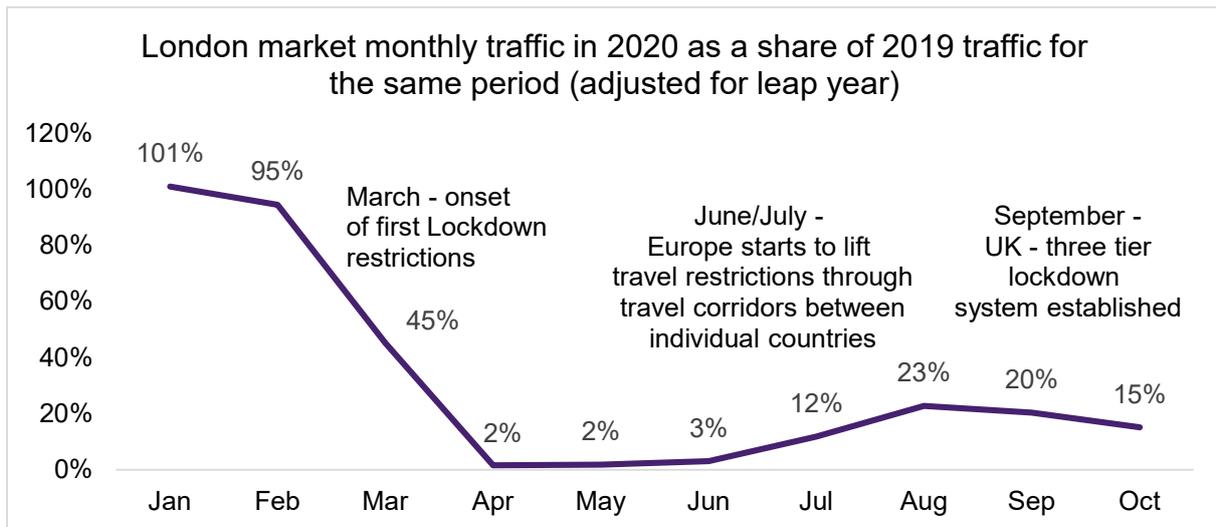


Source: ACI⁷³

Within the London market, recovery has been volatile due to the disparate and unpredictable way in which travel restrictions have been applied and lifted. Immediately after the UK’s first national lockdown was applied in March, demand came to a standstill as all non-essential travel was stopped. As the first lockdown was lifted in early summer, the UK began to agree exemptions to travel restrictions (air bridges) with individual (primarily European) countries, resulting in a constrained recovery in total passenger demand within London. Throughout the summer, air bridges have opened and closed frequently and with little warning and as the winter season began the threat of a second wave in Europe resulted in the list of countries with exemptions to travel restrictions growing shorter. This has resulted in a decline in total passenger numbers travelling to and from London airports, highlighting the sensitivity of passenger demand to government policy, and indicating that demand recovery will be volatile until a permanent alternative to travel restrictions is found.

⁷³ ACI, *Fourth advisory bulletin: The impact of Covid-19 on the airport business*, August 2020

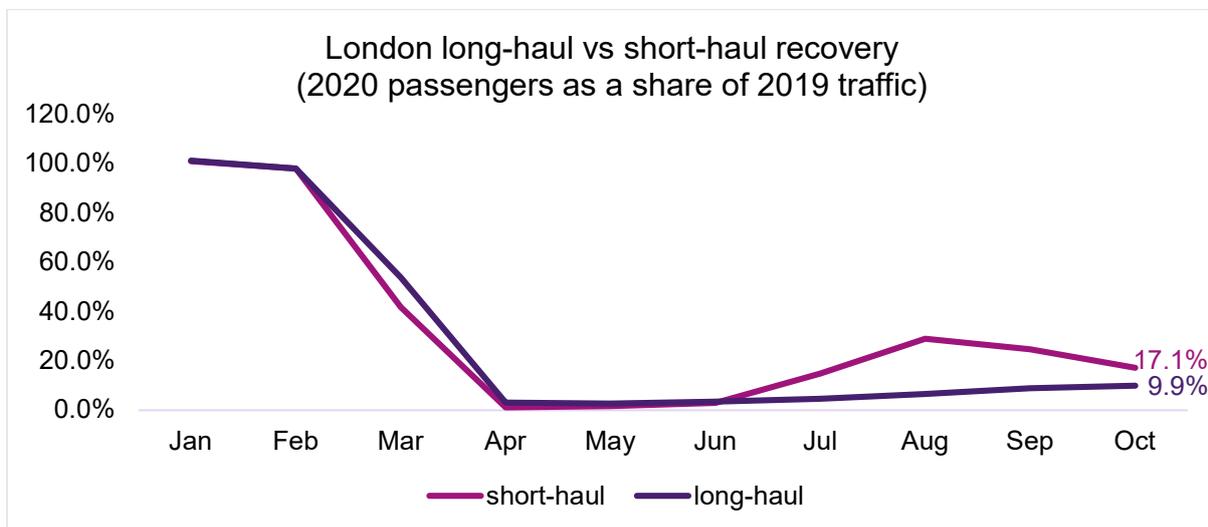
Figure 12: Impact to London passenger demand



Source: CAA and airport announcements⁷⁴

How travel restrictions evolve will also govern the overall mix of demand throughout recovery. To date, short-haul has recovered quicker than long-haul due to travel corridors being established, albeit some on a temporary basis. This has left the London market more skewed towards short-haul traffic, which has a disproportionately large negative impact on Heathrow, due to serving a greater share of long-Haul traffic than European and London based comparators.

Figure 13: London Market short-haul vs long-haul Recovery

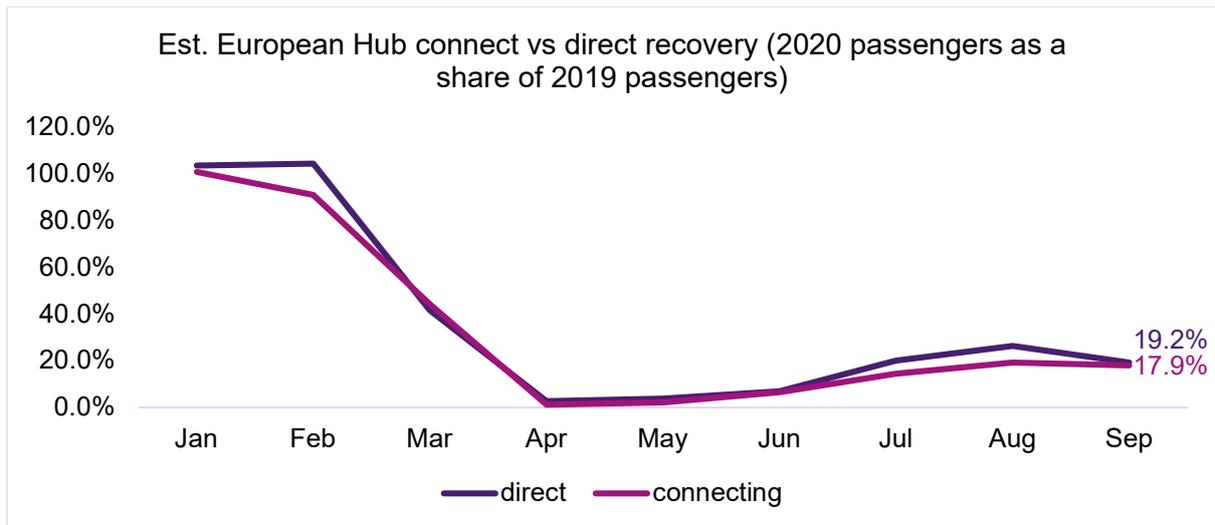


Source: CAA, Airport announcements⁷⁵

Within the London market, recovery of premium demand (passengers traveling in first and business class) has lagged economy class, primarily due to travel restrictions and airline capacity and service decisions. Persisting travel restrictions on long-haul destinations have constrained demand for Premium cabins, as airlines typically offer more Premium services on

⁷⁴ CAA monthly traffic

⁷⁵ CAA monthly traffic, Airport announcements



Source: Airport IS estimates⁸²

As a result of travel restrictions influencing the pace of recovery of individual demand segments, airport competitive positioning has been affected. Airports with greater exposure to international connecting and long-haul routes as well as greater premium demand have recovered slower than those airports who generate a greater share of their traffic from short-haul as measures to reopen travel have favoured this segment within Europe. Airport competitive positioning has also been affected by the pace at which individual countries have adopted more robust alternatives to quarantine on arrival requirements such as airport testing.

Table 4: Pace at which major European Hub home countries adopted airport testing

Country	Date Airport Testing will be implemented	Testing options	Max self-isolation time if test is negative
France	1 st August	- Pre-departure test - Test on arrival	3 days
Germany	8 th August	- Pre-departure test - Test on arrival	5-6 days
Spain	23 rd November	- Pre-departure test only	None if can produce negative test conducted 72 hrs before arrival
UK	15 th December	- Test on arrival	5 days

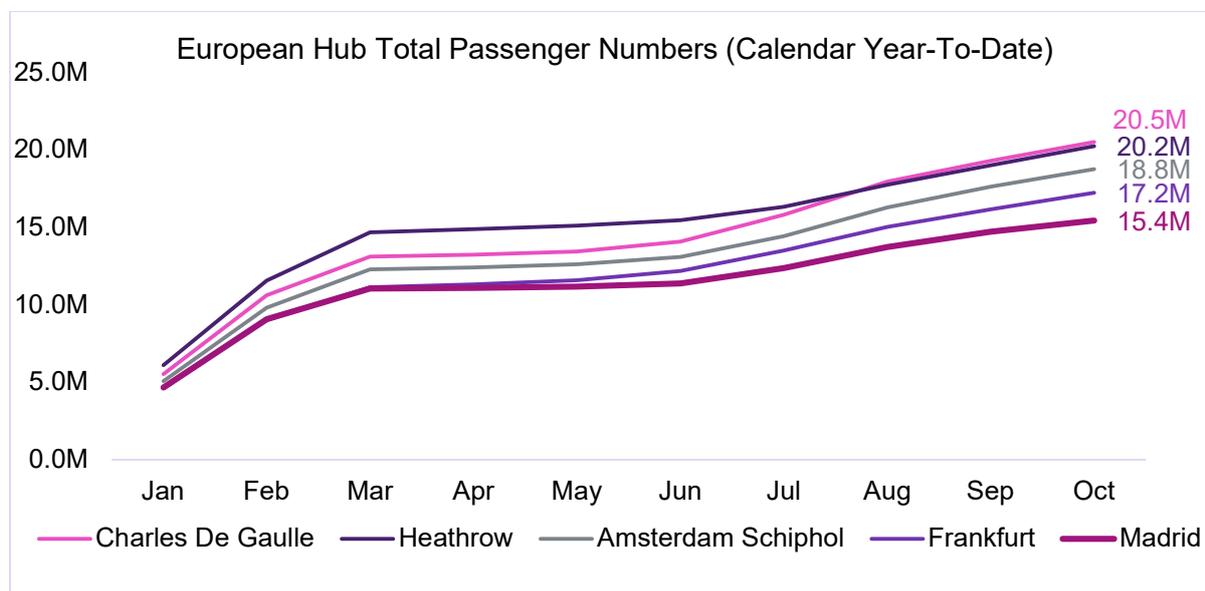
Source: Government travel advice websites⁸³

⁸² AirportIS estimates

⁸³ Government travel advice websites

The UK has been among the slowest to adopt airport testing measures. The impact of which can be seen by Charles De Gaulle overtaking Heathrow as Europe’s leading hub in August on a year-to-date basis.

Figure 16: 2020 year-to-date passenger numbers by European airport



Source: Airport Traffic releases⁸⁴

In summary:

- Variance in the success of virus containment measures, implementation of travel restrictions and testing will contribute to a disparity in regional aviation demand recovery.
- Temporary mitigations to travel restrictions such as air corridors have been uncoordinated and have favoured short-haul and direct passenger segments.
- Long-haul, premium and international connecting passenger segments are more exposed to the effects of travel restrictions and will recover more slowly until a permanent alternative is implemented.
- Heathrow’s competitive position has been affected as a result of the recovery of these demand segments being more constrained by travel restrictions and the UK’s slow adoption of testing.

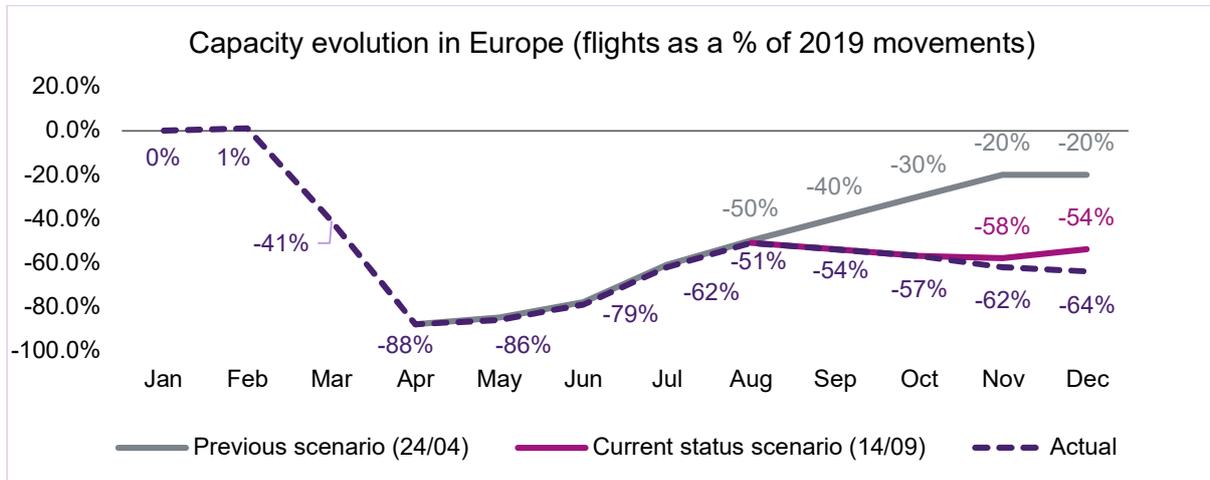
2.2.4.3 Airline fares are fluctuating due to volatility in the balance of supply and demand and the overall traffic mix, but airlines retain power to increase prices

Airlines have severely cut capacity due to travel restrictions. As air corridors were implemented over the summer airline capacity was on a recovery trajectory, however, the resurgence of lockdowns and travel restrictions has meant that capacity recovery has reversed for the winter period. Major European airlines have cut their expectations for capacity utilisation throughout the fourth quarter. For example, IAG have cut their expected capacity utilisation in Q4 2020

⁸⁴ Traffic figures reported by airports through monthly releases (cumulative calendar year to date)

from 40% to not more than 30% of their 2019 capacity. This has resulted in a fluctuating balance in supply and demand for air travel.

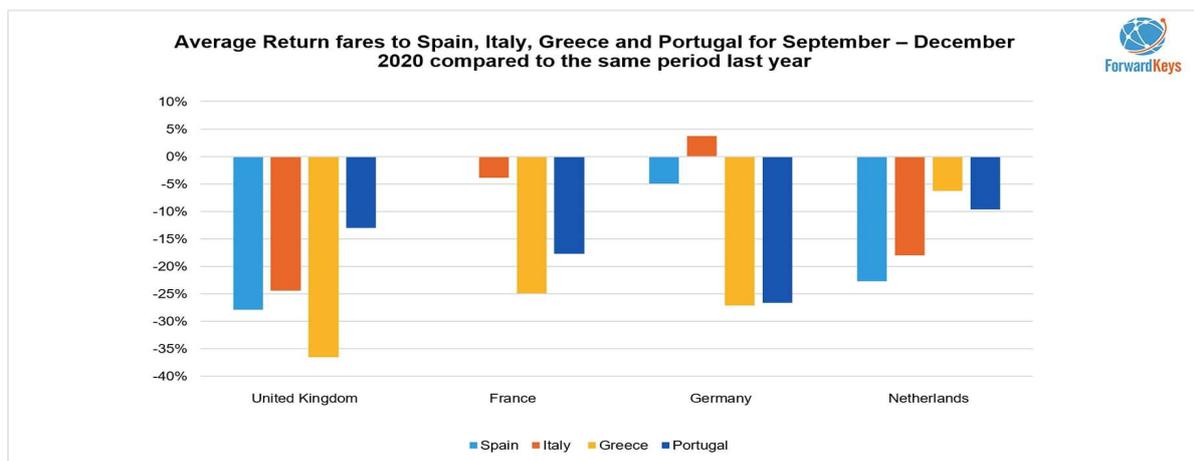
Figure 17: Airline capacity evolution in Europe



Source: Eurocontrol⁸⁵

As a result of the challenges of a fluctuating balance of supply and demand due to the effects of travel restrictions, fares have oscillated in response to developments. For example, European airlines have been discounting heavily for the Winter season and amongst key short-haul markets fares have been cut by an average of ~15% below 2019 levels⁸⁶.

Figure 18: Change in average return fares to select short-haul destinations by origin compared to 2019



Source: ForwardKeys⁸⁷

However, when travel restrictions are lifted, airlines are still able to raise fares, justified by pent-up demand outstripping the immediate capacity that they can offer. For example, when travel restrictions to the Canary Islands were lifted in October, demand bounced back very

⁸⁵ Eurocontrol forecasts for 2020

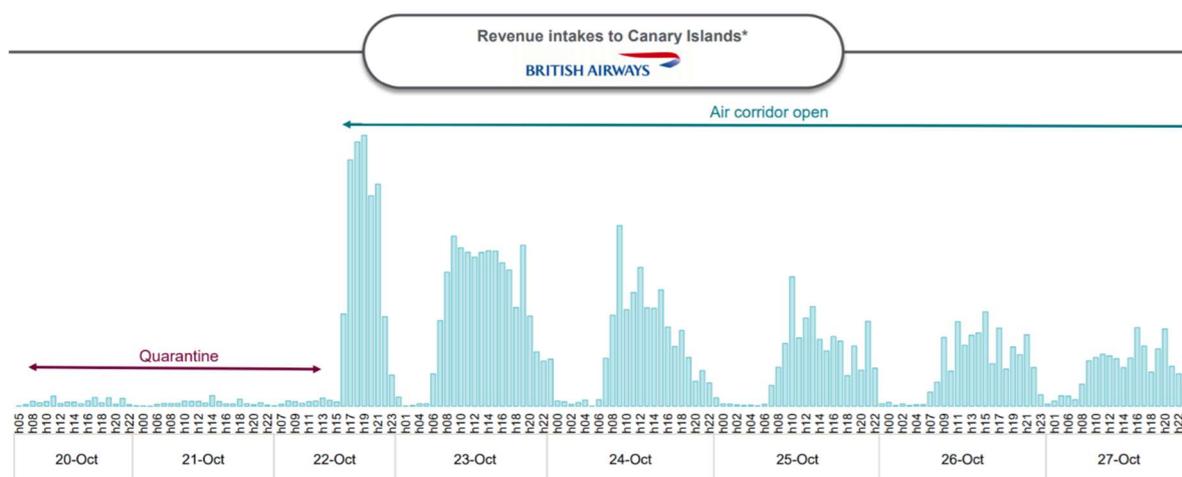
⁸⁶ ForwardKeys, Airlines flex fares in Europe in Q4 to woo travellers, September 2020:

<https://forwardkeys.com/airlines-flex-fares-in-europe-in-q4/>

⁸⁷Ibid

strongly, with return fares to Tenerife and Lanzarote rising between 50 – 79%⁸⁸ in response to surging demand.

Figure 19: Booking profile to Canary Islands after UK lifted travel restrictions in October 2020



Source: IAG⁸⁹

Similar trends have been observed in domestic markets. For example, when the UK announced there would be a grace period to the three-tiered lockdown system between the 22 and 28 December fares between Northern Ireland and Great Britain soared by as much as 600%⁹⁰.

Evidence of airlines being able to raise prices has also been observed within the long-haul segment, despite traffic recovering more slowly than other segments. For example, in Australia, a cap on the total number of international passengers that can enter the country (and the number of tickets that airlines could sell) was applied in July of this year, artificially skewing the balance of supply and demand and resulting in a surge in the cost of international flights to Australia⁹¹. Due to the restrictions on capacity, competition was reduced as certain airlines reduced the number of flights they offered, whilst others prioritised filling premium cabins, benefitting from higher-yield passengers to offset the costs of operating at lower load factors⁹². This resulted in upward pressure on fares.

Beyond the balance of supply and demand, the determination of the trajectory airline fares will depend on how travel restrictions lift, which impacts how passenger mix recovers. Historic analysis suggests that sensitivity to changes in fares varies amongst different types of passengers⁹³. Therefore, the effectiveness of changing airline fares as a mechanism to

⁸⁸ Telegraph, *Holiday booking surge as four new destinations get travel corridors*, October 2020; <https://www.telegraph.co.uk/news/2020/10/23/travel-news-covid-quarantine-canary-islands-mykonos-maldives/>

⁸⁹ IAG Q3 2020 results

⁹⁰ Independent, *Northern Ireland air fares soar by up to 600% ahead of 'Christmas Ease'*, November 2020: <https://www.independent.co.uk/travel/news-and-advice/northern-ireland-flight-costs-christmas-ba-easyjet-ryanair-loganair-b1762238.html>

⁹¹ Simple Flying, *The History of London – Sydney Air Fares*, August 2020: <https://simpleflying.com/london-sydney-air-fare-history/>

⁹² Executive Traveller, *Australian Government pushes to increase international passenger caps*, September 2020: <https://www.executivetraveller.com/news/australia-increases-international-passenger-caps>

⁹³ Airport Commission, *Discussion Paper 01: Aviation Demand Forecasting*, February 2013

stimulate demand will fundamentally be determined by how the demand mix recovers and evolves.

Should the demand mix return to a similar profile to 2019 levels, it would be expected that fares for each segment would largely return to near-2019 levels once economic recovery from this crisis were to occur.

If demand were constrained to mostly short-haul traffic as a result of the lifting of travel restrictions favouring mostly European leisure traffic (as was seen this Summer), fares would likely reduce significantly due to a greater possibility of substitution through other modes of transport, as well as fiercer inter-airline competition due to the focus of Low Cost Carriers in this space. Ability to reduce fares would become critical as a lever to stimulate demand in this circumstance.

If the demand mix moved to a greater share of long-haul travel due to the economic recovery favouring return of these markets, fares would likely increase due to a greater share of travellers capable of paying a premium, as well as fewer airlines competing for this segment. Ability to compete and serve the highest value routes would become critical in this situation.

If volatility continues to dominate the market as it does now, we would continue to see a series of short and sharp booms and busts in demand with the demand mix changing in response to the specific travel restrictions that were being applied. In this circumstance fares might drop when demand was constrained and likely surge for specific routes when travel restrictions were lifted. In this circumstance, the need for flexibility would be emphasised, with all players needing to make optimisations to their operating model to navigate these frequent changes.

In any of these scenarios, airline solvency and liquidity issues will apply upward pressure on fares. The longer demand takes to recover, the more likely that fares would need to increase due to a greater likelihood of airline bankruptcies.

In conclusion:

- European airlines have cut capacity for the winter season in response to the re-imposition of national lockdowns and strengthened travel restrictions, resulting in volatility in the balance of supply and demand.
- Fares are fluctuating in response to changes in supply and demand with evidence of pent-up demand when travel restrictions are lifted resulting in a surge in prices given capacity remains limited.
- The evolution of airline fares throughout the recovery period will depend on how travel restrictions are lifted and the resulting prevalent demand mix.

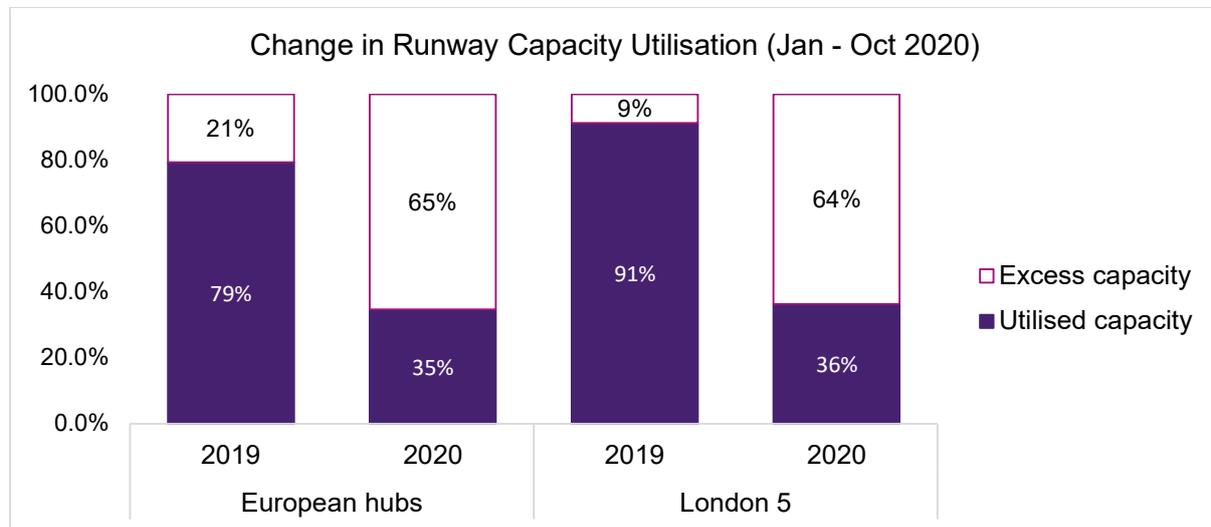
2.2.5 Airport competitive dynamics will change throughout recovery, tied to airline, government and regulatory decisions

2.2.5.1 Airlines will gain bargaining power during recovery as there are likely to be reduced switching costs due to lower airport utilisation

As shown in Figure 17, airlines have adjusted to the immediate changes in current and perceived immediate future levels of demand, by cutting capacity across their networks. Most major players in the industry are expecting demand recovery to take at least 3 – 4 years if not longer, and airlines will only restore capacity in line with how demand will recover. This means

that throughout recovery, airports will transition from operating at near full utilisation to operating at high levels of spare runway and terminal capacity as airlines will reduce frequencies.

Figure 20: London capacity utilisation vs European capacity utilisation (year-on-year comparison)



Source: Airport announcements, CAA data, Heathrow analysis⁹⁴

Operating at higher excess capacity levels will mean that competition between airports will increase as airlines will have increased bargaining power in a situation where many airlines are already in a very strong position. Throughout recovery, airlines are likely to experience lowered switching costs as the availability of slots will increase, giving airlines more freedom to move their capacity between airports in response to changes in airport charges and performance (assuming that slot rules are not suspended indefinitely). In economic crises, the value of airport slots can reduce to up to a tenth of their historic values⁹⁵, which lowers the cost of acquiring and disposing of slots, and subsequently the barriers for airlines to change the allocation of their capacity.

Airport terminal utilisation will be influenced by the choices that airlines now make in response to the crisis. Airlines have chosen to downgauge from larger aircraft types with higher passenger capacities (typically through early retirement), which will likely suppress total passenger volumes that individual airports can serve (particularly those with movement limits). British Airways have already retired 31 747-400 aircraft, which are expected to be replaced by smaller twin engine aircraft. Lufthansa and Air France both announced the retirement of their A380 fleets since the pandemic with other A380 operators such as Qantas placing their entire fleets in long-term storage.

⁹⁴ Airport announcements, CAA data, Heathrow analysis

⁹⁵ Financial Times, Value of airline assets takes a nose-dive, July 2020

Figure 21: Capacity cut by aircraft type

Percentage of widebody jets* in service, Jan-2020 to Sep-2020



Source: CAPA⁹⁶

Airport differentiation will be highly influenced by the choices that airlines make now in response to the crisis. Decisions around capacity deployment and restoration will fundamentally affect the offerings that airports will be able to provide during recovery. Although airlines are constrained by government policies to contain the virus, when and how airlines choose to deploy their capacity will determine the extent and speed at which route networks are restored, governing airport destination choice. The decision to downgauge fleets will likely affect route economics, particularly as airlines navigate the effects of lower demand throughout the recovery from this crisis.

Downgauging will also have a constraining effect on the maximum premium capacity that can be offered from each airport. For example, British Airways' decision to accelerate the 747's retirement would reflect cutting 32% of the premium seats across their entire fleet, but only 25% of their wide body fleet⁹⁷. Aircraft deliveries are being delayed and cancelled as capex and other costs are cut to preserve liquidity, limiting the pace at which airlines can replace their capacity.

⁹⁶ CAPA, *Four-engined widebody aircraft on a flight path to nowhere*, September 2020

⁹⁷ GridPoint Consulting, *British Airways sends the 747 into early retirement*, July 2020
<https://www.gridpoint.consulting/blog/british-airways-retires-747-400>

In summary:

- Airport competition for airline business within London and across Europe will increase throughout recovery as more slots become available due to lower runway capacity utilisation, lowering switching costs for airlines.
- Airlines are downgauging capacity by retiring and grounding larger widebody aircraft types, limiting the total passenger volumes that airports will be able to serve.
- Airport differentiation will depend on airline capacity decisions:
 - Competing on destination choice will depend on which route networks airlines prioritise to restore.
 - The total premium demand that airports can serve will be constrained by how airlines replace permanently cut capacity.

2.2.5.2 Airport economies of scale are challenged by lower passenger volumes and accommodating virus containment measures

Typically, up to 80% of an airport's operating costs are fixed and do not vary with passenger volumes⁹⁸. This means that airport economies of scale will be pressured at lower levels of airport utilisation and airports have limited opportunities to make savings. Recovery of airport utilisation levels is further complicated by the need to accommodate compulsory measures to mitigate the spread of Covid-19, such as social distancing. Estimates suggest maximum saturation capacity can be reduced by 25 – 40% compared to 2019 levels⁹⁹ when social distancing measures are implemented within airports. Despite reduced traffic volumes, additional colleagues are needed per passenger to accommodate increased physical distances in queues as well as to mitigate the impacts of reduced security throughputs. The impact to airports is estimated at an additional 10 minutes of delay for a departing passenger and between 5 – 20 minutes of delay for an arriving passenger¹⁰⁰.

As operating costs are largely fixed, airports will have to cut investment, likely reprioritising capex to suitably match levels of demand. Estimations suggest European airports have flexibility to adjust up to €10 billion of capex between 2020 - 2023, representing around 50% of what was expected to be spent pre-Covid-19¹⁰¹. The ability to adjust capex will vary by airport, with some able to delay projects due to long-lead times (e.g. Amsterdam Schiphol¹⁰²). Reducing investment will mean airports will have to prioritise what they invest in and this will have implications for airport efficiency.

Table 5: European Airports Capital Spend Reductions 2020/21

Airport	Planned capital reduction (2020/21)	Est. % change from plan (2020/21)	Infrastructure Implication
---------	-------------------------------------	-----------------------------------	----------------------------

⁹⁸ACI, *Open letter to EU Transport Ministers and the European Commission*, March 2020: <https://www.aci-europe.org/media-room/241-aci-europe-letter-to-eu-transport-ministers-covid-19-aviation-relief-programme.html>

⁹⁹ Eurocontrol, *Impact assessment of COVID-19 measures on airport performance*, September 2020

¹⁰⁰ Ibid

¹⁰¹ S&P Global Rating, *Actions Taken On Seven European Airports Due To More Protracted Passenger Recovery*, July 2020

¹⁰² Ibid

Charles De Gaulle (incl. Orly)	-€400m	-65%	Reviewing viability of Terminal 4 construction – potential limit to future terminal capacity.
Frankfurt	-€200m	-21%	Two-year delay to opening of Low-Cost Carrier terminal.
Madrid (inclusive of other Spanish airports)	-€175m	-33%	No permanent decisions announced but may change the timing of planned terminal capacity upgrades.
Gatwick	-£157m	-63%	Only projects critical to the operation will be funded.

Source: Airport financial statements: Aeroport De Paris¹⁰³, Fraport¹⁰⁴, Aena¹⁰⁵, Gatwick¹⁰⁶

Reflecting the shift in bargaining power in favour of airlines, and despite experiencing challenges on costs and economies of scale, major European airports have begun to discount airport charges in order to compete for airlines¹⁰⁷. This has been enabled by direct state support. The scope and scale of this support has been highly varied, ranging from:

- Providing access to cheap debt to extend airport liquidity horizons;
- Supporting an airport's primary carrier, indirectly preserving an airport's future revenues and minimising the risks of making short-term changes to airport charges;
- Funding entire incentive programmes to lower charges; and
- Offsetting lost revenues, allowing some airports to mitigate their need to charge for aeronautical revenues for a period.¹⁰⁸

¹⁰³ 2020 expected CAPEX reduction - ADP Q2 2020 financial results (across all Parisian airports – incl. of investment in Orly). Planned CAPEX in 2020 - ADP 2019 investor day presentation

¹⁰⁴ Fraport Q2 2020 and Q3 2020 financial results (reduction in FRA T3 Capex €100m, reduction in other Capex €100m). T3 Capex is being 'stretched' to delay opening until 2025

¹⁰⁵ Gatwick August 2020 investor report

¹⁰⁶ AENA Q3 2020 financial results

¹⁰⁷ ACI, Covid-19 and Airports, Traffic Forecast & Financial Impact – 3rd updated forecast, October 2020

¹⁰⁸ Various announcements from EU commission, governments and airports

In conclusion:

- Airport operating costs are largely fixed meaning a prolonged reduction in passenger volumes will challenge airport economies of scale and there is little room for making savings.
- To preserve liquidity, airports will need to cut investment, but the flexibility to do so varies by airport.
- Despite existing pressures on costs, major European airports are discounting to compete for airlines, with some receiving direct state funded support, strengthening their positions through recovery.

2.2.5.3 Airports have different mechanisms in their existing regulatory frameworks to adjust their price in the face of significant demand volatility

Typical airport regulatory frameworks consider traffic forecasts as a critical determination of airport charges, both as a consideration for future costs as well as the denominator for allowable regulated revenues. Because there is such a high degree of uncertainty in forecasting future traffic volumes, there is an increased risk of price volatility if an airport's regulatory framework does not allow for the consideration of such high levels of volatility.

Regulatory flexibility has been a key enabler for European airports to adjust their airport charge in light of such high levels of volatility. Most comparator airports across Europe have adjustment mechanisms that allow them to recover some or all of their losses in the event of changes in demand or revenue across the period. These either give airports the opportunity to increase charges in the next year or the next regulatory period. In the case that there is no specific adjustment mechanism, there is often the opportunity to recover losses in full in the following year due to the flexible nature of the framework. Certain airports also have an ability to negotiate commercial agreements directly with airlines, allowing them more flexibility to adjust their charge in agreement with airlines. Examples of regulatory action to support airports and appropriately share risk include:

- The suspension of service quality incentive targets;
- The extension of current regulatory arrangements to provide stability for both airport and airlines;
- The removal of annual regulatory adjustments to provide greater price certainty; and
- The suspension of regulatory arrangements to allow for annual pricing.

Table 6: Flexibility of European Airport regulatory frameworks

Airport	Regulatory framework	Risk sharing and adjustment mechanisms available to airport	Regulatory changes airport was permitted to implement
Charles De Gaulle	Hybrid Till / Price cap (RAB)	<p>Traffic risk sharing mechanism after a dead band of +/-0.5% after which 50% of outperformance and 20% of underperformance is shared between airport and airlines.</p> <p>Two specific review and termination clauses:</p> <ul style="list-style-type: none"> - If passenger numbers breach a threshold of around 2% versus forecast for three consecutive years or if investment is less than 75% of that set out by the ERA <p>In the case of exceptional and unforeseeable circumstances that lead to a disruption of the economics of the agreement¹⁰⁹</p>	<p>Suspended current regulatory period and obligations.</p> <p>For airport charges and investments going forward ADP will annually consult with aviation users and seek approval from ART until there is certainty in forecasts of the future of aviation and CDG.¹¹⁰</p>
Rome-Fiumicino	Dual Till / Price Cap (RAB)	<p>Traffic risk sharing mechanism with deadband of +/-5%. Outside of this band, performance is shared at a rate of 50%. Revenue shortfalls are added to the tariff calculations for the next period.</p> <p>Allowance for a rebalancing of tariffs for the remainder of the regulatory period if there</p>	<p>The Italian Government has passed a new law which, in light of the damages caused by Covid 19, will extend by 2 years all Italian Airport concessions</p>

¹⁰⁹ https://www.parisaeroport.fr/docs/default-source/groupe-fichiers/finance/relations-investisseurs/r%C3%A9gulation/2016-2020/2016-2020-economic-regulation-agreement.pdf?sfvrsn=242508bd_8

¹¹⁰ <https://www.globenewswire.com/news-release/2020/05/26/2038825/0/en/A%C3%A9roports-de-Paris-SA-Termination-of-the-2016-2020-ERA-and-termination-of-the-public-consultation-document-for-the-2021-2025-ERA.html>

Airport	Regulatory framework	Risk sharing and adjustment mechanisms available to airport	Regulatory changes airport was permitted to implement
		is a yearly variation of +/-6% of traffic volumes. ¹¹¹	
Aena operated Spanish Airports (incl. Madrid)	Dual Till / Price cap (RAB)	<p>Airport regulation fixes charges between 2017 – 2021</p> <p>If traffic is 10% lower than forecast, losses beyond this can be recovered through charges in the following year.</p> <p>The DORA can be reviewed under extreme circumstances, one of which is a 10% drop in passenger numbers.¹¹²</p>	<p>2021 charges negotiations delayed until October</p> <p>Royal decree providing Aena with the right to recover costs related to Covid-19 through its framework. This is not subject to the 0% cap included in the DORA. If recovery is not possible in this period, it can be transferred to subsequent periods.¹¹³</p>
Dublin	Single Till / Price Cap (RAB)	Article 32 (14)(a) of the 2001 Aviation Act provides for a review and potential reopening of the regulatory framework – Covid-19 constitutes substantial grounds for carrying out of a review (CAR) ¹¹⁴	For 2020 CAR have recommended the removal of the global per-passenger charge cap and to replace it with individual time-specific caps on each individual aviation charge for 2020. It has also proposed removal of the K-factor from the 2022 price

¹¹¹ <http://www.adr.it/documents/17615/9522342/2017-21+Tariffe+-+Incontro+Utenti+2016+ +ENG+v+9+settembre.pdf/4f9bd37a-6c53-40a9-b6a7-c2326d306d27>

¹¹² <https://www.boe.es/boe/dias/2014/10/17/pdfs/BOE-A-2014-10517.pdf>

¹¹³ <http://www.aena.es/csee/BlobServer?blobkey=id&blobwhere=3000010813533&blobheader=application%2Fpdf&blobcol=urldata&blobtable=MungoBlobs&blobheadername1=Content-disposition&blobheadervalue1=attachment;%20filename=H1%202020%20Results%20Presentation.pdf>

¹¹⁴ <http://www.irishstatutebook.ie/eli/2001/act/1/section/32/enacted/en/html>

Airport	Regulatory framework	Risk sharing and adjustment mechanisms available to airport	Regulatory changes airport was permitted to implement
			<p>cap formula, removing the capability to carry forward 2020 under or over recovery into 2022.</p> <p>2021 price cap is to be fixed at €7.50</p> <p>All triggers, adjustments and service quality incentives are removed for 2020 and 2021.</p> <p>A further interim review from the CAR is expected in 2021.¹¹⁵</p>
Zurich	Hybrid Till / Price cap (RAB)	Legislation provides for consultation and agreement with users. In the event of failure to agree, regulator will intervene.	<p>Extension of current regulatory period under until EVA of regulated till is zero or positive. This will be no later than 2025.</p> <p>Flexible charges regime allows Zurich to adapt charges to match uncertainties. If traffic recovers quicker, charges can be reset quicker to compensate for 2021 ramp-up discounts.¹¹⁶</p>
Oslo	Single Till	Avinor has discretion to make exemptions to charges under specific circumstances	
Amsterdam Schiphol	Hybrid Till / Price cap (RAB)	Clause for 'exceptional and unforeseen circumstances' allowing charges for the next year can be reset to reflect	

¹¹⁵ Commission for Aviation Regulation, *Draft decision on an interim review of the 2019 determination in relation to 2020 and 2021*, October 2020

¹¹⁶ Zurich airport press release, *Flughafen Zürich AG successfully concludes Negotiations on Flight Operations Charges*, July 2020

Airport	Regulatory framework	Risk sharing and adjustment mechanisms available to airport	Regulatory changes airport was permitted to implement
		over/under recovery spread over three years ¹¹⁷	
Munich	Dual Till / Rate of return	Charges negotiated directly with airlines and approved by the Federal Ministry	
Frankfurt	Hybrid Till / Rate of return	Charges negotiated directly with airlines and approved by the Federal Ministry	
Heathrow	Single Till / Price cap (RAB)	No traffic risk sharing mechanism included in price control or regulatory framework. Request can be made to reopen the price control through Section 22 of the Civil Aviation Act 2012. ¹¹⁸	

Source: Airport announcements, Regulatory documents¹¹⁹

In summary:

- Without a risk-sharing mechanism, regulated airport charges will likely be volatile throughout recovery due to a significant reduction in passenger volumes and increased challenges in accurately forecasting traffic.
- Most major regulated European airports have a formalised risk-sharing mechanism which grants greater flexibility for airports to adjust their charge, limiting the risk of price volatility.

¹¹⁷ Royal Schiphol Group, *Amsterdam Airport Schiphol Operation Decree - Article 22*, 2017

¹¹⁸ <https://publicapps.caa.co.uk/docs/33/CAP%201103.pdf>

¹¹⁹ Various airport announcements, and regulatory documents

2.2.6 This unprecedented volatility in the market means there are practical considerations for our Revised Business Plan

The drastic shift in market landscape as well as the change in consumer priorities have led to direct impacts on our building blocks that will need to be considered:

Chapter 2.2 - Consumer Insight

Details how we engaged with consumers to refresh our research in the wake of the unprecedented impact brought on by Covid-19:

- Spending habits have evolved, with an acceleration toward more online shopping, a different mix of surface access choices, a greater prioritisation of health and safety in indoor spaces and an amplification in the importance of value.
- The hierarchy of our consumers' airport needs have evolved in response to the crisis and demonstrate how this has informed our Business Plan.

Chapter 3 - Passenger Experience

As the hierarchy of consumer needs has evolved:

- Heathrow's customer proposition must also adapt in response to the new reality we find ourselves in.
- We demonstrate the necessity of protecting our hub model as the only way to ensure all our consumers' airport needs continue to be met.

Chapter 5 - Demand

The unprecedented scale of the impacts of Covid-19 on global economics and the aviation sector means there are many aspects of future demand we cannot yet know for certain with our usual levels of predictability.

- All pre-Covid-19 forecasts have been invalidated by the fundamental changes in the market, and much of what will define future recovery is outside of our control and in the hands of governments and airlines.
- Individual segments are likely to recover at different paces, which could mean a different and evolving passenger mix throughout the crisis.
- With so much uncertainty surrounding how aviation will recover, there is a need for increased flexibility in our own forecasting.

Chapter 7.1 - Operating Costs

With high fixed costs across the sector and pressure on revenues, preserving liquidity has been a priority throughout the crisis, and all participants have needed to seek efficiencies for their cost base. The sector is experiencing unforeseen additional costs and challenges to economies of scale brought on by measures to contain the spread of the virus within airports.

Chapter 7.2 - Commercial Revenues

Covid-19 presents several challenges to Heathrow's ability to generate non-aeronautical revenues.

- Pressures on passenger volumes
- Uncertainty in the future demand mix
- The actions of retail partners
- The Government scrapping duty-free
- Potentially long-lasting changes in the importance of certain consumer priorities/behaviours

Chapter 7.4 - Surface Access

The shock to aviation demand will reduce the total number of people travelling to the airport on a regular basis, in the near-term.

- Our plans must accommodate for lower expected usage of surface access as well as preparing for when passenger demand recovers.
- We must prepare for different choices being made on surface access and commuting.
- We must balance with our sustainability aspirations

Chapter 8 - Financing Platform

We will need to navigate financial market volatility and the risk of increased financing costs through the Covid-19 crisis to ensure our plans remain financeable. Privately financing our plans entirely means we need to maintain investor confidence. There are financial principles behind our investment plans to ensure we can maintain sufficient levels of financial resilience, whilst operating the airport as efficiently as possible.

Chapter 9.1 – Regulatory Framework

The H7 regulatory period will be characterised by a significant amount of uncertainty, and a prolonged period of excess airport capacity, indicating an erosion of airport bargaining power during recovery. In addition, competition between airports will be fiercer as, when the recovery starts and the number of flights starts to increase, airlines will have choices about which airports they prioritise for those services – meaning airlines have far fewer barriers to switching than was previously the case. The regulatory environment will have to reflect this reality, or we will have to consider whether it remains appropriate for the CAA to impose strict regulation on the basis of findings about the state of competition in 2014.

Regulatory precedent amongst European airports to share the risk of such a significant shock exist, with many major airports already activating built-in mechanisms in their existing frameworks to navigate the crisis more easily. We will outline our proposal for each component of Heathrow's regulatory framework, highlighting how it can evolve to address the issues brought on by Covid-19 by striking the right balance between risk and reward as well stability and flexibility, and therefore ensure the right outcomes for consumers.

2.3 - CONSUMER INSIGHTS

Chapter Overview

- Heathrow has built on the established consumer engagement foundations to develop this Revised Business Plan.
- We have added 99 additional consumer insight reports to our understanding since the Initial Business Plan (IBP) to continue to build our consumer knowledge. We've had to change some of our engagement to accommodate the tumultuous 2020 backdrop.
- Our synthesis and the six consumer outcomes generated were designed to be enduring and apply over the long term.
- We have found that although consumers have specific needs related to Covid-19 (cleanliness and space), their general needs remain the same and our outcomes remain appropriate.
- We have consistently seen through our Willingness to Pay (WTP), H7 Choices and passenger prioritisation research that consumers would value improvements in some areas of service and would be willing to pay for these being delivered. The three areas they most want to see improvements are Punctuality, Baggage and Passenger Experience.
- Heathrow has tested whether consumers would prefer that Heathrow reduce overall service levels in the short term to keep prices as low as possible, or whether they would be prepared to pay to achieve what is needed to achieve a safe and reassuring environment. The answer is unequivocal: passengers are willing to accept modestly higher prices to deliver improved quality.
- We have also undertaken one of the largest studies ever to understand the needs of Passengers Requiring Support. We have found that key in meeting their needs is allow them to choose, to trust and to enjoy.
- Our plans try to optimise these outcomes for consumers, but are grounded in stakeholder needs and requirements.
- We have used these outcomes to shape both our H7 capital expenditure, our targets

2.3.1 Consumers still want the same outcomes and have the same needs as they did pre-Covid

It is now undisputable that Covid-19 has become one of the biggest global challenges of our generation, which evolved at unprecedented speed and scale and will have a long-lasting impact. Consumer spending behaviour changed at a staggering pace – with some consumers changing lifetime habits to adopt digital behaviours and companies having to quickly redefine their rules of engagement. Many industries have been disrupted with changing product mixes being demanded (e.g. inflatable hot tubs and heat-lamps for outdoor socialising), purchasing styles (e.g. online grocery shopping and Amazon orders) or methods of delivery and payment (e.g. booking hotels and holidays with little to no deposits). It is therefore more important than ever for businesses to listen to consumers when creating business plans to determine which preferences are temporary and those that represent a longer-term shift. Airports and the

aviation industry have to respond to reassure passengers, otherwise our recovery will take longer.

Heathrow revamped its approach to consumer engagement ahead of our IBP and as we planned for Expansion. The outcome of the Court of Appeal verdict and impact of Covid-19 has meant that we have to change our H7 plans at speed to exclude Expansion activities, against a turbulent changing backdrop. We have therefore continued to engage our consumers, albeit with a different brief than originally intended for this year.

In this chapter we will discuss our latest consumer engagement findings, building on the already established foundations in our IBP. We will then discuss our refreshed synthesis of consumer research and how that allowed us to reaffirm our six consumer outcomes. Our consumer needs themes identified were designed to be enduring and apply over the long term – which they still do despite Covid-19.

The full ramifications of Covid-19 are still not known but it is clear it has had an impact on how customers prioritise their needs at the airport. We now need to adapt to those changes if we want to accelerate the return of demand and assess if this represents a permanent change.

We set out some examples of how our consumer insights have directly influenced our plans – both for the long term and for direct Covid-19 response. We have made some timely interventions to support our Covid-19 response and anticipate these to support our business recovery into the H7 period.

2.3.1.1 Listening to Consumers to guide our Covid-19 response

The cleanliness of our terminals has always been important to our consumers. However, Covid-19 has now put this at the forefront of passengers' minds when travelling – 79% of current passengers and 82% of potential passengers are worried about people spreading or contracting Covid-19 whilst at an airport terminal building. This is only slightly lower than the fears of spreading or contracting whilst on a plane¹. In our Passenger Priorities research, enhanced cleaning so surfaces are Covid-19 safe was the top, or at least top-three priority for all consumer groups (direct/ connecting/ current / potential).

Passengers now expect more from airport colleagues, seeking reassurance where they experience additional stress that travelling in the time of Covid-19 brings. Consumers want colleagues to provide clear, helpful advice in the airport. They also want them to support with hygiene and safety measures, whilst at the same time being safe themselves. Colleagues can help to deliver a message of cohesion and empathy with these measures.

Our research has revealed a core set of needs that were important to driving satisfaction pre-Covid-19, which will also be key to the near and medium-term post-Covid airport experience. However, in some cases they mean something different or have enhanced importance to passengers post-Covid:

¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

Table 1: Influence of Covid-19 on consumers' core needs

Core Need	New Context
Flight Punctuality	<p>This need hasn't changed, but delayed flights will add anxiety to passengers on top of the existing stress experienced by some of the new processes.</p> <p><i>"I will not be surprised if there is screening for Covid-19 at entry to the airport in addition to other checkpoints within. This will likely make it necessary to arrive at the airport much earlier than had been the case prior."</i></p>
Airport Processes	<p>Passengers expect new processes to ensure their safety but want to feel informed of these, both in advance of their visit and whilst at the airport. Information requested includes what the processes are and why they're in place, and what they will need to do differently.</p> <p><i>"What I would expect to change is the number of people per square foot in an airport... lounges to be larger per pax, or for airports to only allow pax through a few hours before their flights. Perhaps by allocating gates earlier"</i></p>
Waiting Times at Key Points across the Airport	<p>Passengers are expecting to queue for longer with enhanced checks in place. We should do what we can to minimise these and communicate likely wait times, as well as what passengers can do to help the process.</p> <p><i>"I would expect much, much more queuing at airports - even before entering as would expect careful checking that intending passengers are fit to travel (e.g. taking temperatures), so passengers will need to reach airport well in advance of flights. After all none of us wants to find that someone with coronavirus is within an airport terminal."</i></p>
Real Time Information	<p>Passengers want to stay in control of their journey and to be kept informed of anything that affects them, such as wait times and boarding / flight times.</p> <p><i>"To help with this uncertainty I would hope there would be a major presence of staff and information points guiding and reassuring passengers."</i></p>
Information / Wayfinding	<p>People now insist information and wayfinding is delivered via multiple channels – including social media, digitally, static signs, via colleagues and announcements throughout the terminal.</p> <p><i>"As a minimum extra staff will be needed to provide good ushering and ensure a degree of social distancing whilst walking about."</i></p>
Wi-Fi	<p>People want to stay connected but good Wi-Fi also has a role to play in distracting and entertaining passengers while they're waiting. It is also essential to help people access key information via their electronic devices.</p>

Core Need	New Context
Cleanliness	<p>There is enhanced awareness of cleanliness and we will need to demonstrate how we are meeting these expectations.</p> <p><i>“I think there will be more safety/hygiene measures in the airport – this will include things like hand sanitiser being regularly & widely available throughout the terminal & more controlled queuing (to increase distance between passengers & reduce crowding).”</i></p> <p><i>“Touching anything metal in particular, will be a concern, water fountains, utensils in the restaurants - you will always be asking yourself, is it safe? Disposable gloves and masks should be made available at the door, masks should be required to enter the airport.”</i></p>
Ambience / Waiting Areas	<p>Passengers are worried that airports will become more ‘sterile’ environments, so ask for places to relax and for welcoming environments to bring some sense of normality to the experience. Adequate seating areas are needed to allow lone travellers or groups to sit and adhere to social distancing guidelines.</p> <p><i>“I would suggest moving tables further apart and removing all paraphernalia from tables including menu and condiments. I’d remove all menus and ask people to look at them electronically including through their own phones and other devices possibly using the free airport Wi-Fi.”</i></p>
Crowding / Space	<p>Space is more important than ever as passengers try to adhere to social distancing guidelines as much as possible. Airport flow needs to ensure there are no bottlenecks and seating needs to be designed to feel less crowded than before.</p> <p><i>“I think that people will be more cautious, personally I will use the lounges more to keep away from the crowds and will use Fast Track to get through security quicker even if it means leaving earlier for a flight. I will reduce the time I spend in shops etc.”²</i></p>

Source: Heathrow

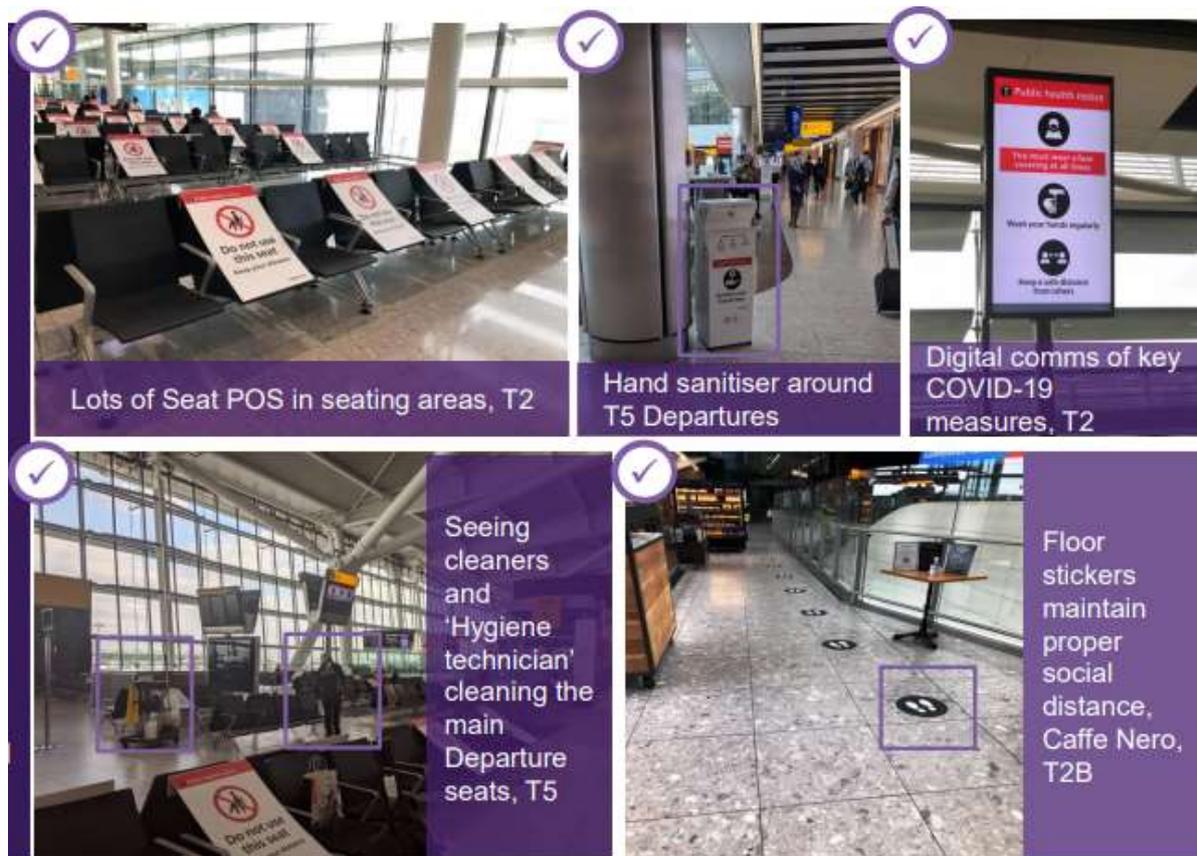
We’ve heard that passengers are more relaxed when they see the Covid-19 measures we’ve put in place³, with hand sanitiser viewed as the most important measure for them. Some of the measures we’ve put in place include:

- Available hand sanitisers at outlets, around the terminal, outlet entrances and toilets.
- Communications and regular voice announcements to remind passengers to wear masks and wash hands.
- Visible cleaners and ‘Hygiene Technicians’ across the airport.
- Increased levels of hygiene testing on all surfaces across the airport.
- ‘Track and Trace’ checks before taking orders and food outlets.
- One-way system in outlets.
- Covid-19 marshals to ensure passengers and staff are staying safe by wearing masks.

² Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

³ Simpson Carpenter Qualitative Research, *Shopper interviews at T2 and T5*, September 2020

Figure 1: Examples of our Covid-19 measures in Terminal 2 and Terminal 5



Source: Heathrow

As well as feeling reassured with health and safety measures at the airport, the majority of passengers are happy with these measures on their journey through Heathrow. Over 82% of passengers agreed that they were able to social distance in the terminals⁴. Over 90% of passengers agreed or strongly agreed they were feeling reassured by the health and safety measures at the airport⁵.

The measures we have put in place, alongside greatly reduced levels of congestion in the terminals, have been recognised by our passengers, who have rated Heathrow at the highest ever level (4.29) in terms of passenger satisfaction in Q3 2020 in ACI's ASQ survey⁶.

We continue to research what consumers want at this time and to listen to our consumers through ad hoc surveys and our monthly customer satisfaction trackers (QSM/ASQ). Some of the changes we need to make will be the result of collaborative working with Government, airlines and other counterparts, rather than direct investments. We anticipate Covid-19 response spending to continue through the H7 period. In essence, consumer expectations have increased for certain elements, such as cleanliness, meaning we must do more to maintain consumer satisfaction at Q6 levels.

⁴ QSM October 2020, Q: "To what extent do you agree with the following statement? I was able to social distance throughout the terminal if I wanted to"

⁵ QSM October 2020, Q: "To what extent do you agree with the following statement? I felt reassured by the health and safety measures in place at the airport"

⁶ ACI , ASQ Passenger Satisfaction Survey, 2019

As outlined in Chapter 3 – Passenger Experience, we have developed our core passenger proposition of ease, reassurance, cleanliness and value for money.

2.3.2 Headline engagement projects

Since 2017 we have engaged with over 1 million consumers to inform our business plan. We have also engaged extensively with other internal and external stakeholders.

Three key consumer engagement projects were undertaken to refine our IBP. These reveal what passengers truly value, the outcomes they prefer and how preferences differed between presented packages. Below we highlight three key engagement projects conducted in 2020 we've used to help shape our Revised Business Plan. This builds on the engagement to date as set out in our Annex 7 - Consumer Engagement Annex – Approach to Engagement.

Table 2: Headline engagement projects to shape the business plan

Phase	Project	Timing	Objective
IBP	Understand overall Consumer Needs – Synthesis of Consumer Insights	Q3/4 2018	To identify key consumer needs when travelling through an airport in order to derive our consumer outcomes. Consolidation of over 100 individual consumer insight reports
IBP	Understanding relative needs – Willingness to Pay Research	Q1 2018	To understand how consumers prioritise options and actions we could take to deliver these outcomes. To understand consumers valuation of a range of service improvements.
IBP	Understanding preferences – Choices Research	Q3 2019	To understand consumers most desirable service package, based on choices related to Expansion and the current operations.
RBP	Reaffirming Outcomes – Synthesis of Insights Stage 3	Q4 2020	Building on our existing synthesis of consumer insight used for the IBP with new Heathrow, industry and airline insights in order to further triangulate the findings and to refresh or confirm consumer needs and our consumer outcomes.

RBP	Understanding passenger priorities post Covid-19 – benefit research	Q3 2020	Updating our understanding of passenger priorities across and within our consumer outcomes. To understand consumers priorities against a revised set of proposed initiatives potential disbenefits alongside the that could be delivered in H7 without investment.
RBP	Passengers requiring support	Q3 2020	To understand the needs of passengers requiring support when travelling by plane

Source: Heathrow

Between the Initial and Revised Business Plan we planned to run further research to hone our plans and ensure that they are acceptable to consumers. However, given the unprecedented external changes forcing us to re-think our business plans, we have not yet been in a position to conduct Consumer Acceptability Testing. We anticipate this will be completed by the end of Q1 2021 and included in our Business Plan updates.

2.3.3 Synthesis of Insights

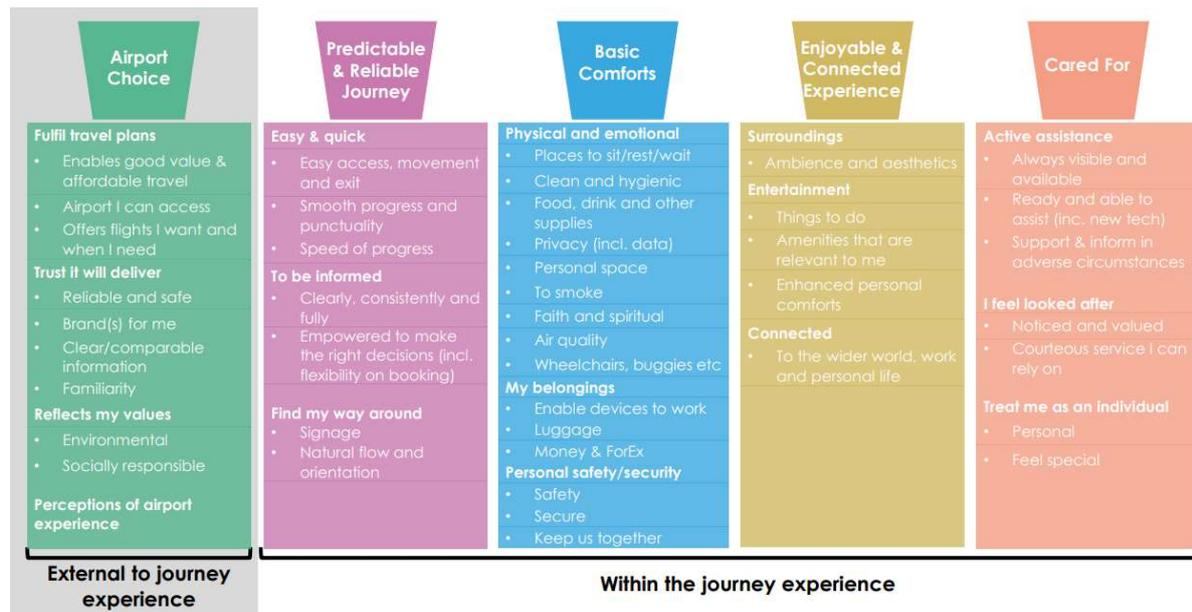
As outlined in our IBP we have six consumer outcomes built from the five themes that emerged from our consumer engagement. We are using these outcomes as a basis for our future plans and strategies. We outline below how we arrived at these outcomes based on a comprehensive synthesis of our findings to date.

In order to understand what consumers need from their airport journey, we needed to integrate the large volume of insight emerging from our consumer engagement into a manageable and practical guiding framework. We used an independent social research agency, Blue Marble, to undertake an insight synthesis, by analysing over 250 individual consumer research and insight reports (106 reports in stage 1; 50 reports in stage 2; 99 reports in stage 3)⁷. This has now been undertaken three times, with each iteration validating the earlier version. The synthesis included Heathrow internal research reports as well as a wide range of external sources, such as airline passenger insights and reports from the CAA and IATA.

Blue Marble carried out an iterative process to establish these key areas of consumer need. This culminated in five areas as described below. Since Covid-19 some of the core themes now have a different emphasis and priority.

⁷ Blue Marble Research, *Consumer needs synthesis*, November 2020

Figure 2: Consumer Synthesis



Source: Blue Marble⁸

Airport Choice

Consumers want good value and affordable travel. Consumers' needs here are mostly practical, needing an airport that flies to the destination they want to go to, at the right time and for the right price. They need to know that they can access the airport and they need to trust that they will be able to complete their journey without delays or cancellations.

Covid-19 has temporarily made travel less predictable – snap quarantines and lockdowns in the UK and elsewhere left many consumers unable to take their trips at short notice or potentially be stuck away from home. When choosing an airport, consumers want to trust it will deliver – to be confident and reassured of a safe journey, and information about changing processes, preparations and what to expect. Consumers want to be able to compare flights and prices to travel to the destinations they want with the right routes and at a time suited to them. 62% of passengers say they are more concerned with finding a good value offer than finding the cheapest price⁹. Covid-19 and other recent events has made the reputation and stature of a brand even more important, alongside the values of the company. Consumers now want to see more evidence that the airport undertakes environmental and sustainability initiatives, so they can feel less guilty about travelling.

Predictable & Reliable Journey

This centres round consumers' need to be in control of their journey. Consumers need to be confident that their journey will run to plan, in line with their expectations, and that the service will be reliable. An airport service that is predictable and reliable will alleviate key stress points for consumers.

To support their predictable and reliable journey in post-Covid, consumers now want both smooth progress and punctuality and a speed of progress. This means that consumers still value punctual flights, reliable baggage times and minimal steps on the journey. The absence

⁸ Blue Marble Research, *Consumer needs synthesis*, November 2020

⁹ *Final Literature Review*, 2017

of bottlenecks (and hence crowding) and self-service options are now equally as important to consumers. This is understandable given the nature of Covid-19 transmission. Travelling in a Covid-19 environment can be daunting – many once frequent travellers have not boarded a plane since March or earlier. These consumers want reassurance and to be informed about the new processes with clear instructions. Where possible they also want personal alerts.

Basic Comforts

This reflects the services and facilities that consumers are most likely to need when they travel through the airport. These needs are mainly practical and include things like cleanliness and places to eat and drink. However, it also reflects consumers' needs to have their belongings around them and to feel safe and secure at their airport.

Basic comforts have grown beyond the traditional places to sit/ rest/ wait, in clean areas with access to food and drink. One new theme that has emerged is the need for personal space, which aligns to much of the Covid-19 advice to socially distance (albeit the rules have been updated over time in the UK from a strict 2m rule to less with the take-up of masks). The need for personal space is at all stages of the journey, including any surface access choices, with social distancing to be actively maintained and adhered to, and no over-crowding.

Consumers also want more relevant food, drink and other supplies as part of their basic comforts when in the airport. This includes food and beverage options to be both culturally appropriate and also ethical. Consumers also want access to a range of retail options, including pharmacy and news in addition to touchless options like vending machines and drinking fountains. The requirement to meet faith and spiritual needs emanates in both food options, but also dedicated prayer rooms to practice their faith.

Enjoyable & Connected Experience

This theme reflects a higher emotional need for passengers and relates mainly to the environment and facilities provided within the terminal. Consumers want to personalise their experience and want to feel connected to their everyday lives and the outside world.

The travelling experience has altered through Covid-19, with some of the traditional enjoyable activities temporarily no longer safe, feasible or appropriate. Nevertheless, there are now aspects of the enjoyable and connected experience that are more important to consumers. The feeling of space, with an appealing interior that is modern, fresh, light and airy is welcomed by consumers. Consumers want to be comfortable with access to diverse seating, showers and premium seating. In addition, they would now like “delivery to seat”, limiting their movements around the airport and interactions with other travellers.

Cared For

This theme reflects another higher emotional need. It centres around consumers' need to feel looked after, valued and supported through their journey. This includes in unexpected circumstances. It is a mixture of both emotional and physical needs and is often related to interactions consumers' experience through the journey.

New technology could help enable the “delivery to seat” retail and food and beverage (F&B) offer, and it may also help consumers feel cared for with the right assistance. This would complement the assistance that colleagues provide. Consumers need active reassurance and they want to see health and safety and social distancing measures are being encouraged and

enforced. *“I’d like to have clear information about how the planes are cleaned and...how often – that certain things have been properly cleaned before each new flight boards.”¹⁰*

Our consumers will also have heightened or differentiated needs based on their background, circumstances and reason for travelling. As discussed later in the chapter, Passengers Requiring Support (PRS) need information upfront to provide more certainty that the airport will provide their access needs. They want a smooth journey at their own pace that caters to their more specific and heightened needs across numerous points of the journey. Passengers requiring support will need greater assistance options in the right environment (e.g. calm and not overly stimulating). Our business travellers want the speediest and shortest journey possible and to be enabled to work. Connecting passengers want smooth, seamless progress with easy wayfinding and also want a secure place for hand luggage and washing facilities. Uniquely for VIPs, privacy is a basic comfort. Premium passengers also have a greater expectation of personalised and special treatment.

2.3.3.1 Consumer Outcomes

We then developed our consumer outcomes from the passenger synthesis based on the following criteria:

- Be simple and easy to understand
- Remain consistent with existing language
- Be able to be meaningfully measured; and
- Reflect the evidence base.

We reviewed and agreed the below six consumer outcomes with the Consumer Challenge Board (CCB). With our refreshed synthesis we remain confident that these are the right outcomes for our consumers to guide our delivery through the H7 period.

On the back of our updated consumer insight synthesis and feedback gathered through constructive engagement, we have reworded one of our proposed outcomes in order to better reflect the broader evidence base of what consumers wants and needs in this area:

“I have more choice of flights and destinations”

becomes:

“An airport I want to travel from that offers me a good value choice of flights”

Naturally, the way we aim to deliver against our six outcomes without Expansion will be different and given the financial constraints we now face we’ve had to adhere to very strict prioritisation.

¹⁰ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

Figure 3: Consumer outcomes



Source: Heathrow

“An airport that offers me a good value choice of destinations that I want to travel from”

Consumers want the airport to offer more destinations served more widely by airlines, at more convenient times and more competitive prices. They want to be able to trust Heathrow will deliver this wider offer. This outcome has evolved since the IBP – now with more emphasis on good value choice of flights. Consumers now have a strengthened desire to use an airport that offers good value flights, with greater choice, maintains reliability and safety but now also improves sustainability.

In our IBP we set out how new capacity is the only way we can materially expand choice of flights and destinations. External changes mean that we are not able to deliver this new capacity in the H7 period. As detailed later in the market insights chapter, for the first time in over a decade, Heathrow temporarily has spare capacity. We have and will continue to work innovatively with incumbent and new airlines to maximise choice for consumers through the recovery.

This means working with new airlines to increase choice of destinations. Crucially, this also opens up destinations to forge new trade links for our cargo customers. In addition, we are working with our incumbent airlines to maximise slot use to non-quarantine destinations. We’ve witnessed how pent-up demand creates a surge in consumer bookings once restrictions are lifted for a particular destination and we are working as flexibly as possible to support ever changing market access.

The key to unlocking more choice for consumers is through testing. This would ease the quarantine requirement for international arrivals. It would open up key routes and provide

consumers with the confidence to travel to their chosen destinations, without fear that they will have to curtail trips or quarantine on arrival. Furthermore, it will provide connecting passengers with an easier and more streamlined journey through the UK, with confidence that all segments of their journey will be running as intended.

“I am confident I can get to and from the airport”

A consumer’s physical journey begins from the moment they leave their home, office or hotel. Therefore, getting to, from and around Heathrow matters to airport experience and airport choice. Consumers’ core goal is a seamless, straightforward journey with no unexpected disruption that is quick, easy and that they trust. Perception, research and relative value for money for getting to the airport all have an effect on which airport and mode they choose.

Our IBP had significant plans to expand the range and resilience of rail and road links – bringing more people to within an hour by public transport and providing a greater range of fare options. While our ambition is still to improve our public transport options, we have used insight to think more carefully about gaps in our network, cost effective ways to fill those gaps in the short term, and to highlight the importance of rail schemes in the long term.

“I have a predictable and reliable journey”

When using the airport, consumers need to have confidence that their journey will run to plan. They are looking for quick and easy progress through the airport with clear and accurate information and no surprises. There can be extra needs for this outcome for certain consumers, such as families or vulnerable passengers. This outcome is also very important for many business travellers who prioritise a speedy, no hassle and reliable service.

In H7 we have ambitions to make the security process seamless, with no need for passengers to empty bags of electronic items or liquids. Before H7 begins we aspire to increase the passenger flow per lane per hour, through a mix of process and system improvements. This means passenger wait times at security will be lower. We also want to invest in technology that can make the rest of the passenger journey touchless and automated. Automation enables multi-tasking between airport, airlines and handlers and gives us an extra level of resilience.

We’ve understood that the top feelings cited by passengers at Heathrow immigration were; frustration (32%), tired (26%), stressed (25%), calm (24%), angry (21%), despairing (20%)¹¹. Consumers just want to get through immigration and on to their destination. We continue to work with Border Force to ensure that E-gates are optimised, our immigration halls are set up to maximise the flow of the queue and to improve our provision of help for Passengers Requiring Support.

“I feel comfortable and secure at the airport”

All consumers travelling through Heathrow require a basic set of facilities and services for their journey. These needs are mainly practical, such as food and drink, rest and sanitation. Consumers want to know their belongings are safe and secure. These needs may be accentuated for some passengers requiring extra support. Consumers expect Heathrow to provide many of these outcomes as a basic minimum and their requirements will change as our consumer mix changes.

¹¹ Join the Dots, *Horizon Community survey – Future Journey mapping*, 2018

Through this years' engagement we know how important safety and cleanliness now are for our consumers. That's why we put in a number of measures in place to make consumers feel safer and reduce the risk of transmission at the airport including, but not limited to; installing hundreds of hand sanitiser dispensers, enhanced and more frequent cleaning, a team of dedicated Hygiene Technicians. As detailed later in the chapter, we have taken time to truly understand our consumers who require extra support on their passenger journey. We continue to offer assistance where needed.

“I feel cared for and supported”

When travelling through Heathrow, in addition to the basic expected levels of service, consumers want to feel looked after, valued and supported in all situations. This encompasses both emotional and physical needs for passengers. These needs vary by different passenger groups and stages of travel. Feeling cared for is particularly important in times of disruption or other unexpected situations where passengers are under more stress.

Our colleagues have a vital role to play in making consumers feel cared for. Our colleagues need to embody our brand and values as they are the point of contact with passengers. We have learnt it all starts with treating each other well, as it is hard to be at our best otherwise. Equipping colleagues with the right training and skills alongside a supportive working environment is key to providing consumers with an excellent service experience.

In the Q6 period our colleagues, in collaboration with Team Heathrow, helped to develop our Service Signatures – “notice and care”, “share what we know” and “make things better”.

- Notice and care - we use our intuition to notice who needs us and we offer assistance in the moment to show we care. A little reassurance can make all the difference.
- Share what we know – we use our knowledge and experiences to share that unexpected bit of information that will make all the difference to someone's day - we often do this without even realising.
- Make things better – It's inevitable that things won't always go as planned in the airport, but it's how we choose to respond that matters most. Showing empathy and focusing on what we can do to help passengers and colleagues really does go a long way.

Delivering our service signatures helps to us to provide the best airport service in the world and can also be used as a guide to how we treat each other. We have seen through our customer satisfaction trackers that when passengers say they have witnessed the different service signatures being delivered within their journey, this significantly improves their overall levels of satisfaction.

Figure 4: Overall satisfaction between witnessing the service signatures¹²

Overall experience satisfaction:



Source: Heathrow, departures and arrivals QSM Jan 2019 to Dec 2019

To give the best service we need to make sure we live and breathe the service signatures internally and are consistent across Team Heathrow, as without our partners we cannot deliver great service.

In the H7 period we aim to put colleagues at the forefront of our service culture and aim to raise further awareness of the service signatures across Team Heathrow.

We have come a long way to minimise the likelihood and impact of disruption and have learnt from key incidents, such as major snow events. Our established resilience strategy and the ongoing investments this plan support are designed to evolve, continually learning and adapting to new or changing threats. Covid-19 has had an unparalleled impact on the airport operation – we’ve had to accommodate new operating processes and tested our resilience plans. We still have the ability to operate an 80 million passenger per annum airport, and we will be able to transition back to increased passenger numbers in a resilient manner when required.

“I have an enjoyable experience at the airport”

An airport journey can be elevated to a fantastic consumer experience, that is memorable for all the right reasons. Once travel basics are met, consumers say they would love Heathrow to give them a personalised connection to the world outside the airport process. This experience can start even before entering the airport. We can also make a difference to a passenger’s journey by providing moments of unexpected joy, surprise and new discoveries.

These feelings appear quite separate from the current travelling reality. We are also aware that Covid-19 may significantly impact our consumer mix and therefore we have to be ready to adapt to cater to changing needs. We continue to pursue space optimisation, create unforgettable experiences, improve digital capabilities to offer an extended range of categories and personalised services and refresh our brands and categories on offer.

We continue to share these outcomes and the insight that has built them internally with business planning leads across Heathrow. The insight and outcomes have been shared

¹² Heathrow, *Departures and Arrivals QSM*, Jan – Dec 2019

through formal insights sharing sessions following the publication of the insights synthesis, regular lunch and learn sessions held by our internal Insights team and continuous communication through an insight reporting platform.

In addition to insight increasingly informing our future plans as they are created, we have also validated our future plans against these outcomes and consumer insights. In particular, we've been keen to understand how we should best prioritise our capital expenditure, which we describe in detail later in the chapter. This triangulation process of testing our plans with further consumer research has been particularly important to ensure that we are still optimise plans for consumers, albeit considering other stakeholder considerations and constraints too.

2.3.3.2 How are we currently doing at meeting these consumer outcomes?

In 2019, 84% of Heathrow passengers rated their experience travelling through the airport positively, up from 41% in 2006¹³. This further improved in Q3 2020 following the Covid-19 outbreak, with a record satisfaction level of 86%. The Q3 2020 increase was due to reduced levels of congestion in the terminals and the Covid-19 related safety measures we put in place to protect our passengers.

The improvement since 2006 has seen Heathrow move from being one of the lowest performing airports in Europe to the leading hub airport in Western Europe. But there are airports in Europe that consistently continue to deliver higher levels of passenger satisfaction than Heathrow.

Figure 5:

[REDACTED]

Looking at the individual stages of a passenger's journey, Heathrow is still performing in the 3rd quartile or lower of European comparator/ competitor airports in terms of perception of:

- Overall Security Process
- Ease of making Connections
- On-time performance

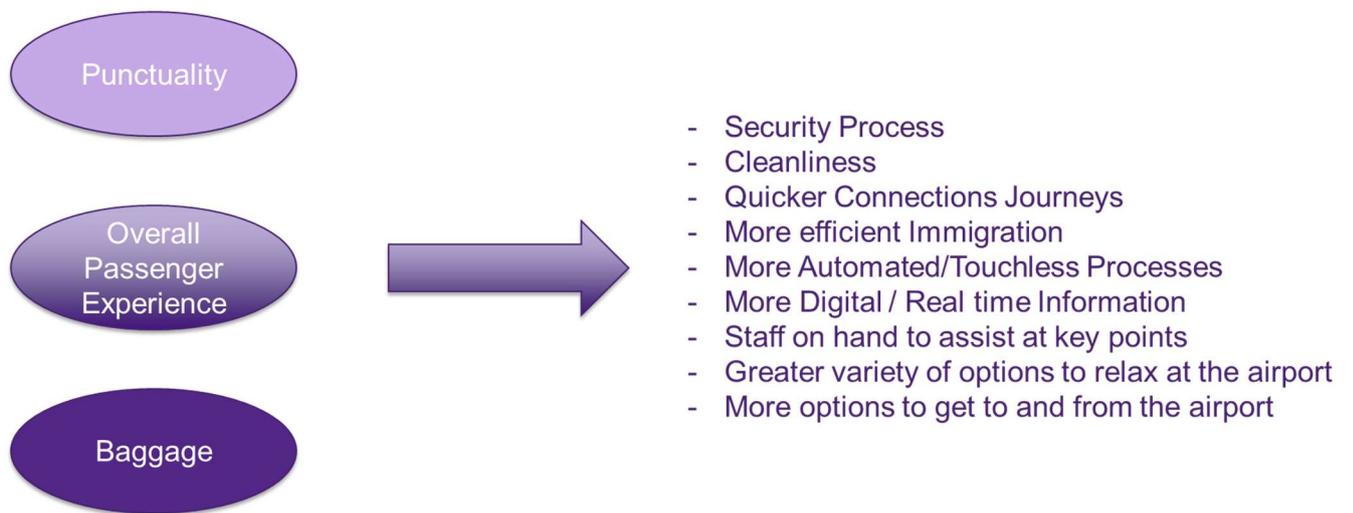
¹³ ACI, ASQ *Passenger Satisfaction Survey*, 2020

Figure 6:

[REDACTED]

Taking all of our consumer evidence into account has led us to the conclusion that consumers believe that Heathrow is currently doing well at meeting the overall outcomes they desire when travelling, but there are three key areas of service where they would prioritise further improvements being made:

Figure 7: The three key priority areas for improvements



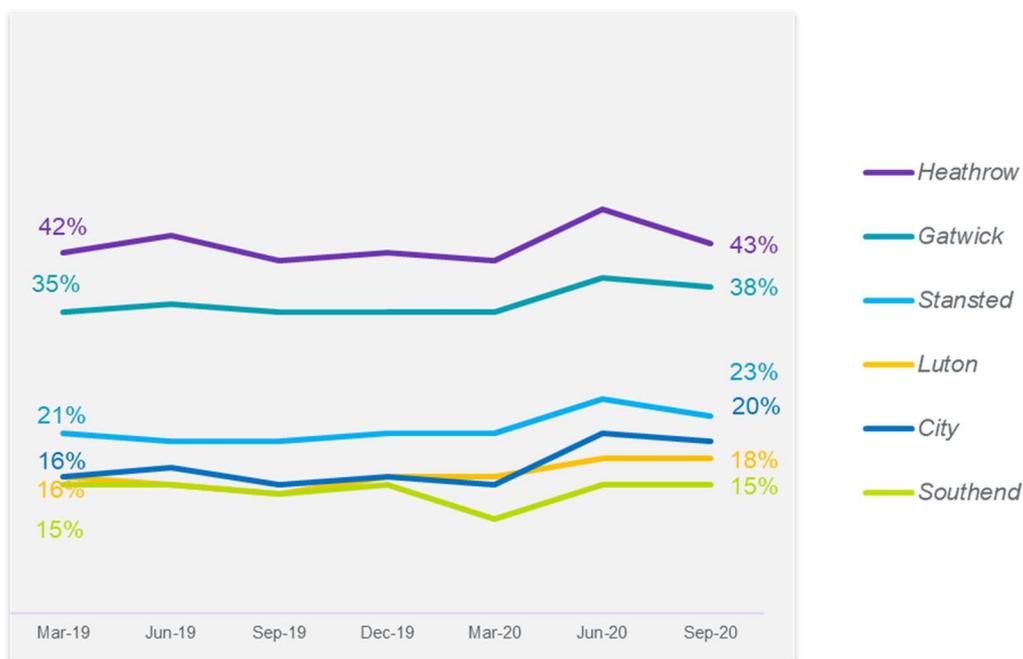
Source: Heathrow

“An airport that offers me a good value choice of destinations that I want to travel from”

69% of UK consumers perceive that Heathrow offers them direct flights to the destination they want. This is higher than at any other UK airport. This still leaves 31% of UK consumers who don't believe that they can get the flight they want from Heathrow.

Overall, Heathrow has a strong reputation for airports amongst UK consumers, being viewed more positively than any other airport in the South-East.

Figure 8: UK consumers positivity ratings of South East airports¹⁴

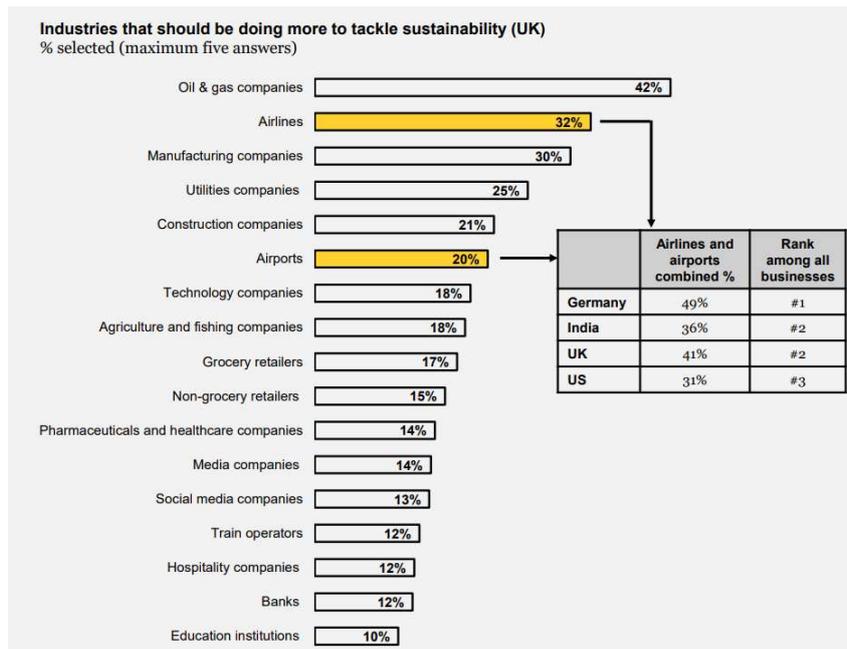


Source: The Numbers Lab

Sustainability, and more specifically carbon, is one aspect of Heathrow's reputation that consumers feel Heathrow and the wider aviation industry should be doing more to try and tackle going forward.

¹⁴ The Numbers Lab, *Heathrow Brand Tracker*, Q3 2020

Figure 9: Industries that should be doing more to tackle sustainability¹



Source: Incite

Only just over a third of passengers state that they are aware that a passenger service charge for using Heathrow forms part of overall airline ticket price. Once they are informed about this charge and what they receive for that price, 70% of current passengers state that they believe that it represents ‘good’ value for money.¹⁵

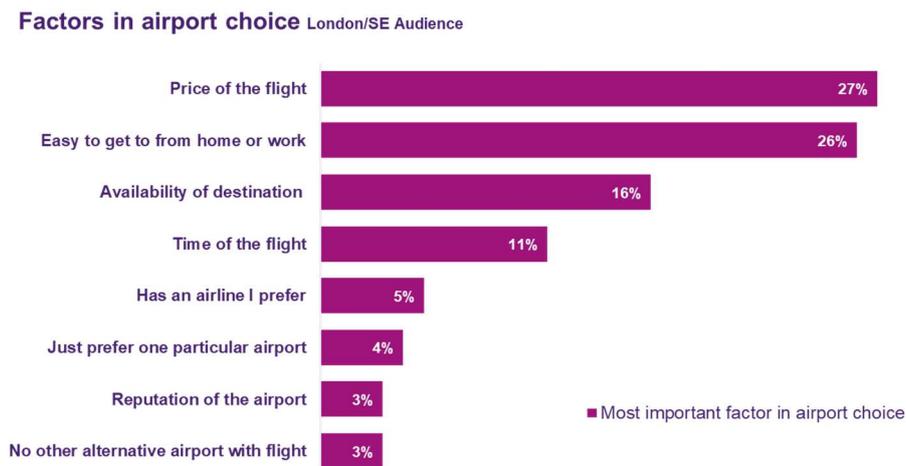
“I am confident I can get to and from the airport”

Ease of getting to and from an airport always ranks amongst the top three reasons passengers choose to fly from an airport¹⁶.

¹⁵ Accent, *H7 Service Package Choices Follow up Research*, October 2020

¹⁶ The Numbers Lab, *Heathrow Brand Tracker Q3 2020*

Figure 10: Key drivers of airport choice¹⁷



Source: The Numbers Lab, Heathrow Brand Tracker Q3 2020

Current passengers recognise and appreciate that Heathrow is already the UK’s best served airport for access by road and rail¹⁸.

Our consolidated surface access consumer insights¹⁹ highlight that ease, along with speed, value and trust, are the key passenger needs when choosing which mode of transport to use and how they perceive their overall travel experience getting to Heathrow.

An easy journey ensures stress levels are minimised and customers feel in control, with the easiest journey being the one considered to be the most direct or one involving no more than one interchange. Ease of getting to the airport is something that Heathrow started to track amongst our current passengers in Q4 2019. At an overall level we are performing well, consistently seeing over 90% agreeing that it was easy to get to Heathrow²⁰.

Taxi and private car drop off are perceived to be the easiest modes as they offer a door to door service. This is reflected in the high satisfaction levels that these modes receive and presents a challenge when wanting to grow our network by public transport. Post Covid-19 this behaviour has been further reinforced with people wanting an ‘easy’ and ‘safe’ journey and therefore more people choosing private modes.

However, both our current and potential passengers are wanting to see further improvements in the range of surface access options²¹ available to encourage them to use Heathrow in the future.

¹⁷ The Numbers Lab, Heathrow Brand Tracker Q3 2020

¹⁸ Systra, Understanding Consumer Need Priorities in a (Post) Covid-19 World, November 2020

¹⁹ IPSOS, Synthesis of Surface Access Consumer Insights, 2019

²⁰ IPSOS, Surface Access Satisfaction Survey, 2019

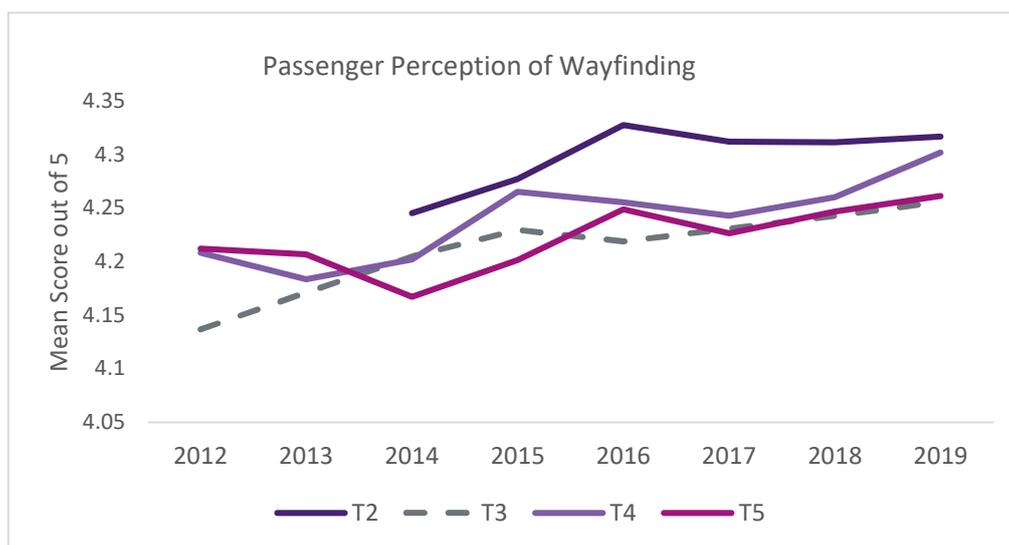
²¹ Systra, Understanding Consumer Need Priorities in a (Post) Covid-19 World, November 2020

“I have a predictable and reliable journey”

Consumers have told us that one of the most important aspects of their airport journey is for their flight to depart and arrive on time.²² Over the course of Q6, working collaboratively with the airport community, we have managed to make marginal improvements in the percentage of flights departing on time from 77% in 2013 to 78% in 2019. However, consumers continually tell us that this is one aspect of their experience that they would like to see further improvement in and would be willing to pay slightly more if this benefit was delivered.²³

In order to facilitate flights departing on time, consumers want reassurance that they will be able to pass through the airport in a predictable and reliable way. Key to delivering this is ensuring that wayfinding through each terminal is clear and easy to follow. Throughout Q6 Heathrow has made improvements across all terminals when it comes to physical wayfinding. This has now reached a level that consumers are wanting maintained going forward²⁴.

Figure 11: Passenger perception of wayfinding at Heathrow²⁵



Source: Heathrow

The other key element to providing consumers with a predictable and reliable journey is to minimise waiting times at key points along a passenger’s journey. During Q6, perception of waiting times in both security search and immigration has improved. In security, positive ratings have moved from 75% in 2013 to 87% in 2019 and in immigration from 77% to 87%²⁶.

These two stages, along with waiting time to reclaim their bags, are where consumers would most like to see further improvements made in future to increase their satisfaction levels with their Heathrow experience.

²² Accent, *H7 Service Package Choices Research*, November 2019

²³ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

²⁴ Caroline Thompson and Associates, *What matters to passengers*, 2017

²⁵ Heathrow, *Departures and Arrivals QSM*, 2012-2019

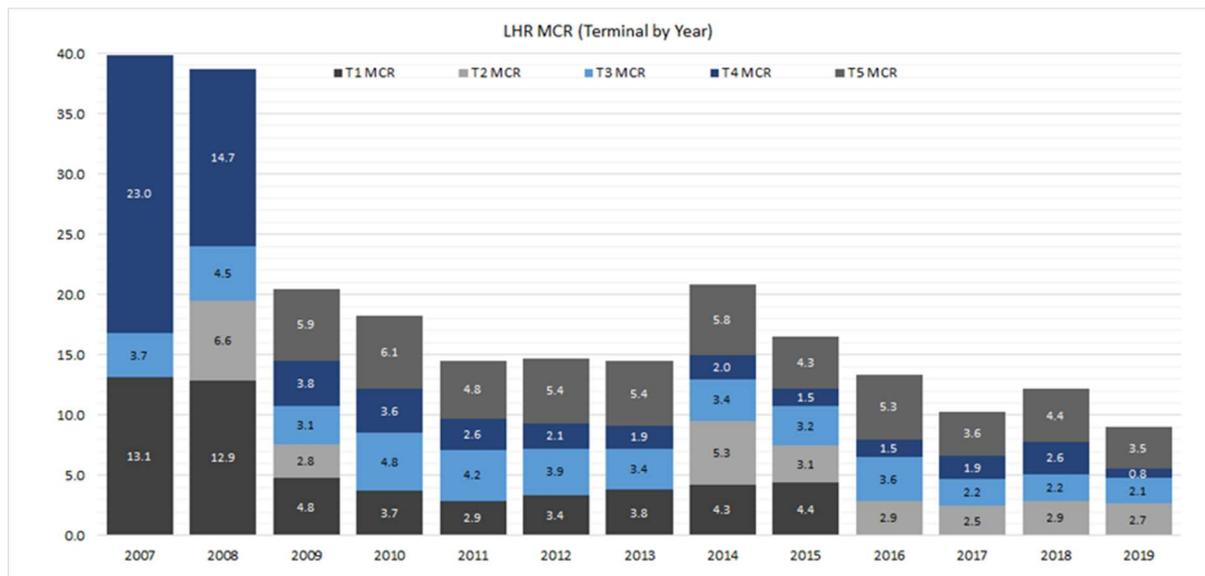
²⁶ Heathrow, *Departures and Arrivals QSM*, 2013 and 2019

“I feel comfortable and secure at the airport”

Following Covid-19, Heathrow being clean and hygienic took on a new meaning for consumers. During Q6 we had already made progress in improving passengers’ perception of cleanliness of the airport, but we now need to react to consumers’ heightened awareness and expectation that Heathrow will be Covid-19 safe²⁷.

Consumers always want the reassurance that their bags will safely reach their destination at the same time as them. Over the past 10 years, baggage misconnect rates at Heathrow have halved from 18 bags /1000 passengers missed to 9 bags /1000 passengers missed in 2019. Consumers want Heathrow to go further in ensuring that their bags travel with them²⁸.

Figure 12: Baggage Misconnect Rates at Heathrow 2007 - 2020



Source: Heathrow²⁹

²⁷ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

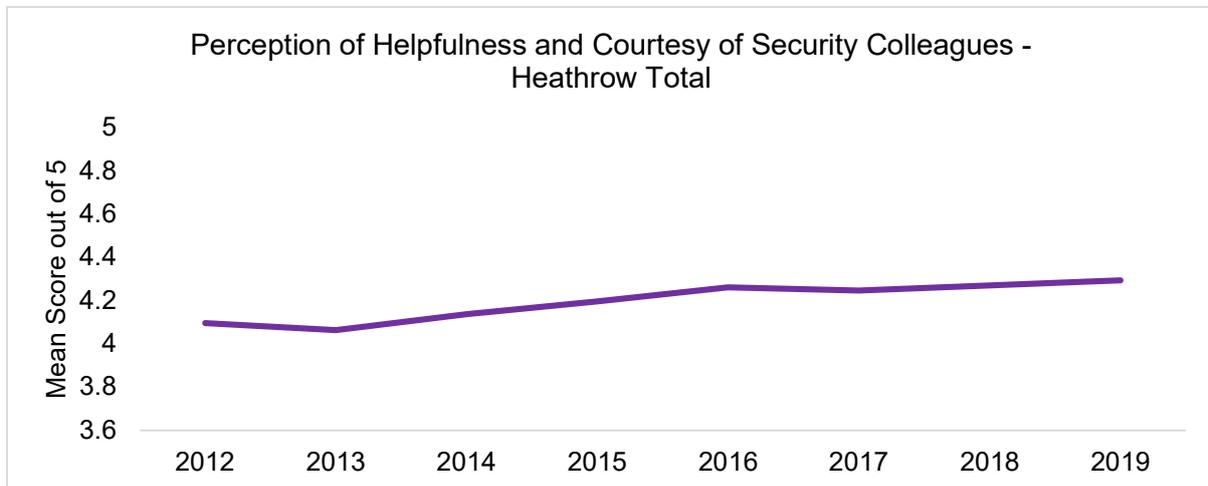
²⁸ Accent, *H7 Service Package Choices Follow up Research*, October 2020

²⁹ Heathrow, *Merlin Baggage performance management system*

“I feel cared for and supported”

During Q6, we have seen that passengers’ perception of the helpfulness / courtesy of security colleagues has been improving.

Figure 13: Helpfulness and Courtesy of Heathrow Security Colleagues 2012-2019



Source: Heathrow³⁰

It is engaged colleagues who deliver great service; we evidence that as Heathrow colleagues’ agreement with “Heathrow is a great place to work” increases, so too does overall passenger satisfaction (after accounting for any changes in passenger volumes).

Figure 14: Heathrow overall link between customer satisfaction and colleague engagement



Source: Heathrow³¹

³⁰ Heathrow, *Departures QSM Survey, 2012 - 2019*

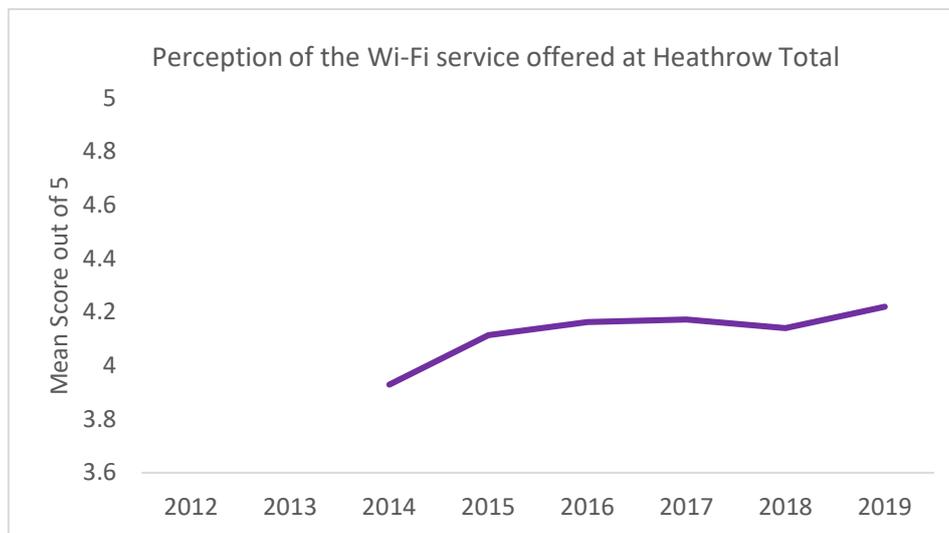
³¹ Heathrow, *Departures QSM and Colleague Engagement Survey, Sep 16-Sep 19*

“I have an enjoyable experience at the airport”

Consumers continued to rate Heathrow shopping and restaurant facilities within the top quartile of our European competitor and comparative airport group during Q6. However, consumers continue to ask for there to be a greater range of products available at some affordable price points³².

In order to have an enjoyable time at the airport, consumers want to feel that they can stay connected to their friends/family or their work while they are at the airport. In order to facilitate this, consumers expect airports to have free, fast and reliable Wi-Fi. Perception of the Wi-Fi service has increased over the course of Q6, but as consumers are becoming increasingly reliant on Wi-Fi, there is a growing expectation that it will be faster and faster.

Figure 15: Perception of Heathrow Wi-Fi service 2014-2019



Source: Heathrow³³

2.3.3.3 Stakeholder Outcomes

Heathrow cannot consider consumer outcomes in isolation. We must also consider the needs and views of our other key stakeholder groups – airlines, community, colleagues and investors. We need to balance these other stakeholder needs, but these are often competing. Put simply, if we do not understand and meet all our stakeholder needs, nobody wins, and we cannot deliver for consumers.

We defined four stakeholder groups in our Strategic Brief in 2018³⁴; Community, Colleagues, Airlines and Investors (see figure 16). Stakeholder outcomes have not been defined using consumer research. However, they are based on similar extensive engagement over multiple years.

³² Join the Dots, *Horizon Retail Report*, July 2018

³³ Heathrow, *Departures QSM Survey*, 2012 - 2019

³⁴ <https://www.heathrow.com/company/about-heathrow/company-information/heathrows-strategic-brief>

Figure 16: Stakeholder outcomes



Source: Heathrow

Community and Environment

We want to benefit our local community and be a good neighbour, which is why we have taken the time to understand the views of the people living closest to the airport. Being a good neighbour means taking steps to improve quality of life for those living near Heathrow. Heathrow is also committed to spearheading a more sustainable future for air travel.

Consulting with our local communities on a regular basis allows Heathrow to shape its future plans in a sustainable and beneficial way for everyone. Our definition of our local communities is our nine boroughs, and that is constituted by inner and outer boroughs. We have also engaged communities outside of these immediate boroughs, as they are also affected by Heathrow.

We understand that the main issues for local people are noise pollution and air quality. We work closely with local communities, airlines and NATS to continue to reduce the noise footprint of Heathrow. Besides aircraft, the main source of air pollution is through road vehicles, which is why we are working to make sure this is not a car-led recovery. Our surface access plans seek to improve public transports and we continue to push the use of electric vehicles for all of Team Heathrow.

We also understand that our communities' immediate need is help to respond to the economic impact of the pandemic. Following four months of work and collaboration with local stakeholders, Heathrow and Lord Blunkett have released the airport's plan to drive local economic growth post-pandemic. As part of this, Heathrow has created a dedicated Heathrow Job Centre Plus Service in partnership with the Department for Work and Pensions to support

colleagues across Team Heathrow and the local community to access job search support and careers, information, advice and guidance.

Our community and environment outcome can be summarised as: *“Commitments made by Heathrow for sustainable airport growth are met.”*

Colleagues

We want everyone who works at Heathrow to feel they can be safe, happy, motivated and developed in ways which encourage them to flourish. Engaged colleagues that represent the communities we serve will ensure we can deliver service for passengers and provide good quality jobs to communities who most affected by the airport. We will create careers, not just jobs, where people will be trusted to make decisions and feel that they can do so quickly and with impact, taking opportunities to grow, adapt and develop.

Covid-19 has had an unprecedented impact on our business. We know that it has been an unsettling time, impacting all of our colleagues' well-being. We created a health and wellbeing learning resource covering a range of topics, including healthy working from home, Babylon online GP, Employee Assistance Programme (EAP) and financial wellbeing help. Organisational change has, however, been unavoidable. We've taken steps to simplify the organisation and build a structure that is scalable. Where possible we've tried to retain and promote our best talent and retain a diverse workforce that reflects our local community. In the long run, these difficult decisions secure the future of our business and the efficient operation of the airport – protecting consumer outcomes.

Our colleague outcome can be summarised as: *“Heathrow is a great place to work.”*

Airlines

We have listened to our current and future airline customers through extensive engagement. They say they want more automation of the passenger journey, more investment in baggage systems to increase resilience, and a better connections proposition. Airlines are committed to driving sustainability, including the reduction of carbon emissions. They prioritise a robust, punctual and resilient airfield operation. There is also a strong preference that charges remain affordable.

Globally, US\$172bn of aid from Governments has been committed to keep airlines going, through a mix of both reimbursable/deferral of payments and waivers³⁵. Airlines have also raised more than US\$220bn of debt through capital markets. The airline community note that re-building passenger volumes and restoring consumer confidence will be critical during this H7 period – they expect an even greater focus by consumers on price, service and value for money. Passenger revenues collapsed in 2020 and are only expected to partially return in 2021, meaning that in order to prevent significant cash burn, costs will need to be downsized by a similar amount. Many airlines have already reduced their costs significantly – both temporarily using Government furlough or similar programmes, and more permanently by early retirement of some widebody jets and reducing overall fleet size. The semi-fixed nature of many airlines makes further cost reductions difficult, perhaps putting a long-term upwards pressure on airline prices after a competitive restart. Further details can be found in the Chapter 2.2 – Market Insights.

³⁵ IATA AGM, November 2020

Prior to submitting the IBP, we engaged specifically with airlines on some of the inputs to the building blocks. This has included engagement on forecasting methodologies and consultants reports that support operating cost and commercial revenues forecasts, and our passenger forecast methodology.

We have also continued with many of the forums and working groups established through Expansion. These report into the monthly Joint Expansion Board. We have engaged with airlines on the IBP and BBU, with over 130 hours of discussion in Constructive Engagement. The airline community have pressed that affordability will be critical for airlines and consumers during the H7 period. We understand that airlines are more financially constrained than ever before and that there is significant uncertainty for their future demand. We have used this feedback to guide our approach for this business plan. For example, our proposed capital expenditure spend has been materially reduced from £5.3bn (2018p) presented at BBU to £3.5bn (2018p) as detailed in Chapter 6 - Capital Expenditure. Projects previously considered key, such as Southern Road Tunnel, Western Rail and some service expenditure have now been deferred or scaled back per airline feedback. This reduction will significantly constrain what Heathrow can deliver through the H7 period.

Furthermore, given the current uncertainty the industry faces, the airline community have been clear on the importance of developing scenarios to illustrate our plans. Our RBP has been developed on a mid-case that is neither overly optimistic nor pessimistic – with passenger forecast sensitivities presented in Chapter 10 – Outcomes. We note that the airline community built a plan based on the BBU high scenario, where passenger volumes returned to 2019 highs by 2023. We see this as being overly optimistic for a central case, with both IATA and ACI recently downgrading their forecasts³⁶. Given the uncertainty, we have outlined our proposal for passenger risk sharing in Chapter 9.1 - Regulatory Framework to accommodate these divergent passenger expectations.

As the UK's largest port, cargo is also a key part of Heathrow's operations. In order to understand the needs of our cargo community, we commissioned a programme of research amongst the extended community (carriers, forwarders, handlers, hauliers plus other, non-operational contacts such as sector consultants, industry associations and commentators). The findings showed that infrastructure improvements were a key priority for the cargo community, with many expressing concerns about the current cargo infrastructure at Heathrow, in particular its age and accessibility.³⁷ Our quantitative study reinforced this and also identified that we could do more to enhance the ease and reliability of cargo operations at Heathrow.³⁸

During the first UK lockdown we observed counter-cyclical with cargo. More freighter flights were used to ensure much needed personal protective equipment (PPE), pharmaceuticals and other crucial equipment was transported. Airlines quickly transitioned from using belly-hold capacity to transport their goods – the absence of passenger demand quickly changed cargo economics. Heathrow has supported this change in operations and will continue to take these learnings into the H7 period.

Our airline outcome can be summarised as: *“Heathrow provides efficient, reliable and affordable airport services.*

³⁶ IATA, *Traffic Forecast Downgrade After Dismal Summer*, September 2020; Eurocontrol, *Five year forecast 2020-2024*, November 2020

³⁷ Firebrand, *Summary review of qualitative research amongst the LHR cargo community – 2018*, February 2018

³⁸ Firebrand, *Heathrow Airport Cargo Community Quantitative Research 2017/8*, May 2018

Investors

Investors – equity and debt – cannot be taken for granted. As a result of Covid-19, Heathrow’s credit spreads have widened dramatically and have not recovered as much as other regulated entities have. Heathrow and other airports have since been downgraded by all rating agencies.

We intend to continue financing Heathrow fully privately with no recourse to the taxpayer. Even though Expansion has been paused, our financing requirements remain one of the largest in the infrastructure sector. This will be through a mix of cash flow from operations and significant debt financing raised via Heathrow’s well-established and successful debt financing platform. A strong investment grade rating remains fundamental to maintaining debt investors’ confidence and achieve cost effective financing.

Equity investors tell us they require an appropriate return on capital over the investment time horizon – particularly if an additional equity injection is required. Infrastructure equity investors are characterised as requiring long term stable returns. Heathrow’s shareholders are no different. They represent some of the largest and best capitalised infrastructure investors globally but require a supportive regulatory framework that provides a fair rate of return given the additional risks being faced.

More information on investors can be found in Chapter 8.1 - Financial Principles.

Our investor outcome can be summarised as: *“Heathrow delivers predictable and fair returns.”*

2.3.3.4 Consolidated Outcomes

Consolidating the six consumer and four stakeholder outcomes provides an overview of what we aim to achieve in H7. Consumers are purposely put at the heart of our plans as we aim to deliver their outcomes, but these will be balanced against the views and constraints of our other stakeholders.

Figure 17: Consumer and stakeholder outcomes



Source: Heathrow

2.3.4 Updated Passenger Prioritisation

As we developed our plans for this RBP, we wanted to understand how the changing circumstances caused by Covid-19 had impacted consumer views and preferences. Our questions of consumers were:

- In the changed environment since Heathrow published its IBP, have consumer needs changed related to their end-to-end airport journey?
- How would consumers prioritise and value Heathrow’s proposed initiatives / potential service improvements during H7 in order to improve their overall end-to-end journey?
- How have consumer emotions and behaviours towards air travel and airports changed as a result of Covid-19? Which pandemic-related needs will remain beyond Covid-19?

We commissioned Systra to conduct this research to gain an independent viewpoint. The research undertook a similar methodology to the Benefits Valuation research, undertaken by Systra and Caroline Thompson Associates in 2018 to uncover consumer priorities for various improvements relating to the end-to-end airport experience. For the initial qualitative stage, six in-depth interviews and open dialogue sessions were carried out with both current and potential consumers and both direct and connecting passengers. This provided valuable insights into consumers’ needs and helped the design of the subsequent quantitative phase. The questionnaire went through a series of tests to ensure the rating and proposed MaxDiff

exercises could be verified. In total 2,877 current and 1,828 potential consumers were interviewed.

Systra discovered that more than nine in every ten respondents felt the consumer needs they were presented, as developed and verified by the synthesis, were fully comprehensive and covered everything which might be important to the airport experience. Any new care needs broadly related to; receiving an enhanced level of customer service (colleagues speaking foreign languages or greater support for those with disabilities), improved basic amenities (a quiet space, family facilities, focus on health), and greater predictability (punctual flights, moving through the airport quickly).

Relative needs

Respondents were asked to allocate 100 points across the six consumer needs categories to determine how we should prioritise our service offering. The views were similar for both current and potential passengers.

Table 3: Current passengers- priorities across the six consumer needs categories

Category	Importance Weighting (out of 100)	95% CIs (Sample to population margin of error around the mean)	Stage of Journey	Overall Weighting
Airport Choice	20	20 – 21	Pre-Airport	38
Getting to the Airport	18	18 – 18		
Predictable & Reliable Journey	18	18 – 19	In-Airport	62
Basic Comforts	16	16 – 17		
Enjoyable & Connected	14	14 – 14		
Cared For	13	13 – 13		
Total	100	---	All	100

Source: Systra

Table 4: Potential passengers- priorities across the six consumer needs categories

Category	Importance Weighting (out of 100)	95% CIs (Sample to population margin of error around the mean)	Stage of Journey	Overall Weighting
Getting to the Airport	20	19 – 20	Pre-Airport	37
Airport Choice	17	17 – 18		
Predictable & Reliable Journey	19	19 – 20	In-Airport	63
Basic Comforts	18	17 – 18		
Enjoyable & Connected	13	13 – 14		
Cared For	13	13 – 13		
Total	100	---	All	100

Source: Systra

Prior to the overall rating exercise, respondents were presented with a series of individual factors within each of the six consumer needs categories. For these individual facts, respondents identified which factors were most, second-most, and lead important to them as part of the MaxDiff exercise. The top three consumer needs per category are presented below:

Table 5: Consumer needs importance weighting – top three for all categories

Category	Consumer needs	Current	Potential
Getting to the Airport	• An airport I can get to quickly and efficiently	22%	26%
	• An airport that I can access easily – with minimal changes	17%	19%
	• An airport that offers a range of transport options to suit my needs	17%	16%
Airport Choice	• It offers flights I want and when I need	14%	14%
	• It's reliable and safe	12%	12%
	• It enables good value and affordable flights	11%	11%
Predictable and reliable journey	• I feel clearly, consistently, and fully informed	14%	16%
	• The terminal layout and sight lines make it obvious to know where to go	14%	13%
	• Clear signage throughout the airport	14%	14%
Basic comforts	• I feel safe	9%	9%
	• Places to sit/rest/wait	8%	9%
	• I feel secure	8%	8%
Enjoyable and connected	• Access to amenities that are relevant to me	15%	18%
	• Personal comforts available when I want them	13%	13%
	• Lots of things to do e.g. shops and experiences	13%	15%
Cared for	• Airport staff are ready and able to help (incl. new tech)	18%	21%
	• I receive a courteous service I can rely on	17%	17%
	• Airport staff are always visible and available	16%	17%

Source: Systra

We are also able to determine the relative importance of each consumer need category, and the individual factors within each category. For pre-airport, getting to the airport has a slightly higher overall priority weighting than airport choice (53% vs 47%). Within the airport, predictable and reliable has the highest overall priority weighting (30%), followed by basic comforts (28%). Cared for has the lowest overall priority weighting (21%). The importance of the individual factors are much the same as our independently conducted Horizon research; this provides us with further assurance.

Our plans for the IBP had significant input and validation for our consumers. While we wanted to continue with all our proposed deliverables, many could only be optimally delivered through Expansion. Therefore, our first step was to separate the Expansion and non-Expansion related investments, then prioritise in terms of size of investment and outcomes delivered. We believed it was necessary to ask consumers for their views on how they would prioritise and value a series of initiatives that we are proposing to invest in during the H7 period in order to improve their overall end-to-end journey³⁹.

To understand the rankings of the proposed initiative, respondents were asked to complete a number of exercises and provide a set of relative rankings. By introducing an additional financial 'improvement to the current service offering (i.e., a 1% reduction in air fare), an assessment could be made in terms of how the proposed quality improvements compare relative to the reduction in fare. Hence for each proposed initiative, the monetary value that provides the equivalent level of benefit to consumers is shown.

³⁹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

As before, we discovered that consumer priorities for improvements are broadly similar – for both direct and connecting passengers. Furthermore, 92% of potential passengers would at least consider using Heathrow if the initiatives that matter the most to them were implemented.

Figure 18: Consumer Priorities for Airport Improvements in H7

Direct passengers	Connecting passengers
Current: <ol style="list-style-type: none"> 1. Reduced time at Passport Control 2. Reduced time at Baggage Reclaim 3. Enhanced cleaning so surfaces are Covid-19 safe 4. Better/more options to access LHR by public transport 5. No need to remove liquids/electronics from bags when going through Security 6. Reduced time at Security Search 7. Enhanced Punctuality of Flights 	Current: <ol style="list-style-type: none"> 1. Enhanced cleaning so surfaces are Covid-19 safe 2. Ultra-high speed wi-fi throughout the airport 3. Staff deployed to help anywhere along the passenger journey 4. Reduced time through Security 5. Real time information about different stages of the airport journey 6. No need to remove liquids/electronics from bags when going through Security 7. Reduced connecting times between flights
Potential: <ol style="list-style-type: none"> 1. Enhanced cleaning so surfaces are Covid-19 safe 2. Reduced time at Passport Control 3. Reduced time at Baggage Reclaim 4. Staff deployed to help anywhere along the passenger journey 5. Real time information about different stages of the airport journey 6. Enhanced Punctuality of Flights 7. Reduced time at Security Search 	Potential: <ol style="list-style-type: none"> 1. Enhanced cleaning so surfaces are Covid-19 safe 2. Staff deployed to help anywhere along the passenger journey 3. Real time information about different stages of the airport journey 4. 10% less time to walk from arriving flight to departure gate 5. Ultra-high speed wi-fi throughout the airport 6. Ability to charge electronic items throughout airport journey 7. Reduced time at Security Search

Source: Systra⁴⁰

Reduced wait time at passport control and baggage reclaim, and enhanced cleanliness to ensure surfaces are Covid-19 safe, are top priorities for current and potential direct passengers. Systra also noted how some waiting times seem to be valued differently at different stages of the airport journey for direct passengers. For instance, for direct EAA passengers, a 5-minute time saving going through passport control seems to be broadly equivalent to a 10-minute time saving for waiting at baggage reclaim.

Amongst current passengers, the value of each of their top five proposed initiatives was between 1.3% to 1.6% of average fare; whilst among potential passengers, the value of each of their top five proposed initiatives was between 1.4% to 2% plus of average fare.

There were some notable differences between passenger segments and the overall results:

- Business passengers prioritise ultra-high-speed Wi-Fi.
- International passengers prioritise flight punctuality and ultra-high-speed Wi-Fi.
- Passengers Requiring Support prioritise a reduction in carbon footprint, new additional security lanes and self-service bag drop machines more than other segments.

The results of the current passengers' relative priorities for service improvements are aligned with the previous benefit valuation research undertaken in 2018⁴¹. However, some of our newly researched initiatives are also very important, including the enhanced cleaning of services and faster, more reliable public transport to/from Heathrow. The majority of consumers (73% of current, 71% of potential passengers) think their priorities will remain the same over the next five to six years – i.e., through the course of H7.

⁴⁰ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁴¹ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

Consumers were also questioned on potential deteriorations in service. 41% of passengers said they'd use Heathrow less if we were to introduce the deterioration in service that was least acceptable to them. The deterioration aspects that have the biggest value are as follows:

Table 6: Deterioration values

Deterioration Aspect	Disbenefit value (as a % of airfare)
9 out of 1000 passengers' bags will not travel with them on the same flight → 10 out of 1000 passengers' bags will not travel with them on the same flight	1.24
No charge for accessing Heathrow by private car or taxi → a £5 charge for accessing Heathrow by private car or taxi	1.08
80 out of 100 flights depart on time → 78 out of 100 flights will depart on time	1.03
99% of time all lifts, escalators and travellators work along your airport journey → 85% of times all lifts, escalators and travellators work along your airport journey	1.01
Current airfare level [£x] → a 1% increase in airfare (so your airfare would have been £y)	1.00
For 7% of flights, passengers must travel on a bus to board/disembark their plane → for 17% of flights passengers must travel on a bus to board/disembark their plane	0.92
9 out of 10 times you will get through security in less than 5 mins → 7 out of 10 times you will go through security in less than 5 mins	0.90

Source: Systra⁴²

These findings are important and can be interpreted as – a deterioration in service is equivalent, in disbenefit terms, to an increase in air fare of approximately 1% and would risk a drop in passengers travelling from Heathrow.

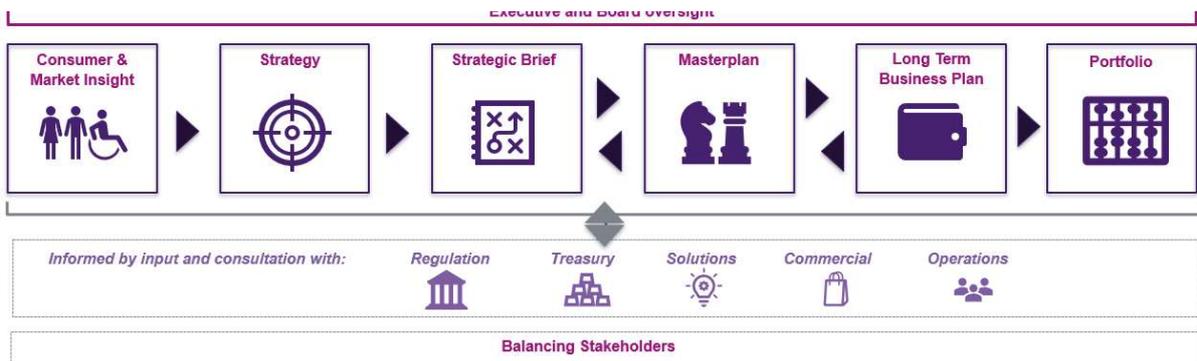
This research affirms the view that consumers will pay more for an acceptable level of quality—therefore, it is important for Heathrow to invest appropriately in areas consumers prioritise in the H7 period. We have used these findings to develop our refreshed passenger proposition, with key themes of ease, reassurance, cleanliness and value for money. More detail can be found in Chapter 3- Passenger Experience. Furthermore, this has helped to drive the allocation of our capital portfolio and operating considerations. High level practical implications to our plan are found below.

2.3.5 Practical implications to our plan

Our consumer engagement gathered to date has directly impacted our plans for 2022 onwards – it has been used for masterplanning, capital business cases and portfolios and internal business planning. After the Judicial Review announcement and the first impacts of Covid-19 were being felt, we went through a reorganisation to protect our business. This meant that there were some colleagues in new positions. To ensure our consumer insights golden thread journey was not lost, we quickly re-established our path from consumer insight to capital spend:

⁴² Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

Figure 19: Heathrow's established link from Insight to Capital Expenditure



Source: Heathrow

We have weekly dialogue of all the key counterparts to discuss any changes proposed to the capital portfolio, in addition to a number of other established forums including Heathrow Investment Committee (HIC). The Executive Committee and Board have also reviewed direct consumer insight at regular away days and meetings. Their teams are briefed separately if a particular research package has direct implications on their area of the business.

Our consumer engagement has directly impacted our plans for 2022 onwards. We have listened to their needs but have also been cognizant to the requirements of our other stakeholders. We have significant ambitions but will be limited by our capital expenditure budget and our operational constraints. Below we highlight the priorities we are hoping to deliver against and signal areas where we could potentially do more at a later date.

Reduced waiting times

For direct passengers, getting through passport control and collecting baggage were the top priorities in the WTP research:

- 37% of current passengers and 53% of potential passengers had a preference to reduce wait times at passport control from 10 minutes to 5 minutes.
- 36% of current passengers and 52% of potential passengers preferred to reduce wait times from 45 minutes for bags to be delivered after the plane lands to no more than 30 mins.

It continues to be a significant source of anxiety for our consumers when they do not know how long a process will take or when they will receive their bag.

*"The instructions are clearer. At this stage I just want to know how to get through border control quickly and painlessly. So though supportiveness from the Border Force is welcome, clear instructions are far more welcome."*⁴³

*"The immigration officer was very rude. He was not welcoming. And he was the first person I met getting into your country."*⁴⁴

Our improvements for baggage in the IBP were based on Terminal 2 Future Baggage. Terminal 2 currently used the old Terminal 1 baggage system and is thus among the most vulnerable elements of the Heathrow baggage service. We discussed accelerating the

⁴³ Join the Dots, *Horizon Border Force Research*, March 2018

⁴⁴ Revealing Reality, *Understanding the Airport Needs of Passengers Requiring Support*, October 2020

investment with airlines at Constructive Engagement. They did not support this significant investment in H7 but recognise the need to prolong the Terminal 1 baggage system by conducting critical asset replacement and repairs. Our consumers should therefore not experience a drop in baggage delivery through H7 and beyond.

Consumer feedback also suggested introducing real-time information at baggage reclaim to help passengers. Our Digital Transformation is looking to create a single unified digital experience, which could be extended to passengers' bags. We will develop more detailed business cases to discuss with the airline community and would welcome consumer views before proceeding on this technology development.

Managing wait times at immigration and baggage



Our passport control process is fulfilled by Border Force. We responded to customer complaints about long queues at border control and opened up E-gates for passengers from seven countries, including the USA and Japan – significantly improving passenger satisfaction. Our research, carried out in conjunction with Border Force, showed that stress can be alleviated by providing clear and concise information about what passengers expect. With this in mind, we propose the following in the H7 period:

- Further optimise the usage of E-gates, making sure those who can use the E-gates are aware.
- Ensure that our immigration halls are set up to maximise the flow of the queue by investigating alternative options for queue call forward mechanisms to ensure an efficient process.
- Continue to improve our provision of help for Passengers Requiring Support in immigration.

As with baggage, we would seek to investigate the development of real-time queue information but will have to fully assess the business case to provide this, given the limited capital expenditure in the H7 period.

No need to remove liquids and reduced time at security

Our research has identified security as the biggest stressor in the airport for the majority of consumers. They report the long queues, uncertainty, lack of organisation and unhelpful colleagues as all feeding into the stressful nature of the experience. In 2019, 20% of

passengers regarded check-in waiting time or security waiting time as the most important factor in their journey.⁴⁵

“Despite having well over 2 hours before I need to get to the departure lounge, I’m practically running to the gate...That is my biggest bugbear, really long security lines, and really long lines at check-in.”⁴⁶

“I have experienced this system at Brisbane Airport in Australia many times and it’s definitely faster. Those 3D scanners used when there is no need to remove items from the luggage also seem to be better at identifying items, reducing the need for secondary screening.”⁴⁷

“Save time, less queuing, less stress for people running late, more time to relax”⁴⁸

“Security would be a place I would worry about going as what potential germs are on the conveyor belts and boxes you put items in. If it was clear to me that an airport was doing all it could and communicated why things were different to normal it would make the experience much better for me as a passenger.”⁴⁹

When asked how the experience could be improved in the future, the most common suggestions passengers had included:

- A way to avoid having to unpack hand luggage e.g., liquids or electronics.
- Being able to pass through scanners without having to remove clothing items e.g., belts, shoes, jewellery.
- Better management of the queuing system, in particular better distribution of passengers to stations and the full capacity of stations in use (particularly at busy times).
- Lanes available for those who require additional support, to provide those passengers with the help they need and to prevent others from being held up. Also, lanes for solo travellers, frequent travellers or travellers with no hand luggage to pass through quickly.
- An increase in better trained colleagues to manage the specific bottlenecks e.g., queue management, inexperienced travellers and bag searches.
- More automation and technology that would speed up the process in the airport e.g., something similar to the TSA pre-check system.

To maintain compliance with Department for Transport (DfT) security standards for passenger and colleague screening, we will replace the current cabin baggage x-ray detection systems across all terminals and will invest in our control posts to ensure continuity of standards. By investing in this equipment, passengers will be able to travel through security without the need to remove liquids and laptops from bags. 94% of our passengers were in favour of the introduction of this technology⁵⁰. This will significantly speed up the security process.

⁴⁵ Heathrow, ASQ, 2019

⁴⁶ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁴⁷ Horizon report, *Future security solutions*, September 2020

⁴⁸ Ibid

⁴⁹ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

⁵⁰ Ibid

We are also looking at ways to improve the security flow per lane per hour in the H7 period. This will be partly achieved by re-rostering to ensure we have sufficient colleagues to support at our peak times. In addition, we will review queue management and more dynamic scheduling of our lanes, in addition to training our colleagues to better manage the bottlenecks to ensure travellers have a shorter wait time at security.

We are mindful that some passengers may feel rushed through, which may heighten stress – particularly Passengers Requiring Support. In response to this we are rolling out our Service Signature training to all frontline colleagues, so that they are better equipped to support and reassure passengers and enable to help reduce their stress levels



We also recognise that Covid-19 has raised fears about the security process. In particular, a lack of social distancing, reusing the same trays to place belongings in and close interaction with colleagues during bag and body searches. We are focusing on ensuring queue times are as short as possible to mean less close contact with other passengers. In addition, we have regular cleaning of all trays and security equipment and it is mandatory for all colleagues to wear face masks when in the terminal. This is to reassure our passengers.

Reliable punctuality

Through our research we have a good insight into the links between frustration and length of delays. Consumers are reasonably tolerant of limited delays, especially if they are kept informed. However, half of passengers said a delay of 1 to 2 hours would be very frustrating and a third said by that duration it would make them question using the airline or airport again.⁵¹

“[I was] feeling stressed – [my] inbound flight was late and [it] only left about an hour to make the connection”⁵²

“One of the big issues will be queuing at the gate, where everyone is herded into a small area or crowded onto buses. This will need to be addressed before starting flights up again.”⁵³

We know that any delays at the airport significantly impacts both our passengers and our airlines. We also recognise from our research that consumers do not differentiate between the

⁵¹ Ipsos loyalty

⁵² Heathrow on airport passenger feedback

⁵³ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

responsibilities of airports and their partners; they just care about the issue being addressed and rectified.⁵⁴

We are committing to increase departure punctuality to 80.5%. We recognise that this could be a challenge with new operators and different fleet and network configurations, but we believe this is the right thing to do for our passengers. Despite working to a more limited capital expenditure envelope, we are also committing to maintain our assets where required for safety or compliance. Furthermore, we are committing an appropriate portion of our capital expenditure for investment in both security and cyber security. Further details can be found in Chapter 7.3 - Resilience.

Better options by public transport

Our insight has shown that consumers weigh up the ease, speed and trust when choosing the mode for their journey to and from the airport. The Government has temporarily suggested that people should avoid public transport if possible while the pandemic is at its height, but this is expected to be a shorter-term measure. Among arrivals, only 1 in 4 passengers say the pandemic has impacted their onward travel plans⁵⁵. Improvements in public transport should therefore be within our long-term aspiration.

“Be able to hop on a train or other form of public transport that has Wi-Fi, runs at reliable frequency with a predictable journey time. It could also be cool if there were some airline check in kiosks onboard so that you could print your boarding pass (and perhaps bag tag) on board thus avoiding the queue at the airport.”⁵⁶

“If we found out that buses or taxis or trains were going to be massively inconvenient then we would alter and go elsewhere.”⁵⁷

“I would have taken public transport from Heathrow today, but my husband will be picking me up.”⁵⁸

A big factor for me when considering airport choice is how I can get there. Ideally you don't want to drive and pay to park... So flight times that fit the hours of the train, and good connectivity to public transport.”⁵⁹

We believe that investing in public transport is the right thing to do to meet consumer expectations to provide a better surface access mix, with greater ease, value and speed, and also to meet our sustainability ambitions and improve air quality around the airport. Our consumer insight gathered has helped us to understand the gaps in our surface access network. Our key H7 initiatives include:

- Heathrow Express will continue to at least 2028, with new rolling stock to be introduced in 2021. Heathrow Express is continually the best rated train operating company in the UK and the new rolling stock will increase the passenger experience even more. We will also implement our “First Mile/ Last Mile” transfer proposition to provide our Heathrow Express travellers with a door to door service.
- The Elizabeth Line is now expected to provide direct services from Heathrow to central London via Paddington by 2024. Consumers will no longer have to switch trains, but instead will be directly connected to the West End, the City of London and Canary Wharf with six services per hour.

⁵⁴ Populus, *Resilience Qualitative Research*, October 2019

⁵⁵ Ipsos, *Heathrow Surface Access Tracker*, September 2020

⁵⁶ Join the Dots, *Horizon surface access report*, October 2018

⁵⁷ Join the Dots, *Horizon airport choice report*, 2018

⁵⁸ Ipsos, *Heathrow Surface Access Tracker*, September 2020

⁵⁹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

Improving our public transport links



The airline community conveyed support for sustainable transport options, but disagreed with a dedicated contribution to Western Rail in the H7 period. Western Rail will benefit Heathrow users through improved accessibility and journey time reductions for passengers from M4 Corridor areas, the South West and Wales. As the earliest opening date of Western Rail will not be until 2030, we will continue open discussions with DfT and airlines to determine any H8 contribution. Further information can be found in Chapter 7.4 - Surface Access.

Enhanced cleaning

Consumers have always been concerned with the cleanliness of our terminals. We have measured cleanliness since 1990. The need for cleanliness has stretched beyond having a generally clean environment and clean toilets. Covid-19 has pushed this to the forefront of our passengers' minds.

"I've never found Heathrow to be anything less than spotless. There's always someone bimbbling around with a cleaning cart. We're going to need to be allowed more than 100ml of alcohol gel in our hand luggage or the airport will have to have free gel from dispensers after we're through security screening."⁶⁰

"I just need calm, quiet areas which are safe and clean."⁶¹

"Hand sanitizer, visual cleaning operatives, cleaning toilet constantly."⁶²

To reassure passengers, we are making sure that our cleaning is more visible than ever, backed up by clear demonstrations of Covid-19 safe rules. We are increasing the frequency of cleaning at all stages of the airport journey. In addition, we are maximising social distancing throughout the airport, including at peak times, both for passengers and colleagues.

⁶⁰ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers' perspective*, May 2020

⁶¹ Horizon, Join the Dots, *CX Proposition*, August 2020

⁶² Ibid

New technology supporting our enhanced cleaning



Although we have already started using biometrics, it is our intention to provide a touchless journey where possible throughout the H7 period. This includes the ability to complete key processes on the passenger's phone to minimise the need to touch the same surfaces. More detail on making our terminals Covid-19 secure can be found below and in Chapter 3 - Passenger Experience.

Colleagues supporting throughout the passenger journey

We know from our research that our colleagues and the service they provide can turn around a passenger's experience from bad to excellent, and make truly memorable experiences. We have taken responsibility for the end-to-end consumer journey at Heathrow and have sought to create a common culture and approach for Team Heathrow. 74% of Passengers Requiring Support felt really cared for, with everything and everyone feeling like they're on the passenger's side⁶³

Our research has also shown when travelling though or post the Covid-19 pandemic, passengers will want further reassurance from our colleagues – particularly if they haven't travelled for an extensive period and are unfamiliar with the new procedures.

"Honestly it's just the attitude of that person [security officer] and nothing else. She looked like she was bored....It was average because of the service"⁶⁴

"Trying to maintain a pleasant, comfortable, friendly and reassuring environment would be appreciated"⁶⁵

"I'm not sure I need to feel special, (that has a connotation of wanting special treatment, being needy) I do want to feel respected, as I will and do respect those who I am conversing with."⁶⁶

As cited above, in the H7 period we aim to raise further awareness of the service signatures across Team Heathrow. We aim to make our colleagues always visible and available to provide passengers with support as they move through the airport. We continue to train our colleagues in providing an approachable and friendly service – all our colleagues have the

⁶³ Revealing Reality, *Understanding the Airport Needs of Passengers Requiring Support*, October 2020

⁶⁴ Caroline Thomson Associates, *Heathrow Service Recovery Research – Qualitative Research Findings*, October 2016

⁶⁵ Horizon, *Join the Dots, CX Proposition*, August 2020

⁶⁶ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers' perspective*, May 2020

same induction programme, regardless of whether they are performing an operational or management role.

We know that other London airports and European hubs are also striving to provide passengers with a memorable service. In the H7 recovery period, if we do not offer a compelling offer, passengers will choose to fly elsewhere. For this reason, we closely monitor the service we provide to our consumers. Our overarching measures are; overall satisfaction, customer effort (ease) and future intent to use Heathrow. Further information can be found in Chapter 9.2 - Measures, Targets and Incentives.

Better connectivity

Consumers now use technology contemporaneously with their surroundings. While nothing can replace human contact, we know that digital propositions can provide many consumers with additional support. We've heard from consumers that they would like to use their devices to know real-time, personalised information, make purchases and onward plans, and to keep them entertained while in the airport. There therefore needs to be a reliable high-speed Wi-fi connection available, particularly for non-UK and connecting passengers.

In September 2020, around 5-6% of passengers were rating the Wi-Fi Poor/ Extremely Poor compared to 2% in September 2019⁶⁷. In addition, 65% passengers were willing to share additional personal info to speed up processing at the airport - versus 70% in 2017⁶⁸.

“An app to order, collect and takeaway food/drink when in the terminal > this would be grand! An extension of the existing Heathrow App to include all the food& drinks outlets within the airport (maybe showing only related to the terminal, on the day of the flight?) and with an estimated prepping time so that one can quickly and easily decide when, where and what to order.”⁶⁹

“Some airports have places you can get some quiet and work, I tend to head to those.”⁷⁰

Passengers want time out to relax, either in a lounge or in a peaceful departure area, using Wi-Fi. This comfort in a new post Covid-19 world also means being distanced from others. Our enhanced digital offer (web, app, and mobile) will include improving our digital retail proposition. We have already accelerated some of our digital propositions, including an improved 'contactless' in-terminal pre-order click and collect F&B service, an improved mobile app to guide passengers through their journey and keep them reassured and safe, as well as restarting our retail online 'reserve and collect' service.

In the H7 period we intend on continually improving our digital offer. This will include multilingual support for passengers, eCommerce merchandising, extended digital payment capability, improved use of digital service and passenger support channels, and improved ability to sell our products and services via digital third parties. We will also refresh our Heathrow Reward Loyalty Programme. Further information can be found in the Chapter 7.2 - Commercial Revenue.

To support this, we are intending on improving our Wi-Fi infrastructure at some point in the H7 period to give consumers a higher connection speed, allowing them to stay connected with their lives outside the airport.

⁶⁷ QSM, “Q: How would you rate the Wi-Fi service in the Terminal today?”, September 2020

⁶⁸ IATA, *GPS-2018 Highlights*

⁶⁹ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers' perspective*, May 2020

⁷⁰ Oko, *T3 Future F&B Offer Strategy*, March 2017

Using digital to support our passengers and provide a more connected experience



2.3.6 Passengers Requiring Support (PRS)

Through one of the largest ever studies in UK aviation and with support from Revealing Reality⁷¹ (who have undertaken many similar engagements for large international organisations), we have discovered that a large and growing proportion of Heathrow passengers, almost 39%, required additional support in 2019. Over 11,400 consumers participated, as well as over 60 stakeholders (Airlines, Border Force, HEx etc.), charity organisations (Macmillan Cancer Support, Alzheimers Society, Whizz-Kids etc.) and community members. This has helped us to evolve beyond our historic lens of Passengers with Reduced Mobility (PRM) to Passengers Requiring Support (PRS), by expanding our understanding to a broader range of personal circumstances that may affect passengers and their airport needs.

As part of the study, we carried out over 80 hours of in-airport observation, shadowing 32 journeys and also interviewing non-flyers to ensure we spoke to as many current and potential consumers as possible. Our in-airport survey was completed by over 8,000 current consumers and our general population survey was completed by over 3,000 potential consumers. We collected stories to identify the current challenges in people's Heathrow experiences and understood what people want and need from the airport experience. We've understood that passengers that require support can often feel frustrated, distressed, disappointed, angry or patronised while in the airport – with half of those reporting to have struggled to enjoy themselves at Heathrow.

“When I go to the airport, I feel like I am preparing for battle.”

We've understood that our provision of assistance services is insufficient as it only caters for 6% of those who require support every day. It is clear that on occasions our service does not meet expectations or treat people in a dignified way;

“Some people are nice when they assist you but others it's clear that it's just their job – for them we're just people with a disability.”

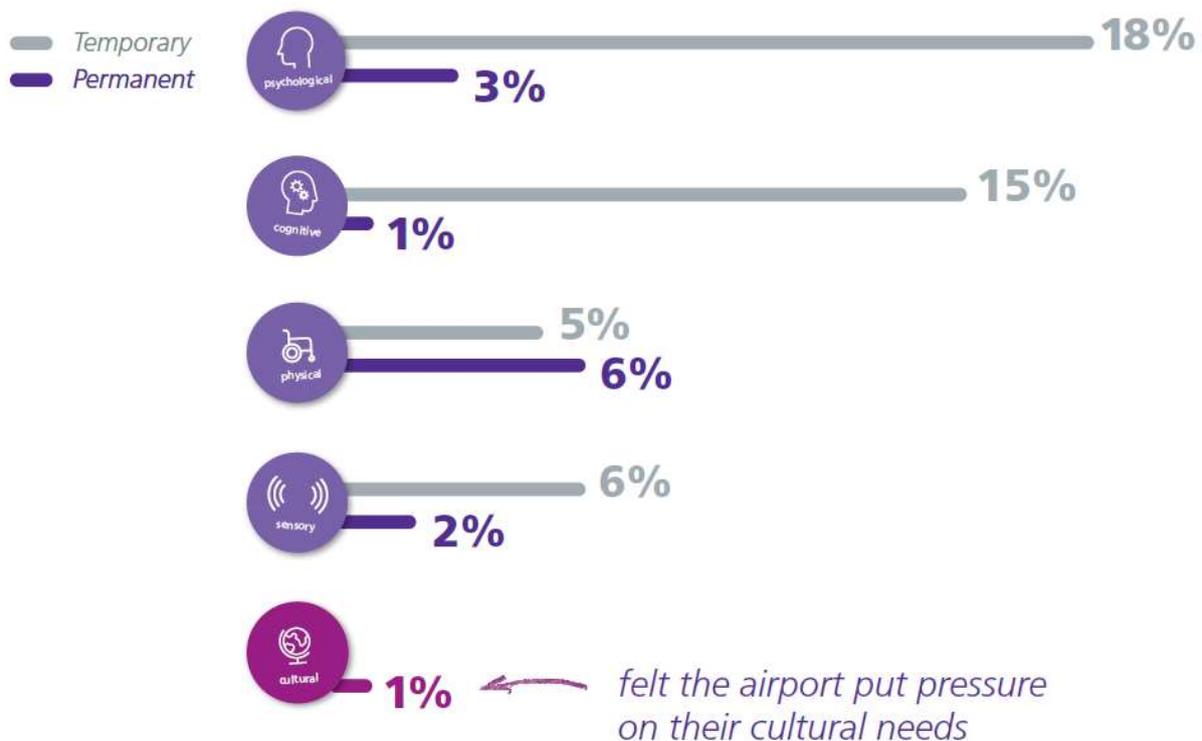
⁷¹ Revealing Reality, *Understanding the Airport Needs of Passengers Requiring Support*, October 2020

Our services do not adapt to encompass those passengers who may require support on a temporary basis. Neither have we made sufficient allowances for all types of support require, which we've understood to be;

- People with **sensory** needs, including those with visual impairments, hearing impairments, blocked sinuses and migraines.
- People with **physical** needs, including those with arthritis, irritable bowel syndrome, and those who are pregnant or with broken limbs.
- People with **cognitive** needs, including those with dyslexia, autism, dementia and those experiencing jetlag/ exhaustion.
- People with **psychological** needs, including those with mental health issues and those experiencing anxiety and stress.
- People with **cultural and identity** needs, including those who have requirements around religion, diet, clothing and protecting modesty.

Many of our consumers may also fall into multiple categories too. On any given day we may have following number of Passengers Requiring Support.

Figure 20: Percentage of Passengers Requiring Support on any given day



Source: Revealing Reality

In evolving our understanding of PRS needs, we have uncovered that the largest group of needs are typically psychological and cognitive. Many consumers have reported feeling tired and exhausted when travelling. In addition, anxiety and stress levels are cited to be high;

“I don’t feel like the staff are on my side...I felt like they weren’t taking me seriously or doing what they could to help.”

Problems can be experienced across all stages of the customer journey – from the overwhelming idea of travelling to the airport, to struggling to navigating around the airport to being separated from family members at immigration. 42% of assistance users felt like the service they received was either under or over delivering, with the services being set up for the whole journey for those with high levels of need.

Three high level needs were identified, which capture what matters most to passengers; to trust, to choose and to enjoy.

To Trust

When using the airport passengers want to feel like the airport cares about them and takes them seriously. They want to trust that they will be able to do what they need to do on time. Consumers are seeking reassurance that the airport is on their side.

Practical aspects include:

- Information instructions being hard to find or non-existent –
“The immigration officer was very rude. He was not welcoming. And he was the first person I met getting into your country”
- Airport processes being complicated/ overwhelming –
“In the airport restaurant, I raised my hand to call a waitress, as we are doing in Hong Kong. I was told not to do this in England. I felt very embarrassed.”
- Not knowing what you’re meant to do at each stage – 30% go into airports expecting it to be a battle that they need to be ready for.

To Choose

Consumers want to maintain their independence as much as possible. Perceptions of independence are unique to the individual, and passengers typically know what they need themselves. Passengers are seeking flexibility rather a ‘one size fits all’ solution and are seeking to choose the support that is right for them.

Practical aspects include:

- Being somewhere/ doing something that was uncomfortable –
“We felt like we were being rushed through the airport and not given time to organise all our paperwork. People forget that many travellers don’t know what to do, or can’t move quickly.”
- Problems communicating with staff –
“...try to avoid all interaction with any staff... they are normally angry and unhelpful so I use websites to find out what facilities are available”
- Not knowing all of the options available/ having all the information –
“you can organise a wheelchair, but I don’t need one of them.”

To Enjoy

Consumers want to maintain their independence as much as possible. Perceptions of independence are unique to the individual, and passengers typically know what they need themselves. Passengers are seeking flexibility rather a ‘one size fits all’ solution and are seeking to choose the support that is right for them.

Practical aspects include:

- Not knowing how much time you have before needing to move on –
“In the waiting area we were told we only had half an hour to go and get some lunch. This meant a rushed lunch, no time for shopping or enjoyable activities, and a long time back in the waiting room before we actually had to get to the gate.”

- Not feeling able to relax and feel positive –
“We had a long four hours to wait for the bus. There wasn't a lot to do in arrivals except a Costa and Cafe Nero.”
- Not being able to get the type of food you want –
“I wanted better information about where food for special diets (i.e., gluten-free) would be available. Do I stop now? Is it just ahead?”

We have used the insight to develop a meaningful response and way forward. We intend on responding to our Passengers Requiring Support in the H7 period, but are mindful that we have financial limitations. We recognise that we cannot offer tailored solutions for every need or deliver every request or suggestion we receive from charities. We will therefore be focusing on initiatives that meet the majority of passengers' needs – currently our assistance only helps 6%. The principles we've set out are that the provision:

- Should be universally inclusive wherever possible.
- Shouldn't cause more stress.
- Enables independence wherever possible.
- Helps people to share their needs.

We are still forming all the specific initiatives we will undertake. Our initial considerations are; offering a range of seating options, using our digital channels to help the feeling of control and settling nerves, allowing people to specify what level of support they need, creating a warmer, more relaxing environment using greenery and space. Our colleagues will also play a key role in providing a welcoming, attentive and proactive service – capable and confident of reading when passengers need help and when they would prefer their own space. Our business cases will be based on creating a better experience for our passengers and creating a halo effect for everyone.

Covid-19 has exacerbated the challenges people were already facing when using airports. Revealing Reality conducted eight further remote interviews to get an update from them about how Covid-19 has influenced their views on travels and airports. Some key themes emerged:

- Not knowing what to expect when travelling and a lack of knowledge about how airports were managing social distancing.
- Some respondents were worried about wearing a mask for long periods of time, whereas others saw this as reassuring.
- Many expressed a desire for reassurance by visibly seeing the airport being cleaned regularly.
- Those who had been shielding or who had conditions that made them more susceptible to Covid-19 were more concerned about travelling.

2.3.7 Continually listening

We recognise that to achieve our vision and enhance our airport to meet consumers expectations, we must understand the needs of our passengers as comprehensively as possible. Our engagement throughout the Covid-19 pandemic has helped to guide our response and importantly shape our ongoing H7 plans.

We will continue to listen to our consumers through the H7 period. While we are confident that our plans will deliver our consumer outcomes, by continually engaging with our consumers we have the opportunity to adapt and refresh our plans based on the consumer needs. In our Consumer Engagement Strategy, included in Annex 8, we outline our intentions for ongoing engagement.

2.4 – CONSTRUCTIVE ENGAGEMENT

Chapter Overview

- We have engaged extensively with the airline community through Constructive Engagement and other governance forums. Constructive Engagement involved over 80 hours of formal engagement over a two-month period.
- We have considered airline feedback, taking on board comments over the course of the nine weeks of Constructive Engagement, as well as the airline community's written response, and meaningfully adapted our H7 plan as a result.
- Where there are differences in the views of the airline community and Heathrow we have provided the rationale for these, including responding to points within the airline community's alternative business plan.

2.4.1 Introduction

We value airline engagement and feedback as it helps inform and improve our decision making. The Revised Business Plan (RBP) has benefitted from airline feedback following nine weeks of formal Constructive Engagement (CE) that ran from August to September 2020. CE involved over 80 hours of thorough and challenging discussions on all business plan topics with wide attendance from airlines, the CAA and Heathrow teams. This was in addition to 50 hours of structured engagement meetings relating to the IBP earlier in 2020, resulting in over 130 hours of formal engagement on our business plan over the last year.

CE built upon the information available in the Initial Business Plan (IBP), published in December 2019, the Building Blocks Update (BBU) from July 2020, as well as further information provided during the engagement sessions. Through August and September 2020 Heathrow brought in over 50 subject matter experts from across the business to lead over 70 separate presentations. Managers from our Security, Services, Retail, and Surface Access teams all participated as well as Finance, Regulatory and Strategy, and Procurement leads. This was key to ensure the right people were involved in airline discussions. The main workstreams included:

- Passenger Forecasting;
- Operating Costs and Commercial Revenues;
- Capital Plan;
- Capital Efficiency;
- Regulatory Framework;
- Other Regulated Charges; and
- Measures, Targets and Incentives.

We also held standalone sessions on the WACC, the Regulated Asset Base, and our security strategy.

Our engagement is wide ranging and is not just limited to the nine weeks of CE on Heathrow's business plan. We have extensive engagement through regular governance meetings under the Joint Steering Board - such as the Capital Portfolio Group and Future Portfolio Group, Operations Board, Above- and Below-Wing Airport User Committees and Surface Access Airline Stakeholder Committee. Since Covid-19, additional temporary governance groups, such as the Joint Covid Planning Group and Testing Trials Group, have also been established. This regular governance involves around 100 hours of discussions each month on Heathrow's priorities, operations and actions and joint review of key business cases and decisions, which is supplemented by a range of informal bilateral conversations and meetings.

Heathrow was transparent and responsive in the information provided during CE. There was a clear rationale provided wherever information was not available or could not be shared due to commercial or competitive sensitivity. Where information could not be shared, we provided an alternative where that was possible. We responded to over 99% of airline requests, closing over 150 actions during CE.

Throughout the CE process Heathrow has sought airline views to incorporate these into our plan where possible. The airline community also submitted a formal response at the end of CE. This was a useful summary of their perspective, which we have considered in detail and incorporated into plans where we considered this was appropriate. We have noted specific points of feedback in many of the chapters of our plan to show how this has been considered.

Below we set out the common themes from the airline community feedback in its Airline Alternative Business Plan, as well as more specific feedback by regulatory building block. For more detailed explanations on how we have considered and incorporated airline community feedback into our plans, please refer to individual chapters.

2.4.2 Overall feedback themes and the Airline Alternative Business Plan

We heard common themes from airline feedback¹, even as airline views are heterogeneous:

- Airlines are more financially constrained than ever before - they want to see a charge that is competitive and as low as possible;
- While airlines see the need for some investments, they think Heathrow needs to be very disciplined to only invest what is critical. They think Heathrow should prioritise any 'discretionary' capital investment based on whether it can deliver further efficiencies;
- Airlines accept that Covid-19 has hit non-aeronautical revenues and potentially led to new, unforeseen, costs. But they believe it is important the airport be innovative and entrepreneurial in identifying new revenue streams and low-cost solutions;
- Airlines accept the future is uncertain and welcome a framework that is flexible to a volatile future.

These overarching themes form the basis of the airline community alternative business plan², which specifically included:

¹ During Constructive Engagement or Heathrow Airline Community, *Airline Community Response to H7 CE*, October 2020

² Heathrow Airline Community, Annex 2: *Airline Affordability Assessment - Alternative H7 Business Plan*, October 2020

- A WACC of [REDACTED]
- Capital expenditure reduced to [REDACTED]
- Commercial revenues increased by [REDACTED] (and no surface access strategy revenues)
- Operating costs reduced by [REDACTED]

2.4.2.1 Airline community proposal on WACC

The airline view on WACC of [REDACTED] is lower than Heathrow's view of 8.0% set out in our RBP. We note that the airline community's view is also lower than the pre-tax WACC for water companies identified by the CMA of 2.96%³ and is not reflective of the risk of airports pre-Covid, never mind post-Covid. We do not consider that the airline estimate reflects appropriate market data on the cost of capital for Heathrow.

In contrast, our estimate is based on robust market data and consistent with the approach taken by the CMA in the recent Water and NERL appeals. The airline community's estimate would not allow us to finance our activities or deliver the required capital expenditure to maintain airport infrastructure.

2.4.2.2 Airline community proposal on capital expenditure

In the RBP we set out that the maximum capital envelope invested in any scenario will be £3.5bn⁴, reduced from £5.3bn in our BBU having reflected on airline feedback. This is made up of a £2.1bn component that is critical ("Protect the Business") and a £1.4bn amount ("Win the Recovery" and "Build Back Better") which are essential to respond to changing market conditions. The Protect the Business portfolio is therefore closely aligned with the airline community proposal of £2bn for H7 and, in line with airline community feedback, focuses on the delivery of critical expenditure.

The £1.4bn portfolios are required to respond to changing market conditions, supporting a more efficient and commercial airport that responds to consumer needs post-Covid. These investments will not only structurally lower the charge but can also support airline ambitions to automate their processes and remove operating costs.

We only propose to invest this sum if:

- Recovery in passenger demand warrants it. In the Low cases – considered in the sensitivities in Chapter 10.2 – we only spend the critical amount.
- There is a strong business case, identified alongside the airline community through the existing Capital Governance process.

We believe this approach is consistent with the airline proposals insofar as we are clear what is critical to invest in any scenario and we are clear the conditions and purpose of discretionary spend, including addressing key challenges such as lowering the charge or enabling automation. This represents a significant shift in our plans since the publication of the Building Block Update in July and is the product of meaningful Constructive Engagement since.

³ Calculated from post tax cost of equity of 4.14% (RPI) and vanilla WACC of 2.57% (RPI) using a tax rate of 19% and gearing of 60%. See Table 9.27 of the CMA water interim findings.

⁴ All prices in this document are in 2018 prices unless otherwise stated.

2.4.2.3 Airline community proposal on commercial revenues

For commercial revenues, overall, we consider that the work conducted by [REDACTED] provided some useful insight and information. The airline community response presents a [REDACTED] overall variance to Heathrow's commercial revenue projections as set out in the BBU. This is a result of the airline community including no surface access strategy revenues but increasing the core commercial revenues by [REDACTED].

Discrepancies on core commercial revenues come primarily from the treatment of the Government's announcement on VAT, which the airline community consultants significantly underestimate. Additionally, discrepancies come from [REDACTED]'s assessment of the influence of passenger mix and economic outlook in concessionaires' performance, minimum guarantees and margins, which have also been significantly and negatively impacted by Covid-19. Unlike the airline community's alternative business plan, we have also included forecasted surface access strategy revenues, including a Forecourt Access Charge.

2.4.2.4 Airline community proposal on operating costs

The airline response proposed a reduction of [REDACTED] versus our BBU projections. There are a number of components to the proposed reduction in the airline community plan which we have considered and respond to:

- *Airline community inclusion of benefits from capital projects and known restructures as well as continuing to increase the number of staff on new contracts. Further recognition made for contract renegotiations ([REDACTED])*
In the RBP, we have included a clear link between operating costs and the capital plan, included explicit savings for projects/initiatives where possible and included long-term savings brought forward in 2020. However, not all savings made in 2020 in response to the impact of Covid-19 are permanent. Many savings are temporary or volume related and will therefore return as passenger volumes grow. As we are starting H7 with an efficient cost base, we cannot continue to make savings at the level achieved in Q6. It is not logical to assume saving levels can continue indefinitely.
- *Airline community view that CPI rather than RPI should be used to inflate*
Our forecasts use nominal input price inflation from The Office for Budget Responsibility and other government sources and are not inflated by RPI. This means there is no potential benefit from using CPI inflation methodology as set out in the airline community response.
- *Airline community view that surface access costs should be removed ([REDACTED])*
Our surface access strategy has been grounded in consumer research and will deliver on our consumer outcome "I am confident I can get to and from the airport". Surface Access operating costs cover a number of initiatives to deliver the strategy, including running the new Forecourt Access Charge. Introducing an Access Charge is a key element of the surface access strategy, is aligned to our sustainability objectives and will grow revenue in line with the "user pays principle". Under the single till, this means that revenue from charges levied on passengers who use forecourt drop off facilities will go to making the overall airport charge more affordable for all passengers. This mirrors the process for the treatment of car parking revenues or revenues from Heathrow Express. See Chapter 7.4 – Surface Access for more details of our surface access strategy.

- *Airline community view that service / Covid-19 costs should be removed ([REDACTED])*
During Constructive Engagement, the airline community agreed that costs associated with our service response to Covid-19 should be included in the forecast as an overlay. Both our Covid-19 and Enhanced Service overlays are underpinned by our consumer engagement and are essential to delivering our consumer outcomes. See section 7.1.6.7 and 7.1.6.9.
- *Airline community proposal of removing funding Heathrow's pension deficit ([REDACTED])*
It is inconsistent policy for pension deficit costs not to be included in the plan as previous benefits for consumers through lower pension payments were passed on.
- *Airline community challenge on Heathrow to either gain an improved return on assets or sell them ([REDACTED])*
The [REDACTED] airline challenge does not reflect the reality of the treatment of investment properties on the RAB and is therefore inaccurate and unrealistic for Heathrow to achieve in H7. The value of these properties does not increase on the RAB as it is not an asset register; the properties remain at cost so airlines are not paying the costs of the property value through charges. The investment properties are valued due to an accounting requirement rather than being held purely for revenue. A number of these assets are operationally necessary, such as car parks, lounges and offices and therefore difficult to sell. Additionally, we do not consider the improved return on assets or selling of assets fits clearly within the operating costs forecast.

2.4.2.5 Airline community proposal on the airport charge

We consider that the airline community's alternative business plan produces an average charge ([REDACTED]), which is unrealistic and founded on a number of incorrect assumptions. We have set out the reasons for this in the sections above with respect to each regulatory building block.

There has been significant upwards pressure on Heathrow's airport charge driven by three fundamental shifts in our economics post-Covid, which are out of our control:

- Passenger numbers are significantly lower than anticipated with 85m fewer passengers than our central IBP 2R forecast – an entire year of lost passengers over the period. While we have made big cost reductions where possible, we still need to finance a £16 billion asset base that will be used by far fewer passengers than it was designed for.
- The risk of operating and investing in the airport has undergone a paradigm shift. The parameters that are used to set the WACC have all shifted and our credit has been downgraded. This inevitably leads to a higher cost of capital than put forward in our IBP. We consider that this is a long-term change in the perception of risk.
- Our costs and revenues have been hit by Covid-19 and Government policy. Dealing with Covid-19 adds some costs, while Government continues to levy almost the same business rates despite passenger numbers being materially lower. The combination of a shift in passenger mix, change in behaviour (e.g. decline in use of foreign currency) and changes to VAT regulations are cutting commercial revenues. The net result, even

after significant mitigation, is a reduction in our non-aeronautical P&L, putting further pressure on charges.

Left unmitigated, the combined impact of these shifts is an increase to the charge to £38.44 per passenger.

We recognise the need to ensure airport services remain affordable and propose a raft of measures that will mitigate the increase on the airport charge:

- We have proposed an adjustment to our RAB to ensure there is continued confidence in the regulatory process while minimising any increase on the charge and keeping it lower than it would be without a RAB adjustment. We forecast that a return to predictable regulation could reduce the cost of capital by 149 basis points (from 9.49% to 8.0%). It also creates the financial capacity to enable the suspension of an element of regulatory depreciation for the duration of H7. The combined impact of this change reduces the unmitigated charge by approximately £8.55 per passenger – putting c. £2.5bn back into the pockets of airlines or consumers over H7.
- We have proposed flat charges over the period in H7. Coupled with the depreciation reduction this ensures that charges are at the lowest level possible over the period. The P0 increase in 2022 is required to ensure that our plan is financeable. By avoiding subsequent charge increases we ensure that prices are as low as they can be during the period.
- We have listened to airline feedback and cut back our capital investment plan to no more than £3.5bn. The majority of this plan is based on what is strictly necessary to keep the airport safe and operational. Any discretionary spend beyond that is targeted at making Heathrow even more efficient or to increase commercial revenues – invested only if there is a strong business case to do so. These investments mitigate the increase in charges and support airline ambitions to reduce their costs by enabling the automation of more processes above and below wing.
- We have presented options to make more efficient use of airport infrastructure. We want to explore these further with airlines. These include reopening T4 later into H7 without harming service, with resulting cost savings flowing to consumers through a lower charge.

The combined impact of these mitigation measures is to reduce the charge from £38.44, to £29.89.

We are also interested in exercising other levers that can bring the airport charge down further. These include a longer regulatory period that would allow the later years, where demand has recovered, to offset weaker demand in the earlier years. Our plan is contingent on the CAA accepting a minimum five-year regulatory period. We also consider a sensitivity for a seven-year period that could reduce the average H7 charge by a further £1.07 relative to a five-year period.

2.4.2.6 Airline community view on scenarios

The airline community also requested the further use of scenarios. As outlined in Chapter 10.2 - Outcomes: Next Steps, we consider six sensitivities to our RBP. In each, we isolate some changes to our building blocks and follow through the impact on the charge and consumer outcomes. This gives a high-level view of how our plans will evolve in response to changing events. We present the sensitivities not as an alternate plan but to preview how our decision

making might have to alter and confirm that the plan is sufficiently robust to adapt to potential futures. If those futures were to become more likely over the course of 2021, we would revisit these sensitivities and how changes to one or more building blocks have a more profound effect on our plans.

The sensitivities have been developed at the request of our airlines and include:

- Higher (p90) and lower (p10) passenger demand forecasts
- The absence and timing of the Covid-related adjustment to Heathrow's RAB
- Shorter (two-year) and longer (seven-year) regulatory periods.

We have also used a scenario-based approach in the RBP for passenger forecasting, developing four scenarios to reflect the potential circumstances that may emerge over the coming years. These scenarios take into account the impact of economic activity, potential future quarantine measures and the impact of other airport restrictions on passenger demand and the supply of capacity by airlines. Our model splits Heathrow demand by 40 geographic markets to allow for more nuanced border opening assumptions and distinguish weightings of travel purpose to markets

These scenarios are then combined and weighted through Monte Carlo analysis to provide three main scenarios, high, mid and low on which we have assessed our plans. Our RBP is based on the mid-case scenario in order to provide a clear plan for the H7 period. Chapter 10.2 Outcomes – Next Steps shows the impact of these different passenger numbers on our plans for the H7 period.

In addition to these overall themes, we had specific feedback from the airline community for each workstream.

2.4.3 Passenger forecasting

The ability to forecast for 2022-26 was a key topic discussed during the passenger forecasting CE workstream. There was agreement that this was difficult, so a flexible approach was required. In the RBP Heathrow has taken the approach of fixing the formula, not the input assumptions. We will provide updates in 2021 as more information emerges.

The airline community requested that scenarios are used to a greater extent in the RBP. We have used a scenario-based approach to passenger forecasting in the RBP, developing four scenarios to reflect the potential circumstances that may emerge over the coming years.

Through CE there was a shared desire to reach a mid-forecast as well as a range, but acknowledgment that uncertainty might limit our ability to do this accurately. We have used a scenario-based approach to reflect the uncertainty and combined these scenarios based on a simple weighting in order to create a low, mid, high forecast output.

On long-term travel demand, IATA put forward that by 2027 air travel demand in the UK is expected to be lower compared to the level of demand in the absence of the pandemic.⁵ We agree that the impact of this shock is such that we will not return to a pre-Covid baseline. In all but the most optimistic economic scenario, the GDP impact alone would be enough to put

⁵ Heathrow Airline Community, Annex 3: *IATA Economics summary - Key Points*, October 2020

us on a new forecast trajectory, and that is before other longer-term impacts, like reduction in business travel, are considered.

There was some disagreement over the price of fares over H7, with the airline community contending that airlines will be incentivised to price low to stimulate demand. We consider that there is high uncertainty in the outlook on fares but the short-term downward pressure on fares of low fuel prices, excess capacity and weak demand could quickly turn to upward pressure from lower utilisation and increased operating costs once demand returns. We must also consider the impact of carbon pricing on airfares, which is another upward pressure.

The airline community also disagree that airlines may struggle to meet demand during H7. We consider that regardless of which carriers are able to survive through Covid-19, the financial impacts suffered by those that do come through the immediate crisis could inhibit the pace of any recovery. The scale of airline resource cuts will take time to build back from but with the high uncertainty over the impact these cuts could have on demand, we have considered a number of scenarios for the RBP. The capacity supply model used for the RBP also notes that airport capacity could also restrict demand during recovery as a result of factors such as Covid-19 related space requirements.

2.4.4 Operating costs and commercial revenues

During the CE process the airline community was critical of Heathrow's drivers-based approach. It considered that it failed to address how Heathrow responded to the initial impact of Covid-19 and did not take into account known step-changes in costs or revenues such as the Magenta or Security Transformation programmes. During CE we discussed the approach at length with the airline community and made a number of refinements for the RBP.

For operating costs:

- We have revised the base year to 2019, in line with airline community views;
- We have provided transparency of the short- and long-term impacts of post-Covid cost savings;
- We have built in explicit savings from projects where these are available, such as cost of change; and
- We have provided clear links between the capital plan and operating costs efficiency.

For commercial revenues:

- We have revised the base year to 2019;
- We have included a Covid-19 impact: passenger mix, economic outlook and contract renegotiations;
- We have reviewed our mode share assumptions used to forecast our surface access revenues, using information on changed passenger behaviour post-Covid; and
- We have provided more detail on the potential impact of the Government's announcements on Duty Free and VAT.

The airline community also employed consultants to produce operating costs and commercial revenue forecasts. For operating costs, we take into account some comments from [REDACTED] but we consider that some of the key assumptions [REDACTED] have made

has led to them producing an unrealistic forecast for 2026. [REDACTED] 2026 core operating cost forecast is [REDACTED] serving [REDACTED] passengers. However, our forecast out-turn for 2020 is £913m serving 22.3m passengers and this includes temporary savings of furlough/salary reductions and volume-related contract savings. It is simply not realistic to assume the same operating costs for 2026 as 2020 when serving over 3.5 times as many passengers. Similarly, this forecast assumes a [REDACTED] cost saving against the 2019 baseline; it is unrealistic to deliver ~20% savings on an already efficient cost base.

[REDACTED] put forward that although the econometric benchmarking study by KPMG⁶ does find that Heathrow has reduced its costs over the period studied by more than comparator airports, the chosen model cannot be used to conclude that Heathrow now operates at the efficiency frontier. And more broadly, [REDACTED] had concerns about the application of the KPMG study, which assessed the efficiency of a pre-pandemic Heathrow, to post-pandemic operating costs forecasts. KPMG have responded to all queries raised by [REDACTED] and their response is included in Annex 22.

We also considered the commercial revenues report produced by [REDACTED], which we think provides some useful insight. However, in some circumstances assumptions were made, for example on space and spend across passenger types, which we have corrected for in the RBP. Another key area of difference was the impact of the recent government announcements on VAT and duty free. In its analysis, [REDACTED] did not take account of the full impact of the VAT changes on Heathrow's commercial revenues. The report focused only on the impact on retail margins but did not take account of the impact on the direct revenues Heathrow receives from VAT refund operations and lost retail sales.

Both [REDACTED] and [REDACTED] advocated a more bottom-up approach to forecasting. While we have incorporated feedback and made changes where appropriate, Heathrow has clearly evidenced the driver-based approach and discussed the methodology and output at length with the airline community. We continue to believe it offers both proven accuracy, represents regulatory best practice⁷ and has the ability to adapt to different passenger growth scenarios.

2.4.5 Capital plan

The discussions with the airline community during CE focussed on both the size of the portfolio and prioritisation of scope within it.

The airline community provided feedback that the £5.3bn capital envelope in the BBU 'High' scenario was too large and an envelope of c.£2bn would be more appropriate. As a result of a forecast reduction in passenger volumes, the scale of investment has been reduced from the original High scenario of £5.3bn to a maximum of £3.5bn.

⁶ KPMG, *Airport Operating Cost Efficiency Benchmarking*, October 2019

⁷ Other regulators such as Ofgem and Ofwat have been using a driver-based approach to cost forecasting since the 1990s as they focus on benchmarking total expenditure using a top-down approach. Ofwat's PR19 approach was based on an econometric approach to cost modelling for the majority of the cost base, with other costs assed by exception "We use econometric models to benchmark companies' costs and set efficient cost allowances".

Another piece of feedback from the airline community was that Heathrow should start with establishing the minimal required level of capital to address safety, security and regulatory matters, with further programmes / projects to be progressed on a case-by-case basis. The £2.1bn Protect the Business portfolio is aligned with the airline community view of starting with essential investment first and ensures that we deliver a safe and secure environment for our passengers, our people and wider Team Heathrow colleagues.

Through the CE process the airline community also provided feedback on a number of major projects that were set out in the BBU:

- The airline community did not support the Southern Road Tunnel as part of H7 plans; we have de-prioritised this for H7.
- The airline community understands the requirement to deal with the aging T1 baggage infrastructure; T1 Baggage Prolongation is included in the Protect the Business portfolio to maintain current performance of the T1 baggage system serving T2. Further work is being progressed to determine the most appropriate holistic solution for T2 baggage.
- Regarding Western Rail, the airline community outlined they are supportive of the principle of heavy rail into Heathrow but would need to understand the actual costs and evidenced business case. A contribution to Western Rail is not included in the H7 capital plan proposals but T5 Station Fit-Out is included in the Build Back Better portfolio to enable the future connection of Western Rail to Heathrow. We are currently reviewing the potential of making a contribution to Western Rail at a later date given the revised project timescales.

The airline community acknowledged that sustainability remains a priority but put forward that meaningful investment is not possible until stability returns. In the RBP, the Build Back Better investment has been forecasted from 2025 when passenger volumes are projected to have increased and be more stable.

The airline community also requested that the Win the Recovery portfolio included investments to drive out inefficiencies in the cost of operating for the whole airport community, to benefit the airport charge; the RBP includes an allowance for this.

In parallel to CE and maintained once CE ended, Heathrow has continued engagement with the airline community through the Capital Portfolio Board to help shape the required programmes and projects for H7. During H7 we are proposing to continue airline community review and engagement, including through the retention of the Development and Core ex-post framework for the delivery of larger, one-off projects.

2.4.6 Capital efficiency

During CE, the CAA was still formulating and consulting on its capital efficiency proposals from CAP1951, and Heathrow and airlines sought further clarity from the CAA on its proposals. The CAA team has since hosted workshops with Heathrow and airline community, though has yet to finalise its policy.

The CE process was productive in establishing agreement on the broad aspects of the capital framework and understanding the key concerns in Q6. There was clear consensus that there is no fundamental concern or issue with the Q6 framework. This includes the continuation of

the Development and Core gateway process. The flexibility the existing framework brings is key for H7 given the uncertain outlook and must be retained.

Heathrow has demonstrated the strength of Development and Core. The actual cost of projects delivered through Q6 was within 0.5%⁸ of estimates of core values. Development and Core provide the scope to make decisions with airlines reflecting circumstances in real time. This brought us both to question the timing of the CAA's proposal to introduce ex-ante in H7.

All stakeholders have responded to CAP1951 and engagement on capital efficiency will continue through our existing governance forums. We are planning to further engage airlines and the IFS on these matters early in 2021 through the IFS Working Group.

The airline community also provided some specific feedback on Leadership & Logistics (L&L). The airline community proposal to treat L&L as a separate standalone item is something that Heathrow will consider in terms of both financial accounting applicability, and also any impact the H7 regulatory framework (ex-ante, ex-post) would have on the working arrangement.

Risk and procurement were two further areas which the airline community would like to see developed. The risk processes for H7 will be developed alongside the other regulatory aspects with potentially differing routes for ex-ante and ex-post projects. Heathrow will continue to keep the airline community updated with regards to the procurement strategy; a progress update is currently planned for the IFS Working Group in the first months of 2021.

2.4.7 Regulatory framework

The regulatory framework discussions in Constructive Engagement were collaborative and wide ranging on vital elements of the regulatory construct. These discussions were in part novel, reflecting the unprecedented times.

There is common agreement with airlines on the core element of the regulatory construct to retain RAB-based regulation on a single till framework for H7. However, if market realities continue to change, the RAB based framework may need to be reviewed. We adopt a consistent approach with airline views on using a five-year regulatory period as the basis for our RBP, which the airline community also terms as its baseline position.⁹ The airline community was clear that its priority is to have price certainty over H7 and we agree a stable price is important. We believe that, in order to create price stability, a minimum five-year regulatory period is required.

Given the uncertainties we face, we agree with airlines that there is a necessity of some form of risk-sharing and we propose the specific mechanism that addresses this as part of our proposed price control adjustment mechanism. While we believe the mechanism we are proposing is the right one, and a necessary baseline mechanism to mitigate the uncertainties of the H7 period, we will review whether any additional risk and reward sharing is necessary through 2021 when we have more evidence on our ability to forecast for the H7 period.

There are differing views on the inclusion of a mechanism to adjust the price control in the case there is a material change in assumptions versus those used to set the price control. The airline community believe the WACC set for H7 will incorporate all material risks and that the

⁸ excluding the tunnels, HBS and T3IB projects

⁹ Heathrow Airline Community, Annex 13: *Regulatory Framework Airline Community Interim Feedback*, September 2020

Q6 settlement did not include a “general shipwreck clause” or explicit re-opening of the regulatory price control after being set ex-ante.

We disagree with this assessment and our proposal builds on the Q6 settlement which already included provision for the CAA to review the price control in exceptional circumstances.¹⁰ Our proposed risk sharing mechanism is a key part of the upfront conditions we are proposing on when the price control can be adjusted, in order to provide certainty to all parties. We propose that these are included in Heathrow’s Licence.

2.4.8 ORCs

Airline engagement on ORCs has been continuous through Q6. We engage regularly through governance forums established with airlines such as the Other Regulated Charges Group. Through this process we agree annual prices and any modification to the way these charges are levied to users.

Constructive Engagement built on this process with a particular focus on which elements should be within the scope of ORCs for H7. There are several areas of common agreement on the scope and format of H7 ORCs.¹¹

Through CE it was agreed that PRS should remain as an ORC and to focus on developing our partnership approach with airlines to ensure we deliver the service our consumers expect. We agreed with airlines to move check-in, automation, heating, gas and common IT charges to aeronautical revenues.

We agreed significant structural changes in the scope of ORCs, including moving to a ‘marginal approach’ to cost. This means moving airline share of annuities, allocated costs and, where necessary, other uncontrollable costs to aeronautical charges.

We also discussed the treatment of business rates and CAA Licence Fees. The airline community agreed that business rates should be subject to a full pass through, building on the mechanism currently included in the Q6 Licence. Airlines were also clear that they wanted increased transparency on the business rates bill as part of these changes, with the potential for an independent third-party assessment. We agree that transparency is key. Therefore, we have proposed to include business rates as an additional ORC. This allows business rates to be subject to the same levels of robust governance and transparency as other ORC costs. We propose to manage CAA licence fees through a factor adjustment in the aeronautical charge.

We also made other specific ORC proposals in our IBP. We listened to our airlines and have changed our proposals. Most notably, we are not proceeding with our proposal to include a separate charge for cargo and we retain taxi feeder and bus and coach facilities as ORCs. We also responded to airlines by not proceeding with a winter resilience recovery mechanism and will keep this under review in H7 through our governance forums.

Above all, there was overarching agreement to ensure there is sufficient scope and flexibility within the period to make necessary changes that better reflect the reality at that time and are in the interest of consumers.

¹⁰ CAA Q6 Final proposals, para 12.114, page 242

¹¹ Heathrow Airline Community, Annex 12: *Other Regulated Charges - Airline Community Financial Assessment*, October 2020

2.4.9 Measures, targets & incentives

There was support from the airline community on the retention of a service quality incentive scheme. The airline community put forward that the current methodology of the SQRB scheme has worked well and driven the right behaviours, but the impact of Covid-19 may change this view. Recent months have led us to consider whether consumer expectations are changing and, as a result, Heathrow initiated further consumer research to better understand the evolving priorities of consumers.

We support the view by CAA and airlines that the scheme should be better adopted to reflected consumer research and needs. The RBP builds on this by using consumer research to inform our proposal for measures, targets and incentives.

Our proposals use the overarching consumer outcomes as the cornerstone of our passenger proposition which the airlines largely supported. This informed the measures that sit within this framework, which include 24 measures that are supported by the airline community.¹²¹³

The main area of continued disagreement was around the interpretation and inclusion of reputational measures where Heathrow plays a coordinating role across the airport community in delivering the consumer outcome. The airline community does not agree it is appropriate for measures that are not within Heathrow's direct control to form part of an outcome-based framework that sits within Heathrow Airport Limited's overall regulatory model. We are proposing to include measures of service quality for services which are not solely within Heathrow's control as reputational measures within our framework to ensure sufficient focus on the delivery of key consumer outcomes through all stages of the passenger journey, in line with best practice observed in other leading global airports. Our proposals are in line with CAA policy on outcomes-based regulation¹⁴.

The airline community agreed with the approach proposed during CE for setting targets for H7. In line with regulatory best practice, seen in particular in the recent PR19 price control review for water, we have used a toolbox of consumer evidence, benchmarking, expert evidence and cost benefit analysis to calibrate our proposed targets. This ensures that they are in line with consumer expectations, historic performance and the proposed cost base of our business plan.

The incentives set by the scheme play an important role in ensuring that Heathrow's regulatory framework and associated incentives are balanced. Airlines and Heathrow agree that the current level of rebates at risk, equalling 7% of airport charges, is to be retained. However, the airline community are not supportive of bonuses forming part of the scheme. Bonuses are an integral part of the scheme to ensure there is a balance of incentives and that Heathrow is incentivised to find innovative and efficient ways provide better service to consumers.

In order to reflect regulatory precedent and best practice, reflect consumer value of service improvements and incentivise the best possible service for consumers, we are proposing to increase the potential bonus levels. Bonuses will be available for most financially incentivised measures where service above expected levels is provided. While this increases Heathrow's

¹² Heathrow Airline Community, Annex 6: *Proposed H7 Consumer Measures*, October 2020

¹³ Heathrow Airline Community, Annex 7: *Measures Targets and Incentives - Additional Questions and Responses*, October 2020

¹⁴ CAP1540

potential to earn a bonus in H7, our unit rate mechanism reflecting that consumers value each unit of performance and 99% targets mean that our upside and downside exposure is not symmetrical.

The rebates in Q6 have been based on a knife edge mechanism. This means that rebates are paid as soon as performance drops below target. We disagree with the airlines' view that this mechanism should continue to be in place for H7. We have reviewed the structure of the incentive mechanism and are proposing to move toward a sliding scale mechanism for rebates through H7.

This prevents the perverse incentive currently present in the Q6 regime which means that, when Heathrow has not met the target, there is little or no incentive to improve performance for the remainder of the month as the full rebate is automatically payable. Every unit of performance counts to consumers and should count as part of our service quality incentive scheme, so an increasingly larger rebate should be paid as performance worsens up to the maximum threshold.

3 – PASSENGER EXPERIENCE

Chapter Overview

- This chapter is a critical part of our “Golden Thread”, linking our consumer insights to our investment and operating plans and consumer outcomes. At the centre of this is delivering our six consumer outcomes.
- We disagree with the CAA assertion in CAP1966 that consumers are willing to accept lower service levels. Our research indicates the precise opposite, and the CAA suggestion risks delaying recovery of demand. We will continue to base our business planning on delivering for our current and future consumers.
- Our insights confirm passengers continue to want a good value choice of flights (“an airport I want to travel from that offers me a good value choice of flights”). The impact of Covid-19 has reduced the destinations, frequencies and airlines operating from Heathrow – to the detriment of consumers . The best means of restoring passenger choice is to restore the economics of a hub airport.
- While passengers continue to want to “feel comfortable and secure”, “feel cared for and supported” and “have a predictable and reliable journey”, Covid-19 appears to have heightened certain needs.
- It remains unclear whether this is a temporary or permanent shift, but to keep delivering the same outcomes and deliver world class service we need to keep investing – we cannot afford to stand still. We will do this while ensuring great service is efficiently delivered, keeping the cost of operating at Heathrow competitive.
- Evidence indicates that we need to continue focusing on making Heathrow journeys easy, clean, reassuring and value for money. This can be delivered through a series of targeted investments and service improvements while ensuring that the cost of operating at Heathrow is affordable.
- Targeted investments in touchless technology, digital wayfinding, hassle-free security, automated processes and enhanced cleaning regimes will be carefully considered, all deliver immediate changes to passenger experience within the H7 period that respond to heightened passenger needs post Covid-19 and would be valued by consumers even if those heightened needs dissipated over time.
- As a result of having a clear thread linking insights and our plans, we can describe in detail how the passenger journey in H7 will improve on Q6 and meet passenger expectations about their airport experience. By being clear on our ambitions for passenger experience we can give structure to our plan and ensure it is truly consumer-led from inception to delivery.

3.1 Introduction

This chapter is a key part of our “Golden Thread”, that ensures consumers insights inform our plan and we have the right measures and targets to ensure we are delivering against our outcomes.



In this chapter we focus on the research seen in Chapter 2.3 – Consumer Insights and assemble it into a framework that can inform our investment and operating plans for H7.

This framework effectively becomes our refreshed “passenger proposition” and allows us to set out our ambitions for experience at the airport during H7. By having a clear view on what experience we want to deliver, it ensures the investments we make or the changes in process we undertake are targeted at what makes the biggest difference to passengers. It provides structure to the rest of the plan by ensuring there is a clear consumer lens through which to prioritise and interpret investments and changes to process. Targeted changes also ensure our investment and operations remain efficient – and we only do what passengers are willing to pay for, while keeping the airline cost of operating at Heathrow competitive.

This framework considers the other insights we have beyond those of just from our consumer research:

- It uses the conclusions of Chapter 2.1 – Impact of Covid-19 to provide relevant context on the constraints on our investment and delivery capacity for any new proposition. We note we need to focus on a proposition that is not capital intensive to deliver.
- It uses the conclusions of Chapter 2.2 – Market Insights to provide relevant context on the ways our competitors are investing to respond to findings, and how aviation and the wider economy is changing to meet changing consumer and market trends triggered by Covid-19.
- It uses the conclusions of Chapter 2.4 – Constructive Engagement to provide relevant insight from airlines. We note the need to make targeted interventions that make the greatest difference for the least amount of cost, avoiding making investments that later prove dated should consumer needs revert back to pre-Covid trends.

In this chapter we draw three key conclusions:

- There is no evidence that the CAA’s assertion that passengers will accept lower service post-Covid is true; indeed the evidence shows that the opposite is true. Willingness to Pay and Passenger Priorities research confirms customers expect more, not less. Delivering for our current and future consumers is our best means to accelerate recovery of demand and keep airport services affordable.
- The means to deliver high level socio-economic outcomes (“an airport I want to travel from that offers me a good value choice of flights”) are broadly unchanged: consumers still want direct flights to destinations they want to go to, at the right time and for the right price¹. We believe this is best secured by restoring the economics of a hub airport.
- While airport experience outcomes (“I feel comfortable and secure...”, “I have an enjoyable experience...”, “I feel cared for and supported” and “I have a predictable and reliable journey”) are unchanged, the means to deliver those outcomes has, and our passenger proposition will need to adapt as a result. Research indicates that this is

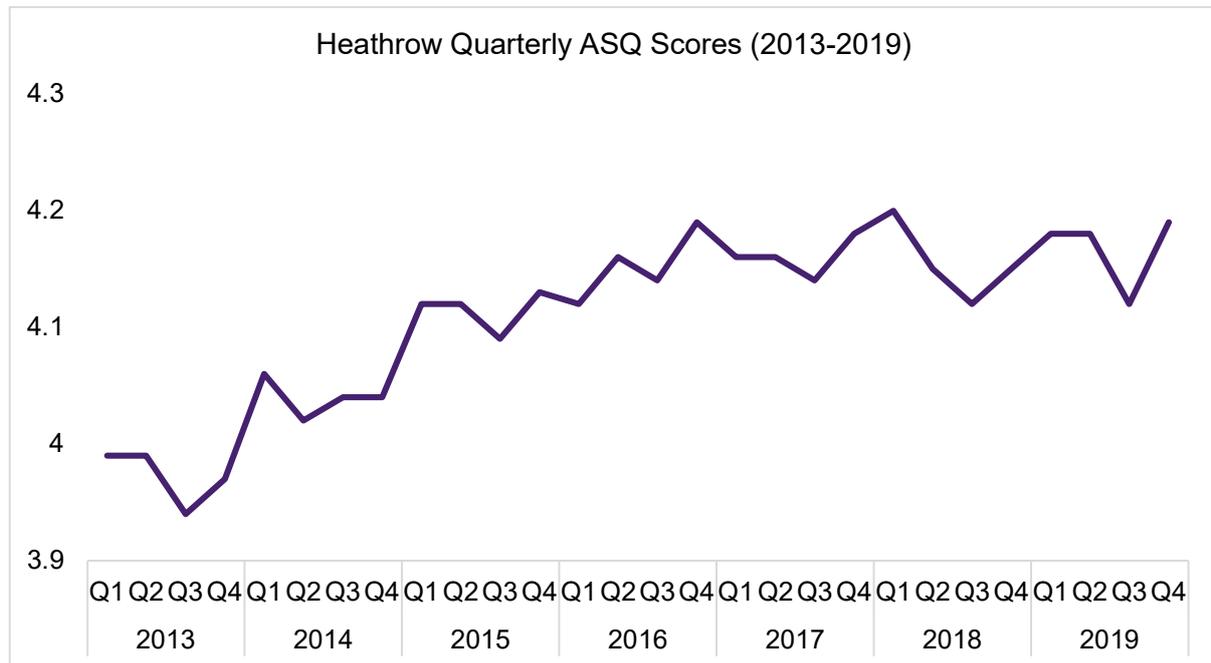
¹ Join the Dots, *Passenger priorities post COVID-19*, June 2020

best delivered by continuing to focus on a proposition that is easy, clean, reassuring and value for money.

3.2 Customers expect more from their airport experience, not less

Over the last regulatory period we improved our engagement with consumers and were able to better calibrate our proposition to deliver record levels of service at Heathrow while serving record numbers of passengers.

Figure 1: Heathrow Quarterly ASQ Scores 2013-2019



Source: Airports Council International

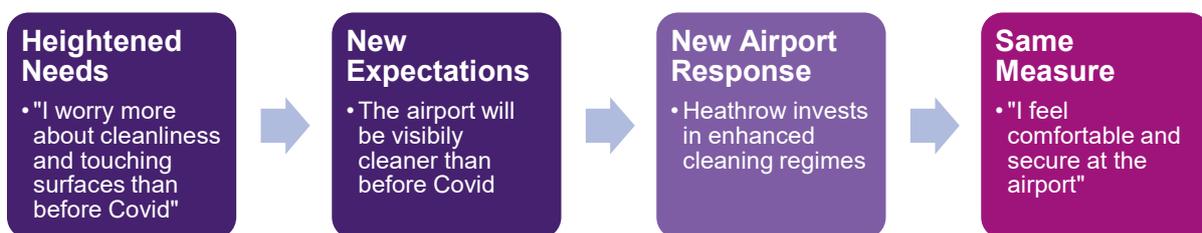
The consumer studies undertaken were consolidated into consumer synthesis research, which we have kept updated in the wake of the Covid-19 pandemic. These are summarised in Chapter 2.3 – Consumer Insights. This has enabled us to track how consumer needs have evolved in response to the pandemic. While consumer outcomes remain aligned to the six outcomes we have always targeted (below), there is significant evidence that consumers have heightened needs and changed priorities post-Covid.

Figure 2: Heathrow Consumer Outcomes



Source: Heathrow

This has a key implication: if we do not respond to these changes in consumer expectations then we will see consumer outcomes deteriorate and risk falling behind competitors. Even just to stand still and maintain the same outcomes, Heathrow will need to do things differently. This means that more expenditure and investment is required to respond to consumers' new needs and expectations.



In CAP1966, the CAA asserted that "a significant short-term reduction in investment may be an appropriate reaction to the present level of passenger traffic and uncertainty"². We agree that it could be appropriate in the very short-term, and Heathrow has done precisely that in

² CAP1966, p.25

2020 and 2021 to protect liquidity. However, this is not appropriate beyond the very short-term and ongoing deferral poses a serious risk of deteriorating consumer outcomes.

Our research, summarised in Chapter 2.3 – Consumer Insights, confirms:

- 67% of users preferred plans which offered targeted improvements in service particularly for Punctuality, Baggage and Passenger Experience and were willing to pay more for these to be delivered³.
- Only 2% of passengers were willing to accept a reduction in service in return for fares decreasing slightly⁴.
- 41% of passengers said they would use Heathrow less if we were to introduce the deterioration in service that was least acceptable to them⁵.

Moreover, it is unquestionable that, even if consumer outcomes remain the same, Covid-19 has at least temporarily heightened, if not permanently changed, what consumers expect from their airport experience:

- 79% of current consumers and 82% of potential passengers are worried about people spreading or contracting Covid-19 whilst at an airport terminal building. This is only slightly lower than the fears of spreading or contracting whilst on a plane⁶.
- In our Understanding Consumer Need Priorities post-Covid research, enhanced cleaning so surfaces are Covid-19 safe was the top, or at least top-three priority for all consumer groups (direct / connecting / current / potential)⁷.

Our European competitor hubs continue to innovate and invest to meet these new consumer needs as illustrated:

- Frankfurt – cleaning and testing facility (Lufthansa partnership)⁸.
- Amsterdam Schiphol still expect to invest 1.5 billion euros between 2020 – 2021⁹.

A combination of deliberately degrading existing service levels, not responding to heightened passenger needs post-Covid and falling behind our European competitors is clearly unacceptable.

Permanent cuts to capital spending would not deliver affordable airport services, either. As is clear in Chapter 10.2 – Next Steps, passenger numbers are the greatest driver to the airport charge. The approach the CAA suggests would risk the recovery, with any slowing down flowing directly to higher passenger charges.

³ Systra, *Heathrow Airport Customer Valuation Research Final Report*, April 2019

⁴ Ibid

⁵ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

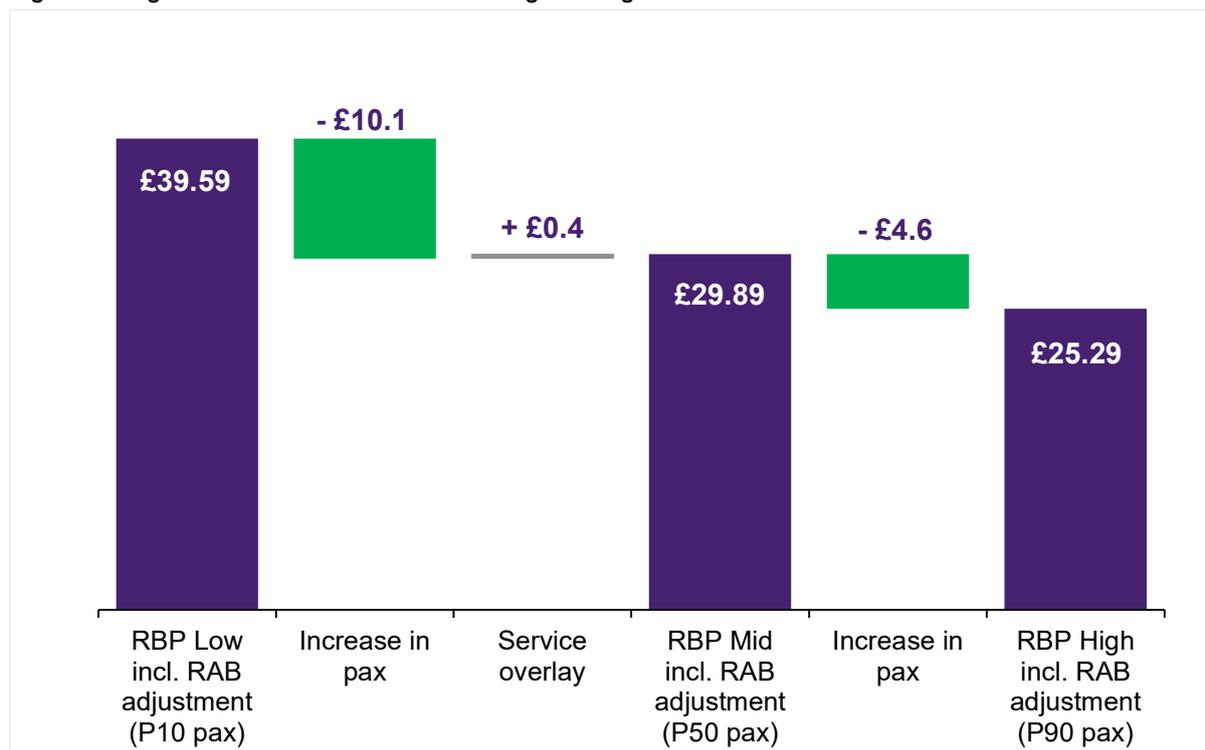
⁶ Ibid

⁷ Ibid

⁸ *Fraport Financial Results 2020*

⁹ *Royal Schiphol Group Interim Results 2020*

Figure 3: High/Mid/Low traffic scenario charges bridge



Source: Heathrow

We will approach this RBP from the perspective that:

- Delivering for our current and future consumers is the best means available to us to accelerate recovery and deliver affordable airport services.
- While our airport experience before Covid-19 was world class, there are ways in which it can be improved, particularly in the context of emerging consumer concerns post-Covid.
- Improvements typically require investments, and even if we should ensure they are targeted and efficiently delivered, we should not accept "...a significant short-term reduction in investment" an "appropriate response..." to the challenges of H7.

Targeted investment will play a necessary role in ensuring we meet consumer outcomes in H7. To avoid temporary capital deferrals becoming cuts, the CAA needs to ensure Heathrow can restore its investment capacity and capability, which must include a Covid-related adjustment to Heathrow's Regulated Asset Base.

3.3 Socio-economic consumer needs are best delivered by a market leading hub

Our post-Covid research confirms that consumers still want an airport that "offers them a good value choice of flights". It has shown that offering flights that consumers want, when they need them, remains the top priority amongst consumers within the Airport Choice consumer theme, with a 14% priority weighting observed amongst both current and potential passengers¹⁰.

¹⁰ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

Good value and affordable flights are also important to consumers, with an 11% priority weighting across both current and potential passengers¹¹.

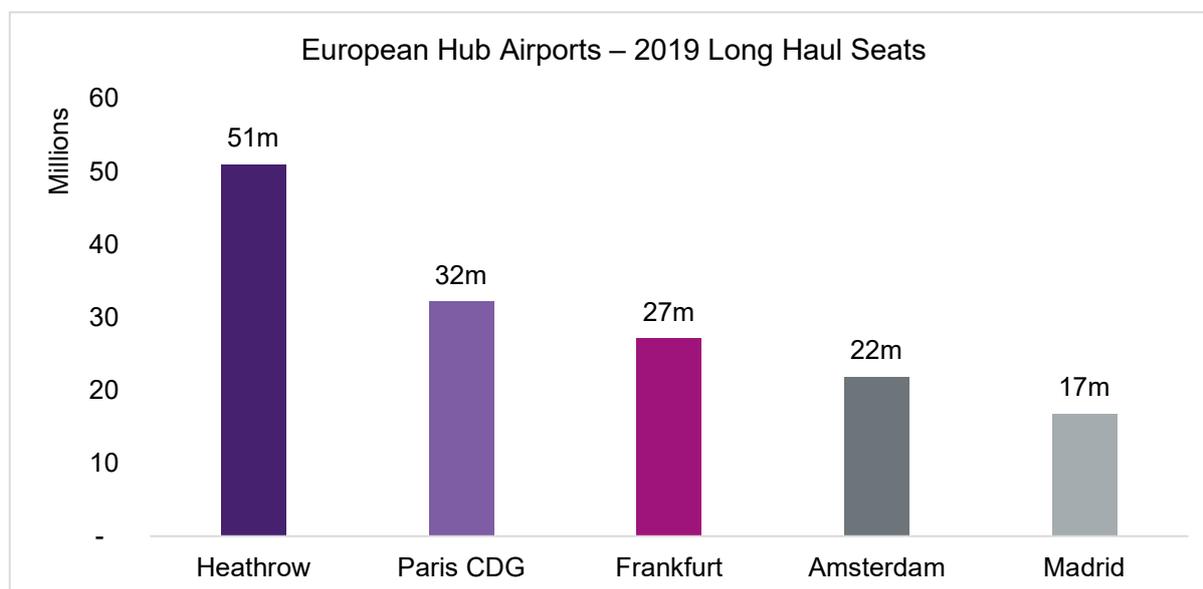
“I want to travel in an efficient, safe and reliable way at a cost I can afford¹²”

Choice of destinations and airlines, at multiple frequencies are best delivered by a hub airport. The economics of aggregating direct, transfer and cargo demand make more routes viable and create the grounds for airline competition and multiple frequencies during the day.

“There is a wide range of airlines flying to a wide range of destinations. The only reason I ever use any airport is that it can provide flights to my chosen destination¹³”

Before Covid-19, Heathrow was the largest hub airport in Europe. While capacity constraints limited network breadth, Heathrow had the highest number of long-haul seats and our key routes had multiple flights per day, operated by a number of carriers.

Figure 4: 2019 Long haul seats available at major European hubs



Source: Airport IS Schedule Data (Year Ending December 2019)

Table 1: Top 5 LHR Long-Haul Routes by 2019 passenger demand – average daily departure frequencies and airlines operating routes

Destination	Average Daily Departures	Airlines Operating
New York JFK	19	5
Dubai	9	3
Hong Kong	8	3
Los Angeles	8	4
Doha	7	2

Source: Heathrow Traffic Data (Year Ending December 2019)

¹¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

¹² Ibid

¹³ Ibid

However, this hub model is under threat. The UK has fallen behind other countries in introducing rapid airport testing and travel corridors. As a result, and due to factors outside Heathrow's control, we have seen European hubs already start to overtake us in the recovery. The consequence is that London, once the best-connected city in the world, is now 8th¹⁴. UK consumers have less choice of destinations and airlines – there is no guarantee that choice will return; we need to actively make it happen.

Key to this Revised Business Plan is restoring the economics of the hub – this is the best means to ensure passengers have a good value choice of flights, and maximising consumer benefit.

This is not something achievable by Heathrow alone and will require collaboration with the airline community and policy makers. Heathrow will work to regain this position by:

- Delivering an updated passenger proposition that delivers on our consumer outcomes and reflects consumer priorities post Covid-19, ensuring our potential passengers believe flying through Heathrow is easy, clean, reassuring and value for money. This is developed in the rest of this chapter and throughout our Revised Business Plan.
- Supporting an efficient cost of operation for airlines and incentivising their growth (and new entrants), by focusing on the levers that will smooth the airport charge across the period. We outline our approach to downward adjustment to regulatory depreciation in Chapter 8.3 – Depreciation.
- Supporting efficient, reliable and easy connections, including using occupancy reviews as a lever to drive efficient use of space but also to maximise intra-terminal connections. We outline our approach to the reopening of our terminals and efficient use of infrastructure in Chapter 7.1 – Operating Costs and Chapter 7.3 - Resilience.
- Supporting an efficient cargo operation, both in belly-hold and for dedicated freighters, ensuring Heathrow is a competitive proposition for cargo owners. We outline our proposals to invest in our cargo proposition in our Chapter 6 – Capital Investment.
- Protecting Heathrow's existing operating hours to ensure flights arriving from critical long-haul markets can access the airport at times that suit premium travellers. We outline how this is compatible with our commitments to noise and sustainability in Chapter 4 – Building Back Better.

However, our ability to remain a viable hub is also highly dependent on Government policy:

- The UK Government must become a world-leader in pre-departure testing pilots and trials with some of the UK's most important trading markets. This will be vital to launching wider scale testing in aviation, developing common international standards that re-open global markets for trade, travel and tourism and to kick start the economic recovery.
- The Chancellor should introduce an emergency 12-month Air Passenger Duty (APD) waiver, which research shows would boost passenger demand by around 12% over the next 12 months¹⁵.

¹⁴ IATA. International Air Connectivity Crisis Threatens Global Economic Recovery. November 2020. Press release No. 102

¹⁵ York Aviation, *The Demand and Connectivity Impact of a 12 Month Air Passenger Duty Waiver*, July 2020

3.4 Focusing on ease, cleanliness and reassurance will help us best meet consumer outcomes

The evidence shows that, for all passenger segments, Covid-19 has driven an enhanced perception of the risk of traveling through airports. This heightened risk awareness results in consumers being more aware of the phases of their journey and how comfortable and secure they feel. The outcome is that the quality and safety of these steps in a passenger journey are increasingly significant drivers of a consumer's choice of airport¹⁶.

If we address consumers' heightened needs during each phase of their journey through a new passenger proposition, we will be doing what is in our control to accelerate the return of demand. Indeed, our consumer research has shown that 92% of potential passengers would at least consider using Heathrow if the service initiatives that matter most to them were implemented¹⁷.

We need our proposition to passengers to be effective and efficient:

- Effective, insofar as it is targeted at the expectations and needs that are heightened as a result of the pandemic.
- Efficient, insofar as the necessary investment required to deliver what consumers need is as affordable as possible.

3.4.1 Effective

To be effective we need a forensic understanding of which needs have heightened or have changed as a result of Covid-19. Our evidence shows that, while all the consumer outcomes remain relevant, the importance of "Predictable and Reliable Journey", "Basic Comforts" and "Cared For" are heightened.

"Reliable speed of progress through check-in, security etc to gate... and post-Covid want to spend as little time in the airport as possible."¹⁸

"Airport lounges (if I'm having to turn up earlier than ever I'll need some creature comforts)."¹⁹

"I feel like my personal safety (which includes hygiene) matters to the airport...it's vital to being cared for!"²⁰

We also need to be confident that the changes we have observed since Covid-19 are stable, or at least that the changes we make to our proposition are valued in a world where the consumer trends we are observing now fade into the distance.

¹⁶ BCG, *COVID-19 Consumer Sentiment Snapshot #10: The Trip Back. Exhibit 11.*

¹⁷ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

¹⁸ Join the Dots, *Passenger priorities post COVID-19*, June 2020

¹⁹ Ibid

²⁰ Ibid

We therefore outline four key areas where there are heightened needs and where our proposition to passengers should focus, and where investment here would be “no regrets” in any given future – and indeed where we already have a strong track record:

- **Ease:** consumers fear that travelling will become much more complex due to new processes, leading to new points in the journey where they feel anxious, out of control or lacking personal space. They continue to expect, however, that the airport experience will be as streamlined and efficient as possible. They value Heathrow simplifying or removing steps, avoiding repetition or complexity and reducing the time required to complete steps where possible. The importance of ease is emphasised by our post-Covid consumer research, which has shown “Predictable and Reliable Journey” to be the most important of the four ‘In-Airport’ consumer outcomes, with a 29.5% importance weighting²¹.

“That queues are not any longer than they have been in the past - don't overdo anything that will impede the travel experience.”²²

“Whilst measures to protect us post Covid-19 is critical, it would be a shame to lose the journey experience at the airport.”²³

- **Cleanliness:** consumers have always expected airports to be clean, but this is now more so as long as the fear of transmission is increased by touching contaminated surfaces and being in crowded spaces. They value visible cleaning processes and evidence of strict cleaning regimes, along with the automation of journey elements towards a touchless experience and social distancing where possible. Our post-Covid research has indicated that 79% of current passengers are concerned about spreading or contracting Covid-19 in airport terminal building, with this figure rising to 82% amongst potential passengers²⁴. Furthermore, connecting passengers ranked enhanced cleaning of surfaces to ensure Covid-19 safety as the most important initiative amongst 27 proposed initiatives to improve their airport experience²⁵. Through clear demonstration of action to promote cleanliness in our terminals, we can help to alleviate this concern felt amongst our consumers.

“Also, I want to see the hard evidence of airports taking care of proper cleaning and hygiene throughout the terminal.”²⁶

“I think touch points like self-check in need to be abandoned with check in on personal mobile devices to eliminate contact with touch screens.”²⁷

“A clean, comfortable place to sit AWAY from people”²⁸

²¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

²² Ibid

²³ Ibid

²⁴ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

²⁵ Ibid

²⁶ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

²⁷ Ibid

²⁸ Join the Dots, *Passenger priorities post COVID-19*, June 2020

- **Reassurance:** the airport experience can generate anxiousness for many consumers and this trend is reinforced post-Covid-19 due to the uncertainty and insecurity that returning to travel produces in our consumers. They value frequent communications and the presence of visible and empathetic colleagues who are willing to help. Our post-Covid research has told us that, across both current and potential passengers, feeling clearly, consistently and fully informed is the most important priority within the “Predictable and Reliable Journey” outcome (with a 14% and 16% weighting respectively)²⁹. Within the “Cared For” consumer outcome, the greatest priority weighting was assigned to having airport colleagues ready and able to help (18% and 21% weighting amongst current and potential passengers respectively)³⁰. We also know that 25% of consumers have become nervous about flying as a result of Covid-19³¹, further reinforcing the importance of providing reassurance.

“Airports and flying can be very stressful and anxiety-provoking so feeling calm and at ease are important. This makes the whole experience more enjoyable.”³²

“As a minimum extra staff will be needed to provide good ushering and ensure a degree of social distancing whilst walking about.”³³

“Being in the airport will be like entering a danger area. Not wanting to go near anyone, touch anything and speak to anybody. To help with this uncertainty I would hope there would be a major presence of staff and information points guiding and reassuring passengers.”³⁴

- **Value for Money:** flying remains an economic choice that is undertaken if it is good value to do so. Consumers value a choice of airlines and destinations, which is critical to deliver better service and lower fares. As referenced in the previous section (3.3), offering flights that consumers want, when they need them remains the top priority amongst consumers within the “Airport Choice” consumer theme (14% priority weighting observed amongst both current and potential passengers)³⁵. In addition, food value and affordable flights are also important to consumers as part of this consumer theme (11% priority weighting across both current and potential passengers)³⁶.

“Having to change in Dallas or Chicago is always a pain so more direct long haul would be great and save time and stress!”³⁷

“Positive in terms of more routes and better frequencies, less positive if it means far more passengers using existing infrastructure as it’ll be slower and busier.”³⁸

²⁹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

³⁰ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

³¹ Ibid

³² Join the Dots, *Passenger priorities post COVID-19*, June 2020

³³ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

³⁴ Heathrow Service Proposition, *Post Covid-19 Customer Realities*, June 2020

³⁵ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

³⁶ Ibid

³⁷ Join the Dots, *Passenger priorities post COVID-19*, June 2020

³⁸ Ibid

By focusing on these four elements, we will be able to deliver a proposition that will meet consumer outcomes and enhanced expectations in a post-Covid world. This focus is compatible with all the identified consumer outcomes, and does not neglect other elements of the journey, but focuses our investments on the principles that are now most important to our consumers and likely robust to any future changes in consumer trends.

3.4.2 Efficient

We must deliver this new proposition in order to allow the conditions for as quick a recovery in passenger numbers as possible; however, we will do so, as far as possible, while ensuring that airport services are reliable and affordable. We must also ensure that our new proposition is deliverable as part of Heathrow's capital plans.

In Chapter 6 - Capital Investment and Chapters 7.1-7.4 (Operating Costs, Commercial Revenues, Resilience and Surface Access) on running the airport, we outline a plan to deliver our proposition that is efficient and can sit within our capital envelope:

- Targeted capital investments in touchless journeys and digital retail to make the airport experience easier and cleaner.
- Automation of key elements of the journey to give passengers more control over their journeys.
- Upgrades to our apps to enable digital wayfinding, call-to-gate and other features to tailor communications and information to passengers – reassuring them.
- Investing to update our security scanners to enable hassle-free and faster-flowing security processes – with no need to remove electronic items from bags, helping to make one of the most stressful points of journey easier.
- Operating overlays to deliver enhanced cleaning and building on our successes in Q6 to ensure colleagues trained in our service signatures are available to support passengers when required.

These are small changes that deliver results that we know meet the outcomes that consumers value. They target investment to make tangible changes to passenger experience within the H7 period. While cleaning and colleague presence require additional operating costs to deliver, others drive greater efficiencies or additional commercial revenues that make the business case efficient, as well as being effective in meeting new passenger expectations.

3.5 The H7 Heathrow Passenger Experience

The outcome of our effective and efficient new customer proposition is that we can articulate in detail what the future passenger journey will look like through the eyes of our passengers.

- Passengers will arrive at Heathrow by private or public transport to find clean and simple stations and parking products, and then enter decluttered check-in areas, with simple wayfinding that minimises cognitive overload. Clarity of wayfinding is the most prioritised element within Predictable & Reliable Journey outcome, with 14% of current passengers and 16% of potential passengers ranking elements of wayfinding as the most important contributor to this outcome³⁹.

Figure 5: Clear and plentiful wayfinding will aid a predictable and reliable journey



Source: Heathrow

- The check-in process will be mostly online and through consumer devices, reducing the need to touch any surfaces. It will be a single-stop process, improving on the current offering through merging the elements of tag printing and bag drop into a single transaction.

Figure 6: Passenger processes will be increasingly carried out using personal devices



Source: Heathrow

³⁹ Systra. *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

- While the process will be automated, well trained and empathetic colleagues will be on hand to notice and care, and to support passengers through the process if required. Heathrow will keep investing in the roll out of Service Signatures to our front line and Team Heathrow colleagues, building on the success achieved in Q6. 18% of our current passengers and 21% of potential passengers deem staff readiness to help as the most important element of the ‘Cared For’ outcome⁴⁰.

Figure 7: Well trained and empathetic colleagues will be on hand to assist



Source: Heathrow

- The security process will be easy, efficient and with very limited or nil points of contact, as Security Transformation investment will remove the need to unpack bags or remove electronics and liquids from customers’ hand baggage. Colleagues will be trained to detect any possible threat, but also to provide support to consumers and empathise with them and their service needs. Eliminating the need to remove items and liquids from hand baggage when going through security is the 6th most important consumer priority for direct current and potential passengers⁴¹.

Figure 8: Eliminating the removal of liquids from bags will simplify the security experience



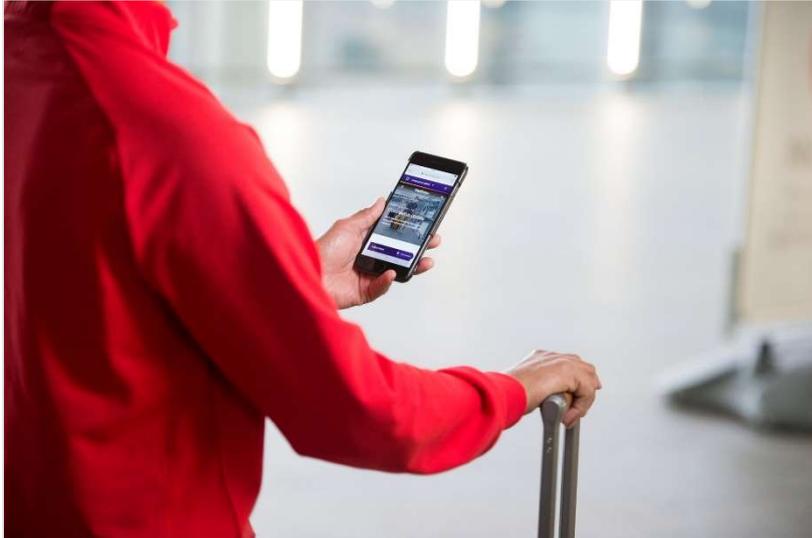
Source: Heathrow

⁴⁰ Ibid

⁴¹ Ibid

- Digital Transformation will make navigating through the airport easier exploiting digital features on passenger devices - for those who want to engage with our enhanced digital offering – with direct support via chat and personalised alerts, including call to gate. Wayfinding enabled by blue-dot technology will reduce the complexity of passenger orientation and flow through the terminal.

Figure 9: Passengers will increasingly be able to navigate the airport using their own devices



Source: Heathrow

- Our space management technology will help passengers to understand the levels of crowdedness, and our investment in touchless journeys will allow them to flow through the airport without the need to touch any surface. Cleaning colleagues will be visible to passengers and regimes will be strict and transparently communicated.

Figure 10: Visible cleaning colleagues will help to reassure



Source: Heathrow

- Lounge options will be available for those passengers that want to engage with them, as well as new commercial offerings and services in a wider range of products and budgets, facilitated by digital technology. The digital retail experience will therefore offer passengers the choice of engaging traditionally within a retail unit, or to browse hundreds of products from their phones and the ability to collect any purchases at a moment convenient to them.

Figure 11: Passengers will have the option of engaging with our retail proposition



Source: Heathrow

- At the gate, we will work with the airline community to simplify and automate the boarding process as far as possible, putting passengers more in control and limiting queues.

Figure 12: Self-boarding gates will improve passenger experience at the gate



Source: Heathrow

- Those passengers transferring through Heathrow will benefit from maximised intra-terminal connections and digital personalised communications, facilitated through digital technology, which will support them through their connection journeys. This will give our typically most anxious group of passengers more information about their connections, time to gate and ability to engage in our retail and refreshment offer in a time window that suits them – including getting it delivered to their new gate.

Figure 13: Leveraging digital technologies will improve connecting passengers' experience



Source: Heathrow

- For those landing into Heathrow, reduction of passport control times is the first and most important priority⁴². Passengers will enjoy a contactless arrivals journey and will be able to easily progress to and through the border. More will be eligible to use our electronic passport gates, and technology will ease all the elements of the journey as we work with Home Office to automate the border and ensure it is adequately resourced.

Figure 14: More passengers will benefit from use of electronic passport gates



Source: Heathrow

⁴² Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

4 – BUILDING BACK BETTER

Chapter Overview

- The severe financial impact of Covid-19 has required all stakeholders to make some difficult decisions to survive and protect our businesses. As we begin recovery we will need to work closely together to identify opportunities to do things differently and where to prioritise investment to ensure that we Build Back Better.
- While consumers broadly have the same preferences as pre-Covid, the crisis appears to have accelerated trends such as digitisation, automation and sustainability.
- We see significant opportunity in using technology to improve the way we operate for users and generate real savings for us and airlines.
- Heathrow 2.0 continues to set a framework for thinking about our sustainability impacts.
- Climate change remains an existential risk for aviation. Consumers agree. Heathrow remains committed to leading on carbon by using our scale and influence to work with the industry to decarbonise flight. We also plan to take action to “get our own house in order”. Our ambition is both for net zero by 2050 and that 2019 be the year of peak carbon emissions from Heathrow.
- We are committed to be a good neighbour to the communities that rely on our airport for their livelihoods. Our consumers expect this too. Our focus is on reducing noise, supporting employment and skills, improving local air quality and building relationships.
- We have already made tough decisions to start to transform our business. Our aim is to offer careers, not just jobs.
- Infrastructure investment should typically be a longer-term investment – delivering long term value and stable returns for investors. Heathrow should be well placed to make targeted investments with long-term value for consumers, airlines and the wider world.

4.1 Introduction

4.1.1 Covid-19 has accelerated change

Covid-19 has accelerated change across our lives. Healthcare, the economy, civil liberties and established social patterns have all been challenged during the pandemic. Some we will want to see revert to what they were before. There is also the opportunity to use the crisis to reset or reimagine – including for Heathrow’s business and across the wider airport and industry.

The crisis in 2020 has reinforced the value of connectivity and flight. Consumers still want to fly when restrictions are lifted by Government and they feel safe to do so. Businesses depend on flights to trade their goods. Our industry must continue but will need to adapt to ensure longevity. We know that progressing on carbon and sustainability will be the key to our licence to operate as an airport and industry, and also to allow future growth.

Covid-19, and the huge health and economic toll, has dominated global debate in 2020. But other major challenges and changes have not disappeared. The focus on climate change among politicians, businesses, investors and the public has, if anything, intensified. Major

states representing the biggest economies in the world have now backed the goal of “net zero” by the mid-century, including China, Japan and the EU. The US will soon join them. A growing number of businesses, including many airlines, have set the same ambition. Climate represents an existential risk for aviation. Heathrow is committed to play a leadership role to address it. Our ambition is that 2019 be the year of peak carbon emissions from Heathrow. It can be if the right action is taken with sufficient urgency by Government and industry.

We have also seen how consumers now expect to interact seamlessly with technology as part of their surroundings. Under the pressure of the pandemic, the use of technology is fast becoming a hygiene factor. Technology is being deployed throughout our sector and airports must keep up. Consumers also expect to be made aware of how they are progressing in their journey and want to know instantly about delays or diversions. Airlines too are focusing on efficiency to provide an enhanced experience, but as importantly, as a way to take cost out of their operation. The latter need has been exacerbated with Covid-19, where every cost line matters due to its impact on survival.

Our RBP presents some targeted ways to adapt to these trends. In the short to mid-term our business will need to be necessarily prudent and make difficult choices in order to protect our long-term viability, as is presented elsewhere in the RBP. As we have set out in the capital investment section of this plan, we consider a number of investments to be essential for Heathrow to get through this period, maintaining safety, compliance, resilience and long-term viability. Yet we also view this as a period where – for only modestly more capital investment – we could make substantive decisions that will mean we rebuild as a stronger, greener and leaner entity. We set these decisions out in this section. By making these changes, and perhaps compromises today, we will be better positioned to deliver our future consumer and stakeholder outcomes.

4.2 Consumer needs continue to drive change

We have had a glimpse of what life would be like without aviation and the social and economic impacts of not being able to fly. It means a loss of jobs and economic wealth locally and nationally. It impacts tourism, cultural exchange, education and essential business travel, and means a fundamental loss of connections with family and friends.

What we saw from every relaxation in UK lockdown and travel restrictions during summer and early autumn 2020 is that consumers still want to travel. This demand for travel is evidenced by spikes in bookings observed whenever travel restrictions are lifted. For example, when restrictions between the UK and the Canary Islands were lifted in October searches for flights to Spain rose by more than 500% (from an already significant base of 80% of 2019 searches)¹, with airlines such as BA experiencing an immediate spike in bookings². More recently as travel restrictions within the UK are set for a temporary relief over the winter holiday period, fares to Northern Ireland jumped by up to 600% in response to the spike in demand³. Air travel has

¹ <https://www.ttgmedia.com/news/news/skyscanner-research-shows-canaries-surge-but-confidence-sliding-25851>

² IAG Q3 2020 results

³ <https://www.independent.co.uk/travel/news-and-advice/northern-ireland-flight-costs-christmas-ba-easyjet-ryanair-loganair-b1762238.html>

been shown to matter to many in our society for many powerful economic, social and personal reasons.

It is imperative that our sector thrives in the future, but we will have to adapt to ensure that future. We must look beyond current uncertainty, and the financial and social impacts of Covid-19, to anticipate where we are going in the longer term. We should take opportunities, where we can, to Build Back Better.

The Covid-19 crisis has pivoted some consumer behaviours by temporarily impacting how we work, how we shop and how we entertain ourselves. We have witnessed a digital acceleration – the rise of remote working, digital entertainment and home fitness on demand. More people expect to make a portion of their purchases online post Covid-19 than before; there is up to 30% net increase in intent to spend online even post-Covid-19⁴.

Building Back Better is thus not just about the foundation we must build to secure our long-term future; it is also considering how we shape and develop the airport experience for consumers. Automation and technology could deliver enhanced seamless, touchless passenger journeys and reduce operating costs – and therefore lower passenger fares – while improving service and choice for consumers. We also know from our research the importance of sustainability as an issue for consumers is strong and has grown over the last two years, even though the pandemic has been the top issue of concern in 2020⁵. Consumers expect airports to play a role in reducing their impact on the environment and particularly eliminating carbon. While that does not drive airport choice, it can be a differentiator.

In the rest of this chapter, we outline how we will make these longer-term changes and what that means for our stakeholders. We organise this by using the outcomes defined in Chapter 2.3 – Consumer Insights.

⁴ McKinsey and Company, *COVID-19 United Kingdom Consumer Pulse Survey*, September 2020

⁵ Incite Kin + Carta, *Understanding the sustainability landscape in 2020 and future initiatives for Heathrow*, September 2020

Figure 1: our consumer and stakeholder outcomes



Source: Heathrow

4.3 Airlines – Heathrow provides efficient reliable and affordable airport services

Airlines are our biggest customer and in preparing our business plan we have engaged with our airline community extensively – both through day-to-day operation coordination and through dedicated engagement sessions to discuss emerging plans. Airlines have told us that they are financially constrained more than ever before and that the future is uncertain and difficult to predict. We have worked extensively to reduce our costs; both operational and capital investment. Airlines see the need for critical investment, but also “discretionary” capital investment based on whether it can deliver further efficiencies. In light of this feedback, we are planning to make a few targeted investments in the H7 period, which can also be transformative. These include; maintaining our resilience, accelerating the use of autonomous and touchless technology and improving our digital maturity.

Covid-19 will force a much faster pace of change in the industry and as a result we anticipate that business and operating models will change, driven by demand evolution, technological breakthroughs and perhaps changes in regulation. We believe it is prudent to set aside capital expenditure through the H7 period to help us adapt to these market changes and support us Building Back Better. We have a once-in-a-generation chance to rethink how our hub airport works.

In 2020 we have done everything we can to reduce our costs; furloughing significant proportions of our colleagues, swiftly but temporarily consolidating terminals and other operating infrastructure and renegotiating contracts. We have done this to preserve the financial viability of our airport and also support airline operations. However, unlike airlines who operate on a more variable cost structure, airport costs are rigidly fixed. In addition to reducing our own costs, we have taken action to directly reduce those of our airline customers,

including alleviation on parking charges and the provision of a Relocation Support Fund to those airlines temporarily relocating while the operation is consolidated in Terminals 2 and 5.

For airlines, operating to schedule is of critical importance. This is particularly the case for airlines operating complex networks and long-haul operations.

“The most important things for me is their stand allocation, just because they are the ones telling us what stand we can go on. It's a complex job, which they do very well”.

Anonymous airline, Terminal 3

“I would say the main challenge is the fact it's a time sensitive operation that we run. Aircraft operate to strict time schedules”.

Anonymous airline, Terminal 4⁶

Resilience

We have continued to adapt to the major shifts in airline operations, including the convergence of hub and spoke and low-cost airline operations, and new generations of narrow and wide-body aircraft. Covid-19 will continue to have an impact on our airlines' operations through H7, which we will need to prepare for. This could be caused by airline failures, consolidation or indeed a surge in demand through rapid roll-out of a vaccine.

In Covid-19 times, Heathrow has gone from seeing a plane take-off or land every 45 seconds, to now seeing one arrive or leave every five minutes or so. Although seemingly counter-intuitive, fewer passengers have put additional strain on airlines' operations. Particularly the complexity of temporarily rebuilding networks to fit latest quarantine rules, requirements to match fleet and schedules and ensuring additional procedures are in place to ensure passengers are fit to fly.

Our future terminal occupancy and reopening will be dependent on passenger volumes – which is driven by airlines. To protect our business, we may be operating a reduced terminal or infrastructure environment for some of the regulatory period. Our central case assumes that we will not restart operations in Terminal 4 until mid-2023. We have shown that we are able to make rapid changes to our live operating environment quickly and safely and have plans already in place to reopen when we can.

As outlined in Chapter 7.3 - Resilience, we are committed to maintaining our departure punctuality at 80.5%. We are also progressing airspace modernisation to both improve the environmental impact of aviation and mean fewer delays for our airlines. We are continuing to invest appropriately in Cyber and IT upgrades in response to the anticipated threat of cyber-attacks, to minimise the potential for disruption. We continue to maintain robust plans in place to quickly recover from any eventuality to minimise the impact to airlines and our passengers.

Automation

We have already made significant investments in automation. One of the key successes of automation we have had is self-service bag drop. There are now 188 self-service bag drop machines installed across our four terminals, reducing the number of check-in colleagues

⁶ B2B international, *Delivering a sky-high partner experience*, July 2018

required to resource desks and enabling 66% of our departing passengers to use a self-service bag drop in 2019, increasing to 80% in 2020, and ultimately 100% in the future. This has improved check-in transaction times by up to 20%.

Similarly, 60% of gates now have self-service boarding capability, enabling 75% of passengers to use the self-service facilities. This will increase to 80% of gates with self-service in 2020 and ultimately 100% in the future. This reduces the number of airline colleagues required to carry out transactional processes, enabling them to focus on supporting passengers who require assistance, manage exceptions and get the aircraft away on time. Self-service has delivered boarding times which are up to 30% faster, with less queuing time for our passengers. Our future operating strategy will seek to continue to increase automation and further reduce costs for our airline partners.

Increasing automation has substantial benefits for airlines, such as reducing the number of airline colleagues required across all stages of the passenger journey. In the H7 period, our focus will be on ensuring that, where appropriate, all of our terminals are operating to the same standard, including rolling out self-boarding, baggage and other customer facing automated units. This will provide a more seamless universal experience for passengers, who will know what to expect in any Heathrow terminal. However, our prioritisation and roll out of any new technology will ultimately be determined by passenger volumes, terminal reopening and availability of capital to invest.

Our airfield and airspace will remain safe and secure for passengers, colleagues and aircraft operations. It will enable an efficient and predictable operation to minimise delays on the ground and in the air. An adaptable approach will allow our airfield and airspace operations to respond to changes in air-traffic demand, different aircraft types, airline operating models and industry dynamics. Pre-Covid-19 we were undertaking trials to automate several parts of the airfield. This includes smart stand allocation, which would provide more seamless taxiing of aircraft to the gate/stand. To enable this, the point of aircraft arrival at the gate will be synchronised with ground support equipment to allow a fully coordinated aircraft turnaround processes, maximising and leveraging automation. This will benefit airlines and passengers by minimise delays and turnaround times. Pooled ground support equipment could also help ensure that the equipment required is always ready.

We aspire for our baggage operation to be as seamless as possible for our passengers. Our airlines were not supportive of investing in Terminal 2 Future Baggage in H7, meaning this investment is delayed to at least H8. Beyond H7, our future baggage design will bring a simplicity and consistency to systems and processes making it easy to use for airlines, handlers, operators and passengers. We will enable full traceability of baggage through real time information giving our passengers confidence and putting them at ease. We will also be able to automate baggage movements including loading and unloading of the ULD/trailer, with the baggage tracked through the process. This could allow for a premium baggage arrival product going forward, with every item tracked through the process. Our baggage systems themselves can be improved to have a built-in system redundancy and flexibility to cope with partial system failure. Unit based systems can be used instead of conveyors.

Digital

Our future digital proposition is one of the keys to unlocking efficiency. Digital transformation forms an important part of commercial plans to provide a more intuitive and personalised airport experience for passengers; to allow passengers to use the retail channel they want to use, as well as provide a bigger range of products for our passengers. As outlined in Chapter

7.2 – Commercial Revenues, in the H7 period we will focus on improving the digital retail proposition by offering more ranges and a buy and collect proposition.

We believe our digital proposition can go beyond supporting consumer journeys and can help generate airline efficiencies too. We think of digital as: *“a means of defining how technology, process and data underpins the airport. It enables Heathrow to re-imagine how activities should be undertaken. It is a mechanism to seamlessly integrate technology into activities to enhance the user experience and improve productivity.”* [REDACTED]. We recognise that we need to consider digital in the future as an integrated system rather than a set of individual technologies.

Our longer-term ambition, likely beyond H7, includes developing a digital twin for the airport. Digital twins are realistic digital representations of physical things. They unlock value by enabling improved insights that support better decisions, leading to better outcomes in the physical world. Digital twins enable better use, operation, maintenance, planning and delivery of assets, systems and services.”⁷ Digital twins can refer to a digital replica of potential and actual physical assets, processes, people, places, systems and devices and can be used for various purposes. Digital Twins exist alongside the physical entity and are connected to each other by real time data which is collected using sensors.

By sharing data, airlines could benefit in adapting their offer. This includes tailoring their services provided to consumers based on their airport experience, offering click and collect for duty free, rather than stocking items onboard and improving their productivity. It can also change the nature of airline operations at the airport including forecasting the demand for all resources accurately in advance, and confidentially carrying out any remedial work necessary.

A “smart airport” is enabled by all appropriate parties having access to the trusted, real-time and relevant data and information. This can enable data-driven decision making, which will optimise airport operations. Creating an end-to-end passenger “data journey” where intelligent use of data can make complex calculations, solve problems and improve inefficiencies a passenger may experience on their journey. Throughout the end-to-end journey, the passenger receives personalised location-based information that is communicated through the passenger’s preferred channel. Communications are optimised across Team Heathrow, key partners and stakeholders to provide the perception of a seamless experience.

A smart airport can also transform airport and airline operations in a number of ways;

- Asset monitoring and control – Machine learning provides the ability to make intelligent operational decisions to maximise the utilisation of assets, equipment and resources. The operation is also able to gain valuable insight and can use information to predict and address issues before they become problems, minimising any potential health and safety incidents. Through proactive monitoring, airlines will benefit by being able to increase the average number of jobs completed in shift and a reduction in routine replacements due to the age of assets. This will benefit airlines through less incidents and less downtime as a result of these incidents.
- Baggage – Continual data collection and analysis enables a more immediate response to problems to help ensure bags reach the aircraft on time. Eventually capacity can be balanced across the airport. This benefits airlines and passengers through speedier connection times, fewer bags lost in transit and more punctual delivery of bags.

⁷ Gemini Principles – Centre for Digital Built Britain

- Aircraft – Total Airport Management approach enables scheduling of exact times for gate open, pushback and apron, taxiway and runway use. The aircraft journey is managed through all appropriate parties accessing consistent, reliable and real-time information will all stakeholders working from a single Airport Operations Plan. Airfield capacity is maximised even when visibility is very poor. An optimised airspace allows aircraft to follow the most efficient route with purpose-driven information exchanges with aircraft maintained after take-off. This minimises potential disruption for airlines meaning more flights can run to schedule.
- Colleague deployment – Artificial Intelligence empowered planning and dynamic resourcing of people and assets, enabling dynamic response to any incidents, or changes in demand. Any bottlenecks in the operation are spotted and mitigated. Dynamic resourcing will work best with multi-skilled colleagues as outlined in the colleague outcome below. Airlines will need fewer colleagues to support their ground operations – this is particularly true for routine tasks including maintenance and inspections.

We have made an allowance of £150m in our capital portfolio to enable investment that will improve our resilience, automation and digital capability. We will work closely with the airlines to prioritise our investments in H7, recognising that some of our ambitions may not be delivered until after the H7 period. In parallel we will also focus on opportunities to do things differently to improve outcomes for consumers, airlines and other stakeholders.

4.4 Community and environment – commitments made by Heathrow for sustainable airport growth are met

4.4.1 Context

Refreshing our approach for our new reality

In the IBP we outlined some ground-breaking and transformational initiatives to ensure sustainable growth through Expansion. Although Expansion is delayed and we now need to refresh our plans in light of new economic circumstances, we still have these aspirations and sustainability remains core to our business success.

In 2017 we published our “Heathrow 2.0” plan, setting out our ambition on sustainability. It sets out the goals and actions to deliver four big outcomes that reflect the material colleague, community and environmental issues for Heathrow: Great Place to Work, Great Place to Live, Thriving Sustainable Economy and a World Worth Travelling.

Ultimately, sustainability is the key enabler of future growth, which provides the consumer benefits of choice and competition. In developing Heathrow 2.0, we identified four ways that a leadership position on sustainability drives business value and helps us deliver better outcomes for consumers:

- **Differentiating Heathrow for consumers.** Sustainability is a growing concern. While it does not drive airport choice, it differentiates consumers’ experience. A lack of visible progress by the aviation sector may also mean that some consumers choose to fly less.

- **Operating more efficiently.** Using less energy, operating our airfield more efficiently and a range of other efficiency measures cut costs as well as emissions. This keeps charges low for consumers.
- **Attracting, retaining and engaging the talented colleagues we need to provide great consumer service.** In its latest 'Global Millennial Survey 2020', Deloitte highlights that climate change and protecting the environment is one of the biggest concerns for millennials and generation Y (28% and 31% respectively)⁸. The research also highlights strong environmental stewardship and sustainability credentials influences job loyalty among these groups.
- **Maintaining our “licence to operate and grow”.** We need to deliver our economic and environmental commitments to maintain the support of local communities and political decision-makers.

We have made significant progress on Heathrow 2.0 since we launched the plan four years ago. Progress has been delivered by a combination of measures: consistently considering community and environmental impacts in our decision-making, setting and delivering annual business plans that make progress towards our longer-term targets and targeted capital investment. We invested around £150m (2018p) of capital during the five years of Q6 to address our sustainability impacts. The improvements we made in this period include:

- reducing the amount of electricity used to power the airport by 14%⁹ and by also switching to a renewable electricity tariff from 2017, cutting our carbon emissions from energy by 90%⁹ compared to 1990;
- installing charging infrastructure to support the electrification of our vehicles – we now have a fleet of 101 electric and hybrid vehicles, which represents 93% of all our light vehicles (under 2.4t)¹⁰;
- developing the noise and track keeping system to enable better access and information to airline and community stakeholders through an airline portal and xPlane¹¹ functionality, significantly increasing the array of noise monitors in the surrounding community, supporting slightly steeper approach trials, trialling new equipment to monitor landing gear deployment;
- investing in public transport provision including our contribution to Crossrail providing additional rail connectivity into Central London and beyond; and
- maintaining compliance with our environmental permits by upgrading the airport pollution control system, which treats de-icer in airport rainfall runoff and reducing the impact of winter airport operations on local watercourses.

⁸ The Deloitte Global Millennial Survey 2020, *Resilient Generations hold the key to creating a better normal*, 2020

⁹ *Heathrow carbon footprint data 2014 and 2019*

¹⁰ *Heathrow data*

¹¹ xPlane is an online tool tool allows you to find out about what kind of aircraft from Heathrow fly over your location, when and how often

Figure 2: 2019 sustainability improvements



Source: Heathrow

However, three significant developments during 2020 mean that we need to refresh our plans:

1. While we have successfully appealed the Court of Appeal verdict that suspended the Airports National Policy Statement, the verdict has delayed our Expansion plans.
2. Covid-19 has had a huge impact on our business and the communities around Heathrow. For Heathrow, this means that we ourselves have far fewer resources to invest in sustainability. At the same time the economic and employment needs in our local communities have increased hugely. In our local area, rates of furlough are amongst the highest in the country. Oxford Economics have forecast that in 2021 workplace-based employment reliant on Heathrow will see at least 37,000 fewer jobs than in 2019, or a loss of £4.0 billion GVA contribution to GDP across the sub-region

(in 2016 prices). 16,000 of these are residents of the six boroughs closest to the airport¹².

3. Understanding of the strategic risk of climate change has continued to grow. Climate represents an existential risk for aviation. In the short-term, over the next decade or so, the risk is primarily a political, investor and consumer one. If we do not demonstrate tangible progress within the next ten years to cut emissions and build confidence in our plan to get to net zero, we could face greater restrictions from Governments, consumers choosing to fly less, and more difficulty and cost attracting equity and borrowing. That could threaten our ability to recover, to operate and to grow.

In the medium-term, from the 2030s onwards, the physical impacts of a changing climate will become more apparent, particularly if global efforts to limit emissions are less successful. Heathrow's assets and operations face some risks from more extreme weather, but the knock-on for aviation of the potential physical impacts on the global economy could be far bigger. Covid-19 has not changed the risk of climate change. If anything, by showing us the effects of a genuine global crisis, the pandemic has accelerated global efforts to address climate change. A growing number of states and companies have set net zero goals, and Governments are using their Covid-19 economic stimulus plans to accelerate decarbonisation.

These three changes in context reinforce our commitment to sustainability. But we need to review and update our plan to prioritise our efforts on the most significant issues. During 2020 we have made some early adaptations. We have increased our focus on carbon given its ever growing prominence. Carbon has explicitly become part of an executive director's portfolio - the Chief Carbon and Strategy Officer now leads a Carbon and Strategy team, thus placing climate change at the centre of our strategic planning.

We have also created a Heathrow Local Recovery Plan¹³ together with local boroughs and stakeholders under the leadership of Lord David Blunkett. The Plan channels a number of ongoing activities to support local communities in the crisis, for example building on our donation of laptops to local schools with a quality online / virtual work experience programme for young people in education.

Growing consumer engagement on sustainability

Since our IBP submission, we have engaged over 4,000 consumers to gauge their latest views on sustainability¹⁴. 24% of UK respondents picked sustainability as their top item when asked which issues facing society need fixing. Given the Covid-19 pandemic it was no surprise that issues that ranked above sustainability included epidemics (54%) and economic instability/uncertainty (40%). However, sustainability has continued to grow in importance. In the latest research, 61% of UK consumers say they are more concerned about sustainability than two years ago, likely as campaigners like Greta Thunberg and David Attenborough have made most consumers more aware of sustainability issues.

Increasingly consumers also want to take responsibility themselves – our research shows that passengers are translating their strong feelings into personal action. Those in a stronger

¹² Oxford Economics: *"The economic impact of reduced activity at Heathrow Airport"* September 2020

¹³ <https://mediacentre.heathrow.com/pressrelease/details/81/Corporate-operational-24/12624>

¹⁴ All references in this section are taken from that research: *Incite Kin + Carta, Understanding the sustainability landscape in 2020 and future initiatives for Heathrow, September 2020*

financial position tend to exhibit sustainable behaviours more. In terms of air travel, around a third of UK consumers claim to avoid flying where possible and 40% say they expect to avoid it in the next few years. Our 2019 traffic levels did not reflect any significant behaviour change by UK consumers, and the survey also confirms that people feel there is a lack of good alternatives to flying. However, consumers may choose to fly less unless the aviation sector is acting, and being seen to act, to eliminate carbon. When people do fly, they say that they would value more information on how to offset carbon emissions. 80% of those surveyed have heard of offsetting but only 6% have done it. Younger people are more likely to see offsetting emissions as having an impact.

Although convenience, destinations and flight prices remain the most important factors in choosing an airport, two thirds of consumers see sustainability credentials as important. 70% of passengers would feel more positive knowing the Heathrow is taking a lead on the environment. There is an opportunity to raise awareness of our initiatives – more than 50% of UK consumers do not know about them and only around 15% claim to know a fair bit or a lot.

Expectations of what Heathrow should do are clear: take a lead on reducing our environmental impact and eliminating carbon, working with airlines to support the industry to become more sustainable. The specific steps that are seen as most important for an airport are investment in renewable energy, reducing carbon and noise and improving air quality. For Heathrow specifically, the top five most important potential activities identified by consumers were:

- Investment to make the airport itself zero carbon
- Investment to eliminate carbon from aircraft on the ground
- Investment in making aviation fuels more sustainable and lower carbon
- Investment in research on zero-emissions flight technology
- Reduction of single-use plastics at the airport

Non-environmental elements of our Heathrow 2.0 plan are also seen as important by consumers, although environmental issues are primary. Around 25% of consumers believe an airport needs to be a fair and responsible employer, support local businesses and care about the local community.

Looking ahead to H7

Over half of UK adults agree that Covid-19 economic recovery must put the environment first¹⁵. 37% believe more strongly now than before the pandemic that the money they spend should not damage the environment¹⁶. The Government has laid out steps to a green recovery in the Prime Minister's 10-point plan on climate change and in the Spending Review. Aviation and Heathrow must play their part in that effort to retain consumer support as flights recover.

As Heathrow recovers over the H7 we will focus on where we can make most difference:

- Prioritising progress towards net zero emissions in the air and on the ground
- Continuing to work with our neighbours to improve quality of life by:
 - Managing our noise impact
 - Supporting local employment and skills

¹⁵ <https://environmentjournal.online/articles/over-half-of-uk-adults-call-for-a-green-recovery-from-covid-19/>

¹⁶ Ibid

- Improving our local environment

We will review Heathrow 2.0 and intend to publish an updated plan by end of 2021 with revised targets that support airport recovery through the upcoming period.

4.4.2 Carbon – catalyse change across the industry

Every industry needs a plan to get to net zero, and aviation is no exception. At the start of 2020, UK aviation – airlines, manufacturers and airports - became the first in the world to commit to net zero and publish a roadmap to get there. Shortly afterwards, Heathrow published 'Target Net Zero'¹⁷, our own strategy. Our ambition is for 2019 to be the year of peak carbon emissions from Heathrow, driven by accelerated retirement of older aircraft because of the pandemic and with urgent action by the Government to scale up sustainable fuel.

Heathrow cannot get to net zero alone. Carbon emissions at Heathrow are generated by airlines, other Team Heathrow partners, passengers and colleagues. That is why our Target Net Zero plan and our H7 plan are built around the following goals:

- Working with our industry partners, Government and passengers to decarbonise flight
- Working with Team Heathrow and passengers to eliminate carbon on the ground
- Finishing the job of getting our own house in order as the airport

Changed economic conditions mean delivering on these three goals requires even greater prioritisation. Even in the “high” passenger RBP scenario, very limited capital and opex means a ruthless focus on priorities. To help us do that, we have developed a marginal carbon abatement cost curve to identify the lowest cost investments that deliver the greatest carbon savings. See Figure 3.

Our initial modelling shows the types of projects that would deliver the best carbon 'bang for buck' in H7. We will continue to improve our carbon data and assumptions and refine our analysis so that we target the right combination of these projects and build confidence in the level of benefit.

¹⁷ <https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/heathrow-2-0-sustainability/heathrow-target-net-zero.pdf>

Although carbon is the focus of this section, all the steps we outline below will also reduce the emissions that contribute to local air quality. Where relevant we identify particular air quality benefits from our plans.

Taking the carbon out of flying - advocacy

Over 95% of Heathrow's carbon footprint is from flights. We do not fly the aircraft of course, but the whole aviation sector, including airports, has a stake in decarbonising flight. Our role is to use our scale and influence to drive change. We have thus sought to lead in campaigning for net zero flight. Core to that goal are the policies needed to urgently scale up Sustainable Aviation Fuel (SAF) in particular.

The good news is that we can decarbonise flying by 2050. This allows us to protect the benefits of aviation in a world without carbon. The journey to net zero aviation has two parts. First, we need to take the carbon out of flying, through either new planes or new sustainable fuels. Second, we need to put any carbon we do emit back in the ground through natural climate solutions, like trees and peatland, or through engineered carbon removal.

To take the carbon out of flying there are in turn two choices: "change the plane" or "change the fuel". Changing the plane means developing a new zero-emissions aircraft. Electric and hydrogen technologies are both options for shorter journeys. Airbus has recently announced plans for a commercial hydrogen aircraft with a capacity of up to 100 seats and a range up to 2000kms to be flying by 2035. That would be a significant step forward. However, flights of that distance still only represent around 30% of global aviation CO₂. This shift will also take decades as the aircraft fleet is gradually changed over. Such a shift is both economically challenging and too slow to meet climate change goals.

The 70% of aviation CO₂ that comes from longer journeys will require a different solution: changing the fuel. That means dropping new, lower carbon "Sustainable Aviation Fuel" (SAF) into existing pipelines and aircraft. These fuels are proven, cut carbon and meet strict sustainability standards. The fact that they can be "dropped in" to existing infrastructure means that the faster they are produced, the faster we can decarbonise. There is also evidence that SAF emits fewer particulates so has air quality benefits too. SAF is an economic as well as an environmental opportunity. Kick-starting a new SAF industry in the UK will allow us to establish a lead in a globally competitive sector with significant technology export potential. It will also help to level up the UK as SAF production will be in regeneration areas with existing refinery and pipeline infrastructure across the nations and regions of the UK: Scotland, Wales, Humberside, Teesside and the North West.

The UK Government needs to act to seize this opportunity. SAF costs more than kerosene. The Government can address this challenge by creating a commercial framework that is viable for airlines to use SAF. Building an industry at scale will also rapidly drive down SAF prices. That is why we want to see the Government act now and in H7 with SAF mandates to scale up supply and price incentives to lower the cost of SAF.

In 2020, the Government launched the Jet Zero Council, a group of 25 industry, Government and environmental leaders tasked with agreeing and delivering the plan for net zero aviation. Heathrow will stay actively involved in that process supporting the development of ambitious targets. By 2030 10% of all aviation fuel used in Europe could be sustainable based on analysis by the "Clean Skies for Tomorrow Coalition". We believe we should be at least as

ambitious for the UK too. We are keen to work with airlines and others to make that a commercially viable reality as well as a target.

As well as progress in the UK, we need a global “high ambition coalition”. We were a founding member of Clean Skies for Tomorrow, a joint initiative of the World Economic Forum and the Energy Transitions Commission backing net zero and the rapid scale up of SAF. It includes leading global airlines, OEMs, airports and fuel companies. 2020 has seen growing momentum in the aviation sector behind a net zero 2050 goal. The One World Alliance of 13 carriers, representing most regions of the world, committed to net zero in September 2020. The whole European aviation sector joined them in November. COP26, the next major annual climate change negotiations hosted by the UK in 2021, will be an important milestone to continue to build that coalition and showcase the solutions for aviation. Our goal is for a global agreement on net zero aviation at the 2022 Assembly of ICAO, the UN body that governs aviation. Such an agreement would be a foundational framework for H7 as a whole.

Taking the carbon out of flying – direct action

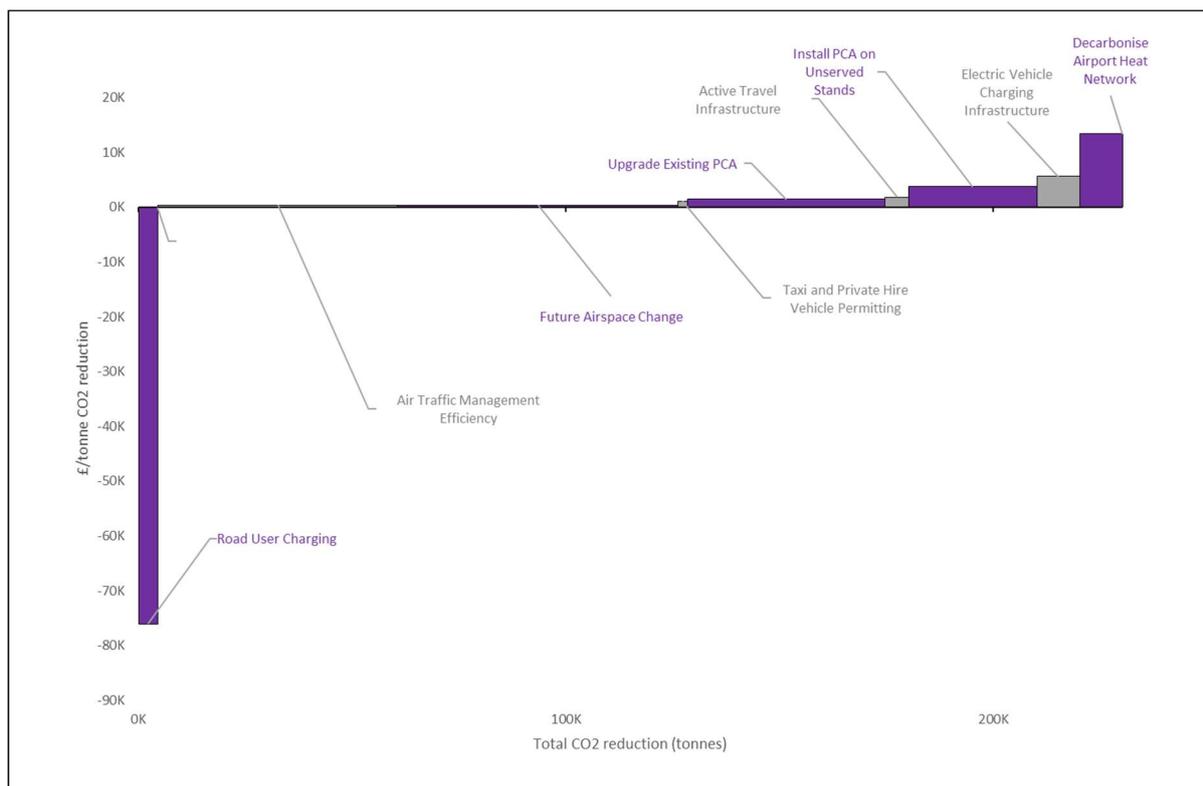
Beyond advocacy Heathrow is looking to what we can do ourselves.

First, our landing charges already incentivise planes that are cleaner for local air quality and quieter. We are now consulting on how we could use our landing charges to incentivise SAF. This would likely be via rebates for airlines that use SAF to help close the price gap with kerosene.

Second, we are evaluating the need for capital investment to support SAF and other new zero-emissions aircraft technologies. Our current assessment there is not a need for any on-airport SAF infrastructure, but we continue to explore any implications for Heathrow investment. Although we do not anticipate electric or hydrogen aircraft to be operating commercially from Heathrow during H7, we do need to understand the potential infrastructure implications for Heathrow. With Rolls-Royce, we are leading a consortium of aviation companies and academics which has been awarded funding from the Innovate UK “Future Flight” Programme to understand the implications for the aviation sector of these new technologies.

Third, we are planning to prioritise any H7 decarbonisation investment to deliver the biggest carbon bang for our buck. This includes investment to cut carbon from aircraft both in the air and on the ground and will support our airline customers to deliver their carbon goals.

Figure 3: Marginal abatement cost curve for key investments to cut carbon



Source: Assessment by Heathrow using Heathrow and various external data sources

Airspace change is the highest impact capital investment by the airport to decarbonise flight. Airspace around Heathrow and across much of the UK is still based on technologies designed for earlier generations of aircraft. It is very safe, but not efficient: it does not allow modern aircraft to use their full capabilities to fly efficiently and quietly. Heathrow was planning a complete redesign of airspace as part of our Expansion plans. Given delays to those plans, we now seek to modernise two runway airspace between 2026 and 2029. An airspace modernisation investment of £20m could save up to 500,000 tonnes of CO₂ per year¹⁸ and would be the lowest cost/tonne on our carbon abatement cost curve (see Figure 3). Much of our investment is likely to be during H8 but early design and consultation works will start in H7 and depending on capital availability we will explore options to start this programme earlier. This will also depend on progress with the NATS and CAA led programme to modernise upper level airspace across the whole of the UK.

Other air traffic management efficiency initiatives are also low-cost abatement measures. A programme of up to £20m investment includes steps implemented by NATS, which can reduce airborne holding, increase departure efficiency and cut taxi and runway holding time.

We are also assessing investments to cut carbon from aircraft on the ground. Pre-conditioned air (PCA) is one option. It allows aircraft to connect to air conditioning powered by electricity

¹⁸ Heathrow estimated figure based on 'Decarbonisation road-map: a path to net zero, Sustainable Aviation, 2020. Savings subject to other requirements for the airspace change programme, such as noise and respite

rather than running their engines to cool or warm aircraft. Terminals 2 and 5 and parts of Terminal 3 already have PCA. Equipment upgrades are needed in H7 to ensure it provides an appropriate degree of cooling or warmth. We also need to look at the right commercial charging model to incentivise the use of PCA instead of kerosene. One possible option here is to allow third parties to provide PCA equipment and contract directly with airlines to supply the service. That needs further evaluation from a commercial and operational perspective.

We are also making it easier for customers to reduce the carbon impact of their flights. In early 2020 we launched a quick and easy platform for customers to purchase quality carbon offsets to cover flights. As travel recovers post Covid-19 we plan to restart promotion of the platform.

Eliminating carbon on the ground – surface access and vehicles

3% of Heathrow's carbon footprint comes from surface access to and from Heathrow by colleagues, passengers and freight vehicles, or from vehicles operating within the airport. Our approach to surface access is outlined in detail in Chapter 7.4 – Surface Access. Our goal is to deliver the infrastructure, services and incentives that enable passengers and colleagues to make more sustainable travel choices. More sustainable travel choices also contribute to reducing congestion, improving local air quality, improving health and wellbeing and supporting our ambition of Heathrow as a great place to live. Suspending Expansion and a tight H7 plan makes this more challenging as it delays our capacity to deliver major new infrastructure.

During H7, we expect to see a continued move by consumers, colleagues and Team Heathrow partners to electric vehicles. The big shifts will be driven by Government policy, in particular the phase-out of new petrol and diesel cars by 2030. Before the new phase-out was announced, data suggested that by the end of H7 around 4% of all UK passenger vehicles would be electric¹⁹. We now expect to see a much more significant shift in the market with a greater choice of cars with longer range and lower cost, and a national charging network that provides confidence to switch to EVs. Heathrow must meet consumer needs and support the EV shift by providing the right charging infrastructure for private cars, but also for taxis and private hire vehicles.

This is not just about private cars. We are planning an airside "Ultra-Low Emissions Zone" by 2025 and both Team Heathrow and Heathrow are expanding our own EV fleets. Electric buses and coaches are expected to make up 38% of the national fleet by 2027²⁰. Heathrow is a major hub for long-distance and regional coach connections and local bus routes and has a significant bussing operation to connect colleagues and passengers between terminals and car parks at the airport.

In H7, we therefore plan continued investment in EV charging locations to improve coverage and availability. Charging needs to be in the right place, at the right time, at a competitive price. Given constraints on our capital investment in H7, we will evaluate options for third

¹⁹ Average EV vehicle projections using source data from *Bloomberg NEF, 2020; BP, 2019 and TRL, 2011*

²⁰ *Bloomberg NEF, 2020*

parties to provide EV charging infrastructure from a commercial and operational perspective. We will also consider pricing models that positively influence EV usage.

Getting our own house in order – a zero carbon airport

Less than 1% of Heathrow emissions are directly controlled by the airport. These are the emissions from our buildings and infrastructure, i.e. the electricity and gas used to power Heathrow. Our plan is for zero carbon infrastructure. We are well on the way. Total emissions from our electricity and gas use have fallen by around 85% since 2015. This is a result of continued investment in energy efficiency measures so we use less electricity and gas in the first place, optimising existing onsite sources of renewable energy, and shifting to a renewable electricity tariff

Moving forward we plan to continue with the same steps. Consuming less energy will always be the first step as it helps us save costs. We will identify further opportunities to operate our assets more efficiently and continue to grasp the energy and cost benefits of deploying the latest technology - replacing older less efficient assets with newer more energy efficient versions.

To fully eliminate carbon emissions, we need to decarbonise our energy supply by switching to renewable sources. We generate some renewable electricity on-site. The Heathrow Energy Centre provides renewable heat and electricity using a biomass boiler and we generate electricity from solar panels installed at T2. Renewable energy generation installed at Heathrow currently meets up to 10% of our total annual energy demand. In H7, subject to investment, we seek to raise that further by increasing the coverage of photovoltaic solar panels, responding both to the UK's renewable generation challenge and making savings from a localised renewable supply. We will also consider purchasing power from renewable energy generated by third parties close to Heathrow, which could offer us cost savings.

In 2017 Heathrow switched to a renewable electricity tariff. It ensures all the electricity we use is matched with an equivalent amount of renewable electricity flowing into the grid. The tariff eliminates carbon emissions from any electricity we are unable to generate ourselves. Many Team Heathrow partners also benefit from this arrangement. We intend to maintain a renewable backed tariff throughout H7.

The last major source of carbon emissions in running the airport is the gas used in our heating and cooling systems. We plan to develop a heat exchange system, which can reuse heat from buildings in summer and stores it to provide heating in winter. This would provide a zero carbon alternative to traditional heating and cooling systems. It is the right thing to do as we move to zero carbon infrastructure but has a relatively high abatement cost. We plan to start design work in H7 with a view to installation in H8.

Depending on demand recovery we will be seeking to bring forward business cases for these investments in H7 or H8.

4.4.3 Being a good neighbour

Being a good neighbour means taking steps to improve quality of life for those living near Heathrow. We want to benefit our local community, not detract from it. That can only happen if we take the time to listen to the people around us. Local people tell us noise impacts lives

in many ways, so we will continue collaborating with airlines and researchers to reduce its negative effects.

We also understand that our communities' greatest immediate need is help to respond to the economic impact of the pandemic. That means support staying in or finding new employment and creating opportunities for skills training. A third theme we hear is local air pollution. We know the main cause is road vehicles, so we will keep working to ensure this is not a car-led recovery. Above all, we will continue building the relationships with our communities.

Heathrow continues to be at the forefront of efforts to tackle aircraft noise. This is partly in response to the number of people affected by noise from our airport. Through working with airlines and NATS, the noise footprint of Heathrow has reduced markedly over the past few decades. Local communities understandably expect the airport to continue to invest in addressing noise impacts and to provide predictable and equitable periods of respite, all based on new research and evolving standards.

During H7 our priorities will be managing our noise impact, supporting local employment and skills and improving the quality of the local environment.

Reducing the impact of aircraft noise

Aircraft noise is the biggest single issue for local communities. The 'noise footprint' of the airport is smaller than it has even been, thanks to significant investment by airlines in new, quieter aircraft. Covid-19 has forced many airlines to retire their older, noisier, less efficient aircraft, such as the Boeing 747 – meaning that the future aircraft fleet used at Heathrow will be quieter and more efficient.

We remain committed to reducing our noise impacts. We will continue to develop and evolve our Noise Action Plan using the four pillars of the ICAO "balanced approach" to noise management. This aims to ensure both a sustainable transport network and protection of the local environment. In practice this means:

- Quieter aircraft – developing our differential charging system to encourage the use of "quietest in class" aircraft at Heathrow. We will continue to lobby for a date to be set for the international phase out of the noisiest category of aircraft. The benefit of progressively quieter aircraft is shown by the reduction in our Lden noise contour footprint area of 28% since 2006.
- Quieter operations – We will revise our 'Fly Quiet and Green' programme and continue to improve departure track keeping. Through our airspace modernisation programme and other airspace changes, we will work towards providing increased predictable periods of respite and runway alternation during easterly operations beyond H7.
- Mitigation and land use planning – we will implement a simplified and more accessible noise insulation program that reflects the outcomes of our 2021 review, Government policy and Independent Commission on Civil Aviation Noise (ICCAN) guidelines.
- Operating restrictions – we will continue to implement the night flying restrictions set out by Government. In addition, we will evolve our voluntary Quiet Night Charter which aims to further reduce the impact of night flights. For example, working together with airline and NATS partners has helped secure a reduction in late running departures of 27% since 2015.

In developing our approach to noise management over the next few years we will take into account external factors such as:

- Government aviation policy and noise objectives
- Rate and level of economic recovery in aviation
- ICCAN guidelines and any future statutory powers they may have
- Emerging research into aviation related impacts on health and quality of life.

Cleaner air locally

Air pollution in London and the health impacts it causes have been a major focus in London in recent years, as it has in cities across the UK and around the world. The quality of the air around Heathrow is also an important issue for local communities and for colleagues working at the airport.

There is an extensive network of air quality monitors across London and the UK, including around Heathrow. Historically, monitors right next to the airport have met air quality standards, but those next to the M4 motorway a couple of kilometres away have not. This shows that road traffic rather than aircraft is the main contributor to local air pollution.

Not surprisingly during 2020 there has been a reduction in pollution at all monitoring locations, due to the national lockdown restrictions introduced in March to tackle the Covid-19 pandemic. It is likely that with the gradual economic recovery of the country, pollution levels will increase and return to the pre-Covid-19 trend but with a slightly downwards profile given the uptake of cleaner vehicles and aircraft.

Although most of the traffic on the motorways around Heathrow is not related to Heathrow (and is already improving thanks to work by the Government and the Mayor to reduce pollution), we still have a role to play. All of the actions and investments on carbon outlined above will also reduce the emissions that contribute to local air quality.

One key activity for Heathrow is monitoring air quality at and around the airport. This allows us to understand levels of air pollution and target improvement activities. We own and run some monitors ourselves and these are part of a wider local and national network, which also includes local authority and national Government monitors. All of the information on air quality around the airport is published on the Heathrow Airwatch website (www.heathrowairwatch.org.uk).

Looking ahead, one issue we want to understand better is “ultra-fine particles” or “UFPs”. These are produced by road traffic and also by aircraft engines. There is currently no formal standard for measuring these in cities or around airports. There are also not yet any health-based limits set by Governments or health agencies around the world. Academics are increasingly researching UFPs to increase our understanding and there have been studies at some airports as well as in cities. We are sponsoring a PhD research project to better understand levels of UFPs at and around Heathrow and are installing a trial monitor at the airport. All the steps outlined above to reduce carbon emissions and other emissions that contribute to local pollution will also help to reduce UFPs. As our understanding develops we will identify if there are further specific steps we should take and build those into our plans.

We will review Heathrow 2.0 by the end of 2021 and will update our air quality targets at the same time.

A skills-led recovery, building careers for the future

Heathrow is the largest single-site employer in the UK. 9.4% of local residents rely on the airport for employment²¹. A skills-led recovery will be key to social and economic recovery of the local area over the H7 period. The Heathrow Local Recovery Plan sets out how we will contribute to that. Our aspiration is to work with Team Heathrow to support the 16,000 local residents that are predicted to be made redundant across the airport in 2021 to develop new skills and find better jobs. Growth will provide the opportunity to create different entry points into Heathrow allowing young people in our local communities greater access to careers at the airport.

We will repurpose the Heathrow Academy as a collaborative centre focused on:

- Outplacement care for Team Heathrow colleagues who are at risk or unemployed
- Facilitating learning and development for Team Heathrow transitioning to a new role and working environment at the airport - supporting our vision to deliver the best airport service in the world
- Brokering 'world of work' experiences for young people locally to improve their employment prospects at the airport or beyond.

This refreshed and collaborative approach will bring together skills, expertise and resources from across Team Heathrow and our partners. It will enable us all to draw upon the support and tools needed to give our passengers the best airport service in the world.

In shaping the support and services we deliver over the next five years we will consider external factors including:

- Government policy and funding for reskilling and employment schemes
- The local economic landscape including growth in other sectors, employment levels and demographic changes
- The changing people needs of Heathrow and other employers at the airport
- A more sustainable funding and delivery model for the Heathrow Academy in the future

Building the future together

Ultimately, being a good neighbour means building trust. Trust grows from strong relationships over time. The pandemic has highlighted the importance of working in partnership with community and local authority stakeholders to ensure that we are responding decisively and with urgency to the challenges of aviation downturn. We recognise the crucial work that community groups and local councils around our airport have led to support residents, many of whom work at Heathrow, through such a challenging time and are proud of the role that we are playing in that.

While we do not have the resources to continue all of the local community programmes that we were developing, we are committed to building on the strength of our relationships locally. By working closely together with local communities, we will continue to listen and share information through direct community and local authority engagement, forums and bulletins. We will also direct our resources to where they can have most impact, in response to the

²¹ Oxford Economics: "*The economic impact of reduced activity at Heathrow Airport*" September 2020

needs of our communities. Finally, we will deploy our Heathrow Rangers in local villages and continue working with the local primary schools most impacted by the airport.

4.5 Colleagues – Heathrow is a great place to work

Our IBP set out our ambitions to grow employment at Heathrow and across the UK through Expansion. A year later, we are in the opposite position of needing to scale back the business in the face of falling demand.

Covid-19 has reaffirmed how important it is to adhere to strict health and safety measures. We want everyone to go home safe and well to their loved ones and to protect their loved ones too. We have put in place targeted action plans to drive down injuries from sharps, for example, and will pursue these through H7 to make incremental improvements. Covid-19 has transformed the way airports operate to ensure passengers and colleagues can fly and work safely. Our response has been based on Government guidelines and including; installing physical controls to enable social distancing, significantly enhancing our cleaning regimes, requiring all colleagues to wear face coverings, asking non-operational colleagues to work from home where possible, and changing our car parking arrangements to help colleagues avoid the use of public or colleague buses.

We recognise this is a challenging time for colleagues and therefore strengthened our support for health and wellbeing. In addition to the arrangements already in place, including our 24/7 confidential Employee Assistance Programme and on-line GP Service, we have provided additional support for working from home, home schooling and financial wellbeing.

The impact of the pandemic has resulted in significant change across the airport, whether physical in the consolidation of terminals or organisational. The associated fire, health & safety and wellbeing (FHSW) risks have been identified and managed, in addition to maintaining business as usual FHSW.

We also have ambitions to become a better place to work. Motivated, skilled colleagues across the airport will deliver better service, greater efficiency and faster growth. We want everyone who works at Heathrow to feel they can be safe, happy, motivated and developed in ways which encourage them to flourish. As we have cut headcount, changed terms and conditions and made other difficult changes to survive, we have sought protect some fundamental aspects of the colleague package. While our aim in the organisational change has been cutting costs, we have protected as many jobs as we can – offering a choice of a job for all who want one in frontline roles. We have reaffirmed our commitment to market-rate salaries guaranteed to be at or above the London Living Wage.

At Heathrow, Diversity and Inclusion is a fundamental part of our business strategy, which is led by our senior management team. Our business depends on the ability to provide an excellent passenger service and to do this effectively we need to ensure we recognise and utilise a diverse range of thought, skills and experience.

The Diversity and Inclusion strategy and action plan is our commitment to creating a welcoming, inclusive workplace that establishes a passionate approach to inclusion, building a culture that attracts, retains and progresses the most diverse talent.

The goal for Heathrow is to reflect the diversity of the local community at every level by 2025. To be a workplace where everyone feels able to bring their whole self to work and perform at their best. Where openness, honesty, challenge and innovation are encouraged and valued helping us to achieve better outcomes for our colleagues, passengers and Team Heathrow. Therefore, we have set ourselves some very ambitious goals:

Table 1: Diversity and inclusion goals

Goal	Measure
Reflect the diversity of the local community at every level for female colleagues	49% Female representation at each level
Reflect the diversity of the local community at every level for Black, Asian and Minority Ethnic Colleagues	39.9% Black, Asian and Minority Ethnic representation at each level
Create an inclusive culture where colleagues feel confident in recording and sharing their diversity data	100% Disclosure rates (including prefer not to say) for: Gender, Disability, Ethnicity and Sexual Orientation

Source: Heathrow

The impact of Covid-19 has had a significantly negative impact on our business from a financial perspective. We have since made a number of changes to our organisational structure but have ensured that there has not been a significant impact to diversity. As a result of the organisational re-design in April 2020, overall figures for Black, Asian and Minority Ethnic colleagues increased from 43.2% in April 2020 to 45.6% in September 2020. We saw a slight decrease (0.7%) in our overall female representation 41.7% in April 2020 to 41.0% in September 2020.

When reviewing our ethnicity and gender representation across all levels of the organisation it is clear we still have more to do, and we have committed to making this a priority over the next five years. To support us with this we have calculated our Gender Pay Gap for three years, and in 2019 our Gender Pay Gap was below the national average. We are making further progress to address our Gender Pay Gap, in particular improving female representation in more senior, higher paid roles. This year we also calculated our Ethnicity Pay Gap. This analysis revealed that these colleagues remain underrepresented in our most senior leadership roles, contributing to the pay disparities. We seek to reduce this gap over the H7 period.

We view the H7 period as a chance for greater transformation of how our operations work. This includes a number of internal initiatives with colleagues including:

- Re-rostering to drive efficiency and respond to potential schedule changes.
- Focusing on productivity – flow rate, fixed post removal and incentives for team performance.
- Cross-training and de-duplication – leveraging passenger services framework and approach for front-line cross training and service roles, for example in APOC.

This provides our colleagues with an opportunity to broaden their skills, meaning more fulfilling roles. Colleagues tell us that the restroom, catering and healthcare facilities we provide are not consistently high quality and we need to fix this. This includes upgrading medical facilities. We will prioritise changes first in those terminals open to passenger operations.

There is significant opportunity to change our operating model further. Our aspiration is to retain a core of multi-skilled colleagues who are able to work in a flexible and adaptable manner. This retains all of the key skills required to complete the many complex and vital tasks to make the airport run efficiently.

We believe that introducing automated activities will redefine the roles at the airport rather than eliminate them. Certain activities, rather than entire occupations, have been automated to date. Changes that have already occurred have greatly improved the efficiency of the airport. Advancements include automated check-in kiosks, biometric document checking and the role of autopilot on flights. By automating some of the more “mundane” business processes, the roles we are able to provide in the future are likely to be less repetitive and more fulfilling and engaging for our colleagues. There is an even bigger opportunity if we consider the traditional processes fulfilled by each of the operatives at an airport. There is no reason why we must continue operating in the same manner, with the value chain segmented in the same way.

We see a further opportunities beyond the H7 period. Some of the areas we will be exploring include:

- Automated tugs to move aircraft in and out the hangar – meaning less time waiting.
- Using drone technology aircraft inspections – safer and quicker turn around.
- Automated baggage and cargo warehouses – just in time delivery and ordering allows efficient use of space.
- Using robots to perform physical tasks - meaning our colleagues can avoid danger zones and parts are installed with less variability.

4.6 Investors – Heathrow delivers predictable and fair returns

Our investors are committed to long-term investment. This should make Heathrow well placed to invest for long-term value for consumers, airlines and the wider world. But this can only if the conditions for investment are fair and appropriately balance risk and return.

Heathrow is the largest wholly privately-owned airport globally and throughout Covid-19, the UK’s hub airport has remained privately financed through a combination of additional equity and debt investment. We have acted quickly as a business to reduce our monthly cash burn by over 30%, cutting costs and cancelling or pausing capital projects. We have still lost around £5 million every day. We are planning further savings through 2021 and H7.

Covid-19 has highlighted the level of risk to which Heathrow is exposed in stark contrast to regulated entities in other sectors. Credit rating agencies’ expectations are that the breadth and severity of the Covid-19 outbreak will lead to slower than previously anticipated travel recovery. As a result, they have downgraded Heathrow and other airports. This more negative outlook will lead to higher funding costs and consequently less efficient investment, and it may take several years for Heathrow to regain an A- rating.

We need to ensure that the risk and reward balance is reset to enable private investment to continue. At this time of unprecedented uncertainty, the CAA has to use the regulatory framework to provide stability; we outline ways this can be achieved in Chapter 9.1 - Regulatory Framework.

There is now mounting pressure on companies to pay attention to environmental, social and governance (ESG) issues. Most c-suite leaders and investment professionals say they expect that ESG programs will contribute more value in five years than today. They also indicate that they would be willing to pay about a 10 percent median premium to acquire a company with a positive record for ESG issues over one with a negative record²². This has a direct implication for Heathrow - we need to anticipate and adapt to future needs with the ability to flex investment in line with a changing world and emerging megatrends.

The UN has warned of a “lost decade of investment” if there is not coordinated public action to spur a better economic recovery²³. In order to Build Back Better we will require some smart actions now, and not fall into the same pitfalls post the global financial crisis. Smart investment will benefit future generations, the planet and support a more resilient future. All airports will now be facing the same dilemma – fear of an unknown future market may curtail investment. But investing in a considered and proportionate manner, in a way that helps a business to shield, adapt and survive the megatrends should be undertaken. We have an opportunity to rebuild from Covid-19 by investing in digitalisation and decarbonisation.

²² McKinsey, *The ESG premium: New perspectives on value and performance*, February 2020

²³ UNCTAD, *Trade and development report*, 2020

5 - DEMAND

Chapter Overview

- Covid-19 has had an unprecedented impact on passenger numbers and led to continuing uncertainty on the future of supply and demand.
- We agree with the airline community that we need flexibility in our approach.
- We are therefore considering a range of scenarios as well as a mid-case and expect to provide multiple updates to these in 2021.
- This plan focuses on the methodology and the key drivers, all of which has been developed through Constructive Engagement with the input of the airlines. This forms an evidence base that can be built upon as new information becomes available.
- Government policy is a key driver of passenger numbers and guidance on this in 2021 could support a clearer view of H7 at subsequent updates.
- We set out our current view on the forecast range (High, Low, and Mid scenarios) – but with the clear view to update this in 2021. We forecast 325m passengers across a five-year H7 period in the mid-case.

5.1 Introduction

5.1.1. Context

The Covid-19 pandemic has caused an unprecedented drop in demand that, at best, will be followed by a prolonged downturn, if not a structurally depressed global aviation sector.

The scale of the impact means that our previous H7 forecasts have been invalidated and the key demand drivers have fundamentally changed. This chapter sets out our methodology and assumptions for forecasting demand, as well as our approach for building in flexibility.

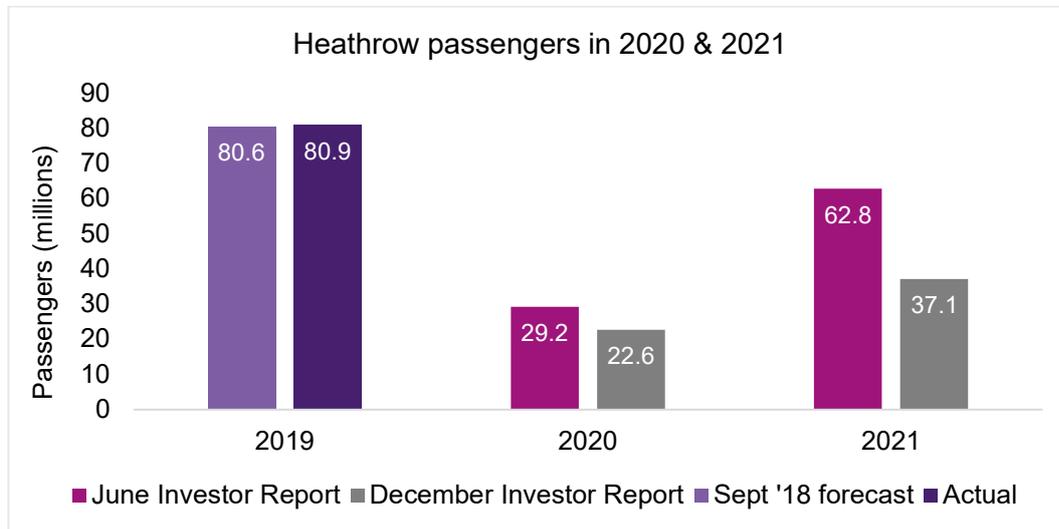
The demand scenarios we set out in this chapter are a key input, not only to the building blocks and airport charge, but to our overall business plan; they drive all of our cost and revenue forecasts and hence influence our capital plans.

So much of what will define future levels of demand is outside of our control and in the hands of Governments around the world. Passenger demand will only decouple from Covid-19 impact once a vaccine has been widely deployed, with immunity meaning travel restrictions can be lifted. Demand is thereby sensitive to the efficiency with which Governments support the deployment of a vaccine and then the speed with which they respond by lifting travel restrictions. Of course, this depends on not only the UK Government, but Governments around the world.

At the time of writing the Building Blocks Update in July, passenger numbers had dropped by 96% for the second quarter and the outlook for 2020 & 2021 expected passenger numbers of 29.2m and 62.8m respectively. Since then, early signs of recovery in August have stalled, with September and October remaining at 82% down on 2019 levels. In November, what had been considered a worst-case scenario was realised; a second national lockdown, which restricted demand to levels seen at the start of the pandemic.

The outlook for passenger numbers in 2020 has now been revised down to 22.3m, and the outlook for 2021 has reduced significantly again to 37.1m. That represents a drop in the outlook for 2021 by a further 41% in just 6 months between creating forecasts. The impact over the rolling year up to March 2021 is now expected to be -84%.

Figure 1: Passenger demand in 2020 and 2021

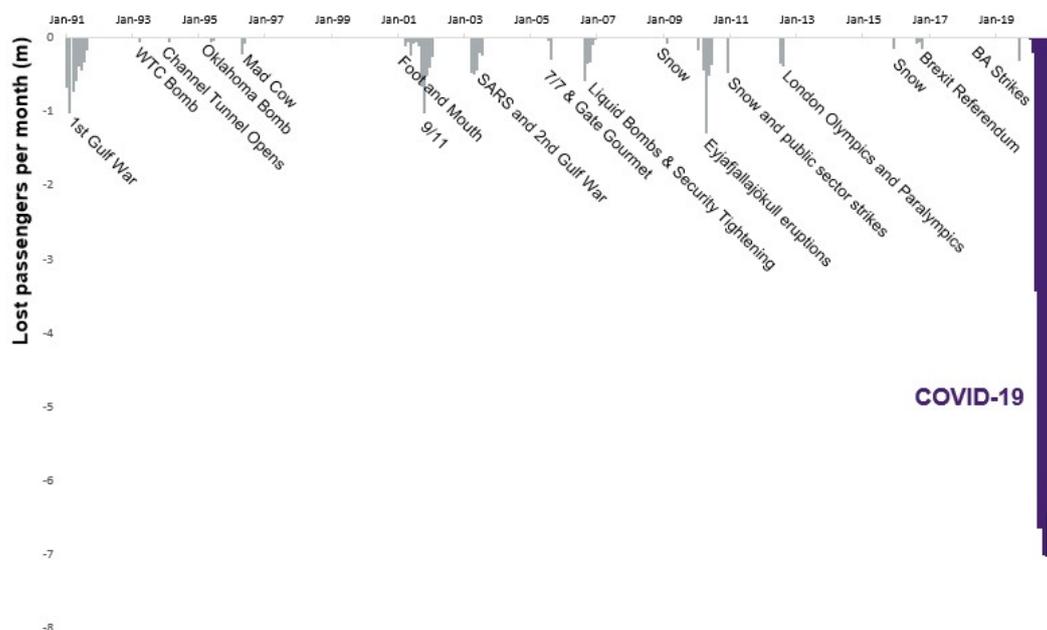


Source: Heathrow forecast and actuals

5.1.2. Previous shocks

The risk associated with passenger numbers is both evident and unprecedented. The impact of this shock is so much deeper and longer lasting than any previous shock, that little can be learnt by comparison, other than as minimum recovery periods, or an understanding of how the type of shock impacts the shape of recovery.

Figure 2: Covid-19 dwarfs all other Heathrow passenger shocks of the last 30 years



Source: Heathrow forecast and actuals

The nature of the shock from Covid-19 can be thought of in three parts:

Travel restrictions – enforced restrictions which limit the ability to travel, akin to previous shocks like the ash cloud or snow event of 2010, which create a V-shape shock in which passenger numbers return once the restrictions are lifted. In the case of Covid-19, the ongoing, rolling nature of travel restrictions mean there are multiple mini ‘Vs’ in succession, creating the W-shape forecast that is now well known.

Consumer behaviour – once travel restrictions are lifted, initially in part with implementation of testing, or later with rollout of a vaccine, the dominating driver will be consumer confidence and demand to travel. Airline capacity and fleet decisions will need to respond to that recovery in consumer confidence. This is akin to the consumer response in wake of the liquid bomb threat in 2006, and the shock caused by SARS in 2003. This drives a U-shaped recovery, which is more ongoing in nature than the V-shape shock.

Economic impact – the underlying impact, which will dominate in the later years of the shock, is the economic impact. This is the lagging impact once travel restrictions are lifted and consumer confidence returns, which is akin to the L-shape shock of the Global Financial Crisis, which took three years to recover from.

5.1.3. Industry views

Much like our own downward revisions to forecasts, IATA’s recent update reflects a more negative outlook since our discussions in Constructive Engagement, which itself was a more negative outlook than a few months beforehand.

“A few months ago, we thought that a full-year fall in demand of -63% compared to 2019 was as bad as it could get. With the dismal peak summer travel period behind us, we have revised our expectations downward to -66%” Alexandre de Juniac, IATA’s Director General and CEO, speaking in September¹.

IATA are expecting the deep losses of 2020 to continue into 2021², highlighting that the crisis caused by Covid-19 is *“devastating and unrelenting”*. Their November update forecasts 2020 demand for Europe to be -70% on 2019, and 2021 to be -56%.

In terms of longer-term outlook, IATA forecasts:

*“while the industry will see improved performance in 2021 compared to 2020, the road to recovery is expected to be long and difficult. Passenger volumes are not expected to return to 2019 levels until 2024 at the earliest, with domestic markets recovering faster than international services.”*³

Similarly, the recent forecasts from Eurocontrol⁴ consider three scenarios, with recovery to 2019 levels ranging from 2024 to 2029. They forecast flights in 2021 to be -49% on 2019.

“Even in the most positive scenario, we do not expect a recovery to 2019 levels before 2024. There is a very real prospect that this recovery could take even longer, perhaps to as far out as 2029. This is a catastrophic picture for the aviation industry and shows clearly why it is so important for States to take consistent and coherent measures to support the aviation

¹ [IATA - Traffic Forecast Downgrade After Dismal Summer](#)

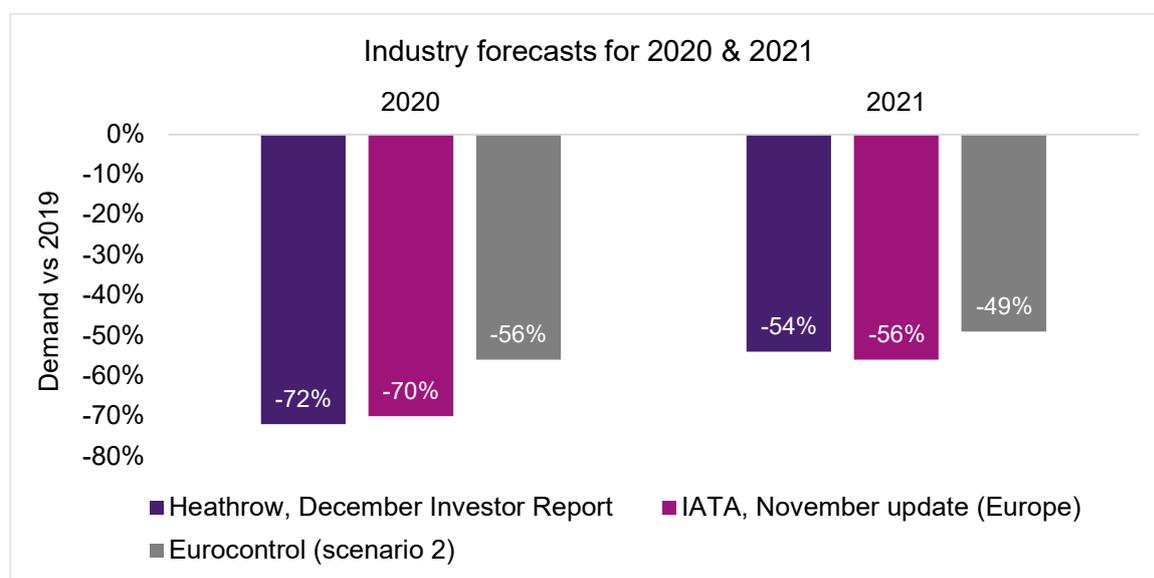
² [IATA - Deep Losses Continue Into 2021](#)

³ [IATA - Deep Losses Continue Into 2021](#)

⁴ [EUROCONTROL Five-Year Forecast 2020-2024 | EUROCONTROL](#)

industry and make passengers feel safe to fly again.” Eamonn Brennan, Director General, Eurocontrol.

Figure 3: Comparison between industry forecasts (NB. Eurocontrol forecast is flights)



Source: Heathrow forecast, Eurocontrol Five-Year Forecast (4th Nov), IATA press release (24th Nov)

These forecasts are indicative of the general outlook, with others from rating agencies S&P⁵ and Groupe ADP⁶ echoing our own view, as well as those of IATA and Eurocontrol, that the outlook for recovery has become more negative in recent months, and that recovery to 2019 volumes will not be before 2024.

Although there is some consensus on the earliest point for recovery, there are wide ranging views as to how long the recovery could take. Eurocontrol’s most conservative scenario⁷ puts recovery at 2029, whereas IATA’s presentation during Constructive Engagement⁸ showed a low case recovery by 2039 and passenger numbers remaining 35% below 2019 levels in 2027.

Much of the uncertainty surrounding the initial years of recovery is focused on vaccines. As IATA sets out below⁹, the uncertainty relates not only to the timeline for rollout, but also the effectiveness and the associated impact on travel restrictions and consumer confidence.

“We assume a vaccine(s) is deployed in the second half of 2021, but it looks likely that there will be production and distribution challenges that mean it will only be in late 2021 and in 2022 when air travel rises back substantially. On this basis we don’t expect 2019 levels to be regained until around 2024. We should also acknowledge the huge amount of uncertainty over virus behaviour, vaccine effectiveness and government responses.”

Of course, this uncertainty is prevalent across many of the key demand drivers and it is because of this context that there is a clear need for flexibility in our approach.

⁵ [As COVID-19 Cases Increase, Global Air Traffic Recovery Slows | S&P Global Ratings](#)

⁶ [October 2020 traffic figures and traffic assumption for 2021 - Groupe ADP - Service presse](#)

⁷ [EUROCONTROL Five-Year Forecast 2020-2024 | EUROCONTROL](#), 4th Nov 2020

⁸ IATA Economics, Passenger outlook for the UK, September 2020, included in Annex 16

⁹ <https://www.iata.org/en/iata-repository/pressroom/presentations/outlook/>, 24th Nov 2020

5.2 The need for flexibility

Along with other building blocks of the business plan, there are many aspects of the future we cannot yet know with any degree of predictability. There has been no real further certainty since the point at which we wrote the Building Blocks Update; the Covid-19 pandemic continues to evolve and our expectation of what constitutes a worst-case scenario continues to be reset.

We are not able to reliably predict, or find evidence that others can predict, the exact course of infection across countries more than a few weeks into the future. This uncertainty is exacerbated by unpredictable policy decisions by Governments around the world, who have been slow and un-coordinated in establishing travel standards and testing, while being quick and potentially irrational in imposing controls.

This potential for significant change means that we cannot expect to forecast with any level of precision. Our approach for the RBP is therefore to fix the formula, not the input assumptions; our models are designed to be updated throughout 2021 as more information emerges. In each update we will transparently update the assumptions, using the same forecast logic and methodology, subject to any updates from feedback or further thinking, which we will explain at each point.

When the future of global aviation is so uncertain, we believe that pegging our planning to one forecast is unwise and impractical. False certainty on a single scenario could lead to poor and inefficient spending and investing in misinformed strategies. We have therefore created a range of passenger demand scenarios with transparent assumptions. Given the current uncertainties we do not yet know if any one scenario will prove to be overly optimistic or conservative, but they have been created based on evidence and data, and so set a basis for further update.

This flexible approach is jointly agreed with the airline community as being the best way to manage the additional uncertainty we now face in forecasting traffic.

In this spirit of building in flexibility to manage uncertainty, we are also proposing changes to our regulatory framework. In line with our main competing airports in Europe, we are proposing a price control adjustment mechanism which automatically adjusts the price control to reflect deviations in outturn revenue against forecast. This will ensure that, even in the face of forecasting uncertainty, the price control can adapt to the outturn conditions of H7 and remain fit for purpose. We are also proposing the retention of the Development and Core capital framework, a fuller pass through of business rate costs through the Other Regulated Charges (ORCs) mechanism and an expansion of the S-Factor to account for unforeseen changes in Health and Safety policy requirements. Together, these proposals will ensure the framework is sufficiently flexible to deal with the unprecedented uncertainty of the H7 period.

5.3 Demand forecast methodology

5.3.1. Overview

In preparation for the Initial Business Plan we had comprehensively reviewed our forecasting models with independent input to build on the improved accuracy of the Q6 models and take on board feedback from airlines and the CAA on their performance. This comprehensive review gives us confidence that the models are designed based on a robust forecasting methodology, sound mathematical techniques and industry best practice. Our approach for H7 therefore builds on this strong base.

Clearly the Covid-19 crisis represents a significant challenge for forecasting, and this requires some changes and additions to the models. For example, we need to reflect the impact of travel restrictions on supply, the lack of an accurate flight schedule and the focus on market level changes rather than airline level.

As well as necessary updates to respond to new drivers, the models also depend on assumptions which are currently unknowable or continually changing. This leads to uncertainty but need not mean starting from a blank sheet of paper on our methodology. The uncertainty can be addressed by using the models to consider scenarios and having a plan to update once new data is available.

During Constructive Engagement, there was a clear desire from the airline community to take a scenario-based approach, which would give a range of forecasts as well as a mid-case, and that could be updated in 2021.

The approach set out below combines the advantages of using the full functionality of the proven, existing models, with a scenario-based approach that covers the range of outcomes, whilst giving the flexibility to update as we gain more information over the next year.

The detail of the methodology can be described in four parts, each explained below:

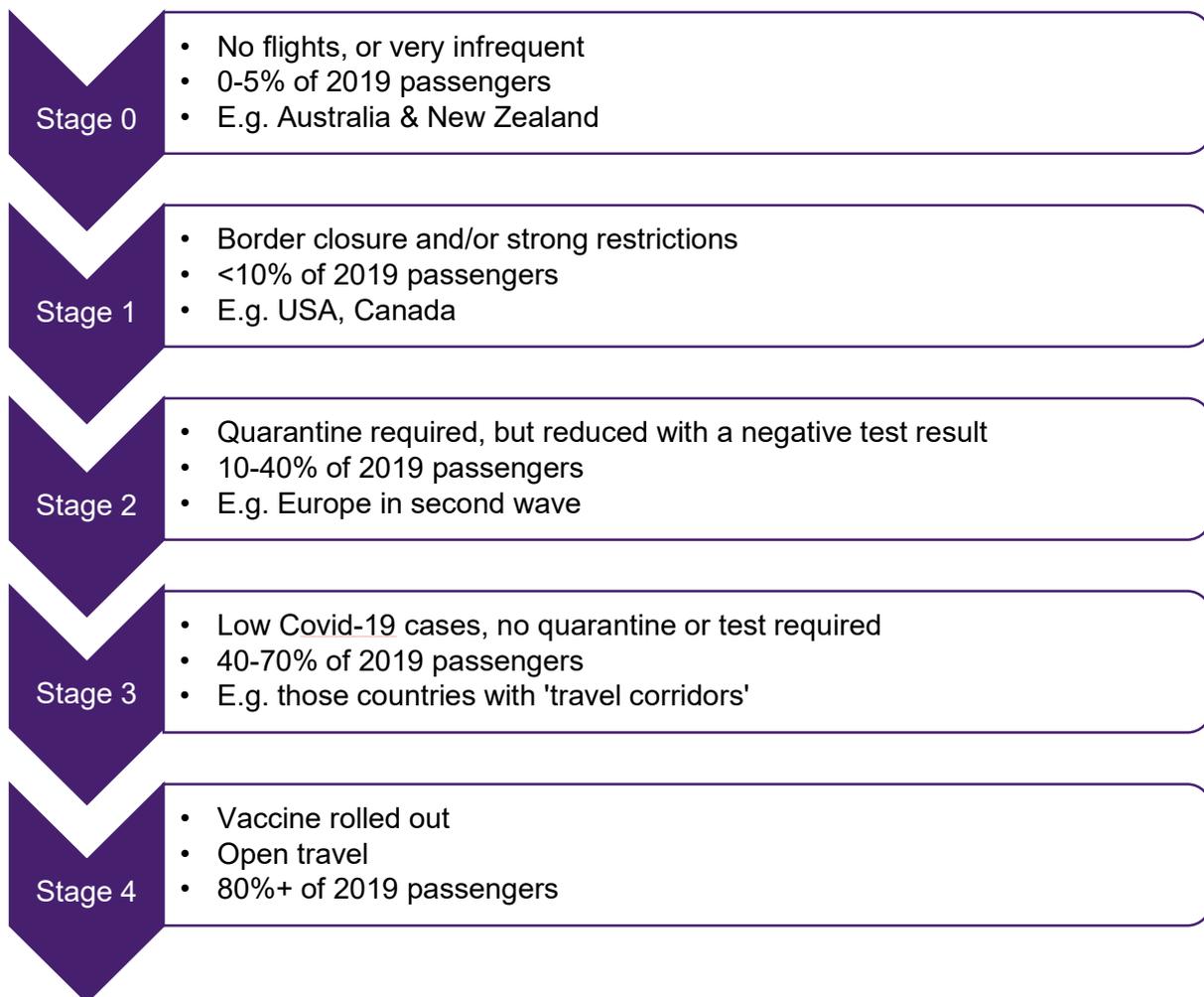
- Travel restrictions model;
- Econometric model;
- Capacity supply model; and
- Weighted combination of scenarios.

5.3.2. Travel restrictions model

Over the last year, we have seen demand respond to the lifting of restrictions, continued border closures in many long-haul markets and the re-imposition of quarantine on previously open markets. The data on the level of demand in each market under different states of control allows us to build a model of the stages of recovery and create a forecast for passenger numbers in each of those stages for each market.

These stages of recovery move from full lockdowns and/or border closures through quarantine and testing regimes to more open 'travel corridors' and ultimately a return to free travel on discovery and rollout of a vaccine.

Figure 4: Stages of Recovery



Source: Heathrow

For each of these stages, we calculate the expected level of demand in each market as a proportion of 2019 demand. This is based on the actual demand we have seen across markets as changes have been made to restrictions over the last year, which show consistent patterns across restrictions and markets. Where markets haven't 'experienced' particular stages, the data from other markets and/or stages is extrapolated.

Having defined these stages, and the level of demand for each market in each stage, we then define the timeline for each market to move between the stages. The assumptions behind this timeline are set out in detail in Section 5.6 Key Drivers - Travel Restrictions Model.

The travel restrictions model splits Heathrow demand by 40 geographic markets (e.g. France, West U.S., Central Asia), compared to eight in the original models. This allows for more nuanced border opening assumptions and to distinguish more finely between different balance of purpose of travel between markets. This approach allows us to build up our observations of markets in each stage over the next year, developing our understanding of how each market will respond to varying restrictions.

5.3.3. Econometric model

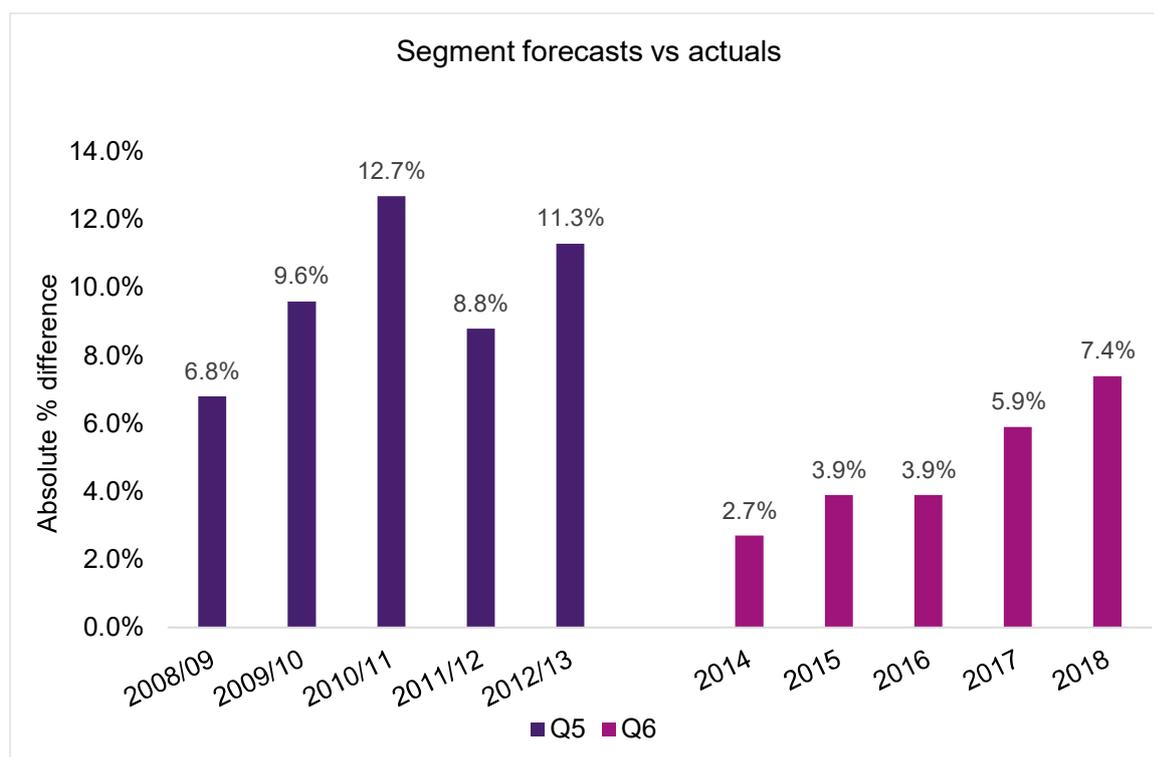
Once the vaccine rollout has begun, travel restrictions are lifted and demand begins to return closer to 2019 levels, the driving factors influencing passenger numbers return to more typical forecasting territory; capacity constraints and demand elasticities. The original models then come back into their own. These models have been extensively reviewed and evaluated and have proven to be accurate at predicting passenger numbers.

In Q6 we introduced two separate but complementary modelling approaches to forecast Heathrow's long-term passenger numbers. These included:

- A capacity supply model that considers passenger demand from an airline supply point of view and forecasts changes in aircraft movements, average aircraft size (number of seats) and load factors;
- An econometric model that forecasts the change in passenger demand as a result of changes in income (GDP and consumer expenditure) and changes in fares (driven by oil price, taxes, charges and efficiency gains).

These models produced forecasts with significantly improved accuracy versus those in Q5, with errors more than halved. The early years of Q6 saw significant accuracy improvements, with the outperformance in 2017 and 2018 driven by the introduction of growth incentives.

Figure 5: Overview of settlement forecast errors for Q5 and Q6



Source: Heathrow analysis of forecast vs. actuals

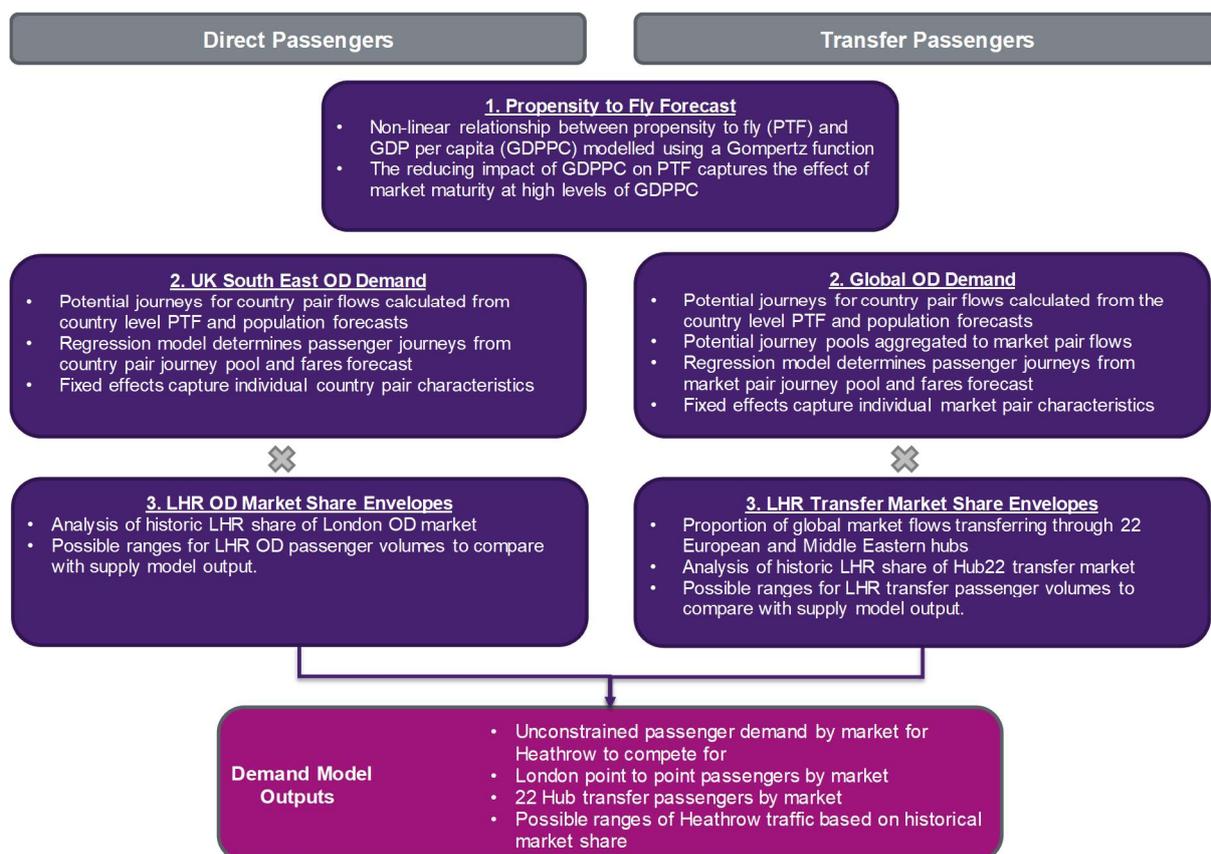
The model presented in the IBP brought together the econometric and capacity models. This built on the successes of the Q6 models and takes on board feedback from airlines and the CAA on their performance. The new model was comprehensively peer reviewed by Steer to give confidence that our forecasting methodology is based on reliable data inputs, sound mathematical techniques and industry best practice.

Our methodology consists of a ‘top down’ econometric model which assesses total demand available to Heathrow, along with a ‘bottom up’ supply model which accounts for changing capacity. The two link to each other to ensure that the supply forecast (and thus forecast passenger numbers) fit within demand envelopes.

The demand model produces annual volumes for Origination and Destination (O/D) passengers and transfer passengers in 13 geographical markets. These totals represent the unconstrained demand available to the London market and major hub airports, which Heathrow will compete with for traffic. We explored the use of different datasets and assessed the impact of factors which may logically be drivers of demand. We tested over 100 different regression models, using different combinations of variables before deciding on the approach below, which gave the best correlation to historic actual passenger demand.

The resulting demand model uses a two-stage regression; the first part forecasts passenger propensity to fly and the second part forecasts passenger flows between country and market pairs.

Figure 6: Heathrow demand model overview



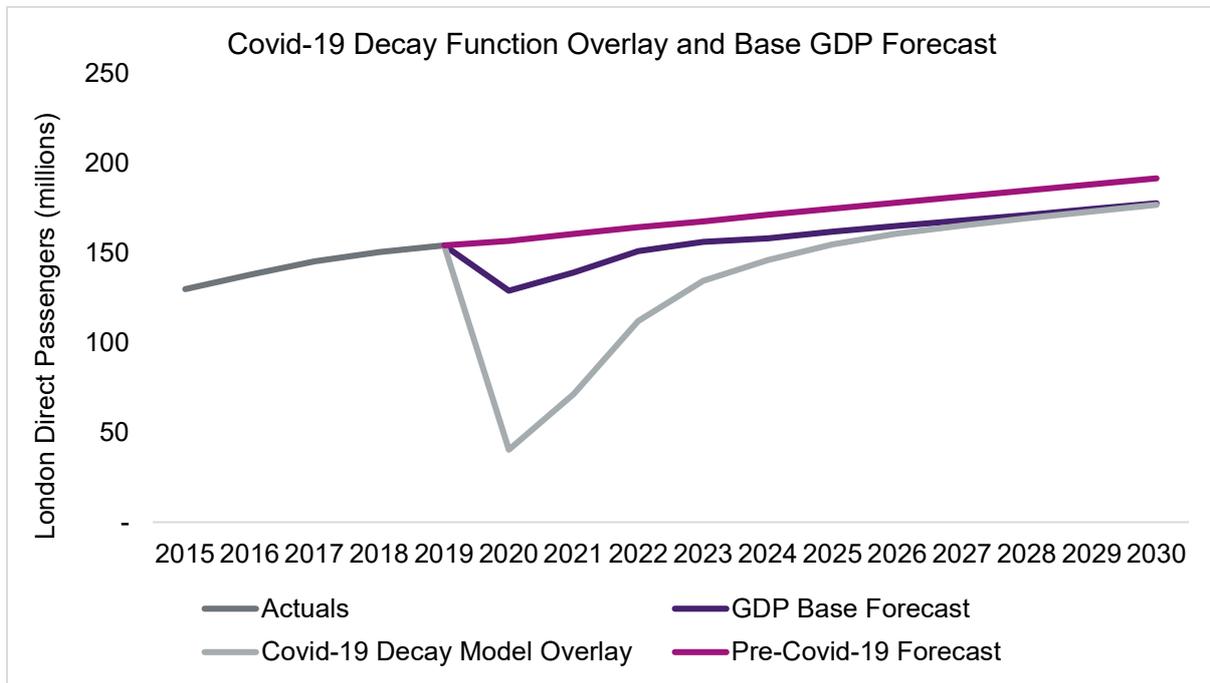
Source: Heathrow

The explanation below focuses on the updates that have been made to the model to respond to the impact of Covid-19. Much more information on the base model can be found in the Initial Business Plan Passenger Forecasting chapter included in Annex 13.

The initial challenge for the econometric model is that the first part of the shock from Covid-19 is a restriction of supply rather than a demand response; it's not that passengers don't want

to fly, but that they can't. Of course, that's not to say there is no underlying demand impact, only that it is dwarfed by restrictions in the first years of the shock.

Figure 7: Impact of GDP compared to overall demand reduction



Source: D&S Forecast Model

To deal with this we have introduced an exponential decay function to model the initial stages of recovery. The function is characterised by two input variables: the length of time before returning to 2019 passenger levels, and the shape of recovery. The decay function is calibrated to the recovery timeline forecasted through the travel restrictions and capacity supply models. With more data, the decay function can be calibrated to the actual shape of recovery.

There are two other aspects to the impact of Covid-19 that require additional functionality in the model: the potential for long-term impacts to both business traffic and air fares.

It is expected that business traffic will suffer a long-term reduction in demand, as evidenced in Section 5.7. This is essentially a long-term reduction in propensity to fly for this passenger type. We have therefore added functionality into the model to give the ability to apply a percentage reduction to the overall volume of business passengers¹⁰.

To assess the impact of a change to fares we have added functionality to set an input assumption on the percentage reduction. Then using the fares elasticity generated in our regression model, we can estimate the resulting impact on passenger demand available to Heathrow.

The underlying and lagging impact of Covid-19 will be the economic shock. This doesn't require any amendments to the model, only consideration of more scenarios than would be usual, because of the uncertainty and range of outcomes. The propensity to fly component

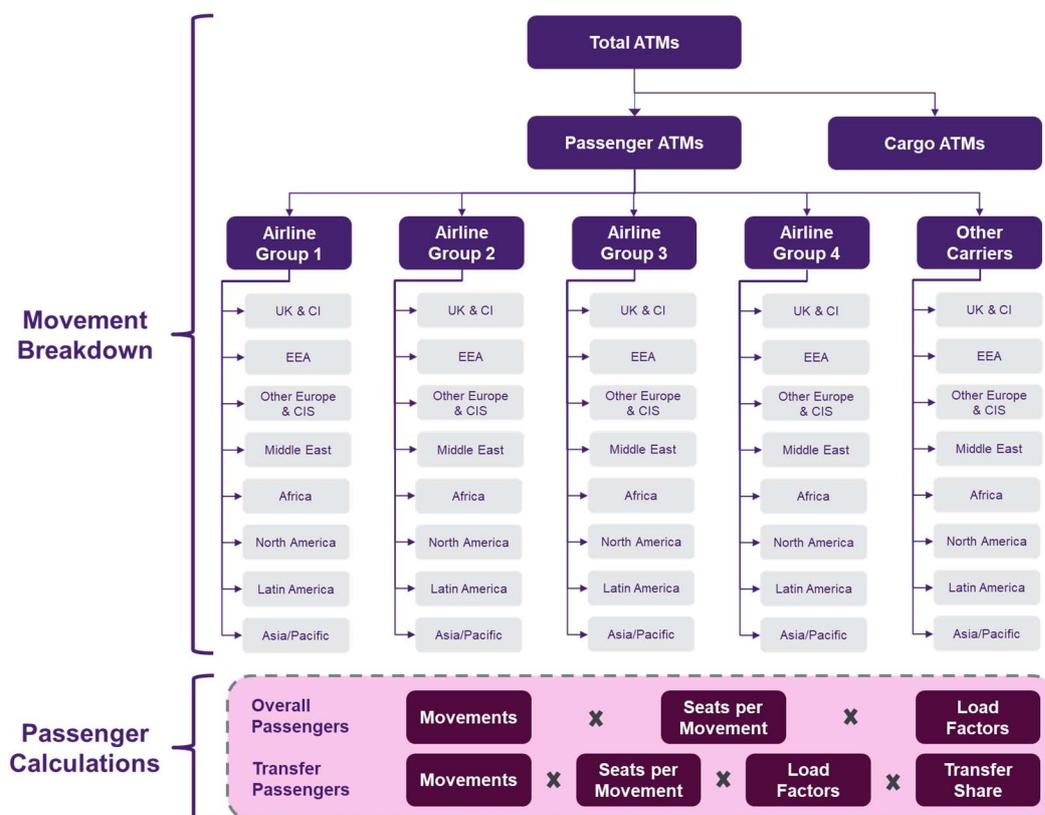
¹⁰ Business passengers are estimated to account for 37.2% of UK domestic passengers and 19.0% of international passenger flows, based on the 2019 CAA Passenger Survey Report: Characteristics of terminal passengers and the reduction is applied to all years from 2020.

models the relationship between GDP per capita and the number of flights purchased per person at a country level. It captures the likelihood of people choosing to fly as their incomes grow. Propensity to fly multiplied by the population generates the pool of available journeys to/from an individual country. The modelled relationship was fitted to over 1,300 data points with and has a coefficient of determination of 81%.

5.3.4. Capacity supply model

The supply model takes the approach of a typical capacity-based forecasting model. Heathrow passenger demand is built up from assumptions on key metrics: movements, seats per movement, load factor and transfer share. Assumptions are created for up to nine distinct airline groups and eight geographical markets.

Figure 8: Heathrow supply model overview



Source: Heathrow

The uncertainty that is inherent with any forecasting is reflected in our models by the use of standard probability modelling techniques, using ranges for key inputs to generate ranged forecasts around the central value.

Using Monte Carlo simulations provides a statistical confidence level for an estimate. P50 is defined as the midpoint of the estimates where, by definition, 50% of estimates exceed the P50 and 50% of the estimates fall below the P50. P90 means 90% of the estimates are below this point and just 10% of the estimates are above. It does not mean that the estimate has a 90% chance of occurring – that is a very different concept. The central limit theorem indicates that the P50 estimate has a higher chance of occurring than P90 or P10 estimates.

5.3.5. Weighted combination of scenarios

The full range of possible inputs is larger than the capacity and econometric models are designed for. Each scenario is therefore modelled separately and the resulting separate probabilistic outputs are then combined.

Each scenario is not equally as likely as the other, so in combining the scenarios we apply a simple weighting to reflect this. This weighting means producing more runs from those scenarios which are more likely. A full probabilistic range is then created from the weighted combination of the scenarios.

In the combined probabilistic range, the P50 is the median, and is therefore taken as our mid case forecast. The P90 is taken as our high case forecast, and the P10 as our low case.

5.4 Airline community engagement

The forecasting methodology and assumptions have been shaped by our discussions with the airline community during Constructive Engagement (CE) as well as other publicly available commentary and analysis. The table below sets out each piece of feedback and/or evidence and how we have responded:

Table 1: Airline feedback & commentary

Airline community feedback ¹¹¹² & commentary	Heathrow's response in the RBP
There was agreement through CE that it is very difficult to forecast numbers for 2022-2026 at this stage so a flexible approach is required, with current discussion to focus on the drivers of demand and potential scenarios, with updates to follow in 2021.	Our approach for the RBP is to fix the formula, not the input assumptions and then update in 2021 as more information emerges. Our methodology uses a scenario-based approach to reflect the uncertainty. Please see Sections 5.2 and 5.3 for more detail.
Through CE there was a shared desire to reach a mid-forecast as well as a range, but acknowledgment that uncertainty might limit our ability to do this accurately.	We have used a scenario-based approach to reflect the uncertainty and combined these scenarios based on a simple weighting in order to create a low, mid, high forecast output. Please see Section 5.3 for more detail.
There was agreement through CE that the main drivers in short to mid-term are travel restrictions, pace of easing restrictions, passenger confidence and economic outlook.	The key drivers were discussed during CE and the resulting assumptions are set out in Sections 5.6, 5.7 and 5.8.
The airline community have requested that scenarios are utilised to a greater extent in the RBP.	We have used a scenario-based approach, developing four scenarios to reflect the potential circumstances that may emerge over the coming years. For more information on the scenarios please see Section 5.5
By 2027, which marks the end of the H7 regulatory period, air travel demand in the UK is expected to be lower compared to the level of demand in the absence of the pandemic.	We agree that the impact of this shock is such that we will not return to a pre-Covid baseline. In all but the most optimistic economic scenario, the GDP impact alone would be enough to put us on a new forecast trajectory, and that is before other longer-term impacts, like reduction in business travel, are considered. These key drivers are discussed in more detail in Sections 5.7 and 5.8.
In the long term, we expect that that international and domestic business travel will rebound as economies recover.	Although there is uncertainty over the scale of the long-term impact to business travel, evidence suggests that it is unlikely for business practices to rebound to exactly as they were pre-Covid. All our scenarios consider at least some long-term impact to business travel. Please see Section 5.7.2 for more detail.
We generally agree that airports heavily reliant on long-haul traffic may see a prolonged recovery	This principle of long-haul recovery taking longer than short-haul is reflected in our travel-restrictions

¹¹ During Constructive Engagement meetings or Heathrow Airline Community, *Airline Community Response to H7 CE*, October 2020, pp.5, 9-10

¹² Heathrow Airline Community, Annex 3: *IATA Economics summary - Key Points*, October 2020

Airline community feedback ¹¹¹² & commentary	Heathrow's response in the RBP
<p>compared to airports which predominantly serve short-haul destinations.</p>	<p>model. For more information, please see Sections 5.3.2 and 5.6.</p>
<p>IATA put forward argumentation and evidence that in the short-term fares are likely to remain low as a result of weak demand environment. Further, airlines operate in a highly competitive environment, which is evidenced by a decrease in airfares as a result of weaker demand this year.</p> <p>Historical evidence indicates that airlines generally pass on savings in costs to the passenger in the form of lower fares.</p> <p>The airline community contend that price sensitivity and affordability will be significant factors, especially in the first half of H7.</p> <p>The airline community disagree with Heathrow's assumption that fares will rise and believe in a period of low demand with a significantly increased share of both short- haul and leisure Traffic, fares will fall as airlines will be incentivised to price low to stimulate demand.</p> <p>In any event, the airline community would note that airline fares set in a highly competitive environment is not relevant to the economically regulated price control period of Heathrow.</p>	<p>There is high uncertainty in the outlook on fares, with a number of factors having the potential to affect the cost of air travel during the recovery and beyond, as acknowledged in an IATA press release earlier this year¹³.</p> <p>There is a risk that the short-term downward pressure on fares because of low fuel prices, excess capacity and weak demand could quickly turn to upward pressure from lower utilisation and increase in operating costs once demand returns.</p> <p>Many of the drivers considered in Sections 5.7 and 5.8 of this chapter could also lead to higher fares, including: airline and airport capacity constraints which may limit supply, a loss in business passengers impacting on airline profitability and so resulting in an increase to economy fares and a shift to smaller aircraft reducing the number of available seats</p> <p>Please see the 'Market Insights' chapter, which sets out a review of the evidence on any changes to air fares.</p> <p>Section 5.7.3 in this chapter then sets out the assumptions we have considered on fares across our scenarios.</p>
<p>In the longer run, the development of a vaccine as well as measures adopted by the industry and aimed at minimising virus transmission onboard aircraft, could mean a move away from the approach to block off the middle seat by some airlines and governments. This source of cost pressure could become moot.</p>	<p>This is acknowledged, but it is not only the impact of keeping the middle seats free that may cause fares to rise; there are other airline and airport capacity constraints which may limit demand through the recovery period. Please see Section 5.8 for more detail.</p>
<p>IATA estimates that the introduction of a £5 VAC at Heathrow could further reduce passenger demand by 2.6% relative to the current level of passenger volume, observed during January-June 2020.</p>	<p>This is acknowledged and noted as a risk to passenger demand in Section 5.9.</p>
<p>The airline community also disagree with Heathrow's assumption that airlines may struggle to meet demand due to not having enough staff available to grow capacity quickly. This is not the case; airlines have been careful to retain operational and flight personnel and it is highly unlikely that airlines will not match the demand upturn with sufficient capacity when it occurs.</p>	<p>Please see Section 5.8 for the evidence as to why both airline and airport capacity may restrict demand during recovery, and why capacity could also be reduced in the longer-term through moves to lower capacity and higher efficiency aircraft.</p>

¹³ [Cost of air travel once restrictions start to lift](#), IATA, 5th May 2020

Airline community feedback ¹¹¹² & commentary	Heathrow's response in the RBP
<p>While the industry will see improved performance in 2021 compared to 2020, the road to recovery is expected to be long and difficult. Passenger volumes are not expected to return to 2019 levels until 2024 at the earliest, with domestic markets recovering faster than international services (IATA press release No: 95 Deep Losses Continue Into 2021, 24th November 2020).</p>	<p>We agree on the relatively longer path to recovery for international services, in particular long haul. Section 5.9 sets out a comparison of the Heathrow forecasts with those presented by IATA during CE, which shows good alignment.</p>
<p>This crisis is devastating and unrelenting. Airlines have cut costs by 45.8%, but revenues are down 60.9%. The result is that airlines will lose \$66 for every passenger carried this year for a total net loss of \$118.5 billion. This loss will be reduced sharply by \$80 billion in 2021. But the prospect of losing \$38.7 billion next year is nothing to celebrate.</p> <p>The financial damage of this crisis is severe. Government support has kept airlines alive to this point. More is likely needed as the crisis is lasting longer than anyone could have anticipated. And it must come in forms that do not increase the already high debt load which has ballooned to \$651 billion. (IATA press release No: 95 Deep Losses Continue Into 2021, 24th November).</p>	<p>The impact of Covid-19 on airline balance sheets has been unprecedented and this carries a risk that those airlines who do survive will lack the investment platform to access funds to invest in capacity to drive recovery.</p> <p>Section 5.8 looks at this in more detail and sets out the scenarios we have considered in our forecasts.</p>
<p>We assume a vaccine(s) is deployed in the second half of 2021, but it looks likely that there will be production and distribution challenges that mean it will only be in late 2021 and in 2022 when air travel rises back substantially. On this basis we don't expect 2019 levels to be regained until around 2024. We should also acknowledge the huge amount of uncertainty over virus behaviour, vaccine effectiveness and government responses (IATA press release No: 95 Deep Losses Continue Into 2021, 24th November).</p>	<p>We have considered this in forming the assumptions on vaccine timeline. Please see Section 5.6 for more detail.</p>
<p>Even in the most positive scenario, we do not expect a recovery to 2019 levels before 2024. There is a very real prospect that this recovery could take even longer, perhaps to as far out as 2029. This is a catastrophic picture for the aviation industry and shows clearly why it is so important for States to take consistent and coherent measures to support the aviation industry and make passengers feel safe to fly again (Eurocontrol Five Year Forecast, published 4th November).</p>	<p>In Section 5.9 we show a comparison between Eurocontrol's forecast to 2024, with our H7 forecasts, which show good alignment.</p>

5.5 Scenarios

We have developed four scenarios to reflect the potential circumstances that may emerge over the coming years. These scenarios are described here in headline terms, and then in detail in the following sections.

5.5.2. Early Vaccine

The most optimistic scenario and a combination of all the best-case assumptions on testing and vaccine rollout around the world. The key assumption here is that recently announced vaccines are approved and rolled out very quickly, to allow herd immunity to be reached in leading markets by April 2021 and global travel restrictions to be lifted in tandem. The economic impact is based on the most optimistic of the Oxford Economics GDP scenarios, in which scientific advances mean reduced social distancing in 2020 and a rapid recovery in which minimal permanent damage is inflicted on the global economy.

5.5.3. Testing & WHO Vaccine

This scenario takes its name from the World Health Organisation estimate that a safe and effective vaccine will be ready for distribution around the world in early to mid-2021, and so assume we assume that roll-out allows 'herd immunity' to be reached from October 2021 in leading markets. The economic impact is based on the Oxford Economics Baseline GDP scenario, in which a major worldwide second wave of Covid-19 is avoided and world GDP rebounds strongly in 2021. This is our base case scenario.

5.5.4. Rolling Quarantine

The Rolling Quarantine scenario assumes that we continue through waves of Covid-19 over the course of 2021, with vaccine rollout delayed, ineffective or with low uptake, resulting in further significant global economic impact and to the aviation industry in particular because of continuing reliance on quarantine measures. This scenario assumes that the ongoing impact of the pandemic causes more significant long-term changes, for example more significant shifts to more efficient and lower capacity aircraft, and a more sustained and significant reduction of business demand.

5.5.5. Permanent Reduction

Permanent Reduction is the most conservative scenario, reflecting a number of potential reasonable worst-case eventualities, including lack of confidence in testing, ineffective vaccine rollout, and a deep financial downturn.

The level of uncertainty and complexity is such that we are unlikely to track along any one particular scenario for a significant length of time; the reality will likely move between the scenarios as decisions and their results change key assumptions.

For example, in September and October, reality was most closely aligned with the Rolling Quarantine scenario, with local lockdowns and travel corridors meaning passenger numbers were 82% down on 2019 levels. The nationwide lockdown in England was then implemented, which brought November closer to the Permanent Reduction scenario.

5.6 Key Drivers - Travel Restrictions Model

Although it looks increasingly hopeful there will be significant vaccine rollout before the start of the H7 period, as yet there is no clarity on how soon that will happen around the world or what effect a vaccine might have on the pandemic and its impacts on travel. It is very likely that passenger volumes for at least 2021 and likely beyond will remain largely driven by the UK and other countries' approach to managing Covid-19.

5.6.2. Testing implementation

We have made broad assumptions about the timeline for testing implementation and expect to be able to update these over the course of the next year. Again, the basis for the assumptions is grounded in evidence as much as possible, but this is an area in which policy decisions by the UK Government will make a big impact on demand.

There is clear intent for a staged approach, with the first step currently implemented: an arrivals testing model in which the tests are privately delivered and paid for, and passengers are released from quarantine after a period of self-isolation and a negative test result.

The next big step forward with testing will be the roll-out of rapid point of care tests. Scientific advances in testing technology will allow near-instant results and so eliminate the need for quarantine. These rapid tests will reduce the cost from c.£100 for a polymerase chain reaction (PCR) test, to just c.£5, which will widen the appeal to the leisure market.

Oxford University has recently developed a rapid diagnostic test that gives results in less than five minutes. They expect to have an approved device available before the middle of 2021¹⁴.

Figure 9: Testing implementation timeline assumptions

In the **Testing & WHO Vaccine** scenario we assume that testing begins to be taken up in significant volumes from February 2021 and then across all markets by May 2021.

The timeline continues with the assumption that more affordable, rapid point of care tests begin to be implemented for the European market in May 2021 and are then available across all markets by July 2021.

The assumptions for the **Early Vaccine** and **Rolling Quarantine** scenarios follow the same sequence, but reaching each stage at earlier or later points in time respectively, as set out in the table below:

Stage	Early Vaccine	Testing & WHO Vaccine	Rolling Quarantine
Testing	Dec'20 – Feb'21	Feb'21 – May'21	Apr'21 – Oct'21
Rapid point of care	Feb'21 – Apr'21	May'21 – Jul'21	Aug'21 – Dec'21

In the **Permanent Reduction** scenario, it is assumed that there are significant further waves of Covid-19 outbreaks across Heathrow's key markets throughout 2021, that constrain passenger volumes to those seen in Q3 and Q4 2020. It is assumed that implementation of an effective testing regime proves to be either too politically or practically difficult, or that the cost and/or hassle is too great a deterrent to passengers to significantly impact demand.

¹⁴ [Oxford scientists develop extremely rapid diagnostic test for Covid-19](#), 15th October 2020

5.6.3. Vaccine timeline

It is evident that the biggest single impact to demand over the next few years will be the rollout of an effective vaccine or treatment.

“It is clear that the only feasible long-term solution lies with a vaccine or drug-based treatment... we must acknowledge that life will be different, at least for the foreseeable future... then as vaccines and treatment become available, we will move to another new phase, where we will learn to live with Covid-19 for the longer term without it dominating our lives”, The UK Government¹⁵.

There has been an unprecedented research effort seeking a Covid-19 vaccine, with two vaccines now approved for full use, 5 in early or limited use, and 70 candidates in Phase I-III trials¹⁶. There is high uncertainty on when we will begin to see an impact on passenger demand, with uncertainty being inherent in the timeline for rollout, the effectiveness and degree to which full immunity is conferred and the associated impact on travel restrictions and consumer confidence.

Of course, Heathrow is reliant on worldwide rollout of a vaccine for demand to return to normal. A recent report¹⁷ from Airfinity Ltd. found that the US strategy to rely on only vaccines and treatments, rather than emphasising Covid-19 control measures in the meantime, threatens to delay the return to normal life well into 2023 even if vaccine rollout progresses well over the next few months.

This uncertainty needs to be reflected in the range of scenarios we consider. In the more optimistic of the three scenarios, we make the fundamental assumption that either via vaccine or treatment Covid-19 will eventually cease to be a generalised public health emergency.

We have consolidated vaccine timeline estimates into three scenarios: the most optimistic (Early Vaccine) is one in which recent vaccine announcements allow ‘herd immunity’, and thus relaxed border restrictions by April 2021. This would require a rapid and extensive rollout of recently approved vaccines, and for other vaccine discoveries to follow in quick succession to allow for the widespread vaccination that is required for herd immunity. This timeline aligns with the upside case presented by IATA during Constructive Engagement, which assumed vaccine discovery at the end of 2020¹⁸.

The Testing & WHO Vaccine scenario takes its name from the World Health Organisation estimate that a safe and effective vaccine will be ready for distribution in early to mid-2021¹⁹. This scenario assumes that herd immunity is reached in leading markets from October 2021.

The more conservative vaccine timeline in the Rolling Quarantine scenario assumes that herd immunity is reached in July 2022. This allows for the major and unprecedented challenge of regulatory approval, large-scale manufacture and complex logistical process. We have already seen Pfizer cut their production targets for 2020 after issues with the quality of raw materials it had sourced for production²⁰.

¹⁵ The UK Government’s Covid-19 Recovery Strategy

¹⁶ <https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>

¹⁷ Bloomberg, All-In U.S. Push for Vaccine Raises Risk Virus Lingers, 27th October 2020

¹⁸ IATA Economics, Passenger outlook for the UK, September 2020, included in Annex 16

¹⁹ [https://www.who.int/news-room/q-a-detail/coronavirus-disease-\(covid-19\)-vaccines](https://www.who.int/news-room/q-a-detail/coronavirus-disease-(covid-19)-vaccines)

²⁰ <https://www.wsj.com/articles/pfizer-slashed-its-covid-19-vaccine-rollout-target-after-facing-supply-chain-obstacles-11607027787>

The timeline assumed in the Rolling Quarantine scenario aligns with the central case presented by IATA during constructive engagement, which assumed that a vaccine is ready for rollout in the second half of 2021, and with recent statements from IATA²¹ on the outlook for passenger numbers over the next few years:

“We assume a vaccine(s) is deployed in the second half of 2021, but it looks likely that there will be production and distribution challenges that mean it will only be in late 2021 and in 2022 when air travel rises back substantially. On this basis we don’t expect 2019 levels to be regained until around 2024. We should also acknowledge the huge amount of uncertainty over virus behaviour, vaccine effectiveness and government responses.”

If it becomes apparent that the more effective vaccines are the harder ones to transport and with more complicated cold storage logistics it may mean desired herd immunity takes longer to build up to in all countries, pushing backwards the date that unencumbered travel could return. Similarly, a less efficacious vaccine might be easier to distribute but would need higher uptake to reach desired levels of immunity.

While in line with consensus timelines, all three assumptions would still be faster than previous fastest vaccine developments of c.48 months for Ebola and Mumps.

In the most conservative scenario, Permanent Reduction, we assume that recently discovered vaccines are found to be less effective than Phase III clinical trial results suggest, and lead to a lack of confidence from a large minority of the public.

Oxford/AstraZeneca were expected to disclose data for their whole Phase III clinical trials and have instead published summary statistics for two cohorts, leaving more answers than questions on the actual efficacy of their vaccine, and a debate on whether the FDA in the United States would even approve its usage.

Lack of an effective vaccine would lead to continuation of current control measures, such as social distancing and travel restrictions, for a significant period of time, if not indefinitely, which would result in significant structural changes to aviation and a permanent reduction in capacity.

Figure 10: Vaccine timeline assumptions

In the **Testing & WHO Vaccine** scenario we assume that a vaccine roll-out allows ‘herd immunity’ to be reached from October 2021 in leading markets.

In the **Early Vaccine** it is assumed that herd immunity is reached in leading markets by April 2021, and in the **Rolling Quarantine** scenario in July 2022.

In the **Permanent Reduction** scenario, it is assumed that no effective vaccine is rolled out to the required levels to achieve effective global herd immunity within the H7 period.

²¹ <https://www.iata.org/en/iata-repository/pressroom/presentations/outlook/>, 24th Nov 2020

5.7 Key drivers – econometric model

This section sets out the key drivers for the econometric model and describes the assumptions for each scenario.

5.7.1 GDP Forecast

Although the impact of a weaker economy on passenger demand is currently dwarfed by the impact of travel restrictions, in later years the economic impact will be one of the persisting effects of Covid-19 on demand.

The econometric model relates passenger volumes to changes in GDP, allowing us to understand the relationship between economic growth and the likelihood of air travel. We consider five GDP scenarios in our modelling, developed by Oxford Economics.

In the Baseline scenario, the impact from GDP means that passenger volumes never return to the pre-Covid forecasted trajectory, and a new trajectory is set at 3% below. This scenario has recently been revised downwards by Oxford Economics, to reflect the re-surge in Covid-19 cases that has prompted key European economies to re-impose national lockdowns. It is expected that these second lockdowns, even if short-lived, will leave households and firms more wary about the future and braced for further disruption in 2021, in turn subduing spending and hiring decisions.

In the Baseline scenario, the impact from GDP alone prevents a return to 2019 passenger levels until 2022. This expectation of GDP recovery in 2022 is supported by the recent Spending Review from the Office for Budget Responsibility²² and economic forecast from the Confederation of British Industries²³.

In the Rapid Upturn scenario, widely available medical advancements - including a vaccine, treatments, or robust track and trace networks - allow a faster return of GDP. The quick recovery means that any permanent damage to the global economy is negligible, however the speed and scale of the GDP decline is still greater than the 2008/9 Global Financial Crisis. The global economy rebounds strongly in the second half of 2020 and robust growth of 7.6% is seen in 2021. This allows passenger volumes to return to the Pre-Covid trajectory earlier in 2022.

The Financial Crisis scenario is one in which there is a slow removal of public health restrictions, which weighs heavily, and for a protracted period, on economic markets. The initial demand shock is compounded by a financial crisis and the introduction of Government austerity measures. The result is not only stagnation in the near term, but recovery is also anaemic, comparable with that seen in the period following the Global Financial Crisis, as permanent damage is inflicted upon the global economy. The impact on passenger numbers from GDP alone prevents a return to 2019 levels until well beyond the end of the H7 period.

As well as the impact of Covid-19, there may also be an impact on passenger numbers from Britain's exit from the European Union. A topic which, in any 'normal' year, would merit significant discussion, is dwarfed in comparison to the potential impact of Covid-related drivers. The impact of 'Brexit' is not explicitly considered in our scenarios but should be noted as having the potential to further dampen demand. This will be considered closely in our 2021 updates once more is known about the impact of Britain's exit from the European Union.

²² [Spending Review 2020 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/90412/spending-review-2020.pdf), 25th November 2020

²³ [Investment incentives needed to fast-forward Covid economic recovery | CBI](https://www.cbi.co.uk/press/2020/11/10/investment-incentives-needed-to-fast-forward-covid-economic-recovery), 10th November 2020

Figure 11: GDP Scenarios

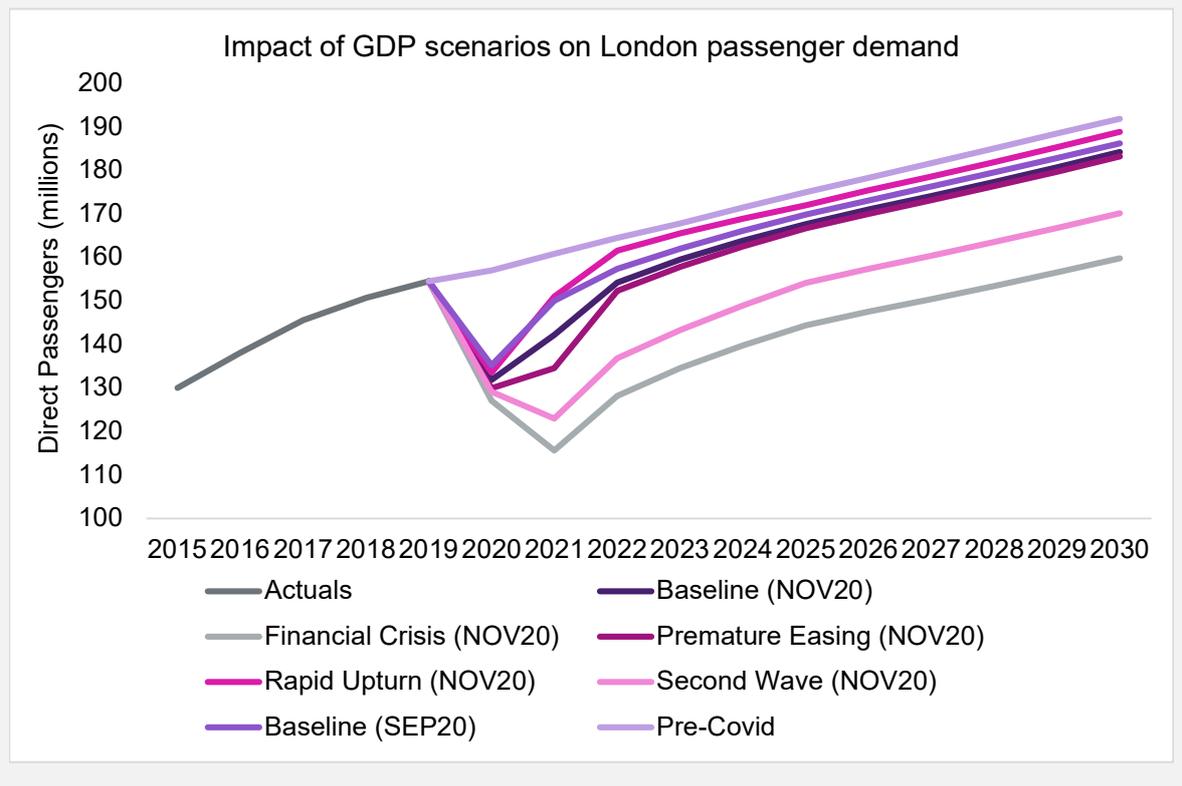
Baseline (weight=40%): While output remains significantly constrained in the near term by continued social distancing, a major worldwide second wave of Covid-19 is avoided and world GDP rebounds strongly in 2021.

Premature easing (25%): Pandemic accelerates where economy prioritised over health. As lockdown fatigue leads to an early relaxation of social distancing measures in some countries, infections surge once more and severe public health restrictions return in the latter part of 2020.

Second wave (15%): W-shaped recovery as global infections spike again in early 2021. A second coronavirus wave results in renewed lockdowns globally, peaking in early 2021, and a further period of severe economic weakness.

Financial crisis (5%): Deep downturn creates credit crunch. The post-pandemic period is characterised by limited credit supply, private sector deleveraging and public sector austerity, resulting in tepid productivity growth and anaemic growth.

Rapid upturn (15%): Scientific advances mean reduced social distancing this year. A more optimistic upside for the global economy in which recovery is more rapid and less permanent damage is inflicted on the global economy.



Source: Oxford Economics November 2020, D&S Forecast Model

5.7.2. Long-lasting impact on business travel

Business travel is a critical driver of profitability for many airlines and can drive between 55 and 75% of airline profit but account for as few as 10% of passengers²⁴. Historically, business travel has been more volatile and slower to recover than leisure travel after economic downturns and other disruptions to travel patterns²⁵. We have witnessed the impact of previous shocks on business travel at Heathrow, with British Airways' Business passengers never recovering after the Global Financial Crisis²⁶.

Heathrow is uniquely exposed compared to other European hubs and other UK airports to the slower recovery – and permanent weakening – of the business passenger segment, given our passenger mix.

Table 2: Premium Passengers, selected airports.

Airport	% Premium Cabin Passengers
Heathrow	13%
Charles de Gaulle	8%
Frankfurt	9%
Amsterdam	7%
Madrid	4%
Manchester	3%
Gatwick	4%

Source: Airport IS passenger traffic data by cabin year ending December 2019.

When the Covid-19 pandemic struck, businesses around the world responded with blanket policies that restricted travel and set high thresholds for exceptions. The number of business passengers travelling through Heathrow in August, September and October 2020 had only recovered to 11%, 10% and 10% respectively of volumes in those months in 2019. Over the same three months passengers visiting friends and relatives had recovered to roughly 30% of 2019 levels.

Once companies and their employees are ready to return to travelling for business they are expected to do so in stages, with the phasing determined by the length and purpose of a trip as well as the sector in which travellers work²⁷.

²⁴ Jane L. Levere, "Best guess on when business travel will recover? It could be years", New York Times, 13th July 2020

²⁵ [For corporate travel, a long recovery ahead | McKinsey](#)

²⁶ Alex Cruz evidence at Transport Committee, 16th September 2020

²⁷ [For corporate travel, a long recovery ahead | McKinsey](#)

Figure 12: Resumption of business travel by phase

	Proximity	Travel reason	Sector
Earlier recovery	 Regional travel that can be completed in a personal or rented vehicle	 In-person sales or client meetings, and essential business operations	 Manufacturing, pharmaceuticals, and construction
	 Domestic travel by air or train	 Internal meetings, training programs, and other small-group gatherings	 Tech, real estate, finance, and energy
Later recovery	 International air travel abiding by government regulations and restrictions	 Industry conferences, trade shows, exhibitions, and events	 Healthcare, education, and professional services

Source: McKinsey²⁸

As each segment returns, it is expected to be different. Business travellers will be subject to corporate travel policies and budget constraints, which are more restrictive as a consequence of the pandemic. Many events will offer virtual or hybrid formats.

The extended experience of video conferencing will eliminate the need for some corporate travel. This increase in videoconferencing isn't comparable with the increases we've seen in the past. From December 2009 to December 2010, registered Skype users grew by 40%, and their net revenues increased by 20%²⁹. The use of Zoom in 2020 saw a 30-fold increase in April alone, their sales jumped 169% year-on-year in the three months to 30th April, and the number of customers with more than 10 employees has increased by 354%³⁰.

When considering the scale of the longer-term impact, it is useful to consider the proportions for each of the various reasons for business travel. From the Department for Transport research on purpose for business travel³¹, shown in the table below, we can see that 25% of business travellers are attending a meeting with people from the same organisation, and 4% as part of a regular commute to work; both segments which we would expect to reduce significantly given the experiences of video conferencing this year and corporate travel budget constraints over the coming years.

²⁸ [For corporate travel, a long recovery ahead | McKinsey](#)

²⁹ <https://techcrunch.com/2011/03/07/skype-revenue-up-20-percent-to-860m-in-2010-paid-users-up-19-percent/>

³⁰ <https://www.bbc.com/news/business-52884782>

³¹ [Department for Transport research paper](#), 2018

Table 3: Segments of business travel

Segment of Business Travel	Proportion
Attend a meeting with client / supplier	32%
Attend a meeting with people from same organisation	25%
Provide a service	19%
Conferences / trade shows	17%
As part of regular commute to work	4%

Source: DfT, 2018

In combining these various pieces of evidence, it is clear that there is the potential for a significant long-term impact on business travel, but also high uncertainty as to how great that impact might be. We have therefore considered the following scenarios:

Figure 13: Long-term business travel reduction assumptions

The **Early Vaccine** and **Testing & WHO Vaccine** scenarios test a long-term reduction in business demand of -10%

The **Rolling Quarantine** scenario tests a reduction of -20%.

The **Permanent Reduction** scenario tests a reduction of -30%.

5.7.3. Fares

There is high uncertainty in the outlook on fares, with a number of factors having the potential to affect the cost of air travel during the recovery and beyond. There is a risk that the short-term downward pressure on fares because of low fuel prices, excess capacity and weak demand could quickly turn to upward pressure from lower utilisation and increase in operating costs once demand returns³².

Many of the drivers considered in Sections 5.7 and 5.8 of this chapter could lead to higher fares, including: airline and airport capacity constraints which may limit supply, a loss in business passengers impacting on airline profitability and so resulting in an increase to economy fares and a shift to smaller aircraft reducing the number of available seats.

Looking at evidence from previous shocks, in particular at the recovery from the Global Financial Crisis, in the five years after 2007 air fares had grown by between a third and a half in both nominal and real terms³³.

Separately, we must also consider the impact of carbon pricing on airfares. A world where no action is taken to reduce carbon emissions in the industry would be catastrophic for climate change. If Governments and industry take concerted action and limit warming to 2 degrees, i.e. the lowest level of ambition in the Paris climate change agreement, then the price of carbon

³² [Cost of air travel once restrictions start to lift](#), IATA, 5th May 2020

³³ Office of National Statistics - <https://www.ons.gov.uk/economy/inflationandpriceindices/datasets/consumerpriceinflation CPI Reference L583> 2007 index = 100, 2012 value 149

would increase to £77 per tonne of CO₂ by 2030 according to the DfT's 2017 carbon price forecast³⁴, shown below.

In this central case scenario, a carbon price of £77 by 2030 would result in a 5% increase in fares. The high case would result in a 15% increase in fares by 2030.

Table 4: DfT Carbon Price 2017, all financial figures in 2016 prices

	Carbon price (£ / tCO ₂)		
	Low	Central	High
Current*		£21	
2025	£19	£41	£63
2030	£39	£77	£116

Source: DfT, *European Union Emissions Trading System

Considering this evidence and acknowledging the high uncertainty, we have considered the following scenarios on fares:

Figure 14: Fares Assumptions

The **Early Vaccine** scenario assumes that fares increase by 5%, consistent with central case increases in carbon price alone.

The **Testing & WHO Vaccine** and **Rolling Quarantine** scenarios assume that fares increase by 10%.

The **Permanent Reduction** scenario assumes that fares increase by 25%, consistent with upward pressure from carbon pricing, lower utilisation and increase in operating costs.

³⁴ DfT forecast 2017

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878705/uk-aviation-forecasts-2017.pdf

5.8 Key drivers – capacity supply model

This section sets out the key drivers for the capacity supply model and describes the assumptions for each scenario.

5.8.1 Airport capacity

Insight from consumer surveys³⁵ shows that the risk of contracting Covid-19 through contact with other passengers throughout the airport journey is a top concern. The Safe to Fly measures implemented at Heathrow including social distancing, mandatory mask wearing and enhanced cleaning, are key to ensuring the safety and trust of our passengers. These measures are literally ‘hygiene’ factors needed to restore confidence in air travel to allow the return of demand.

Whilst critical for confidence these measures could become a constraint once demand begins to rise. Physical distancing in queues, higher processing time at check-in to ensure compliance with various destination-specific requirements, the need to complete passenger locator forms at immigration; all result in either greater time required for the passenger journey, or more space needed to serve the same number of passengers.

A report by Eurocontrol³⁶ found that compulsory Covid-19 measures might add up to 10 minutes to a passengers’ departing journey and between 5-20 minutes to the arrivals journey. It also found that space requirements are critical, with 100% more space required at both security and immigration, 30-50% more space at boarding gates, 50% at check-in, and 30-50% at baggage reclaim, all compared to the space needed to serve the same number of passengers in the pre-Covid period.

“Airports already congested before the COVID crisis can expect to reach their maximum saturation capacity at just 60-75% of their peak 2019 traffic.”

It is logical to assume that these measures will be in place at least until the risk of contracting Covid-19 at the airport is significantly reduced, either through a comprehensive testing regime which screens passengers before entry to the airport, and / or sufficient rollout of a vaccine to achieve herd immunity across all markets.

Figure 15: Airport Capacity Assumptions

The **Early Vaccine** scenario assumes is that there is no significant airport capacity constraint.

The **Testing & WHO Vaccine & Rolling Quarantine** scenarios align with the upper end of Eurocontrol’s findings on saturation capacity, restricting demand to 75% of 2019 levels until a vaccine is rolled out across all markets.

The **Permanent Reduction** scenario aligns to the lower end of Eurocontrol’s findings, restricting demand to 60% of 2019 levels until a vaccine is rolled out across all markets.

³⁵ Numerous surveys carried out by IATA, ACI, BVA BDRC / Alligator, for example: <https://www.iata.org/contentassets/5f8235a4ef364ec886ad2594531c04d0/covid-19-survey-press-briefing-presentation-.pdf>

³⁶ Eurocontrol , *Impact assessment of COVID-19 measures on airport performance*, September 2020 <https://www.eurocontrol.int/news/covid19-impact-airport-performance-study-published>

5.8.2. Airline supply

The impact of Covid-19 on airline balance sheets has been unprecedented. Airlines are surviving on \$173 billion of support from Governments in 2020, yet the median airline still has just 8.5 months of cash remaining. With further lockdowns across Europe as we enter the winter season, in what is a weaker period even in normal times, and the industry not expecting to turn cash positive until late in 2021³⁷, the financial viability of some airlines is clearly at risk.

We have already seen the disappearance of Flybe. Virgin Atlantic, based at Heathrow and the airport's second largest carrier, approved a private capital injection and refinancing package in July 2020. Other key Heathrow carriers, such as Lufthansa and Air France-KLM, have relied on substantial Government rescue packages in order to ensure their survival. Industry experts³⁸ have warned that further airline collapses, with a resulting detrimental impact on future passenger volumes, are very likely³⁹.

Regardless of which carriers can survive, the financial impacts suffered by those that do come through the immediate crisis could inhibit the pace of any recovery. Airlines will lack the investment platform to access funds to invest in capacity to drive recovery, and it will take time to build back from the cuts that have been made to resource levels.

Under pressure to limit their rate of cash burn, airlines have significantly cut their resource level over the last year. IAG has reduced employee numbers by 10,000 [est. 20%+] across British Airways and Aer Lingus, and reduced employee costs by 42% in the three months to September 2020⁴⁰. Virgin Atlantic has cut employee numbers by almost a half⁴¹, for American Airlines it's almost one third⁴², and a similar picture across many other airlines.

The scale of these cuts will take time to build back from. IATA expects that airline employment will remain down by one third in 2021⁴³. This would be only a 5% increase on employment levels in 2020, despite their expectations of scheduled flights increasing by 35%.

With high uncertainty over the impact that resource cuts could have on supply, we have considered a number of scenarios:

Figure 16: Airline Supply Assumptions

The **Early Vaccine** scenario assumes that airlines are able to retain resource at sufficient levels so as not to limit supply in the ramp-up.

The **Testing & WHO Vaccine** and **Rolling Quarantine** scenarios assumes that airline capacity caps demand at c.90% in the initial years after vaccine rollout.

The **Permanent Reduction** scenario assumes that airline capacity caps demand at c.75% throughout the H7 period, as a result of a prolonged downturn which continues pressure on airline finances and resource levels.

³⁷ [IATA - Deep Losses Continue Into 2021](#), 24th November 2020

³⁸ [Outlook for Air Transport and the Airline Industry](#), IATA, 24th November

³⁹ [Flybe's collapse could be 'first of many' airlines, BBC News](#), March 2020

⁴⁰ [IAG Q3 2020 Financial Results](#), 30th October 2020

⁴¹ [Coronavirus: Virgin Atlantic to cut 1,150 more jobs - BBC News](#), 4th September 2020

⁴² [American Airlines Says Oct. 1 Job Losses Will Total 40,000, forbes.com](#), 25th August 2020

⁴³ [Economic Performance of the Airline Industry, IATA](#), 24th November 2020

5.8.2 Fleet changes

Over the last decade, airlines have tended to choose the largest models for most popular aircraft types, namely the Airbus A320 and Boeing 777. The average A320 at Heathrow carried an extra 12 seats per aircraft in the five years after 2015 and a 777 carried an extra 24 seats in 2019 versus 2008. Heathrow also saw growth in the number of flights on A380s from 900 per year in 2008 to just under 16,000 movements in 2019.

Even prior to the Covid-19 pandemic, we were seeing a stalling or even reversal in seat per movement growth. More efficient twin jets such as Boeing 787s and Airbus A350s led to airlines switching older, larger aircraft for these modern replacements. We had already been anticipating that the next few years would see the remaining 747s being replaced with these aircraft – with an average net loss of 60 seats per movement – and a continuation in the replacements of A380s for these more efficient aircraft (e.g. Malaysia Airlines, Singapore Airlines).

These expected changes have been exaggerated and accelerated by the Covid-19 pandemic. In the past year we have already seen the early retirement of British Airways' entire Boeing 747-400 fleet – totalling 31 aircraft and accounting for 31% of its long-haul seat capacity at Heathrow. British Airways had been the world's largest operator of passenger 747s.

Other airlines have signalled their intention to adjust supply to future levels of demand. In October Akbar al-Baker told an online conference:

"We don't think we are going to operate our A380s for at least the next couple of years" and criticised rivals currently operating the A380 as *"foolish"*.⁴⁴

These decisions by airlines across the globe signal the view that future passenger volumes will not warrant using the largest aircraft types that have become common at Heathrow in recent years. This retirement of four-engine aircraft leaves Heathrow uniquely exposed amongst other UK and European hub airports:

Table 5: Large aircraft movements as % of overall movements, selected airports

Airport	% A380/747 departing movements
Heathrow	7.19%
Frankfurt	5.56%
Charles de Gaulle	2.51%
Manchester	2.13%
Amsterdam	1.51%
Gatwick	1.41%
Madrid	0.38%

Source: Airport IS schedule data – All departing flights year ending December 2019

In 2019, 3.4 million seats were flown on A380s at Heathrow, and 5.4 million on 747s. This made up 9% of our total seat capacity for the year. As these larger types are retired, their replacements will be lower capacity, more efficient types such as Airbus A350s and Boeing 777/787s.

⁴⁴ [Qatar Airways expects to keep A380s parked for years | Reuters](#), 19th October 2020

Table 6: Seat capacity, selected aircraft

Aircraft Type	British Airways Seat Capacity
Airbus A380-800	469
Boeing 747-400	345
Airbus A350-1000	331
Boeing 787-9	216

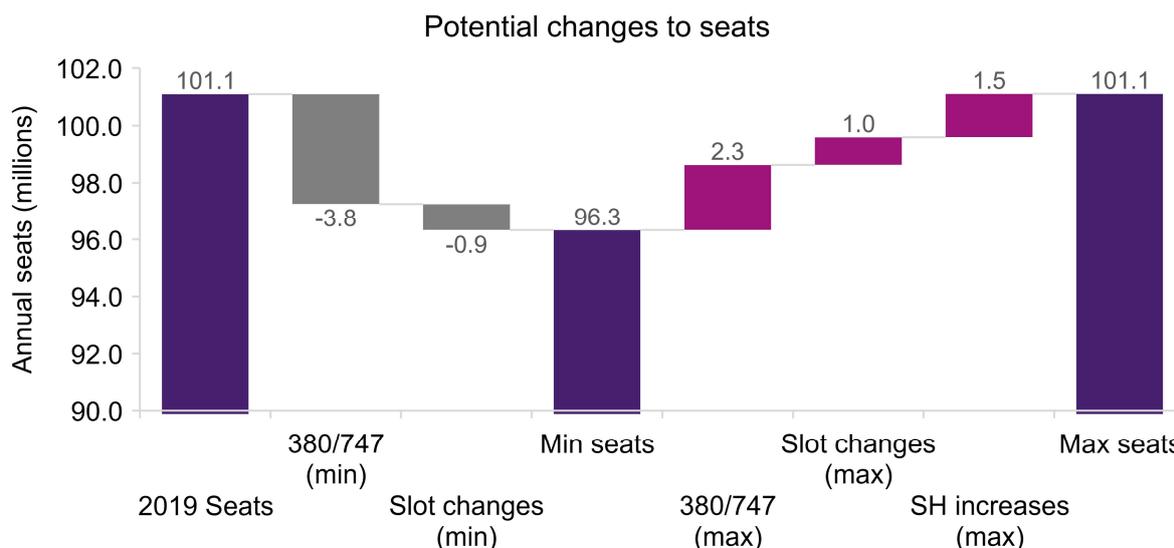
Source: British Airways

Depending on the choices made by airlines in replacing these larger aircraft, we may see a decrease of up to 3.8 million seats per year, or a smaller decrease of 1.5 million seats per year. Of course, these are long-term changes to capacity and in the shorter-term we expect the available seats to vary much more significantly in response to the more immediate impact of Covid-19.

We must also account for slot changes since 2019, following the cessation of Air New Zealand and Flybe operations at Heathrow. In the case of Air New Zealand, this is a loss of 0.24 million seats per year and for Flybe a loss of 0.7 million seats per year. We have considered a lower-case scenario in which 0.5 million of these seats are retained, and a high case in which there is a slight increase in the number of seats on these slots, to 1.0 million seats per year.

There are also some opportunities for some modest increases in seats of c.1.4 million seats per year. On short-haul routes, there are further orders of larger A320NEOs due to replace smaller A320CEOs. There are also opportunities for airlines to continue densifying their short-haul fleets. This upgauging and densification is reliant on airline finances recovering such that they have the funds to invest in new capacity. These increases are therefore only considered in the more optimistic of our scenarios.

Figure 17: Potential impact of fleet changes on available seats



Source: Heathrow Analysis of 2019 Actual Seats

The four scenarios reflect this range of potential seat changes:

Figure 18: Seats per movement assumptions

The **Early Vaccine** scenario assumes that any reductions in seats on long-haul will be offset by further up-gauging and densification on short-haul fleet.

The **Testing & WHO Vaccine** scenario includes a reduction of 1.6 million seats through replacement of long-haul aircraft, a reduction of 0.4 million seats through slot changes, and an increase of 0.5 million seats on short-haul aircraft.

The **Rolling Quarantine** scenario includes a reduction of 1.6 million seats through replacement of long-haul aircraft and a reduction of 0.9 million seats through slot changes.

The **Permanent Reduction** scenario includes a reduction of 3.8 million seats through replacement of long-haul aircraft and a reduction of 0.9 million seats through slot changes.

5.8.3 ATMs & slot alleviation

The rules for slot allocation mean that airlines must operate at least 64% of their allocated slots. The imposition of travel restrictions and significant decrease in consumer demand led to the suspension of these rules for the summer 2020 and winter 2020/21 seasons, allowing airlines the flexibility to adjust their schedules without the risk of losing their slots.

Full suspension of the slot rules is the equivalent of freezing the slot portfolio as it was in 2019, with no requirement for airlines to either fly their slots or hand them back. The result is a slower recovery than might be possible, with unused slots being unavailable for re-allocation. On the other hand, blanket re-introduction of slot rules would likely encourage operation of smaller aircraft with lower load factors in order to protect historic rights to slots.

There is still uncertainty over whether the suspension of slot rules will continue beyond the end of the winter 2020/21 season, with engagement between key industry groups still ongoing, but an expectation that there will be some form of alleviation of the slot rules for at least part of the summer 2021 season. We therefore consider a number of different scenarios in our planning for H7.

Figure 19: Slot rules assumptions

In the **Early Vaccine** scenario, it is assumed that fast progress with vaccine rollout will mean there will be no form of slot rule alleviation needed for the summer 2021 season.

Without alleviation, airlines are required to fly at least 64% of their slots in order to maintain the historic rights (up to 20% hand-back before the start of the season, and then up to 20% hand-back of the remaining 80% of slots).

In the **Testing & WHO Vaccine** scenario it is assumed that there will be some form of slot alleviation in the summer 2021 season, and then slot rules will return for the winter 2021 season.

In the **Rolling Quarantine** scenario it is assumed that there will be some form of slot alleviation up to the summer 2022 season, but not for winter 2022 onwards.

The **Permanent Reduction** scenario assumes that some form of slot alleviation will be needed as far ahead as the summer 2023 season.

5.9 Results

In this final section, we present the outputs of our RBP forecasting, noting that these outputs will be updated in 2021.

5.9.1 Weighting

As outlined previously in this chapter, each of the four base scenarios are not equally as likely as the other, so in combining the four scenarios we apply a weighting to reflect this:

- Early Vaccine – 10%
- Testing & WHO Vaccine – 50%
- Rolling Quarantine – 30%
- Permanent Reduction – 10%

The Testing & WHO Vaccine scenario is our base case and given the highest weighting of 50%. This scenario forms the basis of our December Investor Report and 2021 Airport Charges Decision document.

The Early Vaccine scenario is formed from the combination of the most optimistic assumptions and so forms a reasonable best-case scenario. On the converse, the Permanent Reduction scenario forms a reasonable worst-case scenario. These scenarios are therefore both given a 10% weighting.

The Rolling Quarantine scenario is formed from assumptions that are more conservative than the Testing & WHO Vaccine scenario and viewed to be not as likely to occur, but more likely than either of the Early Vaccine or Permanent Reduction scenarios, and so is given a weighting of 30%.

As we gain more information over the course of the next year, these weightings will undoubtedly change. Many of the assumptions in the Early Vaccine scenario will be tested in the first few months of 2021, with the outcome leading to either a significantly higher weighting, or in fact setting the weighting to 0% if the assumptions prove to be unachievable.

5.9.2. Shock factor

Shocks are events that cannot be forecasted, which reduce passenger volumes, and are not explained by economic variables or supply metrics within the models. Historically, these have included the impact of 9/11, SARS, the Gulf War, industrial action and volcanic ash clouds.

In order to account for these events, the average size of historic shocks is estimated using a comparison of actual and modelled passenger volumes. This shock factor is then applied to each annual forecast output. The methodology for this calculation was established for Q6.

There is no doubt about the unprecedented impact of the Covid-19 pandemic shock, which was certainly not accounted for in any shock factors calculated for previous regulatory periods. In Q6 the shock factor was calculated at 1.41% and then at 1.07% in the Initial Business Plan for H7. Of course, both factors are dwarfed in comparison to the c.75% shock from Covid-19 in 2020 and the likelihood of an 85% shock over the 12-month period to March 2021.

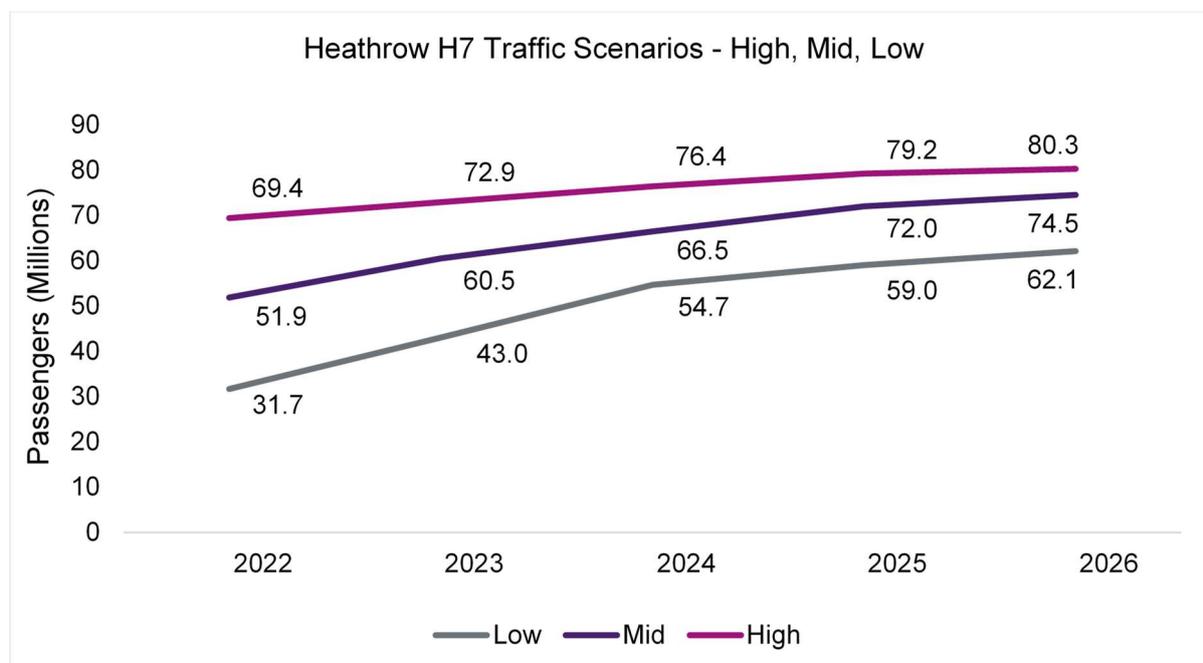
In calculating the shock factor for the H7 period, we have assumed the 10% impact cap from Covid-19 in 2020 & 2021 that is associated with the RAB adjustment. This results in a shock factor of 1.46% to be applied to each annual forecast output for 2022 – 2026.

Without the modifier from the RAB adjustment and reflecting the full impact of the c.70% shock in 2020 and forecasted c.50% shock in 2021, the shock factor is calculated at 4.85%.

5.9.3. H7 low, mid and high cases

In considering each of our four scenarios with weightings to reflect their likelihood of occurring, and a shock factor of 1.46%, we reach the following low (P10), mid (P50) and high (P90) cases:

Figure 20: H7 low, mid and high scenarios – chart



Source: Heathrow

Table 7: H7 low, mid and high scenarios – table

	2022	2023	2024	2025	2026	TOTAL
Low (P10)	31.7m	43.0m	54.7m	59.0m	62.1m	250.5m
Mid (P50)	51.9m	60.5m	66.5m	72.0m	74.5m	325.5m
High (P90)	69.4m	72.9m	76.4m	79.2m	80.3m	378.1m

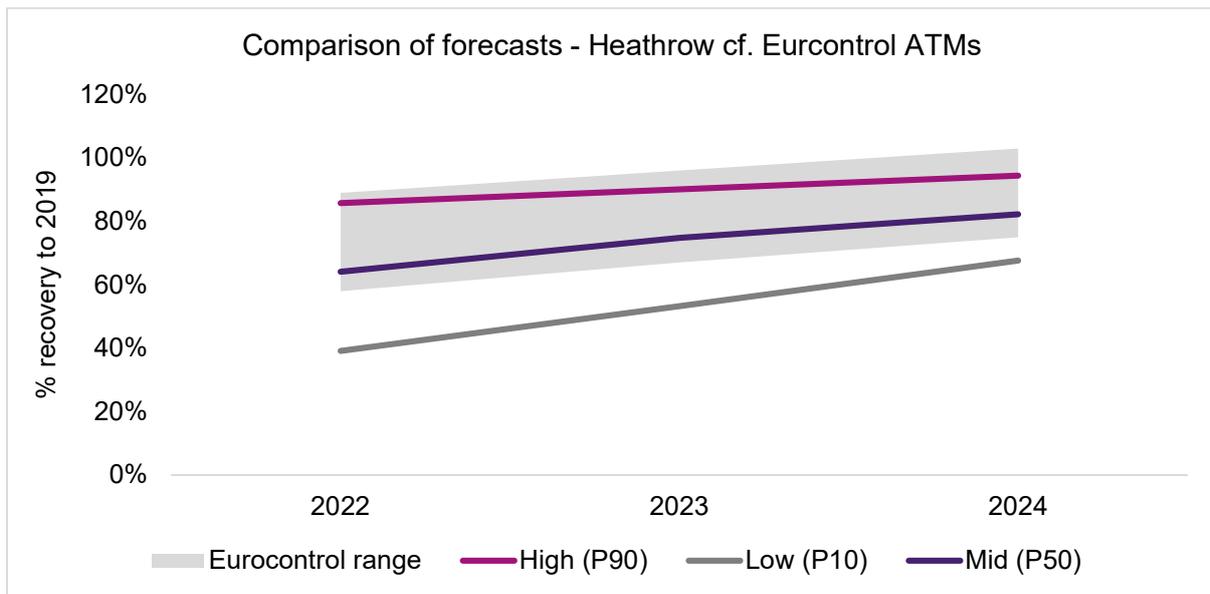
Source: Heathrow

5.9.4. Comparison to external forecasts

To put these forecasts in context, the below charts show how they compare against forecasts from IATA and Eurocontrol. The IATA and Eurocontrol forecasts have been chosen for comparison because of their relevance. In the case of the IATA forecast, there is particular relevance as the forecast shown was presented by IATA during Constructive Engagement.

In order to compare like-for-like, the % recovery to 2019 is shown. In the case of Eurocontrol, it should be noted that the forecast is of ATMs rather than passengers, hence less of an alignment than we see in the comparison with IATA forecasts. This also serves to highlight the difference between ATM and passenger recovery, with ATMs expected to lead.

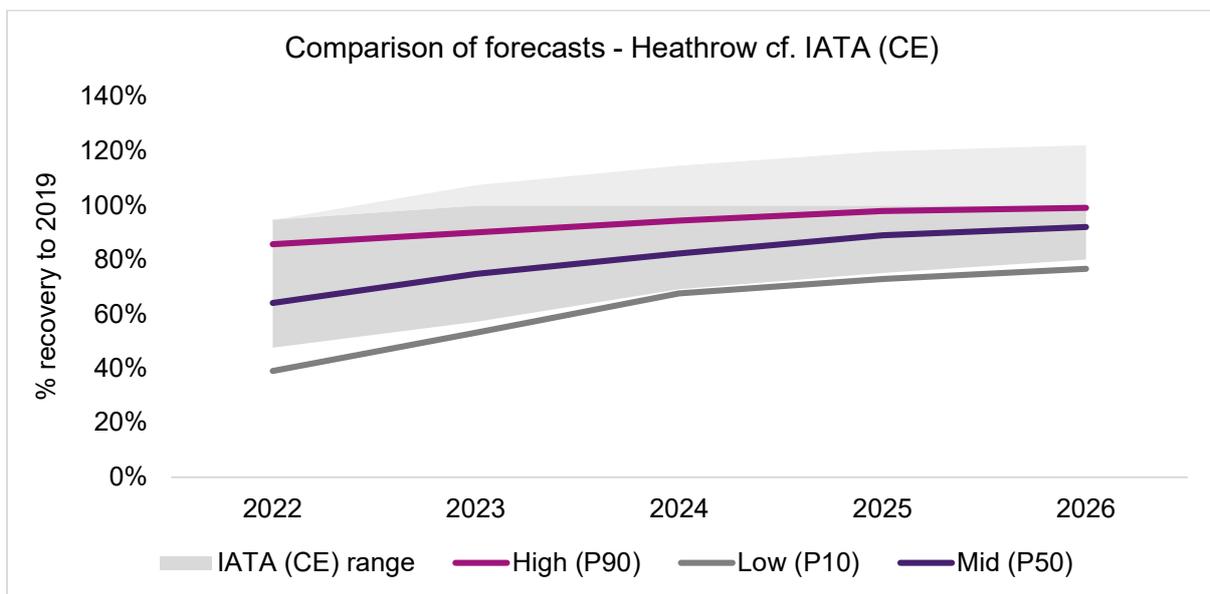
Figure 21 - Comparison between Heathrow and Eurocontrol forecast



Source: Heathrow & Eurocontrol

The below chart shows good alignment between the Heathrow forecast and IATA forecast presented during Constructive Engagement. The IATA forecast is of unconstrained demand, hence the increases above 100% shown in the later years of H7. As discussed during Constructive Engagement, Heathrow's capacity constraints mean it is inappropriate to compare to unconstrained demand, so in the chart below the proportion of recovery above 100% is shown in a lighter grey.

Figure 22: Comparison between Heathrow and IATA forecast



Source: Heathrow & IATA (Constructive Engagement, session 5)

5.9.5. Risks & Opportunities

Commensurate with the level of uncertainty in the forecast, there is a correspondingly large amount of both risk and opportunity. To ensure that the H7 price control can be built on the best possible information, we will update our views on demand through 2021. In addition to our regular engagement with the CAA and airlines we will provide two formal updates to our assumptions and forecasts, one in April and the second in July 2021. There are, however, some aspects impacting our forecast which will cause longer-lasting uncertainty and have the potential to remain uncertain through the H7 period.

Failure to control Covid-19 - the key risk in the immediate term relates to any potential need for further lockdowns and travel restrictions. Covid-19 will need to be kept under control until vaccines have been sufficiently rolled out, and lack of progress with testing and tracing leaves little confidence that further national restrictions will be avoided. The impact of the November lockdown on passenger numbers was evident, with a 38% drop in average daily passenger numbers from October to November. We must acknowledge the potential for further impacts of this scale until vaccine roll-out is achieved in all of Heathrow's core markets. With any further restrictions, we also risk the compounding impact on consumer confidence and economic conditions, ultimately delaying the recovery of each.

Uptake & development of testing solutions – in the last month there has been some progress with implementation of a testing solution, but we have yet to see the impact this might have on demand. This opportunity has the potential to begin to rebuild consumer confidence, which could then accelerate with the introduction of rapid point of care tests. With arrivals-based testing due to be implemented in December, we will soon have much more information on the potential scale of this opportunity.

Pace of vaccine rollout - rapid roll-out of an effective vaccine is the single largest upside opportunity. There is also significant risk in the approvals, manufacture and rollout stages, and it is not yet known how long immunity lasts. As with testing, much of this risk can be addressed through updates to the forecast in 2021, once we have more information.

Lifting travel restrictions – with testing and vaccine rollout should come the lifting of travel restrictions, but there is risk that Governments delay this response because of over-caution or other political rationales for keeping borders closed.

Economic downturn - there is significant risk to the global economy stemming from further waves of Covid-19 and potential financial crisis. This is reflected in the more conservative GDP scenarios we have modelled, but currently only with a small amount of weighting to these scenarios.

Britain's exit from the European Union – a topic which, in any 'normal' year, would merit significant discussion, is dwarfed in comparison to the potential impact of Covid-related drivers. The impact of 'Brexit' is not explicitly considered in our scenarios but should be noted as having the potential to further dampen demand.

Changes to VAT and airside tax-free sales – the challenges to how customers engage in our commercial offering are made worse by Government changes to VAT and airside shopping, that erode our competitive advantage over the high street. This poses a risk to passenger numbers, as the VAT Retail Export scheme incentivises international residents to visit the UK and spend in the UK retail sector. Survey evidence suggests that 93% of international travellers will change where they do their overseas shopping⁴⁵, and is likely to

⁴⁵ Global Blue, *Global Blue Survey of International Travellers*, September 2020

reduce the number of non-EU visitors to the UK by 7.3%⁴⁶. This impact is not explicitly considered in our forecast, but clearly presents a significant risk to the passenger numbers set out above.

Forecourt access charge – as set out in Chapter 7.2 - Commercial Revenues, we are proposing to introduce a forecourt access charge in 2021. Consumer feedback and airline concerns highlight the risk that the forecourt access charge may impact passenger demand. The proposed charge is at a reduced level to address these concerns, so we do not consider any resulting reduction to demand in our forecast, yet this is a risk that should be noted.

To address these risks, in addition to plans for updates in 2021, we are also clear that changes to the regulatory framework can help to manage uncertainty through the H7 period and ensure that the price control remains fit for purpose in all outturn scenarios.

In line with other airports, we are proposing a price control adjustment mechanism which automatically adjusts the price control to reflect deviations in outturn revenue against forecast. Our proposed mechanism, set out in more detail in Chapter 9.1, is calibrated to ensure the price control can appropriately balance risk and reward. Our mechanism works by making an adjustment to prices in the following regulatory period, ensuring that airlines have price predictability throughout the H7 period and thus increasing the framework's ability to deal with this unprecedented uncertainty in a manageable way.

⁴⁶ CEBR, *The Impact of Ending Tax Free Shopping in the UK*, September 2020

6 - CAPITAL INVESTMENT

Chapter Overview

Investment is critical to keeping the airport safe and compliant, but also to delivering our priorities to deliver for our future consumers and to keep fares competitive.

- Our capital plans have changed dramatically since we published our Initial Business Plan in December 2019. We now plan for a world that is more capital constrained and where passenger demand is uncertain. To do what we can to ensure a quick recovery, we must deliver a plan grounded in what consumers want. Therefore, this chapter should be read as a continuation of the golden thread that links insights to our plans and, later in this document, with expected outcomes.
- We have focussed on developing a plan that can flex to any future demand scenario, that targets investments on what passengers have told us they value most and have taken account of airlines' needs where relevant:
 - We target investments that make the greatest difference to consumer outcomes, including touchless journeys, hassle-free security and sustainable travel.
 - We have reduced the proposed capital envelope to only what is a critical minimum for sustaining assets, plus some discretionary portfolios targeted at keeping the cost of airline operations at Heathrow competitive.
- We propose a capital plan of £3.5bn for the H7 period, comprised of three distinct portfolios:
 - **Protect the Business (£2.1bn)** – this is the minimum we would need to invest in any future scenario to ensure Heathrow is safe and compliant.
 - **Win the Recovery (£1.1bn)** – this is an amount we invest to respond to near-term challenges presented by Covid-19, drive efficiency and cut costs in H7, and to adapt to changes to airport commercial business such as airside retail to ensure the cost of operating at Heathrow remains competitive and passengers feel comfortable and secure travelling. We consider this essential to further consumers' interests by hastening recovery and thereby unlocking lower charges when the crisis is over.
 - **Build Back Better (£0.3bn)** – this is an amount we invest to respond to longer term challenges to Heathrow and the sector, including the need to decarbonise and improve surface access links.
- If the passenger forecast continues to weaken in 2021, we would propose we constrain the second two categories of spend, while safeguarding the £2.1bn threshold and against threats to safety or security of the airport or our colleagues.

1.1 Introduction

This chapter outlines our capital investment plans for H7. It is grounded in the feedback we have received from consumers and airlines. It is designed to reflect a world where capital is constrained and future passenger demand is uncertain and could rapidly change.

- In this introduction we outline the changes in circumstances since our IBP that have driven radical changes to our approach.
- We outline the key findings from our consumer engagement and our refreshed passenger proposition that forms the basis for prioritising our investments.
- We outline the feedback we received from our airline community and how we have meaningfully changed our capital plans as a result.
- We outline the three portfolios that form our H7 capital plan and give details on some of the key projects and expected outcomes from investment.
- We conclude as to how the plan presented here will evolve into a series of capital programmes to be advanced in our capital governance framework.

This chapter does not cover our views on capital efficiency, which are to be found in Chapter 9.3 – Capital Efficiency.

1.1.1 Our position at the 2019 Initial Business Plan (IBP)

Our IBP set out an ambitious investment plan for 2022-2036 where the rate of investment peaked at £4bn (2018p) per annum. Our plans were shaped by consumer insight and airline feedback, following a rigorous process of masterplan optioneering. It was an efficient capital plan validated by robust external benchmarks and with delivery underpinned by using the established development and core framework.

It outlined how we would deliver a transformation in consumer outcomes – from providing consumers with more choice of flights and destinations through a third runway and terminal infrastructure, to making each and every journey more predictable and reliable with key investments in improving our baggage capability in Terminal 2, constructing the Southern Road Tunnel and direct investments in resilience. We proposed a step-change in service based on rigorously researched and evidenced consumers preferences and willingness to pay.

It delivered for our communities through targeted investments in noise, air quality and surface access. It also delivered for airlines by providing new capacity efficiently by investing in projects that generate positive commercial outcomes and in automation related initiatives, ensuring airport services remained reliable and affordable throughout the fifteen-year period.

1.1.2 Key changes since publication of our IBP

Since the publication of our IBP, the impact of Covid-19 on passenger demand and The Court of Appeal and Supreme Court judgements on the Government's Airports National Policy Statement (ANPS) has caused us to significantly revise our plans for capital investment and shorten the proposed control period from 15 years to a minimum of 5.

Capital in H7 will now be far more constrained and rather than adding capacity, our aim is now to fill it by giving passengers the confidence to travel again. Despite this change in approach,

our overarching aim remains to outline a portfolio of capital investment built on solid evidence that delivers the best possible consumer outcomes given the circumstances.

The Building Blocks Update (BBU) – July 2020

The BBU, provided to airlines and the CAA in July 2020, outlined for the first time the substantial shift expected between our IBP and RBP capital plans, and proposed an illustrative H7 capital plan range from £2.1bn to £5.3bn (2018p) over 5 years. This range reflected different passenger demand scenarios, mirroring the vast range of possible passenger demand scenarios for the next period.

These plans supported debate with airlines through Constructive Engagement on the content and prioritisation of the different types of investment. The BBU used the significant bank of development, cost estimating, and consumer insight work established in preparation for the IBP, where it was available. This ensured that the subsequent Constructive Engagement was based on a robust evidence base and centred on delivering the outcomes that we know matter to consumers.

From this process we were able to begin prioritising our capital investments for the RBP, informed by the insights provided by consumers and airline customers on the investments and outcomes that would be the most valuable to them.

Key Developments from BBU to our RBP – July to December 2020

There have been at least four developments since we published our BBU that we have considered when building our capital plans for the RBP:

- Consumer insights have confirmed that consumers want the same outcomes and have the same needs as pre-Covid, although how they prioritise certain elements within the outcomes has changed, for example the elevated importance of cleanliness, and we now need to do more to meet those needs. In the H7 period, we will need to make targeted investments even to maintain consumer outcomes. This is considered later in this chapter, and further detail is available in Chapter 3 – Passenger Experience.
- Throughout Constructive Engagement, airlines were clear that they expected most of the capital plan to be focussed on investments required to keep the airport safe, compliant and operational. Their view was that any discretionary investment should be made only if passenger demand made those investments viable and that they were directed at making the airport more efficient. This is considered in detail later in this chapter, and further airline feedback is summarised in Chapter 2.4 – Constructive Engagement.
- Recovery in passenger demand has continued to underperform expectations and forecasts have been downgraded for both 2021 and for H7. This has also suggested a need to adjust the upper end of our capital envelope for H7 downwards. For further information see Chapter 5 – Passenger Demand.
- Another consequence of the lower passenger demand is that we have had to take difficult decisions to further defer investment from the iH7 period to protect our liquidity. This has consequences both for projects that are now deferred into H7, and the maintenance cost of assets in H7 that have not been maintained as planned in iH7. For further information see Chapter 2.1 – Impact of Covid-19 on Heathrow.

Given the current uncertainty, we continue to believe that it is important to retain the Development Capital and Core Capital approach to ensure the flexibility needed to adapt the plan over time. See Chapter 9.3 - Capital Governance for our proposal on the management of capital governance through this period.

Moreover, given the passenger demand drives our ambitions on capital investment, our plans are likely to continue to mature throughout 2021 as the demand outlook for H7 becomes

clearer. We intend to issue updates to this plan in April and July next year. This flexibility will allow us to work with the airline community to prioritise investments and refine these plans.

1.2 Consumer insights

Chapter 2.3 – Consumer Insights sets out the detail around the extensive consumer research that feeds into our RBP, including our capital plan set out in this chapter. Chapter 3 – Passenger Experience brings together those insights and outlines a refreshed passenger proposition, including the key investments required to deliver it. This section repeats the key findings of those chapters, as consumer insights are the foundation of our capital plans and this chapter is a continuation of the “Golden Thread” linking insights to our plans and to our targeted outcomes (shown below).

Figure 1: Heathrow’s Consumer Outcomes



Source: Heathrow

Our 2020 synthesis of consumer insight research has showed that consumer requirements when travelling are largely the same as those observed prior to the Covid-19 pandemic. However, while underlying needs have not fundamentally changed, some lower-level needs, such as cleanliness and personal safety, have become amplified and more important in determining airport choice¹. From our research, we have concluded that we must focus on delivering a proposition that is easy, clean, reassuring and that provides value for money.

Our research confirms that 92% of potential passengers would consider using Heathrow if initiatives that matter the most to them were implemented². Furthermore, it has also shown that 41% of potential passengers said they’d use Heathrow less if Heathrow allowed a deterioration in the area of service most important to them³.

¹ Blue Marble Research, Consumer needs synthesis, November 2020

² Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

³ Ibid

From a capital investment perspective, with consumers assigning approximately 62% of their overall importance weighting to consumer needs within the journey experience ('in-airport'), we recognise the importance of investing and changing our processes where required to meet consumer needs, including those amplified in the wake of Covid-19. Making this our priority also fits into our overall objective to do what is in our control to accelerate the return of demand for travel.

From our extensive consumer research since the start of the Covid-19 pandemic, we've understood the following eight key things to be true of consumer needs and have reflected these needs in the composition and prioritisation of our capital portfolio for H7.

1. Access to the airport remains a key priority for passengers, but taking public transport needs to be safer than ever before – particularly from a hygiene/social distancing perspective - and we also anticipate that there may be some, at least temporary, future switching away from public transport towards private car journeys to the airport, with 10% of participants in our post-Covid surface access research saying that they would switch away from public transport in the future as a result of Covid-19⁴.

I think to minimise risk for me and other people I'd try and get a lift from my family rather than using public transport⁵."

2. While flight availability has always been key for passengers when it comes to airport choice, in the post-Covid world there is the added dimension of safety – passengers would like to be going to 'safe' places at 'safe' times⁶.

"Consumers have clear airport perceptions and preferences, but finding the right flight is the overriding aim.⁷"

3. Post-Covid, passengers want enough space and will rate the ease of access/moving through the airport according to their stress levels in navigating the new normal of social distancing; they want ease of access maintained as far as possible, and clear signage to help with navigation through terminals remains of high importance.

"Space to sit is no longer enough, having space to social distance is essential.⁸"

4. Concerns about health have increased in the wake of the Covid-19 pandemic, with 79% of current passengers saying that are concerned about spreading or catching Covid-19 whilst in an airport terminal⁹. Unsurprisingly therefore, passengers expect action to be taken to minimise their exposure to Covid-19 whilst they are travelling through the airport.

"I would expect that we would have to prove that we are healthy before we fly. Maybe temperature test or even have to queue to see an airport doctor to just do basic tests. I know this is time consuming, but it would make me feel safer. Hand gels and cleaning areas for baggage or trolleys you may use"¹⁰.

⁴ Join the Dots, *Surface Access Post COVID-19 Recovery*, August 2020

⁵ Ibid

⁶ Heathrow Consumer Research, *Passenger Priorities Post-COVID*, May 2020

⁷ Ipsos, *Heathrow Surface Access - Final Report*, July 2016

⁸ Join the Dots, *Passenger priorities post COVID-19*, June 2020

⁹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

¹⁰ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers' perspective*, May 2020

5. Passengers need to be more informed than ever before, with information needed around processes (especially processes changing as a result of Covid-19), preparations and what to expect.

“People now insist information and wayfinding is delivered via multiple channels – including social media, digitally, static signs, via staff and announcements throughout the terminal.”¹¹

6. Expectations for cleanliness now extend beyond the traditional toilets, litter and seating. In the post-Covid world passengers expect additional features in terminals, such as hand sanitisation and more open areas with plenty of space. They also expect that processes are safe, with the inclusion of touch-free processes, and that safety procedures are carried out along their journey through the airport.

“Security would be a place I would worry about going as what potential germs are on the conveyor belts and boxes you put items in”¹².

7. Passengers have told us that they still want to experience the airport as they always have done and do not want this to be lost as a result of Covid-19. However, Covid-19 appears to have increased the importance of open and airy interior spaces and may also change some passenger expectations around amenities such as retail (e.g., the degree of physical browsing in retail stores).

“With passengers experiencing a different kind of stress at airports, the need for stimulation and distraction is likely to continue to be important, along with creating a sense of welcome and a calm ambience.”¹³

8. Passengers now expect more from airport colleagues, seeking assurance to assuage the additional stress that travelling in the time of Covid-19 brings – visibility and availability of colleagues are key. Colleagues must also be seen to be visibly taking precautions to ensure safety.

“Allocating additional visible cleaning staff...will also greatly improve confidence”¹⁴

These eight observations are the foundation of our conclusion that our future passenger proposition needs to be based on ease, cleanliness, reassurance and value for money. We have ensured that investments that meet this proposition are prioritised and retained in the portfolio over other projects. Despite our capital investment being far more constrained, we will continue to ensure that we are making the best possible use of our available capital investment to deliver against the consumer needs that we know matter most.

¹¹ Join the Dots, *Passenger priorities post COVID-19*, June

¹² Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

¹³ Join the Dots, *Passenger priorities post COVID-19*, June 2020

¹⁴ Airports Council International, *ASQ 2020 Global Traveller Survey*, 2020

1.3 Airline community engagement

We have continued to engage extensively with airlines through our ongoing Capital Portfolio Board (CPB), Joint Steering Board (JSB) and other ongoing operational collaboration forums. In addition, we have undertaken nine weeks of intensive discussions with airlines in Constructive Engagement following the publication of our BBU.

These discussions have meaningfully shaped our capital plans, both the size of the portfolio and what we have prioritised. Table 1 below gives a summary view of changes we have made in the transition from the BBU to RBP, driven by engagement with the airline community through Constructive Engagement.

Table 1: Heathrow's position on capital plans - BBU vs. RBP

Heathrow's position at BBU	Airline community feedback through CE ¹⁵	Heathrow's response in the RBP
A capex envelope of £5.3bn for a High scenario and £2.1bn for a Low scenario.	The 'High' scenario of £5.3bn is too large when compared to Q6 and for H7 deliverability. c.£2bn is an appropriate level of capital investment.	As a result of a forecast reduction in passenger volumes and airline feedback, the scale of investment has been reduced from the original High scenario of £5.3bn to a maximum of £3.5bn.
	Heathrow should provide detail as to how capital would vary between High and Low ranges during the H7 period.	We have developed a flexible prioritisation framework which we will use to shape the programmes and projects for H7 for any capital scenario.
Illustrative plans in response to different demand scenarios to support debate during CE.	Heathrow should start with establishing the minimal required level of capital to address safety, security and regulatory matters, with further programmes / projects to be progressed on a case-by-case basis.	The £2.1bn Protect the Business portfolio ensures that we deliver a safe and secure environment for our passengers, to protect our staff and the wider Team Heathrow. These are the minimum standards we must meet recognising the enhanced needs of our consumers as a result of Covid-19.
Illustrative plans in response to different demand scenarios to support debate during CE.	The airline community agree with the principles of splitting capital into cost categories and Heathrow has explained the logic of its approach.	We have maintained the portfolio approach of Protect the Business, Win the Recovery and Build Back Better.
	Request for greater definition of overarching	We have proposed a Programmatic approach

¹⁵ During Constructive Engagement meetings or Heathrow Airline Community, *Airline Community Response to H7 CE*, October 2020, pp.11-15

	objectives and specific deliverables of projects under each category in order to progress views.	which sets out overarching delivery objectives with illustrative projects.
Recognition of ongoing consultation process with the airlines through CE and the Capital Portfolio Board.	Through the Capital Portfolio Board, the airline community and Heathrow will continue to review and agree a plan that will help shape the required programmes and projects for H7	Heathrow continues to engage with the airline community through the Capital Portfolio Board to help shape the required programmes and projects for H7
Southern Road Tunnel included in BBU High Scenario.	Southern Road Tunnel - the airline community are not supportive as part of the H7 plans	The Southern Road Tunnel has been de-prioritised for H7.
T1 Baggage Prolongation included in BBU High and Low Scenarios.	<p>T1 Baggage Prolongation - the airline community understands there is a requirement to deal with the aging T1 baggage infrastructure.</p> <p>Heathrow needs to do more to identify and agree with airlines the most appropriate solution including consideration on the implications for H8.</p>	<p>T1 Baggage Prolongation is included in the Protect the Business portfolio. This is to maintain current performance of the T1 baggage system serving T2.</p> <p>Further work is being progressed to determine the most appropriate holistic solution for T2 baggage given the deferral of the Future T2 programme.</p>
<p>Western Rail contribution (REDACTED) included in BBU High Scenario.</p> <p>T5 Station Fit-Out included in BBU Low Scenario.</p>	Western Rail - whilst supportive in principle of heavy rail into Heathrow, the airline community need to understand the actual costs and evidenced business case.	<p>A contribution to Western Rail is not included in the H7 capex proposals.</p> <p>T5 Station Fit-Out is included in the Build Back Better portfolio to enable the future connection of Western Rail to Heathrow.</p> <p>We are currently reviewing the potential of making a contribution to Western Rail at a later date given the revised project timescales.</p>
The High Scenario in the BBU rolled over the service capital investments from the IBP, totalling £505m for the H7 period.	Service - the airline community have not had sufficient detail to quantify the proposed values, including Heathrow's statement	Removal of a dedicated allowance for service in the High Scenario (£505m).

An initial estimate was provided of £138m in the Low Scenario.	that at least £138m is required in a low scenario.	In the RBP, service outcomes are still retained through investment in safety and security and a focus on our refreshed passenger proposition, which is less capital intensive but meets updated consumer needs based on extensive consumer research.
Allowances for sustainability	The airline community acknowledged that Sustainability remains a priority, but meaningful investment is not possible until stability returns.	The Build Back Better investment has been forecasted from 2025 when passenger volumes are projected to be more stable.
Allowances for efficiency spend	The airline community requested that the Win the Recovery portfolio included investments to drive out inefficiencies in the cost of operating for the whole airport community, to benefit the airport charge.	The RBP includes an allowance for investments to drive out inefficiencies in the cost of operating for the whole airport community, to benefit the airport charge.

Source: Heathrow

1.4 Capital portfolio evolution

In our BBU we outlined a maximum envelope of up to £5.3bn covering a scope of projects worth £6.6bn. We also outlined a minimum critical spend between £3.2bn and £2.1bn that would need to be invested in any scenario to keep Heathrow safe and compliant.

As a consequence of our extensive consumer research and engagement with airlines, the H7 capital plan has evolved significantly since the publication of the BBU:

- The maximum capital envelope in any scenario will be £3.5bn, down from £5.3bn in our BBU. This comprises a £2.1bn component that is critical (“Protect the Business”) and a £1.4bn amount that is essential to protect consumers’ long-term interests (“Win the Recovery” and “Build Back Better”).
 - We have excluded projects such as T2 Future Baggage and Southern Road Tunnel following airline feedback.
- We have confirmed the minimum amount invested in any passenger scenario will be no higher than £2.1bn, down from a range of £2.1bn - £3.2bn in our BBU.
 - We have reduced the maximum critical compliance allowance in our BBU from £550m p.a. to £240m p.a. in our RBP.
- We have retained an allowance of £1.4bn for additional investment and shaped it based on airline feedback in that it is:
 - Invested only if our central forecast remains robust. If the demand outlook continues to deteriorate, we will constrain this further or completely.

- Directed exclusively at projects that respond to changed passenger needs or make the cost of operating at Heathrow more efficient, or which generate incremental revenues to reduce upward pressure on the airport charge.
- Designed to ensure our plans are robust to a volatile demand outlook and create the structure to refine plans further in 2021 as demand becomes clearer.

1.4.1 Capital portfolio exclusions

Following airline feedback and a consideration of consumer insight, we have excluded the following projects that were in our H7 scope at BBU.

Table 2: Key project capital reductions (BBU High to RBP)

Category	Capital Project	RBP Reduction vs BBU (High)
Significant Infrastructure Projects	T2 Future Baggage	-£1,462m
	Southern Road Tunnel	-£848m
	Adapted Airfield	-£146m
Surface Access Projects	Rail Contribution	-£110m
	Other Surface Access Projects	-£45m
Service Projects	Dedicated Allowance for Service	-£505m

Source: Heathrow

We recognise that each of the deferred projects had significant consumer outcomes associated with it:

- **T2 Future Baggage** would have delivered a new baggage system for Terminal 2, reducing missed bags and improving baggage processing times, whilst enabling the subsequent demolition of Terminal 1 and safeguarding for future expansion of Terminal 2. This project would have helped us deliver against the passenger need for luggage to be handled with care, kept safe and travelling with them. The project would have also acted as an enabler for airline on-time performance, further benefitting the passenger experience by delivering against the ‘predictable and reliable journey’ outcome, as well as benefitting our airline customers.
- The **Southern Road Tunnel** would have provided a road link between the Central Terminal Area and the south of the airport, reducing public transport journey times and increasing active travel accessibility, whilst also increasing operational resilience. The tunnel would have improved ease and reliability of access for consumers, thereby delivering against both the ‘confident I can get to and from the airport’ and the ‘predictable and reliable journey’ outcomes.
- The **Adapted Airfield** would have enabled easterly departures from the northern runway, benefitting communities by more evenly distributing noise, while modifying the existing runways for a future three runway operation. We know that consumers continue to assign value to airports being socially responsible as part of the airport choice theme in our consumer synthesis¹⁶, and that an adapted airfield would have helped us to deliver against this.

¹⁶ Incite Kin + Carta, *Understanding the sustainability landscape in 2020 and future initiatives for Heathrow*, September 2020

- Our **Rail Contribution** would have provided a financial contribution for Western Rail access to Heathrow, enabling mode share shift and improved access to Heathrow from the Thames Valley, South West and Wales. Along with the Southern Road Tunnel, Western rail would have improved ease of access to the airport for consumers, thereby delivering against both the ‘confident I can get to and from the airport’ and the ‘predictable and reliable journey’ outcomes.
- Our **Dedicated Allowance for Service** would have raised the levels of service performance in several areas. Top-down initiatives in our IBP included improvements to baggage and airside operation systems, which would have delivered against the ‘predictable and reliable journey’ outcome, as well as on the consumer need for luggage to be handled with care, kept safe and to travel with them. The IBP also included plans to deliver a range of bottom-up, passenger facing improvements, such as improved seating areas and washrooms. These initiatives would have helped us to deliver against a number of the consumer outcomes, notably: ‘cared for and supported’, ‘enjoyable experience at the airport’ and ‘predictable and reliable journey’.

Excluding these are the right choice given the capital constraints we face in this period. We will take mitigating actions that will protect consumer outcomes from the impacts of these project deferrals, with our key consumer outcome mitigations described below:

Maintaining baggage service levels

We understand that the ‘predictable and reliable journey’ outcome remains important to consumers, and that they continue to assign a high value to their bags being handled with care, being kept safe and travelling with them as part of the basic comforts theme identified in our consumer insights synthesis¹⁷. We also know that consumers assign a high disbenefit value to any deterioration in baggage service levels¹⁸.

“Obviously, I want accuracy - my baggage arriving in the same place that I do¹⁹”

Our investment in Terminal 1 baggage prolongation recognises this and ensures today’s baggage service levels in Terminal 2 are maintained in H7, despite capital constraints meaning that the Terminal 2 Future Baggage programme will not be progressed during this period as previously planned.

Minimising noise from our operation

Consumer insights show that social responsibility and reflecting consumers’ environmental values continue to be drivers of airport choice²⁰.

“Airports, along with airlines, have a role to play in tackling sustainability, especially environmental concerns linked to air travel. There is a consumer expectation for this.²¹”

In lieu of capital investment in an adapted airfield, we will continue to incentivise quieter and cleaner aircraft, such as new generation Boeing 787s and Airbus A350s, through our aeronautical charging structure. This mechanism, which has already been shown to be effective in attracting cleaner and quieter aircraft to Heathrow, will help ensure we continue to

¹⁷ Join the Dots, *Passenger priorities post COVID-19*, June 2020

¹⁸ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

¹⁹ Join the Dots, *Innovations at Heathrow Report v1.0*, January 2019

²⁰ Blue Marble Research, *Consumer needs synthesis*, November 2020

²¹ Incite Kin + Carta, *Understanding the sustainability landscape in 2020 and future initiatives for Heathrow*, September 2020

deliver for consumers and our wider local communities. Please see Chapter 4 – Building Back Better for further details.

Expanded surface access options

Having an airport that is easy to access remains the key priority for consumers within the predictable and reliable journey outcome²².

“Flights arrive late so I have arrived at midnight and been left with it costing me a lot of money to get home. I would use services a lot more if there were an earlier start/late finish to Heathrow Express and Tube.”²³”

Although investment by Heathrow in Western Rail will not take place in H7, public transport journey times from the west of the airport will improve through the introduction of Crossrail. As a result, consumers will continue to benefit from improved surface access provision in H7, thereby delivering on the ease of access priority. We will continue to work closely with TfL and our other partners to maximise the value of new Crossrail infrastructure to consumers – including taking into consideration changing consumer priorities and concerns with regards to public transport in the post-Covid world. Further details of our surface access plans and how we plan to deliver for consumers through these plans can be found in Chapter 7.4 – Surface Access. Discussions with DfT are continuing and a contribution for the scheme may be included in H8.

Continuing to deliver service outcomes

We continue to make allowances for targeted investments that will improve service (for example, efficient touchless journeys) and other investments like regulated security have great service outcomes associated with them (for example, not having to remove electronic items from bags). We have worked to ensure our refreshed passenger proposition is less capital intensive while meeting updated consumer needs. Further details of our refreshed passenger proposition and how it will enable us to deliver against consumer outcomes can be found in Chapter 3 – Passenger Experience.

²² Blue Marble Research, Consumer needs synthesis, November 2020

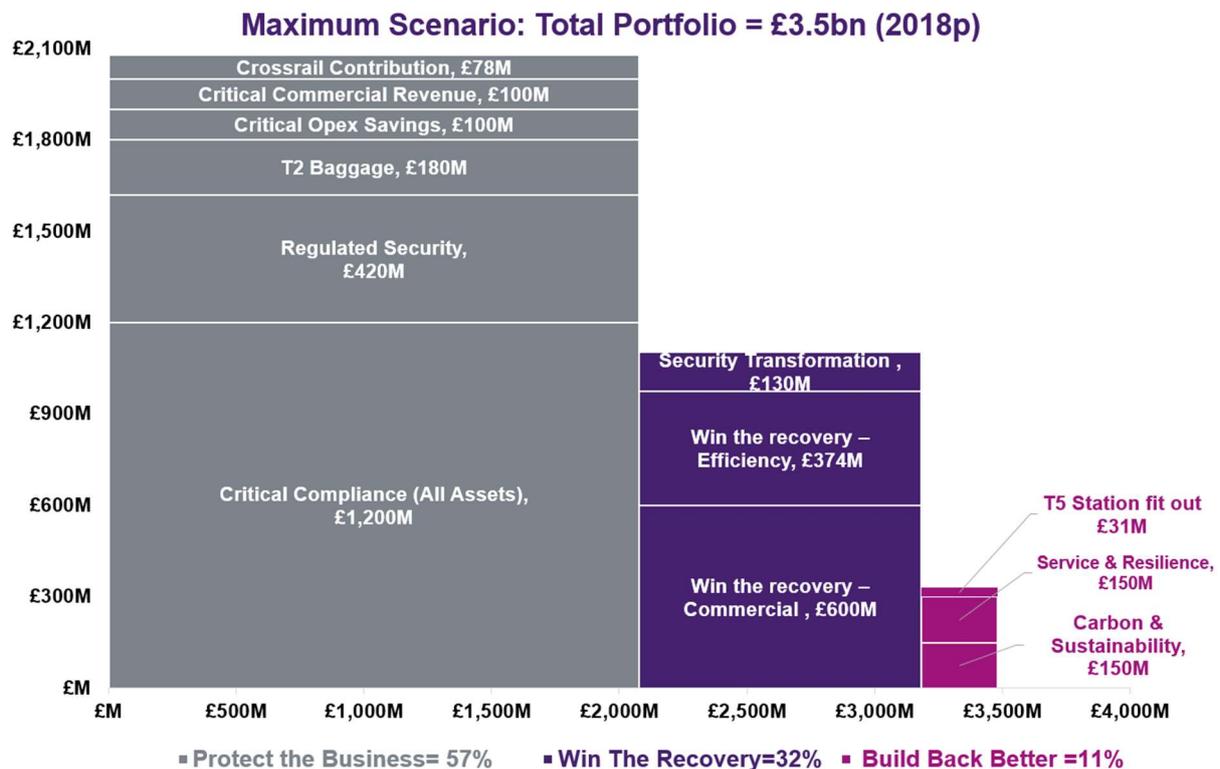
²³ Join the Dots, *Horizon Surface Access*, August 2018

1.5 Our capital plan

We have produced a single plan designed to be robust to any future passenger demand scenario. It is designed around three capital portfolios:

- **Protect the Business (£2.1bn)** – this is the minimum we would need to invest in any future scenario to ensure Heathrow safe and compliant.
- **Win the Recovery (£1.1bn)** – this is an amount we invest to respond to near-term challenges presented by Covid-19, drive efficiency and cut costs in H7, and to adapt to changes to airport commercial business such as airside retail to ensure the cost of operating at Heathrow remains competitive and passengers feel comfortable and secure travelling. We consider this essential to further consumers’ interests by hastening recovery and thereby unlocking lower charges when the crisis is over.
- **Build Back Better (£0.3bn)** – this is an amount we invest to respond to longer term challenges to Heathrow and the sector, including the need to decarbonise and improve surface access links.

Figure 2: RBP H7 capital portfolio



Source: Heathrow

Table 3: £3.5bn Prioritised list of objectives and investment by year (2018p)

£m 2018p	Strategic Projects / categories	2022	2023	2024	2025	2026	H7
Protect the business	Critical Compliance (all assets)	240	240	240	240	240	1200
	T2 Baggage	29	26	41	42	42	180
	Regulated Security	-	105	105	105	105	420
	Critical Opex Avoidance	20	20	20	20	20	100
	Critical Commercial Revenue	20	20	20	20	20	100
	Crossrail Contribution	39	39				78
	Subtotal Minimum £2.1bn Plan	348	450	426	427	427	2,078
Win the Recovery	Security Transformation	75	10	30	10	5	130
	Commercial Revenue Generation	50	70	157	162	161	600
	Efficient Airport	24	50	100	100	100	374
Build Back Better	T5 Station fit out	-	-	-	-	31	31
	Carbon & Sustainability				75	75	150
	Service & Resilience				75	75	150
TOTAL	497	580	713	849	874	3,513	

Source: Heathrow

In building these portfolios we have retained elements of the Initial Business Plan and expansion masterplanning process, as well as introducing top down capital allowances, which categorise investments by their primary objective. This allows us to flexibly respond to the uncertain circumstances and ensures that robust business cases, which demonstrate their contribution to the objective, are developed before any specific investment is committed to.

To reflect the top-down capital allowances, the following capital phasing is assumed in the airport charge, to allow for flexibility in prioritisation closer to the start of H7:

Table 4: Capital envelopes in Revised Business Plan (2018p)

Capital Investment	H7 Forecast [£m, 2018p]					
	2022	2023	2024	2025	2026	Total
Minimum plan	400	420	420	420	420	2,080
Total	500	600	700	800	931	3,531

Source: Heathrow

1.5.1 Protect the Business

We have crafted this portfolio based on the airline request to see our capital plan built from the foundations of what is necessary to keep the airport safe and secure.

These are the minimum standards we must meet, including recognising the enhanced needs of our consumers as a result of Covid-19. We must invest to operate safely, ensuring that our

facilities remain secure and reassure passengers of their safety at every step of their journey. We must comply with the regulations enforced by all our authorities, including CAA, DfT, NATS, Environment Agency and Local Planning Authorities, ensuring we do not breach any safety, security or other requirements. As such, we will invest this amount on the stated projects in any future passenger scenario.

Heathrow's ratio of planned asset replacement compared to the statutory depreciation of c. £800m per annum in iH7 would project an asset replacement requirement of greater than £4bn in H7; a £2.1bn capital plan means we are likely to have to take difficult decisions when prioritising projects in the short to medium term. This would include using assets for longer than their planned life or choosing to temporarily mothball assets deemed unsafe, and even living with existing risks for longer than we would have done pre-Covid, for example pausing any asbestos removal.

This focus on critical asset replacement means that projects which improve service, resilience and capacity cannot be funded from this allowance and are likely only to be invested in later in the H7 timeframe.

Table 5: Protect the Business Capital Allocation

Protect the Business Portfolio	H7 Capital (2018p)	Definition
Critical Compliance	£1,200m	This keeps our asset base safe, compliant and operational for our passengers and Team Heathrow community.
Regulated Security	£420m	Delivers the essential compliance elements of the DfT mandated security changes.
T2 Baggage (previously T1 Prolongation)	£180m	Maintains current performance of T2 baggage (currently served from T1), providing a safe, reliable and compliant solution for the duration of H7.
Opex Increase Avoidance	£100m	Allowance for those efficiency projects most able to protect against increasing operating costs and therefore benefit the airport charge.
Commercial Revenue Protection	£100m	Allowance for those projects needed to protect existing commercial revenues and therefore benefit the airport charge.
Crossrail Contribution	£78m	Deferred from iH7, this is the committed capital contribution to be paid for the Crossrail service to Heathrow.
Total	£2,078m	

Source: Heathrow

Critical Compliance

Critical Compliance spend covers essential asset replacement of all asset types (infrastructure and technology) at the end of their life, ahead of the point at which that they may cost more to maintain and before any failures which would reduce service or risk safety, security or a compliance breach. This spend is non-discretionary and a lack of investment would impact on our ability to meet basic consumer needs. For this reason, the proposed expenditure in asset replacement remains materially the same in any H7 scenario.

This investment level mitigates against potential increases in maintenance costs, a higher likelihood of service interruption and potentially a higher replacement cost in the long run if the

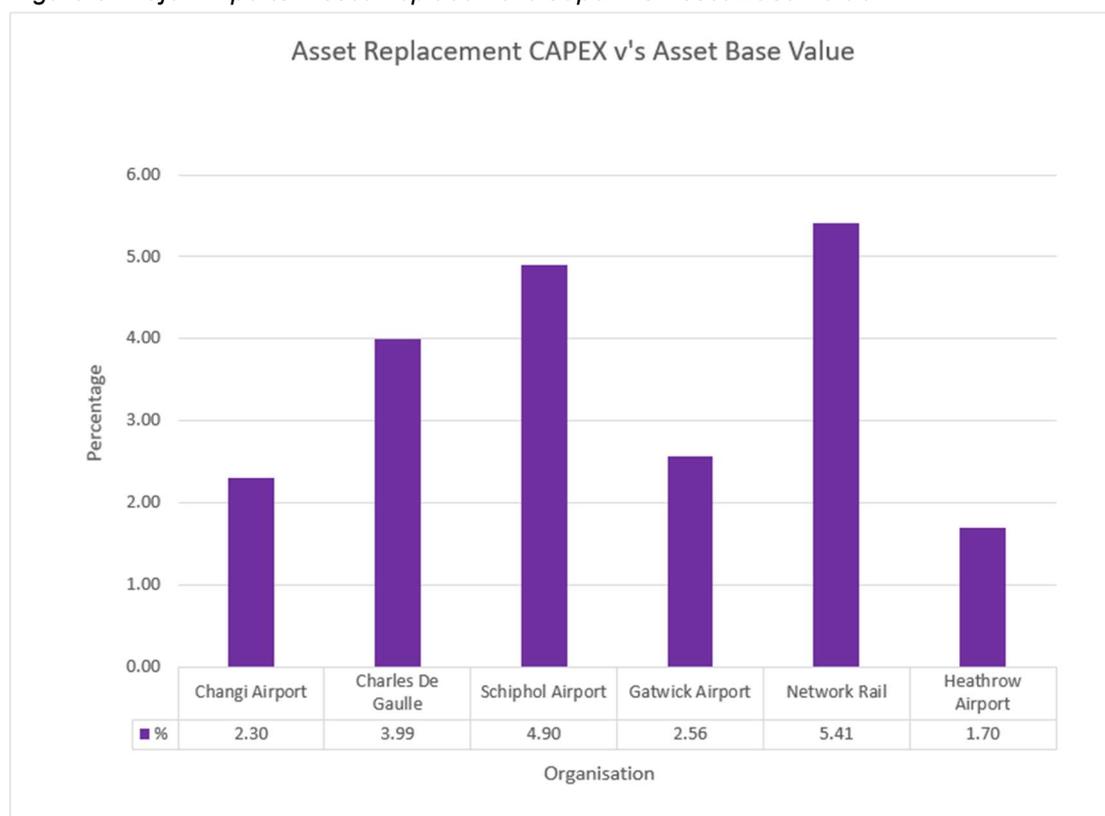
asset fails at short notice. However, compared to Q6, there is no allowance for increasing service levels, resilience or capacity whilst replacing assets – our focus will instead be on maintaining service levels and preventing any deterioration of consumer outcomes.

Historical spend at Heathrow has represented on average 1.7% of the RAB base (less investment properties). This has been externally benchmarked against other similar organisations with broadly similar complexity and within a regulatory environment who tend to invest more (see Figure 3). The £1.2bn allowance for H7 projects this 1.7% trend forward in order to maintain service and resilience similar to today.

Business cases which have been continued during 2020-21 include the Main Tunnel and Cargo Tunnel safety improvements, T4 Hold Baggage Screening compliance and Cyber Security. These investments will continue to be prioritised in the H7 portfolio.

However, projects which have been paused in the iH7 period will now need to be robustly prioritised in order to prevent a spike in asset replacement in 2022 and beyond. We must also take into account the potential increase in costs to reopen terminals when demand returns as a result of consolidating T3 and T4 in 2020. As a result of these delayed projects, we are undertaking a rigorous risk assessment to ensure that we prioritise those assets in most urgent need of replacement earlier in the regulatory period to prevent a ballooning of capital investment and increased levels of risk due to the lack of investment in iH7.

Figure 3: Major Airports' Asset Replacement Capex vs Asset Base Value



Source: From Public Data compiled by AMEY as a 10-year average 2010-2020.

Through managing these risks and prioritising the most critical and urgent asset replacements, we will ensure that we continue to deliver against the consumer outcomes of a 'predictable and reliable journey' and 'feeling safe and secure' whilst at Heathrow, measured through the proposed service quality regime.

T2 Baggage (previously T1 Prolongation)

Without progressing the Future T2 programme during H7, the importance of the T1 baggage project has increased since compiling the IBP. Terminal 2 currently utilises the old Terminal 1 baggage system, which is 85% life expired. Investment is needed to maintain current levels of performance and provide a safe, reliable and compliant solution for H7.

Through Constructive Engagement we have agreed with the airline community that investing to protect the baggage service in Terminal 2 is essential in any scenario. Based on feedback received through Constructive Engagement, we are reviewing options that include prolonging the T1 baggage facility along with any alternative solutions that could provide the baggage functionality without T1. This includes identifying existing assets and spaces that could be used to house a new baggage system that supplements or replaces the T1 system and therein any existing systems that could be used to support the T2 baggage operation. In the case of a new baggage system, the options also assess the investment needed to support the existing T1 baggage system until such a time that a new system goes live.

This portfolio maintains current baggage service levels for Terminal 2 passengers, which has become necessary due to the requirement for the T1 system to operate for longer than previously envisaged. Lower passenger numbers give rise to opportunities for delivery efficiencies by closing some operational areas during any works. This would ultimately enable quicker investment in the facility and baggage system to ensure a safe and compliant working environment is provided for airline, handler and Heathrow colleagues.

The potential to consider alternative solutions to the previously developed asset replacement solution for the T1 system has resulted in the terminology change from T1 Prolongation. T2 Baggage better reflects the potential for investment outside of Terminal 1 to ensure that baggage service levels are retained for Terminal 2 passengers.

We understand from our consumer insights research that baggage is one of the areas where consumers are least willing to accept a deterioration in service²⁴. Furthermore, for some of our passengers, such as those travelling with their own wheelchair, a reliable baggage process is even more critical. This targeted investment ensures that Terminal 2 passengers see Heathrow reliably ensure that their bags are handled with care, kept safe and travel with them. In this way, we will ensure that we continue to deliver against the consumer outcome of a 'predictable and reliable journey' through our airport, and that consumers do not suffer a deterioration in the level of baggage service that they receive.

"No.1 driver of overall flying experience satisfaction is 'Baggage collection at the airport in the UK'.²⁵"

"My wheelchair is precious – it's my arms and legs."²⁶

This programme will therefore develop and deliver a solution to support the baggage operation that currently resides in T1. This will protect the existing resilience of the baggage operation, the building within which it resides and the welfare of the people that deliver the baggage service for T2.

²⁴ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

²⁵ CAA, *Aviation Consumer Survey – 5th wave report*, August 2018

²⁶ Caroline Thompson and Associates, *Heathrow Special Assistance Open Day Presentation*, October 2017

Regulated Security

A key part of the compliance scope for H7 will be the installation of new body scanning and CT screening equipment in terminals and campus as per the DfT mandated regulatory change. Investing in this Regulated Security programme ensures Heathrow's passengers are kept safe and delivers four core improvements:

- Removing existing threat vulnerabilities.
- Delivering regulatory compliance in line with new DfT standards.
- Enhancing passenger experience through a simplified security screening process.
- Unlocking the potential to drive efficiency and improved performance in security.

We know from our consumer insights research that removing the requirement to separately present liquids and gels during the security screening process is ranked as a high priority amongst consumers²⁷. We also know that feeling safe and secure remains a high priority for consumers as part of the basic comforts outcome, and that elements of this have been elevated post-Covid²⁸. Investing in Regulated Security will allow us to deliver both of these core outcomes for consumers.

"I found it quite hard to work out the baggage rules for what is allowed in hand luggage - liquid, lip salve, medicines etc. I fly very rarely and was worried about getting something wrong."²⁹

Finally, post-Covid consumer insights point to the importance of a smooth journey through security in terms of passengers' perceptions of predictability and reliability. Thus, there is more reason than ever before to, where possible, continue investing in elevating the passenger security experience³⁰.

The Regulated Security programme as presented within the Protect the Business portfolio contains only the critical elements of Security Transformation required to achieve compliance with the DfT mandate, as these are required in any H7 scenario. The additional transformational elements to drive efficiency are included in the Win the Recovery portfolio.

Opex increase avoidance and commercial revenue protection

Investment is also needed to continue to reduce the upwards pressure on the airport charge. By protecting against changes in compliance and consumer needs, which would otherwise increase operational costs, we can avoid operational cost increases. As passenger volumes return and increased pressure is put on our technology and infrastructure, we will need to invest to protect our existing resilience and service levels. By their very nature, these changes are unpredictable. Therefore, we have set out an allowance in the minimum plan to ensure that unanticipated impacts do not put unnecessary upward pressure on the airport charge.

Likewise, commercial revenues that the RBP relies upon as consistent and regular income require regular investment to maintain them, such as retail shop fitouts when retailers change. There is likely to be a higher turnover of retailers in H7 as the Covid-19 crisis continues to severely impact the retail industry, particularly in airports.

Investment in shell and core works during H7 will ensure that our retail estate continues to meet building regulations and offer concessionaires a sound trading environment. 'Shell and core' refers to the core structure, materials and services to enable a safe, compliant and

²⁷ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

²⁸ Join the Dots, *Passenger priorities post COVID-19*, June 2020

²⁹ CAA, *CAA Consumer Tracker*, July 2017

³⁰ Join the Dots, *Passenger priorities post COVID-19*, June 2020

operable retail unit. As protect the business initiatives, these works ensure continuity of trading and therefore revenue protection.

Our consumer insights research has shown that, despite Covid-19, passengers still want to experience the airport as they always have, including being able to use shops³¹. By ensuring we retain minimum retail estate investment in the Low scenario, we will continue to deliver an enjoyable airport experience for consumers, whilst also contributing to mitigating the adverse impact that lower passenger numbers have on the airport charge.

“Whilst measures to protect us post COVID-19 is critical, it would be a shame to lose the journey experience at the airport.”³²

Crossrail Contribution

The Q6 settlement included a regulatory commitment to make a one-off contribution for the introduction of Crossrail to Heathrow - £70m in 2011/12 prices. Crossrail presents a unique opportunity to grow the passenger catchment area, presenting consumers with greater airport choice and unlocking a more predictable journey for many more passengers who will choose to travel via train to Heathrow rather than by other means.

A series of delays has led to a revised service commencement date of 2024. Therefore, we have agreed to make the contribution in 2022 and 2023, deferring expenditure from iH7 to H7.

1.5.2 Win the Recovery

Win the Recovery has evolved through Constructive Engagement with the airlines as we respond to the evolving macro-economic environment, as well as through our extensive consumer research. This element of the capital portfolio prioritises investments that enable us to make the most of our competitive advantage – responding to new consumer needs post-Covid, generate new income streams and to create operational efficiencies, do what is in our control to accelerate recovery while reducing the total cost of operating at Heathrow.

Table 6: Win the Recovery Capital Allocation

Win the Recovery Programmes	H7 Capital (2018p)	Definition
Efficient Airport	£374m	Drive down the total cost of operation at Heathrow for the whole community through automation and digitalisation.
Efficient Airport - Security Transformation	£130m	Leverage the opportunity of the regulated security changes to reduce opex through transforming security processes.
Commercial Revenue Generation	£600m	Unlock incremental revenue generation by delivering consumer outcomes over and above the critical compliance.
Total	£1,104m	

Source: Heathrow

³¹ Join the Dots, *Passenger priorities post COVID-19*, June 2020

³² Ibid

Efficient Airport

We know that consumers want reassurance that their journeys from end-to-end will be predictable and reliable. We know airlines want airport services to be reliable, efficient and affordable. This portfolio targets investments in automation and digitalisation to deliver those outcomes.

Automation of the passenger journey has already had a significant impact on airport efficiency and improved consumer outcomes over Q6 and iH7. There are now 188 self-service bag drop machines installed across all four terminals, enabling 66% of our departing passengers to use a self-service bag drop in 2019. This improved check-in transaction times by up to 20%, providing passengers with a quicker and more seamless journey through the airport and lower costs for airlines.

Similarly, 60% of gates now have self-service boarding gates, enabling 75% of passengers in 2019 to use the self-service facilities. This reduces the number of airline colleagues required to carry out transactional processes, enabling them to focus on supporting passengers who require assistance, manage exceptions and get the aircraft away on time. Self-service has delivered boarding times which are up to 30% faster, with less queuing time for our passengers. We will prioritise investments to increase the availability of automated journeys, continuously improving consumer outcomes and reducing airline costs.

Our direct passengers most valued improvements in departure punctuality (third most valued for connecting passengers) in our Willingness to Pay (WTP) research³³ which is at the heart of our consumer outcome of ensuring passengers have predictable and reliable journeys. Key to delivering this is automating the airfield. Pre-Covid we were already assessing automated stand and gate allocation, and the introduction of smart stand automation. This is where airbridges, foreign object debris detection and stand entry guidance are all automated to improve efficiency and safety – while also reducing costs.

We now have ambitions to automate prepositioning, docking and undocking, push back and elements of ground clearance. Over time the introduction of enhanced taxiing services, such as electric landing gear drives and remotely controlled tugs, would make a push-back service unnecessary – improving safety, punctuality and reducing costs. Around and within the airfield, all security and safety patrols would be replaced by a mixture of autonomous vehicles and smart cameras.

Our consumer insights have shown that consumers now expect to feel like they have had enough space throughout their journey, and for this to be achieved as seamlessly as possible³⁴. We want to invest more in solutions to reduce queueing; this would see queues minimised through the use of predictive analytics, personalised notifications for passengers and enhanced dynamic resource allocation of colleagues and assets. This would enable greater control against overcrowding, thereby making it easier for passengers to maintain a comfortable distance from others.

“If people know their gate at bag-drop, they have reduced need to congregate in central areas and near screens and will flow to areas where they are more likely to only be in contact with others on their flight.”³⁵

There will also be increased information sharing across Team Heathrow, so we can deliver consistently high levels of service. We know the use of data and real-time information is something our consumers value. The provision of real-time information on waiting times at

³³ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

³⁴ Join the Dots, *Passenger priorities post COVID-19*, June 2020

³⁵ Ibid

security, immigration and passport control was the fourth most valued improvement for direct passengers in our Willingness to Pay research³⁶. Investments such as the Digital Twin technology enhancement would be key to unlocking the data we have to drive efficiencies in every part of our business while also delivering predictable and reliable journeys to consumers.

In the wake of the Covid-19 pandemic, we know that automation is likely to have an even more important role to play, extending beyond the traditional efficiency advantages that translate into consumer benefit. With 79% of current passengers saying that are concerned about spreading or catching Covid-19 whilst in an airport terminal³⁷, automation post-Covid will also be a key enabler to ensure passengers feel safe, minimising transactional physical interactions through touchless technology.

There are a wide range of different potential solutions to improve outcomes through automation and digitalisation; we will have to work closely with the airlines to prioritise investment within the limited capital envelope available.

Efficient Airport - Security Transformation

The introduction of enhanced security equipment, built around new scanners, offers the opportunity to transform security by driving process improvements and realising additional cost saving benefits. We know that, in the post-Covid world, consumers are concerned about mixing in queues and, more than ever before, want to be able to move through the airport quickly, smoothly and safely³⁸. Importantly, enhanced security equipment with faster processing rates, will help deliver on consumers' need to have a predictable and reliable journey, with smoother, quicker progress through this stage of the airport journey.

"Information - I think this is kind of there, but given that we might be expected to undergo new screening, how about expected times to queue for screening/security/etc.?"³⁹

Key transformational activities include **[REDACTED]**. These workstreams offer greatest opportunity to transform security for consumers, significantly reduce operating costs and continue to keep our passengers safe.

In addition to the transformational activities, the programme will include several tactical initiatives to increase the efficiency of the security operation. These include fixed post reductions, as well as changes in campus, cargo and perimeter intrusion detection. There are also opportunities to use technology to optimise the efficiency of the security operation, reducing operating costs and providing a quicker, more reliable journey for our passengers.

The combined impact of these measures is a more efficient and faster security experience where consumers feel an increased sense of their needs being met, as well as a reduction in fixed operating costs. The cost benefits of this programme are reflected in the operational costs modelling (see Chapter 7.1 – Operating Costs), through an increased efficiency overlay for those scenarios which include this investment.

Commercial revenue generation

Commercial revenues are a critical building block in our single-till regulation, helping to keep aeronautical charges affordable for our consumers. We recognise that our ability to invest in revenue-generating projects will be constrained in H7 following the material impacts on our existing revenue streams from the pandemic and government tax changes. However, we also

³⁶ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

³⁷ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

³⁸ Ibid

³⁹ Ibid

recognise the importance of revenue-generating projects for supporting the affordability of aeronautical charges and achieving consumer service outcomes. We will need to refresh our retail and services offer, seize the new opportunities that exist post-Covid and maintain a standard and ambience of product that consumers expect. Therefore, it is essential that we allocate some capital as part of our commercial plan in support of “Winning the Recovery”.

Consumer engagement will remain at the heart of our commercial plans in H7. The focus remains on passenger experience and adjusting to the new norms of the passenger journey. From our extensive consumer research undertaken to date, we know that by meeting consumer expectations on easiness, cleanliness, value for money and reassurance, passengers will enjoy their airport experience more and therefore be most effectively encouraged to spend more. We are already observing accelerating changes in consumer expectations of the commercial offer, associated with changing perceptions of the airport experience as a result of Covid-19. We are therefore determined to be able to proactively respond to these shifting expectations from the start of H7.

In order to deliver on our consumer outcomes, we are developing a commercial plan for H7 which contains a mix of strategic capital projects and dynamic initiatives. The latter in particular are intended to be adaptable in response to changing passenger traffic and consumer trends. We aim in both to minimise costs and protect and build upon Heathrow's core commercial revenue streams in H7. Some of the key initiatives are summarised below.

We know that consumers will be more digitally demanding in a post-Covid-19 world. They expect that technology is adopted by Heathrow to provide reassurance through their journey, whilst minimising physical contact to ensure cleanliness. We predict an accelerated shift from physical retail participation to digital channels for consumers' retail needs. This is a significant opportunity to transform our Digital Retail proposition by creating a seamless passenger shopping journey at the airport.

We will do this by offering a broader range of products through a 'Virtual Retail' experience, whereby retailers who do not have a physical presence at Heathrow are able to add their offer to our world-leading retail environment. This allows us to sell a broader product mix for the benefit of consumers.

Space can then be repurposed to create interactive retail stores to enhance the consumer experience, used for the logistics of providing goods purchased online or reassigned into additional food and beverage provision. We will also scale our 'buy and collect' proposition by providing digital payment capability, account management and quality collection locations in terminals. This will drive incremental revenue and mitigate against declining engagement with physical retail.

Covid-19 has placed unprecedented pressures on our commercial partners. Several partners have entered administration, requested Company Voluntary Agreements (CVAs) or terminated contracts early, with no ability to meet costs associated with exiting the airport. While this provides short-term challenges for us, it also provides a strategic opportunity to optimise vacant terminal space across the airport.

We will work innovatively and at pace to re-let vacant units, repurpose operational office space and Bureau de Change units and scale up our Blended Essentials concept, first trialled in Terminal 2 in Q3 2020. We will also introduce iconic anchor elements to our satellites and piers, trial new food and beverage and improve our essentials offer when appropriate during recovery. Increasing the efficiency of space at category and overall terminal levels offers opportunities to reinvigorate less productive units for the benefit of consumers in H7, alongside improving our commercial revenue performance.

An efficient, resilient surface access network is critical for the airport's operations. We remain committed to maintaining the range of travel options for our consumers as well as the quality of their experience. Yet our passenger public transport mode share has dropped significantly, by more than 10%⁴⁰, in the immediate aftermath of Covid-19. We expect public transport use will continue to be depressed as consumers choose to travel to the airport by private vehicle.

We are therefore proposing to introduce a Forecourt Access Charge for private vehicles, taxis and private hire vehicles accessing terminal departure forecourts. This will levy a small charge on these vehicles, currently proposed to be approximately £5.2 (2018p). This represents a new revenue stream for Heathrow. We are considering regulatory treatment of this revenue. It could most likely simply be part of the single till, supporting affordable airport charges.

Our Commercial Property Development programme has been paused as a result of uncertainty from Covid-19. However, should a positive business case for one or more of the developments previously identified in the IBP become apparent within the regulatory period, we may choose to propose capital investment in such developments. This could benefit consumers, business partners and the local community. Any development would also provide a ground rent income, improving our commercial revenue performance. We have not assumed any such capital or revenue in our core RBP plan.

Chapter 7.2 – Commercial Revenues sets out in further detail how we will respond to the prolonged impacts of Covid-19, the impact of the legal challenge to the ANPS and HMT's decision to withdraw the VAT Retail Export scheme and tax-free airside sales from January 2021. It also explains how these challenges have been addressed within our forecasting methodology, the assumptions underpinning the methodology, and our commercial revenue forecasts for H7.

1.5.3 Build Back Better

Build Back Better is focused on addressing longer term industry vulnerabilities and opportunities. Timely and proportionate investment is required to mitigate against structural changes to the sector that pose a significant risk.

Major shifts have taken place over the last 20-years in the aviation industry. There has been significant growth of both network and low-cost airline operations, alongside the development and entry into service of new generations of narrow and wide-body aircraft. We have led the emergence and growth of new commercial activities taking place at airports. We have also faced growing expectations for the sustainability of aviation in areas such as carbon emissions, noise and air quality.

We have witnessed, driven and adapted to all these changes. However, Covid-19 is now forcing an even faster pace of change in the industry. We anticipate that business and operating models will change, driven by demand evolution, technological breakthroughs, rising public demands and changes in regulation. We believe it is prudent to set aside capital through the H7 period to help us adapt to these market changes and support us in building back better. We have a once-in-a-generation chance to rethink how our hub airport works and to give us the best platform from which to deliver ever better outcomes for our consumers.

⁴⁰ Heathrow, *Surface Access Profiler: Passenger Mode Share*, August-November 2020

Through Constructive Engagement we have responded to airline community feedback to focus sustainability initiatives only on those which drive the largest improvements – particularly on cutting carbon and minimising material impacts on local communities. Surface access initiatives including the Southern Road Tunnel and Easterly Alternation have been de-prioritised for H7, enabling us to focus investment on urgently pursuing carbon reduction opportunities.

Table 7: Build Back Better Capital Allocation

Build Back Better Initiative	H7 Capital (2018p)	Definition
Carbon & Sustainability	£150m	Reducing the environmental and community impact of our business
Service & Resilience	£150m	Enhancing the service and resilience offered to our consumers
T5 Station Fit-Out	£31m	Enables the connection of Western Rail to Heathrow, enhancing connectivity to the Thames Valley, Wales and South West.
Total	£331m	

Source: Heathrow

Carbon & Sustainability

As set out in Chapter 4 – Building Back Better, Heathrow’s long-term success and our ability to deliver benefits to consumers at the airport is only possible if we operate in a way that maintains Government, community and consumer support. That means continuing to play our part in addressing the negative impacts of air travel.

We also know more specifically from our consumer insights that consumers expect airports to address their environmental impacts and to be socially responsible, as part of the airport choice theme⁴¹. Building back better therefore represents an important part of our delivering on consumer needs and expectations into the future. We’ve also heard from our airline community that driving sustainability including the reduction of carbon emissions is a key priority for the industry more widely.

Climate change remains the most significant mid to long-term risk facing aviation. We must set ourselves firmly on a path to net zero and demonstrate real progress in the 2020s ‘Decade to make a Difference’. Meanwhile, the local impacts of flying remain, such as air quality and noise, or maximising the positive economic opportunities for local communities. Continuing to address these is crucial to retaining our licence to operate.

“While people don’t punish companies for operating in an unsustainable industry, they give plaudits if they are seen to mitigate against the effects of their business.”⁴²

We will prioritise investments which drive the biggest benefits, particularly for emissions. This means focusing on future airspace change, energy efficiency, and allowing all of the Heathrow ground fleet to be electrified. We will prioritise progress towards net zero emissions in the air and ground by:

⁴¹ Join the Dots, *Passenger priorities post COVID-19*, June 2020

⁴² The Nursery, *Heathrow Sustainability Research Summary Report*, May 2018

- Advocating the use of Sustainable Aviation Fuels (SAF) and ensuring our fuel infrastructure can fully support their use.
- Increasing solutions to put any carbon we do emit back in the ground through natural climate solutions, like trees and peatland, or through engineered carbon removal.
- Investing in design and consultation work for airspace redesign, with the full programme likely to be implemented in H8.
- Equipment upgrades to support pre-conditioned air (PCA), coupled with moving toward a more effective commercial charging model.
- Expanding our own and Team Heathrow electric vehicle fleets and investing in charging locations to improve coverage and availability for all at Heathrow.
- Design work on a heat exchange system which can reuse heat from buildings in the summer and stores it to provide heating in winter to cut our largest source of emissions.

Service & Enhanced Resilience

As passenger volumes return, we can invest to drive service and performance enhancements, as well as resilience, to deliver the continuously improving service that passengers expect at Heathrow.

Our IBP set out a plan to deliver a step change in our airport 'brilliant basics' including:

- Continued investment in standards of washrooms, which could include an accelerated investment in new, better quality and stylish washrooms across the campus in the Prioritising Service option;
- Enhancing charging capabilities across the campus including in-seat charging, charging lockers and wireless charging;
- Improving the layout and variety of comfortable seating including reclining seats and options designed for passengers requiring support or accessible seating areas;
- Maintaining spend on cleaning, trolleys and core maintenance; and
- Expanding functional basics like water refill stations, which also cut single use plastic waste.

We also planned to deliver more comfortable special assistance support. Our plans were to take more ownership of our passenger assistance service and invest to upgrade the comfort of their experience throughout the journey, for example with better assistance lounges.

Our consumer insights tell us that these things are still important for consumers. Our RBP sets an allowance to invest in delivering enhanced service for passengers when passenger volumes stabilise. We know these needs may change in the future and so will constantly review our service strategy throughout H7, investing in targeted opportunities to meet them.

As we set out in Chapter 7.3 – Resilience, our insights tell us that disruption has the greatest impact on air travel satisfaction levels and that if a consumer experiences disruption, overall satisfaction falls from 87% to 69%, while dissatisfaction also increases significantly from 4% to 18%⁴³. Our minimum plan commits that we will invest in the non-discretionary protection of existing resilience, and thus protect existing service levels for consumers.

However, as passenger volumes return and increased pressure is placed on our infrastructure, we will need to enhance the existing facilities. There are a number of enhanced operational efficiency initiatives that would have been early deliverables of the expansion project, which we will continue to look to implement over H7. Some of these initiatives do not require significant capital investment and are focussed on taking advantage of our current assets and making best use of the infrastructure that we currently have available.

⁴³ Civil Aviation Authority, *UK Aviation Consumer Survey*, June 2017

Others require modest investment, appropriate in a capital constrained environment, but that could deliver industry leading ATM and Airspace improvements. We have seen such investments be hugely beneficial to resilience at Heathrow throughout the previous price control period.

Again, our RBP includes an allowance for these types of projects later in the regulatory period. As we become more confident in the return of passengers, we will prioritise those projects which unlock the greatest improvements to resilience for our consumers.

T5 Station fit-out

The Western Rail Link to Heathrow (WRLtH) is a proposed scheme, promoted by Network Rail, which would connect Heathrow to the Great Western Main Line at Langley. This would offer consumers direct rail services from the airport to the west, removing the need to change services in Central London and therefore reduce journey times for passengers travelling from areas such as Reading, Bristol, South West England, Wales and parts of the Midlands, thus increasing our catchment area.

The WRLtH, as a direct rail service to and from the west, would clearly be in line with the stated preferences of airport consumers in many ways. Results from our research show that 56% of those surveyed thought that a WRLtH was an appealing option for travelling to Heathrow. 51% of respondents say that they would be interested in using the new service. Our research also shows that 46% of respondents would be more likely to choose Heathrow as their arrival or departure airport if the WRLtH was available. The scheme has also received support from a broad range of stakeholders including the Heathrow Area Transport Forum, local authorities, Local Economic Partnerships and from a range of MPs.

For H7, Heathrow had been committed to contributing to the cost of the scheme based on the benefits accrued to airport users and the value of the scheme to the airport. However, the recent announcement of a delay to the submission of the Development Consent Order for WRLtH from 2020 to late 2021, coupled with the legal challenge to the status of the ANPS amending the basis of the benefit calculation, has resulted in Heathrow being unable to come to an agreement with the DfT on the level of contribution. With the opening date of the scheme confirmed to be 2030 at the earliest, we have concluded that we are not currently in a position to confirm either the quantum of any financial contribution to be made by the airport to the scheme, nor the appropriate regulatory period in which any payment would be made.

In addition to the contribution to the cost of the overall programme, we have identified a £31m investment in H7 to fit out the T5 station box. The box was built as part of the construction of Terminal 5. Fit out costs would be incurred in the latter part of 2026. This investment is subject to the conditions articulated above and the timeframe of the WRLtH programme.

We will seek to recover the costs associated with station fit-out through the application of station access charges via the Office of Rail and Road framework and in line with the CAA 'user pays' principle contained in the surface access policy.

Whilst we believe that delivery of WRLtH would be the right outcome for consumers, the capital constraints of the H7 plan mean we have protected only the investment in the T5 Station Fit-Out in order to maximise the opportunity of the delivery of WRLtH. However, we do remain confident that the delivery of WRLtH has benefits for consumers and colleagues arriving from the west of Heathrow, our second biggest catchment area, which is currently poorly served by public transport. While our capital constraints and the timeline for WRLtH mean that full delivery and contribution are not possible in H7, we will continue to work with the airline community and CAA to define an appropriate contribution, potentially for the H8 period.

1.6 The development of the detailed plan

Covid-19 has required that we reassess all existing business cases for alignment to the three new portfolios. As already noted, many projects that had been planned for 2020-21 have also been stopped in order to protect short term liquidity. The cut in the capital programme and expert resources, along with the current uncertainty on the order and scope of projects for ourselves and airlines, has restricted our ability to develop detailed future business cases. The current pipeline, while clear at a programme level, thus remains relatively immature.

Our approach to the capital portfolio in this RBP is therefore to allocating allowances to key objectives as above. This allows us to reassess existing business cases with the airline community to ensure that they meet the post-Covid consumer needs and to prioritise those which deliver the greatest benefits within any available capital. This approach means the portfolio can flex to different capital allowances and can adjust more easily if priorities change. As the market evolves and opportunities are identified, investments will be added to the portfolio which are evaluated as the highest priority.

We will continue to evolve projects with the airport community over the course of the coming months and evaluate them for inclusion within the allowances through the existing capital governance forums. Work will also continue to develop the Capital Efficiency framework and how any potential new incentives could be applied appropriately to the programme or sub programme (for example, T2 Baggage). We discuss the importance of retaining the Core and Development mechanism in this fluid context elsewhere.

Through Constructive Engagement we have agreed the importance of identifying overall programmes to align the whole airport community's objectives. Programmes also help prioritise business cases for those which deliver the highest benefits per programme. These programmes deliver better outcomes for consumers, drive efficiencies and ensure the charge remains competitive.

Through discussions with the airline community at capital governance boards we are developing seven programmes with clear delivery objectives, aligned to delivering consumer outcomes. These broaden the three priorities of Protect the Business, Win the Recovery and Build Back Better into more detailed definitions and proposed investments within each programme. The proposed programmes are:

1. Asset Replacement
2. T2 Baggage
3. Regulated Security
4. Commercial Revenue
5. Efficient Airport
6. Carbon & Sustainability
7. Future Ready Airport

Figure 4 outlines the proposed levels of investment for each within the £3.5bn capital plan.

Figure 4: Proposed Capital Investment Plan

Strategic Priority	Objective	Capital Target	Priority Definition	PROGRAMMES							Illustrative Projects	Consumer Outcome	
				Asset Replacement	T2 Baggage	Regulated Security	Commercial Revenue	Efficient Airport	Carbon & Sustainability	Future Ready Airport			
Protect the Business	Critical Asset Management & Compliance	£1,800m	Deliver critical safety and security projects and comply with the imposed standards.	Critical Safety, Security & Compliance Scope only £1,200m	T2 Baggage £180m	Minimal compliance achieved £420m						<ul style="list-style-type: none"> Tunnels T1 Baggage Prolongation Regulated Security Upgrade 	<ul style="list-style-type: none"> Airport Choice Getting to/from the airport Basic Comforts
	Protect Efficiency and Revenue	£278m	Protect existing commercial revenues and avoid material opex increases which would increase the airport charge				Protect existing Revenues £100m CrossRail £78m	Avoid material Opex Increases £100m				<ul style="list-style-type: none"> Retail shell & core CrossRail Contribution Cargo 	<ul style="list-style-type: none"> Airport Choice Predictable and Reliable Enjoyable & Connected
Win the Recovery	Efficient Airport	£504m	Drive down the total cost of operation at Heathrow for the whole community			Security Transformation £130m		Automation & Digitalisation £374m				<ul style="list-style-type: none"> Security Transformation Automation & Digitalisation 	<ul style="list-style-type: none"> Airport Choice Predictable and Reliable
	Commercial Revenue Generation	£600m	Unlocks incremental revenue generation by delivering consumer outcomes over and above the critical compliance				Generate Incremental Revenues £600m					<ul style="list-style-type: none"> Road User Charging Safe to Fly Next Gen Retail Touchless Technology 	<ul style="list-style-type: none"> Basic Comforts Airport Choice Predictable and Reliable Basic Comforts Enjoyable & Connected Cared For
Build Back Better	Carbon & Sustainability	£181m	Tackling carbon and addressing air quality impacts - Decarbonising airport infrastructure - Enabling emissions reductions on the ground - Reducing Aircraft emissions						Carbon & Sustainability £150m			<ul style="list-style-type: none"> Sustainable Aviation Fuels Electric Ground Fleet Community investments 	<ul style="list-style-type: none"> Airport Choice
	Future Ready Airport	£150m	Build resilience, unlock capacity and transform service	Potential to use some allocation for this activity				Potential to use some allocation for this activity		Build Resilience, Capacity & Service £150m TS Station Fit Out £31m	<ul style="list-style-type: none"> Improve baggage and passenger connections TS Station Fit Out Automated Airfield 	<ul style="list-style-type: none"> Airport Choice Getting to/from the airport Predictable and Reliable Basic Comforts 	
Total Programme		£3,513		£1,200m	£180m	£550m	£778m	£474m	£150m	£181m			

Source: Heathrow

- **Asset Replacement** ensures the safety, security and compliance requirements of infrastructure and technology assets are maintained, delivering basic comforts, ensuring consumers choose Heathrow as a reliable and safe airport and their journey to and from the airport is without delay. Investments in this programme would include the ongoing improvements to the Cargo and Main Tunnels and continuing to reinforce our Cyber Security.
- **T2 Baggage** maintains current Baggage service levels for Terminal 2 passengers through investing in prolonging the current Terminal 1 baggage system, ensuring these passengers continue to experience a predictable and reliable journey through our airport.
- **Regulated Security** delivers the essential compliance elements of the DfT mandated security changes, ensuring passengers feel safe and secure during their journey through Heathrow.
- **Commercial Revenue** unlocks incremental non-aeronautical revenue generation by delivering consumer outcomes over and above the critical compliance, reducing pressure on the airport charge. This programme enhances every one of the consumer needs, ensuring that consumers feel cared for and have an enjoyable experience at Heathrow.
- **Efficient Airport** drives down the total cost of operation at Heathrow for the whole community through innovation and automation. It ensures that passenger journeys are predictable and reliable.
- **Carbon & Sustainability** tackles carbon and addresses air quality impacts by decarbonising airport infrastructure and enabling reduction of emissions on the ground, enhancing Heathrow's sustainability credentials in the eyes of consumers when choosing the airport to fly through.
- **Future Ready Airport** allows us to look forward to returning passenger volumes, ensuring that resilience, service levels and capacity keeps pace with growth to continue to deliver the needs of the future consumer.

Having a clear view of the programmatic approach allows us to move swiftly from the outline capital plan highlighted in this RBP to the capital governance gateways.

7.1 - OPERATING COSTS

Chapter Overview

- Heathrow delivered over £600m (2018 prices) cost savings in Q6.
- We have achieved these efficiencies while implementing initiatives to benefit our colleagues and community, such as London Living Wage and Zero Waste.
- We have used 2019 as our base year and efficient starting point, as agreed with the airline community during Constructive Engagement.
- External benchmarking demonstrates that our 2019 operating costs represent an efficient cost base for the scale and nature of the airport.
- We have taken decisive action to reduce our cost base by 22% in 2020 in response to the Covid-19 pandemic with both temporary and long-term cost saving measures.
- We retain those savings which are permanent from 2020 and flow through benefits up to **[REDACTED]** in people costs, in line with an agreed approach to Cost of Change.
- We have revised our forecast methodology to reflect feedback from the airline community, setting stretching operating cost targets based on robust evidence base – making ongoing productivity savings of £160m over H7 to keep Heathrow at the benchmarked efficiency frontier.
- Overall, this means we save £367m in core operating costs over H7.
- Cost overlays are used to reflect the material changes to our cost base such as additional costs related to our service response to Covid-19 and savings from initiatives such as the Cost of Change programme or capital investments.
- We have considered the impact of operating costs on consumer outcomes in developing our plans, particularly with regards to our Covid-19 and Service overlays. Covid-19 has imposed significant new costs and we cannot responsibly scale these back without compromising the outcomes that consumers value.
- We seek to work with airlines to make better use of existing infrastructure to prolong cost savings of T4 consolidation into H7 without impacting service levels.

7.1.1 Summary

In this chapter we set out our plans to further improve efficiency and deliver lower operating costs at Heathrow for H7:

- Section 7.1.2 describes how the choices we make around our operating costs directly impact our six consumer outcomes.
- Section 7.1.3 sets out how engagement with the airline community has been reflected in our operating cost forecast.
- Section 7.1.4 highlights how we have delivered cost savings during Q6 and provide details of our benchmarking activities, which show that Heathrow will enter H7 with an efficient cost base.

- Section 7.1.5 discusses the key elements of our plan that could deliver cost savings with a Covid-related RAB adjustment mechanism in place.
- Section 7.1.6 provides details of how we have revised our forecasting methodology to reflect feedback from the airline community during Constructive Engagement, including detailing cost overlays of material impacts on our cost base. We also set out how we have made significant cost savings in 2020 in response to the impact of the Covid-19 pandemic.
- Section 7.1.7 sets out the ongoing efficiency assumptions, including a clear link between the level of capital investment and operating cost efficiency included in the plan.
- Section 7.1.8 presents our operating cost forecast and a summary of the key assumptions.

Taking decisive action to rapidly reduce our cost base has been fundamental to our response to the impact of the Covid-19 pandemic, protecting our business and supporting our airlines in this unprecedented crisis. In addition to reducing our own costs, we have taken action to directly reduce those of our airline customers, including alleviation on parking charges and the provision of a Relocation Support Fund to those airlines temporarily relocating while the operation is consolidated in Terminals 2 and 5.

Assuming implementation of the Covid-related RAB adjustment, by 2026 our plan could deliver c.£100m (2018 prices) of savings per annum compared with 2019. Despite the cost pressures we are facing during H7, core operating costs in 2026 are £64m (2018 prices) lower than in 2019 and total operating costs¹ are £15m (2018 prices) lower. This means we save £367m in cost versus what we would spend without action. Our target is based on combined external benchmarks and reflects the level of capital investment included in the plan.

Our H7 efficiency targets are stretching. We are starting H7 as a materially more efficient business than we started Q6. We reduced operating costs by a total of over £600m (2018 prices) (over 9%) between 2014 and 2018. This cut operating cost per passenger by 16%, from £16.79 in 2014 (9 months) to £14.12 in 2018 (2018 prices). The changes we made not only reduced costs, but also provided passengers with a better, more efficient experience that was evidenced in continually improving passenger satisfaction scores and sentiment.

This progress means that 2019 is an efficient starting point for our H7 forecast. External reviews of our operational cost performance provide robust evidence confirming this as an efficient start point². Heathrow is at the efficiency frontier for an airport with its characteristics, and broadly in line with the average costs per passenger of similar global hubs. However, this also means it becomes increasingly challenging to make further efficiency improvements. This is particularly the case as savings in Q6 and iH7 were made across all major cost categories.

In 2020, the dramatic fall in passenger demand resulting from Covid-19 has required us to take decisive action to significantly reduce our operating costs. This is particularly challenging as we have a relatively high proportion of fixed costs. 80% of an airport's operational costs are fixed³ compared with only 50% for an airline⁴. Despite this we have made £260m⁵ of cost savings in 2020. Whilst most of these savings are temporary or volume related, such as the furlough scheme or changes to contracts to account for lower passenger volumes, we have

¹ Core operating costs and Covid-19, service and surface access overlays

² See section 7.1.4

³ <https://www.aci-europe.org/media-room/241-aci-europe-letter-to-eu-transport-ministers-covid-19-aviation-relief-programme.html>

⁴ <https://www.iata.org/en/iata-repository/publications/economic-reports/airlines-financial-monitor-september-2020/>

⁵ In the BBU, the £300m identified savings were in comparison to the 2020 budget.

successfully enabled permanent efficiencies ahead of H7 to the value of £42m on a 2019 throughput basis. We have flowed through the up to [REDACTED] savings in people costs as agreed with airlines in the Cost of Change initiative. Although our costs were at the efficiency frontier for a regulated airport⁶ in 2019, the Covid-19 pandemic has acted as a changing competitive market and driven us to make further cost savings in line with a shift in the efficient cost base.

However, measures to ensure Heathrow is safe, compliant and meets all the service expectations of our consumers have also led to additional costs. We have also significantly reduced the scale of investment in our capital plan and deferral of investments in iH7 will mean a structurally less efficient airport in H7 than faster investment might have allowed. Unlike in the IBP, we are not going to benefit from economies of scale, as even in the High (p90) case scenario passenger volumes only return to close to 2019 passenger volumes in 2026. A reduced capital plan limits the potential for investment to make further productivity efficiency improvements and this is against a backdrop of expected persistent weakness in productivity in the general economy following the Covid-19 pandemic.⁷

We have revised our forecasting methodology to reflect airline community feedback during Constructive Engagement and to ensure our approach is adaptable to the highly uncertain passenger demand environment. We have included cost overlays to detail where we expect material changes in our cost base. These include cost impacts associated with our service response to Covid-19, implementation of our surface access strategy, the Cost of Change program and an option for enhanced levels of passenger service. These overlays are informed by our consumer insights research where appropriate and seek to deliver the best possible outcome for consumers under the different proposed forecast scenarios.

Our cost estimate should be considered in the context of what is a reasonable allowance for an efficient airport of Heathrow's size and characteristics, rather than a detailed bottom-up forecast of how we will run the business. Indeed, in these unprecedented times, forecasting using bottom-up detail is likely not to be the best approach to ensure an overall efficient envelope of costs is reached. This was a sentiment shared by the CAA in its CAP1940 document: "*Nonetheless, the current uncertainties around future traffic volumes mean that very detailed "bottom-up" forecasts of traffic, costs and revenues are unlikely to be useful for consumers and stakeholders in the short term*".⁸ Consumers are also primarily focused on end results in terms of cost and service. We have focused on evidence-based forecasts rather than bottom-up totals in the interests of adaptability, transparency and producing the incentives for the airport to focus on agile delivery of ongoing efficiency.

In response to airline community feedback, we provide a clear link between capital investment and operating cost efficiency in the plan. Where mature benefit estimates are available, we have detailed the potential savings during H7. Where plans are still evolving for the efficiency improvement programmes included in the £3.5bn capital plan, we have included a specific ongoing efficiency assumption of 1% per annum to reflect the potential cost savings. A plan that was restricted to just the Protect The Business portfolio (£2.1bn, see Chapter 6 – Capital Investment for more details) means we will only be able to deliver ongoing savings of 0.1% per annum.

⁶ It is regulatory precedent to consider companies with operating costs at the 75th cost percentile to represent an efficient business

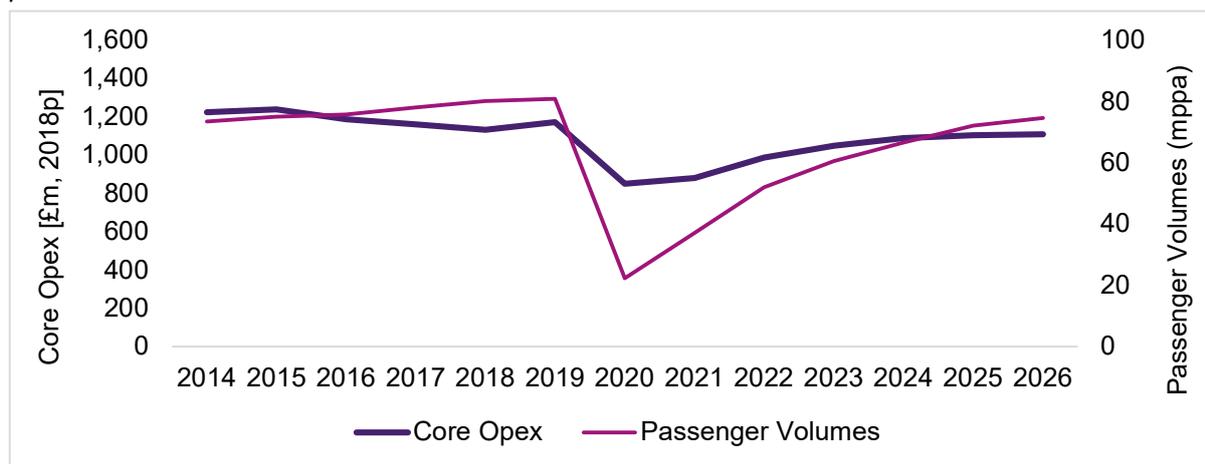
⁷ See section 7.1.7.1

⁸ CAA CAP1940, page 32, paragraph 2.20

In addition to capital investment, it is also important to consider the link between operating costs and commercial revenues. KPMG⁹ found that the volume of non-aeronautical revenues is a significant driver of operational costs, as an increase of non-aeronautical revenue by £1 million increases costs by £0.2 million. Reductions in the operating cost allowance for H7 will therefore impact our ability to deliver the challenging commercial revenue targets included in the plan, as set out in Chapter 7.2 – Commercial Revenues.

Figure 1 shows the evolution of core operating costs from 2014 to 2026 and the corresponding passenger volumes.

Figure 1: Core operating costs excluding Expansion Programme opex (Cat A + Cat B opex), £m 2018 prices



Source: Heathrow

Table 1: Core Operating Costs and Passenger actuals/forecasted figures

	2014	2015	2016	2017	2018	2019
Core Operating Costs (excl. expansion)	1,223	1,238	1,187	1,159	1,131	1,171
Passengers	73.4	75.0	75.7	78.0	80.1	80.9

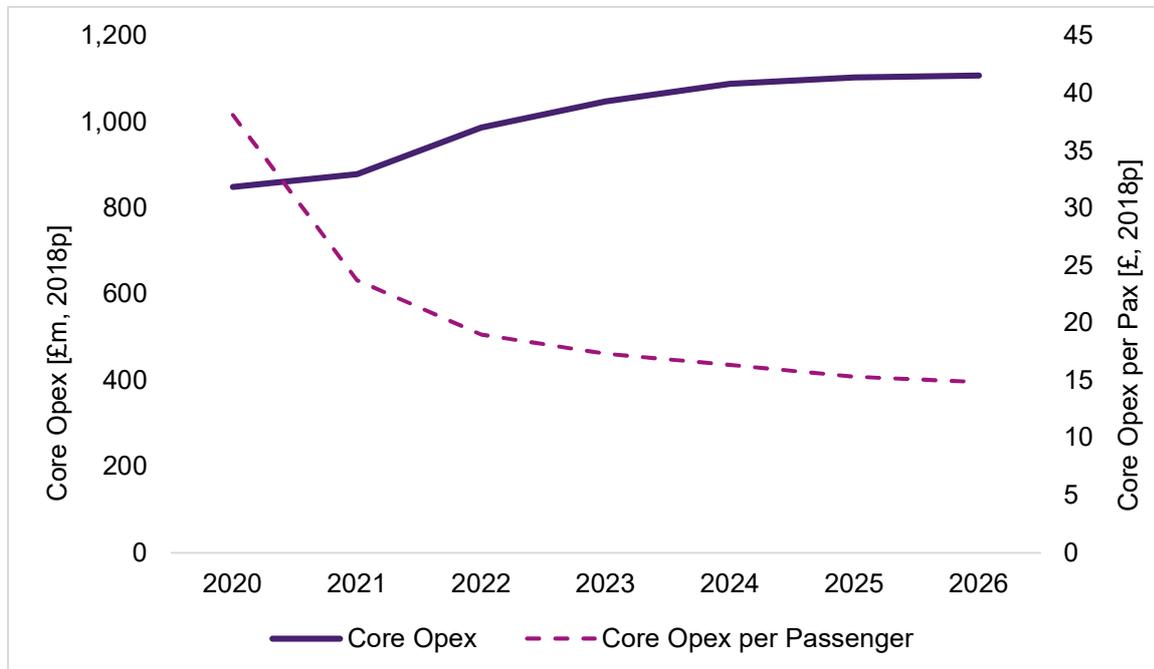
	2020	2021	2022	2023	2024	2025	2026
Core Operating Costs (excl. expansion)	850	879	987	1,048	1,089	1,104	1,109
Passengers	22.3	37.1	51.9	60.5	66.5	72.0	74.5

Source: Heathrow

The figure above highlights how during Q6 we reduced our total costs despite strong passenger growth. During H7, our total costs increase as passenger volumes return. By 2026, although passenger volumes are similar to 2015 our core operating costs are over £130m lower and are £64m lower than in 2019. Figure 2 below shows how we are reducing operating costs per passenger during H7.

⁹ KPMG, Airport Operating Cost Efficiency Benchmarking, October 2019.

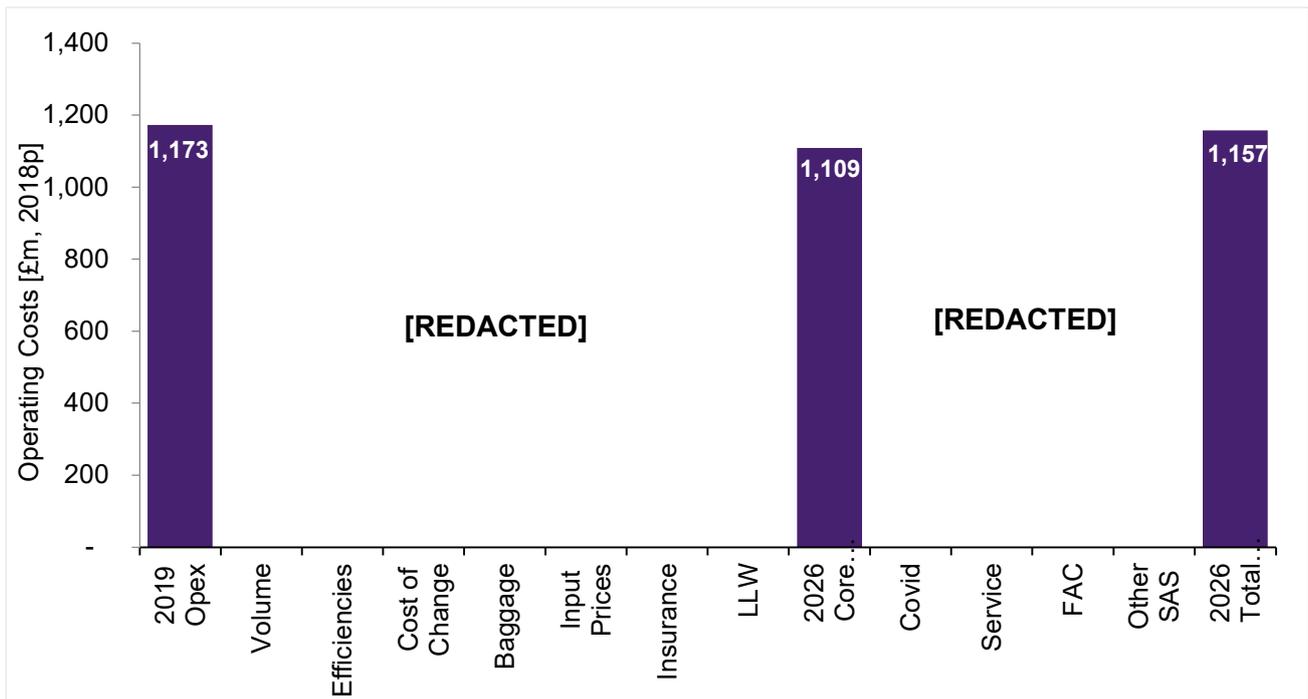
Figure 2: Core operating costs per passenger, £ per passenger 2018 prices



Source: Heathrow

Figure 3 provides a breakdown of the cost savings we will deliver by 2026, the cost pressures we are facing and the impact of the cost overlays. As shown below the increases to costs in 2026 are either due to cost pressures outside of our control or are essential to delivering our outcomes.

Figure 3: Changes in operating costs from 2019 to 2026, £m 2018 prices



Source: Heathrow

7.1.2 Impact of Operating Costs on Consumer Outcomes

We recognise that the choices we make around our operating costs directly impact our six consumer outcomes, shown in Figure 4, and delivering on these outcomes is central to our plans. Whilst the Covid-19 pandemic doesn't appear to have fundamentally changed the needs of our consumers, we have recognised that some priorities (such as cleanliness and the need for reassurance) have been elevated and we need to respond and make appropriate investments simply to maintain previous outcomes. This change in consumer priorities is therefore reflected in our forecast for operating expenditure in H7. Further detail around our extensive consumer insights research and the resulting consumer outcomes can be found in Chapter 2.3 – Consumer Insights.

Figure 4: Our Consumer Outcomes



Source: Heathrow

The consumer outcomes, and the key areas within each of these that our operating expenditure supports, are outlined below:

“I feel comfortable and secure at the airport”

This outcome reflects some of consumers’ most basic human needs for shelter, sustenance and hygiene. Key considerations in this area related to operating expenditure are providing consumers with a clean and hygienic environment, as well as ensuring their personal safety and that they feel secure.

Cleanliness has always been important to consumers, but in the wake of Covid-19 it now extends beyond the traditional focus on toilets and washrooms. Consumers have become far more conscious of the need for all touched surfaces to be cleaned regularly, for example, and also expect there to be provision for hand sanitising across all areas of the terminals. Our plans for operating expenditure in H7 take account of this increased consumer requirement to provide a clean and hygienic environment in our terminals – for example through allocating additional expenditure to deliver enhanced cleaning regimes.

“Hand sanitiser dispensers all over the place. And I really do mean all over the place - one should not have to walk more than ten yards to reach one, in any part of the airport.”¹⁰

¹⁰ Join the Dots, *Passenger Priorities post COVID 19*, June 2020

Consumers have always needed to feel safe, and with the onset of Covid-19 the need to feel safe has become even more prominent. The pandemic has led to demands for additional provisions from consumers, such as passenger temperature checks and Covid-19 tests. Beyond safety related to the risk of contracting illness, this area also includes the operation of safety procedures at the airport, clear safety briefings for passengers and knowing that the environment is generally safe. Our plans for operating expenditure reflect the ongoing consumer need to feel safe, with additional allowances for the new elements now required in order to promote a feeling of safety amongst consumers in the wake of Covid-19.

“I would expect that we would have to prove that we are healthy before we fly. Maybe temperature test or even have to queue to see an airport doctor to just do basic tests. I know this is time consuming, but it would make me feel safer. Hand gels and cleaning areas for baggage or trolleys you may use”¹¹.

“I have a predictable and reliable journey”

We know that having a predictable and reliable journey has always been a key need for consumers, so that they are able to plan their journey in advance and to alleviate stress on the day of travel. Consumer research carried out post-Covid indicates that elements of this consumer outcome have become more elevated in their importance as a result of Covid-19. Additionally, this need is heightened for certain groups, such as passengers requiring support and families travelling together¹².

Our plans for operating expenditure deliver on the predictable and reliable journey outcome through ensuring that journeys are easy and quick, as well as that passengers remain informed throughout their journeys through the airport.

Having a quick and easy journey is fundamentally about being able to move forwards to each next step in the journey with minimal stress, as quickly as possible. Consumers expect to not have to deal with long queues as they progress through their airport journey – whether this be at check-in, security or when they are boarding their flight – and value their ability to access fast track services if desired¹³. We also know that, in the post-Covid world, consumers are concerned about mixing in queues and, more than ever before, want to be able to move through the airport quickly, smoothly and safely¹⁴.

Our plans for H7 operating expenditure take this into account – we know that variables such as the level of security colleague resourcing will directly impact security queue times, for example, and that additional operating expenditure is required in order to run fast track services for passengers who wish to use them. Through improvements to our airport operations and colleague deployment, we will be able to drive improved flow rates through security in H7. Furthermore, our Security Transformation programme in our capital plan offers the opportunity to transform security by driving further process improvements and realising additional cost saving benefits, whilst also delivering further improvements to experience that we know consumers would value. Further detail around our plans for Security Transformation can be found in Chapter 6 – Capital Investment.

¹¹ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

¹² Blue Marble Research, *Consumer needs synthesis*, November 2020

¹³ Blue Marble Research, *Consumer needs synthesis*, November 2020

¹⁴ Join the Dots, *Passenger Priorities Post COVID 19*, June 2020

“I have experienced this system at Brisbane Airport in Australia many times and it's definitely faster. Those 3D scanners used when there is no need to remove items from the luggage also seem to be better at identifying items, reducing the need for secondary screening¹⁵.”

Consumers also expect punctuality as part of their airport experience; this incorporates elements such as flight punctuality and baggage reclaim arrival times¹⁶. Research has shown flight punctuality to be of particular importance to consumers, and our ongoing resilience expenditure will ensure that we continue to deliver on this key consumer need. Further details of our resilience plans for H7 can be found in Chapter 7.3 – Resilience.

“Flight punctuality, remains the most important element of direct and connecting passengers overall journey experience.’ Passengers want to ensure waiting times at key points across their in-terminal journey are minimised despite the new processes in place...Automated and touchless systems will be preferred across the airport.¹⁷”

More recent research indicates a growing trend for passengers to expect digital technology and self-service solutions to help drive an easier and quicker journey through the airport. Indications from our research post-Covid are that this trend is being further exacerbated as passengers look for more ‘touchless processes’ to minimise their risk of contracting illnesses. However, it is also important to note that many passengers expect or prefer a more traditional colleague-delivered service¹⁸.

“Passengers are surprised and delighted by the efficiency at Changi, proving that investment in technology that supports speed and efficiency can make a significant impact on customer satisfaction.”

We have taken this into account in developing our plans for H7 operating expenditure, in order to ensure that the optimal range and balance of service solutions for passengers is provided. For example, we have considered the degree to which expenditure is allocated to provide colleague resource to be on hand to provide support for passengers along their journey.

Finally, we know that consumers want to remain informed throughout their airport journey as part of the predictable and reliable outcome. This is centred on giving consumers absolute clarity in terms of navigating the airport, its processes, rules and procedures, thereby giving the appropriate amount of information to make the correct decisions throughout their journey. Being informed has always been a fundamental expectation and this has become even more important in the post-Covid world, as consumers are more likely to expect information about (new) processes and measures taken because of public health requirements¹⁹. Our plans for operating expenditure reflect this need, through continuing to provide appropriate levels of

¹⁵ Horizon, *Future Security Solutions*, September 2020

¹⁶ Blue Marble Research, *Consumer needs synthesis*, November 2020

¹⁷ Join the Dots, *Passenger Priorities Post COVID 19*, June 2020

¹⁸ Blue Marble Research, *Consumer needs synthesis*, November 2020

¹⁹ Blue Marble Research, *Consumer needs synthesis*, November 2020

colleague resource to ensure that colleagues are always on hand to keep passengers informed as required throughout their journeys.

“Staff must offer transparent information to passengers regarding any processes or issues during the journey.”²⁰

“I feel cared for and supported”

Our people are fundamental to ensuring that our passengers feel cared for and supported. This is primarily achieved through ensuring passengers receive active assistance, feel looked after and are treated as individuals. Colleagues are expected to deliver a courteous, professional and reliable service; they should be attentive and engage with passengers at a personal, individualised level, with anticipation of their personal wishes to make them feel special²¹.

“Excellent service means tailored service; I love it when I am treated on a personal level.”²²

Consumers want to have assistance when they need it, with visibility of colleagues being key to this. Furthermore, in the post-Covid world, colleague visibility extends to the need to see cleaning teams in action, in order to provide visible reassurance about cleanliness throughout the airport. Consumers also expect colleagues to be ready to assist and to be equipped with the knowledge, training and resources to be able to do so effectively. Post-Covid, there is the additional expectation that colleagues will actively intervene to ensure passenger safety, equipped with resources such as face masks, personal protective equipment and sanitiser. Colleagues being on hand to provide support and information is considered to be especially important in adverse circumstances and periods of disruption²³.

Our plans for H7 operating expenditure contribute to delivery of the cared for and supported outcome through ensuring the best possible allocation of colleague resource, particularly taking into account the additional expectations that Covid-19 is driving from a colleague perspective and the heightened need for colleague support during adverse circumstances and periods of disruption.

“I am confident I can get to and from the airport”

It is of fundamental importance to consumers that the airport is accessible, so that they are able to fulfil their travel plans. In the post-Covid world, it is important to consider that consumers may view how they get to the airport differently from how they have previously. There is likely to now be a greater emphasis on the safety of getting to the airport in terms of potential exposure to illness, in particular for those considering public transport options²⁴.

²⁰ Horizon, *Customer Service Week Report*, October 2018

²¹ Blue Marble Research, *Consumer needs synthesis*, November 2020

²² Truth Consulting, *DNA Integrated Analysis: The way forward*, May 2017

²³ Blue Marble Research, *Synthesis of Consumer Insights*, November 2020

²⁴ Join the Dots, *Passenger Priorities Post COVID 19*, June 2020

“Passengers are driven by location and travel time to the airport - they are seeking convenience to make their journey as ‘simple and easy’ as possible.”²⁵

We will continue to dedicate expenditure to achieving delivery of this outcome in H7, for example through the operation of our Heathrow Express services and through provision of bussing services across the airport campus, facilitating quick and easy access to and between our terminals. As part of providing these services, we will also ensure that the appropriate level of operating expenditure is allocated to ensure that these transport modes meet passenger requirements around safety post-Covid.

“An airport I want to travel from that offers me a good value choice of flights”

Consumers want to have access to good value and affordable travel. Whilst our consumer insights tell us that consumers do not explicitly consider the cost of the airport charge when making travel choices, it nonetheless contributes to the overall cost that consumers do consider²⁶.

“I usually take into consideration the entire cost of the journey, including travel to the airport, parking (or not), the cost of the flight, and the cost of the travel at the other end”²⁷.

Through delivering the most efficient operating expenditure possible, we can contribute to good value for consumers overall. To this end, external benchmarking has demonstrated that our 2019 operating costs already represent an efficient cost base and, furthermore, we have revised our forecast methodology for H7 to reflect feedback from the airline community, setting stretching operating cost targets based on a robust evidence base.

“I have an enjoyable experience at the airport”

This outcome is centred around aesthetics, entertainment and feeling connected to life outside the airport. Whilst these are, by their nature, delivered more through capital initiatives, our operating expenditure has a supporting role to play – particularly in the post-Covid context where passengers want to be able to continue enjoying their airport experience whilst feeling safe²⁸. For example, consumers still want amenities such as shops and restaurants that are relevant to them as part of this outcome. Although fundamentally delivered through capital investment, these offerings must be perceived by consumers as safe to use post-Covid and this can be delivered through our operating expenditure, such as through the aforementioned spend dedicated to enhanced cleaning regimes.

Our operating cost forecast aims to deliver on these consumer outcomes as far as possible, and in the most efficient way possible. Changes to the way work, our procurement strategy and investing in capital projects to drive improvements in key aspects of our operation will drive efficiency in our operating costs and are essential to achieving Heathrow’s outcomes.

²⁵ Populus, *Exploring potential impact of an access charge to Heathrow*, December 2018

²⁶ Blue Marble Research, *Consumer needs synthesis*, November 2020

²⁷ Join the Dots, *Passenger Priorities Post COVID 19*, June 2020

²⁸ Join the Dots, *Passenger priorities post COVID 19*, June 2020.

7.1.3 Airline Community Engagement

We have undertaken extensive engagement with the airline community since the IBP, including nine weeks of intensive discussions with airlines in Constructive Engagement following the publication of our BBU.

Airline community and consultancy feedback through CE	Heathrow's response in the RBP
<p><u>Drivers-based methodology</u>²⁹</p> <p>The airline community was critical of Heathrow's drivers-based approach.</p> <p>The airline community considered that the approach failed to address how Heathrow responded to the initial impact of Covid and did not consider known step-changes such as the Magenta or Security Transformation programmes.</p>	<p>During Constructive Engagement we have discussed the approach at length with the airline community and made a number of changes for the RBP:</p> <ul style="list-style-type: none"> • We have revised the base year to 2019 • We have provided transparency of the short- and long-term impacts of post-Covid cost savings • We have built in explicit savings from projects where these are available, such as cost of change. Magenta reduces capitalisable costs and therefore the benefits are not included in the operating cost forecast. However, Magenta does provide an opportunity to reduce overheads included in the Leadership and Logistics % as discussed in Chapter 9.3 – Capital Governance. • We have provided clear links between the capital plan and operating costs efficiency
<p>[REDACTED]</p> <p>[REDACTED] considered that Heathrow's forecasting methodology is not fit for purpose, particularly to address the necessary actions required to adjust the cost base due to materially lower Covid-19 driven demand.</p> <p>[REDACTED] put forward that the methodology does not produce a challenging enough operating cost target for H7 that ensures all necessary steps are being taken to emerge from the current crisis in better shape.</p> <p>[REDACTED]'s 2026 core opex forecast is £929m serving 80m</p>	<p>Our RBP forecasting considers some comments from [REDACTED], but we do not accept all of [REDACTED]'s conclusions.</p> <p>Areas of agreement:</p> <ul style="list-style-type: none"> • Base year change to 2019, providing transparency of the short- and long-term impacts of post-Covid cost savings • Building in explicit savings from capital projects where these are available, such as cost of change • Prices are not inflated by RPI or CPI, but set out as a nominal forecast <p>Areas of disagreement:</p> <ul style="list-style-type: none"> • [REDACTED] appear to conclude that the cost savings we made due to Covid-

²⁹ Heathrow Airline Community, *Airline Community Response to H7 CE*, October 2020, pp.5, 17-18

passengers. It assumes £244m cost savings against 2019 baseline.

19 are all permanent, this is not the case

- By the end of Q6 we were shown to be efficient by benchmarking, meaning that we cannot continue to make savings at the same rate as Q6 through the H7 period
- It would be inconsistent policy for pension deficit costs not to be included in the plan as previous benefits for consumers through lower pension payments were passed on
- Although **[REDACTED]** claim to use a more granular bottom-up approach, with the exception of FTE assumptions, there is little detail or transparency on the approach used

Some of the key assumptions **[REDACTED]** have made has led to them producing an unrealistic forecast for 2026. **[REDACTED]** 2026 core operating cost forecast is £929m (2018p) serving 80m passengers. However, our forecast for 2020 is £913m serving 22.3m passengers and includes temporary savings of furlough/salary reductions and volume related contract savings. It is simply not realistic to assume the same operating costs for 2026 as 2020 when serving over 3.5 times as many passengers. Similarly, this forecast assumes a £244m cost saving against the 2019 baseline. However, it is unrealistic to deliver ~20% savings on an already efficient cost base.

The RBP presents analysis of savings vs 2019 to demonstrate a challenging but realistic cost target for 2026.

[REDACTED]

Although the econometric benchmarking study by KPMG does find that Heathrow has reduced its costs over the period studied by more than comparator airports, the chosen model cannot be used to conclude that Heathrow now operates at the efficiency frontier.

More broadly, **[REDACTED]** had concerns about the application of the KPMG study, which assessed the efficiency of a pre-pandemic Heathrow, to post-pandemic opex forecasts

KPMG have responded to all queries raised by **[REDACTED]** and their response is included in Annex 22.

<p><u>Airline Alternative Business Plan</u>³⁰</p> <p>The airline community presents an £1.9bn variance to Heathrow's operating costs as set out in the BBU. This is a result of:</p> <ol style="list-style-type: none"> 1. Inclusion of benefits from capital projects and known restructures as well as continuing increasing number of staff on new contracts. Further recognition made for contract renegotiations (£1bn) 2. Using CPI rather than RPI to inflate 3. Removal of surface access costs (£86.1m) 4. Removal of service / Covid-19 costs (£205m) 5. Removal of funding Heathrow's pension deficit (£62.9m) 6. Placed a challenge on Heathrow to either gain an improved return on assets or sell them (£495m) 	<p>We have considered the airline community's alternative business plan and commented on the key aspects which cause the £1.9bn variance to the BBU:</p> <ol style="list-style-type: none"> 1. In the RBP, we have included a clear link between operating costs and the capital plan, included explicit savings for projects/initiatives where possible and included long-term savings brought forward in 2020. However, not all savings in 2020 are permanent. Many savings are temporary or volume related and will therefore return as passenger volumes grow. As we are starting H7 with an efficient cost base, we cannot continue to make savings at the level achieved in Q6. It is not logical to assume saving levels can continue indefinitely. 2. Our forecasts use nominal input price inflation from OBR and other government sources, in relation to RPI. This means there is no potential benefit from using CPI inflation as in the methodology set out in the airline community response. 3. Our surface access strategy has been grounded in consumer research and will deliver on our consumer outcome "I am confident I can get to and from the airport". Surface Access operating costs cover a number of initiatives to deliver the strategy, including running the new Forecourt Access Charge. Introducing an Access Charge is a key element of the surface access strategy, is aligned to our sustainability objectives and will grow revenue in line with the "user pays principle". See Chapter 7.4 – Surface Access for more details of our surface access strategy. 4. During Constructive Engagement the airline community agreed that costs associated with our service response to Covid-19 should be included in the forecast as an overlay. Both our Covid and Enhanced service overlays are underpinned by our consumer engagement and essential to delivering

³⁰ Heathrow Airline Community, Annex 2: *Airline Affordability Assessment - Alternative H7 Business Plan*, October 2020

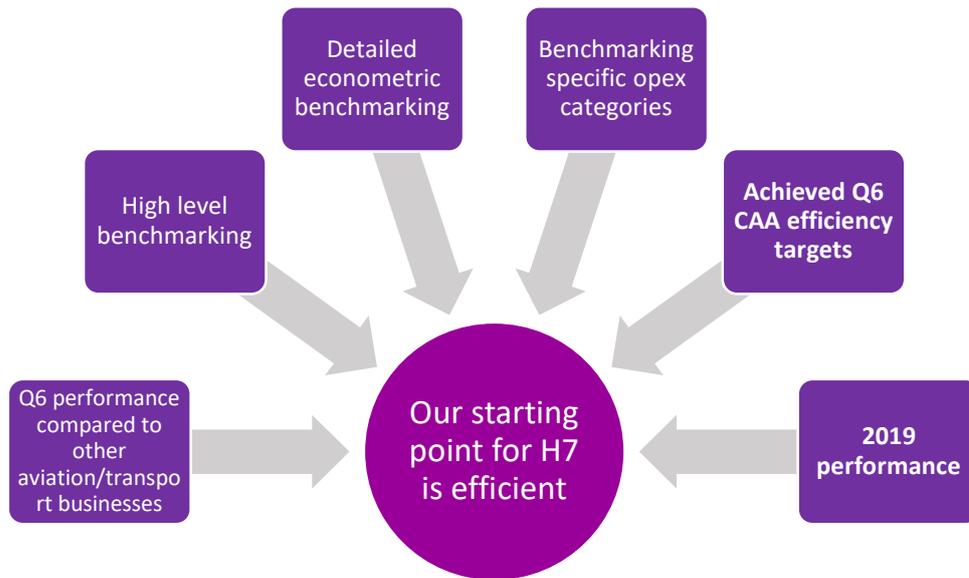
	<p>our consumer outcomes. See section 7.1.6.7 and 7.1.6.9.</p> <ol style="list-style-type: none"> 5. It is inconsistent policy for pension deficit costs not to be included in the plan as previous benefits for consumers through lower pension payments were passed on. 6. The £495m airline challenge does not reflect the reality of the treatment of investment properties on the RAB and is therefore inaccurate and unrealistic for Heathrow to achieve in H7. The value of these properties does not increase on the RAB as it is not an asset register; the properties remain at cost so airlines are not paying the costs of the property value through charges. The investment properties are valued due to an accounting requirement rather than being held purely for revenue. A number of these assets are operationally necessary, such as car parks, lounges and offices and therefore difficult to sell. Additionally, we do not consider the improved return on assets or selling of assets fits clearly within the operating costs forecast.
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7.1.4 Starting from an Efficient Cost Base

Throughout Q6 and Q6+1, we made deliberate and systematic changes to become a more efficient and competitive organisation. As a result, we have achieved a reduction in operating cost per passenger of 14% from 2014 to 2019, whilst also delivering record levels of service. We achieved significant efficiency gains in a challenging environment where passenger growth was higher than forecast. In fact, even with passenger volume growth of 10%, total operating costs reduced by 5% from 2014 to 2019.

Our efforts throughout Q6 and Q6+1 mean that we are in a strong starting position for H7. The figure below shows that we have undertaken an in-depth review of our efficiency and considered a wide range of evidence.

Figure 5: Overview of evidence for efficient starting point for H7

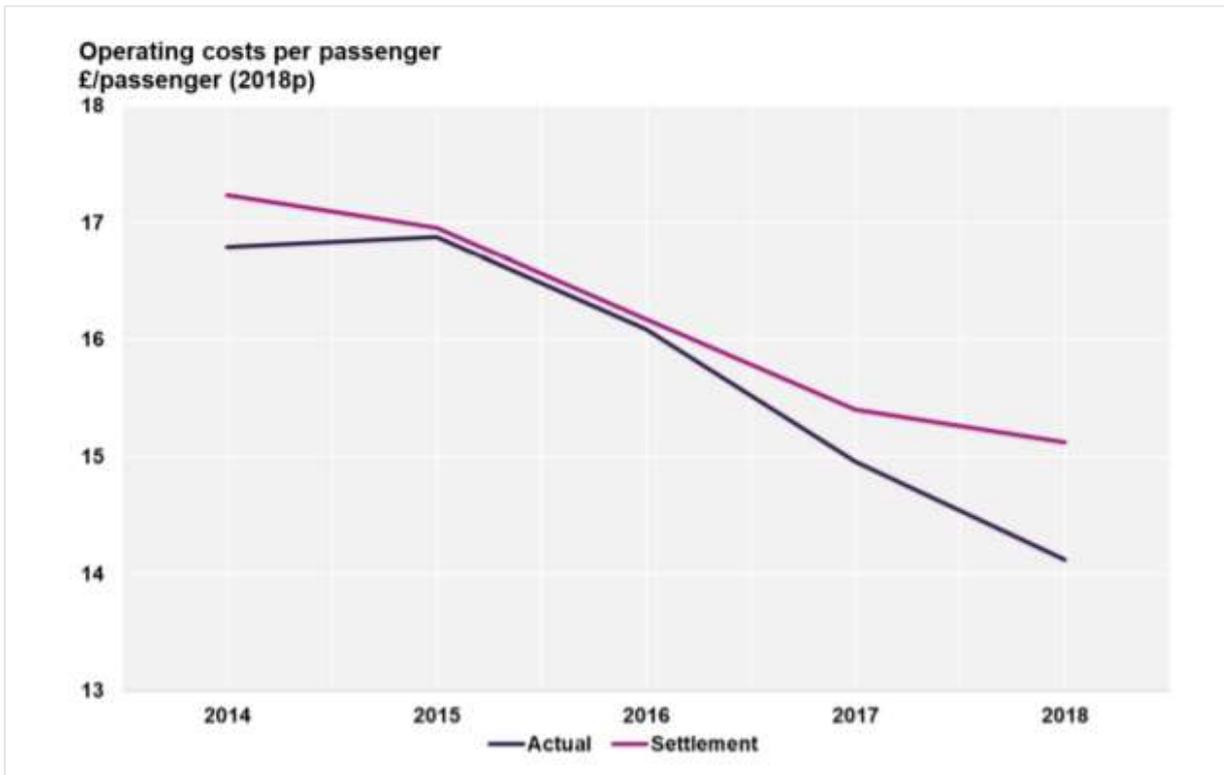


This review concluded that our overall operating cost is efficient and consequently our operating cost forecasts do not include an allowance for catch-up efficiency. This section provides an overview of the evidence that underpins our conclusion.

7.1.4.1 Achievement of Q6 CAA Efficiency Targets

As detailed above, we achieved the Q6 efficiency targets. Some areas were particularly challenging, such as people cost savings. We have made real progress in reducing cost but have balanced that with the need to protect service, resilience and colleague skills retention. In other areas we have pushed further to exploit one-off market opportunities, such as additional utilities savings. We have implemented all of these changes in a way that has still enabled us to reach record levels of service. 2018 savings exceeded the targets set by the CAA in 2014 based on Heathrow achieving the 'efficiency frontier' for similar airport operations.

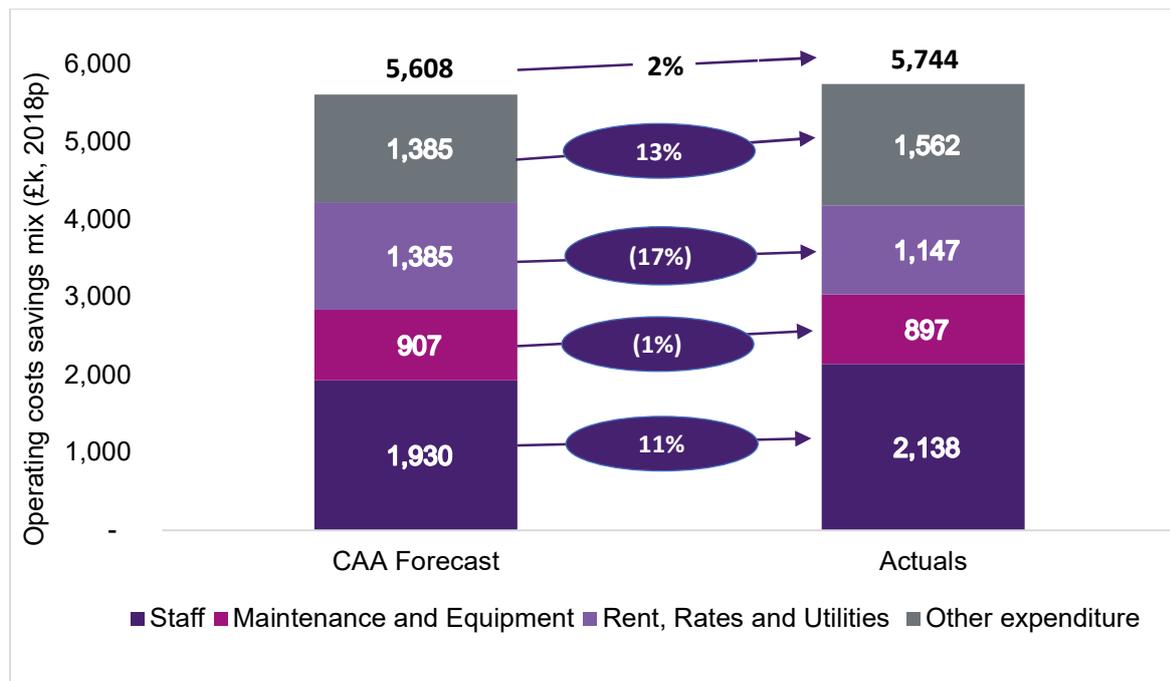
Figure 6: Operating costs per passenger, £ per passenger (2018 prices)



Source: Heathrow

The mix of savings has differed by category and over time from CAA forecasts, as illustrated below.

Figure 7: Heathrow Operating Cost Performance against the CAA Settlement forecast (2018 prices)



Source: Heathrow

People cost efficiencies

People costs are both Heathrow's largest single cost category, and one of the most challenging to drive efficiencies. In Q6 we took a long-term and balanced approach to people change. Heathrow is also highly unionised. People efficiencies can therefore take longer and require care to manage the risk of industrial action. We also need to balance cost with the service passengers receive and our desire to offer colleagues a great place to work. The CAA forecast 2018 total people costs to be £363m (2018 prices) whereas our actual costs were £432m (2018 prices). This gap mainly reflects a CAA target for people costs that was not well founded. In addition, the gap was increased due to (i) higher than forecast passenger numbers, (ii) unforeseen external factors such as the Apprenticeship Levy and increased employer National Insurance Contributions and (iii) deliberate choices to invest more in training and some aspects of service such as landside patrolling.

We achieved efficiency through targeting security, organisational structure, pay deals and pensions, resulting in total cost savings across Q6 of over £300m (2018 prices). In security we introduced around [REDACTED] lower new starter rates and pay ranges saving [REDACTED]. We also saved [REDACTED] by reducing manning levels and fixed posts using new technology (enhanced search lanes, anti-back track doors) and through the design of new processes (APOC, Terminal 1/Control Post 14 closure). Agreeing new pay deals with the trade unions for our negotiated grade contracts in 2014 and 2016 saved [REDACTED] and changes to pension contributions have saved around [REDACTED] per annum.

We implemented two Heathrow-wide organisational re-designs in Q6. The first simplified layers in the organisation and reduced senior roles. The second better aligned our strategy, target operating model and organisational processes and systems. These changes saved [REDACTED] over Q6 net of change and redundancy costs. The introduction of broadbanding in 2015 to group jobs with similar responsibilities and skills and benchmark salaries against market rates is producing ongoing cost savings.

Savings in suppliers and facilities operations

Our contract negotiations with suppliers led to savings in baggage, engineering and trolley operations. We have repeatedly market tested all our contract areas, seeking the best long-term value rather than an overall policy of insource or outsourced provision. For example, we changed the terms of our engineering contract to include multiskilled cleaning staff. This allowed the contractor to take on additional smaller tasks such as changing lightbulbs, eliminating the costs of sending additional maintenance workers for the job. The contract for the team which collects and redistributes trolleys was terminated and brought in-house to save costs. We renegotiated our long-term contract for high voltage power with UKPNs. Closing Terminal 1 early also reduced contractor costs and other related facilities cost. Overall, these changes delivered over £150m savings in Q6.

Reduced utilities costs

During Q6 we invested £35m in energy demand management projects. These have saved £30m in total. In addition to lower energy bills, they have cut carbon emissions and mitigate the risk to Heathrow's overall grid capacity. Projects included installing LED lighting, more efficient motors and automatic meter reading technology across Heathrow. We became the first European hub airport to install LED lighting on all aircraft stands and have installed solar panels on Terminal 2 and the Compass Centre. Since April 2017 Heathrow has sourced 100% renewable electricity, with an increased proportion coming from on-site generation. From 2014 to 2019 we have saved over 200 GWh - equivalent to closing Terminal 5 for 2 years. Overall consumption per passenger dropped from by 24% from 2014 to 2019.

Delivering end-to-end efficient service with our partners

We have invested in infrastructure that has improved passenger service and resilience while helping airline customers reduce their costs. For example, we worked with airlines to automate steps in the passenger journey with e-boarding gates and self-serve bag drops. At times in Q6 we have incurred additional unanticipated costs to maintain passenger service and overall efficiency. For example, by funding passenger ambassadors where airlines and Border Force removed their passenger facing support roles. This increased our operating costs by £7m per year.

Taking a lead on community and environment

Whilst driving cost efficiencies in Q6, we also remained focussed on ‘doing the right thing’ and taking a lead on sustainability at a local, national and global level. For consumers, sustainability is considered part of the service whilst travelling through Heathrow and is ‘expected’ rather than a ‘nice to have’. Our progress was recognised when we were named “Sustainable Business of the Year” at the prestigious edie Awards in 2019.³¹

In 2017 we launched Heathrow 2.0, the airport’s sustainability strategy. We have made significant progress including 1,093 apprentices starting in 2019, achieving our smallest ever noise footprint, 64 out of 108 contracts were amended to ensure workers in our supply chain received the London Living Wage and becoming carbon neutral in 2020. Heathrow has committed to zero carbon and playing our part in supporting the aviation industry to meet its target of net zero emissions by 2050. Chapter 4 – Building Back Better provides more details on our achievements and our commitments for H7.

7.1.4.2 Q6 Performance compared to other Aviation/Transport Businesses

Our efficiency gains during Q6 are four times higher compared with the transport sector across the EU³². This suggests that we outperform the average transport business across Europe. Our efficiency gains are also higher than IAG³³ and general efficiency improvements in the airline sector as indicated by IATA³⁴. These comparisons show the actions we have taken to cut costs have led to greater efficiency gains than other aviation businesses and we are starting H7 with efficient costs. Our econometric benchmarking, described below, shows that the efficiency gains we have made moved Heathrow from a position of relative inefficiency to the efficiency frontier. As a consequence, the level of savings deliverable in the future is smaller than those possible during Q6.

7.1.4.3 High-Level Benchmarking

High-level benchmarking is useful to provide a simple comparison with our hub competitors. However, when comparing our efficiency to other airports, it is essential to consider the unique characteristics of Heathrow and the costs we incur that other airports may not, or those which are outside of our control. Examples of such costs include rates and other taxes, surface access costs and police costs, including counter terrorism and drone security. These represent around 15% of our costs.

³¹ <https://event.edie.net/awards/2019-winners/>

³² <http://www.euklems.net/>, UK Basic 2017 file, table TFP1p1_I, table TFP1p2_I.

³³ IAG Annual Report and Accounts 2012, p.84, 2014, p.98, 2016 p.100 and 2018, p.116.

³⁴ <https://www.iata.org/publications/economics/Reports/Industry-Econ-Performance/IATAEconomic-Performance-of-the-Industry-mid-year-2018-report-final-v1.pdf>, Economic performance of the airline industry, p.5.

As a high-level comparison, our overall operating cost per passenger is broadly in line with the average for large airports around the world. However, we note that simple benchmarks of this kind do not take into account all the factors that impact airport costs. In particular, KPMG³⁵ found that the volume of non-aeronautical revenues, proportion of international passengers and scale of airport infrastructure are significant in driving operational costs. There are unique operational dynamics for Heathrow, where we set a global benchmark for airports in generating non-aeronautical revenues and we had the second highest volume of international passengers in the world in 2019.

Service is another factor, where delivering a higher level of service may lead to higher costs. Since 2013, we have appeared in the Top 12 of Skytrax's World's Top 100 Airports, which demonstrates that passengers are increasingly satisfied with Heathrow's service. Our 2019 Airport Service Quality (ASQ) score of 4.17 was also above the European average of 4.11.

Frontier Economics reviewed cost and passenger data from ATRS³⁶ and reported operating cost per passenger for all comparable airports in the dataset which handled at least 40 million passengers in 2017. Our operating cost per passenger is very close to the average (£14.46 compared with £13.90, 2017 PPP-adjusted GBP). Of the major hubs in Europe, Frankfurt and Paris Charles de Gaulle have higher operating costs per passenger than us, while Amsterdam and Madrid have lower figures. Frontier Economics repeated the analysis, focusing only on European airports which served more than 40 million passengers in 2017 plus all UK airports which were included in the ATRS data. The results show that we are slightly above the average (£14.46 compared with £11.36, 2017 PPP-adjusted GBP). However, we have the highest volume of international passengers, the highest non-aeronautical revenue per passenger and the second best Skytrax rating in 2019 (8th best airport in the world), all of which lead to higher operating costs. It should also be noted that comparisons with point-to-point airports are less meaningful as they do not share the characteristics of hub airports that drive costs, such as proportions of international passengers, connections facilities, complexity of baggage systems and volumes of cargo. As an example, hub airports typically have significantly higher volumes of international passengers and KPMG³⁷ found that for every 1% increase in the proportion of international passengers there is a 0.7-1% increase in core operating costs.

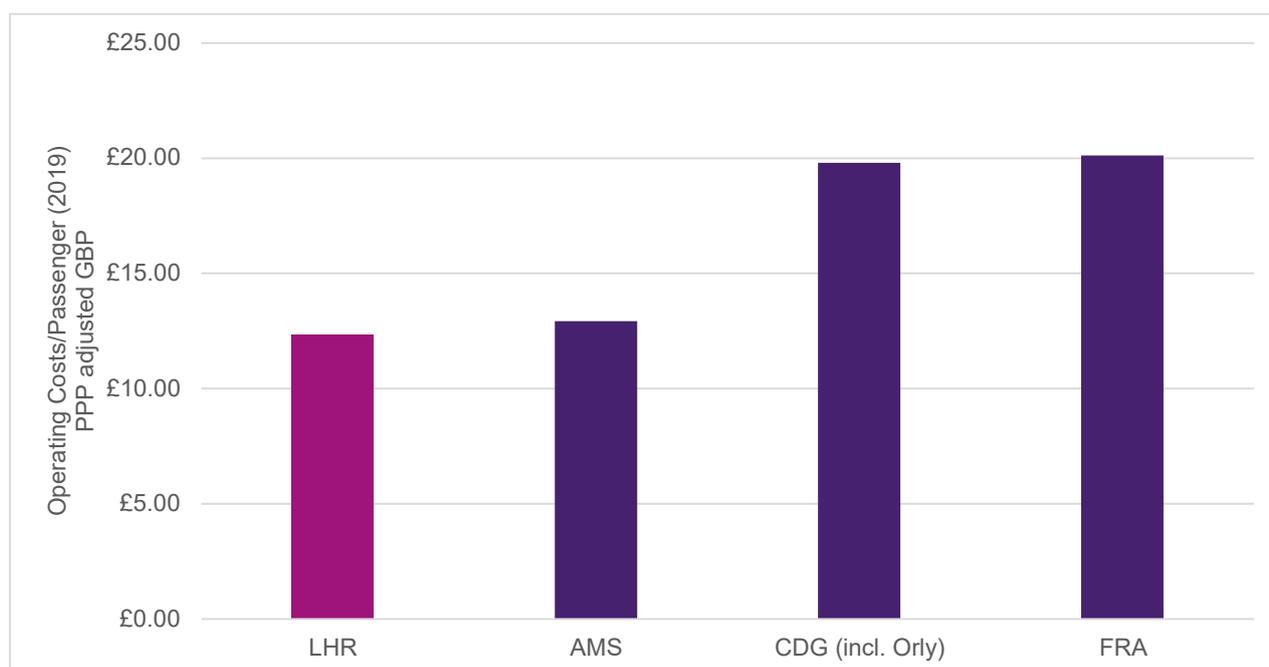
Figure 8 below shows that in 2019 our operating cost per passenger was lower than Frankfurt, Paris (Charles de Gaulle and Orly) and Amsterdam.

³⁵ KPMG, *Airport Operating Cost Efficiency Benchmarking*, October 2019.

³⁶ Air Transport Research Society (ATRS), <http://www.atrsworld.org/Database.html>

³⁷ KPMG, *Airport Operating Cost Efficiency Benchmarking*, October 2019.

Figure 8: Operating Costs per passenger (2019 PPP adjusted GBP)



Source: Airport accounts

7.1.4.4 Detailed Econometric Benchmarking

High-level benchmarking on an operating cost per passenger basis has limitations as it does not consider the multiple factors that drive costs. To address these issues, we commissioned KPMG to undertake a detailed econometric benchmarking analysis of our operating costs. The KPMG detailed econometric benchmarking³⁸ compares only like for like costs and takes into account the characteristics of airports that drive costs. It provides a measure of the level of efficiency that would be expected from an airport with the characteristics of Heathrow. This approach is commonly used by regulators as the primary way of assessing efficiency³⁹.

KPMG's independent and thorough analysis involved:

- Identifying key factors that influence airport operating costs:
 - Airport size – number of passengers served, amount of cargo and volume of non-aeronautical revenue;
 - Airport characteristics – proportion of international passengers and service quality measured by ASQ;
 - Airport congestion – number of runways and number of gates;
 - Airport infrastructure – scale of airport infrastructure measured overall value of core assets;
- Using a large dataset comprising of 28 UK and international airports from 2000 to 2018;
- Normalising the data across different airports by removing inflation and making adjustments that make the data more comparable, such as excluding business rates and other local taxes;

³⁸ KPMG, *Airport Operating Cost Efficiency Benchmarking*, October 2019.

³⁹ Both Ofgem and Ofwat have used econometric benchmarking in their price reviews. (Ofgem, RIIOD1: Final determinations for the slow-track electricity distribution companies, Business plan expenditure assessment, November 2014; Ofwat, PR19 draft determinations: Securing cost efficiency technical appendix, July 2019)

- Adjusting for differences in operating environments such as utility prices that are outside the airports' control;
- Analysing a large number of potential models using different cost drivers, 1,727 possible combinations of cost drivers were reduced to 94 models using quantitative and qualitative criteria, further analysis filtered the models to 5 preferred cost functions; and
- Applying the selected 5 econometric models to historical data to quantify the gap between the operating costs if Heathrow performed as an average or upper quartile airport and our actual operating costs.

Table 2 below shows the preferred models used by KPMG⁴⁰. Although higher levels of service were found to increase costs in the economic analysis, this was dependent on the model specification and not included in the preferred models. The analysis also showed that geographical location can impact the level of operating costs, however, these factors are not correlated with operating efficiency. The coefficients show the estimated percentage change in core operating costs from a 1% change in the cost driver variable.

Table 2: KPMG preferred model specifications

	Model 1	Model 2	Model 3	Model 4	Model 5
Number of Passengers	0.76				
Number of workload Units (WLU)		0.95	0.65	0.51	0.40
Asset size (as measured by core assets)					0.12
Non-aero revenues (NAR)			0.31	0.24	0.25
Proportion of International Passengers (IP%)				0.88	0.85
Model specification	RE	RE	FE	RE	RE
Airport-Term for Heathrow	0.73	0.44	2.23	0.39	0.27
Intercept	5.91	2.69		4.95	4.27
Scale term (sum of scale coefficients)	0.76	0.95	0.96	0.75	0.77
Adjusted R ²	66%	73%	83%	92%	92%
Number of observations in sample	445	416	396	334	334
Number of airports in sample	28	26	26	26	26

Note: No variables have a significance level higher than 5%.

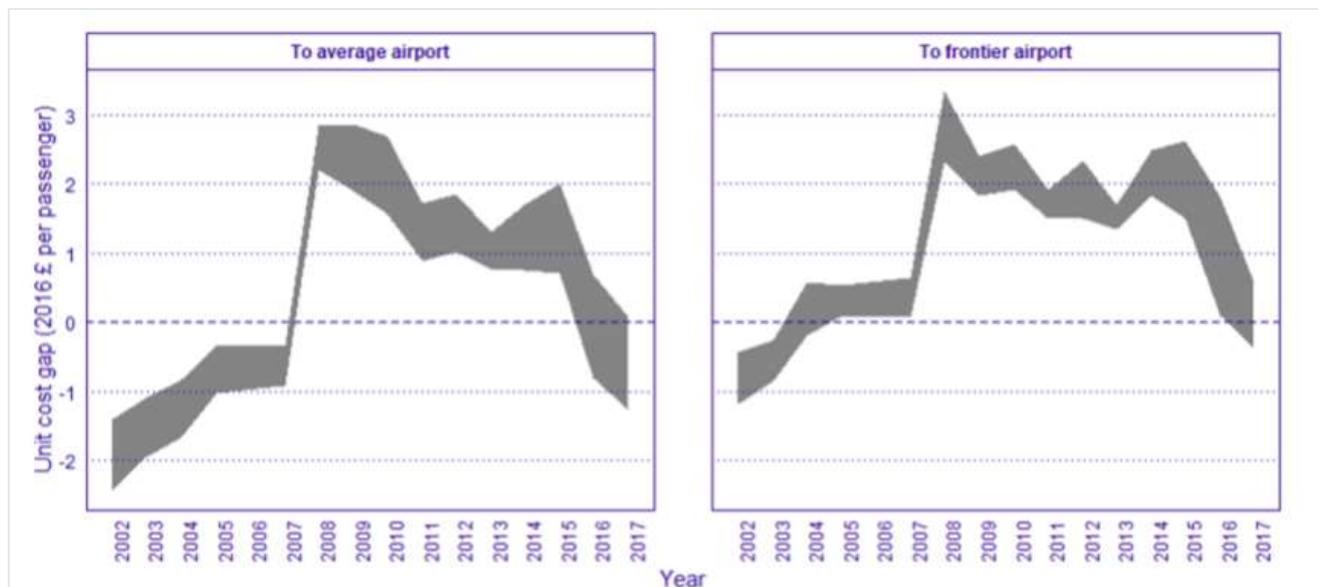
Source: KPMG analysis

Source: KPMG

⁴⁰ All variables were regressed in log form except the proportions of international passengers

Using the preferred models, KPMG concluded that Heathrow’s relative efficiency has changed over time as shown in the figures below, where the shaded area below 0 indicates our costs are lower than the average/frontier costs per passenger.

Figure 9: Heathrow operating cost gap against the average and top performing airport operation (2016 prices)



Source: KPMG

In 2017, operating costs were 6.9% lower than the average airport. KPMG have also calculated the preliminary cost efficiency gap for 2018 (preliminary as not all the comparator airports had reported data for 2018). The table below shows the estimated cost gap to the average and frontier airport base on the assumption that the 2018 frontier is equal to the 2017 frontier. Note, econometric methods cannot capture all efficient drivers of cost. Therefore, we have followed regulatory precedent to consider companies with operating costs at the 75th cost percentile to represent an efficient business.

Table 3: Heathrow efficiency results (2016 prices)

	Cost gap to the average					Cost gap to the frontier				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
£ per passenger (2016 prices)	1.27	1.3	-0.29	-0.79	-1.21	2.2	1.82	0.92	0.16	-0.19
%	11.4%	11.4%	-2.5%	-6.9%	-10.7%	21.4%	16.7%	8.8%	1.6%	-1.9%

Source: KPMG

In 2018, KPMG’s analysis shows that we were 10.7% more efficient than the average airport and 1.9% more efficient than the frontier airport. KPMG concluded that our operating costs are relatively low, given the number of passengers and cargo we handle and our commercial revenues, compared to what might be expected for a representative airport of this scale and type.

7.1.4.5 Benchmarking Specific Operating Cost Categories

Benchmarking specific operating cost categories provides useful insight into the performance of different areas of our business. When reviewing the efficiency of specific costs, it is important to note that an airport operating as an efficient business will not be best in class in all areas. It is the overall cost base that is most important and there are inevitable trade-offs between different cost categories. This is widely recognised in UK economic regulation – in benchmarking for efficiency, UK regulators such as Ofgem and Ofwat do not “cherry pick” different firms in different cost categories to create an unrealistic efficiency benchmark.

We commissioned Steer⁴¹ to undertake an Operating Cost Benchmarking Study to identify how our operating costs evolved in Q6, compared to relevant comparator airports, for a number of cost lines. The key findings of the benchmarking were:

- We have reduced the costs per full-time equivalent (FTE) by **[REDACTED]** by cutting pension and other people costs. A number of initiatives have driven these improvements, namely; the introduction of new starter rates, voluntary severance schemes, security fixed post removal and other workforce initiatives.
- Our security costs are below Amsterdam and are now comparable to Paris. We have reduced our security costs per passenger by **[REDACTED]** during Q6 by reducing the number of security colleagues by **[REDACTED]** and by reducing the average monthly costs for security officers by **[REDACTED]**.
- We perform well in comparison to other airports for engineering costs. We have delivered efficiencies in our engineering performance through contract negotiations, reduced scope of Terminal 1 and revised asset maintenance plans. Additionally, organisational redesign and efficiency improvements have provided savings across the period.
- Cleaning costs are lower than Paris and Amsterdam.
- We have made the greatest improvements in electricity usage per passenger and our electricity consumption per terminal area is lower than most of the benchmarked comparators. We have increased efficiency in energy usage through Energy Demand Management projects and achievement of no-net-increase in consumption for development projects. Our electricity consumption has also decreased following the closure of Terminal 1 to passengers.

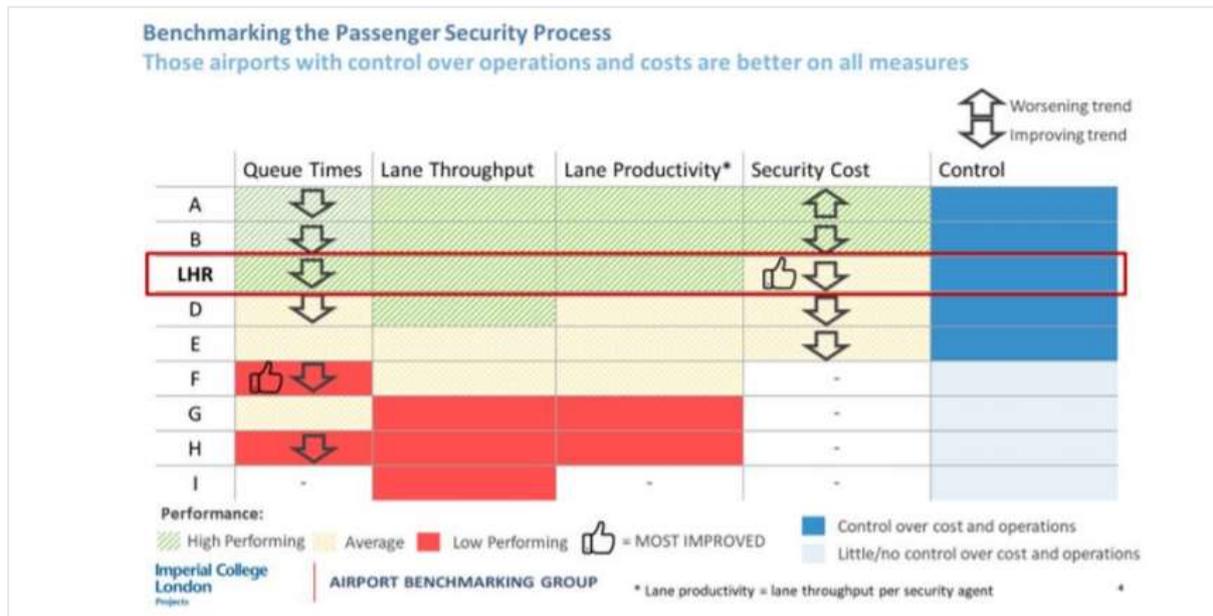
Heathrow, alongside Hong Kong Airport, established an Airport Benchmarking Group in 2017 to provide a platform for major global hub airports to learn from each other by comparing performance, sharing experiences, and identifying best practices. There are nine member airports, Heathrow, Hong Kong International Airport, Toronto Pearson, Los Angeles Airport, San Francisco Airport, Munich Airport, Aeroports de Paris, Schiphol Airport, and Sydney Airport. The ultimate aim is to achieve improved performance of the participating airports in a way which benefits passengers and the wider public, in areas such as safety, security, quality, environment, productivity and efficiency.

The Airport Benchmarking Group reviewed the financial performance of comparator airports and determined that Heathrow has a strong performance for non-aeronautical revenues per passenger for all categories including Retail, Car Parking, Fashion and Food and Beverage. The KPMG econometric modelling showed that higher non-aeronautical revenues are associated with higher operating costs. Our passenger security costs and terminal cleaning costs per passenger are at the average compared to the benchmarked group. The Airport Benchmarking group concluded that our security operating costs on a per-passenger basis are at the average of the group and have shown the most significant improvement in 2018

⁴¹ Steer, *Operating Cost Benchmarking Study*, December 2019

compared to the other airports in the group. We also perform better than average on queue time, lane throughput and lane productivity (lane throughput per security agent) as demonstrated in Figure 10. One of the contributing factors for this is our maximum lane capacity and having multiple passenger divestment points. This provides benefit to our customers travelling through Heathrow, where we aim to minimise our wait times.

Figure 10: Benchmarking the passenger security process



Source: Airport Benchmarking Group

It should be noted that benchmarking security costs against other airports requires particular consideration when attempting to compare like-for-like costs:

- At Heathrow we have to search all transferring passengers, this is not the case in Europe and drives a need for transferring search areas and significant staffing.
- Care is needed when using FTE/Passenger productivity, as FTE numbers include training teams, queue management staff, staff search posts, fixed posts, campus patrollers, etc. in addition to direct security staffing. Some airports security staffing numbers would only count the staffing they have to process passengers, while Heathrow numbers include several categories, such as security managers, compliance or training staff.
- We have multiple terminals, when comparing to single site airports or those with fewer terminals our costs will always be higher. Particularly as terminals have different demand profiles, such as T4 which is very quiet in the morning but very busy in the evening, which is far harder to staff efficiently than a flat profile throughout the day.
- We have multiple staff searches in every business unit to meet our stakeholder demands, which will reduce our FTE/passenger comparison.
- In comparison to other UK airports we have the greatest degree of security risk associated with being the national hub airport.
- Our Campus operation is regulated to run 14 control posts on the airfield to meet airline demand, whereas other non-regulated comparable airports provide similar service with a reduced number of posts.

- We have a large cargo operation, which necessitates a number of control posts and staffing that a smaller cargo mix airport would not require.
- We have regulated service standards to meet, with 99% of queues under 10 minutes and 95% queues under 5 minutes. This is a higher standard than at other airports and creates a requirement to resource to the peak demand, which is less efficient than resourcing for other service standards.

The above considerations were raised through Constructive Engagement. As discussed later in this chapter, our Security Transformation program aims to improve efficiency further and reduce the operational cost of our security.

We will continue our benchmarking programmes through H7 to ensure that we maintain our efficiency.

7.1.4.6 2019 represents an efficient cost base for our RBP and starting point for our H7 forecast

In 2019, our operating costs per passenger was £14.50 (2018 prices). Although this is an increase on the 2018 cost per passenger of £14.12 (2018 prices), it is still significantly lower than the CAA settlement for 2018 and a 14% reduction compared with 2014 (2018 prices).

The increase in costs was primarily driven by:

- Additional £0.19 per passenger to improve security, resilience and service – implementing new hold baggage screening, upgrading drone defence capabilities, increased provision for passengers with reduced mobility and additional passenger ambassadors.
- Additional £0.07 per passenger due to the introduction of a new government carbon levy.
- Additional £0.19 per passenger to improve future efficiency – investment in the Magenta program and enhancements to our IT systems including increased cyber security. The increasing move to cloud-based IT services results in a shift from capital expenditure to operating costs for IT and will reduce overall costs.

This increase of operating costs in IT reflects the nature of the digital revolution on which capital costs required to run and maintain on-premise activities are being replaced by subscription services to subscription-based solutions, which are more cost-effective, secure and resilient.

Whilst these increases reflect airline requests and/or new regulatory requirements, we have successfully enabled permanent efficiencies ahead of H7 to the value of £42m on a 2019 throughput basis. Furthermore, investment in improvements in future efficiency will enable operating costs per passenger to remain lower than those at the efficient frontier of costs by the end of H7 once volumes have recovered.

7.1.5 How we will deliver efficiencies in H7

Consumers care about the end results of cost reductions (i.e. lower prices with no or only minimal impact on the outcomes they value), not the internal steps the airport takes to achieve

them, so like all competitive companies Heathrow must make sure to deliver the necessary efficiencies. Reflecting airline community feedback, we have made clearer links between the capital programme and operational efficiencies. However, it is not only capital investment that drives operational efficiencies, improvements in the productivity of our colleagues and our procurement approach will also deliver cost savings. It is also important to highlight that all aviation stakeholders have a fundamental role in driving lower costs for consumers at Heathrow, particularly given the unprecedented impact of the Covid-19 pandemic.

The potential major initiatives for H7 to drive efficiencies in our business are:

- Magenta to transform our support services efficiency
- Efficient airport program including Security Transformation
- People strategy
- Procurement strategy

7.1.5.1 Transforming our Support Services efficiency

We are investing for the future to ensure our systems and processes are fit for purpose, with flexible and maintainable solutions that allow us to evolve and grow. We call this project 'Magenta'. Magenta is not included in the Capital Investment chapter as the capital expenditure is incurred prior to the start of H7. The Gateway 3 Business Case was approved by the airline community at the August 2020 Capital Plan Board. However, the benefits associated with Magenta reduce capitalisable costs and are therefore not included in the operating cost forecast. Magenta does provide an opportunity to reduce overheads included in the Leadership and Logistics %, as discussed in Chapter 9.3 – Capital Governance.

Magenta is the biggest transformational change programme ever undertaken by Heathrow support services. We are implementing a modern system with straightforward, intuitive processes that allows our support functions to operate efficiently, to provide insights and to add value to decision makers. The scope of the programme will include:

- our core finance process areas
- the people lifecycle
- asset management
- business intelligence

We will use new and proven technology to enable us to upskill our colleagues, bringing innovation to our support roles and modernising the way we work. Magenta will bring benefits across the whole business, enabling colleagues to make their own informed decisions. Support service colleagues will have end-to-end better ways of working with improved processes, tools and data, and our operational colleagues will benefit from direct access to better information. The changes will also make it easier for our supply chain to work in partnership with us, allowing our colleagues to concentrate on core business.

In alignment with Magenta, we are also ensuring our practices are simple and standardised (i.e. risk assessment and policies and legislation). This will minimise the need for internal alignment and enable more focus on delivering a great service to our customers.

7.1.5.2 Efficient Airport and Security Transformation programmes

Investment in our efficient airport program reflects our consumer insights that tell us that consumers want journeys that are predictable, punctual and easy. We are committed to

working with airlines on reducing the costs of operating at Heathrow, particularly in light of the unprecedented shock to the aviation industry from the Covid-19 pandemic. The Efficient Airport programme will develop business cases to reduce costs not just for Heathrow but for the whole airport community through automation and digitalisation. In addition, investments for a more digitalised and agile organisation will increase our productivity and efficiency while contributing to our resilience. The Efficient Airport programme is included in the £3.5bn capital plan.

The Security Transformation programme looks to leverage the opportunity of the regulated security changes to reduce operating costs through transforming security processes, whilst providing quicker and more reliable journeys for our passengers. The £2.1bn capital plan only includes the regulated compliance element of the programme, involving the installation of new body scanning and CT screening equipment in terminals and campus as per the DfT mandated regulatory change which, on its own, would not deliver operating cost savings. The additional transformational elements in the Security Transformation programme to drive efficiency are only included in the £3.5bn capital plan.

Both of these programmes are described in more detail in Chapter 6 – Capital Investment. As neither of these programmes are at the maturity of full business cases, section 7.1.7.3 below describes our approach to reflect the potential efficiency improvements and cost savings in our operating costs forecast.

7.1.5.3 People Strategy

Heathrow's culture transformed in Q6 to become a values and service-led, cost-conscious and competitive business for the future. Our people efficiency savings were achieved by organisational re-design, security colleague initiatives, broadbanding and pension changes. In 2020, we have undertaken another major organisational restructure for managerial roles in response to the Covid-19 pandemic and the suspension of the Government's ANPS. Through the cost of change program, we are addressing the issue of legacy contracts for operational colleagues. Our people strategy in H7 will be driving productivity improvements through the initiatives described below. Heathrow's highly unionised environment requires a carefully managed and balanced approach to people change to manage the risk and consequences of industrial action.

Reward Strategy

We offer a market competitive reward package to attract the best talent and ensure we retain and motivate our colleagues, rewarding excellence and driving a high-performance culture. We are committed to the London Living Wage across both our colleagues and our supply chain, despite the impact it has on costs in the short-term. We have a reward framework based on a broad band structure using the Willis Towers Watson grading methodology and a job family approach which groups job with similar skills and responsibilities to ensure pay is aligned with the market.

Our reward framework delivers pay parity, improved transparency and clear career paths whilst ensuring robust benchmarking against market data. All roles, and new hires, are now assessed annually against market rates using Willis Towers Watson benchmarking data as well as other data sources where appropriate.

From 1 December 2020 all negotiated grades have been migrated to new broadband terms and conditions. Our response to the Covid-19 pandemic has led us to bring forward our reward strategy to deliver long term sustainable wage efficiencies and tackle the challenge of legacy contracts. This will deliver ongoing cost savings and ensures we are systematically aligned

with the market for all roles at all levels across Heathrow. The savings from this are included in our plan as part of the Cost of Change program.

Pensions

We currently operate two pension schemes: Defined Benefit (DB) scheme and Defined Contribution (DC) scheme. Following a collective agreement with the relevant unions, our DB scheme ceased to be offered to new members from June 2008, at which point all new hires were enrolled onto the DC scheme⁴². As part of this agreement, it was determined that we could only make further changes to the DB scheme if the funding deficit for the scheme was to exceed £250m. This happened in 2014 and resulted in further changes to the DB scheme that came into effect in 2015. In particular, we proposed that our contributions should fall from 33% to 23% of active members' total remuneration (salaries and any bonuses). The CAA and airlines accepted this proposal. The following changes were made to the DB scheme to deliver this reduction in costs:

- the accrual rate (the rate at which an individual's pension is built up based on each year of working) was reduced from 1/54th to 1/60th of final pay;
- salary increases that counted towards final pay were capped at 2% per year; and
- it was agreed that any pensionable amounts that were accrued from 1 October 2015 would be indexed by RPI up to a maximum of 2.5% per year.

At this time, it was also agreed that:

- no further changes would be made before 1 January 2019; and
- between 1 January 2019 and 31 December 2020, changes could only be made if one or both of the following two events occurred:
 - pension costs were fully or partially excluded from allowed costs; and
 - a formal review undertaken by the Trustee found that the actual employer contributions were 28% or more of active members' total remuneration.

The most recent Actuarial Valuation⁴³ of the DB scheme undertaken by the Scheme Trustee has resulted in an increase in the employer contribution to 25.6% (applied against basic salaries and shift pay). This change was effective from October 2019. As a result, it will not be possible to propose any amendments to the DB scheme design until 2021.

During Q6, we have shown we can run our pension schemes responsibly and make effective changes when appropriate. Going forward we have three options for the DB scheme:

1. Leave the scheme unchanged and let it continue in its current form;
2. Close the scheme and replace it with another pension arrangement; and
3. Make further adjustments to the scheme which would reduce costs either through reducing the accrual rate, increasing member contributions, fixing the pensionable salary or fixing the value of pension payments.

Any material changes would require agreement with our unions and consultation with individual members. We are committed to doing the right thing for our people and we know that pensions are the second most valued benefit behind base salary. During H7, we will continue to review the cost implications of each option to ensure we make the most cost-

⁴² There were some exceptions to this, such as in the case of apprentices who could join the scheme after gaining a permanent job (if they had begun employment as an apprentice prior to the June 2008), but generally the DB scheme has been phased out since June 2008.

⁴³ Mercer, *Scheme funding report of the actuarial valuation BAA pension scheme as at 30 September 2018*, December 2019.

effective choice which also delivers on our outcome for our colleagues by making Heathrow a great place to work.

Culture

The next five years will be a period of uncertainty, recovery and rapid changes. The business adapted as quickly as it could to the challenges posed by Covid-19. Addressing remnants of legacy ways of working will further improve the effectiveness of our operations. We will take steps to change our culture to create an organisation built on trust, empowerment, safety and agility. The cultural framework will directly support the delivery of our strategic objectives for the recovery of the business. Cultural change will be enabled through a combination of short, mid and long-term initiatives targeting leadership behaviours, consistency and appropriateness of policies, ways of working and communications. We will work with leaders and colleagues at all levels to drive the mindset shift required to deliver our strategy.

Through our strengthened culture, by 2026 we will deliver an organisation that is cost-effective, colleague-focused, service-driven and dynamic. We will reduce our cost base by streamlining and modernising our processes, freeing up resource to focus on solutions and service. We will make Heathrow a great team by nurturing our leaders and colleagues to make the most out of everyone's talent and creating strong relationships with the brand. Our service proposition will improve through the empowerment and psychological safety that we will guarantee for all of our colleagues. Through a move to a more automated and digitalised operation and more agile ways of working, we will create a dynamic organisation resilient against any challenge that can come our way.

Employment, Education & Skills

Education, Employment and Skills plays a critical role in supporting the business to fulfil its Heathrow 2.0 ambitions. The impact of Covid-19 has enhanced this role and our commitments as a responsible employer. Our priority is to ensure as far as feasible, colleagues across Team Heathrow receive practical support from our Heathrow Employment and Skills Academy to either find alternative suitable employment and /or training, learning and development. We will achieve this through our Heathrow Skills Partnership and the partnership we have developed with the Department for Work and Pensions and their national careers services arm. We will continue to support young people in education to receive experiences of work by switching to online and virtual delivery from 2021. Team Heathrow is an important partner in delivering the skills agenda and the People Leadership Forum will continue to be the main channel for ensuring we all work collaboratively to create a diverse, inclusive and skilled workplace, thereby contributing to make Heathrow 'A Great Place to Work' and 'A Great Place to Live'.

7.1.5.4 H7 Operational Procurement Strategy

In formulating our operational procurement strategy for 2020-2021 and into H7, we have considered the impact of Covid-19 and how we will need to operate to protect the business in the short term, win the recovery, build back better as demand returns. This outlook produces three phases of response.

Phase One: Renegotiating contracts and seeking the removal of costs where it is safe to do so and where the impacts do not adversely impact our operations or those of our airlines. These include a variety of activities where we can identify cost opportunities such as government job retention schemes, re-sizing of our supply chain, revisions to our scope of services and alterations to our commercial terms or models within those contracts.

Phase Two: Assessment of all contracts at the airport to align to key value principles – presented to the community through the Other Regulated Charges Group (ORCG) and constructive engagement consultation. Some key themes are: the consolidation of our suppliers so we have fewer more strategic partners; a review of services where we have multiple vendors so as to drive competition in a more agile way; looking at how we use the expertise of suppliers either in the delivery of our services and systems or linking their role in our capital and operations space through different contract and commercial models; and considering how to transfer fixed cost to variable cost to enable more flexibility so we are resilient to any future demand fluctuations

Phase Three: Form or renegotiate partnerships with larger strategic suppliers, looking at how we create commercial environments that focus on betterment, innovations and mutually beneficial relationships. Intrinsic to this is how we continue to seek sustainable solutions, so we continue to be a responsible neighbour and play our part in the wider sustainability agendas.

An area of discussion with the airline community during Constructive Engagement has been our ability to transfer fixed cost to variable in response to the impacts of the Covid-19 pandemic. Our primary activity has been under Phase One of the strategy. The first of our significant procurement activities is for a passenger services provider with scope focused around Passengers Requiring Support (PRS). A key determinant in the decision to award was the scale of fixed to variable cost. Going forward this is a key attribute sought in procurement activities and at extension points with existing suppliers. Due to Covid-19 many contracts are lean following Phase One as detailed above, so a key aspect for Phase Two of this strategy will be fixed and variable cost apportionment. Section 7.1.6.5 below provides more detail on the cost reductions we have made in 2020 from contract renegotiations.

Use case: Baggage Strategic Partnership Tender

A tender was commenced late 2018 to consolidate and rationalise Heathrow's supply chain in support of our baggage services, with a view of fewer, larger suppliers. There were approximately 15 suppliers supporting baggage across Design, Build, Maintain, Operate and IT. The tender sought one or two organisations who had the breadth to support this at lower costs and improved service delivery.

A comprehensive Europe wide tender was run with the involvement of teams across Heathrow and our airline partners. All were actively involved in the tender process and agreed with awarding a seven-year contract with Vanderlande as our technical baggage strategic partner and DHL as the baggage logistics strategic partner.

Pre-Covid, this tender resulted in savings of **[REDACTED]** over the seven-year period and provided multiple other benefits in terms of:

- Fewer suppliers, less supplier interfaces
- Innovation, CI and efficiencies from specialist global partners
- TOTEX commercial modelling providing end-to-end lifecycle management
- Combining of Design, Build, Maintain, Operate and IT under one umbrella partnership contract – a Heathrow first

Transition of the baggage strategic partnership commenced February 2020. All parties continued to work collaboratively to achieve an earlier than expected transition on the 1st September 2020 (Vanderlande) and 1st November 2020 (DHL).

Over 700 employees from the incumbent suppliers transferred to either DHL, Vanderlande and a small number of critical safety roles into Heathrow, with an employee rationalisation exercise being undertaken at the same time. Suppliers, airlines and Heathrow teams all worked collaboratively to achieve this on time and without any operational issues, or incidents. It was noted by many internal and external stakeholders how smoothly this transition went based on its size and complexity.

Due to the effects of Covid-19 further rationalisation is taking place within the baggage partnership supply chain in order to reduce costs further whilst continuing to deliver a fantastic, collaborative baggage service.

Use case: PRS Competitive Dialogue

Through 2019 Heathrow contracted with two suppliers across PRS services who also served Passenger Ambassador Services and Connection Services under separate agreements. Heathrow was considering the merits of a two-supplier model and had concluded that a single provider would be more appropriate for PRS services going forward. Due to the ongoing pandemic, it was decided in May 2020 that an expedited competitive dialogue process would be completed to rationalise to a single, more flexible supplier. The Competitive Dialogue documents were issued on 5th June with the focus on PRS services to commence 19th November, with contract award scheduled for 14th August, this meant a 10-week period for the process to be completed (a process that would normally take 9 – 12 months).

A working group was created with members from Procurement, Service, Finance, Commercial, Heathrow AOC and the Airlines who met fortnightly. The group meeting was chaired by Commercial and the group were regularly updated with progress reports. The airlines were engaged to ensure they had input into the service requirements, SLA's and to ensure that the successful bidder was rewarded for good service and not just for providing a service. The working group were present at supplier presentations and asked to score part of the submissions, along with the HAAG who were also represented at the supplier presentations.

To ensure the most flexibility when HAL starts to recover, the services will be contracted under a Strategic Services Framework Agreement, with the first work package being the PRS services from 19th November. The flexibility this gives Heathrow is the ability to contract work under the Framework to an established supplier at agreed rates with ease and at pace.

With the commercial model that has been agreed, we will be reducing the fixed costs by over **[REDACTED]** but will deliver overall savings of **[REDACTED]** (BAFO) versus the 2019 position with the possibility this will increase to **[REDACTED]** (Based on blended engagement times) dependent on passenger volumes. This is due largely to a flattened management structure and reduced profit and overhead rates. Additionally, the variable costs will be charged as resources are deployed to ensure we pay for services used. Moreover, when additional services are contracted under the framework, we will be able to pass a benefit to the PRS contract (as others come online) as we will be able to support the operational services from one combined back office function.

7.1.5.5 Role of key stakeholders in reducing costs in H7

H7 provides an opportunity for the airline community, CAA and DfT to work with us to rethink the ways of operating at Heathrow to drive lower costs for consumers. Reviewing critical compliance and SQRB standard requirements could allow us to reimagine processes,

resulting in significant efficiency improvements whilst still meeting passenger expectations. Potential opportunities include:

- Review of control post regulation to maximise performance, moving to an overall performance and demand-based regulation, rather than granular control post requirements.
- Cargo efficiency improvements driven through both legislation and process change, such as pre-booking, introduction of airlocks, prestaging, etc.
- Changing security standards to allow for most efficient resource allocation, basing the requirements on value over the overall passenger journey, rather than the current fixed parameters.
- Sharing forecasting and operational data, to aid resource allocation, helping to match resources with the required demand efficiently.
- Promoting the use of digital and automation technologies, simplifying processes above and below wing.
- Changing boarding and turnaround processes for more efficient use of the apron.
- Explore alternative operating models for baggage, reducing the resource needs in the airport campus.

As demonstrated in this chapter, Heathrow is already at the efficiency frontier for operating costs. The main opportunities for savings have been realised during Q6 and iH7, and any additional significant gain will require further work and collaboration with key stakeholders.

7.1.6 Forecast Methodology

In the IBP we set out our robust top-down methodology for forecasting our H7 operating costs over a 15-year horizon. During Constructive Engagement we have discussed the approach at length with the airline community. The airline community have expressed concerns over the use of the drivers-based methodology, suggesting a detailed bottom-up approach would be more appropriate. We have decided to retain the drivers-based methodology but are combining this with overlays to account for material changes in costs. We continue to think that this is the most appropriate approach for forecasting our H7 operating costs, even across a five-year regulatory period, because the drivers-based methodology:

- **Is easily adaptable to different passenger growth scenarios** - It is the most robust approach to reflect the high level of uncertainty in passenger volumes in H7, a key driver of cost.
- **Is robust and evidence based** - The drivers have been developed from a robust and detailed evidence base developed by Frontier Economics⁴⁴. A bottom-up approach would require a large number of assumptions to be made which can be difficult to justify, particularly with a fluid cost base due to the requirements of any response to Covid-19.
- **Provides greater transparency** – It is easy to scrutinise the impact of the specific drivers on our cost base in different scenarios and enables easier comparison for benchmarking. In a bottom-up approach, with many assumptions, it can be difficult to see what the key drivers of cost changes are.

⁴⁴ Frontier Economics, *Developing opex and commercial revenue elasticities for H7*, October 2019.

- **Avoids spurious accuracy** – A detailed bottom-up forecast can lead to false sense of precision, particularly over a five-year time horizon. This is particularly true where there are very large degrees of uncertainty such as currently for H7.
- **Allows focus on the bigger picture** – The focus of a regulatory settlement should be that we have the appropriate overall level of operating cost allowance and cost efficiency target. As opposed to targeting costs cutting measures in specific areas.
- **Overlays highlight material changes** – The use of overlays provides details on the material changes to our cost base, those which are greater than £5m per annum or ~1% of total operating costs. Whilst there will be many smaller changes as we move through H7, both in terms of cost pressures and efficiencies, we would expect them to broadly balance out over the course of the 5-year period.
- **Is aligned with regulatory precedent in other sectors** - Other regulators such as Ofgem and Ofwat have been using this type of approach since the 1990s as they focus on benchmarking total expenditure using a top-down approach.

We have tested our forecasting methodology to review whether it would have provided an accurate forecast of Q6 performance. We used 2013 as the baseline for the forecast, removing any costs associated with expansion. We applied our drivers-based methodology, using elasticities consistent with the IBP model applied to the actual Q6 passenger volumes. We have used the KPMG⁴⁵ econometric modelling described above to reflect the efficiency gains that were required in Q6. This analysis implied a reduction of £1.80 (2016 prices) in operating costs per passenger was required over the Q6 period to move Heathrow to the frontier of efficient costs. This has been applied evenly year-on-year and across all cost categories, excluding the electricity distribution contract. Therefore, variances should be assessed at the total operating cost level. Overall, our driver-based forecasting performed well, providing a forecast within 0.6% of the outturn operating costs. The result also confirms KPMG’s view of Heathrow’s efficiency gap.

For completeness, Table 4 shows the results broken down by cost category. However, the key comparison is at the total level, with variances at the cost category level reflecting business decisions on cost management and the choices of the balance between insourcing and outsourcing of services.

Table 4: Analysis of model performance forecasting Q6 operating costs excluding expansion (Cat A + Cat B opex) (£m, 2018p)

Operating Costs (£m, 2018p)	Actuals						Variance to Model Output						
	2014	2015	2016	2017	2018	Q6 Total	2014	2015	2016	2017	2018	Q6 Total	% Q6 Total
People costs	[REDACTED]												
Operational costs excl. insurance													
Insurance													
Facilities and maintenance costs													
Rates													
Utility costs excl.													

⁴⁵ KPMG, *Airport Operating Cost Efficiency Benchmarking*, October 2019.

distribution contract													
Distribution contract	[REDACTED]												
General expenses	[REDACTED]												
Total	1,223	1,238	1,187	1,159	1,131	5,939	22	4	(9)	3	15	35	0.6%

Source: Heathrow

We have reviewed the detailed aspects of our approach. Our revised forecasting methodology, reflecting airline community feedback, is based on the following steps:

- Use 2019 as the base and efficient starting point, as agreed with the airline community during Constructive Engagement.
- For each cost category we assessed any elements that require specific treatment, identifying insurance and the electricity distribution network fee.
- Applied a short-run passenger volume elasticity to our passenger forecasts and combined with an overlay to account for costs related to terminal utilisation.
- Identified 2020 cost savings (categorised into permanent, temporary and variable) and made specific adjustments to the forecast accordingly.
- Applied specific overlays to reflect the material changes in our cost base related to our response to Covid-19, our revised surface access strategy and an option to deliver an enhanced level of passenger service.
- Adjusted costs in each category to reflect the forecast input price inflation, updated from IBP with latest data where available.
- Applied an ongoing efficiency challenge that reflects the operating cost savings that could be delivered from projects included in the £3.5bn capital plan with a Covid-related RAB adjustment, cross-checked against forecast ongoing frontier efficiency improvements.

As in the IBP, our operating cost forecast consists of the following categories:

1. People
2. Operational Costs (excluding insurance costs)
3. Insurance
4. Facilities and Maintenance
5. Rates
6. Utility Costs excluding distribution fee
7. Distribution Fee
8. General Expenses

The remainder of this section describes each step in our revised forecast methodology in more detail and sets out the changes from the approach used in IBP and BBU.

7.1.6.1 2019 Base year

In the BBU, we used our operating cost forecast for 2021 as the base year for the H7 forecast. As agreed with the airline community during Constructive Engagement, we are now using 2019 as the base year. The 2019 operating costs are publicly available in our regulatory accounts and evidence presented above demonstrates that 2019 represents an efficient starting point for the H7 forecast. Using 2019 as the base year also ensures full transparency of both the cost pressures and savings we have made during 2020 and how we expect them to evolve in 2021. Section 7.1.6.5 below sets out the cost reductions we have made in 2020

and makes clear which are temporary, permanent or those which will vary as passenger volumes grow.

In order to ensure the 2019 operating costs are representative of our baseline costs moving forward, we have made the following adjustments to those published in our regulatory accounts:

- Removed costs associated with expansion from general expenses – £1.8m (nominal)
- Removed a one-off credit from people costs - £1.9m (nominal)

In the IBP, it was assumed all workers in our supply chain would receive the London Living Wage by 2020 and was therefore included in the base year for the H7 forecast. However, the unprecedented impact of the Covid-19 pandemic has led us to delay implementation until 2022 and these costs are no longer included in the base year in full. As a result, we have included an additional £11m (2018 prices) in the model from 2022 onwards to account for the impact of all of our suppliers paying the London Living Wage from this point onwards.

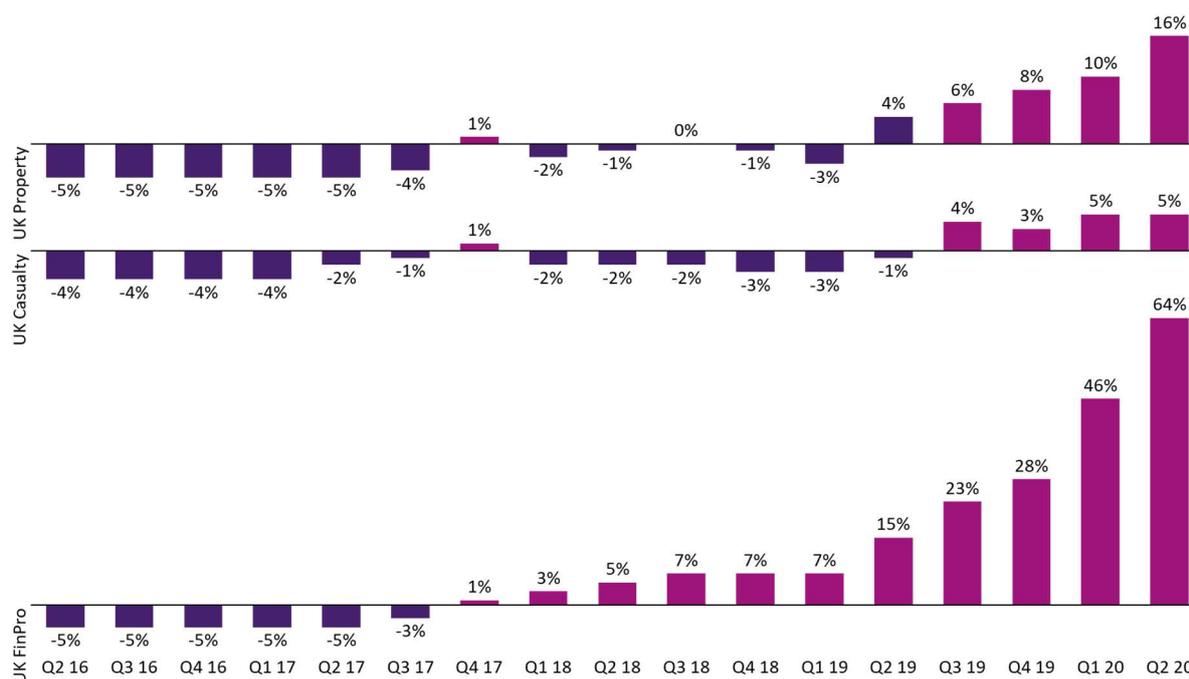
7.1.6.2 Specific Treatment of Cost Category Elements

As in the IBP, we assessed if any elements of our cost categories require specific treatment by reviewing if passenger volumes or terminal use changes are the most appropriate cost drivers. Insurance and electricity distribution fee were determined to need specific treatment.

Insurance

Our insurance costs are not directly linked to passenger volumes or changes in utilised terminal space. Therefore, we have removed insurance costs from the Operational Costs category. Insurance premiums are linked to historic events and the impact they have had on claims settlements. Tracking market conditions highlights significant quarter-on-quarter increases in premiums, as shown in the figures below for various classes of insurance.

Figure 11: UK Composite Insurance Pricing Change — By Major Coverage Line



Source: Marsh Global analytics. UK Composite Insurance Pricing Change — By Major Coverage Line

The premium increases are directly linked to the Harvey, Irma and Maria hurricanes that cost the property insurance markets over \$92bn, and several civil sanctions and litigation that cost the financial markets over \$150bn. The insurance market is currently highly volatile as the full impact of Covid-19 is unknown, with early indications suggesting over \$300bn. Overall we currently purchase around [REDACTED] worth of insurance cover annually across all classes. Our insurance costs for 2021 are expected to increase by [REDACTED] (2018 prices) compared with 2020. For the purposes of the H7 operating cost forecast, we are assuming a [REDACTED] increase per year in our insurance premiums from 2022 onwards. Based on current market conditions, as shown above, this can be considered as a conservative estimate.

Electricity Distribution Fee

The electricity distribution fee is a negotiated price between Heathrow and the UK Power Networks (UKPNS) to gain access to the power supply networks through which we receive our electricity. The contract was renewed in 2016 and forms the basis for the forecast for H7.

7.1.6.3 Short Run Passenger Volume Elasticity

In the IBP we presented the detailed evidence base used to produce an elasticity that links changes in passenger volumes to a change in total operating costs. The robust, independent evidence base was developed by Frontier Economics⁴⁶. Frontier Economics combined evidence from our historical data, benchmarking from a wide sample of comparator airports, a literature review and regulatory precedent. Frontier Economics developed a short run passenger elasticity range of [REDACTED]. The short run elasticity reflects the incremental cost changes experienced with changes in passenger volume and limited changes in

⁴⁶ Frontier Economics, *Developing opex and commercial revenue elasticities for H7*, October 2019

infrastructure. Frontier recommended using the lower range of the short run elasticity, **[REDACTED]**, as an estimate which is fit for purpose in producing our H7 operating cost forecast. This implies that, over the 5-year period, a 1% increase/decrease in passenger volumes leads to a **[REDACTED]** increase/decrease in operating costs.

Our analysis of the model performance for forecasting Q6 operating costs, shown above, demonstrates that the elasticity is appropriate for use over a five-year period of passenger growth. In section 7.1.6.6 below we compare the performance of the driver-based model with the management business plan forecast for 2020 and 2021. The analysis suggests that when there are shocks in passenger demand, in the very short term the driver-based model does not capture the time lag between falls in passenger volumes and the practical ability to implement cost-saving measures. However, once this time lag is accounted for the model remains appropriate for use with highly uncertain passenger demand, and hence is appropriate for use in H7, starting in 2022.

7.1.6.4 Cost Impact of Changes in Terminal Use

We are no longer planning on opening new infrastructure during H7. However, as we are using 2019 as the base year for our forecast, we still need to reflect the impact of changes in the use of terminal space on our operating cost forecast. In response to the Covid-19 pandemic, we have consolidated the operation into Terminals 2 and 5, reducing our operating costs. As passenger volumes grow, we may reopen Terminals 3 and 4 and need to reflect the resulting step change in our cost base. As in the IBP, we have used historical data to estimate the cost impact of changes in the use of terminal space on each of the following cost categories. However, the adjustments now must reflect that these are changes in terminal utilisation rather than a reduction/increase in actual terminal floorspace. Therefore, we have also cross-checked the assumptions against our experience to date of cost reductions from the terminal consolidation.

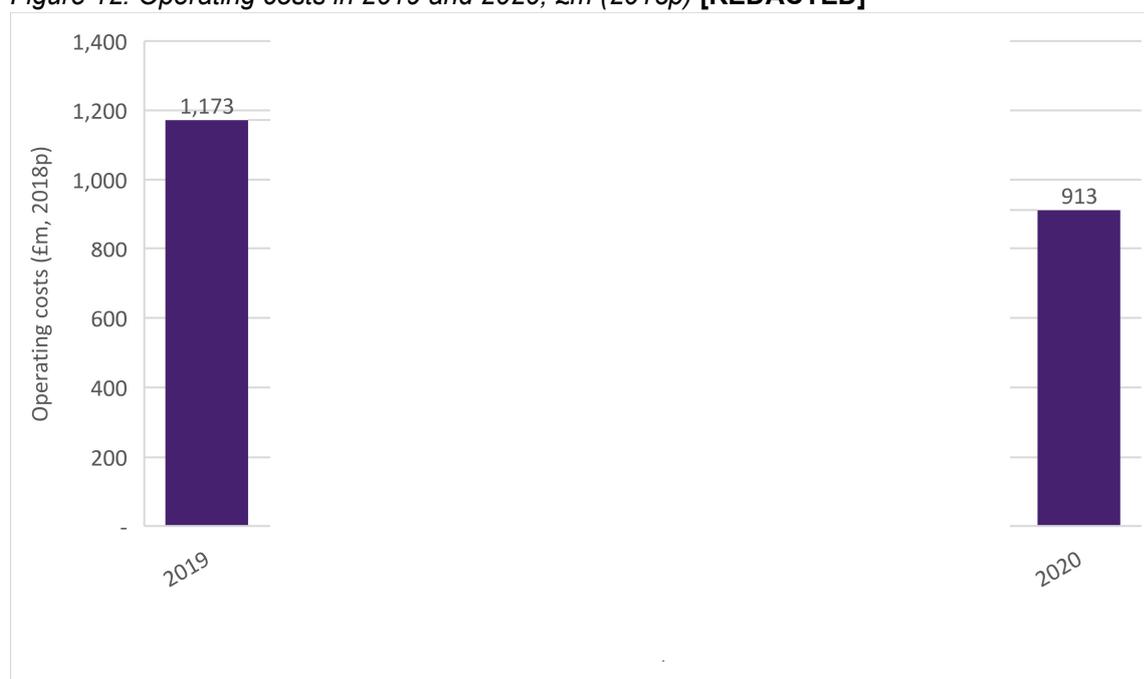
- People Costs – An estimate of **[REDACTED]** per m², based on **[REDACTED]** per m², the actual average security and engineering people costs for Terminal 2 in 2018, applied to terminal floor space reductions/growth. We have used Terminal 2 costs as opposed to the average across all terminals to reflect the most efficient cost base.
- Operational Costs – An estimate of **[REDACTED]** per m², based on **[REDACTED]** per m², the average variable operational costs directly related to terminal size from 2018-19, applied to terminal floor space reductions/growth. Examples of the type of costs used are PRM, commercial expenditure and passenger ambassador costs.
- Facilities and Maintenance – A terminal size elasticity of **[REDACTED]** based on Frontier Economics' analysis of our historical data. This implies that a 1% increase in terminal floor space leads to a **[REDACTED]** increase in facilities and maintenance costs. This is based on a statistically significant relationship Frontier identified from our historical costs.
- Rates – In the IBP, we assumed that rates would increase directly in line with terminal floorspace. This is not an appropriate assumption for short term terminal consolidation and rates are assumed to grow **[REDACTED]** in H7. The actual business rates will be set following re-valuations during the plan period.
- Utility Costs - An estimate **[REDACTED]** per m², based on **[REDACTED]** per m², the average terminal utility costs from 2018-19 rounded down to account for the temporary nature of changes in terminal utilisation, applied to terminal floor space reductions/growth.

7.1.6.5 2020 Cost Reductions in Response to Covid-19

The unprecedented fall in passenger demand resulting from Covid-19 has required us to take decisive action to significantly reduce our operating costs. This is particularly challenging as we have a relatively high proportion of fixed costs. Typically, 80% of an airport's operational costs are fixed⁴⁷ compared with only 50% for an airline⁴⁸. The relative difference in fixed costs between airports and airlines is also borne out with the level of operating cost savings that have been achieved this year. Europe's top 20 airports have cut operating costs by 22%⁴⁹ whereas European airlines have reduced costs by 51%⁵⁰.

We have delivered £260m⁵¹ (2018 prices) of operating cost reductions in 2020 compared with our 2019 costs. Figure 12 shows the contribution of key initiatives to deliver savings.

Figure 12: Operating costs in 2019 and 2020, £m (2018p) [REDACTED]



Source: Heathrow

We made the largest savings in People costs, where the following initiatives delivered [REDACTED] of savings:

- [REDACTED] from temporary pay reductions of 10-25% for all colleagues.
- [REDACTED] from the negotiated grade reorganisation with over [REDACTED] fewer roles through voluntary severance, redundancies or leavers not being replaced.

⁴⁷ <https://www.aci-europe.org/media-room/241-aci-europe-letter-to-eu-transport-ministers-covid-19-aviation-relief-programme.html>

⁴⁸ <https://www.iata.org/en/iata-repository/publications/economic-reports/airlines-financial-monitor-september-2020/>

⁴⁹ <https://www.traveldailynews.com/post/complete-airport-business-model-reset-aci-europe-charts-path-from-extreme-financial-distress-to-post-covid-19-new-normal>

⁵⁰ <https://www.iata.org/en/iata-repository/publications/economic-reports/airlines-financial-monitor-september-2020/>

⁵¹ In the BBU, the £300m identified savings were in comparison to the 2020 budget.

- [REDACTED] from the non-negotiated grade reorganisation with around [REDACTED] fewer roles through voluntary severance, redundancies or leavers not being replaced.
- [REDACTED] from the furlough scheme, where an annualised average of [REDACTED] FTE per month were furloughed, peaking at [REDACTED] FTE in May.
- [REDACTED] from other measures including reductions to overtime, bonuses and contractors.
- Offset by [REDACTED] to account for capitalisation of people costs.

Savings from the pay reductions and furlough scheme are temporary and will not continue into H7. Savings from the organisational redesign are a combination of volume driven and permanent savings. During H7 as passenger volumes grow, we will need to recruit additional colleagues. However, we have also made [REDACTED] permanent savings (when back at 2019 passenger levels) through the cost of change program, described in more detail in section 3.1.6.7 below.

We have saved £48m as a result of cost reductions from our contracts. This has been made up from a number of activities including:

- Pass through of furlough and pay cuts
- Review of services and scopes
- Closing and in cases termination of contracts where we can find alternates or do without services
- Profit and overhead reductions and holidays negotiated
- Removal of contracted or agency staff
- Reduction in working hours or sabbaticals where these have been able to be agreed with employees
- Revisions and savings as a result of KPI pauses
- Reductions in fixed costs including management teams
- Pausing of some initiatives which drove costs

The majority of the reductions in our contract costs are temporary or volume driven. However, renegotiation of the baggage contract has resulted in [REDACTED] per annum of long-term savings, as discussed in more detail in section 7.1.5.4.

We have saved a further £37m by consolidating our operations onto one runway and into Terminals 2 and 5. The costs savings are due to reduced maintenance and cleaning requirements and reduced surface access costs. These are primarily volume related savings, as passenger volumes grow and we reopen terminals these costs will return.

We have saved £69m by stopping non-essential activities in areas such as marketing and digital, retail and media, consultancy studies, VIP/fast track and noise and community. Again, these are a mix of volume related and temporary savings and as passenger volumes grow we will resume these activities as appropriate.

Finally, we forecast to receive [REDACTED] in business rates relief in 2020.

7.1.6.6 Model Adjustment to 2020 and 2021 Costs

As agreed with the airline community during Constructive Engagement, we are now using 2019 as the base year. This means we are using the drivers-based model combined with the

adjustments for terminal space utilisation to forecast operating costs for 2020 and 2021. However, we also have our management business plan (MBP) forecasts for 2020 and 2021 as published in the December 2020 Investor Report. Figure 13 below presents a comparison of the two forecasts by cost category.

Figure 13: Comparison of 2020 and 2021 RBP and MBP forecasts, £m 2018 prices

[REDACTED]

Source: Heathrow

As shown above there is generally a close alignment between the two forecasts. However, overall the RBP forecasts are lower than the MBP forecasts. This is because the elasticities in the RBP model are based on longer-term averages and therefore do not reflect the time lag from a fall in passenger volumes to implementing cost saving initiatives. This is particularly the case for people change where we are required to negotiate with our unions and to fulfil legal consultation periods. Similarly, it takes time to renegotiate contract or there may minimum conditions that prevent the full impact of reduced passenger volumes being accounted for. As we are in a highly dynamic passenger demand environment, we have carried out cost saving initiatives that still allow us to build back as passenger demand returns. If passenger demand was expected to remain suppressed in the long term more permanent cost savings would have been made. We have also chosen to implement temporary measures such as furlough and pay reductions as fairly as possible to colleagues to reduce the burden on any individuals and to retain talent.

Passenger volumes are anticipated to gradually recover throughout 2021, such that by the start of H7 we will have recovered to [REDACTED] passengers. To illustrate the points above, if we were to use this passenger volume to forecast 2021 operating costs using the RBP model, the variance with the MBP model would reduce from £58m to less than £10m.

Table 5 below provides further details on the key reasons for the model variances by cost category.

Table 5: 2020 and 2021 forecast analysis, £m 2018 prices

	RBP Model		Variance to MBP		Key reasons for variance
	2020	2021	2020	2021	
People					[REDACTED]
Operational costs excl. insurance					
Insurance					
Facilities and maintenance					
Rates					
Utilities excl. distribution contract					
Distribution contract					
General expenses					
Covid overlay					
FAC opex					
Total					

Source: Heathrow

We have applied one-off adjustments to all cost categories in the RBP model to fully align the RBP forecast with the MBP forecast. This does not have any impact on the forecast for H7 and is purely to ensure we only have one published forecast for 2020 and 2021. This means that there is a risk the approach we have taken is underestimating costs in H7, particularly in 2022 and 2023.

7.1.6.7 Cost of Change Program

In response to the cost challenges posed by Covid-19, we have worked with the airline community to agree an approach to quickly resolve the issues caused by legacy terms and conditions of employment for operational colleagues. This was agreed using a simple mechanism in line with the options available within our regulatory framework. This demonstrates the need for a regulatory environment with the right level of flexibility to allow airlines and airport to be able to manoeuvre to do the right thing in pursuit of changes for the benefit of consumers. The agreed position is summarised below:

- The upfront costs of change will be added to the RAB as incurred. Heathrow and the airline community agree that RAB is an effective regulatory construct to transfer value between regulatory periods that can be applied to certain operational expenditure cases, where an investment in achieving a structural reduction of those operational expenditures would not otherwise be possible to achieve.

- Only the actual costs will be included. Once negotiations with the trade unions are concluded in 2020, the costs will be audited and the total confirmed by an independent party.
- Heathrow guarantees to deliver a saving per annum of **[REDACTED]** of the cost of change that is added to the RAB. The **[REDACTED]** saving will be applied to each year until the cost of change is fully depreciated.
- The return on investment will be capitalised in the iH7 period, and any operating cost savings generated in iH7 will be retained by Heathrow in line with the incentives set as part of the underlying Q6 framework.
- The actual costs plus capitalised return added to the RAB in iH7 will be depreciated over 10 years from the start of H7. Heathrow will earn a return based on the prevailing WACC.
- Heathrow has agreed to pay a rebate at the end of January 2021. The rebate will be calculated once the actual costs of change are confirmed. It will be equivalent to Heathrow's return on the RAB earned against the actual costs of change up to the end of 2023. The total rebate will be shared across the airline community based on actual passenger numbers in 2019 (excluding carriers that have entirely ceased operations to Heathrow as at January 2021).
- Heathrow bears all risk on the outcome of the negotiations, and of delivering and sustaining savings throughout H7 and H8.

As negotiations are currently ongoing with the trade unions, and consultation for some colleagues, for the purposes of this plan we have assumed the cost of change is **[REDACTED]**. This assumption will be updated in 2021, when the actual costs are finalised.

7.1.6.8 Covid-19 Cost Overlay

Covid-19 has brought considerable cost implications to our operation. Enhanced hygiene and distancing requirements increase the complexity of our process and drive enhanced costs in the form of slower flows and higher resource requirements. Additional cost is borne by the emergence of new requirements that Heathrow must meet in order to remain fundamentally safe and compliant; we also know that Covid-19 has shifted consumers' priorities and the relative importance of our consumer outcomes. We have taken this into account when considering our plan for operating costs for H7.

In Constructive Engagement it was agreed with the airline community that a cost overlay will be applied to the operating cost forecast for H7 to reflect costs associated with our service response to Covid-19, while not necessarily for the cost due to increased processing times or resource needs in our business as usual operational processes. The additional costs that make up this overlay will ensure that Heathrow remains safe and compliant, and that we are also best placed to deliver the service that our insights research has shown consumers now expect in a post-Covid world.

We know that 25% of consumers have become nervous about flying as a result of the Covid-19 pandemic⁵², and that certain factors such as cleanliness have elevated perceived importance⁵³. It is therefore critical that we do everything possible to mitigate consumers' fears around travel and direct our operating expenditure according to the identified consumer priorities in the post-Covid world.

⁵² Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁵³ Join the Dots, *Passenger priorities post COVID 19*, June 2020

“Make me feel safe, confident and relaxed about air travel.”⁵⁴”

We included a high-level Covid-19 cost overlay estimate in the BBU, which has now been further refined. However, we note that these costs are highly sensitive to changes in Government policy and CAA requirements and the sooner these are known, the easier it is for us to plan appropriately. For example, we have not included any provision for the introduction of health screening processes, which would result in significant additional costs.

Even if the rollout of vaccines alongside advances in treatment for Covid-19 reduced the need for social distancing, it is highly likely that there will be ongoing additional measures needed to ensure Heathrow is safe, compliant and meets all the service expectations of our consumers in a post-Covid world. Although there is significant uncertainty in this area, for the purposes of the H7 operating cost forecast we have made the following assumptions based on our experience to date, as well as our post-Covid consumer insights:

- Safe to Fly program – The measures in our Safe to Fly programme are reflective of consumer insights, in particular cleanliness as part of the feeling comfortable and secure outcome. This includes enhanced cleaning and disinfection processes and the provision of hand sanitiser and trolley wipes. Costs are largely fixed, as the cleaning regime is time dependent rather than related to passenger volumes. However, in a mid/low passenger volume scenario there is assumed to be some substitution with business-as-usual cleaning costs. Costs will grow as terminals reopen.

“A clean, comfortable place to sit AWAY from people - and the noise, that's sanitised, where people are made to sanitise and behave in a way that does not compromise other travellers”⁵⁵”

- Additional PPE for Heathrow colleagues only – Although we were initially providing face masks for passengers, from November 2020 passengers requiring face masks have the opportunity to purchase them from vending machines or retail outlets.

“Airport staff wear appropriate PPE and always keep the appropriate distance away.”⁵⁶”

- Additional one-off costs – Reopening terminals or other additional facilities such as car parks, will incur a small one-off cost to provide screening measures, seat barriers, signage, etc. However, as these costs are relatively small, they have not been explicitly included in the cost overlay.

The table below presents the annual costs included in the Covid-19 overlay for each passenger volume scenario.

Table 6: Covid-19 Cost Overlay (£m, 2018p)

(£m, 2018p)	2022	2023	2024	2025	2026	H7 Total
Covid-19 costs	[REDACTED]					

Source: Heathrow

⁵⁴ Ibid

⁵⁵ Join the Dots, *Passenger priorities post COVID 19*, June 2020

⁵⁶ Ibid

7.1.6.9 Surface Access Strategy Overlay

The suspension of the Government’s ANPS has led us to revise our Surface Access Strategy, as set out in Chapter 7.4 Surface Access. This plan reflects the changes in operating costs associated with delivering our revised strategy, as set out in Table 7 below.

Table 7: Surface Access overlay (£m, 2018p)

Surface Access overlay (£m, 2018p)	2022	2023	2024	2025	2026	H7 Total
FAC opex	[REDACTED]					
Other SAS opex	[REDACTED]					

Source: Heathrow

7.1.6.10 Enhanced Service Overlay

With a High and Mid passenger demand scenario, we would have the option to be able to enhance service and further drive passenger demand. We have included an allowance of £25m (2018 prices) per annum to reflect the additional operating costs associated with delivering enhanced levels of service. This investment is aligned with our passenger experience proposition and will be used for efficient investment that will produce maximum experiential return on the investment, as per the guidelines shared in Chapter 3 – Passenger Experience.

The activities in this overlay are informed by our extensive consumer insights research, which has allowed us to clearly identify those investments that will deliver greatest benefit to consumers and therefore drive demand.

Activities in the overlay include:

- Service Signatures roll-out and refresher trainings to enhance our service culture and the support provided by our staff. This initiative is informed by our consumer insights synthesis, which has told us that consumers expect colleagues have the knowledge, training and resources to be able to assist them⁵⁷.
- Launch of a voice of the customer programme, enabling us to engage with our customers and capture feedback and communications in a more meaningful way. We know from our consumer insights synthesis that consumers value being engaged with and for our service proposition to respond to their individual needs⁵⁸ – the voice of the customer programme will help us to facilitate this outcome.
- Initiatives to dynamically deploy our staff to support at key points of the journey when needed. We are proposing this initiative as a result of our consumer insights synthesis telling us that consumers expect colleagues to be on hand to provide assistance in the right place, and at the right time – there are also certain points of the journey where the need for assistance is heightened, including in arrivals, connections and immigration⁵⁹.

⁵⁷ Blue Marble Research, *Consumer needs synthesis*, November 2020

⁵⁸ Ibid

⁵⁹ Ibid

- Enhancing existing services, so they are able to serve Passengers Requiring Support through the same process as any other customer in an inclusive manner, integrating the proposition rather than supplementing with extra add-ons. This is an important initiative in the context of 42% of passengers requiring support feeling that the service they received was either under or over delivering – suggesting that a more inclusive approach is needed⁶⁰.

Backed by robust consumer evidence, these initiatives are backed by consumer evidence. They represent the most appropriate and efficient way to maximise the consumer outcomes during H7 within the described capital limitations.

In our Low passenger number scenario, due to the resulting financial constraints, we would concentrate only on delivering our service response to Covid-19, removing this service overlay.

7.1.6.11 Input Price Inflation

For the IBP, we commissioned First Economics⁶¹ to determine appropriate input price adjustments to be applied to H7 operating costs, reflecting the rate at which prices for labour and materials changes over time. First Economics recommends using forecasts prepared by the Office for Budget Responsibility (OBR) and other appropriate government departments. Where available we have updated the forecasts to reflect the latest available. The table below shows the recommended nominal input price inflation forecasts.

Table 8: Nominal price inflation forecasts

	2020	2021	2022	2023	2024	2025 / 2026
Wages	3.6	3.8	3.6	3.3	3.2	3.5
Materials	2.5	2.5	2.5	2.5	2.5	2.5
Power	2.2	2.5	1.6	2.4	4.7	2.2

Source: First Economics, Frontier shift, input price inflation and productivity growth, August 2019; OBR Historical official forecasts database, March 2020

It should be noted that all these forecasts were developed before the full impact of the Covid-19 pandemic, which is still on-going. We will update the estimates, reflecting the impact of Covid-19, when new forecasts become available in 2021.

As in the IBP, the figures in the Table 8 have been weighted together in accordance with the share that each input type has within the H7 operating cost categories and applied annually. For forecast years 2025 and 2026, the average value for 2021-24 has been used with the exception of power, where an average of 2021-23 has been used to exclude the impact of the spike in costs forecast for 2024.

7.1.6.11 Approach to Business Rates

As we have very limited control of business rates, it is appropriate that we should not benefit from windfall gains from reductions in rates. Through the same logic, we should not bear the impact of any policy shift in the opposite direction. As in the IBP, we propose going further than in Q6 in line with this principle, making business rates an ORC. This will ensure 100% sharing immediately, any savings (or liabilities) with consumers. It will also provide airlines with a higher degree of transparency over measures to reduce business rate costs even as

⁶⁰ Revealing Reality, *Understanding the Airport Needs of Passengers Requiring Support*, October 2020

⁶¹ First Economics, *Frontier shift, input price inflation and productivity growth*, August 2019

government policy may shift. We therefore reflect the business rates forecast in our plan in our forecast of ORCs.

In 2020 we have forecast [REDACTED] in business rates relief and in 2021 we are expecting to receive a further [REDACTED].

7.1.7 Ongoing efficiencies in H7

Feedback from the airline community during constructive engagement highlighted the need to see a greater link between capital investment and operating cost efficiency in the plan. When determining an ongoing efficiency challenge for H7, to ensure our operating cost targets are both stretching and evidence based, there are a number of factors to consider:

- Catch-up efficiency – as discussed in section 7.1.4 we have demonstrated that we are now at the frontier of efficient operating costs and no catch-up allowance is required
- Frontier shift – an estimate of the ongoing productivity improvements in operating costs at an efficient airport
- Capital investment in iH7 – committed capital investment in iH7 that is forecast to deliver operating cost savings
- Capital investment in H7 – level of capital expenditure available in H7 to invest in projects to deliver operating cost savings

This section describes our approach to determine an appropriate operating cost efficiency challenge for each scenario, dependent on the capital plan.

7.1.7.1 Frontier shift

For the IBP, we commissioned First Economics⁶² to develop an independent and robust productivity efficiency challenge for H7. First Economics noted that the regulatory precedent of ~1% per annum productivity growth is primarily based on pre-financial crisis data. First Economics also highlighted the failure of UK and other western economies to revert back to pre-crisis levels of productivity after recovering from recession. This is a well discussed economic issue and First Economics presented evidence that this is unlikely to be a temporary phenomenon. First Economics highlighted the Bank of England February 2019 Inflation Report, that shows that the average annual total factor productivity growth for 2015-18 Q3 was 0.2% and forecasts a 0.3% average annual total factor productivity growth for 2018 Q4-22 Q1.

Since the IBP, the outlook has been downgraded. In the Bank of England January 2020 Monetary Policy Report^{63 64}, average annual total factor productivity growth for 2019 was 0.0% and the forecast growth for 2020-23 Q1 is 0.1%. Clearly this forecast is made before the Covid-19 pandemic. In their most recent Monetary Policy Report⁶⁵ (November 2020), the Bank of England judges that the Covid-19 pandemic and the adjustment to a new trade agreement with the EU will impact productivity growth and have longer-lasting scarring on the economy.

⁶² First Economics, *Frontier shift, input price inflation and productivity growth*, August 2019

⁶³ In November 2019, the Inflation Report became the Monetary Policy Report

⁶⁴ Bank of England, *Monetary Policy Report*, January 2020

⁶⁵ Bank of England, *Monetary Policy Report*, November 2020

“The MPC expects the combination of a period of lower investment and a process of reallocation to lower the economy’s supply capacity relative to what it would have been in the absence of Covid... Elevated uncertainty and tighter credit conditions are expected to reduce investment, leading to a persistently lower capital stock and productivity.”

The Bank of England also note that recent data on productivity has been very volatile, partly reflecting the impact of the Coronavirus Job Retention Scheme. Covid-19 has led to an increase in remote working where evidence appears to be mixed on the impact on productivity with an increase in worker output offset by lower collaboration. Similarly, although firms and public services have introduced innovations on service delivery increasing productivity growth there has also been increases in the costs of doing business reducing productivity.

The OBR, in their most recent Fiscal Sustainability Report, have also downgraded their productivity forecasts in their central and downside scenarios from March 2020⁶⁶, reflecting the impact of the Covid-19 pandemic. However, they also note that average earnings in the medium term are also expected to be lower, reflecting the lower levels of productivity.

It is important to note the productivity assumptions in the plan must be consistent with those for wage inflation. As such we have used the pre-Covid productivity forecasts as the basis for our efficiency assumptions to maintain consistency with the input price inflation assumptions described in the section above.

For H7 we are assuming a frontier shift of 0.1% based on the Bank of England average annual total factor productivity forecast for 2020-23 Q1 discussed above. Only by considering the most recent outlooks will we be able to produce an efficiency challenge that is achievable for the current economic environment.

7.1.7.2 Capital investment in iH7

Despite reducing capital expenditure in 2020/21 **[REDACTED]** as result of the Covid-19 pandemic we are still investing in transforming our support services efficiency through the Magenta project, as described in section 7.1.5.1. However, as the benefits are capitalisable, no adjustment to the operating cost forecast is required.

In addition to the capital investment in iH7, we have also brought forward long-term efficiency savings in 2020. As described in section 7.1.6.5 we have made significant cost savings in 2020 in response to Covid-19. **[REDACTED]** of these savings have been identified as permanent long-term savings. In addition to this **[REDACTED]** of savings have been committed as part of the Cost of Change program (see section 7.1.6.6). In a more stable operating environment these savings would have been made over a longer period of time, however, the unprecedented nature of the Covid-19 crisis has resulted in these savings being brought forward.

7.1.7.3 Capital investment in H7

Reflecting feedback from the airline community during constructive engagement, we have also considered the level of H7 capital investment available to deliver efficiencies in each scenario. If mature business cases are available for projects within the capital plan, it is possible to explicitly reflect the forecast efficiency savings within the operating cost forecast. However, the capital plan for H7 is not at that level of maturity. The two programs that will deliver operational cost savings are Efficient Airport and Security Transformation. The efficient airport

⁶⁶ OBR. *Fiscal Sustainability Report*. July 2020. Page 30.

program reflects a capital allowance with full business cases for individual projects to be developed through the capital governance gateway. Similarly, the Security Transformation program is not yet at the maturity of a full business case with robust benefit estimates. Note both these programs are only included in the £3.5bn capital plan.

An alternative approach is therefore required to reflect the efficiency savings from the H7 capital plan. Below we discuss two potential ways in which capital investment increases operating cost productivity:

1. Capital substitution – the replacement of labour for capital, for example investment in automation
2. Embodied technical change – improvements in the quality of inputs, for example investment in more efficient equipment

1. Capital substitution

CEPA were commissioned by ORR to provide estimates of Network Rail's scope for achieving efficiency gains in operating and support costs over CP5⁶⁷ (April 2014 to March 2019). When considering the application of total factor productivity growth to operating and support costs, CEPA made an adjustment to account for capital substitution as these are predominantly labour costs. CEPA note that Network Rail would need to be allowed to undertake an appropriate level of capital expenditure to achieve the labour productivity gains. Using the EU KLEMS data, CEPA calculated a range of capital substitution adjustments from 0.2% - 1.4% depending on the selected sectors and time period. CEPA also estimated that the economy-wide capital substitution effect was 0.4% - 0.5% depending on the time period considered. On behalf of ORR, Oxera estimated a capital substitution effect of 0.5% for the previous price control CP4 for Network Rail's scope for efficiency gains⁶⁸.

Europe Economics⁶⁹ were commissioned by Ofwat to assess the ongoing cost reduction that the water sector should be expected to achieve in the price control period from April 2020 to March 2025. Europe Economics applied an adjustment for capital substitution to total factor productivity estimates when applying them to wholesale base expenditure (botex), which is operating costs and maintenance capital expenditure but not enhancement capital expenditure. As botex contains some capital, Europe Economics argued it is appropriate to apply a partial capital substitution effect, unlike if apply to only operating costs where a full adjustment would be appropriate. Europe Economics estimated a partial capital substitution effect ranging from -0.3% to 0.6% depending on the selected sectors and time periods and a range of 0% - 0.3% for the economy wide partial effect.

Europe Economics also estimated a capital substitution effect for operating cost efficiency in their work for OFGEM as part of the gas distribution price control review for April 2007 to March 2013⁷⁰. They estimated a range of 1.2% - 1.5% as the capital substitution effect based on NISEC02 data from 1973 to 1999 for the whole economy and comparator sectors.

⁶⁷ CEPA, *Scope for improvement in the efficiency of Network Rail's expenditure on support and operations: supplementary analysis of productivity and unit cost change*, March 2012.

⁶⁸ Oxera, *Network Rail's scope for efficiency gains in CP4*, April 2008.

⁶⁹ Europe Economics, *Real Price Effects and Frontier Shift – Final Assessment and Response to Company Representation*, December 2019.

⁷⁰ Europe Economics, *Top down benchmarking of UK Gas Distribution Network Operators*, April 2007.

In the Bank of England January 2020 Monetary Policy Report⁷¹, ⁷²there is a forecast of 0.4% for the capital substitution effect (referred to as capital deepening) for 2020-2023 Q1 alongside the forecast for average annual total factor productivity growth discussed above.

Reviewing the regulatory precedent for capital substitution we can conclude:

- There is a basis for applying a capital substitution effect to estimates for total factor productivity when determining efficiency targets for operating costs
- The scale of the effect is dependent on the proportion of labour within the operating costs
- Determining an estimate is dependent on the time period and industry sectors considered
- It is only appropriate to apply an adjustment if there is an allowance for the required capital expenditure included in the plan

Taking these factors into account, we have used the following approach to estimate a capital substitution adjustment for H7. The capital substitution effect is the difference between growth in capital inputs and growth in labour inputs, adjusted for the proportion of capital in the total inputs and the proportion of enhancement (non-critical) capital in total capital spend. It should be noted that capital expenditure to deliver additional capacity would not be considered as enhancement capital. For the purpose of deriving a capital substitution estimate, we have assumed there would be no growth in labour inputs during H7. Growth in capital is assumed to be annual capital expenditure as a proportion of the RAB (less investment properties). Table 9 below sets out the assumptions and calculation steps. The approach is in line with that used by Europe Economics⁷³ for Ofwat.

Table 9: Capital substitution estimate for H7 (2018 prices)

Capital substitution % estimate	£2.1bn plan	£3.5bn plan
RAB (exc. investment properties) (£bn)	[REDACTED]	
Critical Capex (£bn, p.a.)⁷⁴		
Enhancement Capex (£bn, p.a.)⁷⁵		
Total Capex (£bn, p.a.)		
Growth in capex		
Operational Costs (£bn, p.a.)		
Capex % of Total Costs		
Enhancement Capex % of Total Capex		
Capital substitution % p.a.		

Source: Heathrow

For H7, we are assuming a capital substitution effect of 0.9% per annum for the £3.5bn capital plan. This estimate is at the higher end of the 0.2% - 1.5% range identified reviewing regulatory

⁷¹ Bank of England, *Monetary Policy Report*, January 2020.

⁷² Bank of England, *Monetary Policy Report*, January 2020. Page 6, Table 1B.

⁷³ Europe Economics, *Real Price Effects and Frontier Shift – Final Assessment and Response to Company Representation*, December 2019, footnote 83, page 80.

⁷⁴ Annual Critical Capex calculated as £2.1bn / 5

⁷⁵ Annual Enhancement Capex calculated as (£3.5bn-£2.1bn) / 5

precedent. The total year-on-year efficiency assumed in our base case is 1% (capital efficiency 0.9% + frontier shift 0.1%). As the £2.1bn plan contains no enhancement capital expenditure there is no capital substitution adjustment required (0.1% frontier shift only).

2. Embodied technical change

As part of their recent work for the Ofwat PR19 price control, Europe Economics argue that “A true measure of frontier shift should take into account the potential cost savings from quality improvements ‘embodied’ in the inputs used by the sector – labour, capital and intermediate inputs.”⁷⁶ However, total factor productivity estimates primarily reflect disembodied technical change that allow inputs to be converted more efficiently into outputs such as better management processes. They acknowledge that there is limited research in this area but present evidence that an uplift of up to 60% to total factor productivity estimates may be appropriate.

The Competition and Markets Authority’s provisional price control determinations for four companies that rejected the Ofwat price determinations agreed that there is a valid conceptual basis for increasing their efficiency estimate based on the EU KLEMS total factor productivity data⁷⁷. However, they considered embodied technological change as a qualitative factor due to the limited evidence available to quantify the impact.

From this we conclude there is a basis for considering efficiency targets at the higher end of identified ranges to reflect embodied technical change if the capital plan is providing investment in improving asset quality.

7.1.7.4 Efficiency assumptions in the plan

The table below presents the annual ongoing efficiency assumptions included in the plan, assuming a £2.1bn or £3.5bn capital plan, taking into account all the factors discussed above.

Table 10: Annual efficiency assumptions

	2022	2023	2024	2025	2026
IBP (For reference)	0.3%	0.5%	0.5%	0.5%	0.5%
Frontier shift (£2.1bn and £3.5bn capital plan)	0.1%	0.1%	0.1%	0.1%	0.1%
£3.5bn capital plan only (additional)	0.9%	0.9%	0.9%	0.9%	0.9%
Total for £3.5bn capital plan	1.0%	1.0%	1.0%	1.0%	1.0%

Source: Heathrow

⁷⁶ Europe Economics, *Real Price Effects and Frontier Shift – Final Assessment and Response to Company Representation*, December 2019, p7.

⁷⁷ Competition and Markets Authority, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations provisional findings*, September 2020, p177.

As shown above, assuming the inclusion of a capital plan of £3.5bn, we have included significantly more stretching efficiency targets than in the IBP and are in line with the regulatory precedent of ~1%. This reflects our response to the Covid-19 crisis to reduce the cost of operating at Heathrow for all parties and to reduce the upward pressure on the airport charge.

7.1.8 Operating Cost Forecast and Summary of Key Assumptions

Tables 11 below provides our operating cost forecast for H7. The results show that despite the cost pressures we are facing during H7, core operating costs in 2026 are £64m (2018 prices) lower than in 2019 and total operating costs are £15m (2018 prices) lower.

Table 11: Total operating costs (£m, 2018p)

Total operating costs (£m, 2018p)	2019	2020	2021	2022	2023	2024	2025	2026	H7 Total
People	[REDACTED]								
Operational costs excl. insurance									
Insurance									
Facilities and maintenance costs									
Rates									
Utility costs excl. distribution contract									
Distribution contract									
General expenses									
Total Core Operating Costs	1,173	904	936	987	1,048	1,089	1,104	1,109	5,336
Covid-19 costs	[REDACTED]								
Forecourt Access Charge costs									
Surface access strategy costs									
Enhanced service costs									
Total Operating Costs	1,173	913	947	1,029	1,093	1,135	1,152	1,157	5,567

Source: Heathrow

Reflecting airline community feedback, our revised approach to forecasting operating costs for H7 is based on a broad evidence base. Table 12 below summarises the key assumptions that have a material impact on our operating cost forecast and demonstrates why our approach is robust.

Table 12: Summary of key assumptions

Key assumption	Value	How it impacts on the forecast	Why our approach is robust
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Starting point year	2019 actuals adjusted for expansion costs and one-off exceptionals	Operating costs in the “base year” has an impact on all the forecasts as it is the starting point to which elasticities are applied	KPMG’s analysis demonstrates that we have delivered significant catch up efficiencies in recent years
Elasticity of operating cost with respect to passengers*	[REDACTED]	Short run elasticity applied to People, Operational, Utility and General Expenses cost categories.	This is based on Frontier Economics’ analysis of cost and passenger data at over 30 large airports (40 million+ pax in 2017) over the period 2001-2017. [REDACTED]
Elasticity of Facilities and Maintenance costs with respect to terminal size*	[REDACTED]	Applied to Facilities and Maintenance costs.	Frontier’s analysis of our historical costs found a statistically significant relationship for terminal size and Facilities and Maintenance costs.
Cost impacts of change in terminal floorspace usage	Change in People costs for change in terminal area of [REDACTED]/m2 Change in Operational costs for change in terminal area of [REDACTED]/m2 Change in Utilities costs for change in terminal area of [REDACTED]/m2		Based on analysis of our 2018-2019 average historical costs directly related to terminal size. We have used the most recent efficient costs and considered the temporary nature of the changes to terminal utilisation.
Rates	[REDACTED]		Actual business rates value will be as a result of re-valuations during the plan period.
Insurance costs	[REDACTED]		Conservative estimate based on current market conditions.
Electricity distribution fee contract*	Forecast based on contract		The contract was renewed in 2016 and forms the basis for the forecast for H7.
Covid-19 overlay	See section 7.1.6.7 for details		Costs based on experience to date.
Surface Access overlay	See section 7.1.6.8 for details		Surface access strategy informed by consumer insight.
Enhanced service overlay	£25m per annum		Allowance based on consumer insight.
Input price inflation	See section 7.1.6.10 for nominal input price inflation		Study completed by First Economics recommends using the OBR and other government forecasts.
Ongoing efficiency	See section 7.1.7 for details	Applied to all cost categories except distribution contract	Based on Bank of England total factor productivity forecasts and available capital investment.

Passenger numbers	Key interdependency (see Chapter 5 - Demand)
Terminal Size	Key interdependency (see Chapter 5 - Demand)

**Unchanged from IBP*

Source: Heathrow

7.2 – COMMERCIAL REVENUES

Chapter Overview

- Heathrow sets the global benchmark for airport commercial revenue.
- Our revised H7 plans are grounded in consumer research but respond to:
 - The unprecedented impacts on commercial revenue instigated by Covid-19;
 - Suspension of the Airports National Policy Statement and the subsequent pausing of Heathrow's Expansion Programme; and
 - HM Treasury's decision to withdraw the VAT Retail Export Scheme and airside tax-free sales from January 2021.
- Commercial income faces headwinds from increased digitisation and limited space per passenger, in addition to lower passenger demand and passengers' propensity to spend as a result of the financial impacts of Covid-19.
- The impact of Covid-19 on our current revenue streams and new trends emerging from consumer research means we are exploring new revenue generating opportunities, such as Forecourt Access Charging, whilst maximising revenues from those current revenue streams.
- Our plans and proposed initiatives are based on consumer research and designed not only to maximise revenue, but also to enhance our airport experience, delivering to consumer outcomes.
- These commercial initiatives, however, will only be viable with a favourable decision from the CAA with regards to a RAB-adjustment. In any other scenario we will have to cancel or defer these plans and prioritise any available investment into business continuity, neglecting commercial and experiential opportunities.
- We have set varying targets for commercial revenues based on observed, emerging and anticipated changes to demand post-Covid, as well as considering a scenario with no Covid-related RAB adjustment.

7.2.1 Introduction

Commercial revenues are a core building block in our single till regulation, helping to reduce the airport charge. In our Initial Business Plan (IBP), we published our plans for commercial revenues at Heathrow from 2022 to 2036. We presented international benchmarks of Heathrow's commercial performance. We set out the key drivers of commercial revenue. We detailed our focus for commercial revenues in H7 and how it was underpinned by consumer research, discussing the challenges we were facing.

Those challenges have now been superseded by three significant challenges which will negatively impact our revenues in H7 and beyond:

- 1) The unprecedented immediate and long-term impacts associated with Covid-19, creating inherent uncertainty for our future commercial revenues;
- 2) The suspension of the Airports National Policy Statement (ANPS) and the pausing of Heathrow's Expansion Programme; and

- 3) HM Treasury's decision to withdraw both airside tax-free sales of all non-excise goods and the VAT Retail Export scheme for all passengers from January 2021 which we expect will have a significant negative impact, which cannot be fully mitigated.

In this chapter, we set out our revised plans for commercial revenues at Heathrow from 2022 to 2026. These plans outline our response to the unprecedented impacts initiated by the global outbreak of Covid-19 in 2020 on our commercial revenue. These impacts in 2020 have materially suppressed aeronautical and non-aeronautical revenues, which will have long-lasting consequences for our commercial revenues moving into the H7 period and potentially beyond. As a result of these changes, our RBP for H7 forecasts significantly reduced revenues than previously anticipated, and a resultant knock-on impact to the airport charge.

We present international benchmarks of Heathrow's commercial performance, with full acknowledgement that the environment within which we operate has changed as a result of Covid-19 and Government policy. We set out the key drivers of commercial revenue. We detail our key focus for commercial revenues in H7 and how this continues to be underpinned by consumer research in an environment recovering from Covid-19. We provide details of our forecasting methodology for H7 based on each category of commercial revenue and how our drivers-based approach remains relevant to our forecasting following Covid-19.

7.2.1.1 Commercial at Heathrow

Heathrow's commercial offering relates to a wide range of products and services available across the airport, from car parking to telecoms and lounges to retail stores. The critically important revenue streams provided by these products and services fall within the single till regulatory framework, supporting the reduction of airport charges.

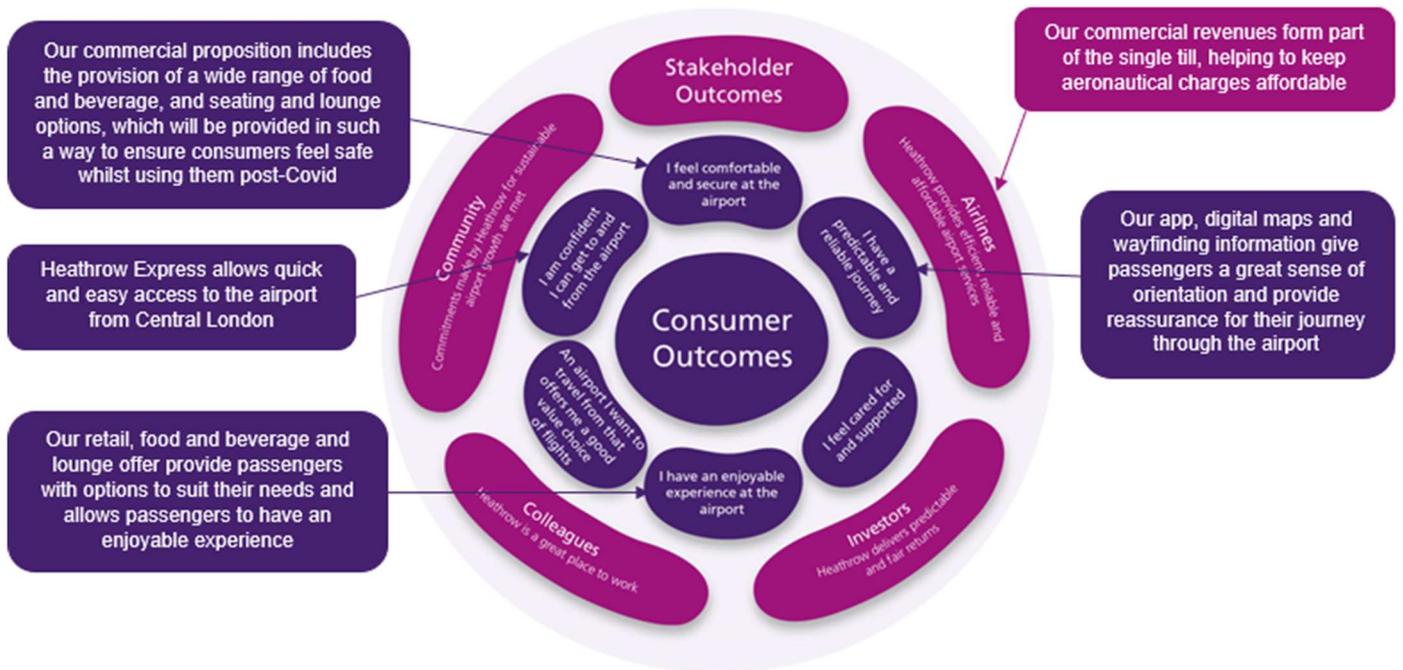
Commercial revenues, a total of £975m (nominal) in 2019¹, are a very significant component of the single till, representing approximately a third of Heathrow's total revenues. Heathrow already achieved the highest non-aeronautical revenue per passenger and the second highest commercial revenue per passenger in the independent airport benchmarking report carried out by Pragma², reflecting the quality of the commercial proposition on offer and the mix of passengers flying through the airport. Passengers recognised our success in this area, voting Heathrow to have the "World's best airport shopping" for the last 11 years in the annual Skytrax awards. Importantly, as evidenced in our consumer insights synthesis, commercial products and services do much more than simply help to reduce airport charges: they play a key role in the overall airport experience and support the delivery of consumer and airline outcomes³.

¹ *Heathrow regulatory accounts, 2019* (this takes into account retail, property, rail and other revenue categories and excludes revenues from ORCs and airport charges)

² Pragma, *Heathrow Airport Limited Commercial Benchmarking 2019*, November 2019, page 19, Figure 20

³ Blue Marble Research, *Consumer needs synthesis*, November 2020

Figure 1: Consumer Outcomes driven by Commercial



Source: Heathrow

Heathrow outperformed the CAA Q6 settlement in 2019 for commercial revenue on a total level by 1%. Commercial revenues per passenger in 2019 were £12.05 per passenger⁴.

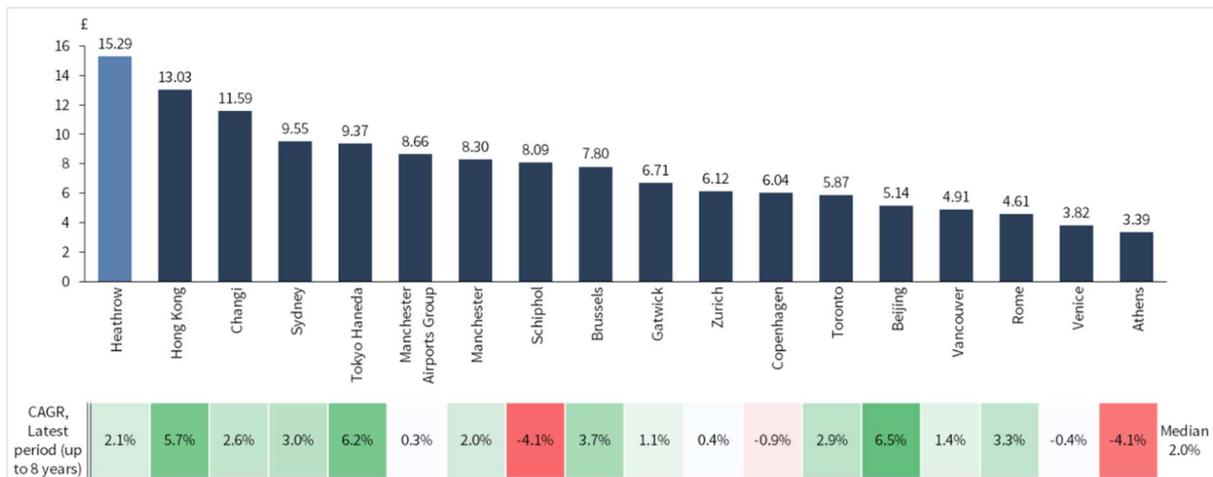
Higher than expected passenger growth contributed to this increase in revenue, alongside favourable exchange rate movements and the implementation of Heathrow management initiatives. For example, in Q6 we implemented our new 'Meet and Greet' affordable parking product, which allowed us to become both more competitive on price and achieve higher levels of car storage.

An independent benchmark study carried out in 2019 for Heathrow by retail and commercial strategy consultants Pragma confirmed that Heathrow continued to set a global benchmark for airports in generating non-aeronautical revenues⁵.

⁴ Heathrow regulatory accounts, 2019 (this takes into account retail, property, rail and other revenue categories and excludes revenues from ORCs and airport charges)

⁵ Pragma, Heathrow Airport Limited Commercial Benchmarking 2019, November 2019, page 18, Figure 19

Figure 2: Non-aeronautical revenue per passenger, latest year available and CAGR latest period



Source: Pragma

When looking at Heathrow’s retail and food and beverage revenues, Heathrow has benchmarked in second place in Pragma’s benchmark set⁶:

Figure 3

[REDACTED]

There has continued to be strong growth in Heathrow’s commercial revenues over recent years at a compound annual growth at (CAGR) of [REDACTED] for retail and food and beverage revenues and [REDACTED] for total non-aeronautical revenues⁷. Other airports, primarily in the Asia-Pacific region, have experienced greater growth in recent years.

Pragma’s review suggests that these airports are likely to be benefitting from growth in high spending Asian traffic, as well as the development of new commercial space focusing on the food and beverage offering and a unique approach to passenger experience in the presentation of the offering⁸.

The picture is different in Europe, with European airports among the lower performing airports. According to Pragma, this is likely to be due to higher volumes of short-haul low-cost carrier traffic, challenges in consumer confidence and the rise of disruptors, such as Uber and online shopping. This aligns with work carried out by KPMG, showing that airports with an increased presence of long-haul passengers are likely to see a higher spend per passenger⁹. This will be a key consideration for Heathrow going forward with the recovery so far being driven by short-haul, and long-haul expected to see a prolonged recovery period.

⁶ [REDACTED]

⁷ Ibid

⁸ [REDACTED]

⁹ KPMG, *Airport Commercial Revenue Efficiency Benchmarking*, December 2019

Benchmarking work carried out by Imperial College and Airports Council International (ACI) also highlight recent trends in commercial revenue:

- The Imperial College work cites limited growth in retail revenues among the benchmark set of airports¹⁰. Their study highlights that, in 2018, retail concession revenues per passenger were generally flat, with revenues from car parking and fashion retail generally declining across both EU and non-EU airports. There was, however, universal growth in food and beverage revenues, aligning to Heathrow's growth in food and beverage revenues as highlighted by Pragma:

Table 1: Overview of Benchmarking Performance 2018: Financial (LHR compared to Airport Benchmarking Group (ABG))

KPIs	LHR (with rank)	EU Airports	Non-EU Airports
NON-AERO REVENUES			
Retail concession revenue per pax	2 nd / 9	Flat/No Trend	Flat/No Trend
Car parking revenue per pax	3 rd / 9	Worsening	Worsening
PASSENGER SPEND			
Airside core business spend per pax	1 st / 9	Worsening	Improving
Fashion retail spend per pax	1 st / 9	Worsening	Worsening
Food & Beverage spend per pax	2 nd / 9	Improving	Improving
COSTS			
Passenger security costs per pax	3 rd / 5	Improving	Worsening
Terminal cleaning costs per pax	4 th / 8	Improving	Worsening

EU = European Airports

Non-EU = All Other Non-European ABG Airports

Trend

AIRPORT BENCHMARKING GROUP

LHR Rank

Improving

Flat/No Trend

Worsening

Source: Heathrow

- Latest ACI Europe data on non-aeronautical revenues also shows per passenger declining trends in most areas of revenue since 2013, other than food and beverage, which grew by 19.8% per passenger¹¹.

The period of high revenue growth that Heathrow enjoyed in Q6 will not continue into H7. For H7, and as a result of the impact Covid-19 has had on our business, we are expecting to see a significantly depressed commercial revenue line. The impacts of the pandemic, combined with government decisions around two periods of national lockdown, quarantine, and lack of a testing regime has materially depressed passenger volumes. This has resulted in Paris Charles De Gaulle overtaking Heathrow in 2020 as Europe's busiest hub airport and a lower passenger forecast for the next regulatory period. Additionally, we expect a significant change

¹⁰ The Imperial College Airport Benchmarking Group was established in 2017 to provide a platform for major hub airports around the world to learn from each other by comparing performance, sharing experiences, and identifying best practices.

¹¹ Latest data from ACI Europe on non-aeronautical revenue

to our passenger mix, affecting the way our consumers will engage with our commercial products and services.

The wider retail sector has experienced rapid and significant change over recent years with the rise of online shopping. Since 2009, total retail sales made online by shoppers in the UK was growing at a rate of 12.6% per year, resulting in 18% of purchases being made online in 2019 and putting pressure on the performance of physical retail¹². The impact of Covid-19 is likely to accelerate these changing behaviours. Using retail data from September 2020, research indicated a 30-75% growth in consumers who purchase mostly or entirely online across most retail categories¹³. This change in the wider retail environment sets different expectations amongst consumers regarding how they will be able to access retail. We are already seeing some examples of this preference for increasing digitisation, such as:

- The decline in Bureaux de Change transactions due to a preference for electronic payments and currency cards¹⁴; and
- The large take-up of app-based private hire vehicle operators as a surface access mode¹⁵.

These trends threaten airports' commercial models further. To capture increased consumer digital demand, airports must prioritise a significant amount of capital investment on digital. However, H7 limited capital availability means our investment and digital delivery will be phased further, which increases the threat of declining retail revenues as consumers move to other digital retailers. Reduced commercial revenues throughout the period will ultimately put more pressure on the airport charge.

Our Heathrow Express service will face increased competition from the launch of the Elizabeth line, even though it is delayed. This provides consumers with a greater choice of public transport options but will reduce our rail revenues.

In combination with the impacts of HM Treasury's decision to withdraw airside tax-free sales of all non-excise goods and the VAT Retail Export scheme from January 2021, the amount of revenue we are able to earn from airside retail will be materially reduced.

To respond to above and mitigate as far as possible the downside impact on our revenues, we will need to invest in new initiatives. Our commercial plan assumes an amount of investment to protect and minimise the decrease in revenues; unlike previous regulatory periods, we do not anticipate gross revenue growth in H7.

7.2.1.2 Changes since publishing our IBP

Removal of Expansion from our H7 Plan

Since publishing our IBP in December 2019, the ANPS was suspended following a judgement made by the Court of Appeal on the Judicial Review against the Government's policy on

¹² Pragma, *Heathrow Airport Limited Commercial Benchmarking 2019*, November 2019, page 27, Figure 33

¹³ McKinsey, [Survey: UK consumer sentiment during the coronavirus crisis](#), October 2020, Slide 10

¹⁴ 2018 banking industry figures showed that debit card payments have overtaken cash as the most popular form of payment in the UK, with the number of cash payments falling by 15%

¹⁵ Since 2015, Heathrow's surface access survey has shown the proportion of trips made by Uber increase. In 2015, 10% of journeys made by taxi/private hire were Uber journeys, rising to 36% in Q1 2020

Heathrow's expansion, leading Heathrow to pause the Expansion Programme. On 16 December the Supreme Court overturned this decision. Following this decision, Heathrow will consider the best way forward for the delivery of Expansion. However, in line with CAA expectations, our RBP sets out our plan for a two runway Heathrow in H7.

Materially, this means that we cannot expect to grow at the same levels of increasing passenger demand we had forecast over the 15-year regulatory period in our IBP. Expansion was key to unlocking new infrastructure, which would have enabled our key drivers of commercial revenue in retail, property, surface access and other services to flourish in H7. We have therefore had to take a step back and reassess our core priorities for these key drivers against our consumer outcomes for a revised 5-year regulatory period to 2026.

Covid-19

The global outbreak of Covid-19 has had an unprecedented impact on the aviation industry, obliterating traffic volumes and driving down consumer confidence in flying. Our current passenger forecasts for H7 are presented in Chapter 5 – Demand, which predict that passenger volumes at Heathrow will not reach pre-Covid levels in the period. Covid-19 has had an exceptional impact on our commercial revenue streams in 2020 and 2021. For H7, our real revenues will not recover to pre-Covid levels and we are forecasting materially reduced revenue streams than previously anticipated in the IBP.

Covid-19 has changed and will further considerably alter consumers' behaviours, expectations and attitudes towards travel. 25% of our consumers declare that they are now 'nervous flyers' but were not nervous flyers prior to the global outbreak¹⁶. These changes in consumer behaviours will have consequences for our plans for H7:

- Customers are less likely to engage in any commercial offering because of additional precautionary behaviours, as well as having a reduced propensity to spend¹⁷.
- Fear of transmission and subsequent aversion to fly is greater in older customer groups, who are traditionally more likely to spend in terminals¹⁸.
- Aversion to fly is higher for long-haul trips, and even higher towards Far East destinations, who have historically been the biggest contributors to passenger spend in terminal¹⁹.
- Customers will have new and higher expectations on cleanliness, screening processes and social distancing, which will impact our commercial proposition from iH7 onwards, particularly in-terminal, dependent on the measures we employ to meet those expectations e.g. space management, one-way flows²⁰.

Section 7.2.2.1 of this chapter discusses the importance of meeting the needs of our consumers in a changing environment in H7.

Capital constraints, caused by Covid-19, will reduce our ability to protect revenue at the pace required to keep up with the changes enforced by the removal of the VAT Retail Export

^{16, 17, 18, 19} Join the Dots, *Passengers Priorities Post COVID-19*, June 2020

²⁰ Join the Dots, *Passengers Priorities Post COVID-19*, June 2020

scheme and amendments to airside tax-free sales, as well as new consumer expectations. In particular we expect to have impaired capacity for funding new digital commercial platforms.

More generally, we are already observing changes to our passenger demographics, with growth in our short-haul market during our initial recovery, which has partly replaced demand from our long-haul market²¹. This trend is likely to continue into the H7 period, and we identify the impacts that this change in passenger demographic is having, and will have, on our revenues below.

We identify the specific impacts of Covid-19 observed by each commercial revenue stream below:

1. Retail

Covid-19 has placed unprecedented pressures on the retail industry in both high street and travel retail settings. This is due to reduced footfall, forced closures and suppressed demand as a result of a wider economic downturn. Our retail concessionaire business partners at Heathrow are no exception to these impacts and the concessionaire model means that Heathrow is a stakeholder to both the successes and failures of our business partners.

Several business partners have entered administration, requested Company Voluntary Arrangements (CVAs) or terminated contracts early, often with little or no notice and a reduced ability to meet costs associated with exiting the airport, such as de-stock and strip out. These partners include **[REDACTED]**. Many concessionaires have requested renegotiation on commercial terms, and we must balance the income impact from revised terms with sustainable occupancy levels in the short- and longer-term. Unit vacancies present a credible threat commercially, reputationally and to our ability to meet consumer outcomes. As well as a significant income impact from concessionaires exiting the airport, we must be mindful of the capital expenditure implications, where shell and core works may be required (especially if increasing food and beverage offerings) to enable units to be re-let earlier or more frequently than they may otherwise be expected to.

Heathrow is acutely aware of a wider industry shift towards digital retailing, mirroring trends in wider society. This shift away from 'High Street' retail is being accelerated by Covid-19²², which is likely to shift consumer expectations also in travel retail settings, impacting our concessionaires' operating models. Priorities and initiatives described later in the chapter address Heathrow's plan to uplift our digital capabilities.

2. Surface Access: Car Parking, Car Rental and Rail Revenues

In surface access, our commercial revenues are driven by our car parking, car rental and rail offer to consumers. The reduction in passenger demand from H1 2020 onwards has suppressed the revenues we had forecasted to attain from these products.

In 2019, our departing passenger public transport mode share was 41%. The remainder of our non-transfer passenger base chose either private car or taxi and private hire as their preferred mode for travelling to Heathrow.

²¹ Heathrow, *Passenger Profiler*, August 2020

²² Social Market Foundation, *A new life for the high street*, July 2020

The ongoing impacts of Covid-19 are demonstrated by the emerging changes observed for our passenger mode share. We recommenced our departing passenger survey for our Surface Access Profiler in August 2020 and for the months where data has been collected, we have seen a drop of more than 10% public transport share as a greater proportion of departing passengers switch to car-based modes²³. This result is indicative of the anticipated car-led recovery predicted by Heathrow and other transport operators, with passengers placing more emphasis on safety in light of the increased risk of transmission of Covid-19, and therefore choosing private vehicles to travel to the airport during the recovery period.

This is supported by our consumer research. Outputs of a survey of our consumer base Post-Covid suggest that there will be some uplift in demand for kiss and fly:

“I think to minimise risk for me and other people I'd try and get a lift from my family rather than using public transport.”²⁴

However, we are forecasting a reduction in the proportion of passengers using park and fly²⁵, particularly in the short-term, compounding the impact in our revenues. This is due to the current significant increase in kiss and fly trips we have observed since we started collecting data again in August 2020. We will continue to monitor our departing passenger mode share to assess how it will progress over time.

For our car parking products, the impacts of Covid-19 include a higher number of transactions per departing passenger compared to pre-Covid-19 performance levels, as passengers shift away from public transport modes, resulting in a significant uplift in demand for our short-stay car parks, which are located adjacent to our terminals. However, the reduction in total passenger numbers has resulted in the closure of our perimeter long-stay, business and valet car parks. As a means of managing capacity in the short-stay car parks which remained open, we uplifted our pre-book and roll-up short-stay car park tariffs.

Our consumer insights work has also confirmed a shift away from business passengers to leisure passengers with 8 in 10 passengers travelling for leisure in October 2020, compared to less than 7 in 10 in October 2019²⁶. A greater mix of short-haul destinations and higher proportion of leisure passengers, driven by airlines' consolidation of frequencies flying from other London airports²⁷ is likely to result in shorter durations of car park stay. This is likely to result in a lower average transaction value (ATV) as we compete with off-airport parking operators specialising in the leisure market.

In car rental, a higher number of car rental transactions per passenger will be driven by our passengers being more inclined to harness the safety of a private vehicle compared to public transport or taxi and private hire when leaving the airport. However, longer-term, a shift in arrivals passengers from long-haul markets to short-haul markets will result in lower ATVs. This is because, historically, passengers from our short-haul markets are more inclined to

²³ Heathrow, *Surface Access Profiler: Passenger Mode Share*, August-November 2020

²⁴ Join the Dots, *Surface Access Post Covid-19 Recovery*, August 2020

²⁵ See Section 7.2.4.3

²⁶ Heathrow, *Discovery Platform*, November 2020

²⁷ British Airways consolidated its entire London Gatwick Airport short-haul operation at Heathrow until at least March 2021

choose smaller, lower-priced products in the car rental market, resulting in up to a **[REDACTED]** lower ATV compared to our long-haul market consumers.

In rail, lower consumer confidence and social distancing measures when using mass transport modes means that there have been reductions in capacity and patronage on Heathrow Express services, as well as coach services, resulting in lower revenues. The demand impact has been particularly severe for our Heathrow Express proposition because of a reduction in business travellers, a core segment using the service. Reduced consumer confidence in utilising these modes is likely to result in depressed demand and revenues longer-term. We will ensure that the highest safety standards are achieved, particularly on our Heathrow Express proposition, encouraging those passengers who are more comfortable to remain using public transport to continue to do so²⁸. The series of delays to the through-running Elizabeth line trains will also impact our planning for H7, with these delays having led to a revised service commencement date of 2024.

Further information around the context of Surface Access can be found in Chapter 7.4 – Surface Access.

3. Property

Our rental income from property facilities, supported largely by airline use, has been negatively impacted due to reduced passenger volumes and international travel restrictions leading to an increase in accommodation vacancies. This has added significant pressure to our occupancy rate **[REDACTED]**²⁹ and the resulting increase in business rates liability.

At the time of publication of this RBP, 41 retail units have been vacated by our business partners since the start of the Covid-19 pandemic. We are also experiencing the consolidation of airline lounges and our expectation is that this will increase over the period. This will mean further pressure on our occupancy rate and suppression of property income.

The risk of business failure, consolidation of operations, rent alleviation packages and non-payment of debt are additional challenges that we currently face. These will continue to impact the commercial property sector in the foreseen future. As airlines continue to take significant losses, there is an increased risk of consolidation and hand-back of airline lounges. This could structurally reduce our occupancy rate.

In addition, the guide prices for 2021 and 2022 and subsequent years will see a substantial reduction in rental income, which translates to a potential reduction in revenue in the single till. Heathrow is considering options for mitigating this risk and is in discussions with the Airline Operators Committee (AOC).

The property development programme previously set out in our IBP has also been affected due to the change in market appetite, driven by uncertainty in the aviation sector and perceptions about future travel patterns and volumes. The scale and timings have shifted, and this will reflect negatively on the expected ground rent income and therefore our commercial property revenues in H7.

Our previous plans to invest in a Commercial Property Development Programme have been put on hold as we work through the implications of the uncertainty that Covid-19 has imported

²⁸ Join the Dots, *Surface Access Post Covid-19 Recovery*, August 2020

²⁹ Occupancy rate was calculated based on vacant space from the “Move In Move Out” schedule

to our business and our plans. Should a positive business case for one or more of the developments previously set out in our IBP become apparent within the regulatory period, we may choose to progress the capital works accordingly. Any investment in property development in the period would likely bring reduced opex and / or revenue generation benefit.

4. Marketing and Digital

Our ability to communicate with passengers and use marketing and digital communications to drive revenue has been severely impacted as a result of the pandemic. Our performance marketing budgets, which predominantly drive product and service revenue, such as car parking, have been reduced. [REDACTED]. Activity and redemption for our loyalty programme has been reduced and we have had to reduce the opening hours and service levels of our passenger contact centre.

We have focused on low cost marketing and Heathrow-owned and in-airport channels since Covid-19. This has restricted our ability to inform passengers about our new safe airport operating model and maximise income per passenger for those still travelling.

Covid-19 has also accelerated the shift to digital, both to deliver a more contactless airport journey as well as digital retail. Heathrow research shows that real time information, automated payment, pre-order and collection are all now demanded by passengers³⁰. Use of our existing digital offer has also accelerated, with significant increases in pre-booking of products and services such as car parking. At the same time, the use of services, such as digital pre-order food and beverage in terminals, has increased.

Changing passenger expectations due to Covid-19, combined with expectations of a quicker recovery of short-haul compared to long-haul, presents significant revenue risk for our offer over the next three years.

Our recovery plan for marketing focuses on driving preference for Heathrow by prioritising 'Fly Safe', then encouraging people to 'Travel Again'. We will use more efficient digital return on investment media channels, increase awareness and drive pre-journey demand for Heathrow products and services. We will also increase use of our products and services through the airport journey by promoting post Covid-19 passenger needs such as 'contactless' journeys and improved value for money.

Our response to passenger digital needs is outlined later in Section 7.2.3 of this chapter.

5. Legislative changes to airside tax-free pricing and the VAT Retail Export Scheme from January 2021

In September 2020, HM Treasury announced changes to airside tax-free sales of all non-excise goods and the withdrawal of the VAT Retail Export scheme from January 2021. The existing tax-free status is a key purchase driver among passengers, particularly in high-spend categories such as luxury and technology. At the time of publishing our RBP, the Government has confirmed it is still intending to implement these changes in January 2021. We recognise the impact these changes have on our pricing proposition. They are therefore a significant and credible threat to our income.

Our position is shared by a number of other key industry players and we are actively lobbying UK Government with other UK airports, large retailers, VAT Refund operators and UK Travel

³⁰ Join the Dots, *Passenger Priorities Post COVID-19*, June 2020

Retail Forum, who commissioned an initial assessment of the policy impact outlining significant income and margin losses at UK airports³¹. Heathrow's own research among its Horizon community found that 46% of passengers' purchase behaviour would be impacted and that non-EU passengers are less likely to shop at Heathrow in the future³².

The VAT Retail Export scheme incentivises international residents to visit the UK and spend in the UK retail sector, which benefits the wider economy and 'UK PLC'. A survey by Global Blue undertaken in September 2020 cited that 93% of international travellers will change where they do their overseas shopping and that the removal of the VAT Retail Export scheme will affect how much 95% of international travellers will spend on their next visit to the UK³³. This is unsurprising given further research showing that the removal of the VAT Retail Export scheme is likely to reduce the number of non-EU visitors to the UK by 7.3%³⁴.

In absolute terms, the threat to Heathrow will depend on passenger volumes in any given year. Based on 2019 passenger volumes, we estimate that removing tax-free shopping could lead to a significant reduction in retail income, forecast to be in the region of [REDACTED] per annum (2019 prices) in an 80.9m passenger operation. This is comprised of a [REDACTED] impact from lost revenue and unit closures as a result of losing tax-free pricing and [REDACTED] of lost revenue from losing the VAT Retail Export scheme and associated revenue driven by these refunds. A [REDACTED] loss would be expected from the impact on advertising. Conversely, a [REDACTED] gain would be expected from opportunities in our tobacco and liquor proposition by extending these to passengers to EU destinations. Calculations for these figures are outlined below:

- [REDACTED]^{35,36}
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Our analysis was built alongside an external consultancy partner, EY, and these headline findings (based on 80.8m passengers) have been sent to Office for Budget Responsibility (OBR) and are used in ongoing lobbying of UK Government. However, at time of publishing our RBP, the Government has confirmed it still intends to implement these changes in January 2021.

We have estimated the impact of the decision based on 2021 passenger numbers (37.1m). Using the same base methodology as outlined in the 80.8m passenger scenario, we arrive to the following breakdown:

- [REDACTED].
- [REDACTED].
- [REDACTED].
- [REDACTED].

³¹ York Aviation, *Initial Assessment of the Impact of Removal of the Extra Statutory Concession on Goods Supplied at Duty-Free and Tax-Free Shops*, September 2020

³² Join the Dots, *Horizon Report on VAT Shopping and FX*, November 2020

³³ Global Blue, *Global Blue Survey of International Travellers*, September 2020

³⁴ CEBR, *The Impact of Ending Tax Free Shopping in the UK*, September 2020

³⁵ [REDACTED]

³⁶ [REDACTED]

The impact of these policies remains uncertain. This is due to factors such as concessionaires holding back from signing concessionaire agreements owing to these changes, causing units to not trade for longer than may be expected. We will therefore need to revisit our forecast for H7 in our RBP updates through 2021, as we gather more evidence to underpin our forecasts included here.

Despite our efforts to mitigate, the impact to our overall income for H7 will remain significant unless this policy is reversed or modified.

7.2.1.3 Our response to these changes

The suspension of the ANPS has paused our expansion plans. Our plans to drive commercial revenue in H7 are now based on the assumption of the continued operation of a two-runway airport with associated infrastructure as it exists today within the airport's current footprint, rather than an expanded Heathrow.

The impacts of Covid-19 on our commercial revenues required an immediate reactive response, whilst in parallel, our planning commenced for a longer-term recovery. It is not only our commercial revenues which have been significantly reduced in the aftermath of the global outbreak of Covid-19. Our commercial partners, who help drive a number of our revenue streams, have also had to deal with the impacts, in some cases causing business failure and notification of early termination of commercial arrangements with Heathrow. In order to lessen the burden of these impacts on partners, we provided several support mechanisms **[REDACTED]** available to tenants locating to a different terminal following the consolidation of passenger operations into Terminal 2 and Terminal 5.

For the H7 period we have developed a commercial plan that aims to protect existing commercial revenue streams, whilst also optimising and driving efficiencies in them so that they remain resilient to severe demand shocks of similar magnitude to Covid-19. The plan also aims to implement initiatives which generate new revenue streams. These are discussed in Section 7.2.3 of this chapter.

The impacts of Covid-19 are material and will significantly suppress our commercial revenues in H7. Our revenue forecasts will remain inherently uncertain until we have a better understanding of how far passenger demand will recover, as this is our ultimate driver of commercial revenue. However, there is no historic demand shock event of the magnitude of Covid-19 on which to forecast this recovery. Equally, the impact of VAT Retail Export scheme remains uncertain until this policy change becomes effective. Therefore, we will re-assess these forecasts in 2021 through the application of new data received from our consumers and our airline community.

We are committed to continuing to leverage our considerable commercial knowledge and expertise throughout the H7 period to support our commercial performance and provide the facilities and services expected by consumers. This chapter sets out our forecast and plan to both mitigate these threats and take advantage of any opportunities in H7.

7.2.2 Key Drivers of Commercial Revenue

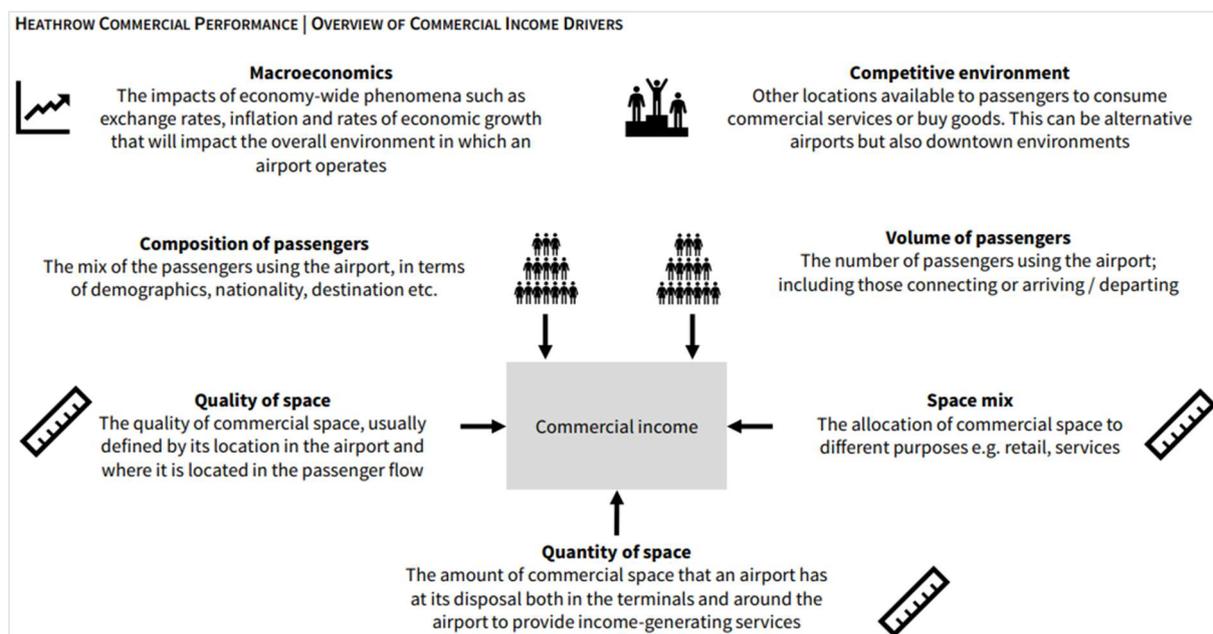
Commercial revenues include the following areas:

- Retail (Duty Free, food and beverage, specialist shops and other services);
- Property (rental income from property or office space);
- Surface access (car parking, car rental and rail (Heathrow Express)); and
- Other services (advertising revenue, fast track security options, VIP charges, etc).

To develop a robust forecast and plan for H7, we have considered the key drivers of commercial activities and how we can manage and influence these. Our understanding of the key drivers is informed by our considerable experience, the findings of the Pragma study, and the econometric analysis carried out by KPMG. Our consumer outcomes also provide crucial insight into what passengers want to see from our commercial offering to increase their satisfaction and drive participation.

The Pragma report specifically identifies the following key drivers of commercial income³⁷, based on a review of Heathrow’s historic performance and benchmarking of the commercial performance of other airports and retail destinations using publicly available data:

Figure 4: Drivers of commercial income in airports



Source: Heathrow

We face significant uncertainty in the ‘composition of passengers’ and ‘volume of passengers’ drivers. We are also operating in limited commercial space after the consolidation of operations into Terminal 2 and Terminal 5. Without a clear expectation on timescale of when or to what extent passenger profiles will recover, and without the quantity of space required to deliver a targeted commercial mix, our ability to optimise and plan the commercial estate and offer is severely compromised, impacting H7 commercial revenues and our ability to meet consumer outcomes.

KPMG’s work also points to passenger numbers as a key driver of commercial revenue, in particular for retail revenue and car parking revenues³⁸. The work identified that the proportion

³⁷ Pragma, *Heathrow Airport Limited Commercial Benchmarking 2019*, November 2019, page 7, Figure 1

³⁸ KPMG, *Airport Commercial Revenue Efficiency Benchmarking*, December 2019

of international passengers as a significant factor. Macro-economic factors, including local wages and GDP per capita, were also identified as key drivers.

Historic experience shows that ensuring we meet consumer needs and the implementation of effective management initiatives are also key drivers of commercial revenue.

7.2.2.1 Consumer Outcome and our Commercial Proposition

We recognise the role that our commercial offering plays in delivering on our consumer outcomes and delivering on these outcomes is central to our commercial plan for H7. Although the Covid-19 pandemic does not appear to have fundamentally changed the needs of our consumers, we have recognised that some priorities within the consumer outcomes have been elevated, at least in the short-term, but potentially in the long-term too.

Passengers' elevated expectations for reassurance, enhanced cleanliness and social distancing will be key considerations in the wider re-opening of the retail estate following the pandemic, as well as specific objectives contributing to easiness, such as the scaling of our Reserve and Collect proposition.

We have considered all the consumer needs relevant to our commercial proposition and have given consideration to any changes in priorities in the post-Covid context. Our commercial plans for H7 aim to deliver against these consumer outcomes. Further detail around our extensive consumer insights and our consumer outcomes can be found in Chapter 2.3 – Consumer Insights, whilst Chapter 3 – Passenger Experience brings together those insights and outlines our refreshed passenger proposition.

Figure 5: Heathrow Consumer Outcomes



Source: Heathrow

We know that if we do not offer our passengers the appropriate mix of surface access options, shops, places to eat, experiences and places to relax within the airport, it will have a negative impact on their satisfaction and enjoyment of the airport. This will ultimately have a negative impact on our reputation and commercial income, as passengers may be less inclined to engage with the offer or will choose to fly from an alternative airport.

Despite the current uncertainty in future passenger demographics and mix, we remain committed to keeping consumer needs and outcomes at the heart of our commercial plans. There are four key consumer outcomes, outlined below, that we have identified as being supported by our commercial offering.

“I feel comfortable and secure at the airport”

This outcome reflects some of consumers’ most basic human needs for shelter, sustenance and hygiene. However, it also goes beyond these fundamental human requirements, reflecting instead a wide range of facilities and services that today’s passengers expect from an airport in order to feel comfortable.

“It’s about seating while waiting, perhaps a cup of coffee and something to nibble on. It’s creature comforts.”³⁹

Key considerations in this area related to our commercial proposition include continuing to provide consumers with a wide range of food and beverage options, seating and lounge options, as well as facilities to access a range of foreign currencies. Furthermore, in the post-Covid context, these facilities must now be provided in such a way as to make sure that consumers feel safe whilst they are using them. For example, we know that consumers still want access to a range of different seating and lounge options post Covid-19, but with the additional requirement for social distancing and cleanliness as a key influence⁴⁰.

“I have a predictable and reliable journey”

We know that having a predictable and reliable journey has always been a key need for consumers, so that they are able to plan their journey in advance and to alleviate stress on the day of travel. Consumer research carried out post-Covid indicates that elements of this consumer outcome have become more elevated in their importance as a result of Covid-19. Additionally, this need is heightened for certain groups, such as passengers requiring support and families travelling together⁴¹. It is therefore important that we continue to drive initiatives that help to deliver a predictable and reliable journey, taking into consideration any changes that have taken place as a result of Covid-19.

“I expect Heathrow to make everything reliable and predictable, so I don’t have to be worried or thinking about it.”⁴²

Having a quick and easy journey is fundamentally about being able to move forwards to each next step in the journey with minimal stress, as quickly as possible. In the post-Covid world, the ability to move through the airport quickly, smoothly and safely is of even greater

³⁹ Join the Dots, *Passenger Priorities Post COVID-19*, June 2020

⁴⁰ Ibid

⁴¹ Blue Marble Research, *Consumer needs synthesis*, November 2020

⁴² Join the Dots, *Passenger Priorities Post COVID-19*, June 2020

importance to consumers⁴³. Our commercial proposition contributes to delivering on this outcome, primarily through our digital proposition, incorporating our online (web, app and mobile) capabilities for engagement and purchase of our commercial products and services. These provide a platform for effectively sharing key information with consumers (for example around our in-terminal offerings and wayfinding). We expect that technology will be adopted to provide reassurance throughout the airport journey, increasing easiness and minimising contact to ensure cleanliness. This presents commercial opportunities, such as Food and Beverage ‘Grab and Go’ and Reserve and Collect.

Ultimately, the digital proposition can be used to put consumers in a position of knowing what to expect, being able to better plan out their journeys and being enabled to navigate our terminals with greater ease.

“I have an enjoyable experience at the airport”

This outcome is centred around aesthetics, entertainment and feeling connected to life outside the airport. Whilst Covid-19 is now a factor that consumers consider as part of their airport experience, we know from our recent research that consumers still want to be able to enjoy the experiences that they have come to associate with being at the airport, and do not want to miss out on these as a result of Covid-19.

“Whilst measures to protect us post COVID-19 is critical, it would be a shame to lose the journey experience at the airport.”⁴⁴

Our commercial proposition is central to delivering these experiences for consumers, and therefore to ensuring that they still retain the ability to enjoy their time at the airport. Through providing the desired retail and experiential activities, when appropriate, we are able to give consumers a sense of place and enhance their airport experience. Although still desired by consumers, it is important to note that, in the post-Covid context, these offerings must be provided in such a way as to ensure that consumers feel safe engaging with them.

“I am confident I can get to and from the airport”

It has always been of fundamental importance to consumers that the airport is accessible, so that they are able to fulfil their travel plans. This has not changed in the post-Covid world but it is important to consider that consumers may view how they get to the airport differently from how they have previously. There is likely to now be a greater emphasis on the safety of getting to the airport in terms of potential exposure to illness, in particular for those considering public transport options⁴⁵. Research suggests that consumers will continue to prioritise accessibility

⁴³ Ibid

⁴⁴ Join the Dots, *Passenger Priorities Post COVID-19*, June 2020

⁴⁵ Ibid

when determining their airport of choice, but also place greater emphasis on ensuring that a reliable and safe surface access journey to the airport can be made following Covid-19⁴⁶.

“Basically, the airport must be easy to get to by public transport from home, because hotels, transfers and parking etc. all add to the cost of a holiday.”⁴⁷

From a commercial perspective, through the continued operation of the Heathrow Express service, we can help to deliver confidence to consumers that they are able to get to and from the airport. Importantly, we will ensure this proposition continues to meet the requirements of consumers post-Covid, with aspects such as safety and cleanliness, in addition to social distancing measures, being taken into account as required.

7.2.2.2 Passenger Volume and Mix

Passenger volume and mix are key drivers of commercial revenue, as identified in Figure 4. The more passengers who fly through Heathrow and the more appropriate the commercial offer for them to participate in, the higher the revenue the airport can achieve. Passenger mix includes factors such as demographic, destination, and reason for travel. Historically, Heathrow has benefitted from a fine balance between our business and leisure passenger demographic. However, Covid-19 has impacted this balance and our passenger mix will evolve through H7.

Different groups have different needs and purchase motivators, reflected in varying average spends and rates of engagement between offers. For example: car parking revenues are closely linked to the percentage of UK-based passengers as they are more likely to be travelling to the airport in their own car. Benchmarking from KPMG confirms that the level of car parking revenues achieved by airports is negatively impacted by the proportion of international passengers, with a one percentage point increase in the share of international passengers being associated with a 3.7% reduction in car park revenue⁴⁸.

The Pragma study found that passengers from East Asia and the UK are more likely to spend at Heathrow than those from other destinations⁴⁹. The graphs below show the indexed spend per passenger growth plotted on the y axis for different passenger groups:

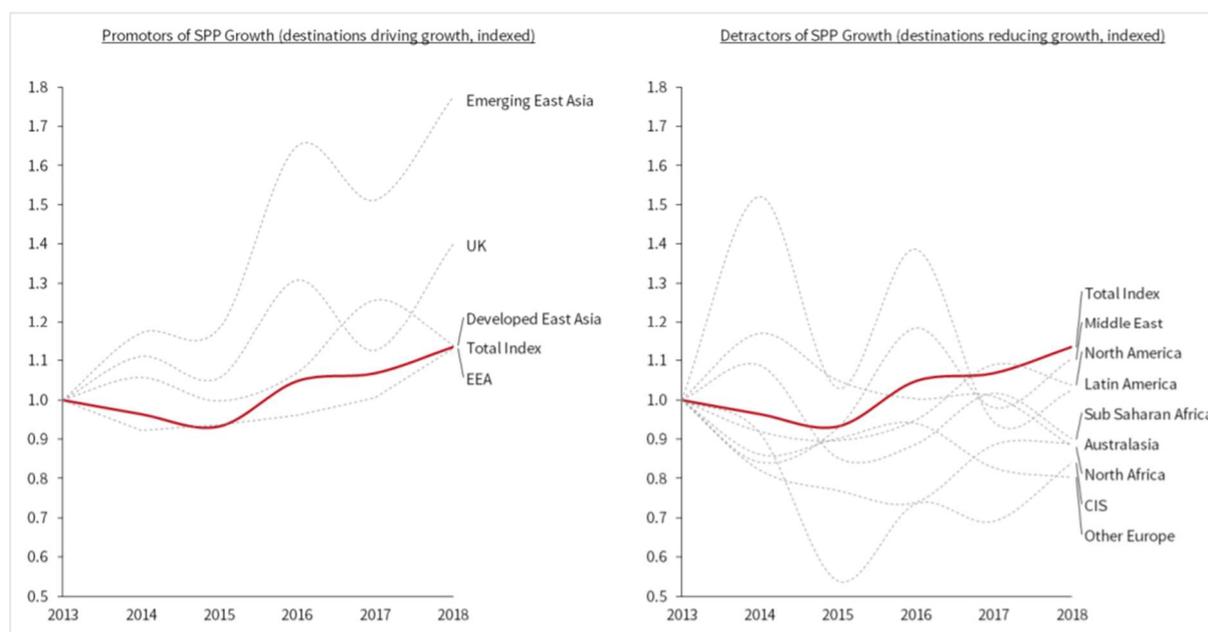
⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ KPMG, *Airport Commercial Revenue Efficiency Benchmarking*, December 2019, page 14

⁴⁹ Pragma, *Heathrow Airport Limited Commercial Benchmarking 2019*, November 2019, page 13, Figure 12

Figure 6: Promoters and detractors of Spend Per Passenger (SPP) growth, indexed



Source: Pragma

The importance of passenger mix is also evidenced by KPMG’s econometric analysis of the key drivers of commercial revenue, showing that airports which serve relatively more international passengers often have the highest retail income⁵⁰. There is also support for this proposition in academic papers, which conclude that passenger mix has a large influence on commercial revenues at airports: leisure passengers have a higher propensity to spend relative to business passengers, as do international passengers relative to domestic passengers, especially at hub airports⁵¹.

Historically Heathrow has benefitted from a passenger mix that has helped drive spend per passenger to world leading levels. However, we expect to see key passenger and destination mix changes – with a quicker short-haul recovery anticipated than long-haul – owing to the Covid-19 pandemic and associated factors which are likely to change the spend per passenger and overall commercial revenues achievable. These factors include:

- The post-Covid-19 global economic downturn and potential recession, limiting consumers’ discretionary spend and confidence in personal financial circumstances;
- Reduced consumer appetite to travel, and the move from long-haul travel to short-haul travel, certainly during the recovery period, owing to perceived or actual barriers related to personal health, financial and practical considerations (such as testing or vaccinations);
- Behavioural changes in international business travel and communication; and
- Wider macroeconomic factors such as the removal of the VAT Retail Export scheme and changes to airside tax-free sales, volatility in foreign exchange rates and Brexit, the timing or cumulative impact of which are likely to suppress demand.

⁵⁰ KPMG, *Airport Commercial Revenue Efficiency Benchmarking*, December 2019, page 12

⁵¹ Fuerst and Gross, *The commercial performance of global airports*, 2017, Table 1

These factors will make it increasingly difficult for Heathrow to achieve this past level of performance. We expect that the negative impacts of Covid-19 and passenger levels on our retail revenues will dissipate by 2024. However, the impacts of the VAT changes will continue throughout the period.

Through analysing Income Per Passenger (IPP) at a destination and category level, and normalising Heathrow's 2019 passenger volumes to 2021 passenger mix, we can evidence the impact from the change in destination mix on overall IPP and overall commercial revenues, as we see far fewer high-spending passengers travel through Heathrow in the 2021 forecast. The modelling uses our own accurate passenger mix data and comprehensive analysis is undertaken at category, month and destination levels to ensure it is valid and reliable.

This forecasted downturn impact is also consistent with wider evidence. [REDACTED]⁵².

Further evidence shows us that retail spend and commercial revenues are lower from passengers travelling on low cost carrier airlines typically associated with leisure and visiting friends and relatives (VFR) travel and short-haul destinations⁵³, and that airports with a higher proportion of these passenger types had lower unit revenues⁵⁴.

As demonstrated in Chapter 5 – Demand, VFR and leisure segments are more resilient in the face of travel restrictions and more rapid to recover than business travel, defining the change in our passenger composition, and consequent reduction in IPP from 2021. Whilst we expect these changes in passenger mix to revert to 2019 levels by 2024, when we also expect to have all terminals operational, the overall impact of this key driver to our commercial performance will be significant across H7.

7.2.2.3 Space

Asset space is a key foundation of Heathrow's ability to ensure good consumer outcomes and enable commercial revenue generation. We identify three drivers of space that influence commercial revenues.

Quantity of Space

The amount of commercial space in terminals impacts the provision of shops, services and facilities that can be provided to meet consumer needs. In Q6, growth in passenger volumes was met by increased airport and terminal capacity. The pausing of the Expansion Programme means that expansion plans to grow and increase capacity further, and therefore increase the quantity of commercial space available, will not be implemented in H7. As a consequence, there is not expected to be any fundamental increase in the quantity of commercial space during H7 beyond 2019 levels. However, Heathrow will explore opportunities for space optimisation and development where possible and where there is a positive business case to do so.

Covid-19 has dealt unprecedented challenges to retailers, resulting in some ceasing trade at Heathrow. To protect our quantity of available space (minimising vacancies), and to continue to meet consumer needs, we will work innovatively and at pace to re-let units. However, it

⁵² [REDACTED]

⁵³ Yokomi, Wheat and Mizutani, *The Impact of Low Cost Carriers on Non-Aeronautical Revenues in Airport: An Empirical Study of UK Airports*, May 2017

⁵⁴ Graham and Dennis, *Airport traffic and financial performance: a UK and Ireland case study*, 2007

remains unclear that there is demand from retailers to take on units; there is a risk of vacant units for an unspecified period into H7.

Quality of Space

Quality of space impacts how the space available can be optimised to drive commercial revenues and meet consumer needs, for example by placing retail categories in appropriate locations in relation to passenger flows and journeys through the airport. Primary space, located in the main areas of passenger flow and dwell, is more likely to generate a strong return as retail space than secondary or tertiary space, which is off primary flow, and may be located further away or on other levels. Satellites and piers are considered secondary or tertiary spaces, reflecting their lower productivity on a retail income per square metre basis than primary areas such as the core IDL. In H7, we have an opportunity to improve the quality of and how we maximise space use in targeted areas to drive an increase in retail revenue.

Space Mix

Space mix refers to how the available space is dedicated to particular categories, impacting the level of commercial revenues achieved, in particular regarding property and retail revenues, which are closely linked to the quantum of space made available for each use.

The designation of terminal space to particular categories and offers is designed in response to changes in passenger volumes and mix, consumer demand and spend propensity. Particularly with regard to retail and property space, mix is adapted in order to optimise commercial revenues and our ability to meet consumer outcomes.

The space mix within our terminals is planned to be reflective of the passenger mix associated with our respective airline customers operating within them. The temporary consolidation of flight and passenger operations into Terminal 2 and Terminal 5 will therefore impact the optimal space mix across the airport, with Terminal 3 and Terminal 4 non-operational until June 2021 and June 2023, respectively, in our Mid case scenario. To protect our proposition, and to meet our consumer needs, we will work creatively and resourcefully to optimise our space mix as far as possible within our operating terminals in H7.

Adaptability is desirable in order to respond in a more agile and less expensive way. As newer terminals, Terminal 2 and Terminal 5 are more adaptable - for example in our ability to remove walls more easily between retail units to change format and configuration. We will take steps to maximise the opportunity presented by this advantage in the face of a changing passenger mix within those terminals.

In general, our RBP assumes that we are able to re-open all terminal space by 2024, at which point we will see a normalisation of the impact of Covid-19 on our yields. Additionally, there could be opportunities to extend the cost savings of consolidation further without necessarily harming our ability to serve demand but would require further changes to airline processes in order to protect service outcomes for consumers. We will work with airlines to explore this option further in 2021. Regardless of these developments, the negative impact of lower passenger numbers and the Government's changes to VAT will continue to affect overall yields for the remainder of H7.

7.2.2.4 Management Initiatives

In addition to the external factors that drive commercial revenue, such as passenger numbers and inflation, effective and efficient management is a key driver. We need to ensure we are best placed to be resilient and ready to maximise any opportunities that may present through management initiatives. These can include investment in new facilities and retail units, as well as non-capital projects, such as contract negotiations, marketing and operating cost-driven activities like service improvements and other operational changes.

Understanding the views and requirements of consumers and airlines informs our prioritisation, decision-making and management initiatives. In addition to our programme of consumer engagement, we have held workshops with airlines to understand how we can best work together to grow commercial revenues for our mutual benefit. Our process for identifying the appropriate management initiatives is set out in Section 7.2.3 of this chapter.

For H7, we have based our forecasts on historical data inclusive of the impact of past management initiatives.

7.2.2.5 Key Interdependencies

Commercial revenue cannot be analysed in isolation from other parts of our RBP. KPMG's analysis shows that there is a link between revenues generated and corresponding amount of operating expenditure at airports⁵⁵.

Our revenue forecasts are based on the levels of operating and capital expenditure we plan to incur during H7. If assumptions or levels of expenditure change, it will impact our revenue projections and delivery for H7. [REDACTED]⁵⁶. Thus, commercial revenues or operating costs cannot be considered in isolation, as a challenge to any of these building blocks will have further consequences on the other.

7.2.3 Planned Initiatives for H7

Our H7 forecast has been developed alongside our commercial plan. The commercial plan provides an overview of how we will approach commercial revenue for H7, focusing on a number of key areas that make up our overall commercial strategy. These are described below.

7.2.3.1 Reliance on RAB Adjustment: Capital investment and return

The impacts of Covid-19 on our commercial revenues have been addressed in Section 7.2.1.2 of this chapter. These will be aggravated in a scenario without a favourable decision from the CAA in our request for a RAB adjustment. The capital investments described in Section 7.2.3.2 onwards can only be financed if we assume that the CAA implements our proposed Covid-related RAB adjustment.

^{55, 56} [REDACTED]

Our commercial capital portfolio in a given year is required to maintain assets, services and products, enhance our offering and in some places develop and deliver entirely new services to our consumers. Through efficient delivery of our commercial capital portfolio, we are delivering in the interests of consumers by both improving their experience and contributing to the single till framework.

As discussed within this chapter, Covid-19 has had a material impact on all of our commercial revenue streams. Some of these changes may be short-lived as a result of the altered composition of passengers and reduced passenger volumes, each a key driver of our revenues. However, other changes, such as those to airside tax-free sales, the withdrawal of the VAT Retail Export scheme and Brexit will require a structurally different commercial model going forward.

To respond to these short-term and structural impacts, we will need to spend capital to both maintain and protect existing revenue streams as well as to incrementally generate revenue elsewhere to mitigate against revenue that will be lost.

The strategic capital projects and dynamic initiatives outlined in greater detail below are dependent on the RAB adjustment but have been developed to be adaptable in response to changing passenger traffic scenarios and consumer expectations, whilst aiming to minimise costs and protect Heathrow's core commercial revenue streams in H7.

The exact project selection and phasing will be determined and finalised in-period through our established capital governance processes. The benefits case of selected projects will be defined to ensure that we drive the best return for capital investment and deliver our H7 commercial plan efficiently and effectively. More detail on our capital plan can be found in Chapter 6 – Capital Investment.

7.2.3.2 Passenger Experience

As outlined in Chapter 3 – Passenger Experience, we know that consumers are expecting Heathrow colleagues to be available to support and reassure them through their journey. This is particularly important in the context of observed accelerated changes in consumer expectations following Covid-19. The introduction of social distancing measures to keep our passengers as safe as possible will influence the availability of terminal space. We know from our insights work that implementing seamless social distancing measures will be closely linked to our passengers feeling cared for and safe on their journey to, through and from the airport⁵⁷.

“The ability to feel safe and secure and be able to be distanced from other people. I hate crowding normally and am even more wary of it in the current circumstances.”⁵⁸

Additionally, consumers will have heightened expectations on easiness, terminal cleanliness and screening processes.

⁵⁷ Join the Dots, *Passenger Priorities Post COVID-19*, June 2020

⁵⁸ Ibid

“Very clear markings to maintain social distancing. Numerous hand sanitizers and visible, proactive management of people’s movements through the airport.”⁵⁹

By providing passengers with an experience that fulfils their needs in a post-Covid-19 world, we expect that more passengers will either choose to fly from Heathrow or that those who already fly from Heathrow will choose to fly from Heathrow more often. We also expect that, by meeting consumer expectations on easiness, cleanliness, value for money and reassurance, passengers will enjoy their airport experience more and be encouraged to spend more in our terminals, enjoying our products and services.

Our H7 plans therefore focus on delivering on our consumer outcomes, adjusting to the new norms of the passenger journey and providing a stress-free airport journey for passengers that they want to engage in. We plan to deliver this enhanced passenger experience through initiatives such as:

- **Continuing to roll out and embed our Service Signatures:** Customer care is key, and the role that our colleagues play in it is unquestionable. We will champion service through human interactions through our colleagues and Team Heathrow using our Service Signatures. A key focus of this will be mitigating and removing stress points for passengers and providing reassurance by ensuring we notice and care, share what we know and make things better. Improving the experience and relieving pain-points in their journeys will reduce process and allow passenger to enjoy our leading commercial offering. This will be even more important post-Covid-19 in helping passengers to have enjoyable and connected experiences and increasing our commercial revenue. Living by our Service Signatures will be increasingly important as we recover from Covid-19, as they are a proven cost-efficient way of delivering better service outcomes for consumers, which will in turn increase our commercial revenues.
- **Introducing more options and facilities for passengers in our departure lounges:** We want to introduce more facilities for passengers, where there is a business case to do so. We know from our insights that our consumers’ basic comforts have always been cleanliness, comfort and safety. These priorities remain but have a different context following Covid-19. We need to ensure that any new facilities have a strong business case which will improve our service proposition to our consumers. Social distancing requirements will influence our ability to introduce new options for passengers but will allow us to explore innovative methods to implement them. We will continue to work closely with our colleagues to monitor feedback from the passengers they serve and will continue to gather proactive insight from consumers through our consumer engagement activities to ensure we are delivering what our passengers want and expect.

⁵⁹ Ibid

7.2.3.3 Retail

Heathrow uses **Space, Experience, Digital and Offer** as a four-pillar framework for retail proposals; this structure is adopted below to establish how we will mitigate against significant threats from Covid-19 and VAT and tax-free shopping changes to protect as much revenue as we can. However, we must also acknowledge that, despite our best endeavours, it is likely to prove very challenging to make up the revenue lost from these enduring and structural changes.

Space

Space refers to the quality, quantity, location and format of passenger-facing trading areas and spatial supporting infrastructure, such as stock rooms and corridors.

A note on the impact of passenger uncertainty on our space planning and operations: Uncertainty in passenger volume and mix will impact our plans for the physical retail estate. Our commercial partners may possibly be less willing to commit to capital spend, favourable commercial terms or particular contract lengths. Uncertainty around future passenger shopping expectations and behaviours may impact our ability to optimise product range and audience reach. Further, uncertainty in passenger volume and mix will impact our plans for resourcing key fulfilment partners, Reach (in-terminal shopping services) and the Heathrow Consolidation Centre (HCC). Resourcing levels can be planned with a robust forecast, but uncertainty in the phasing of this could result in inefficiencies or underperformance in service levels.

1. **Space Optimisation projects, such as repurposing Bureau/VAT Refund and Operational Office Space, Blended Essentials and new category concept formats: [REDACTED].** We expect a decline in Bureau transactions to continue with the rise of digital transactions, as previously noted in the IBP. Coupled with the end of the VAT Retail Export scheme from January 2021, these changes are significant financial headwinds to retail income at Heathrow in the coming years. Whilst there is an opportunity to mitigate some of this lost income by repurposing the units vacated into alternative small-format categories, we consider the overall impact to be wholly negative.

As noted under Covid-19 impacts for property, reduced demand has led a number of operational partners (airlines / handlers) to surrender office space. This may present an opportunity for the development of small-format retail units, mitigating some loss of property income.

The blended essentials concept was introduced in Terminal 2 in Q3 2020. The concept offers consumers complementary essentials products in a single unit, increasing efficiency of space at category and overall terminal levels, as well as offering quality and convenience to passengers. Pending successful outcomes in Terminal 2, investment across other terminals will follow in H7.

New category concept formats such as Food and Beverage (F&B) 'market halls' offer a quality consumer experience, choice and achieve higher F&B revenue.

2. **Satellites and Piers:** Satellites and piers are a subset of wider space strategy and optimisation. They have typically generated a small proportion of retail income but have a high passive dwell time for passengers. There is an opportunity to reinvigorate these spaces by introducing iconic anchor elements, testing new F&B offers and improving

the essentials offer, when appropriate and in response to a favourable passenger recovery. Doing so could enable space to be repurposed in the IDL, which until such a time should remain our focus to maximise passenger dwell and commercial revenues. Satellites and piers are also a consideration in the scaling of the digital offer, as easy collection in satellites and piers supports the 'anytime, anywhere' concept. Optimising stand planning offers an additional build on the proposals, as offers can be optimised based on the passenger demographics and destination of flights boarding in a particular area.

3. **Back of house Optimisation:** We will continue to consider back of house space such as stock rooms, dwell areas and corridors as key enablers to sustainable growth. We will continue to develop units and review unit occupation to ensure compliant, safe and efficient movements. Back of house space is a key enabler to the growth of our digital agenda, and we will develop appropriate space for storage and dwell for products purchased through buy and collect, to support the revenue that digital channels will generate.
4. **Heathrow Consolidation Centre (HCC):** Akin to back of house terminal space, the HCC is a core component of the retail ecosystem as it supports safe, compliant and efficient movement of goods. Investment such as vehicle fleet replacement and compliance works are required during the H7 period to protect retail revenue and ensure sustainable revenue.
5. **Shell and Core works:** Shell and core refers to the core structure, materials and services to enable a safe, compliant and operable retail unit. Investment in shell and core works during H7 will ensure that our retail estate continues to meet building regulations and offer concessionaires a sound trading environment. As critical compliance initiatives, these works ensure continuity of trading and therefore revenue protection.

Experience

Experience refers to the environmental factors which can support a quality retail estate and revenue, such as general ambiance of stores and commercial areas, format, design and payment methods.

A note on the impact of passenger uncertainty on experience: Our plans aim to continue to optimise experience factors in order to deliver on the consumer outcome of having an enjoyable experience at the airport. Uncertainty in passenger volumes and mix may impact our ability to optimise these at all times, for example in maintaining unit opening hours.

1. **Repeatable and Scalable Experiential Model:** As part of our space and experience strategies, investment in experiential raises Heathrow's profile as a shopping destination and increases engagement with the offer, creating a 'halo' effect on overall retail participation and driving revenue. Subject to positive business cases and winding down of Covid-19-related restrictions, including social distancing measures, we aim to offer further experiential events and campaigns around key holidays and sporting events. There is also the opportunity to monetise in several areas, such as wellness, family or relaxation experiences; our consumer insights have shown that that these factors, as part of the 'Enjoyable Airport Experience' consumer outcome, may be of

increased importance to consumers following Covid-19⁶⁰. Doing so could represent a productive source of income for secondary or tertiary commercial spaces and help to mitigate some of the income lost from the removal of airside tax-free pricing and declining revenues in traditional shops, whilst also delivering against consumers' priorities post-Covid. Additionally, we will explore opportunities to deliver experiences with our media partner JCDecaux, combining these with retail where possible, and in units otherwise temporarily empty as a result of Covid-19 impacts. This will help to mitigate loss of revenue in H7.

"With passengers experiencing a different kind of stress at airports, the need for stimulation and distraction is likely to continue to be important, along with creating a sense of welcome and a calm ambience."⁶¹

2. **Reinvigorate VIP and Premium Services** - undertaking activities such as:
 - a. Investing in the styling of the Windsor Suite in line with the new brand guidelines to enable market repositioning and a higher price point that drives revenue, as and when we see a favourable recovery in this passenger profile to ensure we realise the revenue benefits of investment. We would also seek to take steps forward to delivering 'one product, one price', whilst working collaboratively with stakeholders to maximise slot capacity opportunities for General Aviation, recognising that a downturn in overall traffic may present General Aviation opportunities not usually available at Heathrow.
 - b. Moving to a cost recovery model for Fast Track in all terminals, which allows us to focus on growing incremental Fast Track revenues through direct B2B and B2C sales streams.
 - c. Assessing and progressing with a porter service of the future which has a more competitive cost base and delivers higher levels of customer satisfaction and revenue⁶².
 - d. Growing the Meet and Assist offer through targeted business development activities aligned with the Heathrow VIP sales and distribution plan. Aligning the two products as complimentary, not competitive to one another.

Digital

Digital refers to our online (web, app, mobile) capabilities for engagement and purchase of our commercial products and services. Consumer attitudes and purchasing behaviours are increasingly shifting towards digital channels and away from physical retail participation.

"Do they really not have an app? We only use smartphones."⁶³

Covid-19 is expected to accelerate this trend, owing to additional measures announced in physical retail settings. Investing in our digital capabilities is critical to capture future demand

⁶⁰ Blue Marble Research, *Consumer needs synthesis*, November 2020

⁶¹ Join the Dots, *Passenger Priorities Post COVID-19*, June 2020

⁶² Join the Dots, *Porter Service research*, July 2019

⁶³ Join the Dots, *Heathrow 'Future of Online Retail' Research*, November 2018

from digital channels and protect revenues from declining participation in the physical retail offer. The removal of airside tax-free pricing, a key purchase driver in the physical retail estate, places further importance on the role of digital to offer an extended range of categories or value-added services, such as personalisation.

1. **Improving our digital retail proposition**, as noted further under *Digital Transformation*.

In summary:

- a. An improved 'buy and collect' proposition will deliver digital payment and a seamless passenger shopping journey. We aim to offer a broader range of products for pre-purchase online, including 'Virtual Retail' offering ranges from retailers who do not have a physical presence at Heathrow. This enables us to sell a broader product mix and onboard retailers less expensively, to the benefit of consumers. The 'buy and collect' proposition will be supported by digital payment capability, single-sign-on account management and quality collection locations in each terminal. Investment in these capabilities will drive incremental revenue and mitigate against declining engagement with the physical retail offer.
 - b. Supporting our digital proposition with improved fulfilment capability through investment in warehousing space for storage and distribution. This will enable cross-terminal shopping, where passengers will benefit from having access to products sold in outlets across the airport, and in-terminal delivery, including to lounges, piers and satellites.
2. **Explore third-party partnerships:** Payment providers such as American Express, Alipay and WeChat offer a significant opportunity to build pre-awareness of Heathrow retail among passengers through their wide reach and number of touchpoints. Partnering with these providers would support retail revenue by raising awareness and increasing the ease of transaction, potentially increasing conversion rate. Airlines' digital touchpoints, such as in-app check-in and seat selection, offer an opportunity for pre-engagement with the retail offer, enabling consumers to review products and buy before travel. Offering this awareness ahead of the journey is likely to increase passengers' share of spend on airport (versus High Street or home delivery), driving incremental retail revenue. There is an opportunity for Heathrow and airlines to partner on an affiliate basis to share the incremental commercial benefit.

Offer

Offer refers to the products and services that we sell to gain commercial revenue. Our retail offer and category mix are informed by our category space model and trend analysis. A key input into the model is the passenger forecast (volume and mix). Uncertainty in passenger mix, and the timeline and degree to which passenger groups will recover, impacts the agility with which we can adapt to an optimal product offer. The loss of airside tax-free pricing, as a key purchase driver and unique selling point (versus High Street settings), will be a key influence in the evolution of our offer in H7 as we attempt to mitigate against the income loss as a result of this legislative change. Additional factors, such as Brexit, changes in the international aviation market and our competition will also shape our offer.

1. **New Categories and Brands:** We will explore the opportunities presented by new and emergent categories where consumer demand is identified, such as Athleisure or key

F&B needs, such as Vegetarian and Vegan, to gain incremental revenue. In doing so we will consider the influence of 'new normal' demand arising from the Covid-19 period, such as the home exercise market, and how we can represent this offer and gain income from a suitable commercial model on-airport. As a main purchase driver across a number of categories, we will also seek to reinvigorate and curate the Best of British Gifting offer through partnerships with iconic British brands, institutions and retailers. An opportunity presented by our Digital agenda is to introduce new categories and brands that do not trade on the airport through our 'buy and collect' proposition. This balance must be considered carefully in the context of challenging physical trading environment for on-airport retailers following Covid-19.

2. **Value proposition and High Street pricing:** Post Brexit, we will review value pricing and value proposition for consumers and the messaging to support this (starting in 2021 but continuing into H7). We know from consumer insight, and as noted in Chapter 3 - Passenger Experience, that choice and value for money are key factors for consumers. Factors such as Covid-19 and a resultant economic downturn are likely to impact passengers' sensitivity to price and the price elasticity of categories, so a review of pricing is critical to protect share of passengers spend (versus High Street) and our commercial revenue. Uncertainty in passenger volumes and mix variables will impact the agility with which we can work with concessionaires to secure the most appropriate product ranges and price points.
3. **Offer Promotion:** Our retail proposition is closely supported by marketing and digital activities to promote our offer. Uncertainty in passenger volume and mix will impact our ability to undertake optimal promotion activities.
4. **Media Asset Replacement:** We plan to make significant investment in our media estate during H7. Media assets typically have a lifespan of five years and replacements are required at end of life to minimise maintenance and engineering operating costs and ensure continuity of income from our media partner JCDecaux. We have already pushed our lifespan to seven years on many assets, so replacement is critical for revenue protection during this period. There is also a reputational impact as advertisers will not want to buy advertising on broken or temperamental assets. Key projects include the replacement of Digital Airport Panels (DAPs), i-Vision screens and Carousel Airport Panels (CAPs).

7.2.3.4 Digital Transformation

Current Status

Prior to the global outbreak of Covid-19, we were removing legacy systems to bring our commercial digital proposition into the 21st Century. Our original programme was temporarily paused due to the impact of Covid-19 on our capital portfolio. Some of the legacy passenger digital experience still remains.

As part of our Covid-19 response to support passenger and revenue recovery, we pushed our digital offer as much as we could with our current capability, guided by the consumer insights gathered in the wake of Covid-19. This included an improved 'contactless' in-terminal pre-order click and collect F&B service, an improved mobile app to guide passengers through their journey and keep them reassured and safe, as well as restarting our retail online 'reserve and collect' service.

“...takeaways are great but it means more packaging, and more virus particles on the packaging. I'd really like food to be ordered on the Airport app and it be delivered to the gate I'm sitting at.”⁶⁴

We know consumers and passengers are now more digitally demanding post-Covid-19. Retailers such as John Lewis expect a 50% increase in digital channel share in the next year⁶⁵. Our own passenger research shows a demand for ‘contactless’ solutions like ‘click and collect’⁶⁶ and early recovery shows a significant shift to digital booking already. Digital readiness will therefore be key to our efforts to recover from the impacts of Covid-19 across our commercial revenue streams.

Recovery Plan

We have two solutions built into our recovery plan in marketing and digital. Our first solution is to **Finish our Digital Foundations**. We will continue to replace legacy systems in order to provide the security and seamless experience passengers expect post-Covid-19. Secondly, we want to **Accelerate Digital**. We will use the recovery period following the outbreak of Covid-19 as our chance to double our efforts and transform faster than before and therefore, to deliver a market leading digital proposition for passengers over the next three years.

Key Deliverables

1. **Digital and Retail Foundations:** We want to provide an improved retail ‘buy and collect’ offer to deliver a seamless passenger shopping journey and a contactless retail experience, aligned with the post-Covid needs of consumers. This will be supported by enhanced digital payment capability, making buying from multiple retailers across airport much easier. As part of this, a new eCommerce platform will provide passengers with an easy to use ‘One Heathrow’ service and provide improved data management and My Account capability. A new mobile app will be developed, which brings a personalised and real time experience to each individual passenger through their end-to-end airport journey.
2. **Retail Fulfilment:** We want to provide a new in-terminal fulfilment and warehouse offer to enable ‘buy and collect’, as well as cross-terminal retail shopping. We also want to encourage the addition of new virtual retailers, who will not need a physical presence in-terminal. Setup costs will be less expensive than physical stores, which will increase retail range, breadth and allow both smaller and UK brands to access and benefit from Heathrow’s passengers. This will support an extended in-terminal retail delivery offer including in lounges, satellites, piers and gates.
3. **Continuous Improvement:** We will invest in a continuous development operating model for digital once we have completed the rebuild of legacy systems. This will provide ongoing incremental improvements to our offer based on passenger feedback.

⁶⁴ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

⁶⁵ John Lewis Partnership, [Unaudited results for half year ended 25 July 2020](#), September 2020

⁶⁶ Join the Dots, *Passenger Priorities Post COVID-19*, June 2020

Improvements will include more multilingual support for passengers, personalisation, eCommerce merchandising, extended digital payment capability, improved use of digital service and passenger support channels and improved ability to sell our products and services via digital third parties.

4. **Retail Loyalty and Data:** We will also refresh our Heathrow Reward loyalty programme, based on passenger feedback. This will provide more reasons to visit and shop at Heathrow, increasing income per passenger, as well as being built on a single data technology platform which will be more efficient.

7.2.3.5 Commercial Property

Our overall approach to H7 is to keep space let, maximise income and mitigate business rates liability from vacancies. There are four areas of focus:

1. **Maximise occupancy and rental income:** This will be delivered through re-letting and targeted investments for the refurbishment and creation of spaces suitable for re-letting. These investments are critical to maintain income and billing.
2. **Developing passenger focused facilities:** Property provides a number of passenger-facing products, for example terminal connected hotels, independent lounges, and business centres. These products enhance the passenger experience, as well as generate income for the single till. We will look to maintain and where appropriate expand these products as part of strategy to let space and maximise income.
3. **Long Term Operational Facilities:** We will consider the purchase of essential operational leased buildings where it drives a lower long-term facilities cost.
4. **Commercial Property Development:** A number of sites have been identified for opportunistic development when the conditions are right for delivering value into the regulated business. This may or may not be delivered in the H7 period.

Given the economic circumstances, the focus on H7 will be on managing the vacancy rate and ensuring we maximise income opportunities as terminal space becomes available.

7.2.3.6 Surface Access

Surface access refers to all the ways in which passengers, visitors, colleagues⁶⁷ and goods travel to and from Heathrow. This includes travelling to or from Heathrow by public transport, taxis, private hire vehicles, cars, lorries, walking and cycling. It does not include trips by aircraft, for example transfer passengers.

How people travel to and from Heathrow is critical for the airport's operations and we are committed to maintaining and where possible improving the range of available travel options, as well as the quality of each individual's experience. In H7, this will be central to influencing

⁶⁷ A colleague is defined as a person working within the airport boundary or travelling to the airport for employment within the aviation industry whether they are directly employed by Heathrow Airport Limited or not.

and achieving our outcomes, “I can get to and from the airport” and “I have a predictable and reliable journey”.

“Passengers want to feel ‘in control’ of their journey from start to finish, this is even more important to passengers right now.”⁶⁸

In surface access, our commercial revenues are driven by our car parking and car rental products and the operation of Heathrow Express, the heavy rail link between London Paddington and Heathrow Terminals 2, 3 and 5. We have described the impacts of Covid-19 on these revenue streams in Section 7.2.1.2. For H7, we have identified a number of opportunities which aim to protect the revenues generated by each of these streams, as well as to provide new sources of income including via the implementation of innovative techniques through novel technologies, such as the proposed Forecourt Access Charge.

Further details of our Surface Access plans can be found in Chapter 7.4 – Surface Access.

Car Parking / Car Rental

For our car parking products, we want to be ready for the changing passenger profile during our recovery period, initiated by the impacts of Covid-19. A greater proportion of our passenger profile being leisure, rather than business, as well as the shift from long-haul to short-haul destinations by our airline customers during our recovery from Covid-19 offers us an opportunity to rebrand our car parking products. This includes implementing changes to our current ‘long-stay’, ‘short-stay’, ‘business’ and ‘valet’ products.

In H7, we do not anticipate that the overall provision of car parking capacity for our passengers will change. However, given that we have forecast that passenger volumes will not return to 2019 levels until the back-end of H7 in the High scenario, or at all in the Mid and Low scenario, we will consider opportunities that find alternative uses for car park space which remains vacant and non-operational in line with suppressed demand. These alternative uses will be implemented on the basis that they are able to secure fixed revenue streams without restricting our provision of car parking for our passengers. Our passenger car parks will retain the ability to provide capacity in line with passenger demand.

Other initiatives we are considering in support of our car parking and car rental revenues in H7 include:

- The implementation of cost-efficient improvements to our Authorised Vehicle Area, which is the designated waiting area for private hire vehicles that we introduced in 2016.
- [REDACTED].
- [REDACTED].

⁶⁸ Join the Dots, *Surface Access Post COVID-19 Recovery*, August 2020

Heathrow Express

Heathrow Express offers a dedicated rail service between London Paddington and Heathrow Terminals 2, 3 and 5. Heathrow Express is well regarded by passengers and scored the highest rating for passenger satisfaction in the 2019 National Rail Passenger Survey, at 96%⁶⁹. We continued to operate a dedicated Heathrow Express service through the 'lockdown' periods in order to provide a travel option to those passengers and colleagues for whom it was critical to travel between, to or from the airport from central London. The provision of this service will continue to be an important surface access offer until at least 2028, when our operating licence is due to expire. We will ensure that it continues to provide the best possible customer experience and supports people wanting to travel quickly to the airport from central London.

As discussed in Section 7.2.1.2 of this chapter, Covid-19 will suppress demand for mass transport modes, including Heathrow Express. In addition to this, the changing passenger mix from a business to a leisure demographic will further impact demand on our service proposition, as a core passenger element of Heathrow Express' market are business travellers commuting between Heathrow and central London. Growth in agile working practices adopted by businesses following Covid-19⁷⁰ and the expected operation of full Elizabeth line services from 2024 will abstract demand from Heathrow Express and significantly impact both our passenger volumes and yield. We also remain acutely aware of the impact that 'ride-hailing' apps will continue to have on our passenger mode shares, specifically in the private vehicle mode category, and the increased competition this presents for Heathrow Express.

We are therefore considering ways in which we can protect revenues generated by Heathrow Express and then incrementally build on in H7 dependent on observed passenger demand. The introduction of a new, dedicated fleet of Class 387 trains for Heathrow Express by March 2021 will improve our proposition to our consumers. [REDACTED].

Heathrow Express will also continue to explore ways to iteratively implement innovative technologies that put Heathrow Express at the forefront of consumers' considerations when choosing a surface access mode to Heathrow.

Our current Heathrow Express track access rights and services agreement with GWR will expire in 2028; [REDACTED].

Forecourt Access Charge

In 2021, we are proposing to introduce a Forecourt Access Charge for private vehicles, taxis and private hire vehicles. This will levy a small charge on these vehicle types at terminal departure forecourts only and at a significantly reduced level of charge compared to that proposed in our Surface Access Proposals within the IBP. In the UK, nine out of the ten largest airports by passenger volume have, or are publicly committed to introducing, some form of road user charge, with Heathrow being the only exception⁷¹.

⁶⁹ Transport Focus, *National Rail Passenger Survey: Main Report*, Autumn 2019

⁷⁰ Felstead, A and Reuschke, D, *Homeworking in the UK: before and during the 2020 lockdown*, August 2020

⁷¹ Publicly available information obtained from airport websites (Belfast, Birmingham, Bristol, Edinburgh, Glasgow, London Gatwick, London Luton, London Stansted, Manchester), November 2020

This will become a new revenue stream for Heathrow, and therefore, there are many considerations still to be had in the design of the final scheme, including the regulatory treatment of revenues.

Further details of this proposed initiative are contained with Chapter 7.4 – Surface Access.

7.2.3.7 Aviation

Industry Initiatives

Across the industry, Covid-19 has brought unprecedented long-term challenges. A key consequence of these challenges is that the aviation industry is changing quickly and, as it does, unique opportunities are created within an agile but constrained market.

For example, in the acute phase of the Covid-19 crisis, Heathrow has created new opportunities for our airline partners, helping many consolidate their operations at Heathrow, or enabling them to trial new Heathrow-based routes. Where capacity exists, Heathrow has also welcomed new airline partners to our runways, opening up new commercial opportunities for airlines and providing a wider mix of passengers than before.

Heathrow will seek to carry forward these initiatives to maximise industry recovery and growth.

Pricing

Ultimately, long-term recovery will be secured through stimulating and stabilising passenger volumes, whilst retaining our focus on sustainability through attracting the cleanest, quietest fleet. These ambitions will sit at the heart of our approach to aeronautical pricing: to attract passengers, while maintaining responsible investment in our passenger terminals and operational facilities. We will do this while maintaining a safe, reliable operation which balances service and affordability, following our passenger experience principles to deliver consumer outcomes.

Heathrow will continue to explore the efficacy of incentive schemes to drive passenger growth and is open to discussions with the airline community on the best way to shape future incentive schemes to meet that objective.

Cargo

Heathrow is the UK's most valuable import and export trade centre with £140.9 billion of goods passing through in 2019; almost 50% more than the combined value of the ports of Felixstowe and Southampton at £95.2 billion.

In 2019, 40% of the UK's entire export trade, representing 62% of all airfreight, used Heathrow runways.

Cargo generates direct and indirect revenues for Heathrow, our airline partners, handlers, forwarders and the wider local community. The infrastructure surrounding Heathrow owned and operated by our business partners supports many other airports' cargo operations.

2020 has proven that cargo provides resilience to the entire economic chain at times of slow down and will be a key instrument in re-establishing Heathrow as a leading global airport as the UK recovers from Covid-19. In the next regulatory period, Heathrow will seek to improve its competitive cargo offer.

Heathrow Cargo is unique in structure amongst global airports

Heathrow freighters represent only 0.5% of all runway movements and only 7% of total cargo capacity compared to Amsterdam-Schiphol (AMS) at 56% and Frankfurt (FRA) at 57%⁷². This means that 95% of all cargo at Heathrow travels in the belly hold of a passenger aircraft. In 2020, Heathrow lost its position as the second largest cargo airport in Europe, behind FRA to AMS, despite recovering strongly following the first peak of the pandemic.

Cargo at Heathrow has a symbiotic relationship with passenger operations, both feeding and relying upon the passenger network. This synergy with the passenger network means cargo supports passenger fares and smooths airline revenues, but also means it is vulnerable to passenger declines. Falling passenger demand in 2020 meant most major revenue-earning routes were dependent on cargo but also that cargo capacity was most impacted on our highest frequency passenger routes, such as transatlantic routes.

Heathrow is also unique amongst competitors in having no directly-owned cargo infrastructure resulting in us lacking the insight driven by the data that direct ownership would provide.

Heathrow Cargo will drive a faster recovery of the Heathrow long-haul passenger network

Out of necessity, airlines operating from Heathrow were amongst the quickest in the world to adapt to preighter (passenger aircraft carrying cargo only) flying, which now represents circa 60% of all cargo tonnage flown. The airline revenue from cargo allows many passenger routes to remain economically viable despite low passenger loads. **[REDACTED]**.

Airports and Airlines offering better cargo propositions will benefit

We want cargo at Heathrow to move quicker, smoother and with more control. To achieve this, our initiatives will pursue ever-improved cargo security, data and insight growth to maximise value and target investment, faster airfield access to speed up flow of cargo, and legislative change to modernise cargo flow and drive efficiency.

Conscious of capital expenditure constraints Heathrow will also seek to resolve the complex issue of how improvements for cargo facilities can be funded.

Cargo initiatives under consideration to improve Heathrow's Cargo Proposition

1. Data Improvements will drive understanding, insight and better decision making in support of cargo.

[REDACTED]

2. Faster flow of cargo through Heathrow with ever improved Safety and Security.

[REDACTED]

3. Border modernisation.

This will support cargo to flow quickly and seamlessly through Heathrow, whilst retaining border security. **[REDACTED]**.

4. Working with landowners around Heathrow to create the conditions for them to invest.

⁷² ACI Airport statistics, *Seabury Capacity Tracking Database*; Seabury Consulting analysis

[REDACTED].

7.2.4 Our Commercial Revenue Forecast for H7

7.2.4.1 Introduction

For H7, our commercial plan aims to deliver on our consumers' changing expectations and behaviours following Covid-19 and minimise the impact of the pandemic by protecting existing commercial revenue streams. These revenues will be materially suppressed due to the long-lasting impacts directly attributable to Covid-19, combined with the additional challenges we face as a result of HM Treasury's decision to make changes to airside tax-free sales and withdraw the VAT Retail Export scheme for all passengers from January 2021. We are also facing significant capital expenditure constraints if we do not obtain a favourable decision from the CAA for our request for an adjustment of the RAB.

This section outlines the assumptions and methodology we have used to forecast our commercial revenues for H7 for each of our revenue streams. We set out why the assumptions and methodology we have used are robust, given the fundamentally uncertain period we face. We present our commercial revenue forecasts for H7.

7.2.4.2 Airline Community Engagement

We have undertaken extensive engagement with the airline community since the IBP, including nine weeks of intensive discussions with airlines in Constructive Engagement following the publication of our BBU in 2020. Key feedback received relating to commercial revenues is summarised in the table below.

Table 2: Summary of key feedback received on Commercial Revenues during Constructive Engagement

Airline community and consultancy feedback through CE	Heathrow's response in the RBP
<p><u>Drivers-based methodology</u>⁷³</p> <p>The airline community was critical of Heathrow's drivers-based approach.</p>	<p>The drivers-based approach for H7 allows us to forecast in a simpler and more robust way using proven drivers of commercial revenue and avoids introducing complications from the addition of spurious detail.</p> <p>During CE we discussed the approach at length and made a number of refinements for the RBP:</p> <ul style="list-style-type: none">• We have revised the base year to 2019;• We have included a Covid-19 impact: Passenger mix, economic outlook and contracts renegotiations;

⁷³ Heathrow Airline Community, *Airline Community Response to H7 CE*, October 2020, pp.5, 17-18

Airline community and consultancy feedback through CE	Heathrow's response in the RBP
	<ul style="list-style-type: none"> • We have reviewed our mode share assumptions used to forecast our surface access revenues, using information on changed passenger behaviour post-Covid; and • We have provided more detail on the potential impact of the Government's announcements on Duty Free and VAT. <p>More detailed information on the specific assumptions and methodology used can be found in this chapter and the accompanying annexes⁷⁴.</p>
<p>[REDACTED]⁷⁵</p> <p>[REDACTED] provided a report post-Constructive Engagement setting out their views and alternative methodology to the drivers-based approach.</p> <p>[REDACTED]:</p> <ul style="list-style-type: none"> • expressed concern that the drivers-based forecasting methodology could understate H7 revenues; • consider that Heathrow could increase retail revenues through period through changes such as the reintroduction of duty free; • believe that a more bottom-up approach should be taken to different retail revenue categories rather than looking to achieve a forecast which is accurate at an overall level, as shown by the comparison of the H7 methodology against Q6 outturn. <p>[REDACTED] suggested a number of changes to the methodology including:</p> <ul style="list-style-type: none"> • A more bottom-up methodology looking at retail categories in isolation; and 	<p>Overall, we consider that the [REDACTED] work provided some useful insight and information.</p> <p>However, in some circumstances assumptions were made, for example about space and spend across passenger types, which we have corrected for in the RBP.</p> <p>We agree that there will be an impact on revenues from both the airside tax-free shopping and VAT decisions. Overlays have therefore been included in the RBP methodology (see Table 3 below).</p> <p>The following areas required further work beyond the [REDACTED] report. We have updated the impacts of these areas in the RBP and will reassess in 2021 updates when we have further information:</p> <ul style="list-style-type: none"> • The scope of the impact of VAT and airside tax-free shopping changes did not take into account direct loss of commissions from VAT refunds, nor the associated reduction in sales per passenger. • We have updated information on mode share to inform forecasts for car parking and HEx revenue.

⁷⁴ Frontier Economics report, KPMG report, Surface Access Proposals

⁷⁵ **[REDACTED]**

Airline community and consultancy feedback through CE	Heathrow's response in the RBP
<ul style="list-style-type: none"> • Inclusion of overlays for potential upside and downside changes to revenues. 	
<p><u>Airline Alternative Business Plan</u>⁷⁶</p> <p>The airline community presents an £40.4m overall variance to Heathrow's commercial revenues as set out in the BBU. This is a result of the airline community including no surface access strategy revenues but increasing the core commercial revenues by [REDACTED].</p>	<p>We have considered the airline community's alternative business plan.</p> <p>Discrepancies on core commercial revenues come primarily from the treatment of the Government's announcement on VAT (7.2.1.2 – 5), which the airline community consultants significantly underestimate.</p> <p>Additionally, discrepancies come from [REDACTED] assessment of the influence of passenger mix (7.2.2.2) and economic outlook in concessionaires' performance, minimum guarantees and margins, which have also been significantly and negatively impacted by Covid-19. Unlike the airline community's alternative business plan, we have also included forecasted surface access strategy revenues, including a Forecourt Access Charge.</p>

Source: Heathrow, [REDACTED], AOC, IATA

7.2.4.3 Assumptions and Methodology

The table below summarises the key assumptions that have a material impact on our forecast and shows that each of these assumptions have been validated using external assurance, regulatory precedent or global best practice. The table below shows that we have developed a broad evidence base that underpins each of our assumptions.

Our H7 forecast is derived from a 2019 baseline, applying drivers with elasticities calculated using an evidenced-based methodology. Our forecasting methodology is supported by independent advice, regulatory precedent and engagement with our stakeholders.

This represents a change of approach from the bottom-up approach taken in Q6 but is consistent with IBP and BBU regulatory submissions. Following investigation of the model, this simpler forecasting methodology for H7 allows us to forecast in a more robust way using proven drivers of commercial revenue and avoids introducing complications from the addition of spurious detail.

This section and the next section provide a brief outline of the structure of our forecast models and demonstrates why our key assumptions are robust. More detailed information on the

⁷⁶ Heathrow Airline Community, Annex 2: *Airline Affordability Assessment - Alternative H7 Business Plan*, October 2020

specific assumptions and methodology used can be found in the annexes accompanying this chapter⁷⁷.

⁷⁷ Frontier Economics report, KPMG report, Surface Access Proposals

Table 3: Commercial revenue forecasting assumptions and methodology

Key Assumption	Value	How it impacts on the Forecast	Why our Approach is Robust
Starting point year	2019 actuals	Revenue in the “base year” has an impact on all the forecasts as it provides the starting point for all forecasts	Pragma (2019) have shown that Heathrow [REDACTED] , this suggests that the starting point retail revenue is efficient. KPMG benchmark study also states that Heathrow is at the efficient frontier for revenue generation.
Elasticity of passengers with respect to retail revenue	[REDACTED]	A [REDACTED] increase in passengers leads to a [REDACTED] increase in retail revenue	Frontier Economics (2019) have analysed Heathrow’s historical data and found a strong relationship between passenger volumes and retail revenue. They find that this estimate is supported by the academic literature and regulatory precedent. KPMG (2019) also found a robust relationship between retail revenues and passenger growth [REDACTED] .
Management challenge	[REDACTED]	Assumed that the historical impact of management challenges at Heathrow will continue in H7, so Heathrow is able to achieve the elasticity level	Pragma (2019) have shown that Heathrow [REDACTED] , which suggests that historical management challenges at Heathrow set the most relevant standard for future management challenges at Heathrow.
Elasticity of total utilised terminal space with respect to property revenue	[REDACTED]	A [REDACTED] increase in utilised terminal space leads to a [REDACTED] increase in property revenue	Following IBP Constructive Engagement, airlines requested for terminal space metrics to be applied to property revenues as the driver.
Elasticity of car parking/car rental passengers with respect to surface	[REDACTED]	A [REDACTED] increase in passengers using these services leads to a [REDACTED] increase	KPMG (2019) have carried out an econometric benchmarking exercise, reviewing the key drivers of commercial revenues at a number of international airports. Their review found a potential relationship between car parking revenues and passenger growth, which could evidence an elasticity of [REDACTED] to

Key Assumption	Value	How it impacts on the Forecast	Why our Approach is Robust
access (car parking and rental) revenue		in surface access revenue	passenger growth. This also reflects Heathrow's management judgement.
Elasticity of Heathrow Express passengers with respect to Heathrow Express revenue	[REDACTED]	A [REDACTED] increase in passengers using the service leads to a [REDACTED] increase in Heathrow Express revenue	Although none of the independent benchmarking exercises found a robust relationship which could be used to forecast Heathrow Express revenues, our forecast assumes an elasticity of [REDACTED], reflecting our ambition to maintain Heathrow Express yield per passenger through the period even with passenger abstraction due to Crossrail.
Usage volumes for surface access modes	Adapted LASAM mode share volumes	Revenues for surface access modes are forecasted taking the forecast proportion of origin/destination passengers and then applying this number to the percentage mode share forecast, using LASAM analysis to apply step changes to our mode shares to evolve from today	Only origin / destination passengers will use our surface access offer as transfer passengers will not be required to travel to/from the airport. This means that forecasting using growth in origin/destination passengers will give us a more accurate picture of the users that could use our surface access modes. We have used analysis of outputs from the LASAM model to step change mode share evolution from today, taking into consideration the infrastructure and passenger behaviour changes that are expect to occur, to estimate the percentage of O&D passengers that will be using each transport mode.
RPI	Annual inflation series reported by Oxford Economics	RPI will adjust our forecasts to deliver more ambitious targets	Nominal forecasts that are adjusted by RPI will be higher than those adjusted by CPI. Therefore, RPI adjustment provides a more ambitious commercial revenue target than CPI adjustment. Moreover, this choice of inflation index is aligned with the large base of UK regulatory precedent that has used RPI.
VAT Retail Export Scheme overlay	[REDACTED]	[REDACTED]	[REDACTED]
Covid-19 impact: Passenger mix, economic outlook	[REDACTED], reducing to [REDACTED] by	Derived from economic impact, concessionaires'	Passengers mix will change in Heathrow, Covid-19 concerns make that passengers are less likely to engage in our commercial offers, and the economic impact of Covid-19 will

Key Assumption	Value	How it impacts on the Forecast	Why our Approach is Robust
and contracts renegotiations	2025, with all terminals operational from 2024	agreements and passenger behaviour	also reduce their disposable cash, impacting our revenues. Adjustment is applied to retail and surface access revenue categories. This will be revised for RBP updates in 2021. Concessionaires' agreement margins and minimum guaranteed have been reviewed to reflect current passenger numbers and behaviours, impacting further in our ability to capture revenue.
Covid-19 impact on property	[REDACTED]	Derived from economic impact and forecast for office and airline space	This is a combination of guide price reductions, rent protection plans and forecast variations: office space will be in lower demand with sector wide reductions, airline consolidations, and new working practices (e.g. agile working) and is not expected to improve through H7. This will be revised for RBP updates in 2021.
Covid-19 impact on rail	[REDACTED]	Derived from economic impact into Heathrow rail yields	Yield per passenger decrease to protect mode share as passenger attitudes toward public transport have changed. This will be revised for RBP updates in 2021.
Impact of Elizabeth line on rail revenue	[REDACTED]	Derived from economic impact from Elizabeth line competition into Heathrow rail yields	Yield per passenger decrease from 2024 onwards due to beginning of Elizabeth line operation.
Passenger numbers			Key interdependency (see Chapter 5 – Demand)

Source: Heathrow

7.2.4.4 Commercial Revenue Forecasts in H7

This section set outs the approach used to forecast revenues by each revenue stream and presents the forecast revenue for each area.

Retail

In the past, we have used a detailed line-by-line approach to forecast retail revenue. This approach tried to model a large number of specific factors that may influence retail revenue. These include the call to gate time, congestion in the terminals and / or changes in specific exchange rates. For H7, we have developed a simpler approach that is based on key inputs:

- A 2019 baseline to represent the most recent ‘normal’ year prior to Covid-19;
- A factor adjustment to account for changing retail income per passenger due to Covid-19;
- A factor adjustment to account for the HM Treasury decisions on airside tax-free shopping and the VAT Retail Export scheme from January 2021;
- A factor adjustment to account for the impact of Covid-19 on passenger mix, passenger behaviours, and subsequent impact on margins as per concessionaires’ agreements;
- An elasticity of passenger numbers with respect to retail revenues – for every [REDACTED] increase in passengers, we project that retail revenue will increase by [REDACTED];
- RPI adjustment – we have adjusted our retail revenue using Oxford Economics RPI forecasts; and
- One-off adjustments – where it is clear that material items within the retail revenue category are not driven by passenger growth and are expected to change materially over the coming period we have made a one-off adjustment.

Using this methodology, our forecast retail revenues for H7 in different growth scenarios are as follows:

Table 4: Forecast retail revenues for H7

	H7 Forecast [£m, 2018p]					
	2022	2023	2024	2025	2026	Total
Retail revenue excl. Bureaux	[REDACTED]					
Bureaux revenue	[REDACTED]					

Source: Heathrow

Surface Access

As set out in Section 7.2.3 of this chapter and Chapter 7.4 – Surface Access in further detail, we are developing a Surface Access Strategy to allow consumers to access Heathrow quickly and easily and so that we can achieve the passenger public transport mode share and colleague single vehicle occupancy targets we have set ourselves for the H7 period.

Our approach to developing our Surface Access Strategy has followed the CAA’s surface access policy and the guidance contained in the Aviation Policy Framework published by the

Government in 2013. In developing the Surface Access Strategy, we also remain cognisant of the ANPS and Heathrow 2.0, which contains our flagship sustainability goals for surface access.

Our revenue projections forecast below are based on analysis we prepared for our three-runway Airport Expansion Consultation in June 2019. Whilst some of the initiatives captured in this analysis are no longer proposed in our Surface Access Strategy for a two-runway scenario, the assumptions underpinning them remain relevant and have been used to inform our projections in the RBP. We have retained the same drivers-based approach and financial assumptions for forecasting our surface access revenues in H7 as adopted for the IBP. For the purposes of establishing our revenues in lower passenger demand scenarios for the RBP, we have assumed a linear link between the passenger forecast for each year in H7 and base year passenger mode share, informed by the London Airports Surface Access Model (LASAM) for each relevant mode i.e. car parking, car rental, kiss and fly, taxi and Heathrow Express. We then take this number and apply it in the following way for each driver of surface access revenue.

Car Parking / Car Rental

Our Commercial Surface Access category includes revenues from our passenger car parking and car rental products. As for our retail revenue forecast, we began by reviewing benchmarking evidence to understand the key drivers of our revenues for these categories in order to establish whether or not an elasticity-based approach would be appropriate for forecasting revenue for these categories.

KPMG's econometric benchmarking approach highlights that car parking revenues are closely linked to passenger volumes, with the revenue elasticity ranging between **[REDACTED]**⁷⁸. KPMG's analysis also revealed a negative relationship between the percentage of international passengers at the airport and car park revenues, with each international passenger percentage point being associated with **[REDACTED]** less car parking revenue.

In H7, we do not anticipate that the overall provision of car parking for our passengers will change based on the passenger forecasts outlined in Chapter 5 – Demand. We are therefore not forecasting large growth in our car parking revenues and are proposing to use a high-level elasticity of **[REDACTED]**, aligned to KPMG's econometric projection, to forecast forward our car parking revenues, instead of Frontier's approach based on historic performance trends, which would not reflect the impact that Covid-19 will have on our revenues. To forecast our revenues, we have therefore used:

- A 2019 baseline to represent the most recent 'normal' year prior to Covid-19;
- Our assumed proportion of O&D passengers using car parking and car rental services, as informed by LASAM;
- An elasticity of **[REDACTED]** applied to growth in passengers using the facilities; and
- RPI growth.

Using this methodology, our forecast car parking and car rental revenues for H7 in different growth scenarios are as follows:

⁷⁸ KPMG, *Airport Commercial Revenue Efficiency Benchmarking*, December 2019, page 15

Table 5: Forecast surface access revenues for H7

	H7 Forecast [£m, 2018p]					
	2022	2023	2024	2025	2026	Total
Surface Access Revenues	[REDACTED]					

Source: Heathrow

Forecourt Access Charge

We propose to retain the introduction of a Forecourt Access Charge for all private vehicles applicable for the charge. This would be at a reduced level of charge compared to the proposed charge of between £12 and £20 contained within the Surface Access Proposals in the IBP. Chapter 7.4 – Surface Access explains our rationale for retaining the scheme as part of our Surface Access Strategy. Heathrow is also the only airport from the largest ten airports in the UK by passenger volume not to currently be, or about to introduce, implementing a form of road user charge⁷⁹.

The proposed Forecourt Access Charge constitutes a new source of revenue for Heathrow in H7. It is therefore important that the regulatory framework is able to incorporate this income stream.

Taking into account this policy guidance, the competing views of our stakeholders and the requirements to ensure the charge can be both implemented effectively and in a manner that protects consumers, there are a number of potential options for the access charge revenue. These are discussed in Chapter 9.1. The following section outlines the methodology used to forecast these revenues.

In line with consumer feedback and addressing airline concerns that the Forecourt Access Charge may impact passenger demand, we are proposing a reduced level of charge of [REDACTED] (2018p) across the H7 period that we will review at regular points. The table below shows how this charge is comparable with charges currently, or proposed to be, enforced by other UK airports.

Table 6: Departure forecourt charges at selected UK airports

Airport	Forecourt Charge by Time Period				
	> 5 mins	> 10 mins	> 15 mins	> 20 mins	60 mins
Birmingham	£3	£3	£3	£8	£48
Edinburgh	£4	£4	£8	£15	£30
London Gatwick ⁸⁰	£5	£5	£5	£5	£5
London Luton	£4	£4	£9	£14	£54
London Stansted	£7	£7	£7	£25	£25

⁷⁹ Publicly available information obtained from airport websites, November 2020

⁸⁰ This is proposed to be implemented from 2021. [Gatwick Airport Press Release](#), October 2020

Manchester	£5	£6	£25	£25	£25
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Source: Airport websites, November 2020

Revenue assumptions for the Forecourt Access Charge have assumed the average number of passengers per private vehicle trip and the impact of a charge on mode shares, informed by outputs from the London Airports Surface Access Model (LASAM) to derive the number of annual vehicle trips for kiss and fly and taxi modes. This has then been multiplied by the number of trips taken that would be impacted by the charge. An assumption has been made on the proportion of trips exempted from the charge.

The volume of qualifying vehicle trips is then multiplied by the charge amount to produce the forecasts set out below. It is important to recognise that payment compliance rates will differ depending upon enforcement powers. In the absence of the DCO granting such powers, alternative options will be explored. For the purposes of the RBP, we have assumed no statutory enforcement powers and a compliance level of 80% in line with analysis.

To forecast our revenues, we have therefore used:

- Forecourt Access Charge level of **[REDACTED]** per eligible trip;
- Our assumed proportion of passengers using kiss and fly and taxi modes, as informed by LASAM;
- Constant assumption on vehicle trips per passenger, based on LASAM and historical information;
- **[REDACTED]**; and
- RPI growth.

Using this methodology, our forecast Forecourt Access Charge revenues for H7 in different growth scenarios are as follows:

Table 7: Forecast Forecourt Access Charge revenues for H7

	H7 Forecast [£m, 2018p]					
	2022	2023	2024	2025	2026	Total
Forecourt Access Charge Revenue	[REDACTED]					

Source: Heathrow

Rail

Our rail revenues are made up of both income from Heathrow Express operations and the Piccadilly line extension contract with TfL and track and station access charges. Heathrow Express revenues form the largest component of our rail revenue category. In the coming period, Heathrow Express will face challenges presented by downward pressures on demand associated with the outbreak of Covid-19, as well as increasing competition from other rail and public transport services. In particular, we expect that it will face revenue abstraction following the introduction of the Elizabeth line. We will start to see the impact of Elizabeth line services on our revenue from 2024.

Heathrow Express currently possesses track access rights until 2023, with a commitment to extend these rights to 2028 with the Department for Transport. We have therefore included

revenues associated with Heathrow Express in our commercial revenue forecasts for the H7 period.

The benchmarking work carried out by Frontier Economics did not find any robust relationships to evidence the potential drivers of rail revenues⁸¹. Their analysis found that rail revenue has declined as passengers have increased, a relationship that they do not expect to hold in the long term and so would not be suitable for forecasting. We have therefore developed the following forecasting approach for rail revenues:

- A 2019 baseline to represent the most recent ‘normal’ year prior to Covid-19;
- Our assumed proportion O&D passengers using Heathrow Express, as informed by LASAM;
- A factor adjustment to account for the impact of Covid-19 on passenger attitude towards public transport, mode share, and the consequential impact in yield;
- A factor adjustment to account for a reduction in yield when Elizabeth line becomes fully operational;
- An elasticity of **[REDACTED]** applied to the growth in passengers using Heathrow Express; and
- RPI inflation.

A forecast based on continuing to achieve a flat Heathrow Express yield per passenger will be challenging given the increase in competition expected over the coming period and suppressed demand due to Covid-19. In order to respond to this challenge, the strategic focus of Heathrow Express will be to protect its current customer base and identify the market segments it can attract to rail that are not currently using public transport.

The other element of our rail revenue includes track and station access income and income provided by the Piccadilly line extension contract. Our track and station access revenue assumptions reflect our agreed charges set out in our published price list⁸² and the contractual formula based on Terminal 5 passenger numbers for Piccadilly line usage. In 2018, track access revenue account for around **[REDACTED]** of our total rail revenues.

Using this methodology, our forecast rail revenues for H7 in different growth scenarios are as follows:

Table 8: Forecast rail revenues for H7

	H7 Forecast [£m 2018p]					
	2022	2023	2024	2025	2026	Total
Rail Revenue	[REDACTED]					

Source: Heathrow

⁸¹ Frontier Economics, *Developing opex and commercial revenue elasticities for H7*, October 2019, page 31

⁸² [Heathrow Airport Ltd: Rail Price List 2019](#)

Property

Property revenue refers to revenue from office space, lounges, non-terminal properties and cargo but does not include revenues from development of commercial property.

Unlike Retail and Surface Access, Property revenues are considered to behave differently from other non-aeronautical revenue streams, which makes it difficult to adopt a single approach for forecasting revenues or benchmarking against different airports. Property revenues can be influenced by a number of factors, such as: the operating model for property development, availability of space (and priorities for that space), growth of passengers, airline mix (lounge development) and local competition (rental rates that could be achieved). This leads to difficulties in adopting a single approach for benchmarking or forecasting property revenues amongst different airports. In their work, Frontier were unable to identify a robust relationship between Heathrow's historic property revenues in order to provide a meaningful forward looking forecast⁸³.

The key drivers of property revenues were reviewed as part of the external benchmarking work carried out by KPMG. In this piece of work KPMG reviewed the property revenues for a benchmark set of airports from 2012 to 2018 to identify the key drivers of property revenue and the impact that the drivers have on the levels of revenue reported. This exercise also showed that property revenue behaves differently to retail revenues and is less sensitive to observable drivers than revenues from retail activities. KPMG's report sets out that much of Heathrow's property revenue is driven by characteristics specific to Heathrow, rather than observable changes in elements such as passenger numbers or ATMs.

Following airline feedback during Constructive Engagement, we are modelling now our property revenue based on utilised terminal space as below.

Our forecasting approach uses:

- An elasticity of utilised terminal space with respect to property revenues – for every **[REDACTED]** increase in passengers, we project that retail revenue will increase by **[REDACTED]**;
- Terminal space as a driver for revenue forecasts, as opposed to passenger numbers;
- A factor adjustment to account for the impact of Covid-19 on working practices and tenants' requirements for infrastructure and office space; and
- RPI adjustment.

In H7 we expect:

- Ground rent from commercial space to continue as baseline; and
- Lounge revenue to continue.

In H7 we will also explore new ways of generating property revenues through commercial property development.

The regulatory framework chapter also sets the conditions that we consider could be put in place to increase benefits from these development opportunities, should the CAA provide the required regulatory assurance.

⁸³ Frontier Economics, *Developing opex and commercial revenue elasticities for H7*, October 2019, page 31

Using this methodology, our forecast property revenues for H7 in different growth scenarios are as follows:

Table 9: Forecast property revenues for H7

	H7 Forecast [£m, 2018p]					
	2022	2023	2024	2025	2026	Total
Property Revenue	[REDACTED]					

Source: Heathrow

Other Income (Services)

Other income includes commercial revenue from activities not captured by the other categories such as advertising revenue, Fast Track Income, VIP Charges or aviation fuel. Neither Frontier nor KPMG found a robust relationship to evidence the drivers of these revenues. Given the nature of the revenues and previous experience, we expect these to grow in line with passenger growth. We have therefore used the following assumptions in our forecast:

- An elasticity of passenger numbers with respect to service revenues – for every [REDACTED] increase in passengers, we project that retail revenue will increase by [REDACTED]; and
- RPI adjustment.

Using this methodology, our forecast services revenues for H7 in different growth scenarios are as follows:

Table 10: Forecast services revenues for H7

	H7 Forecast [£m, 2018p]					
	2022	2023	2024	2025	2026	Total
Service Revenue	[REDACTED]					

Source: Heathrow

7.2.4.5 Our Forecast for H7

We forecast that Heathrow's total commercial revenues, excluding those associated with the proposed Forecourt Access Charge, will grow by [REDACTED] CAGR from 2022-2026. Commercial income per passenger [REDACTED] H7 at approximately [REDACTED] per passenger. The table below summarises our H7 commercial revenue forecast.

This forecast uses the assumptions in our base business plan, as per the passenger forecast is set out in Chapter 5 – Demand.

Table 11: H7 commercial revenue forecast – Mid Case

[REDACTED]

Source: Heathrow

As explained above, achieving this forecast is dependent on our capex and opex assumptions being accepted by the CAA. In order to grow our commercial revenues, our plans require capital investment to implement our plans. Similarly, we have assessed the impact of decreasing the levels of operating costs spend related to commercial revenue throughout the period to assess the impact. Our review shows that a drop in opex would result in a drop in revenues as well as multiple other impacts on customer satisfaction and employee wellbeing.

7.3 – RESILIENCE

Chapter Overview

- There has been a step change in Resilience over Q6, with departure punctuality remaining stable and arrival punctuality steadily increasing over the regulatory period.
- This improved punctuality has resulted from a combination of both significant investment that Heathrow has made into world-first resilience tools, such as enhanced Time Based Separation, and innovative operational measures.
- Covid-19 has had an unparalleled impact on the operation of the airport and introduced resilience challenges that we simply have not seen before. The experience of Covid-19 has allowed us to learn from dealing with a truly major shock and in doing so further improve and redesign our operational processes.
- The impact of deferred investment resulting from Covid-19 may take multiple years to come through and it may require additional investment to keep resilience at current levels.
- Resilience will remain a primary consideration for us throughout H7. Consumer insight highlights the importance of resilience in allowing us to deliver on the key outcomes consumers expect from their airport journey.
- We will look to implement initiatives which are focussed on sweating our current assets and any resilience enhancements will require prioritisation in the same manner as all other projects in the H7 capital plan.
- Future resilience improvements cannot be delivered by Heathrow alone which is why Heathrow is proposing the creation of a Joint Resilience Plan for H7, created with the airlines, that details the single and joint accountabilities for resilience milestones across the control period.
- There may be a need for the continued temporary suspension of terminals through at least part of the H7 period. We will continue to look at Demand v. Capacity on an ongoing basis to make the most cost-effective decisions in order to continue to provide airlines with the conditions to recover business together.

7.3.1 Introduction

Resilience of the airport operation and related infrastructure is extremely important to consumers, airlines and others in Team Heathrow. Our resilience plans are informed by both experience operating the airport and extensive consumer insight. Covid-19 has posed unprecedented challenges to resilience and had a significant impact on Heathrow's resilience plans, which we will outline below. Through H7, we plan to deliver a level of resilience which responds to consumer needs and varying passenger volumes. We can only do this through working closely with the airline community.

While resilience means different things for the consumer at different points on the passenger journey¹, our insights tell us that disruption has the greatest impact on air travel satisfaction levels; if a consumer experiences disruption, overall satisfaction falls from 87% to 69%, while dissatisfaction increases significantly from 4% to 18%². Our plans for H7 are therefore focused

¹ Populus, *Resilience Qualitative Research*, October 2019

² Civil Aviation Authority, *UK Aviation Consumer Survey*, June 2017

on providing an appropriate level of resilience to minimise disruption at Heathrow and meet consumer expectations, while recognising the constraints on capital investment during the period and challenges that the deferred investment since Covid-19 could bring.

In this chapter we set out:

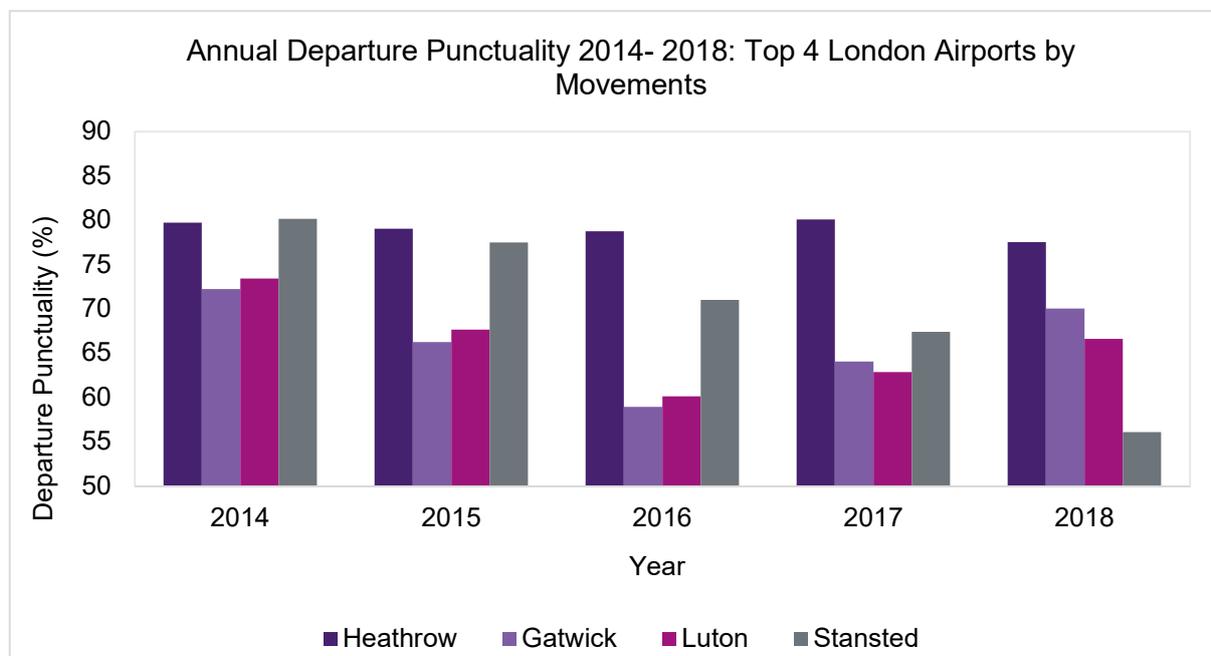
- the step-change in resilience over Q6;
- the impact of Covid-19 on our resilience;
- the link between resilience and consumer outcomes; and
- our resilience plans for H7.

7.3.2 The step-change in resilience over Q6

There has been a step change in Resilience over Q6. Over the regulatory period annual movements gradually increased towards the annual movement cap of 480,000 movements, with over 80 million passengers per annum using the airport before the downturn in 2020 due to Covid-19.

During Q6 Heathrow was capacity constrained and, without changes and interventions, an increase in movements would lead to increased delays, cancellations, and late running flights into the night period. However, departure punctuality has remained stable and arrival punctuality has steadily increased over Q6, while over the same period other UK airports have seen reductions in punctuality and increasing delays. We achieved these improvements while also reducing operating costs by a total of over £600m (2018 prices), or 9%, between 2014 and 2018.

Figure 1: Annual Departure Punctuality 2014-2018 - Top 4 London Airports by Movements



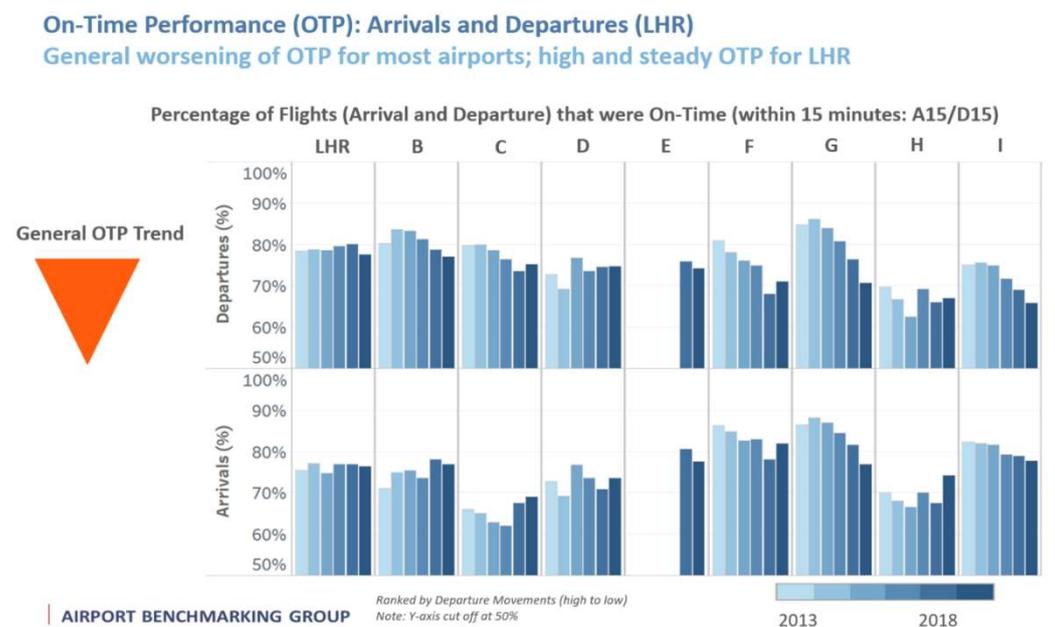
Source: CAA Data

This improved punctuality has resulted from a combination of significant investment that Heathrow has made in world-first resilience tools, such as enhanced Time Based Separation

(TBS), (a world first tool, which reduces the impacts of strong winds on our arrivals flows by applying constantly updating arrival separations based upon time intervals at the runway threshold, rather than fixed longitudinal separations), as well as the introduction of innovative operational measures that allow us to use our runways more efficiently (such as revised arrival/departure separations). Many of these resilience innovations have been achieved by working in partnership with airlines and other external partners, such as NATS in the case of enhanced TBS, and have delivered significant benefits to the operation with minimal capital investment.

All of these enhancements have been made with the aspiration of providing our passengers with the best, most resilient service possible.

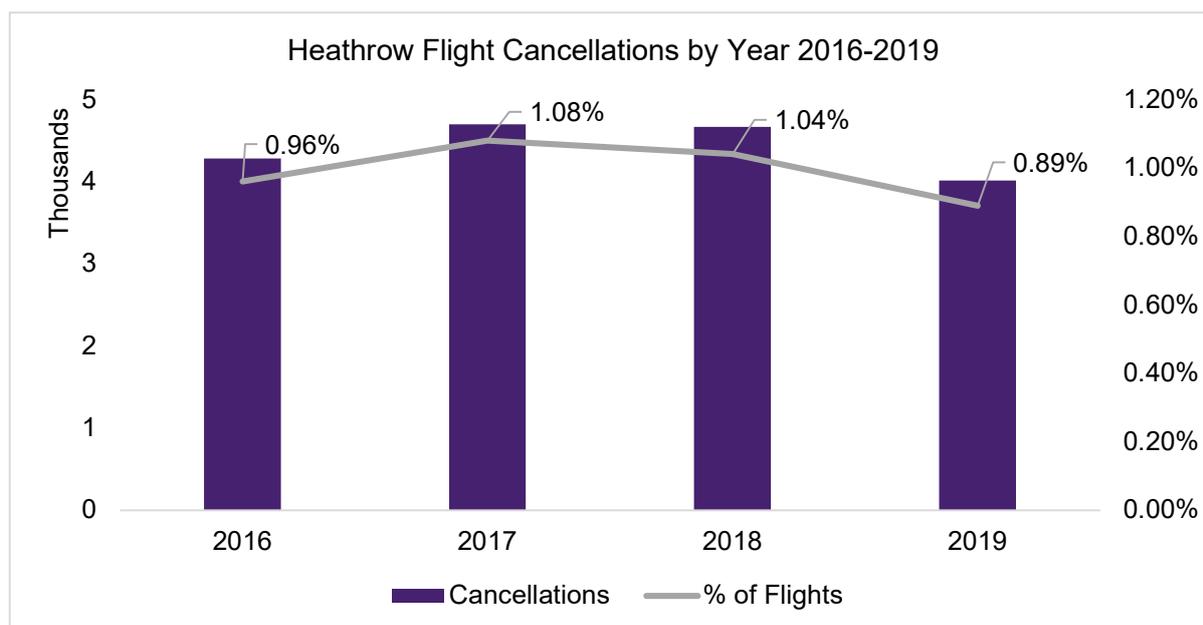
Figure 2: On-Time performance comparison across major airports



Source: Airport Benchmarking Group

As a result of these enhanced resilience measures, flight cancellations reduced to below 1% in 2019, which equates to less than 4,300 flights during the year, the lowest on record. Not only does this provide more predictable and reliable journeys to our passengers, but it also places Heathrow very favourably in comparison to other hub airports.

Figure 3: Heathrow annual flight cancellations 2016-2019



Source: Heathrow

The number of nights with late runners gradually decreased across Q6, with 2019 finishing with only 257 late running departures. Heathrow remains fully committed to halving late running aircraft from 2014 levels by 2022. This improvement reflects excellent progress through initiatives for departure resilience and turn-around performance, most notably our Strive for Five programme, as well as the Quiet Night Charter developed and deployed during Q6. Strive for Five was a multi-stakeholder project that sought to deliver a 5% increase in punctuality performance over the Q6 period and was achieved by aggregating a number of small performance increases in a variety of areas, with minimal investment.

These improvements and our ongoing commitment to further reduce late running aircraft gives assurance to our local communities that the Heathrow operation is resilient to shocks and will not result in increased late flying that disturbs their periods of guaranteed respite. This is a key part of ensuring we deliver on our community outcome to ensure that Heathrow continues to operate and grow sustainably.

7.3.3 Covid-19 challenges to Heathrow's resilience

Covid-19 has had an unprecedented impact on the airport operation. We have needed to accommodate completely new operating processes that have tested a number of our resilience plans. Covid-19 has also introduced resilience challenges that we simply have not seen before. These have included:

- Reacting to changing Government guidelines on social distancing across the estate, such as moving between two metre and 'one metre plus' social distancing. This has seen the overall capacity of our terminals reduce and has increased the need for extended queuing times.
- Extreme volatility in aircraft scheduling as a result of 80/20 slot alleviation and the increase in late notice cancellations by airlines.
- Unpredictability of passenger numbers due to short notice quarantine or lockdown decisions. This has also led to significant challenges in resource planning as schedule

volatility has meant that we have had to often plan for traffic scenarios that do not materialise.

- Challenges due to reduced staffing as a result of Covid-19 and self-isolation, both within Heathrow and critical wider Team Heathrow stakeholders.

The experience of Covid-19 has allowed us to learn from dealing with a truly major shock and in doing so improve and redesign our operational processes. While there is a high degree of uncertainty around the recovery from Covid-19 and the 'new normal' for Heathrow, we will continue to take a holistic, consumer-focused approach to resilience, regardless of passenger numbers.

Resilience will remain a primary consideration for us throughout H7; however, future resilience improvements cannot be delivered by Heathrow Airport alone. Ensuring that customers feel safe and supported through any disruptive event will require collaboration across agencies in a way that appears seamless to those using the airport. This is reflected in the development of our wider, more collaborative approach to measuring service quality as set out in Chapter 9.2 – Measures, Targets and Incentives.

Despite the challenges Covid-19 has posed to the entire aviation industry, Heathrow has not lost the ability to operate an 80 million passengers per annum airport. We will be able to transition back to serving increased passenger numbers in a resilient manner when required. The extreme shock of Covid-19 has demonstrated Heathrow is capable of dealing with unprecedented uncertainty in addition to the high passenger volumes and capacity constraints previously experienced.

It should be noted that, as a result of Covid-19, we have taken extensive and prudent action to protect the business, manage our liquidity, save jobs for colleagues and above all ensure we continue to deliver for consumers. This has included identifying and executing at least £300m (nominal) of cost savings and cutting our capital programme for 2020 from £1.9bn to £428m (nominal, over £300m of which had already been spent in H1 2020) and to £374m (nominal) for 2021.

Since Covid-19 flight punctuality has been tracking above target and we have maintained high availability of assets within the SQRB regime. These areas have benefitted from over 10 years of consistent investment; it is important to recognise that the impact of deferring investment now may take several years before it is reflected in performance, and potentially require higher investment in future years to bring back to current levels. We will not compromise on safety but the result of lower investment may have consequences on which assets we can keep operational.

7.3.4 Resilience and consumer outcomes

We know that delivering a resilient airport is key to delivering on our consumer outcomes, which are the output of our extensive consumer research and engagement. In particular, there are four outcomes with strong links to resilience that are key to informing our plans:

- I have a predictable and reliable journey;
- I am confident I can get to and from the airport;
- I feel cared for and supported; and
- I feel comfortable and supported.

This section will set out these outcomes and explain how they are closely linked with Heathrow’s resilience. The following two sections then describe how we will measure against the key outcomes linked to resilience, and how our resilience plans for H7 respond to consumer needs, enabling us to deliver on our identified consumer outcomes shown in Figure 3 below.

Figure 4: Heathrow's Consumer Outcomes



Source: Heathrow

Covid-19 has had an impact on consumer needs and attitudes to flying. While our 2020 synthesis of consumer insights research has shown that consumer needs when travelling are broadly the same as they were prior to the Covid-19 pandemic, it has indicated that some lower level needs, such as cleanliness, personal space and personal safety, have become amplified³.

Passengers are also more nervous about travelling than they were before Covid-19, with one in four people saying that they have become nervous about flying as a result of Covid-19⁴. We recognise that resilience has an important role to play in ensuring that the post-Covid needs of passengers are met and we have taken this into consideration in building our resilience plans for H7.

Further detail around our consumer insights and our overall passenger experience proposals coming out of this research can be found in: Chapter 2 – Insights and Chapter 3 – Passenger Experience.

³ Blue Marble Research, *Consumer needs synthesis*, November 2020

⁴ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

Details around the four outcomes with strong links to resilience are described below:

“I have a predictable and reliable journey”

Our 2020 synthesis of consumer insights highlights that consumers highly value flight punctuality, their baggage arriving on time and a seamless journey at every stage as part of the predictable and reliable journey outcome⁵.

“Airport travel needs to be time efficient, predictable and reliable in a sometimes busy and stressful environment”⁶

Passengers fear that travelling will become much more complex due to new processes, leading to new points in the journey where they feel anxious, out of control or lacking personal space⁷. They continue to expect, however, that the airport experience will be as streamlined and efficient as possible. They value Heathrow simplifying or removing steps, avoiding repetition or complexity and reducing the time required to complete them where possible. The importance of ease is emphasised by our post-Covid consumer research, which has shown “Predictable and Reliable Journey” to be the most important of the four ‘In-Airport’ consumer outcomes, with a 29.5% importance weighting⁸.

Our research has also shown that both current and potential passengers assign a high value to resilience-related initiatives. For example, a deterioration in the percentage of bags travelling on the same flight as passengers was shown to generate the greatest amount of disbenefit amongst those surveyed⁹. This is particularly significant given that 41% of those surveyed said that they would use Heathrow less if it was to introduce the service deterioration that was least acceptable to them¹⁰. Other resilience initiatives, such as a greater proportion of flights departing on time, improving waiting times at baggage reclaim and having real-time flight information were also shown to be of high value to both current and future, direct and connecting passengers¹¹.

“I am confident I can get to and from the airport”

Access to the airport has always been a priority for consumers as part of choosing the airport they want to fly from. Time is critical for consumers travelling to or from the airport as they either have a flight to catch or want to get to their destination as quickly as possible. This means that consumers’ perception of speed is important when they are making choices between transport modes. They also need to trust that a surface access option will deliver for them and know that there are different options available.

Some airports near to me in distance are further due to the route available (i.e., A roads rather than motorway) so get bumped down the list.¹²

Our post-Covid surface access consumer research has shown that, while some consumers may switch modes of surface access (such as towards private cars rather than public transport on the grounds of safety), consumers overall are still looking for the quickest and most

⁵ Blue Marble Research, *Consumer needs synthesis*, November 2020

⁶ Join the Dots, *Passenger priorities post COVID 19*, June 2020

⁷ Ibid

⁸ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁹ Ibid

¹⁰ Ibid

¹¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

¹² Join the Dots, *Passenger priorities post COVID 19*, June 2020

convenient way to travel to the airport¹³. Nonetheless, it is important to recognise that we could see some shift in transport modes in the future. It's also worth noting that stress associated with using public transport modes is likely to be greater than before for consumers and even more so if there is a disruption event on their journey.

“Covid makes it even more certain that I will travel in my own, personal bubble, completely isolated from other people.”¹⁴

“I feel cared for and supported”

A key priority for consumers in the event of disruption is to be informed promptly and effectively. Without adequate information, consumers could feel ‘in limbo’ and unable to relax, prepare themselves for their flight or do anything productive during the wait period¹⁵.

“For me this is about having support when it matters - i.e., after 5mm of snow and the runway closes and we're all stranded!”¹⁶

Importantly, our research shows that consumers do not differentiate between the responsibilities of airports and their partners. They care about the issue being addressed and rectified¹⁷. This is crucial to resilience through H7, as Heathrow Airport will require other Team Heathrow partners to play a key role in delivering the appropriate level of resilience.

The feeling of being looked after is something that can be memorable for consumers, bringing actively positive impressions of an airport and potentially feeding into airport preference and choice. Cared for needs are accentuated particularly in unexpected or crisis situations where additional stress is experienced¹⁸.

Furthermore, our post-Covid consumer research has shown that visibility of airport colleagues to reassure and assist passengers is of paramount importance¹⁹ - indeed, our research indicates that 25% of consumers have now become nervous about flying as a result of Covid-19. It is also likely that reassurance and assistance will be even more crucial during any future periods of disruption. The uncertainty and insecurity that is associated with returning to travel will result in passengers being more stressed than ever before; frequent communications and the presence of visible and empathetic colleagues who are willing to help will be hugely important to support our consumers through the airport journey.

Details of our response to ensuring we deliver this reassurance and assistance to passengers though our refreshed passenger proposition is covered in Chapter 3 – Passenger Experience.

“Airports and flying can be very stressful and anxiety-provoking so feeling calm and at ease are important. This makes the whole experience more enjoyable.”²⁰

¹³ Join the Dots, *Surface Access post COVID 19*, August 2020

¹⁴ Join the Dots, *Passenger priorities post COVID 19*, June 2020

¹⁵ Populus, *Resilience Qualitative Research*, October 2019

¹⁶ Join the Dots, *Passenger priorities post COVID 19*, June 2020

¹⁷ Populus, *Resilience Qualitative Research*, October 2019

¹⁸ Civil Aviation Authority, *UK Aviation Consumer Survey*, June 2019

¹⁹ Join the Dots, *Passenger Priorities post COVID 19*, June 2020

²⁰ Ibid

“I feel comfortable and secure at the airport”

If a consumer is impacted by disruption they expect to be kept safe and comfortable whilst they wait to continue their journey. It is important that the airport community works together to meet both the physical and emotional needs of passengers at these times.

Our research has shown that, while consumers have always considered cleanliness and safety as top priorities as part of this outcome, Covid-19 has led to these factors being interpreted differently. Perceptions of cleanliness now extend beyond the traditional toilets and litter; consumers now expect other things, such as provision for hand sanitisation and open areas with plenty of room to mitigate the risk of virus transmission. Seating has always been crucial for consumers, but in the post-Covid world passengers expect more: seating must be adequately spaced, wipe clean and with hand sanitisation facilities nearby.

“The ability to feel safe and secure and be able to be distanced from other people. I hate crowding normally and am even more wary of it in the current circumstances.”²¹

Our research-led understanding of what consumers expect as part of the above outcomes, particularly post-Covid, enables us to ensure that our resilience plans for H7 deliver on consumer needs as far as possible.

7.3.5 Resilience and Outcomes Based Regulation

As detailed in Chapter 9.2. - Measures, Targets and Incentives, there are a number of existing and new measures in Heathrow’s proposed service quality regime that will be supporting the four key resilience related outcomes set out in the previous section.

- There are a number of measures under **I have a predictable and reliable journey** that relate to resilience, including Departures Flight Punctuality and Runway Operational Resilience (previously called Aerodrome Congestion), which looks at the variance in actual versus estimated air traffic movements due to material events. Other measures include passenger perception of wayfinding, which we know is particularly important to connecting passengers, and a number of queue time measures to measure how quickly consumers are moving through security and immigration.
- We plan to measure Ease of Access to the Airport under the outcome of **I am confident I can get to and from the airport**. This is particularly important for passengers travelling on direct point-to-point flights, where anxiety levels are heightened about getting to the airport on time.
- **I feel cared for and supported** will include measures related to the helpfulness and attitude of airport and security staff. Consumers do not distinguish between which company colleagues at the airport work for, if they require help along their journey then they expect that anyone working at the airport will be able to assist them²². This includes during times of disruption.
- Under the outcome of **I feel comfortable and secure at the airport**, we plan to include a range of measures, including Baggage Misconnect Rate and Baggage System

²¹ Ibid

²² Populus, *Resilience Qualitative Research*, October 2019

Availability, because consumers see that it is important that their bags with their belongings in reaches their destination at the same time as they do²³ and want to be safely reunited with their baggage as soon as possible so they can smoothly continue on their journey²⁴. There is also an attitudinal measure called Feeling Safe and Secure, as consumers have a fundamental expectation that they will feel that they are been kept safe and secure at all times while travelling, including when there is disruption²⁵.

The service quality regime is only one component of our wider plans to meet the needs of consumers, but nonetheless we believe we have proposed appropriate measures to target the key outcomes related to resilience and ensure we are measuring our progress against meeting them.

7.3.6 Our resilience plans for H7 will respond to consumer needs, as well as adapt to varying passenger volumes

Delivering outstanding consumer outcomes and maintaining an appropriate level of resilience is possible and essential during H7. We are nonetheless cognisant of the impact of Covid-19, which is likely to result in a necessarily different passenger experience and proposition. We may also be operating in a reduced terminal or infrastructure environment for at least some of the regulatory period.

We have proposed several resilience measures across H7, to be delivered through cross-stakeholder engagement and collaborative working:

Improving departure punctuality

Through targeted improvements to operational resilience and environment made possible by our £3.5bn capital plan, we are aiming to achieve an improvement in departure punctuality, from 78.4%²⁶ to 80.5%. We will also target maintaining continuous descent operations at above 85%. This represents a challenge in the ongoing recovery from Covid-19 and will only be possible with delivery of our proposed capital plan and collaboration from across Team Heathrow.

New operators and crews unfamiliar with Heathrow flight procedures and revised requirements for turn-around (e.g. aircraft cleaning and loading and passenger boarding etc) will make previous levels of performance difficult to achieve, but we recognise how important the steps that we took through Q6 were in supporting a resilient operation; committing to maintain these levels of service is the right decision.

In support of this target, we will also look to investigate more proactive use of slot scheduling and capacity limits through our close working relationship with the airport co-ordinator, ACL. Active management of slot rules, especially approaching the night period, could help to alleviate late running aircraft and during the normal operational day would ensure operating to plan more closely, something consumers value highly as part of the “Predictable and Reliable Journey” outcome.

²³ Accent, *H7 Service Package Choices Research*, November 2019

²⁴ Join the Dots, *Horizon Report Arrivals*, 2018

²⁵ Truth Consulting, *DNA Integrated Analysis: The way forward*, May 2017

²⁶ 2019

Enhanced operational efficiency

There are a number of enhanced operational efficiency initiatives that would have been early deliverables of the Expansion programme, which we will continue to look to implement over H7. Some of these initiatives do not require significant capital investment and are focused on sweating our current assets and making best use of the infrastructure that we currently have available. Others require modest investment, to a level appropriate in a capital constrained environment, but that will deliver industry leading ATM and Airspace improvements, which we have seen to be hugely beneficial to the resilience of Heathrow throughout the previous price control period.

We will seek to continue the improvement of stand utilisation through enhancements to stand planning, as well as procedures and tools to support targeting further turn-around efficiencies. We know that some stands are utilised more efficiently than others at Heathrow and if we can align the overall level of performance to the highest performing stands, we will be able to liberate significant resilience in our day-to-day stand plan.

We will continue to work with our partners at NATS, the air navigation service provider (ANSP), to deliver ATM efficiencies such as enhanced Time Based Separations: Pairwise Separations (refining arrival separations for aircraft to increase the landing rate while maintaining current safety performance) and completing the deployment of Departure Management (DMAN), enhancing departure planning and sequencing to the runway. We will also look for opportunities to derive the benefits of Performance Based Navigation (PBN), which gives aircraft the opportunity to fly more accurate tracks with greater containment.

Airspace modernisation

We will continue to progress airspace modernisation in line with deployment as agreed with the Future Airspace Strategy Implementation (South) programme; Heathrow remains committed to playing a key role in the modernisation of the airspace around the London Terminal Manoeuvring Area. The revised airspace will make use of advances in modern technology to provide sustainable airspace designs, reducing our carbon and noise footprints.

Of course, there are trade-offs to be made between carbon and noise reduction; these will require careful consideration, as well as engagement with Government and our local communities to secure the right balance. However, there is no doubt as to the benefits of national airspace modernisation on the environmental impact of aviation, while also contributing to airport resilience and ATM throughput.

Continued enhancement of Demand vs. Capacity procedures

Much work has been done throughout Q6 on design and implementation of a demand vs capacity (DvC) process at Heathrow. This process is a collaborative one where, working in collaboration with our airline partners, an event is identified that has significant potential to degrade the ability of Heathrow to deliver a full schedule (such as fog, strong winds or winter events), a schedule intervention is made, and airlines are requested to remove flights. This provides a schedule on the day that is much more robust and achievable and ensures early communication with those passengers flying on affected flights.

In H7, Heathrow will further refine this process and work with all parties to ensure that interventions are kept to a minimum but also ensure that when they are necessary they are undertaken in a way that causes the minimum amount of disruption to passenger journeys. We will also look to increase the collaboration with our airline partners to ensure that any interventions are appropriately actioned and deliver the outcomes that are planned.

Late running departures

As previously mentioned in the chapter, late running departures are a bellwether of operational resilience, as well as being a key metric in improving Heathrow's impact on the local communities. As the current DfT night restrictions come to a close in 2022, we will play a key part in setting new targets (through the upcoming Night Flights consultation) and will continue to lead the industry in driving down late running departures across H7.

Joint Resilience Plan

Now more than ever, it is clear that all stakeholders are required to be part of the resilience plan if Heathrow is to achieve the outcomes identified as being most important to consumers. Our airline partners play a pivotal role in the overall resilience of the airport and the only way to maintain and improve operational resilience is to work closely with them on the timing and implementation of our proposed measures.

That is why Heathrow is proposing the creation of a Joint Resilience Plan for H7. Created with the airlines, this details the single and joint accountabilities for resilience milestones across the control period, and allows all stakeholders to be held to account for delivering the consumer outcomes which matter most to passengers. This Joint Resilience Plan would be in addition to those measures applied throughout the control period via any outcomes-based regulation.

It is important to recognise these initiatives, whilst providing a foundation for continued operational resilience throughout H7, will need to be delivered in a capital constrained environment due to the impacts of Covid-19. As such, any resilience enhancements will require prioritisation in the same manner as all other projects in the H7 capital plan; they should be benefits led, driving maximum resilience into the operation based and undertaken in a responsible, cost-efficient way.

7.3.7 Resilience and terminal management

It should also be noted that, in the event of a Low demand scenario, there may be a need for continued temporary suspension of terminals through at least part of the H7 period. We will continue to look at Demand v. Capacity on an ongoing basis to make the most cost-effective decisions and continue to provide airlines with the conditions for recovery.

We have established a triggers process to govern the return of capacity and shared principles for how the return would take place (accepting that the uncertainty around the demand at that point means we cannot be specific). **[REDACTED]**. At the appropriate stage in the recovery of demand, having three terminals operational will provide more flexibility to balance demand and avoid over-crowding as the recovery continues.

As airline schedules return to a more predictable pattern and follow the established scheduling process (including the 80:20 slot rule), we will look to move the existing agile Demand v. Capacity process to integrate with the scheduling process and medium-term forecasts.

[REDACTED]. This requires a focus on operational efficiency and changes to processes by both airport and airlines but flows through into a further reduction on the charge. There could be opportunities to extend the cost savings of consolidation further without necessarily harming our ability to serve demand, but this may require further changes to airline processes in order to protect service outcomes for consumers. We will work with airlines to explore this option further in 2021.

Once full terminal capacity returns, we will re-establish existing scheduling and capacity limit processes to manage the schedule development and ensure that the operation and resilience are protected, including terminal over-crowding. This may include a recalculation of limits as appropriate, depending on the extent to which capacity is permanently altered, or identification of interventions to change the terminal process to return additional lost capacity. However, it will not be possible to determine this until more is known about the rate and shape of demand return, and any lasting impacts of Covid-19 on capacity reduction.

7.3.8 Asset resilience

Resilience of Heathrow's assets is dealt with differently for different classes of assets. For the purposes of resilience the assets can be divided into three categories:

- High Integrity;
- Business Critical; and
- Business Operational.

High Integrity assets are those that could cause significant harm to people or non-compliance with legislation or regulation. Business Critical assets are those that are essential for the core operation of Heathrow, where failure would cause significant impact on the operation. Business Operational assets are all assets that are not in either of the two previous categories.

A high level of resilience is currently achieved on all High Integrity assets. In some cases this is achieved through duplication (or n+1, one more than the number that is actually needed) and in other cases it is achieved through high resilience detailed design. Our maintenance programme for these assets is also designed to ensure high levels of availability.

Future plans for High Integrity assets previously included further enhancement of the resilience and fault tolerance, [REDACTED].

Our Business Critical assets have a variety of levels of resilience, based on the level of risk associated with the asset. Further enhancements were planned throughout H7, which have now been paused. [REDACTED].

For all Business Operational assets, a lower level of resilience is anticipated during H7.

7.3.9 Capital investment through Build Back Better

While our H7 plans focus on a number of initiatives, which will sweat our current assets and make the best use of existing infrastructure or require only modest investment, the Build Back Better portfolio includes £150m for Service & Resilience projects as part of our 'Future Ready Airport' programme as detailed in the Chapter 6 - Capital Investment.

Our minimum plan commits that we will invest in the non-discretionary protection of existing resilience, protecting existing service levels for consumers. However, as passenger volumes return and increased pressure is placed on our infrastructure, we will need to enhance the existing facilities.

We will ensure through our capital governance process that we prioritise the projects within the £150m capital allocation which unlock the greatest improvements to resilience for our consumers.

7.3.10 Heathrow takes a holistic view of resilience, including areas outside of the airport operation

Cyber and IT

We will continue to invest appropriately in Cyber and IT upgrades in response to the anticipated increased threat of Cyber Attacks and in order to meet our regulatory and legal commitments in terms of Network and Information Systems (NIS) and GDPR. We will also build on the strong progress we have made in educating our colleagues on the threats of cyber security and how they can play their part to protect the airport.

Through H7 we will target appropriate investment to assess and address the evolving cyber security risks and threats to Heathrow airport and aviation:

[REDACTED]

Climate Resilience

As an operator of nationally significant infrastructure, Heathrow is required by the Government to produce a five yearly “Climate Change Adaptation Report” (CCAR), setting out the risks to our airport and operations from more severe weather and what we are doing to prepare. Even with rapid global progress to cut carbon emissions, some change in our climate is inevitable and is already happening. In the UK this will mean hotter, drier summers and warmer, wetter winters. It will also mean more extreme weather including heatwaves and periods of heavier precipitation. We use the latest expert projections of climate change from the Government and the Met Office to understand the future risks to Heathrow’s infrastructure and ensure we have plans in place to address these.

Those plans are currently a mix of management actions and ensuring our design standards are appropriate for future weather conditions. In the future, we may also need to invest to upgrade elements of our infrastructure (e.g. surface water run-off systems) but we are not currently anticipating that during H7. We will publish our next CCAR in 2021 and will update our risk management plans as part of that.

Financial Resilience

In the Financing Principles chapter (Chapter 8.1) we note that Heathrow took rapid and decisive management action to reduce costs following the outbreak of Covid-19 and its impact on demand. Financial resilience will remain a priority for Heathrow as we move into H7.

7.4 - SURFACE ACCESS

Chapter Overview

- Surface Access is important to consumers and critical to outcomes we know they value: being “confident getting to and from the airport” and having a “predictable and reliable journey”.
- It is also highly valued by our other stakeholders as a means of getting to and from places of work
- Our surface access strategy targets aims to grow airport passenger numbers, reduce the cost of access, reduce emissions, achieve wider sustainability goals and generate revenue for the single till.
- We plan to achieve a passenger public transport mode share of 45% by 2026 and a colleague single occupancy car mode share of 57% by 2026. Key elements of our plan in H7 include:
 - **Free Travel Zone:** while we have suspended the Free Travel Zone for 2021 (as a result of Covid-19), we will look to restore a subsidised travel zone as soon as possible in the H7 period.
 - **Forecourt Access Charge (FAC):** we are working towards the introduction of a FAC, the last of the 10 larger UK airports to do so. The charge is expected to be around [REDACTED].
 - **Rail:** the Elizabeth line is due to commence operations through running central London (up to 6 trains per hour) by 2024. We will continue to support the development of Western and Southern Rail. While we do not anticipate Western Rail becoming operational until at least 2030, we have set aside some investment to fit out the T5 station to accommodate the new line.
 - **Heathrow Express:** operations will continue until at least 2028, with new rolling stock and a door to door extension service minimising onward charges.
 - **Other Rail:** we support the proposed investment in the Piccadilly Line rolling stock and signalling system upgrades and will work with the HS2 programme to ensure that the airport passenger experience when interchanging at Old Oak Common station to board Heathrow-bound trains is optimised.
 - **Taxis & Private Hire:** we plan to improve the efficiency of taxi and private hire journeys. This could include a backfilling scheme and/or permitting.
 - **Freight:** our investment in a cargo truck call forward system and facility will enable scheduling of deliveries and collections at the Cargo Centre and provide a location for HGVs / LGVs to wait if they arrive early or at times when the Cargo Centre is full.
 - **Active Travel:** we will create more direct and safe walking and cycling links to key colleague employment locations and expand the role of the Heathrow Cycle Hub.
 - **Electric Vehicles:** we will continue to electrify our own fleet of vehicles and put the EV charging infrastructure in place to meet anticipated growth in demand.

7.4.1 Introduction

Surface access refers to all the ways in which passengers, visitors, colleagues¹ and goods travel to and from Heathrow. It does not include trips by aircraft (e.g. transfer passengers). Our surface access network connects people and freight to Heathrow, supporting our role as the UK's only hub airport. Heathrow is also an integrated transport hub, bringing together road, rail and air transport.

Our plans for surface access enable passengers, colleagues and our local communities to travel with a choice of safe, fast, easy, reliable, value for money, efficient and sustainable transport options. In delivering these benefits, we will be providing a better service for our consumers, enable better air quality and local quality of life and improve Heathrow's economics and value for the UK.

Surface access in our IBP reflected our Surface Access Proposals for the preferred three runway (3R) masterplan, as set out in our summer 2019 Airport Expansion Consultation. Since then:

- The Court of Appeal decision to suspend the Government's ANPS, while recently overturned by the Supreme Court, has nonetheless meant that the programme for Heathrow Expansion, the associated masterplan and timing for new capacity has been delayed.
- The Covid-19 pandemic and its economic impacts have caused an unprecedented drop in passenger demand .

It has therefore been necessary to adapt our proposals for surface access to reflect the impact this has had on travel demand and our business.

Our proposals for surface access in H7 take into account consultation with the airline community and the CAA through our monthly Surface Access Airline Stakeholder Committee (SAASC) and Constructive Engagement. We have also consulted many stakeholders through the Heathrow Area Transport Forum (HATF).

In common with the rest of our plan, the proposals outlined in this chapter assume the implementation of the Covid-related RAB adjustment. In the event of a decision not to allow this adjustment, it is likely that the potential investment described in this chapter would be significantly reduced. Please refer to Chapter 10.2 – Outcomes for more details on capital implications of this decision.

7.4.2 Covid-19 has had a material impact on our surface access strategy

The impact of Covid-19 on the demand for air travel and how people will use surface access to travel to and from the airport in H7 remains unpredictable. Heathrow's monthly Profiler

¹ "Colleagues" is defined as all employees of Team Heathrow (Heathrow, airlines, handlers and supply chain partners based at the airport).

Survey² of departing passengers for October 2020 indicates there has been a reduction in the use of public transport for those accessing the airport. This aligns our recent car park utilisation data which is high relative to current passenger demand. Table 1 shows October 2020 mode share breakdown based on our Profiler survey data compared with October 2019.

Table 1: Mode share Comparison October 2019 – 2020

		October 2019	October 2020
Private Vehicle	Private car	22.5%	39.0%
	Rental car	2.1%	2.2%
	Taxi / Private Hire Vehicles (PHV)	31.7%	28.0%
	Other	1.7%	1.0%
Public Transport	Coach / Bus	12.4%	6.0%
	HEx	9.6%	3.9%
	Tube	19.1%	18.7%
	TfL Rail	0.7%	0.9%
	Other Rail	0.2%	0.3%
	Public Transport Mode Share	42.1%	29.8%

Source: Heathrow

We expect personal safety and cleanliness to remain a higher priority for passengers³ than in the past. Our Profiler Survey⁴ data suggests there is less trust in public transport and mass transit modes as a result of concerns over Covid-19. Our insights demonstrate consumers value speed, ease and trust when choosing the mode for their journey to the airport and we believe these will continue to be important. As passenger demand grows back, we will have choices to make about where we invest to influence passenger travel behaviour when accessing the airport.

The economic reality for consumers, airlines and Heathrow has changed significantly since we developed our IBP and our investment in surface access in H7 will need to adapt as a result. We expect there will be a reduction in the number of Team Heathrow⁵ colleagues working at the airport. This will reduce the number of people travelling to the airport on a regular basis and may make some public transport services less viable due to low patronage. Our focus will be on protecting the business and reducing costs during this period of lower

² Heathrow, *Monthly Profiler Survey*

³ Join the Dots, *Horizon Surface Access Post Covid-19 Recovery report*, August 2020

⁴ Heathrow, *Monthly Profiler Survey*

⁵ Team Heathrow includes every airline, handler and supply chain partner based at the airport.

passenger demand. This also means we will have less to invest in surface access in the H7 regulatory period than we had previously anticipated in our IBP.

We must still consider our long-term sustainability strategy to ensure we Build Back Better (Chapter 4). Passenger and colleague surface access is the biggest source of airport carbon emissions after aircraft and is a factor in local air quality both within the airport and in our local communities. The surface access strategy plays a critical role in achieving our sustainability goals and our surface access targets must continue to focus on reducing the impact of surface access on the environment and local communities.

The profound impact Covid-19 has had on our business has meant our priorities for surface access will need to balance growth as well as sustainability. We will seek to work in partnership with Team Heathrow, Heathrow Area Transport Forum (HATF) and other key stakeholders to maximise the value of our investments in surface access during H7.

7.4.3 Consumer Insights

Surface access investment contributes to the delivery of two out of our six consumer outcomes (Figure 1). It is central to the “I am confident I can get to and from the airport” outcome and also influences “the predictable and reliable journey” outcome.

Figure 1: Heathrow consumer outcomes



Source: Heathrow

Surface access improvements drive our catchment growth and are a key driver of consumer satisfaction. It has always been of fundamental importance to consumers that the airport is accessible, so that they are able to fulfil their travel plans. While the consumer value assigned to being able to access the airport has not changed in the post-Covid-19 world, it is important to consider that consumers may view how they get to the airport in a different way to how they did previously. There is likely to be greater emphasis on the safety of getting to the airport in terms of potential exposure to transmission, in particular for those considering public transport

options⁶. Indeed, our consumer research showed that 76% of current passengers are concerned about spreading or contracting Covid-19 while travelling to the airport.⁷ Overall, our research suggests that consumers will continue to prioritise accessibility when determining their airport of choice, but that they will also place greater emphasis on the reliability and safety of surface access options for getting to the airport following Covid-19⁸.

“Basically, the airport must be easy to get to by public transport from home, because hotels, transfers and parking etc. all add to the cost of a holiday.”⁹

Consumer insight indicates passengers want three key things from surface access¹⁰:

1. To get to the airport quickly.
2. For the journey to be easy.
3. For their journey mode to be reliable.

Passengers weigh up these factors (speed, ease and trust) when choosing the mode for their journey. Our consumer research shows that being able to get to the airport quickly and efficiently and being able to easily access the airport are the two most important needs within the theme of ‘getting to the airport’. These two needs were assigned a combined 39% priority weighting by consumers across the six key needs related to getting to the airport¹¹.

“I avoid Heathrow as the tube is so tedious”¹²

Consumers have also told us that they value a wider range of choices and, as part of the ease of access to the airport need, that they prefer some public transport options over others – for example direct rail services over complex multi-change journeys or coach¹³. A better mix and greater speed, ease and reliability of public transport options not only meets consumer expectations but is also an effective way to improve the sustainability of our airport. We know that sustainability is important to many of our consumers, with 24% of consumers ranking sustainability in the top three issues facing society that need fixing¹⁴. Therefore, investing in sustainable surface access options is also important in meeting consumer needs in this area.

“...the aviation sector is really stagnant in terms of sustainability improvements, so actually working towards these targets would go a long way.”¹⁵

⁶ Join the Dots, *Passenger priorities post COVID 19*, June 2020

⁷ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁸ Join the Dots, *Passenger priorities post COVID 19*, June 2020

⁹ Ibid

¹⁰ Ipsos Mori, *Heathrow Surface Access Insights Synthesis*, April 2019

¹¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

¹² Join the Dots, *Passenger Priorities Post Covid-19*, June 2020

¹³ Ibid

¹⁴ Incite Kin + Carta, *Understanding the sustainability landscape in 2020 and future initiatives for Heathrow*, September 2020

¹⁵ Ibid

Our plans have always assumed investment in infrastructure and operational change to improve our public transport options. Greater insight has driven us to think more carefully about the gaps in our network, focusing on cost effective ways to fill those gaps in the short term and to highlight the importance of rail schemes in the long term. Feedback from consumers on an access charge is also clear – they will support it but far more so if it is used to increase transport choices or reduce overall costs than if it is a commercial mechanism for solely generating revenue^{16 17}. This has informed our treatment of surface access charges, as set out later.

In conclusion, we do not believe that Covid-19 will fundamentally change what our consumers value, but our surface access proposals may need to reflect changes in passenger expectations on safety and cleanliness, which also impacts consumer mode choice¹⁸. There is significant uncertainty over how long the recently observed changes to the way that people engage with our surface access offering will extend into H7. Continued consumer research will provide the insight required to ensure proposals for H7 meet the needs of our consumers.

We discussed our surface access proposals with airlines in Constructive Engagement. We have incorporated their views into our surface access priorities. The airline community did not support the Southern Road Tunnel and therefore we have de-prioritised this for H7. The airline community were supportive of the principle of heavy rail into Heathrow but would need to understand the actual costs and evidenced business case. Therefore a contribution to Western Rail is not included as part of our H7 capital plan, but a T5 Station fit-out to develop our supporting infrastructure is.

7.4.4 Benefits

Our surface access vision is “*transforming journeys to and from Heathrow*”. This, along with our consumer insights, gives us a need to deliver more value from less spend.

Investing in surface access allows us to meet the consumer need of being confident that they can get to and from the airport and helps us to deliver against the consumer outcome of a predictable and reliable journey. It also enables us to meet the more surface access-specific consumer needs (speed, ease and trust). This in turn drives airport growth and revenues and has a positive impact on the single till, helping to minimise the airport charge. The proposals for surface access include a combination of interventions that provide a choice of travel options for consumers, increase airport operational and surface access resilience and align to the CAA ‘user pays’ principle contained in the surface access policy.¹⁹

Surface access is key to ensuring that we deliver on our commitments to our stakeholders:

¹⁶ Populus, *Exploring potential impact of an Access Charge and Emission Charge to Heathrow*, February 2019

¹⁷ Incite, *Passenger modal choice – The influence of introducing an HVAC*, February 2020

¹⁸ Join the Dots, *Horizon Surface Access Post Covid-19 Recovery report*, August 2020

¹⁹ CAA, *CAP 1847 Economic regulation of Heathrow Airport Limited: an update on the CAA surface access policy*, October 2019

- Passengers: investing in our surface access strategy enables us to meet consumer needs and deliver our key consumer outcomes.
- Community: the right surface access proposition significantly increases the sustainability of the airport.
- Airlines: a surface access strategy that meets consumer needs will ensure that we can grow our catchment area and maximise revenues from other surface access options, helping to keep airport charges affordable and support airline demand.
- Colleagues: a surface access strategy that properly meets colleague needs will allow colleagues across Team Heathrow to make cheaper, more efficient, more sustainable and reliable journeys to work.
- Investors: a good surface access proposition makes Heathrow attractive to more passengers, airlines and cargo users.

The suite of surface access proposals aim to deliver ten key outcomes and the level of investment available for surface access in H7 will determine our ability to deliver against them:

1. Increase the range, availability and quality of surface access options for consumers.
2. Reduce carbon emissions and the impact of airport operations on local communities, the environment and air quality.
3. Grow airport passenger numbers through providing faster, easier and more reliable surface access connections to the airport.
4. Reduce the cost of surface access for the airport, passengers and colleagues.
5. Generate revenue for the single till.
6. Drive efficiencies in airport operations through reducing surface access costs for Team Heathrow.
7. Improve colleague wellbeing through more active travel and better journeys.
8. Support future growth in cargo demand without adding congestion.
9. Enable growth through delivering critical schemes.²⁰
10. Support the regional economy.

Table 2 below identifies the outcomes for each surface access initiative.

²⁰ Delivery of Expansion-related schemes will require capital investment which will need positive business cases in the H7 period. Our approach for the capital plan will be to bring forward the case for individual projects as appropriate.

Table 2: Surface Access Benefits and Outcomes

	Western Rail	Forecourt Access Charging	Active Travel Infrastructure	Travel Wallet and Car Sharing	Taxi and PHV Permitting	Bus and Coach components	Electric Vehicle Infrastructure	Car Parking	Freight
Range, availability & quality of Surface Access	✓		✓	✓		✓	✓	✓	✓
Grow airport passenger demand through faster, easier, more reliable connectivity	✓					✓	✓		
Reduce cost of Surface Access for the airport, passenger and colleagues			✓	✓		✓	✓	✓	
Generate revenue	✓	✓			✓		✓	✓	
Drive efficiencies in airport operations to reduce costs for Team Heathrow	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reduce impact of airport operations on the environment and air quality	✓	✓	✓	✓	✓	✓	✓		✓
Improve colleague wellbeing through more active travel and better journeys	✓		✓	✓		✓	✓		
Facilitate growth in cargo demand without adding to congestion									✓
Enable growth through delivering critical schemes	✓	✓	✓	✓	✓	✓	✓		✓
Support regional economy	✓		✓			✓			✓

Source: Heathrow

7.4.5 Targets

In line with the Government’s Aviation Policy Framework (March 2013²¹) we have an Area Transport Forum in place. The Policy Framework sets out that one of the primary roles of the Area Transport Forum is to:

*“set out targets for increasing the proportion of journeys made to the airport by public transport for both airport workers and passengers”.*²²

Heathrow’s Area Transport Forum (HATF) robustly challenges Heathrow on its performance against defined surface access targets and doing the right thing for passengers, colleagues and local communities. The HATF priorities for surface access, which focus on achieving sustainable outcomes that benefit the sub-region, have also been a key focus when setting surface access targets.

The purpose of our surface access targets is to focus the delivery of our surface access strategy, help to prioritise investments that maximise benefits, and enable us to monitor progress towards achieving the surface access outcomes identified in the previous section. The surface access proposals in the IBP focused on achieving the ANPS targets, which align to our sustainability strategy. Surface access is a significant contributor to the carbon footprint of the airport; surface access investments provide some of the best value sustainability benefits including reducing congestion and improving local air quality.

The airline community provided diverse views on prioritising sustainable outcomes in Constructive Engagement. There was a recognition that targets are useful in delivering the Surface Access Strategy (SAS) but caution that these should be realistic and aligned to what

²¹ <https://www.gov.uk/government/publications/aviation-policy-framework>

²² <https://www.gov.uk/government/publications/aviation-policy-framework>, page 70, paragraph 4.17

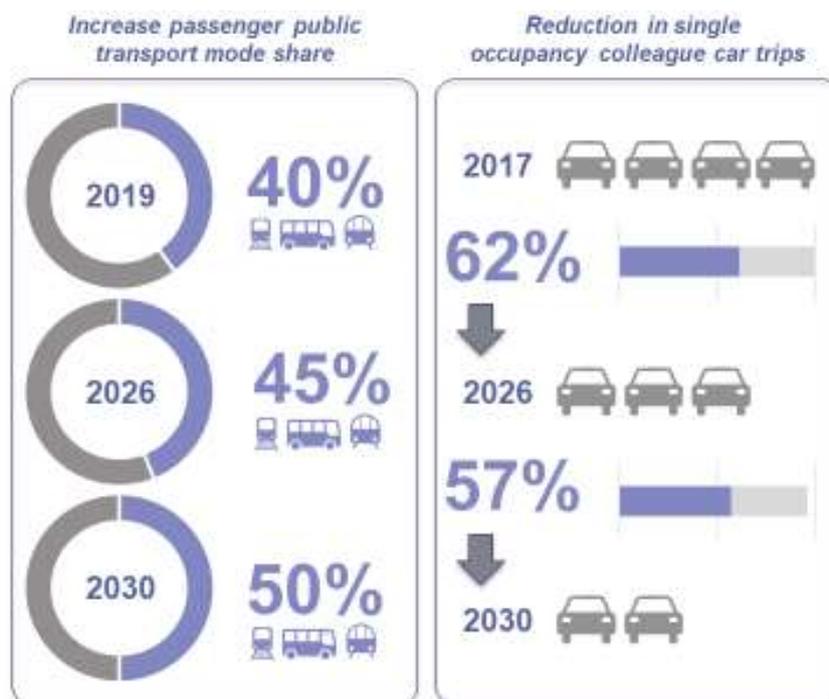
can be achieved through limited investment capacity. We have listened to the airline community and have considered appropriate targets for 2026 that continue to progress us towards longer-term sustainability goals and the outcomes described above. However, given the unprecedented challenges of the H7 period, these have had to be balanced with achievability.

Our analysis of the 2017 Employer Travel Survey and 2018 Machine Address Identification (MAID) system data demonstrated that in 2018 colleagues generated 45,000 trips to and from the airport on an average weekday. We expect Covid-19 will result in a reduction in the number of Team Heathrow colleagues that work on campus and therefore the number of colleague car trips generated in the short-term. However, colleague trips will continue to account for a significant proportion of the daily traffic generated by the airport. It remains important for our long-term sustainability goals that we manage the impact of these by providing colleagues with sustainable travel choices.

We have considered these key contributions, our business needs and level of investment to form our proposed targets for H7:

- Achieve a passenger public transport mode share of 45% by 2026;
- Achieve a colleague single occupancy car mode share of 57% by 2026.

Figure 2: Our surface access targets



23

Source: 2019 CAA Passenger Survey²⁴ and 2017 Heathrow Employer Survey²⁵

We continue to aim for the surface access passenger mode share target outlined in the ANPS and in our sustainability strategy. By doing so we can create a long-term consumer opportunity for growth and continue to improve our consumer offer while balancing the impacts of surface access on our community and the environment. However, we recognise that the path towards achieving a steady shift in mode share will need to change to reflect the impact of Covid-19.

We have adopted a simplified colleague target measuring the proportion of single occupancy car trips. This allows us to regularly monitor performance of surface access interventions that target specific travel options such as car sharing and active travel.

We will bring forward surface access investments in H7 that support us meeting our surface access targets with exact investments prioritised in-period, taking into account appropriate levels of funding available.

7.4.6 Core surface access components

7.4.6.1 Rail

Heathrow has two rail and underground links to central London, accounting 30% of our transport mode share in 2019. Our vision is to put Heathrow at the heart of the rail network.

²³ Figures rounded

²⁴ 2019 CAA Passenger Survey

²⁵ 2017 Heathrow Employer Survey

We want to build upon the committed proposals to introduce Elizabeth Line services, opening a station on the HS2 line at Old Oak Common and to upgrade the Piccadilly line, and a longer-term ambition to realise two new rail connections to the west and south of the airport.

In our IBP we proposed investment in both the Western Rail Link to Heathrow (WRLth) and Southern Access to Heathrow (SAtH) schemes. Although the impact of Covid-19 has delayed progress, they remain an important part of our longer-term strategy. To maximise the use of the Elizabeth Line and Piccadilly Line we proposed investment to promote the use of these by passengers and colleagues to help achieve the ANPS targets. The impact Covid-19 of on our finances means our ability to support these projects will be significantly reduced but we will continue to work closely with TfL and our partners to maximise the value of this infrastructure for consumers.

Heathrow Express

Heathrow Express (HEX) provides a dedicated rail service between London Paddington and Heathrow Terminals 2, 3 and 5. Heathrow Express is a subsidiary of Heathrow Airport Limited, with Great Western Railway (GWR) managing the service. Passengers have consistently ranked HEX top in passenger satisfaction when compared to other Train Operating Companies (TOCs). In Spring 2020, 94% of passengers were satisfied with their journey. The predictability and reliability of the journey, cleanliness and the helpfulness of staff were cited as particular areas of satisfaction.²⁶ We also confirmed these views in separate research conducted earlier this year.²⁷ Passengers were more satisfied with their HEX journey than TfL Rail or Tube. 48% rated the train cleanliness as excellent and 59% rated the punctual service as excellent. We recognise that value for money for the ticket price was cited as an area to improve²⁸. We have initiated an innovative yield management system, which we will use to incentivise our price-conscious passengers to travel by Heathrow Express over other surface access modes.

HEX will continue to run through the H7 period, until at least 2028. New rolling stock will also be introduced before the H7 period, which will provide our passengers with more comfortable facilities. The new contract and rolling stock will also increase reliability. We have also identified that our HEX passengers prefer a more direct journey so we will deliver a ‘First Mile / Last Mile’ transfer proposition in partnership with an appointed ground transportation provider.

At a point in H7, Heathrow Express will need to negotiate to extend the Track Access Agreement or apply for a new one in order to continue operating beyond 2028. Further details on the operating cost and commercial revenue associated with Heathrow Express can be found in chapters 7.1 and 7.2 respectively.

Elizabeth Line

The Elizabeth Line will deliver a significant improvement to public transport connectivity to Heathrow once direct services to central London commence in 2024. It will provide a direct rail connection from Heathrow across central London to the West End, the City of London and

²⁶ Transport Focus, *National Rail Passenger Survey, Main Report*, Spring 2020

²⁷ Ipsos, *Heathrow Surface Access Tracker*, Q1 2020

²⁸ Transport Focus, *National Rail Passenger Survey, Main Report*, Spring 2020

Canary Wharf, with six services per hour serving the airport in each direction. The introduction of the Elizabeth line is the most significant change to Heathrow's surface access proposition since the introduction of the Heathrow Express in 1998.

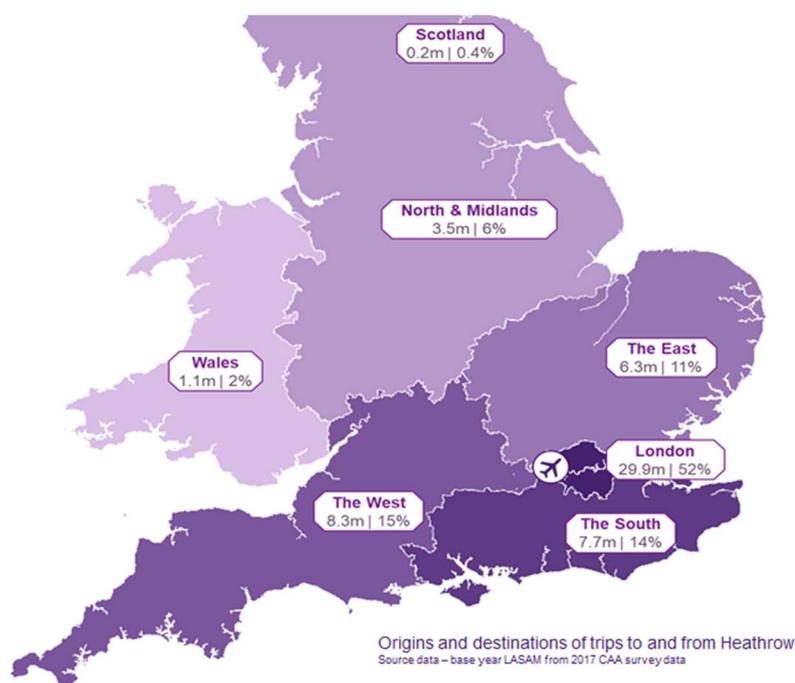
Newer trains on the Elizabeth line will have air conditioning and ample standing room, which may help to assuage concerns about cleanliness in the longer-term. The work to prepare the Heathrow rail infrastructure for the arrival of the Elizabeth Line trains has been completed. All that remains is to update signage and prepare the airport stations for the commencement of these services. The Elizabeth Line will likely cannibalise existing revenues from the Heathrow Express. Further detail regarding this impact to our commercial revenues and how we propose to mitigate against it in H7 is presented in Chapter 7.2.

Western Rail Link to Heathrow (WRLtH)

The West of England is Heathrow's second largest catchment area (see Figure 3 below) but is currently underserved by direct transport links. We have identified the WRLtH as the optimum solution having considered alternatives such as increased bus and coach services.

Source: Heathrow

Figure 3: Origins and destinations of trips to and from Heathrow



Previous discussions regarding the delivery of the WRLtH have centred around the benefits it could provide as part of Heathrow's expansion programme and the delivery of the surface access requirements set out in the ANPS. However, following an initial review of the benefits of the scheme and consultation with the airline community through Constructive Engagement, we believe that a contribution to WRLtH remains both in the interests of consumers and in line with the CAA's surface access policy, even in a two-runway future.

WRLtH would benefit Heathrow users through improved accessibility and passengers currently travelling to the airport from M4 corridor areas, the South West and Wales by public

transport would see significant journey time improvements. In addition, passengers using cars will have the choice of a new, more sustainable mode of transport.

Table 3: Estimated journey time savings

Current Journey	Journey Post WRLtH	Time saving
Reading to Heathrow CTA on RailAir Coach – 56 minutes	Reading to Heathrow CTA on WRLtH- 30 minutes	26 minutes
Bristol Temple Meads to Heathrow CTA on train via Paddington– 130 minutes	Bristol Temple Meads to Heathrow CTA on train via Reading- 110 minutes	20 Minutes
Slough to Heathrow CTA on train via Hayes and Harlington- 28minutes	Slough to Heathrow CTA on WRLtH- 12 minutes	16 minutes

Source: Heathrow

WRLtH will also bring benefits to the wider UK economy in the form of:

- decongestion benefits to current central transport links, such as the M4;
- improved air quality and reduced noise for local communities; and
- improved links to the airport for local businesses, bringing better access to global markets, thereby improving the UK’s overall productivity.

Through Constructive Engagement, the airline community conveyed its support for improving sustainable transport options and for the benefits to catchment from new rail links and WRLtH as a concept. Through this engagement, airlines were clear that the WRLtH remained an important project and that they are, in principle, supportive of investment in business cases which offer benefits to the environment and public transport and congestion around the campus. However, as per CAA surface access policy, the level of contribution we provide must be commensurate with the net present value of benefits that WRLtH provides to airport users of the service.

WRLtH has also received support from a broad range of stakeholders including local authorities, Local Economic Partnerships, the Heathrow Area Transport Forum²⁹ and from a range of MPs in Wales and the South West. In addition, there has been strong transport policy backing for the WRLtH proposal since it was established as a network priority through rail industry route strategies and planning from 2011. Passenger insight demonstrates broad support for the link with initial research suggesting, as an idea, WRLtH is appealing to most potential users of the service and there is interest to use it³⁰.

²⁹ [HATF website](#)

³⁰ Populus, *Exploring potential usage of Western Rail Access to Heathrow*, November 2018

The submission of the WRLtH DCO has been delayed from 2020 to late 2021, impacting the subsequent entry into service date, which is not expected until 2030 at the earliest. Given the financial constraints impacting our H7 capital plan, we do not propose to include a contribution in our H7 capital plan, but instead look to provide a capital contribution as part of our H8 investment programme.

We have not yet come to an agreement with the DfT on the level of contribution. We have proposed a formula, building on the approach previously taken by DfT, to calculate the benefits accruing to air transport users of the service from improvements to journey times and decreased journey prices. Airlines will be consulted on both the quantum and timing of a contribution and the level will be defined as part of that regulatory process and in accordance with CAA surface access policy, confirmed by CAP1847³¹ in October 2019.

In addition to a contribution to the overall cost of the programme, investment to fit out the T5 station box is also required. For the purposes of the H7 submission, we have assumed a cost of £31m (2018p) will be incurred in the latter part of 2026 although this investment is subject to the conditions articulated above and the timeframe of the WRLtH programme. It is expected that this cost would be split across both H7 and H8. We will seek to recover the costs associated with station fit out through the application of station access charges via the Office of Rail and Road framework and in line with the CAA ‘user pays’ principle contained in the surface access policy.

Southern Rail Access to Heathrow (SAtH)

There is currently no direct railway connection between Heathrow and Surrey, Hampshire and South-West London. Southern Access to Heathrow (SAtH) would be transformational, filling a strategic gap in the rail network – providing a better-quality service for Heathrow passengers and colleagues alike – while reducing the need to access the airport via less sustainable modes. SAtH also offers potential for wider benefits by providing the opportunity to interchange at Heathrow, creating new connections into London and to the north of England via the new link to HS2 at Old Oak Common.

To support the development of the scheme, we have articulated the business outcomes that Heathrow would like to see as a result of SAtH:

1. Catchment and connectivity
2. Customer experience and service levels
3. Deliverability and affordability
4. Land use

Engagement is ongoing with the Department for Transport and individual promoters of projects to improve public transport access to the airport from catchment areas in south west London and the wider south region. However, reflecting the current status of the scheme in the ‘five case’ model approach adopted by Government, there is no specific capital sum attributed to SAtH in the RBP. This does not preclude any investment during H7 and any capital sum would need to be approved via the relevant capital governance process

³¹ [CAP1847](#), October 2019

Other rail

We are supportive of the proposed investment in the Piccadilly Line rolling stock and signalling system upgrades. These improvements would not only enhance the capacity for commuters and Londoners but deliver an improved service for airport passengers.

We are also working with the HS2 programme to ensure that the airport passenger experience when interchanging at Old Oak Common station to board Heathrow bound trains is an optimal one. We will take a view in-period what level of intervention would be appropriate to maximise the benefit to the airport user of these schemes.

7.4.6.2 Forecourt Access Charging

On 3 December 2020 we announced our proposal to introduce a charge for private vehicles accessing departures forecourts.³² Vehicle access charging is commonplace in urban areas and at airports around the world. In the UK, nine out of the ten largest airports have, or are publicly committed to introducing, some form of access charge, with Heathrow being the only exception. Access charging at forecourts is in line with the CAA's 'user pays' principle, as there is currently no cost to the consumer for 'kiss and fly' users in using our assets.

In our IBP and Surface Access Proposals, published as part of the Airport Expansion Consultation, we proposed the implementation of vehicle charging at Heathrow. This was alongside our plans to make public transport easier and more attractive to use for our passengers and colleagues and was based on the outputs of our surface access modelling that demonstrated a 'push' measure was required in order to encourage a greater proportion of passengers to use public transport. The scheme was intended to be implemented in two phases:

- Phase 1: The Heathrow Ultra Low Emissions Zone (HULEZ). This would have mirrored the standards put in place by the London ULEZ and placed a charge on the most polluting vehicles. We had planned for this to be in place from 2022 until 2026, following the granting of powers through the DCO application for Expansion.
- Phase 2: The Heathrow Vehicle Access Charge (HVAC). This charge would have applied to all private vehicles accessing Heathrow to tackle congestion on the surrounding roads. It was assumed that this would be in place from 2026.

While the temporary suspension of the ANPS combined with the impact of Covid-19 depressing passenger demand have caused us to review and change our plans, vehicle access charging remains a core element of our surface access strategy as it:

- aligns with our sustainability objectives to improve air quality, reduce congestion and, therefore reduce impacts on local communities;
- contributes towards the de-carbonisation of our airport; and
- improves public transport mode share.

³² [Heathrow - Heathrow proposal to charge vehicles accessing departures forecourts in response to COVID-19 impacts](#)

However, the changing circumstances have presented an opportunity to consider a different delivery model and one which better fits with the new environment. We have refocused on growing our passenger demand and diversifying revenue streams, alongside progressing towards our long-term sustainability goals. Therefore, we have adjusted our plans for vehicle access charging accordingly and developed our FAC proposal.

Our H7 plans, therefore, include the impact of the FAC set out in our 3 December 2020 proposal. Our plans significantly reduce the charge levels to an expected charge of around **[REDACTED]**. The charge would be implemented in a single phase as an access-based charge at terminal departure forecourts and not car parks. There will also be exemptions for certain groups of vehicles, including for passengers requiring support and freight vehicles, and these will be determined in updated submissions, but will likely align with those exemptions indicatively proposed in the Surface Access Proposals document³³.

This change in approach recognises our new operating environment and aims to balance the potential impact on passenger demand while meeting our sustainability aims. Revenues from the FAC help to bring the airport charge down for all passengers by raising revenue from these specific users of forecourt services. The simpler charge structure also decreases the capital costs of implementation.

We are, however, conscious of the concerns raised by airlines about the potential impact on passenger demand of any new charge for accessing the airport. We have undertaken extensive consumer research to understand the impact that the introduction of FAC could have at Heathrow, both in terms of creating modal shift to more sustainable transport modes or potential for it to act as a deterrent to passengers using Heathrow as their airport of choice. Moreover, we have also received consumer and stakeholder feedback through expansion engagement and consultations:

- *Populus – “Exploring potential impact of an Access Charge and Emission Charge to Heathrow.”*³⁴
Overall, the “concept of charges was not met with considerable concern” however, “results suggest charges could have a significant impact dependent on the level of charge”. Perceptions of ‘reasonable’ and ‘expensive’ charges also differ between domestic and international passengers
- *Incite – “Passenger modal choice: The influence of introducing an HVAC”*³⁵
The findings concluded that opinion of access charging was “more positive than negative but it’s never going to be popular – it’s money out of people’s wallets”. However, more than half are accepting of it. Many who said they wouldn’t fly at all said they’d try a different airport – but many of these won’t have that option.
- *Accent – “H7 Service Package Choices: Follow up research”*³⁶
Current and potential passengers were presented with a series of packages, with one of the options that Heathrow introduces airport vehicle access charges of £15 to reduce

³³ Heathrow, [Surface Access Proposals](#), June 2019, page 235, Table 3.35

³⁴ Populus, *Exploring potential impact of an Access Charge and Emission Charge at Heathrow*, February 2019

³⁵ Incite, *Passenger modal choice: The influence of introducing an HVAC*, February 2020

³⁶ Accent, *H7 Service Package Choices Follow up Research*, October 2020

the number of vehicles travelling to the airport. This prompted a polarised response; 52% of passengers believed it was important or very important but 27% believed it was unimportant or very unimportant.

- *Aviation Economics – “Heathrow Airport Access Charge Study”*³⁷
This report utilised CAA survey data to analyse the impact of access charging and incorporated the decision-making factors analysis. It looked at the impact of a £15 access charge on those passengers that cite cost as their main factor in airport choice. They best represented the potential loss of traffic at Heathrow should an access charge be introduced. This potential loss was quantified as 35,000 at 2017 passenger levels.
- Horizon Report “*Join the Dots, Surface Access Costs*”³⁸
This report analysed the role that the cost of surface access plays in the decision-making process of choosing an airport. It concluded that surface access cost is a later consideration once passengers have chosen an airport and booked their flights – this decision is based mainly on flight cost, time of day of flight and whether the airport offers a direct flight; but also a range of other factors which will vary in importance from person to person. Once passengers start to consider surface access, convenience and habit also trump cost, meaning cost is low on the decision hierarchy for most passengers.
- Many respondents to our AEC including local authorities, HATF and transport bodies were in favour of a form of access charging but requested a commitment from us to use the revenue to fund public transport improvements.
- The airline community has been clear in both responses to AEC and in airline governance forums, that they would expect to see the revenues from the vehicle access charge forming part of the single till and, therefore, reducing the airport charge. The airline community has also made it clear that the level of charge must not adversely impact passenger levels at Heathrow and, it should contribute towards lower emissions, better air quality and de-carbonisation.

To forecast the expected revenues from the lower charge, we have used re-calibrated outputs from our suite of transport models developed for our Surface Access Proposals, alongside outputs from our consumer engagement work packages. This will ensure that we implement an appropriate level of FAC while minimising any potential impact on passenger demand for the airport. Further detail on the revenue forecasting methodology and our forecast revenue in H7 for forecourt access charging is contained within Chapter 7.2 – Commercial Revenues.

7.4.6.3 Bus and Coach

Heathrow’s bus and coach network has evolved to meet the needs of many passengers and colleagues, with nearly all bus services operating very early and very late, seven days a week. Several services also operate 24 hours a day. The airport has one of the busiest bus and coach stations in the UK and many services provide important links around the campus. Our unprecedented losses as a result of Covid-19 and the subsequent reduction in air travel demand forced us to make the difficult decision to suspend the Heathrow Free Travel Zone

³⁷ Aviation Economics, *Heathrow Airport Access Charge Study*, March 2019

³⁸ Join the Dots, *Surface Access Costs*, June 2019

and end transport subsidies, effective from 1st January 2021. It is our intention to restore these as soon as possible in the H7 period.

In our IBP we proposed substantial investment in bus and coach services, bus priority and infrastructure on Heathrow and local authority roads to cater for the passenger growth from Heathrow Expansion and to achieve our public transport mode share target. The impact Covid-19 will mean we need to significantly reduce the level of investment in these measures. We will need to have a greater focus on bus and coach interventions that drive passenger growth and increase our catchment.

In 2019 we undertook research with Transport Focus and DfT which found that passengers who travelled by coach to / from the airport had a positive experience³⁹. However, it also found that awareness of coach as an option for getting to an airport is low. The research concludes that persuading more people to travel to an airport by public transport will require close working between the airport and transport operators, which we are now doing and plan to continue doing so in H7.

Covid-19 has affected patronage on bus and coach services due to lower demand, capacity restrictions to comply with social distancing requirements and the initial message from the Government to avoid public transport unless journeys were essential. Service providers have enhanced their cleaning regimes, introduced new cleaning technology and in some instances introduced protective screens. Most services are now back to the pre-lockdown timetables and some routes are operating higher frequencies or additional buses in order to reduce the risk to passengers. We expect patronage on bus and coach services to return over H7 as passenger demand increases.

We know 50% of passengers choose Heathrow due to the ease of getting to/from the airport⁴⁰. It is therefore possible to grow catchment by providing new or improved bus and coach services to locations currently without adequate public transport to Heathrow. Investing in bus and coach also benefits local communities through improving connectivity, along with improving air quality and reducing congestion.

Making journeys by bus and coach quicker, easier and more reliable will drive patronage growth and reduce the need for financial support that we have previously provided to bus and coach operators. Greater priority will encourage service providers to introduce new or improved services to Heathrow, increasing our passenger catchment and helping us to achieve our surface access and long-term sustainability targets.

Our assumptions for H7 are based on bus and coach patronage continuing to return to pre-lockdown levels and no further advice to avoid public transport.

Bus and Coach Services

Our delivery priorities for H7 include the continued support of bus and coach services, subject to available funding, in order to increase passenger and colleague public transport mode share. We will work with local authorities and service providers to identify improvements to our

⁴⁰ Join the Dots, *Heathrow Surface Access Report*, October 2018

bus and coach network to encourage patronage growth that will help achieve our surface access outcomes. Increasing public transport mode share will help to reduce congestion and support our carbon and sustainability goals.

Our first aim will be to reinstate a free travel zone as early as possible in the H7 period. We will also aim to undertake the following, subject to capital investment required:

- Reviewing existing services to see if additional benefits for Heathrow can be achieved with little or no additional cost.
- Providing kick-start funding to new services that meet the airport's requirements by filling gaps in the public transport network where we know demand exists.
- Work with service providers to promote services in their local areas, particularly when new links are introduced, to increase passenger volumes.
- Providing bus priority measures on and off campus working in partnership with local authorities. Examples include the implementation of bus advanced areas to give buses priority at signal-controlled junctions.
- Infrastructure improvements at bus stops on and off campus, to improve the passenger experience and ensure people feel comfortable and secure during their journey.

Bus service providers operating from outside Greater London and receiving our subsidies will be expected to participate in the Heathrow Travelcard scheme, providing discounted travel for colleagues (see colleague section below). This also includes some coach services where stops are within easy commuter distance.

We will aim to manage our operational expenditure proportionally in line with passenger growth.

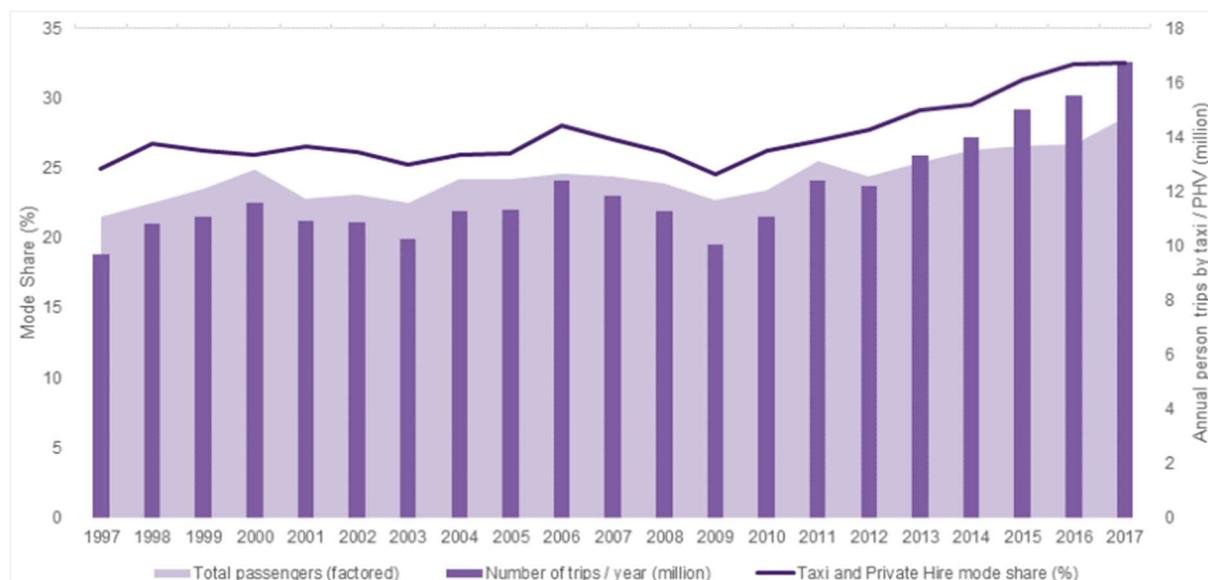
7.4.6.4 Taxi and Private Hire

Taxi (also referred to as hackney carriages) and private hire vehicle (PHV) together are an important mode of transport for our passengers accessing the airport. Prior to the outbreak of Covid-19, taxis and PHVs were the most frequently used transport mode for passengers accessing Heathrow, contributing to one-third of our total passenger mode share.

The mode share and number of trips made to Heathrow each year by taxi and PHV remained relatively consistent until 2012 but have grown steadily since then, as shown in Figure 4 below. This growth coincides with the introduction of ride-hailing apps, which are now responsible for almost 40% of taxi and PHV passenger trips to Heathrow⁴¹.

⁴¹ Ipsos, *Heathrow Surface Access Tracker*, Q1 2020

Figure 4: Taxi and private hire mode share, annual person trips, total ground passenger numbers⁴²



Source: Surface Access Proposals (June 2019)

Taxis and PHVs currently have different operating models at the airport, although both types of vehicles are permitted to drop-off passengers at terminal forecourts for free and pick-up passengers in designated pick-up zones at each terminal. Taxis pick-up at the ranks located at Arrivals at each terminal, having been directed from the Taxi Feeder Park (TFP) to which they pay £3.50 for entry. PHVs must pick-up in designated zones within the short-stay car parks for which they pay a tariff dependent on the time spent in the car park which can be passed onto the passenger. PHVs can also use the Authorised Vehicle Area (AVA) to wait prior to picking up a passenger, which costs £1 per hour for the first five hours of waiting. Heathrow introduced the AVA in 2016 as means of encouraging PHVs not to wait on roads in local communities but in a designated area located adjacent to the perimeter of the airport with facilities.

In our IBP, and as part of our Surface Access Proposals, we presented plans for taxis and PHVs which aimed at driving efficiencies in their movements to and from the airport. The measures set out in those proposals were designed to achieve our Expansion-related commitment to ensure that landside airport-related traffic in the future was no greater than today, also referred to as our 'No More Traffic' (NMT) pledge.

We proposed that in order to improve the efficiency of taxis and PHVs, we would introduce a backfilling scheme, which would reduce the number of trips that are made without a passenger on board. Backfilling would match passengers arriving at the airport with a driver dropping-off another departing passenger. This would increase the number of taxis and PHVs operating with passengers in both directions, and reduce the number arriving or leaving empty. By making the journeys more efficient, emissions from road transport would also decrease, supporting our long-term sustainability goals and benefitting local communities.

⁴² Surface Access Proposals (June 2019)

Taxis and PHVs will continue to be an important mode of transport for passengers during the airport's recovery from Covid-19, as the door-to-door service provided by the mode supports our consumers' three key considerations of speed, ease and trust when choosing their mode of transport. Early indications suggest that passengers are more inclined to use private modes of transport in travelling to Heathrow, rather than public transport as a result of the additional precautions being taken to reduce the risk of Covid-19 transmission. Since we recommenced our departing passenger survey for our Surface Access Profiler in August 2020, our data demonstrates that taxi and PHV continues to contribute to approximately 30% of our total passenger mode share⁴³.

H7 Taxi and Private Hire Strategy

We have listened to our stakeholders through extensive engagement and consultation and we therefore understand that:

- Local authorities highlight the impact that taxis and PHVs have on surrounding communities, including vehicles parked on local roads awaiting fares.
- Both local and transport authorities question how a backfilling scheme could be delivered when we have little control over taxi and PHV operations at the airport.
- Industry bodies largely support the principle of backfilling but require more detail in relation to how such a scheme would operate at Heathrow.
- Airlines agree that proposals to improve the efficiency of taxi and PHV operations at the airport is an important area for consideration in H7 but require further detail to draw any firm conclusions with regards to the proposal's inclusion in the SAS.

There are a number of ways that we could improve the efficiency of taxi and PHV operations at, to and from the airport. These could include:

1. A taxi and PHV backfilling scheme, as proposed at IBP.
2. A PHV permit scheme, along with backfilling.
3. A taxi permit scheme, along with backfilling.
4. Both taxi and PHV permit schemes, along with backfilling.

We will explore these options in more detail in-period and consider implementation options as we agree and develop a preferred proposal.

If we were to take forward any of options 2-4 listed above in H7, this would strengthen our taxi and PHV proposals presented in the IBP through the implementation of a permit scheme. A permit scheme would enhance our influence over taxi and / or PHV operations at the airport, including to better manage efficiencies in their movements, and achieve the outcomes described above.

There are several factors to consider for the design of the potential permit scheme. Firstly, there are different legislative and licensing regimes that apply separately to taxis and PHVs to their operation at Heathrow. This would therefore require a unique permit for taxis and a unique permit for PHVs. This offers us an opportunity to introduce the permits in a phased manner, which would be flexible enough to allow for greater or less control on specific users.

⁴³ Heathrow, *Surface Access Profiler: Passenger Mode Share*, August-November 2020

A permit scheme for PHVs would be prioritised, as this would have a greater impact on traffic levels at the airport than a permit scheme for taxis. This is due to PHVs accounting for approximately 94% of taxi and PHV trips for departing passengers⁴⁴, with a large proportion of these trips originating in London or the South East, as calculated by our surface access air passenger demand model outputs⁴⁵. We would retain the ability to introduce a permit scheme for taxis if required at a later date.

Our proposed backfilling scheme would be retained as part of any permit scheme and a key requirement of the permit would be to mandate backfilling for a specific proportion of vehicle trips undertaken by a licensed taxi or PHV within a given period of time.

A permit scheme would also dictate the operation of both 'permitted' and 'non-permitted' at the airport. We envisage that taxis or PHVs with a valid permit would be able to drop-off at terminal forecourts and pick-up at the ranks or short-stay car parks, as per the current pick-up operation for taxis and PHVs, respectively. We would consider drop-off and pick-up options for taxis and PHVs that do not have a valid permit, should we decide to progress a permit scheme.

If we decide to implement a permit scheme, there would be an administrative cost associated with obtaining a permit to operate at the airport, which would provide us with an incremental revenue stream. This would include the payment of an initial registration fee by a licensed taxi or PHV driver, plus an annual renewal fee. Other UK airports operate permit schemes specifically for Hackney Carriages. **[REDACTED]**

Table 4:

[REDACTED]

It is anticipated that a permit scheme would initially be managed and enforced using the ANPR camera network installed at all commercial car parks, including the Authorised Vehicle Area and Taxi Feeder Park, and terminal forecourts as part of the proposed forecourt access charging scheme. The ANPR camera network would monitor vehicle compliance based on

⁴⁴ Ipsos, *Heathrow Surface Access Tracker*, Q1 2020

⁴⁵ Heathrow, *LASAM v4.3 Model Implementation Report*, July 2019

the access rights of permitted vehicles. Non-compliant vehicles, i.e. those which require a permit to access a specific area of the airport but do so without a permit, would be subject to an enforcement process.

7.4.6.5 Car Parking

Car parking is an integral part of our surface access strategy, the amount of car parking we provide and how we allocate and manage it has a significant impact on car travel to and from the airport. Our approach to car parking must help us manage the number of passenger and colleague car trips being made to and from the airport, reduce congestion, improve local air quality and therefore help us to achieve our surface access targets. Car parking is also an important commercial revenue for the single till supporting a lower airport charge. Car rental, whilst separate to car parking, also needs to be considered in the same context. Details around forecasts revenues for both these modes are included in Chapter 7.2 - Commercial Revenues.

Our proposals for car parking in our IBP were to modestly increase levels of Heathrow-controlled parking spaces and to reallocate spaces from colleague to passenger parking. This allowed for some growth in parking spaces available for passengers, but it reduced the number of parking spaces per passenger from today's levels.

This strategy enabled us to meet the ANPS target for a reduction in colleague car trips while seeking a balance for passenger parking that did not adversely impact our ability to meet our no more traffic pledge. This avoided encouraging passengers to use modes that generate more traffic movements than park and fly users such as, kiss and fly and taxi / private hire.

Overview of Parking Today

Today the passenger and colleague parking at the airport can be categorised into four main types:

- Car parks that are directly controlled by Heathrow. The planning consent we obtained for Terminal 5 caps Heathrow-controlled parking within the airport at 42,000 spaces, of which up to 17,500 can be for colleague use.
- 'Off-site' parking provided by third parties, away from Heathrow. These car parks are privately operated, and Heathrow has no influence over them.
- 'Tenanted' parking, which is particularly for colleagues and other uses associated with airport operations. These are car parks leased to third parties, on typically long leases and which Heathrow does not have direct control over.
- Operational car parks used for the taxi feeder park and car hire.

We undertook an audit of all existing car parking around the airport in 2016 and updated this for 2017. Table 5 shows the amount of airport related parking operating or planned for 2016 and 2017.

Table 5: Total airport parking (2016 & 2017)⁴⁶

Parking Type		Location / Type	2016 Provision	2017 Provision
Existing and Planned Colleague and Passenger Car Parking	Public Passenger Parking	Heathrow controlled, on-site	23,500	25,200
		Off-site – Purple Parking Southall	5,500 ⁴⁷	-
		Off-site – Purple Parking Bath Road	2,000	2,000
		Off-site – other	2,000	2,000
		Total public parking	33,000	29,200
	Colleague Parking ⁴⁸	Heathrow controlled, on-site	15,500	14,300
		Tenanted on-site	9,300	9,900
		Total colleague parking	24,800	24,200
	Planned	Heathrow controlled, on-site	3,000	2,500
	Total			60,800
Other / Operational Car Parking⁴⁹	Hotels	Tenanted	1,700	1,800
	Hatton Cross / Other	Tenanted	600	800
	Authorised Vehicle Area (for private hire)	Tenanted	800	800
	Taxi Feeder Park	Operational	450	450
	Car Hire	Operational	2,700	2,300
Grand Total			67,050	62,050

Source: Heathrow

⁴⁶ All numbers are rounded

⁴⁷ The Purple Parking Southall site was redeveloped in 2017 and no longer exists

⁴⁸ Excludes Waterside and tenanted sites not exclusively used for colleagues

⁴⁹ Parking for other uses at sites within the airport boundary

prolonged period of parking demand outstripping supply, we would seek to reduce this demand through encouraging mode shift onto public transport.

H7 colleague car parking

We need to reduce the impact of airport operations on local communities, the environment and air quality and to facilitate future airport growth. We must therefore encourage colleagues who would usually drive to work alone but have the option of travelling to work using sustainable modes to use these alternatives.

The transport modelling work we did for IBP and in support of our Expansion plans noted that the high supply of car parking per colleague acted as a disincentive to using sustainable transport modes, even where alternative modes of transport were available. As such, our plans involved reducing supply of car parking to reduce the number of car trips being made to the airport.

With an expected reduction in Team Heathrow colleagues working at the airport following Covid-19, car parking spaces per colleague are likely to increase. This means it will be more difficult for us to actively reduce the number of daily colleague car trips.

It is therefore important in H7 we continue to work with Team Heathrow to seek opportunities to implement a phased reduction in colleague car parking. With a significant proportion of colleague parking being 'tenanted' and in control of third parties, this will remain a significant challenge that can only be achieved through working in partnership. The phased reduction would be in line with vehicle demand reductions delivered through the colleague travel strategy which will include measures to enhance and promote public transport and active travel modes as well as increasing car sharing.

Consolidation of colleague car parking will maximise the efficiency of colleague car parking, allow us to provide more frequent bus services for colleagues between car parks and the terminals, and supports our long-term sustainability goals. We will seek to prioritise the best car parking areas for those who are sharing a vehicle for their journey to work.

Car rental

Car rental facilities are largely concentrated on the Northern Perimeter Road, with passengers being bussed to and from terminals. A number of the leading car rental suppliers operate at our airport providing a car rental service for passengers and the local community. In H7 we will continue to work closely with car rental suppliers to improve the quality and choice of car rental, benefitting passengers and the local community. Further information on car rental revenue is provided in Chapter 7.2 - Commercial Revenues.

7.4.6.6 Electric Vehicle (EV) charging

Vehicle technologies have been rapidly evolving in recent years and will continue to do so over H7. For private vehicles, taxis, and private hire vehicles (and to a lesser extent, buses, coaches, and freight vehicles), the primary evolution will be towards increasing adoption of electric vehicles (EVs).

Our EV strategy in our IBP was focused on meeting the air quality targets outlined in the ANPS with an aim for Heathrow to become a leader in the provision of EV charging. The impact Covid-19 means while we recognise the benefits of EVs, our focus will change from generating

demand for the use of EVs to one that responds to the expected growth of electric vehicles use by consumers.

One of the weaknesses of our current charging provision is its price. The cost of charging at Heathrow is around 34p/kWh, higher than the London average due to our electricity cost. Restructuring how we charge for the electricity used by EVs can enable this as a revenue generator that will contribute to the single till.

Recognising these benefits, we have made commitments to increasing the EV charging infrastructure available to passengers, colleagues, taxis, PHVs and commercial vehicles year on year. We joined the EV100 initiative and have pledged to switch all our cars, large vans and 50% of HGVs to electric/plug-in-hybrid by 2030. Our investments in Q6 mean we now have a fleet of 101 electric and hybrid vehicles which represents 93% of all our light vehicles (under 2.4t).

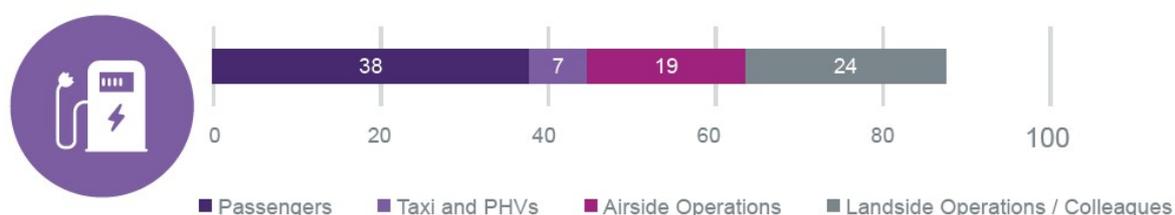
Existing EV charging

To encourage use of EVs, 88 EV charging points have already been installed across the campus (as of April 2019) with 69 of those being made accessible landside.

The majority of EV charging points provided for passengers, airside operations, landside operations and colleagues can recharge a 30kWh battery in 1-2 hours (22kW chargers) or 3-5 hours (7kW chargers). For taxis, rapid chargers (43-50 kW) are provided within the Taxi Feeder Park, capable of recharging 80% of the battery in 20-40 minutes.

The number of EV charging points available per user group is shown in Figure 6.

Figure 6: Number of EV charging points by user groups 2019



Source: Heathrow

Heathrow currently operates 38 EV slow chargers (7 kW) for passenger use, 26 of which are located at T2 Short- Stay Car Park. The price per kWh for electricity at the chargers is set at the same price as electricity across the airport and is set centrally at a cost recovery rate.

H7 EV Strategy

We must focus investment on transport modes that will be most valuable in helping us achieve our surface access outcomes. Passengers, colleagues, taxis/PHVs benefit from the biggest choice of EVs in the vehicle market, should they decide to purchase one. The suitability of electric vehicles to decarbonise those users travelling by private car has been established nationally and internationally.

Our objectives for EVs in H7 will be to:

- develop infrastructure and operational plans;

- ensure that our electrical grid infrastructure can meet increased demand, avoiding additional pressure on capacity; and,
- develop a sustainable commercial model that encourages increased utilisation of EV charging points across the airport.

The forecasts for EV uptake among consumers and technological changes are highly uncertain and subject to a wide range of global and domestic economic factors, and we will therefore need to continually monitor the use of EV charging points and Heathrow-related EV traffic to develop and expand infrastructure as required.

7.4.6.7 CTA Southern Access

In our IBP we proposed a multi-modal tunnel to the CTA from the south, along with associated development that improves capacity for access from the south. Covid-19 does not change our long-term aspiration to provide a new multi-modal link between the CTA and the south of the airport, growing catchment and reducing operational risk in the CTA. However, in response to feedback received from the airline community through Constructive Engagement and to reduce capital expenditure in the short-medium term, we are not proposing to invest in it in H7 but will consider it for future regulatory periods. Alternative, lower cost, proposals to increase resilience of the CTA may be considered and brought forward if deemed a priority for investment. This includes upgrading and improving our use of the Urban Traffic Control (UTC) system that controls a number of our signalised junctions in and around the airport.

7.4.6.8 Freight

As the UK's largest port by trade value, cargo is a key part of Heathrow's operations and the UK economy. In order to understand the needs of our cargo community, we commissioned a programme of research amongst the extended community (carriers, forwarders, handlers, hauliers plus other, non-operational contacts such as sector consultants, industry associations and commentators). The findings showed that infrastructure improvements were a key priority for the cargo community, with many expressing concerns about the current cargo infrastructure at Heathrow, in particular its age and accessibility.⁵⁰ Our quantitative study reinforced this and identified that we could do more to enhance the ease and reliability of cargo operations at Heathrow.⁵¹ In our IBP we proposed to introduce a cargo truck call forward system, a cargo truck call forward facility (HGV / LGV waiting area) and a virtual consolidation technology platform to drive efficiencies and facilitate future growth in demand.

Covid-19 has significantly reduced the number of air traffic movements at Heathrow. To minimise the impact on our cargo operation, we significantly increased our dedicated cargo movements. This has demonstrated the importance of cargo for the single till, due to remaining a resilient revenue component of aeronautical charges, and the importance of investing in it to ensure it operates efficiently. As we have started to build back our route network, the value of cargo to Heathrow has continued to be significant, with cargo in the belly hold of passenger

⁵⁰ Firebrand, *Summary review of qualitative research amongst the LHR cargo community – 2018*, February 2018

⁵¹ Firebrand, *Heathrow Airport Cargo Community Quantitative Research 2017/8*, May 2018

aircraft supporting the resumption of passenger routes which would otherwise not be viable for airlines to operate.

Surface access related proposals for freight movements at the airport aim to improve the ease and reliability of access, reduce impacts on local communities, the environment and local air quality, drive efficiency in operations reducing costs for Team Heathrow and facilitate future growth in cargo demand which will support the regional economy.

H7 Freight Strategy

A cargo truck call forward system and facility will enable scheduling of deliveries and collections at the Cargo Centre and provide a location for HGVs / LGVs to wait if they arrive early or at times when the Cargo Centre is full. With the primary benefit of reducing congestion on the local and national road network, the facility will also improve safety for colleagues, ensure a more timely and predictable journey for cargo through Heathrow, and reduce the number of HGVs / LGVs waiting in local communities with associated noise and air quality benefits. Delivery options for this project are being considered and include an option for funding by Government for delivery by July 2021. If funding from Government is not forthcoming for delivery in 2021, other options will be explored.

To reduce proposed expenditure in H7, we are not planning to invest in virtual consolidation at this stage but will work with partners to deliver solutions and the benefits in Table 1 with minimal investment.

7.4.6.9 Colleagues

Heathrow is one of the largest single employment sites in the UK; the 2017 Employment Survey recorded more than 72,000 colleagues employed by more than 400 different companies.⁵² In 2017, 60% of colleagues drove alone to work, 26% used public transport and 1% cycled to work. By comparison, in 2016 Gatwick saw 52% colleagues drive alone to work, 34% use public transport and 3% cycled, walked or ran to work⁵³ while Schiphol recorded a 6% cycle mode share⁵⁴.

Today, there are few facilities for walking and cycling around Heathrow. With 25% of the Heathrow workforce living within 5km of the airport, there is potential for increasing the proportion of our workforce choosing to walk or cycle to the airport in the future, with the associated health benefits this would bring.

We are currently collecting data through an Employer Survey to better understand the size of the Heathrow colleague population post Covid-19, where they live and what their travel preferences are. Results will be available in January 2021 and we will use that information to revisit our focus.

⁵² ⁵² Heathrow Employment Survey 2016/17

⁵³ Gatwick Airport, [Gatwick Employer and Travel to Work Survey 2016](#),

⁵⁴ Schiphol Newsroom, [Schiphol aims to promote commuting by bicycle](#), September 2019

Our proposals for Colleague strategies in the IBP were extensive and designed to achieve our ambitious ANPS targets of achieving a 25% reduction in the number of colleague car trips by 2030 and a 50% reduction by 2040, relative to a 2013 baseline.

Investment in the colleague strategy will reduce the cost of surface access for colleagues and provide more sustainable travel options that will improve colleague wellbeing through more active travel and better journeys. In 2019 colleagues made 45,000 daily vehicle trips travelling to and from the airport on an average weekday⁵⁵. We expect as a result of Covid-19 the colleague population will reduce in the short term but it remains important we encourage the right colleague travel behaviours now, with this lower population, to prevent significant investment needed in the future to manage congestion and air quality impacts when the number of colleagues increases.

H7 Colleague Strategy

We will work in partnership with local authorities and suppliers to deliver greater value from our more limited spend. The investments we propose will help us achieve a colleague single occupancy mode share of 57% by 2026 (from 61.6% in 2017). Our priorities are to:

- **Enable more active travel** - Make cycling to work a realistic option for more colleagues by working with local authorities and Team Heathrow to provide better infrastructure and access to a bicycle, as well as support to use one.
- **Reduce the cost of the journey to work** – within funding constraints, we will seek opportunities to make public transport fares more affordable for colleagues by working with operators and subsidising fares where possible.
- **Use technology to provide more and better journey to work options** – Working with technology suppliers to bring forward our plans for a colleague “one-stop shop” for travel options, information and purchasing in the form of a Travel Wallet, at minimal cost.

Enable more active travel

The active travel strategy is guided by the following policies:

- Creating direct and safe walking and cycling links to key colleague employment locations
- Expanding the role and scale of the Heathrow Cycle Hub to more locations across Heathrow

Our active travel vision is to provide a workplace where colleagues consider walking or cycling a safe, comfortable and convenient way to make shorter journeys to, from and around the airport. Considering the impact of the Covid-19 pandemic which saw a 119% growth between May 2019 and May 2020 in London^{56*}.

TfL’s Streetspace for London programme is supported by a £45 million fund to allow councils to create new segregated cycles lanes, extend pavements and close roads to traffic. For example, Hounslow has been awarded funding for 48 projects, with a value of £1.3m. To help

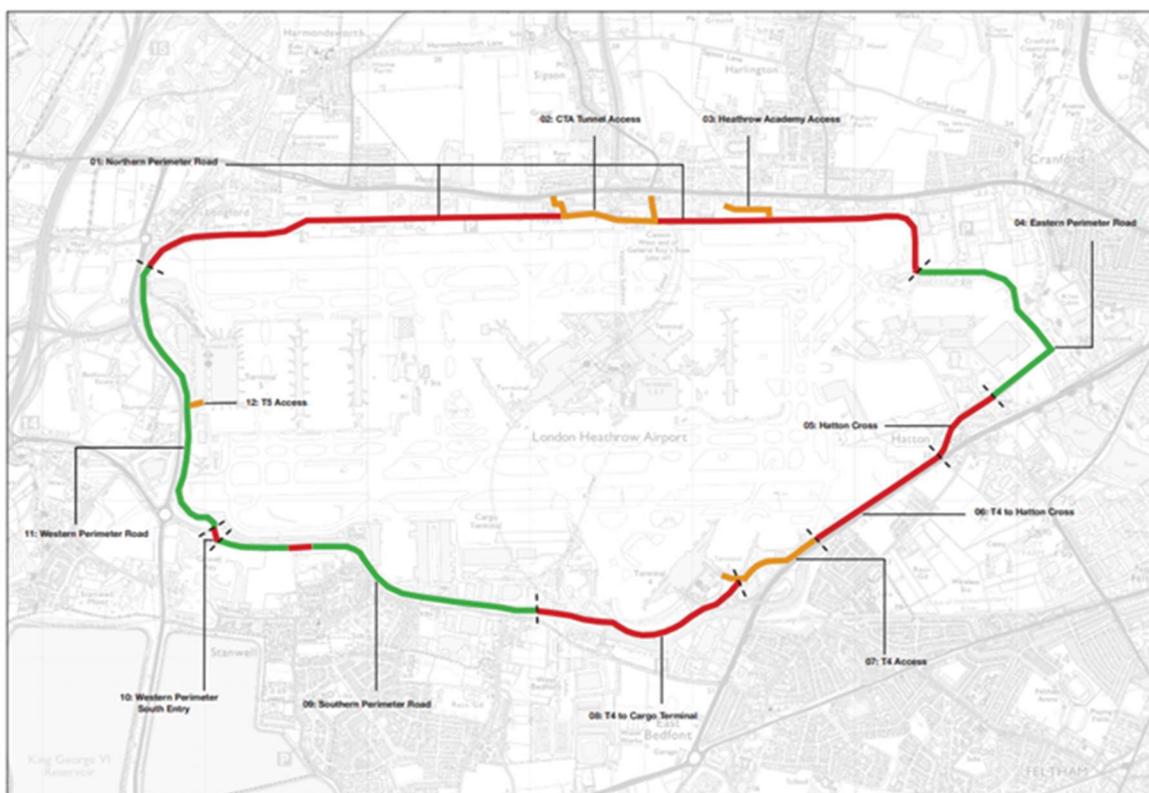
⁵⁵ Heathrow, *2019 Travel Report*, 2020

⁵⁶ Strava Metro (TfL validated), September 2020

local authorities to restart local transport as part of the Government's Covid-19 recovery roadmap, the Department for Transport (DfT) announced a £250 million Emergency Active Travel Fund. The two key aims of the funding are to: enable more people to walk and cycle where possible and, to support safe social distancing in areas where people congregate.

In this context, it is imperative that we work in partnership with local authorities, so they prioritise investment in active travel infrastructure that supports Team Heathrow colleagues to cycle or walk to work safely. Figure 7 illustrates a RAG analysis of the current level of provision on the perimeter roads (Red = no provision; Amber = poor provision; Green = cycle path).

Figure 7: Status of existing Heathrow perimeter cycling infrastructure



Source: Sustrans

Given our funding constraints for H7, proposals for active travel will be focused on:

- **Route infrastructure:** Our focus will be on hub infrastructure – Heathrow-owned roads – and crossings to create continuity to local area infrastructure provided by local authorities. Temporary segregation options are being investigated in the short term to accommodate active travel users and assess levels of usage to support future planning. The reopening of the Northern Road Tunnel (NRT) side bores offers the opportunity to provide colleagues who work in the Central Terminal Area (CTA) a safe, direct straight to their place of work.
- **Trip end facilities and infrastructure:** Providing secure cycle parking locations around the campus working in partnership with property owners will help encourage

more colleagues to cycle. Where feasible, we will improve access to existing shower and change facilities at terminals for colleagues.

- **Behaviour change:** We will optimise the Heathrow Cycle Hub offer; one of the first improvements is planned to be the introduction of mobile/satellite maintenance and repair around the campus. We aim to expand our community of cycle champions to create a Team Heathrow cycling community to encourage new or less confident cyclists. Through engagement with local boroughs, we can provide targeted access to training and other active travel opportunities to colleagues.

Reduce the costs of the journey to work for colleagues

Approximately 1.5% of colleagues purchased a Heathrow Travelcard in 2019, and it is important colleagues can continue to access discounted fares where they are needed most to increase public transport use. Following the temporary suspension of the Heathrow Free Travel Zone and end to transport subsidies, effective from 1st January 2021, we will work with transport operators to consider how subsidised sustainable transport can be restored in a way that benefits consumers and our colleagues.

To make a step change in the number of colleagues who can cycle to work, we will work to make the costs of purchasing a bicycle as competitive as they can be, and for those that cannot store a bicycle at home that there is easy access to affordable cycle hire. We will work with our local authority partners to make available cycle hire schemes to colleagues working at Heathrow through locating docking stations on the airport.

For colleagues who cannot use public transport or cycle to work due to where they live, we will improve our car share platform to enable better access by car for those who do not own a car, and to make it more affordable for those who do by sharing the costs of the journey.

Use technology to provide more, and better, journey to work options for colleagues

Our intention is to provide a “one-stop shop” for Team Heathrow colleagues, which brings together in one App information about all available travel options and direct access to those using within App purchasing. It will consolidate the broad suite of travel information, journey planning, public transport discounts, active travel incentives and our car sharing programme under a single umbrella – the ‘Travel Wallet’.

Delivery of the Travel Wallet will be facilitated by working with new technology firms and taking advantage of emerging technology platforms. We will also look to use technology to expand journey options available for colleagues including:

1. **Dynamic car sharing:** as the technology becomes available in the UK, this could provide colleagues with the ability to search for a journey without having to rely on a regular car share partner. They will be able to request a ride the day of, or the evening before they need it, from someone who will be going their way in the morning.
2. **Demand Responsive Transit (DRT):** we will proactively seek opportunities to work with technology providers and local authorities to provide DRT options to our colleagues in locations not well served by traditional public transport.

7.4.7 Delivering our Strategy

7.4.7.1 Heathrow Area Transport Forum

In line with the Government's Aviation Policy Framework (March 2013) we have in place an Area Transport Forum (ATF). The primary purpose of ATFs is to encourage partnership between airport operators, local authorities, transport operators, local people and businesses, and other relevant parties, to improve public transport access to airports, and reduce reliance on private, road-based transport, congestion, and pollution on nearby roads. The Heathrow Area Transport Forum (HATF)⁵⁷ has been in existence since 1995 however the HATF now has an increasingly important role focussed on:

- Overseeing implementation of the Heathrow surface access strategy and monitor progress against defined targets within the strategy, alongside operation.
- Providing robust challenge to Heathrow with regards to its performance against defined surface access targets and doing the right thing for passengers, colleagues and local communities.
- Providing input to on-going surface access initiatives related to the existing two runway airport.
- Influencing local and central government in policymaking in the airport's favour.

The HATF is a critical forum for the major airport and local stakeholders to work together to deliver more value for passengers, colleagues and the community across the sub-region.

7.1.4.2 Partnership Working

We undertook extensive consultation with the airline community, HATF, Government transport bodies and agencies, local authorities and the local communities of the sub-region in developing our Surface Access Strategy for Heathrow Expansion.

We have continued to engage with the airline community through the monthly Surface Access Airline Stakeholder Committee (SAASC) and Constructive Engagement. We also continue to engage with the HATF and stakeholders such as TfL and Network Rail.

We are also engaging with several local authorities on a bilateral basis to explore opportunities to work in partnership. Discussions with London Borough of Hounslow and Slough Borough Council have already led to potential schemes that include:

- Active travel route to Hounslow Town Centre from the Southern Perimeter Road
- Slough cycle hire scheme

We continue to consult the local communities on surface access through the Local Recovery Forum and the Heathrow Community Engagement Board (HCEB) and its Transport Environment & Noise advisory group (TENAG). The HCEB are also represented on the HATF Board.

⁵⁷ Heathrow Area Transport Forum website: <https://www.hatf.org.uk/>

We must also continue to work closely with public transport operators. This is supported by our 2019 research with Transport Focus and DfT that concluded close working between the airport and transport operators was key to persuading more people to travel to an airport using public transport.⁵⁸

The impact Covid-19 has had on the aviation industry and the resultant need to reduce costs and expenditure over the next regulatory period makes working in partnership with our stakeholders even more crucial. We must look to deliver surface access measures that offer the most benefit to consumers, colleagues and the local community. Working in partnership will give us the ability to bring forward schemes through joint funding arrangements that will help us deliver better quality surface access measures for more people, helping us to achieve our desired outcomes sooner.

Collaboration is also important to help manage the impact of surface access and airport operations on local communities. Through our Airport Expansion Consultation (AEC) we know parking on local streets, congestion on local roads and air quality remain key concerns for residents. How we manage surface access to the airport and deliver our strategy can either have a direct benefit or impact so, we must work with local authorities and community groups to achieve the right outcomes.

8 - FINANCIAL PLATFORM

8.1 - FINANCIAL PRINCIPLES

Chapter Overview

- Heathrow intends to finance H7 entirely from private sources, in contrast to a number of other airports across Europe.
- We believe that private financing, which is underpinned by a strong investment grade credit rating on the basis of fair returns and stable regulation, will deliver both ongoing investment in the airport and value for money for consumers.
- Much has changed since the IBP. While our capital needs are much lower, the Covid-19 crisis brought unprecedented liquidity challenges for our financing platform since Q1 2020.
- Our financing platform has proved to be robust in the face of this crisis. The principles that underpin it must be protected:
 - A minimum cash flow generation in H7 to protect credit rating liquidity metrics, which are not materially dependent on gearing levels;
 - A viable balance of risk and reward over time, including regulatory intervention to ensure this balance is enacted in practice;
 - Protecting the principles of RAB-based regulation, including meaningful regulatory depreciation to recover investment efficiently incurred; and
 - Stable regulation, including as long a settlement period as possible.
- We also provide a number of sensitivity analyses to demonstrate the financeability of our RBP.

8.1.1 Introduction

In this chapter, we provide an overview of how we intend to continue financing Heathrow fully privately with no cost to taxpayers. Heathrow needs to raise between £1 and 2 billion per annum under this RBP, a lower scale than envisaged in our IBP as the potential impact of our Expansion programme is excluded. Yet, Heathrow will continue to have one of the largest financing requirements in the UK infrastructure sector. Heathrow will be funded with a mix of cashflows from operations, significant debt financing and ongoing equity support.

The devastating impacts of Covid-19 on the aviation sector, including Heathrow, have also resulted in billions of equity value losses. At the same time, the dramatic change in airport risk perception has led to Heathrow's credit rating being downgraded and its credit spreads widening significantly. Restoring stronger credit metrics and returning to an A- credit rating with continued equity commitment will be critical to maintain creditors' confidence and attract cost efficient debt financing in the benefit of consumers.

To meet this objective, Heathrow has delivered a comprehensive business protection plan in 2020 to protect its liquidity position and its debt financial covenants. The same prudent financial management of our liquidity and capital structure will continue in H7 and beyond. We will also need continued long-term equity commitment and timely cash inflows underpinned by the enactment of regulatory protections in line with market expectations of UK regulation.

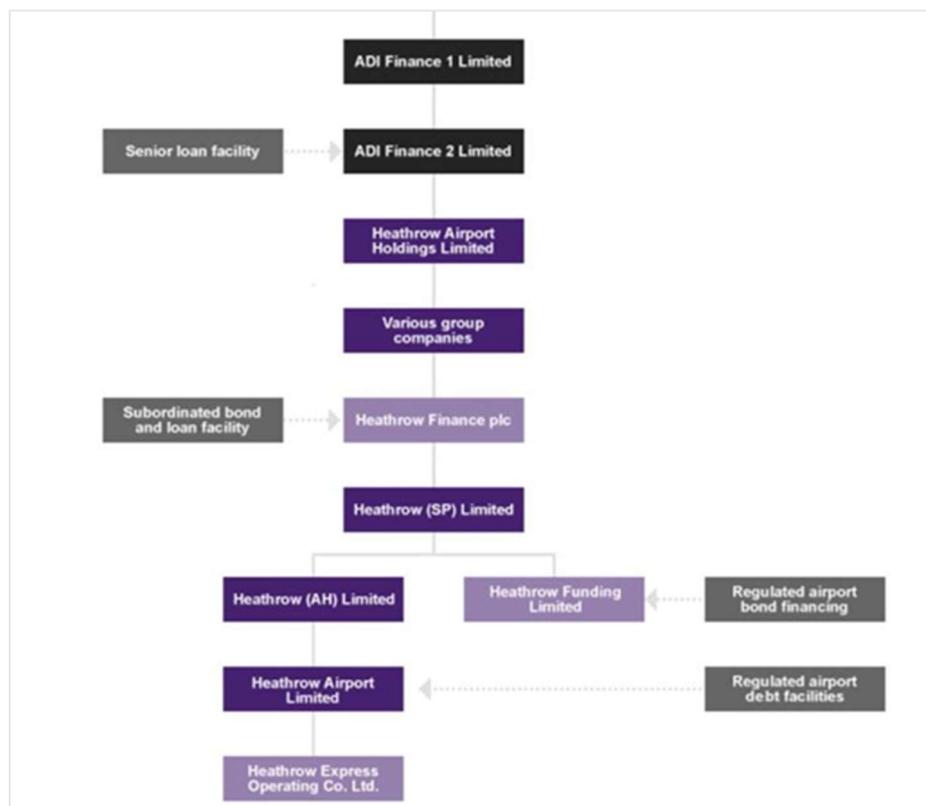
All these elements combined will ensure that Heathrow has access to cost effective funding. This will in turn benefit consumers with both continued private investment and lower airport charges to reflect lower financing costs than otherwise possible.

8.1.2 Heathrow's financing arrangements

Heathrow intends to finance H7 entirely privately, with no cost to taxpayers. This position contrasts with a notable number of other airports across Europe and puts Heathrow at disadvantage in comparison with its competitors. The airport's financing will be implemented with a mix of cashflows from the operations and significant debt financing raised via Heathrow's well-established and successful debt financing platform enabled by ongoing private equity commitment.

Heathrow Airport Limited (HAL) is the regulated subsidiary of the Heathrow (SP) Group that funds the airport. The Heathrow (SP) Group finances its activities through a mix of senior (Class A) and junior (Class B) term debt including bonds and revolving credit and liquidity facilities in a variety of tenors, formats and currencies. The Heathrow (SP) Group also has access to subordinated debt raised by its parent company, Heathrow Finance Ltd, and holding companies above that level, such as ADI Finance 2 which was reinstated in October 2020 – this layer was last used in early 2019. This structure has been specifically designed and well-tested to maximise access to funding at the lowest possible cost.

Figure 1: Heathrow's debt financing platform



Source: Heathrow

Heathrow's debt financing platform was set up in 2008 to ensure maximum flexibility in accessing international debt capital markets. Over the years, the platform has allowed Heathrow to diversify its sources of funding by issuing either across the capital structure to

appeal to different risk profiles among global investors or by issuing at the highest rated level of the capital structure in eight different currencies. The focus on diversification has in turn allowed Heathrow to maintain price tension between various markets and to achieve the most cost-effective funding as a result.

The £15 billion nominal net debt financing platform allowed Heathrow to successfully finance the construction of Terminal 2 and Terminal 5. The financing platform has continued to prove its worth in allowing continued access to international debt capital markets during the Covid-19 crisis. Despite the huge challenges that Heathrow has faced since early 2020, we have drawn all available facilities, managed to raise £2.5 billion of new debt financing and maintain at 18-month liquidity horizon throughout with a liquidity position currently amounting to over £4.6 billion (nominal).

The success of our debt financing platform is underpinned by Heathrow's credit fundamentals and its strong shareholder base. Key credit fundamentals include the resilience of the business, the predictability of cash flows backed by its regulatory framework and the strong suite of creditors protections provided within the financing platform. In addition to those, Heathrow benefits from the support of seven international long-term equity investors. Heathrow's shareholders manage between them around US\$1.0 trillion of assets globally and bring a wealth of expertise in the infrastructure sector. They have a track record of supporting the business not only during challenging times but also through the decade of transformation that took Heathrow to its current world-leading position.

It is Heathrow's ability to generate stable and predictable cashflow supported by credit fundamentals and strong equity support that underpins our investment grade credit ratings, a factor that is critical to maintain debt investors' confidence and a low cost of funding.

8.1.3 Impact of Covid-19 on Heathrow's financing platform

Covid-19 continues to have a significant impact on Heathrow with a dramatic reduction in passenger traffic and therefore on the airport's ability to generate cashflows from operations. The pressure in our financing is mitigated through three sets of interventions set below.

8.1.3.1 Rapid management actions to mitigate the impact of Covid-19

From the outset of this crisis, we established three key objectives to protect the financial resilience of the airport. These remain relevant, both as we navigate this crisis and as foundations for the recovery phase and for the longer term. The three objectives are (1) enhancing and preserving our liquidity position; (2) protecting our financing metrics to avoid covenant breaches and; (3) defending our investment grade credit ratings as far as feasible.

To meet these objectives, Heathrow firstly drew all its available facilities - taking its liquidity position to circa £3.0bn in March 2020. A significant cost reduction programme was swiftly implemented in order to deliver at least £300m (nominal) savings in operating expenses while capital expenditure was cut by over £650m (nominal) in 2020 alone. These actions aimed to reduce the airport's average monthly cash burn from £240m to closer to £160m in 2020.

Heathrow still then faced a forecast breach of its financial covenants, despite its strong liquidity position and the mitigating actions implemented early on. Heathrow's financial covenants are of two types:

- a gearing ratio driven by net nominal debt and the value of Heathrow's RAB; and,

- a cashflow ratio largely driven by the cashflows generated by the operations and cash interest paid.

Despite the historical headroom Heathrow has consistently maintained to covenant levels, the Covid-19 crisis put these ratios at risk. The risk came from both slower RAB growth to preserve liquidity and significantly lower cashflows from operations. Therefore, in July 2020, Heathrow took the prudent step to secure a waiver from its creditors. This removed the risk of covenant breaches in the short term. Over 90% of creditors involved in the process supported Heathrow's request and agreed to the waiver until mid-2022. This timing was predicated on a regulatory reset in January 2022 that would effectively limit Heathrow's financial exposure to the current crisis. Overall, the successful outcome demonstrated the confidence of the credit community in Heathrow to deliver its mitigation plans, the strong reliance in the regulatory traffic reset mechanism and the long-term commitment of shareholders as well as the appropriateness of Heathrow's financing structure.

Heathrow's latest traffic outlook points to renewed pressure on financial covenants as well as credit metrics monitored by rating agencies. Heathrow revised its traffic outlook from 29.2m passengers to 22.3m in 2020, a reduction of 72% compared to 2019 volumes. It also reduced its 2021 forecast from 62.8m to 37.1m passengers. No covenant breach is forecast under the revised outlook thanks to further mitigations put in place. However financial headroom to further shocks is limited and the importance of a viable H7 regulatory settlement has been reinforced, in particular to return to stronger credit metrics and an A- credit rating for senior debt which is aligned with the notional regulatory leverage.

Given the deteriorating outlook, Heathrow took the prudent and proactive step to further enhance its liquidity position. We raised £1.4 billion equivalent across three public bond transactions in Euro, Sterling and Canadian dollars in October 2020. All three transactions were well oversubscribed and completed at competitive prices, though at around 110 to 160bps wider than other regulated utilities in the current market due to higher risk in aviation. This compares to a spread between -20 and 30bps against other utilities at the start of 2020 before the pandemic. This new debt financing was raised within the Heathrow SP group.

Heathrow also secured a new £750m facility at ADI Finance 2 from private international infrastructure investors in October 2020. The capital has been injected into the Heathrow Finance Group. Some of these funds will be used to partially repay some debt at Heathrow Finance while £600 million have been pushed into the Heathrow SP Group. Overall, the capital injection further strengthens our liquidity and creates more headroom to our financial covenants. Some of the proceeds have been used to mitigate further risks on financial covenants through swap repricing and cost prepayments.

Considering the funding recently raised, Heathrow's liquidity stands at around £4.6 billion (nominal). This means that all of 2021 debt maturities are pre-funded. The airport can meet all its forecast obligations for at least 12 months even under the extreme stress scenario of no revenue at all or well into 2023 under its current traffic scenario.

Heathrow's management remains vigilant in the face of this fast-changing situation. We are planning for financing that can see through short-term shocks such as the Government's announcement of a four-week lockdown on 5 November 2020. While Heathrow's liquidity puts us in a robust financial position, financial covenants will again come under strain without both management actions to continue reducing costs and investment in 2021 and clarity on regulatory action in line with the framework.

8.1.3.2 Credit rating agencies actions

Ratings agencies have also acted since March. Standard and Poor's (S&P's) downgraded Heathrow's debt by one notch in March 2020 as the passenger traffic outlook worsened. While Heathrow has maintained its investment grade status so far, its ratings were placed on S&P's CreditWatch with negative implications to reflect a slower recovery than initially anticipated. The CreditWatch with negative implications also reflected the risk that the regulatory framework may not support Heathrow's cashflows in a timely manner. A further downgrade remains distinctly possible. An early indication of how the regulatory 'reset' affects cashflow metrics during H7 will be critical for further rating agency action. Further rating downgrades would move Heathrow's debt to sub-investment grade. This would significantly increase financing costs which would be detrimental to consumers interests in the long-term, impacting both airport charges and investment.

Fitch also placed Heathrow's credit ratings on negative outlook in April, again to reflect the severity of the Covid-19 crisis. Further updates are expected in early 2021.

8.1.3.3 Regulatory intervention will help reduce the perceived airport risk

Heathrow's credit community has proved supportive throughout these unprecedented circumstances. But their confidence must not be taken for granted. There are signs of wariness - recent funding were at competitive prices for the current environment but on terms with wider credit spreads than other regulated utilities achieved. This illustrates the higher perceived risk currently attached to Heathrow. Investors and credit rating agencies are particularly sensitive to actions taken to reduce costs and they also rely significantly on the regulatory protections and assumptions underpinning Heathrow's credit fundamentals.

A first critical step is for the CAA to urgently implement Heathrow's proposed Covid-related RAB adjustment. It would prove the real effectiveness of regulation and strengthen creditors and credit rating agencies' confidence in the regulatory balance underpinning our credit fundamentals and minimise the risk of further potential rating action. A RAB adjustment would in itself mitigate the risk of further credit rating downgrades and widening Heathrow's credit spreads. As Heathrow demonstrated in our response to CAP1966, it will help keep airport charges lower and provide reassurance that the CAA will honour its statutory duty to keep Heathrow financeable by ensuring that investors can receive a fair return commensurate to risk.

A secondary signal closely watched by investors will be whether the regulator responds appropriately to the reality of Covid-19 for the H7 settlement. The focus will be on whether there is practical acknowledgement of the changed risk environment and flexibility to adapt to uncertain business parameters in the regulatory settlement. Stability and predictability in regulation will be critical in this otherwise volatile period.

8.1.4 Securing Heathrow's financeability over H7

The scale of Heathrow's financing needs will reduce during H7 given the reduction in our capital investment plan. However, these financing requirements will remain one of the largest in the infrastructure sector. We estimate that in addition to cashflows from operations, between £1 billion and £2 billion of debt financing per annum supported by ongoing equity commitment will be needed during the next price control period.

To be financeable and deliver the most cost-effective financing, Heathrow needs to return to stronger credit metrics and restore in full its A- investment grade ratings. Many investors have stated that maintaining A- credit rating is critical for creditors to maintain confidence and continued support to Heathrow. For Heathrow to meet this objective, the CAA must respond to its statutory duties and ensure that Heathrow's equity and debt investors are allocated fair returns taking into account the risks incurred by the airport.

Equity investability remains fundamental for H7. Regulation must ensure that the asymmetry between risk and rewards currently embedded in the Q6 framework is resolved urgently. Equity currently faces limited upside and unlimited downside. The RAB adjustment proposal put forward by Heathrow provides the best option to fix the unsustainable imbalance of risk and return while minimising any adverse impact on airport charges. Urgent enforcement of protections already included in the regulatory framework through adjustment of the RAB will ensure equity is incentivised to continue investing in the airport which will in turn deliver greater benefits to consumers. We are also proposing a similar mechanism, where a symmetrical adjustment is explicitly in place going forward into H7 (see Chapter 9.1- Regulatory Framework).

A fair return for H7 will be critical for both equity and debt investors. The Covid-19 crisis has exposed risks that were unknown in 2014. These risks must now be taken into account when defining a fit for purpose return for H7.

Debt investors' confidence in Heathrow's credit will be instrumental in raising the significant debt financing required for H7. Creditors' confidence will ultimately rely on the comfort they can take from continued equity support. They will seek a swift return to stronger credit metrics allowing Heathrow to restore its A- investment grade ratings with both Standards & Poor's and Fitch. This will in turn support continued cost-effective access to debt capital markets.

While the regulatory reset in 2022 will reflect Heathrow's current trading conditions, it will remain critical that the settlement enables timely recovery through charges to cover our costs. Sensitivities included in this plan demonstrate the importance of the tariff profile and the need for a one-off P0 adjustment at the start of H7 to secure a minimum cashflow generation in the early years of H7 to protect credit metrics.

8.1.5 Equity investability

Heathrow's regulatory model is built on the assumption of a low-return stable business operating in a low volatility environment. As a result, the investment proposition for Heathrow's shareholders was one where upside is limited but downside is also limited.

The Covid-19 pandemic has exposed the failure of these assumptions. It therefore triggered an urgent need to protect the fundamental principles of the regulatory framework and the arrangements which have led to a low cost of capital over a sustained period.

Heathrow's proposed RAB adjustment offers the best option to address the unsustainable imbalance between risk and return. Urgent regulatory intervention will restore Heathrow's equity investment case. It will help keep the cost of equity low and enable Heathrow's ability to smooth the H7 charges through deferral of regulatory depreciation (see Chapter 8.3 - Depreciation). By implementing this adjustment now, the CAA will restore appropriate incentives to equity investors to continue investing in the airport to deliver for consumers, as well as accelerating the recovery of our capital structure and minimise the risk of further credit downgrades.

The Covid-19 crisis also exposed the need to recalibrate the risks embedded in the returns allowed by regulation going forward. Airports' perceived risk increased dramatically so allowed returns must also reflect these new dynamics and set the right foundations to future investments in the airport which will benefit consumers in the medium to long term. (See Chapter 8.2 - WACC)

While equity investability must be ensured within regulation in its own right, it is also a key foundation for debt financeability. Heathrow's creditors and credit rating agencies rely on the strength of its shareholders base to assess the airport's creditworthiness. As a result, an adverse outcome for equity will have adverse consequences on Heathrow's perceived credit risk.

8.1.6 Debt financeability

Heathrow's financeability is linked to its capacity to permanently raise significant debt financing at a cost-effective price. We have estimated that Heathrow will need to raise between £1 and 2 billion per annum in debt financing over H7. This means that the proportion of new debt raised in H7 will be close to 30% by 2026. This challenging task will require maintaining the confidence of Heathrow's creditors.

In the medium to long-term, debt investors' confidence will rely not only upon continued cautious management of Heathrow's finances and the strength of its capital structure but also on the comfort taken from a strong and supportive shareholder base as well as restoring stronger metrics to return to an A- investment grade ratings with both Standard & Poor's and Fitch.

8.1.6.1 Strong and supportive shareholder base is critical for Heathrow's credit strength

When assessing Heathrow's credit, debt investors and credit rating agencies will take into consideration the strength of our shareholder base including its capacity and willingness to support the airport's financial standing and its growth.

Shareholders' support is a key indicator of Heathrow's capacity to withstand challenging times. For instance, it is thanks to shareholder commitment and prudence that Heathrow had a robust financial position including significant liquidity and headroom to financial covenants going into the current Covid-19 crisis. Equity is instrumental to manage shocks that create risks for credit, therefore stabilising our credit risk profile in a more volatile environment. Given uncertainties ahead for H7, creditors will want to take even more comfort from a strong shareholder base backing Heathrow.

But the investment case must fairly incentivise equity do so. Equity investability is therefore critical not only for shareholders but also to maintain the confidence of Heathrow's debt investors. This, again, is why an urgent RAB adjustment and ahead of H7 will support Heathrow's credit story. It is also why setting a similar mechanism for H7 to balance risk and reward is so critical. It will demonstrate that a robust and consistent regulatory framework supports Heathrow and its investors and will mitigate the higher perceived risks associated with airports as a result of Covid-19. This will underpin the virtuous cycle of more confidence amongst creditors and rating agencies ensuring continued access to capital markets with tighter credit spreads, lower cost of debt and lower airport charges for consumers.

8.1.6.2 Restoring stronger credit metrics

Restoring stronger credit metrics and restoration of an A- investment grade rating will be key to maintain investors' trust. It will also drive the most cost-effective debt financing.

Covid-19 has significantly deteriorated our cashflow-based credit metrics. This means that timely cash inflows will be critical to restore a strong A- in H7. Additionally, while shareholder support is a key consideration in forming credit options, equity injections will not resolve the challenge we are facing with cashflow credit metrics, simply because they are driven by cashflows from operations.

Credit rating opinions will generally consider a combination of many factors. These factors include Heathrow's business risk profile; competitive position; regulatory protections and their actual implementation; overall financial standing and liquidity position; cashflow metrics; shareholder support as well as the structural features of its financing platform.

Regulatory intervention to implement Heathrow's proposed RAB adjustment will be a necessary step to support and enhance the airport's creditworthiness. It will firstly ensure equity is investable and remains supportive and secondly demonstrate proportionate enforcement of the regulatory framework and protections, two aspects that are critical for creditors. Fair returns across H7 will also be instrumental to maintain appropriate credit metrics.

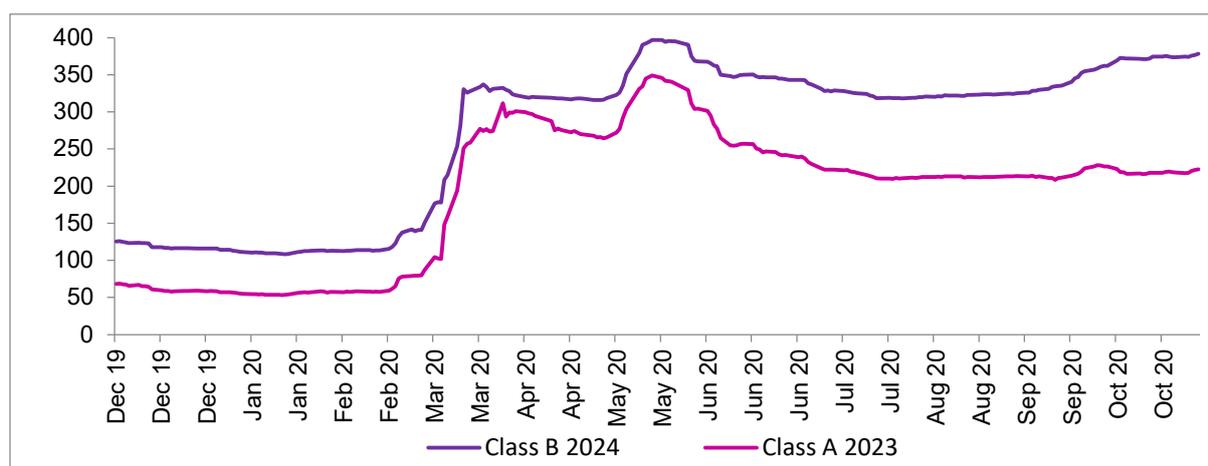
Stronger credit metrics and therefore a return to A- rating will allow to mitigate the risks of higher cost of debt and associated higher airport charges for consumers. Conversely, a downgrade of Heathrow's debt will have immediate and negative implications for our cost of debt and airport charges.

As discussed under the *Financing Arrangements* section of this chapter, Heathrow raises most of its debt within the Heathrow SP group and at two levels of the capital structure: Class A level which is the most senior layer and rated BBB+/A- by S&P's and Fitch as well as Class B, subordinated to Class A and rated BBB-/BBB.

A one notch downgrade by S&P in 2020 has already moved our debt to BBB category in some investor portfolios. Any further downgrade by either S&P or Fitch at Class A to BBB/BBB+ would firmly anchor Class A debt in BBB territory. It would also move Class B debt to sub-investment grade territory as rating agencies apply a systematic gap between the two tranches.

A one notch downgrade would imply Class A would likely price similarly to how Class B debt is currently pricing. Looking at secondary trading available on Bloomberg, the differential is just over 100bps currently compared to around 50bps in late 2019/early 2020. The graph below illustrates the evolution of this differential since the start of 2020 in reference to gilts.

Figure 1: Heathrow Class A and Class B £ secondary spreads over gilts



Source: Bloomberg

Credit rating agencies take a forward-looking approach when forming their credit opinions. We understand that rating agencies take a long-term view to assessing credit metrics and are likely to average the results over a number of years. Consequently, returning to stronger ratings may take at least 12 months and likely 2 years at a minimum so this incremental cost would be borne for any additional debt raised and over its average duration.

On this basis we would expect a one notch downgrade of Class A, lasting at least 2 years, to result in at least a 100bps increase in the cost of debt.

Assuming we raised around £3bn in the next two years with an average duration of 10 years, the incremental 100bps cost to consumers would therefore amount to at least an incremental £300m over the duration of this debt financing. The same amount would be borne by consumers through airport charges.

8.1.6.3 Timely cash inflows required to support Heathrow’s credit metrics

We have set out the rationale to restore stronger credit metrics and how fundamental this will be to ensure Heathrow’s debt is financeable. The following table describes the thresholds required by our credit ratings to meet this objective.

Table 1: Credit metrics and their thresholds

Credit Metrics	Thresholds
FFO/Net Debt (S&P’s)	>8%
Net Debt/RAB (S&P’s)	<70%
PMICR (Fitch)	>1.6x
Net Debt/EBITDA (Fitch)	<8.0x

Source: Heathrow, Standard & Poor’s, Fitch

The gradual recovery in passenger traffic and especially lower passenger forecast in 2022 and 2023 bring some challenges to meeting these requirements. It is critical that our tariff profile includes a one-off P0 adjustment in 2022 to appropriately support our cashflow-based credit metrics from the start of H7. The adjustment will smooth airport charges, effectively keeping prices flat in real terms during H7. It will avoid a steep increase over the five-year period and support our credit metrics by bringing forward revenues from later years. While this approach brings no net present value benefit to Heathrow, it mitigates the highly likely risk of

credit rating downgrades which would lead to a higher cost of debt and higher airport charges for consumers.

We will illustrate the impact of tariff profiles in our *Financeability assessment* section.

8.1.7 H7 financing strategy

Our financing strategy will continue to support our commitment to restoring stronger credit metrics and returning to an A- investment grade rating. It will minimise funding costs and reduce our refinancing risk.

To deliver these objectives, we will continue building upon the three foundations of our financing strategy.

8.1.7.1 Maintaining a robust liquidity position

Heathrow has consistently maintained a strong and prudent liquidity position over a decade. We have aimed to secure enough cash and committed facilities to cover on average 18 months of our forecast obligations including operating and capital expenditures as well as debt service, debt repayment and distributions. This cautious approach was instrumental in navigating the Covid-19 crisis and previous economic crises. It also allows Heathrow to access debt capital markets strategically and therefore to secure the most cost-effective funding. We plan to maintain this prudent liquidity policy to optimise our cost of financing and maximise benefits for consumers.

8.1.7.2 Diversifying our sources of debt financing

As outlined in our *Financing Arrangements* section, Heathrow's debt financing platform was built to diversify our sources of debt financing. This has been achieved by issuing at four different layers of the capital structure in order to appeal to different investor risk profiles and by issuing in eight currencies. Diversification is key to maintain price tension between different markets, different types of investors and therefore to secure the most efficient pricing and reduce costs for consumers.

8.1.7.3 Maximising duration

In order to match Heathrow's long-dated assets, we will continue to maximise the available duration in each market. Our average duration at the end of 2020 is just over 10 years. We plan maintain this average duration over H7. A duration of this length helps minimising refinancing risks and ensure we are robust to a wide range of market shocks.

8.1.8 Financeability assessment

This section assesses the financeability of our plan. It is based on the mid-case traffic scenario and a notional balance sheet consistent with regulatory precedent. It sets out the tariff profile required and compares key credit metrics against the targets set out earlier to return to a strong A- credit rating. The analysis also includes the RAB profiling adjustment mechanism that was used in Q5 and part of our Q6 licence. This adjustment compensates for the impact of the lower or higher revenue generated compared to revenue requirements. The assessment has been undertaken using the CAA's Price Control Model ('PCM').

In the first subsection, we set out an analysis of our overall RBP and comment on key differences in a sensitivity without Heathrow's proposed RAB adjustment.

In the subsequent section, we test the robustness of our plans with possible stress scenarios:

- Using a tariff profile without a P0 adjustment
- Using a lower WACC
- Increasing the cost of new debt to 5% in 2022
- Reducing inflation to 2% over H7
- Reducing passenger numbers to our P10 forecast

8.1.8.1 Assessing the financeability of our plan

8.1.8.1.1 Liquidity requirements

Our overall plan is financeable with a mix of cashflows from operations and debt financing supported by ongoing equity commitment for Heathrow. Given the proactive steps taken to enhance our liquidity throughout 2020, Heathrow's liquidity horizon extends into 2023. During H7, we anticipate that circa £8 billion of gross debt financing will be needed in addition to cashflows from operations in order to meet our forecast obligations.

8.1.8.1.2 Assessment of our credit metrics

Our senior debt is rated BBB+ by S&P's and A- by Fitch. We explained earlier the impact of Covid-19 on credit rating metrics and the importance of restoring stronger metrics and an A-rating with both credit rating agencies given the benefits for consumers due to a lower cost of debt. The approach below ensures we can deliver this objective.

For a financeability assessment on the notional balance sheet we need to consider the appropriate financial ratios for a notionally geared company. At the notional gearing of 60%, the appropriate credit rating is BBB+. This is consistent with the CMA view in 2007 for Heathrow with a notional gearing of 60%¹, and in 2020 for water companies with a gearing of 60%.² Therefore the appropriate ratios are those for a company with a BBB+ credit rating. In practice, credit rating agencies give a one notch benefit for companies with structured debt. This means that the thresholds for a BBB+ rated company without structured debt are the same as those with an A- rating with structured debt. Therefore, the appropriate credit metrics for a company with a notional gearing of 60% are the same as apply to Heathrow's Class A debt.

We have investigated the metrics of our plan using the PCM. The PCM adjusts cashflows to equity to achieve the notional gearing in each year. As a result, it does not reflect the range of factors that companies will take into account in assessing their financing in practice in the real world. In particular, the PCM does not consider the wider range of financial metrics. Thus, in the analysis below the PCM includes an assumption of dividends in years where key metrics are not being met. In practice dividend payments would be less. This means that there is a significant gap between the ratios we obtain on our actual balance sheet and those calculated by the PCM.

¹ Competition Commission, *Heathrow Airport Ltd and Gatwick Airport Ltd price control review*, 2007, Appendix F, paragraph 27

² CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 10.91

The net effect is that the PCM implies a more constrained financial platform than the actual platform. That implication in turn limits the scope to manage the airport charge impacts for consumers. For the purposes of the wider plan we have thus used our actual financing platform and metrics to produce the building blocks output and thus airport charge. We explain any discrepancies between the PCM and this analysis below.

In the analysis below we set out the metrics from 2022. In the context of the assessment by rating agencies it is important to note that metrics in 2020 and 2021 have been well below target as a result of the pandemic. This will influence how rating agencies consider performance in the early years of H7. It will mean that low performance against the metrics at the start of the period is more significant than it would be otherwise.

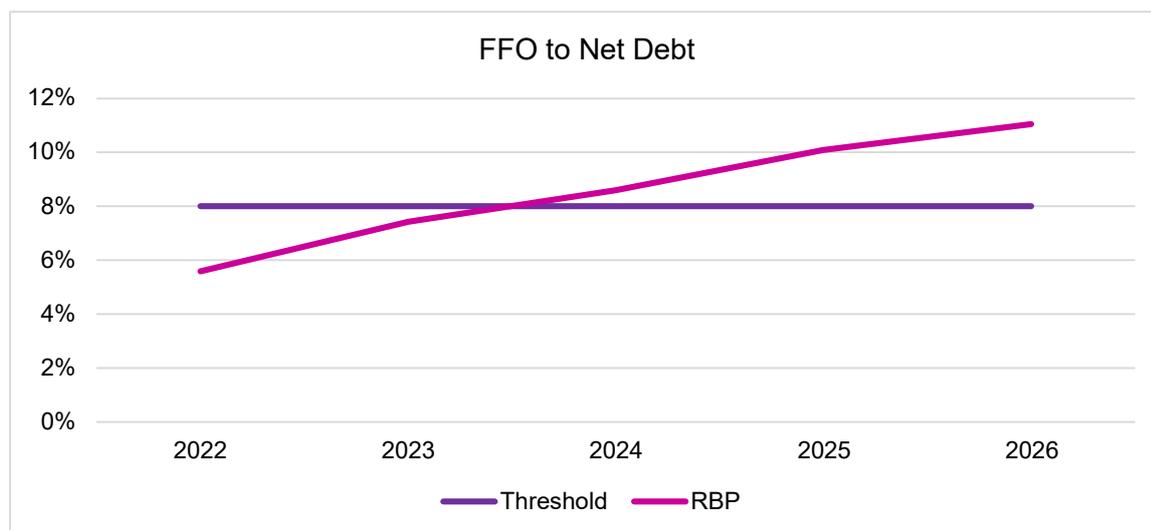
Considering the key target ratios, firstly, on the notional balance sheet, we assumed a fixed gearing of 60% Net Debt to Regulatory Asset Base (RAB). As a result, the S&P's threshold of 70% is not a material constraint for our financeability.

The first key credit metric to strengthen is our Funds From Operations to Net Debt (FFO/Net Debt). Under the notional structure, this metric will only meet the required threshold of 8% from 2024 with a P0 adjustment and with the hypothetically assumed dividends in the Price Control Model. [REDACTED]. Therefore, the minimum thresholds can be met by removing the hypothetically assumed dividends in earlier years of H7. But the P0 adjustment remains critical to generate cash inflows to meet the 8% minimum thresholds.

Figure 2 sets out the FFO to debt ratio for our plan. It illustrates the challenges Heathrow will be facing in the early part of H7 to return FFO/Net Debt to appropriate level. [REDACTED].

Figure 2 shows that under the notional balance sheet in the PCM the financing challenge is greater. Careful treasury control will be required in the early part of H7 to support credit metrics.

Figure 2 - FFO to Net Debt



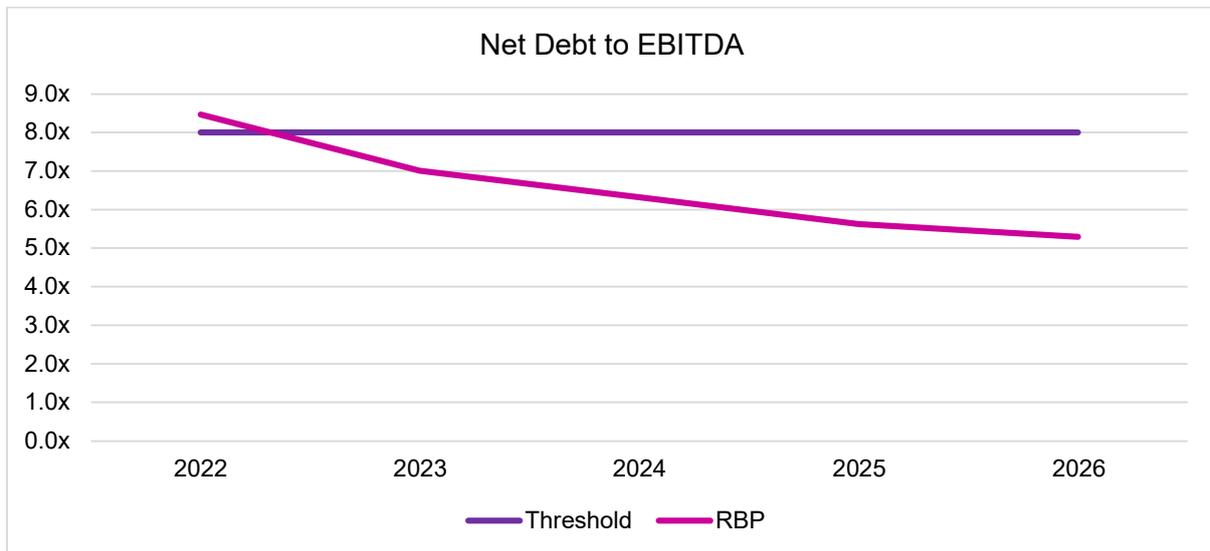
Source: Heathrow

Our Net Debt to EBITDA and Post Maintenance Interest Cover Ratio (PMICR) will also need to improve to avoid any downgrade. Similar to the FFO/Net Debt case, even with a P0

adjustment, Net Debt to EBITDA is outside the threshold of 8x in 2022, again illustrating the financing challenge early in the period. The PMICR is less constrained, partly due to the lower regulatory depreciation recovery built into our plans.

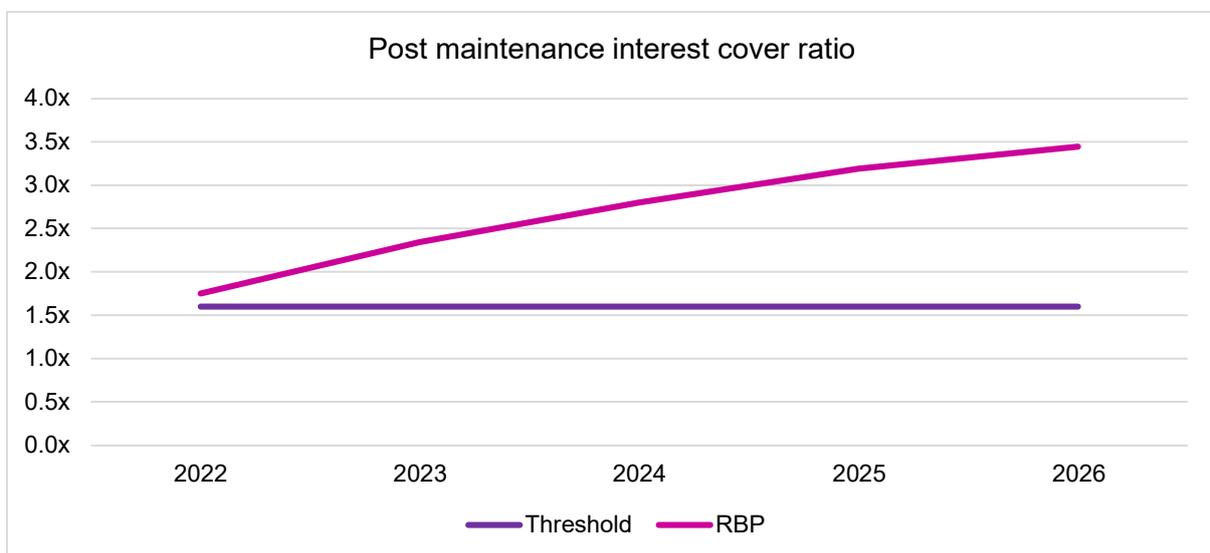
Figure 3 and Figure 4 illustrate how these metrics are challenging in the start of the period, but then return to adequate levels under our plans.

Figure 3 - Net Debt to EBITDA



Source: Heathrow

Figure 4 - Post Maintenance Interest Cover Ratio



Source: Heathrow

8.1.8.1.3 Assessment of our credit metrics without a RAB adjustment

In the absence of Heathrow’s proposed RAB adjustment, a higher level of risk shall be reflected in our cost of capital. A higher WACC in that scenario will result in relatively better cashflow credit metrics but will not solve the pressure expected in the early years of H7. A P0 adjustment will also be required to bring forward revenue and return credit rating metrics to

appropriate levels. In addition, under this scenario, the recovery of regulatory depreciation will be quicker and that will adversely impact our PMICR.

8.1.8.1.4 Overall conclusions

The analysis above demonstrates that, under a notional structure and based on historic rating agency guidance, our plans are only financeable by utilising existing regulatory mechanisms such as a P0 adjustment to restore stronger credit metrics towards A- and minimise any incremental cost of debt that would lead to higher airport charges and be detrimental to consumers.

While our liquidity requirements are to be met by cashflows from operations and debt financing, ongoing equity support will remain key to support Heathrow's creditworthiness, provide comfort to debt investors and effectively underpin debt raising activities.

8.1.8.2 Sensitivity assessment

Demonstrating sufficient resilience to manage unexpected events is a key part of our financeability assessment. We outline below the key sensitivities that we believe are relevant to assessing the debt and equity financeability of our plans. These are scenarios with:

1. No P0 adjustment
2. A lower WACC
3. A higher cost of debt
4. A lower inflation
5. Lower passengers

8.1.8.2.1 Scenarios description

No P0 adjustment

This scenario assumes our plan is fully materialised except for the regulatory P0 adjustment required at the start of H7. As a result, we apply a tariff profile of RPI + 11.2% as per the PCM.

Lower WACC scenario

In this scenario, we assess financeability with an assumption of a lower WACC of 5.10%, based on the Flint Global report updated to reflect the CMA decision on market parameters for the cost of equity and the CMA cost of debt for water companies. It assumes the upper quartile of the CMA range for NERL for the asset beta. The Flint Global report assumptions around debt beta, issuance and liquidity costs and share of new debt are assumed to apply.

These assumptions result in a post-tax cost of equity of 7.80% or pre-tax cost of equity of 9.62% and an all-in cost of debt of 1.65%. Gearing is assumed to be the average of 52.5% and 60% in line with Flint Global's approach.

In this case, we assume no regulatory depreciation adjustment as it is incompatible with this lower WACC assumption.

Higher cost of debt

This scenario reflects a risk of debt costs increasing and having to be absorbed by Heathrow before being corrected through the debt indexation mechanism. In this case we assume the following:

- The cost of new debt increases to 5% nominal from the start of 2022;

- Cost of debt indexation results in the additional costs being recovered through revenue in 2027-2032; and
- The WACC for 2027-2036 and associated aeronautical revenue reflects the higher cost of debt.

Lower inflation scenario

In this scenario, we assume inflation decreases by 2% across H7.

Lower passenger numbers scenario

In this scenario, we assume passenger numbers are at P50 for the revenue requirement, but outturn passengers are at P10.

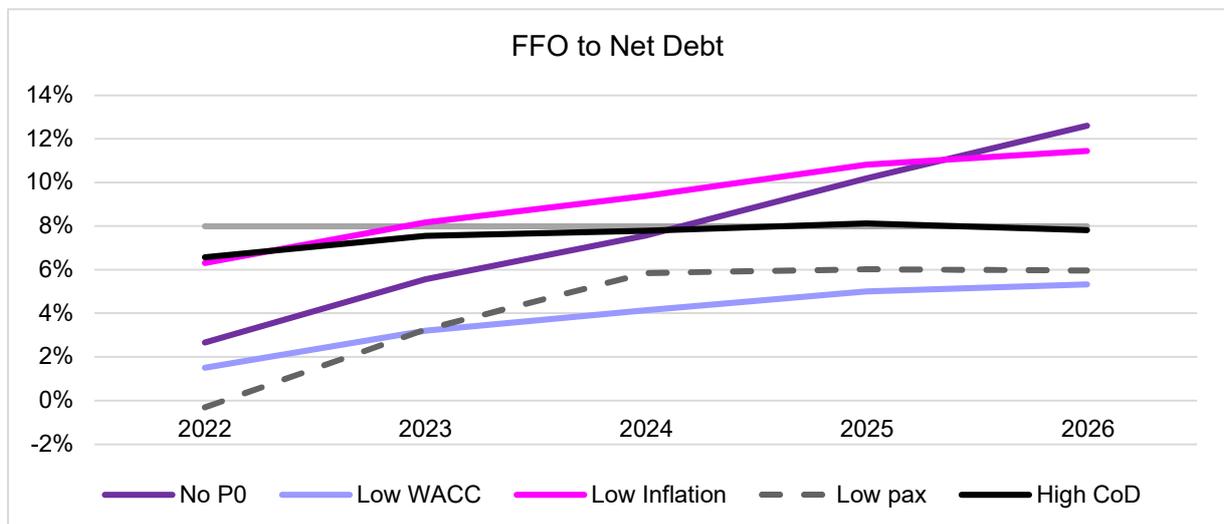
8.1.8.2.2 Liquidity requirements

Among the five sensitivities, the passenger volume underperformance has the biggest impact on our capacity to raise cost-effective debt financing and would likely lead to a credit rating downgrade.

In that case, assuming the tariff was set on a P50 revenue requirements, the cashflows generated by the operations would fall short of revenue requirements. Cashflow metrics would not meet required thresholds and Heathrow’s debt would most likely be downgraded.

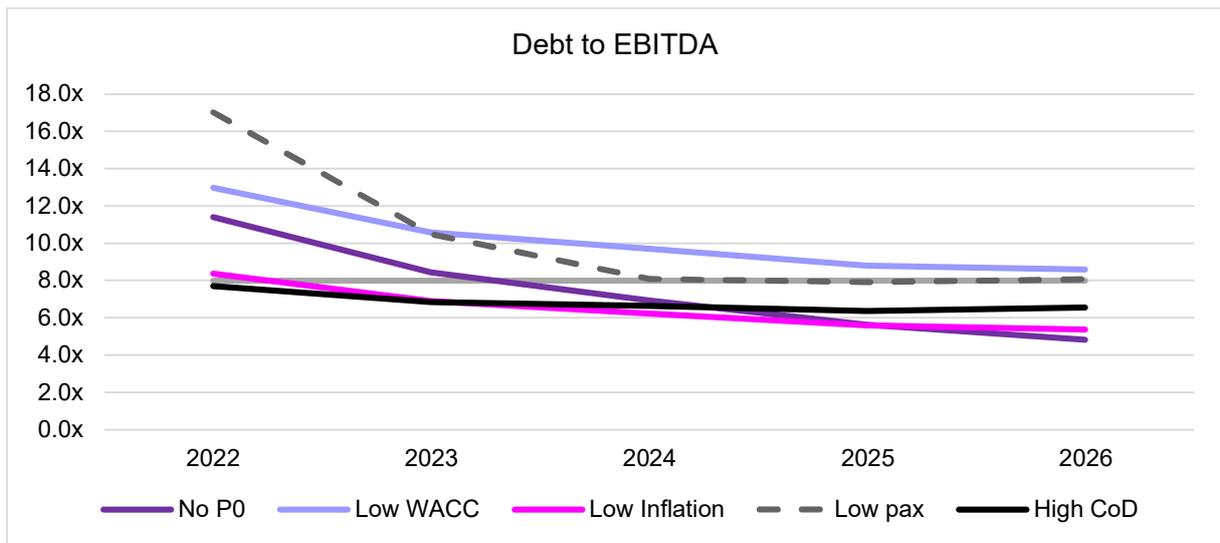
8.1.8.2.3 Assessment of key credit metrics

Figure 5 - FFO to Net Debt Sensitivities



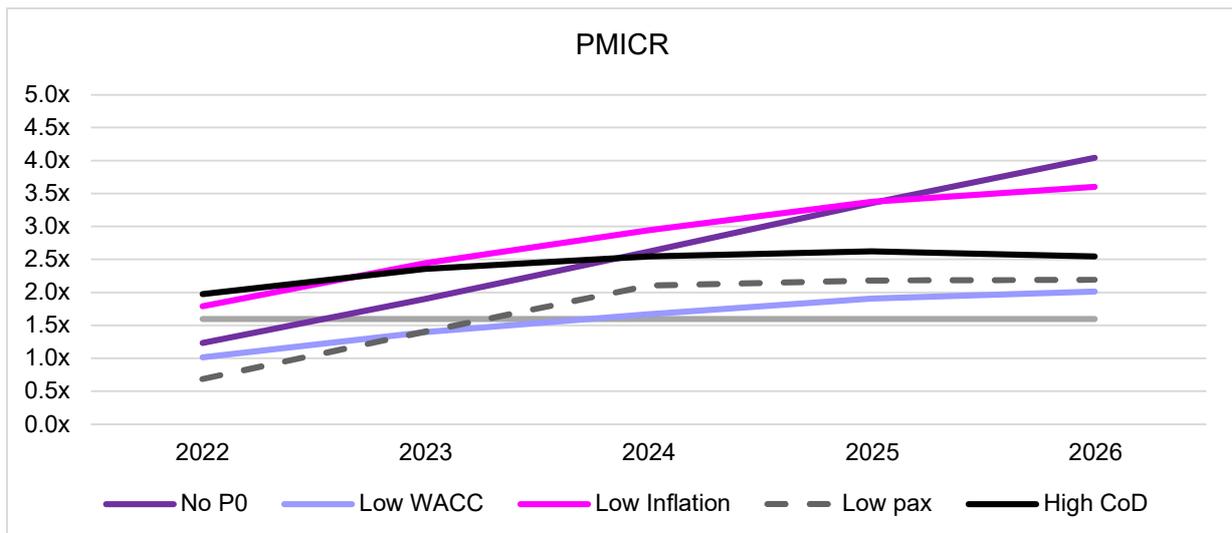
Source: Heathrow

Figure 6 - Debt to EBITDA Sensitivities



Source: Heathrow

Figure 7 - PMICR Sensitivities



Source: Heathrow

Without a P0 adjustment, our credit metrics do not meet rating agencies' thresholds early in the period, with most pressure visible in 2022-23 on our FFO/Net Debt. Note that we have already seen a one-notch downgrade from S&P in early 2020 and this profile would increase the risk of a further downgrade.

In a low WACC scenario, airport charges would decrease mechanically so in that case, a regulatory depreciation adjustment is not only unnecessary but would also be adverse to our credit metrics as it would be delaying further cash inflows. Figures 5 and 6 show that the scenario is not financeable from a debt perspective. In addition, the assumed cost of equity would not be investable for our shareholders so would have consequences on investment decisions and future benefits for consumers.

In a low inflation scenario, we would face some pressure on our 2022 credit metrics but relatively limited compared to other sensitivities.

In a higher cost of debt scenario, we would see reduced headroom on all metrics. The most severe impact is on FFO/Net Debt where we would just meet the required threshold but not build any further headroom during H7.

A passenger underperformance of the magnitude considered would have the biggest impact on our metrics increasing significantly the risk of further rating downgrades from both S&P's and Fitch. This scenario is not financeable and would require significant additional revenue in order to be so.

8.1.8.2.4 Overall conclusion

Our analysis shows that our RBP is only financeable if the interlocked assumptions of WACC, RAB adjustment, regulatory depreciation and P0 tariff adjustment are implemented as a single integrated package. Our plan has pulled our financing levers as far as possible to balance financeability and affordability. This means that minimum cashflows will be required to support our credit metrics and any attempt to cherry-pick will force other adjustment which results in negligible net impact in aeronautical charges.

8.2 - WACC

Chapter Overview

- The cost of capital is set by international markets.
- Following the onset of Covid-19, investors' view of the risk of airports has changed leading to increases in the cost of debt and equity for Heathrow.
- The CMA appeals for NERL and Water companies over 2020 have settled some technical issues in respect of WACC and we follow these rulings in our RBP.
- We set out estimates of the cost of equity and debt for Heathrow based on the latest robust market evidence, in line with logic used in the IBP and CAA work.
- We set out how the Covid-related RAB adjustment reduces WACC for H7.
- We set out the overall efficient WACC required to deliver our H7 plan.

8.2.1 Introduction

To deliver our H7 Plan Heathrow must finance itself with debt and equity from the international capital markets. Investors in these markets can only finance Heathrow if the price they receive (their return) adequately compensates them for the risks that they perceive in their investment. The price of finance for a particular level of risk depends upon the interplay of different factors within global markets and can vary over time. Investors will not provide finance for a return below the market rate available to them for an equivalent level of perceived risk. This means that the price Heathrow will have to pay for its finance is set by global capital markets, just like the price it must pay for other inputs e.g., power costs are set by energy markets.

Heathrow's investors – debt and equity, current or any potential future ones - are sophisticated international businesses with a global choice about where to invest their money. Given this, it is critical that the cost of finance assumed in the plan, the weighted average cost of capital (WACC), is set at a level aligned to capital markets. If not, Heathrow will not be able to access the finance it requires to efficiently deliver investments for consumers. This would contravene the CAA's statutory duty to have regard to the need to secure that Heathrow is able to finance its provision of airport operation services, under s1(3)(a) of the Civil Aviation Act 2012, and it would – more simply – lead to adverse consumer outcomes (investments not being made or not being financed efficiently).

The impact of the Covid-19 pandemic has increased investors' perception of the risk of investing in airports. Market evidence incontrovertibly shows that this has led to a significant increase in both the cost of debt and cost of equity for Heathrow in the last 12 months. We have reflected this market data in our estimate of WACC for the RBP. Consequently, the WACC estimate is significantly higher than the estimate in the IBP.

In this chapter we describe Heathrow's approach to WACC in H7 based on current market evidence on the cost of finance. We also take account of recent regulatory precedent in the CMA appeals for NERL and Water Companies. These appeals provide important precedent about certain key inputs to the WACC. They also demonstrate the CMA's readiness to adjust errors by regulators and ensure consistency across sectors. Primarily using CMA parameters and latest market data, we provide our views on the cost of equity, the cost of debt and the

specific impact the Covid-related RAB adjustment has on both. Finally, we set out our overall conclusions for the WACC required for H7.

8.2.2 Changes since the IBP

We have largely followed the same approach for assessing WACC as we followed in the IBP. Since the IBP, CMA appeals for NERL and Water Companies have provided important new regulatory precedent for some WACC parameters that largely support the estimates we included in the IBP. However, since the IBP the impact of Covid-19 has led to a significant difference in the market data for the cost of debt and equity for Heathrow. As a result of these changes to market data, the estimate of WACC has changed considerably.

A key element of the IBP related to the additional cost of finance that would be required as a result of expansion. This is not considered in the RBP.

8.2.3 Approach to estimating WACC

To determine an appropriate WACC for H7, we have made separate estimates of the cost of equity (R_{equity}) and the cost of debt (R_{debt}) based on robust market data. The WACC is determined from these and the gearing (g) of the company as:

$$WACC = gR_{debt} + (1 - g)R_{equity}$$

There are some key issues that impact our estimate of the WACC of Heathrow:

- The impact of the Covid-related RAB adjustment;
- The level of gearing;
- The CMA inquiries into NERL and Water Companies; and
- The appropriate point in the range.

These are considered below.

8.2.3.1 Covid-related RAB Adjustment

The Covid-19 Pandemic has had a major impact on Heathrow Airport. Passenger numbers in 2020 are expected to be only 28% of forecast, and in 2021 only 46%. The impact of these lower passenger numbers is anticipated to reduce revenue by £3.1bn (2018p) over the two years. The scale of these losses is well in excess of what might be anticipated for a regulated company, or consistent with the WACC set for Q6.

Heathrow has taken a wide range of actions in response to the crisis, including closing terminals, cutting capex, cutting operating cost and reducing colleague numbers. In addition, we have maximised liquidity and sought and obtained waivers from creditors. As well as these operating and financial actions, we have proposed a regulatory approach to the CAA to help manage the crisis in the best interests of consumers.

In this approach we proposed a mechanism that would allow Heathrow to recover an appropriate proportion of the losses experienced over 30 years from 2022 by making a policy decision to increase the RAB before the start of H7. We submitted this proposal to the CAA in

July 2020.¹ The CAA responded to our request with a consultation published in October (CAP 1966) asking for more information. Heathrow responded to the CAA at the start of November.²

The systematic risk of Heathrow, and therefore its WACC, depends upon how risky Heathrow is perceived to be by investors. This in turn will be affected by the level of mitigation to the impact of Covid-19 that the regulatory regime provides. In our CAP1966 response we estimated that implementing the adjustment as proposed would reduce the post-tax WACC by 1.3% compared to no adjustment being made.

In this RBP Heathrow has included the impact of the RAB adjustment as proposed in our response to CAP1966. Therefore, our approach to estimating Heathrow's WACC needs to take account of the impact of the RAB adjustment we have proposed. Our central plan therefore takes account of the RAB adjustment in our assessment of the cost of equity – reducing it by 1.3% post-tax (1.5% pre-tax) compared to a no-adjustment case. We also reflect the impact of the adjustment on the overall charge. The net result is a H7 charge that is £8.5 per passenger lower than without an adjustment. We provide estimates of the cost of equity with and without the adjustment below. Our estimates are consistent with evidence from current market data.

For the RBP, we have not made an adjustment to the cost of debt to account for the adjustment. However, if Heathrow is downgraded in 2021, then this would lead to a higher cost of debt for new debt incurred from 2021 onwards until the credit rating is restored. In CAP1966 we estimated the impact of a one-year delay to implementing the adjustment to be £30m p.a. across H7. This would result in an increased charge per passenger of c.£0.4 in H7. More information on the impact of the CAA not making the proposed adjustment to Heathrow's RAB can be found in Chapter 10.2 – Outcomes – Next Steps.

8.2.3.2 Gearing

The level of gearing is a key input to calculation of the cost of capital. Regulators have generally taken a notional approach to gearing in estimating WACC rather than using company specific gearing. This notional approach allows companies to make their own choices about their financial structure whilst ensuring that customers only pay for costs associated with the efficient cost of capital for a notionally structured company.

For Q4 the CAA used BAA's actual gearing. For Q5 and Q6 the CAA used a notional gearing of 60% for Heathrow. Maintaining stability in this assumption is a key contribution to regulatory consistency.

Flint considered the appropriate level of gearing to assume for the notional WACC for Heathrow in its report for the CAA. They stated that they did not consider that Heathrow's current gearing was inefficient.³ They also stated, that in setting a level for notional gearing it would not be reasonable to ignore assumptions of gearing adopted in the past and that the level should take account of plausible changes during periods.⁴ Flint used this principle to

¹ Heathrow, *Application for a Covid-related RAB adjustment*, July 2019

² Heathrow, *Economic regulation of Heathrow: response to its request for a Covid-19 related RAB adjustment (CAP1966)*, Heathrow's response, November 2019

³ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p51

⁴ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p51

derive a minimum level of notional gearing of 52.5% for H7 based on an initial gearing of 60% and Heathrow undertaking no new borrowings.

We agree that the historical assumptions about the notional level of gearing form an appropriate starting point for the level of gearing during H7. However, the impact of Covid-19 has been to increase levels of gearing as operations are funded by borrowings rather than revenue. This means that a starting point above 60% may be appropriate for H7, reflecting the higher gearing that Covid-19 has caused.

Accordingly, in our modelling we have adopted a quasi-notional gearing approach for the RBP in that gearing at the start and end of H7 is assumed to be 60%. In between gearing reflects the impact of Covid-19. This is implemented in three steps. First, we assume gearing of 60% at the end of 2019. Secondly, we reflect the impact of the Covid-19 pandemic during 2020 and 2021. Thirdly we then allow gearing to reduce back to 60% by the end of 2026. The loss of revenue in 2020 and 2021 leads to gearing rising to 74% by the end of 2021 before the application of the RAB adjustment at the end of the year.

For the purpose of estimating WACC we have considered two options for gearing:

- Using 60% to reflect the long-run regulatory assumption for notional gearing;
- Using 67% to reflect the median gearing in H7 arising from the quasi-notional approach used for financial modelling.

We present estimates for both approaches. However, in the interest of regulatory consistency, we have continued to base our estimate for the RBP on the first of these approaches.

8.2.3.3 CMA Appeals for NERL and Water

Since the IBP was produced two UK regulator price control decisions have been appealed to the CMA. In these appeals the CMA devoted considerable time to assessing elements of WACC. Its findings in this area are relevant for the estimation of the Heathrow WACC for H7.

NERL appealed the price limits set by the CAA in 2019 and the CMA set out its initial findings in March 2020. This included updates on views on key market parameters and methodological issues. It also set out views on the asset beta for airports that are relevant to Heathrow. The NERL inquiry was overtaken by events as a result of the impact of Covid-19 on NERL. This impacted the approach taken by the CMA towards NERL, particularly with respect to WACC. Rather than consider its approach to the provisional findings in the light of the feedback it received in this area, the CMA decided that the impact of Covid-19 made its approach no longer so relevant. In its final determination for NERL the CMA made clear that it had not considered representations on WACC further, and that it had made no judgements on the merit of these responses.⁵

Four water companies appealed Ofwat's price control in January 2020, and the CMA gave its provisional findings in this case in September. The CMA updated its approach to the cost of capital from that set out in the NERL appeal to take account of additional evidence provided over mid 2020, including in response to the initial findings in NERL.

⁵ CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Final Report*, July 2020, para 61

We have considered the CMA's approach and decisions carefully in each WACC parameter. We have shown how our approach is consistent with the CMA approach on all relevant parameters.

8.2.3.4 Aiming Up

In practice setting the WACC in line with capital market requirements is not a precise process and requires careful calibration. In making this calibration in a regulated setting there needs to be a balance between the risk of setting the WACC too low and the risks of setting it too high. If the WACC is set too low then although customers may appear to benefit from the lower charges in the short term, investment levels will fall as the cost of financing them cannot be met. This will result in deteriorating service and increased risk over time. The consequent loss of value to consumers from this is likely in the long term to outweigh the benefits of the short-term lower charge. This is a material risk if, for example, stakeholders (or even the regulator) start with particular charges in mind and then work backwards to find a WACC that fits.

Alternatively, if the WACC is set too high, customers will have too high bills in the short term – even if this may be offset, to some extent, by customers benefiting from additional investment delivering better services.

This need for balance in choosing the point in the range for WACC, in particular the danger of aiming too low, has been reflected in many previous regulatory decisions including by the CMA. For example, this was discussed in its 2007 assessment of the WACC for BAA⁶ and in its 2014 NIE determination. In 2014 the CMA stated that it wished to avoid the cost of capital being too low and selected a point estimate towards the top of the range⁷. These decisions describe situations where the risks to consumers of low investment arising from too low a WACC are disproportionate to the risks to them from too high a WACC. This has previously led to UK regulators choosing a balance towards the top of the plausible range.

The importance of getting this balance right, in particular for airports, has likewise been recognised in other countries. For example, the Australian Productivity Commission specifically points to the risks of over-regulation and of regulators systematically looking to exert a downward pressure on airport charges. It notes its “chilling effect on investment, leading to a long-term risk of increased congestion and falling quality of service” and the prospect of “incumbent airlines being able to use the system to stymie investment that would facilitate increased (airline) competition, potentially leading to higher air fares”.⁸

This issue was investigated by the UKRN in 2018, who identified that to encourage new investment and maximise consumer welfare, the 90th %-ile in the WACC range should be used for new investments.⁹

Oxera undertook work for Heathrow investigating the degree to which to aim up. This work was considered by the CMA in the Water appeal. In its report¹⁰ Oxera pointed out that the

⁶Competition Commission, *A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd)*, 2007

⁷[CMA, *Northern Ireland Electricity Limited price determination, final determination*, March 2014, p. 1339

⁸ Australian Government Productivity Commission, *Economic Regulation of Airports Inquiry Report*, October 2019

⁹ UKRN, *Estimating the cost of capital for implementation of price controls by UK Regulators*, March 2018, p I-162

¹⁰ Oxera, *Is aiming up on the WACC beneficial to customers?*, April 2020

UKRN's view that setting a WACC that was too low could lead to a complete loss of investment was arguably extreme. It investigated whether the overall conclusions of the UKRN paper still held if this assumption was relaxed.

In this analysis, Oxera assumed that in setting the allowed return, regulators were implicitly seeking to minimise expected losses to customers that materialise as a function of: (a) if the regulator sets the allowed return above the 'true' WACC, the loss to customers is the difference in welfare between the current and lower price they should have paid; or (b) if the regulator sets the allowed return below the 'true' WACC, there is a risk of underinvestment and the loss to customers is equal to a fraction of the welfare that they would have enjoyed if the optimal level of investment had incurred.

Oxera noted that since the true WACC is unobservable, the regulator has to make a "best guess". This will not necessarily be exactly equal to the true value of WACC. Given this uncertainty, the regulator should seek to minimise the expected loss that can occur to customers.

Oxera also addressed the issue of sunk investments, where the UKRN argued that as this investment has already been carried out, it is optimal to ensure the lowest possible regulated price and therefore the highest possible customer surplus. In the UKRN's view noted above, this would mean setting the WACC at the 'expected' (often midpoint) level. Oxera argued that this approach is not correct, suggesting that in a world where companies are considering potential capacity expansions to their existing assets or construction of greenfield assets, regulatory treatment of sunk investment can affect future projects as well. All else equal, if investors learn that the regulator intends to aim up during the first regulatory period only, they will expect lower cash flows over the lifetime of the project. This, in turn, decreases the attractiveness of the project and could in some cases jeopardise its economic viability.

Oxera concluded that for airport charges:

- a) even with a low proportion of investment at risk, aiming up on the WACC is still likely to be in the customer's interests;
- b) the lower the price elasticity of demand, the higher the 'safety cushion' between the allowed return and the central estimate of WACC should be; and
- c) for realistic values of price elasticity, customer welfare is maximised by setting the allowed return at or above the 96th percentile of the WACC distribution.

The CMA considered this issue carefully in the Water Companies' appeal. In its provisional findings for water, the CMA stated: "Our aim is to provide a cost of capital allowance that ensures appropriate levels of investment within the sector without overcompensating investors at the expense of customers."¹¹ They concluded that some aiming away of their mid-point estimates was appropriate and that there were reasons, in particular asymmetry and financeability, that justified avoiding setting a cost of capital that was too low.¹² These reasons also apply to Heathrow.

As a result of this decision, the CMA adopted the following approaches¹³:

¹¹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.6

¹² CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.674

¹³ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.674

- a) for the cost of embedded debt, they aimed at the bottom of the range to reflect that the cost of embedded debt would likely fall during the period;
- b) for the cost of new debt, they aimed at the middle of the range to reflect the protections in place from debt indexation; and
- c) for the cost of equity, they aimed at the mid-point between the mid-point and top of their range. In implementing this approach, they applied it to each of the parameters in the cost of equity calculation rather than to the overall cost of equity range.

The CMA considered that this approach resulted in the right balance for customers in terms of bills, but also in terms of continued investment.¹⁴

We have adopted the same approach to our estimate of the cost of capital for H7.

8.2.4 Cost of Equity

8.2.4.1 Introduction

We have used the Capital Asset Pricing Model (CAPM) to estimate the cost of equity for Heathrow. The CAPM is an established methodology with well-understood theoretical foundations. It is also used by all UK regulators when calculating the cost of capital. The CAPM sets out that the investor's required return on equity (r_{equity}) can be calculated from a risk-free rate (RFR or $r_{risk-free}$), equity risk premium (ERP) and the systematic risk of the company (beta).

Consistent with current regulatory practice and that adopted by the CMA we have used a decomposition approach to estimate the ERP. This approach recognises the long-term stability of the total market return (TMR, r_{market}) of equities and the inverse correlation between the RFR and ERP. It therefore calculates the ERP as the difference between the TMR and the RFR. This approach avoids the risk of producing an erroneous estimate from combining inconsistent estimates of ERP and RFR.

$$r_{equity} = r_{risk-free} + \beta_{equity}(r_{market} - r_{risk-free})$$

In the following sections, we set out estimates of the TMR, the RFR, and the equity beta.

8.2.4.2 Total Market Return (TMR)

The total market return is the expected return that would be obtained from a fully diversified investment in the market overall. It is not directly observable, and therefore it needs to be estimated using other data. There are two main estimation approaches:

- Historical approaches – these use historical returns adjusted for inflation to obtain a real TMR. This approach assumes that the historical TMR is a reliable estimate of current investors' expectation of market returns; and
- Forward looking approaches – these use approaches (such as a dividend discounting model) to estimate current investors' expectation of market returns. However, the estimates from these approaches are dominated by assumptions about dividend

¹⁴ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.680

growth that are not readily observable. As such this approach is generally considered less reliable than the historical approach.

When considering historic evidence on returns, there are two key methodological considerations: (a) How to control for inflation when seeking to identify expected real returns; and (b) The appropriate averaging method – arithmetic or geometric – and the relevant time period over which to consider returns.

The issue of TMR has been an area of considerable regulatory debate over the last two years. Although regulators have largely favoured historical approaches, there have been differences in the methodological issues set out above. This has led to a wide range of estimates, with Regulators suggesting a range of 5.0% to 6.0% and regulated companies arguing the range is 6.0% to 6.5%.

The CMA has reviewed the evidence provided by companies and regulators as part of the NERL and water company reviews and its latest view is set out in the preliminary findings of the water company appeal (see below).

In this section we update our view of the appropriate TMR range and set out the conclusions of the CMA. For the purposes of the RBP we adopt the CMA point estimate of TMR of 6.0%.

Heathrow View of TMR

In this section we:

- Recap our conclusions in the IBP;
- Summarise additional evidence subsequent to the IBP; and
- Set out our updated view on the appropriate range.

Conclusions in the IBP

In the IBP we provided evidence in respect of both forward looking and historical approaches.

With regard to historical approaches we provided a wide range of evidence in respect of the appropriate way to adjust for inflation¹⁵, including evidence that the historical CPI series was not robust and therefore was not an appropriate approach.

In addition, we provided evidence on the appropriate approach for averaging including a paper by Cooper, that concluded estimates of the TMR for the purposes regulatory settlement should be based on the arithmetic average.¹⁶

Overall, we concluded that evidence supported a range of 6.0% to 6.5% for the TMR.¹⁷

Additional Evidence

As a result of the debate around TMR and the CMA inquiries into NERL, Heathrow has contributed additional evidence to the CMA on TMR. This evidence has focused on:

¹⁵ Heathrow, *IBP*, 2019, Chapter 12, Section 2.2.2.1

¹⁶ Heathrow, *IBP*, 2019, Chapter 12, Section 2.2.2.2

¹⁷ Heathrow, *IBP*, 2019, Chapter 12, p307

- Updates from Oxera on the correct way to adjust for historical inflation; and
- Updates from Oxera on the appropriate averaging method.

In addition, Oxera has provided additional evidence to the CMA on behalf of the Energy Networks Association in response to its initial findings in the water appeal. These submissions are summarised below.

Inflation Adjustment

In response to the CMA preliminary findings for NERL, Oxera provided additional evidence on adjusting historical returns for inflation.¹⁸ In this report Oxera showed that there were significant shortcomings in the CPI series from 1950 to 1988. The series was estimated from CPI data after 1988 that has now been revised, the ONS cannot recreate the original modelling and the series is planned to be re-estimated by them.¹⁹ Given this, they argued that more weight should be given to the RPI series.

Oxera also provided an update to their analysis of structural breaks in the RPI series. They showed that there had been significant methodological changes in the RPI series other than just the 2010 change. They showed that if the changes in the early 90's were also accounted for, it would be appropriate to deflate the long-run average equity return using the published RPI data without making any further adjustments for the forecast wedge between RPI and CPI inflation.²⁰

Averaging Approach

In the IBP, we argued that the approach to estimating a TMR for use in setting a regulatory WACC should be based on the arithmetic mean of historical real returns.²¹ This was based on a paper by Cooper. It showed that for WACC setting purposes an upwards adjustment to the arithmetic average was required over longer periods of data.²²

Oxera developed this evidence further with the assistance of Professor Schaefer in response to issues raised by the CMA in the NERL inquiry.²³ In this note they explain in detail why estimators such as Blume and JKM result in downwardly biased estimates of TMR for the purpose of setting a regulatory WACC. They conclude that the discount rate that is required to give an unbiased estimate of the discount factor (i.e. of present value), for use in capital budgeting, will be at least as high as the arithmetic average of historical returns and that this is the value that regulators must estimate in setting an allowed return on the Regulated Asset Value (RAV).

¹⁸ Oxera, *Response to the CMA on estimating RPI-adjusted equity market returns*, April 2020

¹⁹ Oxera, *Response to the CMA on estimating RPI-adjusted equity market returns*, April 2020, p2

²⁰ Oxera, *Response to the CMA on estimating RPI-adjusted equity market returns*, April 2020, p6

²¹ Heathrow, *IBP*, Chapter 12, pages 304-305

²² Ian Cooper, *Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting*, European Financial Management, Vol. 2, No. 2, 1996

²³ Oxera, *Deriving unbiased discount rates from historical returns*, February 2020

Response to CMA interim findings in water

Oxera produced a submission for the ENA in response to the preliminary findings in the Water inquiry.²⁴ In this they concluded that there were a number of material errors in the CMA analysis that led them to underestimate the TMR, including:

- using a flawed and inconsistent set of retrospective estimates of historical CPI inflation to deflate equity market returns; and
- deviating from arithmetic averaging of equity market returns, which is the generally accepted averaging method in standard corporate finance textbooks.

In respect of inflation they argue that, in practice, the CMA has relied more strongly on the CPI series than the RPI series and that the CPI series is flawed. They argue that the CPI approach is likely to materially overestimate historical CPI inflation for much of the past. For the period 1900 to 1950 they provided additional evidence to that in the report for Heathrow. This demonstrated that the CED series used for this period is empirically and theoretically closer to RPI. For the period 1950 to 1988 they show that the series used is unreliable, based on data that has subsequently been revised, and has an implausibly small wedge, especially at the start of the series.²⁵

In respect of the approach to averaging they showed that the CMA was wrong to be concerned about the potential impact of serial correlation and that the presence of such correlation did not affect the need to use the arithmetic average. Oxera also note that the CMA has made an error of logic in its analysis of the difference uses of WACC for capital budgeting and forecasting investment returns. It concludes that these errors have biased the CMA's estimate of the TMR range downwards.²⁶

Overall, Oxera argue that addressing these errors would increase the top of the CMA range for TMR and significantly increase the bottom of their range.

Oxera also provided evidence to Ofgem on behalf of the ENA that reflected this evidence.²⁷ In this they conclude that the appropriate range for the TMR is 6.0% to 6.5% real RPI.²⁸

Heathrow view on appropriate TMR Range

The additional evidence provided by Oxera has reinforced the evidence around the appropriate range of the TMR provided in the IBP. Therefore, we continue to consider that an appropriate range for TMR for use in setting a regulatory cost of capital is 6.0% to 6.5%.

CMA Assessment of TMR

The CMA undertook a detailed assessment of the arguments in this area.

²⁴ Oxera, *Review of the CMA PR19 provisional findings*, October 2020

²⁵ Oxera, *Review of the CMA PR19 provisional findings*, October 2020, pages 4-5

²⁶ Oxera, *Review of the CMA PR19 provisional findings*, October 2020, pages 6-8

²⁷ Oxera, *The cost of equity for RIIO-2*, September 2020

²⁸ Oxera, *The cost of equity for RIIO-2*, September 2020, p26

In respect of the appropriate inflation index to use, they considered that there were weaknesses and strengths in using taking both approaches (CPI adjusted and RPI adjusted) into account. They therefore gave weight to both approaches in their assessment.²⁹

In respect of the appropriate averaging period, the CMA were not convinced that the arguments relating to the paper by Cooper were relevant for setting a WACC that determines allowed returns. They therefore considered a range of approaches and averaging periods to estimate TMR on both and RPI and CPI basis.³⁰

Overall, the CMA considered that an appropriate range for TMR was 5.25% to 6.25% real RPI.³¹ Applying its approach to aiming up on the cost of equity, the final estimate of the TMR by the CMA was 6.0% real (RPI).³²

As noted above, Oxera's response to the CMA on behalf of the ENA has questioned the range identified by the CMA. In particular, it concludes that much less weight should be placed on the lower end of the range identified by the CMA due to issues with historical CPI indexes, and that the top of the range has been artificially restricted. The CMA will respond to this additional evidence in its final determination.

Conclusions on TMR

In summary:

- Heathrow identified the appropriate range for the TMR is 6.0-6.5%, updating our IBP;
- In its analysis, the CMA identified a range of 5.25% to 6.25% with a spot value of 6.0%;
- In its response to the CMA on behalf of the ENA, Oxera identified a number of issues in the CAA approach and set out its view that the appropriate range was 6.0% to 6.5%.

For the purposes of the RBP we have adopted the spot estimate of 6.0% identified by the CMA. We note that this is at the bottom of the range estimated by Heathrow, and by Oxera on behalf of the Energy Network Association of 6.0% to 6.5%.

8.2.4.3 Risk-Free Rate

The Risk-Free Rate (RFR) is the representation of the return required on a 'zero beta' asset within the CAPM. It is a measure of the rate of return that an investor can expect to earn without taking any systematic risks. In the CAPM, it is assumed that a 'zero beta' asset will earn the same as a risk-free asset, as non-systematic risk is fully diversifiable by investors.

In the past, regulators have used index-linked gilts of appropriate maturity as a basis for assessing the risk-free rate as these represent an effectively risk-free saving rate for investors.

²⁹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.166

³⁰ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Table 9.3

³¹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.221

³² CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Table 9.27

However, until recently, regulators have tended to aim up from this level out of concern that current rates might be atypically low.

More recently, the appropriateness of using index-linked gilts as a proxy for the risk-free rate in CAPM has come into question. This is because a key assumption in the CAPM is that investors can borrow at the risk-free rate as well as lend at the risk-free rate. Private investors cannot borrow at a lower rate than the rate of the highest-grade corporate debt. Therefore, it has been argued that the risk-free rate should be based on the cost of AAA corporate debt, rather than the risk-free rate.

Oxera provided substantial evidence on this issue to the CMA (including on behalf of Heathrow). They argued that index linked yields were depressed as a result of a convenience yield and that the yield of index-linked gilts should be increased by between 50 and 100 bp to correct for this and the gap between corporate and sovereign 'risk-free' financing rates.³³ Further analysis by Oxera argued that the risk free rate should be based on high quality corporate debt with a small downward adjustment of 5-20bp to reflect default risk.³⁴

The CMA considered this issue in considerable detail. They agreed with regulators that UK index linked gilts were a useful input to the assessment of the risk free rate, but considered that they were unlikely to provide a sufficient proxy for the risk-free rate in isolation.³⁵ The CMA also saw merit in the argument that private investors cannot borrow at the rate available to governments and that therefore the risk free rate should be closer to the yield on the highest credit rated debt. Consequently, they also considered that high grade corporate debt was a suitable input to their assessment of the risk-free rate.³⁶

The approach the CMA adopted was to base its estimate on 6-months worth of data based on long maturity gilts and corporate debt. They concluded that the 20-year index-linked gilt yield formed a lower floor for their estimate of the risk-free rate. Similarly, they considered that the yield on long-dated AAA corporate debt formed an upper bound for their estimate of the risk-free rate.

As a result of this approach, the CMA concluded that an appropriate range for the risk-free rate for the end of July 2020 was -1.40% to -0.81% (CPIH).³⁷ Converting these to RPI real rates using the CMA estimate of RPI-CPIH wedge of 0.9% results in a risk-free rate range of -2.28% to -1.69%. After application of their aiming up approach, the CMA estimate of this parameter was -1.85% real (RPI).³⁸

We have investigated the impact on the lower end of this range of more up-to-date information. Using data over the 6-months up to the end of October 2020 and calculated the average implied 20-year yield over the period 2022 to 2026. The resulting estimate of the 20-year real gilt over the period was -2.28%, i.e. no different to the estimate the CMA obtained using data up to the end of July.

³³ Oxera, *Are sovereign yields the risk-free rate for the CAPM?*, May 2020

³⁴ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.70

³⁵ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.88

³⁶ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.93

³⁷ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.141

³⁸ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Table 9.27

Given this we conclude that the CMA estimate of the risk-free rate of -1.85% remains appropriate.

8.2.4.4 Asset Beta – Market Data

The CAPM beta measures the systematic risk of a stock, i.e. the portion of risk that is correlated with the market portfolio. The asset beta captures the systematic risk of Heathrow as an asset, before taking into account the impact of debt on systematic risk for investors in shares of Heathrow.

For publicly listed companies, betas can be estimated directly by regressing the stock return against the return on the market portfolio. However, following the de-listing of BAA stock in 2006, this approach is not possible for Heathrow. However, it is possible to estimate betas for other airport stocks that are listed. These other stocks can be used to inform estimate of the asset beta of Heathrow. This approach was adopted by the CMA in the assessment of the asset beta of NERL.

Subsequent to the CMA inquiry into NERL, the aviation industry has been severely affected by Covid-19. This has led to a fundamental reassessment of the systematic risk of airports by investors and the asset betas of listed airports have increased significantly. This has a significant impact on the cost of equity for Heathrow.

In this section we set out:

- The conclusions by the CMA on the asset beta for airports in its NERL inquiry;
- Relevant issues from the CMA water company appeals;
- Evidence on current market data and the impact of Covid-19; and
- Conclude on a current market estimate of the asset beta for Heathrow.

CMA Conclusions for NERL

In its assessment of the cost of capital for NERL, the CMA undertook a substantive assessment of the asset betas of airports. The CMA considered that it was inconclusive as to whether NERL was more or less risky than airports and that therefore the asset beta for airports was an appropriate estimate of the asset beta of NERL.³⁹

In identifying appropriate comparators for NERL, the CMA decided not to use data from smaller European Airports or Australian airports.⁴⁰ Instead it decided to focus on the data from the larger airports, namely AENA, AdP, and Fraport. The CMA considered that these comparators were suitable as they were relatively large, had liquid stocks, had regulatory regimes that although different in some specifics broadly exposed the companies to similar systematic risk to NERL, and that they were likely to give reliable estimates.

In assessing the approach for calculating asset beta, the CAA identified four key questions: the length of the calculation; whether to use daily or weekly data; the appropriate comparator index; and whether to make an adjustment for tax treatment. They concluded it was

³⁹ CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, Para 12.76

⁴⁰ CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, Para 12.67

appropriate to consider a range of different lengths; use weekly as well as daily betas (but giving low weight to weekly beta data averaged over less than 5-years); use the Eurostoxx 600 as a comparator index; and make no adjustments for tax.⁴¹

For each of the three comparator airports, the CMA considered different estimates of beta based on measurement periods of 2-years and 5-years and using daily and weekly data. They considered spot values, 1-year averages, 2-year averages and 5-year averages. They considered that all these estimates were informative comparators in projecting the betas for an airport and that they therefore chose a range based on interpreting the data in the round.⁴²

They concluded that an appropriate range for the estimated beta of these airports was 0.50 to 0.60 (using a debt beta of zero).⁴³ Adjusting this range to reflect a debt beta of 0.05, and the average gearing of the comparators of 30%, results in a range of asset beta of 0.515 to 0.615.

Relative risk of Comparators

In addition to the assessment by the CMA in the NERL case set out above, there have been a number of assessments in respect of the appropriateness of comparator airports for estimating an asset beta for Heathrow. In their 2018 report, NERA set out a comparative risk assessment of Heathrow, Frankfurt and Charles de Gaulle (CDG) airports⁴⁴. They showed that Heathrow was riskier than Frankfurt Airport, and at least as risky as CDG. PwC also assessed the relative risk of Heathrow to these airports on behalf of the CAA. It concluded that Heathrow is of comparable risk to CDG and Frankfurt.⁴⁵

In its report for the CAA, Flint also considered that Fraport, AdP and AENA were the most appropriate comparators to Heathrow.⁴⁶ They based their view of Heathrow's asset beta on the asset beta for these airports.

This shows that there is a wide consensus that Fraport, AdP and AENA are relevant comparators for Heathrow for the purposes of assessing its asset beta.

Relevant issues from CMA conclusions for water

The CMA also considered the appropriate approach to estimating asset beta in the water company appeal. The key areas of debate between the participants were the duration of the estimation window, and methodological approaches to estimation. The key areas of its interim decision that have relevance to estimating beta for airports were:

- The CMA considered a wide range of periods and return frequencies in their analysis;⁴⁷

⁴¹ CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, Paras 12.77 to 12.88

⁴² CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, Para 12.92

⁴³ CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, Para 12.95

⁴⁴ NERA, *Cost of Equity for Heathrow in H7, A report for Heathrow Airport*, February 2018

⁴⁵ PwC, *Estimating the Cost of Capital for H7 – A Report Prepared for the CAA*, February 2018

⁴⁶ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p17

⁴⁷ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.267

- They identified the possibility of structural breaks in return data in 2014 and March 2020 and considered this period specifically,⁴⁸ and
- They did not consider that Vasicek adjustments or a GARCH statistical approach would improve their estimates.⁴⁹

The CMA gave some weight to arguments by some water companies that the period for estimating asset beta should take account of structural breaks in the data. They referred to work by Indepen for Ofgem that it is appropriate to use the longest run of data since the last structural break.⁵⁰ They also referred to a paper by Gregory, Harris and Tharyan that argued that for regulatory price control purposes, betas should be estimated using Ordinary Least Squares (OLS) over the longest time window since the last structural break.⁵¹ In analysing the data over the structural break period, the CMA only considered spot estimates as a result of the shorter duration of the period.⁵²

Finally, the CMA recognised the importance of creating the right balance for consumers between creating an appropriate incentive to invest and having bills higher than they needed to be. As a result, they chose a spot estimate for asset beta at the upper quartile of their identified range.⁵³

Current Market Data and impact of Covid-19

We have paid close attention to the precedent set by the CMA in the NERL and Water appeals in our assessment of asset beta for Heathrow. In particular:

- Using the same comparator companies (AENA, AdP, and Fraport);
- Using the same comparator index – the Eurostoxx 600;
- Considering discontinuities in the data;
- Using OLS to estimate betas and not using a Vasicek adjustment; and
- Using a debt beta of 0.05.

A key issue in the estimation of airport beta's is the discontinuity in asset betas before and after March 2020 as a result of the impact of Covid-19. This is illustrated in the chart below which shows spot 2-year estimates of asset beta for AdP, AENA, and Fraport.

⁴⁸ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.269

⁴⁹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Paras 9.273 and 9.274

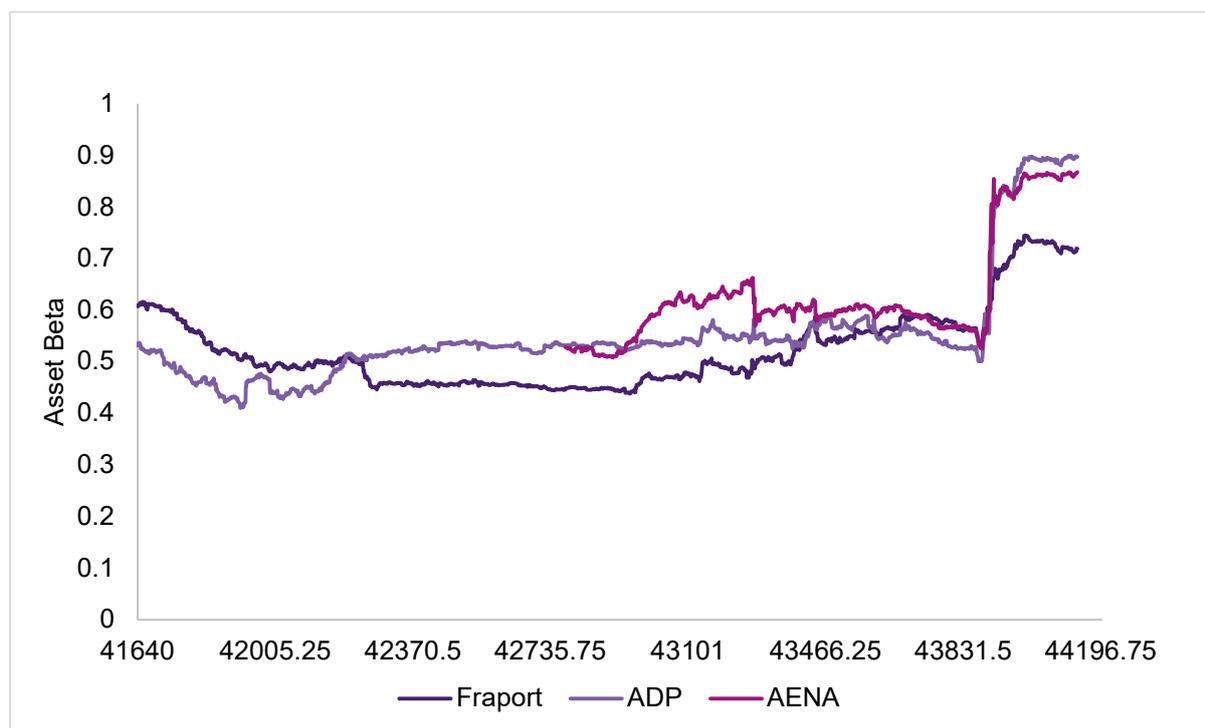
⁵⁰ Indepen, *Ofgem Beta Study – RIIO-2, Main Report*, 2018

⁵¹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.259

⁵² CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.285

⁵³ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.674

Figure 1: Airport Asset Beta – 2 Year Daily Frequency Spot



Source: Bloomberg/Heathrow Analysis

Figure 1 shows that the impact of Covid-19 led to a step change in the asset betas of comparator airports in March. Since then, the asset betas have been relatively stable at this higher level. We consider that as well as being a clear discontinuity in the data, this step change represents a fundamental reassessment of the systematic risks of airports by investors. Essentially, before the pandemic, investors regarded airport assets as being slightly less risky than the market average (asset beta of 0.7). Since the pandemic, they now regard airport assets as being riskier than the market average.

In the water company appeal, the CMA considered a range of analysis periods as well as investigating the potential impacts of structural breaks in the data. However, in the context of water, this was with the assumption that the asset beta of water companies would have been relatively stable over this period. In the case of airports, the discontinuity represents a fundamental shift in the perception of risk. Therefore, we consider that use of longer periods to estimate the current asset beta of airports is not appropriate as the data before March 2020 is not relevant to investors' current views on the risk of airports.

As a consequence, we have considered two periods over which to estimate asset beta:

- A spot estimate based on 2-years daily data; and
- A spot estimate based only on daily data since 1st March.

We have not considered weekly or monthly data due to the relatively short durations of the averaging periods. This is consistent with the CMA approach that gave very low weight to 2-year estimates of beta based on weekly data over two-year periods.

In addition, due to the short duration of the estimation window, we have not considered averages over the period. This is consistent with the approach used by the CMA in assessing the asset beta between structural breaks for water companies (over a 5-year period).

The resultant estimates of asset beta based on data up to 31st October are set out in the table below.

Table 1: Estimates of Asset Beta of Comparator Airports

	Fraport	AdP	AENA	Average
Spot (2-year daily frequency)	0.72	0.90	0.87	0.83
Spot (8-month daily frequency)	0.77	1.00	0.98	0.92

Source: Bloomberg/Heathrow analysis

The two-year estimate of the asset beta includes data from before the Covid-19 discontinuity. As such, they are likely to underestimate investors' current view of the asset beta. As the period since the discontinuity extends, both the two-year spot data and the estimate based on data from March 2020 will become more robust. This will allow updates to the assessment of asset beta to be made during 2021.

Figure 1 shows that two-year asset betas have been relatively stable over the 8 months since March 2020 and there is no sign of a reversion to the levels pre-Covid. They therefore reflect a step change in the assessment of the risk of airports, rather than a temporary response. There is no evidence that the value will decline in the future, therefore we consider that the current level of asset beta is relevant for the whole period of 2022 to 2026.

Conclusion on Current Market Data for Airport Asset Beta

Current market data shows a range of asset beta between 0.72 and 1.00 with an average over the three airports of 0.87.

For the present, we have not considered the appropriate point in the range to adopt. The data from the lower end of this range includes data from before the impact of Covid-19 and therefore may underestimate the asset beta suggesting that a range of 0.77 to 1.0 may be more appropriate. We note that AENA has the highest asset beta despite having a risk sharing mechanism that limits its downside exposure to 10% of revenue loss.

If the CMA approach of aiming up on the asset beta were applied, this would suggest an estimate of around 0.93 to 0.94 could be adopted as a point estimate. Additional time post the discontinuity in March will provide more precision in the estimation of the post-Covid asset betas and we will review our estimates of asset beta through 2021.

8.2.4.5 Asset Beta – Impact of Covid-19 and Covid-related RAB Adjustment

The current asset betas of comparator airports reflect investors' views of the risk of these airports. As such they also include an expectation of the regulatory mitigations that will be available to these airports. In other words, current market data reflects the market view of the riskiness of airports post mitigation. For Heathrow, this means that without a RAB adjustment, the required WACC could be much higher than indicated by current market data as this reflects the expected mitigation for the comparator airports. Conversely, the WACC with the RAB adjustment could be lower or higher than current market data depending on whether it provided more mitigation to Heathrow than the mitigation expected at comparator airports.

In order to determine an asset beta for Heathrow, it is necessary to consider the impact of the proposed RAB adjustment on the systematic risk of Heathrow. The most straightforward

approach is to use market data for comparators directly. This approach would result in an estimate of asset beta of 0.87 based on the average, or 0.93 if the upper quartile is used in line with the CMA approach. Such an approach effectively assumes that the mitigation obtained by Heathrow is consistent with the expected mitigation from other airports.

An alternative approach is to try and estimate the impact of Covid-19 and the RAB adjustment separately on the asset beta. An approach to estimating these impacts was set out in our response to CAP1966.

Estimating the impact of the unmitigated pandemic on airport asset betas

An estimate of the impact of the unmitigated pandemic on airport asset beta can be obtained by considering how the pandemic impacts the variance of returns for Heathrow and comparing the increased standard deviation of airport returns with the average standard deviation of returns for the market as a whole.

This estimation approach is illustrated in the table below based on an initial estimate of asset beta of 0.60 and equity beta of 1.43. The result of the calculation depends upon the time periods over which the impact is expected to recur. The table shows estimates for timescales of 25, 30 and 35 years.

Table 2: Estimation of the impact of Covid-19 on airport asset betas

Airport Asset Betas	Impact	Impact	Impact
Standard deviation of stock market (A)		3.36%	
Allowed asset beta (B)		0.60	
Allowed equity beta		1.43	
Target RORE		9.30%	
RoRE in 2020		-19%	
RoRE in 2021		-12%	
Time period (years)	25	30	35
New Variance ⁵⁴	0.179	0.190	0.202
New Standard deviation for Heathrow (C)	8.5%	8.0%	7.6%
New Equity beta (=B/A)	2.52	2.37	2.26
New Asset beta (D)	1.04	0.98	0.93
Increase in asset beta (=D-B)	0.44	0.38	0.33

Source: Heathrow

Table 2 shows that this approach of estimating the impact of the pandemic on airport asset betas identifies impacts that are consistent with the observed increases in asset beta of 0.25 to 0.4. The resulting estimates are also consistent with the top of the current range for asset

⁵⁴ The variance is calculated as (time period – 2) times the variance of the market overall for a share with Heathrow equity beta, plus the variance in 2020 and 2021

beta. The approach is also consistent with an assumption that some mitigation of the impact of Covid-19 is already included in the average of the market asset betas.

Estimating the impact of intervention on the asset beta of Heathrow

The approach used to estimate the impact of a RAB adjustment on Heathrow’s WACC is to consider the reduction in the variance of returns that would happen as a result of the proposed mitigation. This approach is set out in the Table below for timescales of 25, 30 and 35 years.

Table 3: Estimation of the impact on asset beta of intervention using volatility

Asset Beta	Impact		
Adjustment as proportion of loss	82%		
Reduction in volatility		57%	
Return Period years	25	30	35
Assessed increase in asset beta without mitigation	0.44	0.38	0.33
Asset beta impact	0.19	0.16	0.14

Source: Heathrow

Crosscheck to market data and overall conclusions

The approaches above can be combined to obtain an overall estimate of airport asset beta post mitigation from a RAB adjustment consistent with this submission. This is illustrated in the table below for the three different time periods.

Table 4: Estimate of post adjustment asset betas

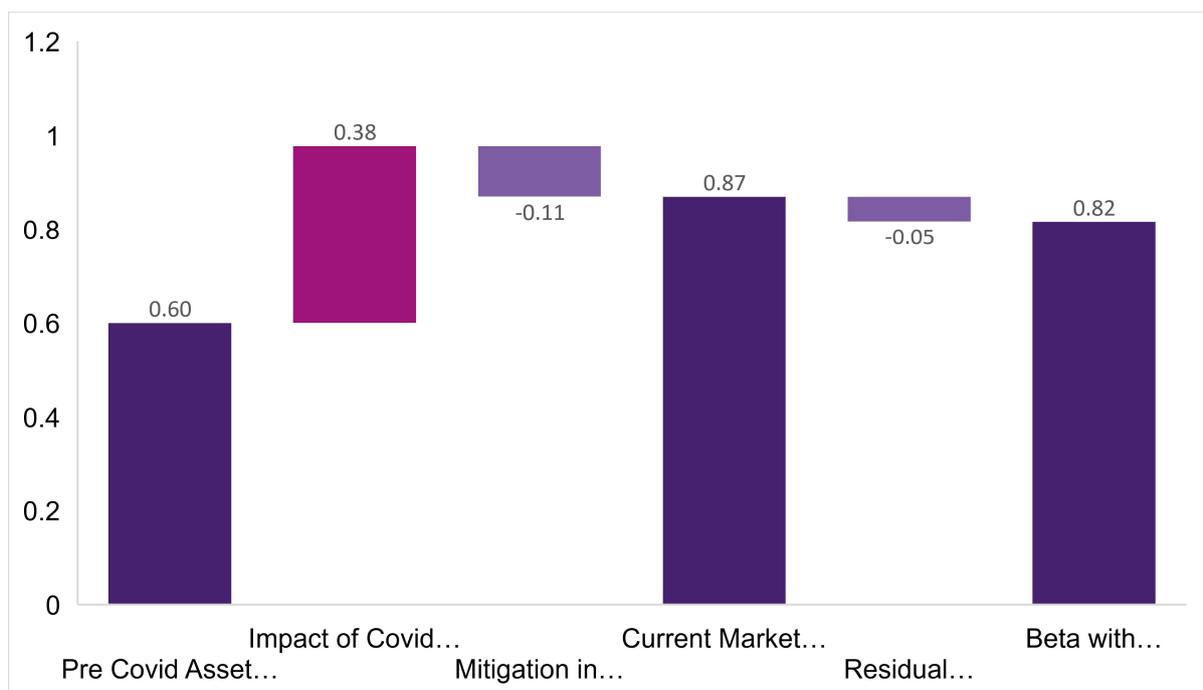
	25 Years	30 Years	35 Years
Base Asset Beta	0.6	0.6	0.6
Increase due to the impact of Covid-19	0.44	0.38	0.33
Benefit from adjustment	-0.19	-0.16	-0.14
Asset beta post adjustment	0.85	0.82	0.79

Source: Heathrow

The estimate from the 30-year calculation is illustrated in

Figure 2 below along with the current market asset beta (based on the average value of 2-year and 8-month spot estimates).

Figure 2: Impact of Covid-19 and Mitigation on Airport asset beta



Source: Heathrow

This shows that the analysis above is consistent with the current market data. It is worth noting that consideration of time periods less than 25-years or more than 35-years gives results that are difficult to reconcile to current market data as they result in a mitigated asset beta above the current market level, or an unmitigated asset beta below the current market level.

The estimates of the impact of Covid-19 and any associated recovery adjustment set out here are not intended to be precise estimates. The approaches used, whilst reasonable, are approximate in nature. Potential issues with them include the degree to which the impact of Covid-19 and any recovery therefrom can be considered a systematic risk. It is possible that the systematic element of the risk is greater than calculated here as well as lower. However, the consistency with market data suggests that the approach set out here is reasonable, and likely to be roughly right. Given this, we can estimate that the benefit to asset beta from the proposed reopener is likely to be around 0.16.

Given this analysis, the appropriate estimate for the asset beta for Heathrow is 0.82. This is at the lower quartile of current market data, but we consider it appropriately captures the impact of the proposed RAB adjustment.

In the absence of the proposed RAB adjustment we consider that the appropriate estimate for asset Beta for Heathrow is 0.98. This is just below the top of the range for current market data and reflects the higher risk represented by this situation.

8.2.4.6 Equity Beta

The CAPM uses the equity beta to determine the cost of equity. The equity beta reflects the underlying systematic risk of the asset (the asset beta) and the impact of debt on this risk to holders of equity. The relationship between a company's equity beta and asset beta depends on the level of gearing and the systematic risk of the company's debt (debt beta). The relationship is:

$$\beta_{asset} = g\beta_{debt} + (1 - g)\beta_{equity}$$

In this section we set out our approach to estimating debt beta, and the resulting estimates of Heathrow's equity beta.

Debt Beta

The debt beta reflects the systematic risk of a company's debt. There are two broad approaches that can be used to estimate a debt beta: direct measurement and decomposition. The direct measurement approach compares the volatility of company debt directly with the volatility of the market. The decomposition approach uses CAPM, the observed cost of debt and assumptions about default risk to estimate debt beta indirectly.

Direct Approach

Professor Ania Zalewska undertook a direct econometric analysis of debt beta on behalf of NERL. She examined the debt beta of Heathrow and NERL bonds as well as iBoxx indices using a wide range of techniques. Zalewska concluded that there was evidence that the debt beta from the Heathrow bonds was significantly smaller than 0.10 and not statistically different from zero.⁵⁵

Nera took this analysis into account in their report on the cost of Equity for Heathrow. They recommended adopting a debt beta of 0.05.⁵⁶

Decomposition Approach

An alternative approach to estimating debt beta is the decomposition approach. This is the approach used by European Economics (EE) in a report for the CAA. This approach derives an estimate of debt beta by assuming that the CAPM can be applied to debt and setting an expected return on debt as the weighted average of the promised cost of debt and the loss given default. Using this approach, EE estimated a debt beta for NERL of 0.1 to 0.19.⁵⁷ A key weakness with this approach is that it requires estimates of several unobservable parameters including the probability of default, the loss given default and the effect of liquidity premia (excluded from EE analysis). NERA showed that replicating EE's approach with more realistic inputs and including the effect of liquidity premia resulted in a range of 0.05 to 0.1.⁵⁸

⁵⁵ Professor Zalewska, *Estimation of the Debt Beta of the Bond Issued by NATS (En-Route) plc*, April 2019

⁵⁶ Nera, *Cost of Equity for HAL at H7*, April 2019

⁵⁷ European Economics, *Components of the cost of capital for NERL*, December 2018

⁵⁸ Nera, *Cost of Equity for HAL at H7*, April 2019, Appendix 1

An additional weakness is the decomposition approach is that it is highly sensitive to the estimate of the risk-free rate. The debate around the right approach to take to estimating the risk-free rate set out by the CMA in the Water appeal means that the estimation range for this parameter is very wide. This reduces the precision of the decomposition approach even further.

CMA Analysis

The CMA examined the issue of debt beta in the NERL appeal. They concluded that the decomposition approach undertaken by EE on behalf of the CAA was largely speculative and that there was significant uncertainty over the ability to measure debt betas using this approach. Whilst they also remained cautious about the extent to which interpretation of traded bond data is possible, they agreed with the conclusion of Zalewska's analysis that the debt beta was likely to be less than 0.1. The CMA concluded that a debt beta of 0.05 was appropriate for NERL⁵⁹ and therefore for use with airport equity beta data.

Flint Report for CAA

In its report for the CAA, Flint proposed the use of a different debt beta for determining the asset beta of the comparator companies from their observed equity betas to that used to calculate the equity beta of Heathrow from its asset beta. They proposed a debt beta of 0.05 for the first step, and a debt beta of 0.09 for the second step.⁶⁰ In adopting this approach, Flint noted the concern of the CMA in the NERL appeal that its estimates of WACC were overly sensitive to gearing in contradiction of corporate finance theory. They also noted that the gearing of Heathrow comparators at 30% was lower than the notional gearing of Heathrow at 60%.

In response to the interim findings by the CMA for NERL, Oxera demonstrated that the reason for the sensitivity of WACC to gearing was as a result of the CMA using a risk-free rate that was not appropriate for CAPM because it was not the rate of a zero asset beta.⁶¹ The CMA took account of this evidence in the water appeal and increased its assessment of the risk-free rate. This substantially reduced the sensitivity of its WACC estimates to gearing.

The difference in debt beta for Heathrow and comparator airports postulated by Flint is not supported by any evidence. Whilst it is not unreasonable to assume increasing gearing increases the exposure of debt holders to systematic risk, the degree to which this occurs is likely to be negligible until very high levels of gearing are reached. In the range of gearing considered (30% to 60%) we do not believe that gearing would make a discernible difference to debt beta for debt with investment grade credit ratings.

Moreover, the Flint approach is:

- Inconsistent with the direct market evidence on Heathrow bonds set out above. This shows that the debt beta for Heathrow's actual debt is below 0.1;
- Inconsistent with the approach taken by the CMA in the NERL and Water appeals; and

⁵⁹ CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, para 12.115

⁶⁰ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p16

⁶¹ Oxera, *Are sovereign yields the risk-free rate for the CAPM?*, May 2020

- Is inconsistent with evidence on variation of the riskiness of debt with credit ratings.

Consistency with CMA Approaches

The approach adopted by Flint is not consistent with the approach taken by the CMA in appendix D of their preliminary findings for NERL. In this appendix, they examined the impact of gearing on WACC for NERL. In the analysis, the CMA did not vary debt beta with gearing⁶².

In addition, the approach taken by Flint is not consistent with the approach adopted by the CMA in the water appeals in which the CMA adopted a spot estimate for debt beta for water companies of 0.04.⁶³ Water Companies are all geared to a greater extent than the notional gearing of 60%. In addition, the credit rating of water companies is typically BBB/Baa2, compared to Heathrow's current senior rating of A-/BBB+. The lower credit rating of Water Company debt would be expected to be associated with a higher debt beta than Heathrow, rather than a lower one. Given this the debt beta of Heathrow debt would not be expected to be higher than water companies.

The current spreads of Heathrow debt are high (see cost of new debt below). We have considered carefully whether this higher spread might reflect a higher debt beta since the onset of the pandemic. However, movements in the spread do not appear to be correlated with movements in the market and therefore the increase in spread does not appear to reflect an increase in systematic risk. Instead we consider it much more likely that the spread has increased as a result of an increased perception of default risk. Note that default risk is not systematic risk and is therefore not relevant in respect of debt beta. Therefore, we conclude that the estimate of debt beta of 0.05 remains appropriate.

Consistent with evidence on riskiness of debt and credit rating

Previous work has shown a relationship between debt beta and credit ratings. Schaefer estimated debt betas by regressing excess bond returns against the corresponding excess equity return for the company issuing the bond for a large sample of US nonfinancial companies. Using this methodology, Schaefer estimated debt betas ranging from 0 for AAA-rated bonds to 0.15 for very risky B-rated bonds. For Heathrow and Gatwick, Schaefer recommended a debt beta of 0.04.⁶⁴ This work shows that higher debt betas are only exhibited for very low credit ratings.

In recent work for the ENA, Oxera show that the riskiness of debt, and therefore its cost, is primarily related to credit rating. They stated that they consider credit rating to be a more comprehensive measure of the riskiness of debt, particularly as it accounts for other factors that affect yields, such as debt structure and securitisation.⁶⁵ They note there is clear evidence, directly observable from the yield of iBoxx indices for different credit rating categories, that credit rating has strong explanatory power over yield spread. In addition, empirical evidence suggests that the relationship between gearing and cost of debt is less pronounced compared

⁶² CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, Appendix D

⁶³ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Table 9.27

⁶⁴ Schaefer, S. (December 2007), *BAA Quinquennial Review: The Cost of Capital for Gatwick and Heathrow*, pp.13-15.

⁶⁵ Oxera, *Asset risk premium relative to debt risk premium*, Sep 20, p26

to the relationship between cost of debt and credit rating.⁶⁶ They demonstrate with a selection of utility bonds that there is a clear relationship between credit rating and spread, but that there is no clear relationship between spread and gearing. Indeed, they showed that the spread on debt of companies with 56% to 65% gearing was lower than those with 46% to 55% gearing.⁶⁷

Conclusion on Debt Beta

Reviewing the evidence overall, and taking account of the CMA analysis, we consider that the resulting range for debt beta is 0.04 to 0.05. The lower end of this range is consistent with the approach taken by the CMA in water. The higher end of this range is consistent with the approach taken by the CMA for NERL and the recommendation to us by NERA. We have adopted a debt beta of 0.05 for both obtaining the asset beta of comparator airports above, and for calculating the equity beta of Heathrow. This estimate is consistent with the approach adopted by the CMA for NERL and therefore consistent with the CAA's approach to estimating betas for airports.

Equity Beta

Table 5 sets out the equity beta for Heathrow for the base case of 60% gearing and an asset beta of 0.98. It also sets out the equity betas for a higher notional gearing of 67%, and in the case of no RAB adjustment.

Table 5: Equity Beta Estimates for Heathrow

	IBP	Base Case	High Gearing Case	No RAB adjustment case
Asset Beta	0.55	0.82	0.82	0.98
Debt Beta	0.05	0.05	0.05	0.05
Gearing	60%	60%	67%	60%
Equity Beta	1.30	1.98	2.38	2.38

Source: Heathrow

The significantly higher equity beta for the base case compared to the IBP reflects the step change in market data on asset beta since the IBP was published.

8.2.4.7 Conclusion on Cost of Equity

Table 6 sets out the resulting estimate of the cost of equity for Heathrow alongside the estimate set out in the IBP. It also sets out the cost of equity for a high gearing case and for the case with no RAB adjustment.

⁶⁶ Ibid, p26

⁶⁷ Oxera, *Asset risk premium relative to debt risk premium*, Sep 20, Table 4.1

Table 6: Cost of Equity for Heathrow

	IBP	Base Case	High Gearing Case	No RAB adjustment case
TMR	6.0%	6.0%	6.0%	6.0%
RFR	-1.67%	-1.85%	-1.85%	-1.85%
Gearing	60%	60%	67%	60%
Equity Beta	1.30	1.98	2.38	2.38
Cost of Equity Post Tax	8.3%	13.7%	16.8%	16.8%
Cost of Equity Pre-Tax	10.0%	16.9%	20.7%	20.7%

Source: Heathrow

Table 6 shows that the TMR for the RBP is the same as for the IBP, and there is only a small difference in the RFR. This reflects the CMA decisions in the water appeals supporting the approach we included in the IBP. The large increase in the cost of equity in the RBP is therefore driven solely by the increase in equity beta for Heathrow as a result of the impact of the Covid-19 pandemic on airport market data.

8.2.5 Cost of Debt

8.2.5.1 Introduction

The second important component of WACC is cost of debt. The key parameters in our estimate of the cost of debt are:

- Cost of new debt;
- Cost of embedded debt;
- Proportion of new debt; and
- Appropriate allowance for issuance and liquidity costs.

In this section we set out our estimates of each of these parameters. Consistent with CAA proposals, our approach assumes that the regulatory framework will include indexation of new debt costs based on the iBoxx 10+ non-financial indices. We have not therefore included any allowance for the risk of interest rates increasing above current market estimates.

8.2.5.2 Inflation

Our approach to the cost of debt is to estimate a nominal cost of debt and then adjust this to a real cost by using a fixed assumption of RPI over the period.

In the IBP, the assumption used was RPI of 3.0%. This was consistent with the long-term Bank of England CPI target of 2.0% and a 1.0% adjustment for the difference between RPI and CPI. Since the IBP, the OBR's December 2019 update reduced the estimate of the forward looking

RPI-CPI wedge (the estimated structural difference between RPI and CPI) by 0.1% to 0.9%.⁶⁸ Therefore, updating our IBP approach for the RBP would result in an RPI inflation assumption of 2.9%.

In the provisional findings for the water companies, the CMA also adopted this approach. It based its estimate of long-term inflation on the Government target of 2.0% for CPI and assuming an RPI-CPI wedge of 0.9% consistent with the OBR forecast.⁶⁹

Given this alignment between our preferred approach, and the approach adopted by the CMA we therefore propose an RPI assumption of 2.9% for adjusting nominal debt costs into RPI real debt costs.

In our calculations below, we do not use the Fisher relationship to convert between real and nominal costs.⁷⁰ This is because in practice the Fisher relationship does not apply. For example, if the real rate on index-linked bonds is 2.1%, and inflation is 2.9%, then the total interest paid would be 5.0%, not 5.1% as would be calculated by the Fisher relationship.

The approach of not using the Fisher relationship is consistent with the approach taken by the CAA in Q6,⁷¹ and is supported by Flint in their report for the CAA.⁷²

The CMA did use the Fisher relationship in its calculations. Where we use CMA data and convert from CPIH to RPI we have used the Fisher relationship to ensure that we are correctly representing the CMA view.

8.2.5.3 Cost of New Debt

We have estimated the cost of new debt in three steps:

1. Identifying a current basis from the average iBoxx 10+ non-financial A and BBB indices for the 6-months up to September 2019;
2. Making an adjustment for future debt costs based on the implied 20-year nominal gilt curve to obtain a forecast of the iBoxx index; and
3. Making an adjustment for the cost of Heathrow debt relative to the iBoxx index.

In this Section we have used 'iBoxx index' to refer to the average of the iBoxx 10+ A NFC and the iBoxx 10+ BBB NFC indices.

The approach adopted takes into account the CAA proposed approach to debt indexation. This approach makes a correction at the end of H7 for the difference between the outturn iBoxx index and the forecast iBoxx index. The appropriate forecast iBoxx index is produced as a result of step 2 above.

The overall approach is identical to that used for the IBP except that the current basis is based on six months of data rather than three months. This is to be consistent with the approach taken by the CMA in the NERL and Water enquiries.

⁶⁸ Office for Budget Responsibility *Forecast evaluation report*, December 2019, pp20-21 Box 2.3

⁶⁹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.27

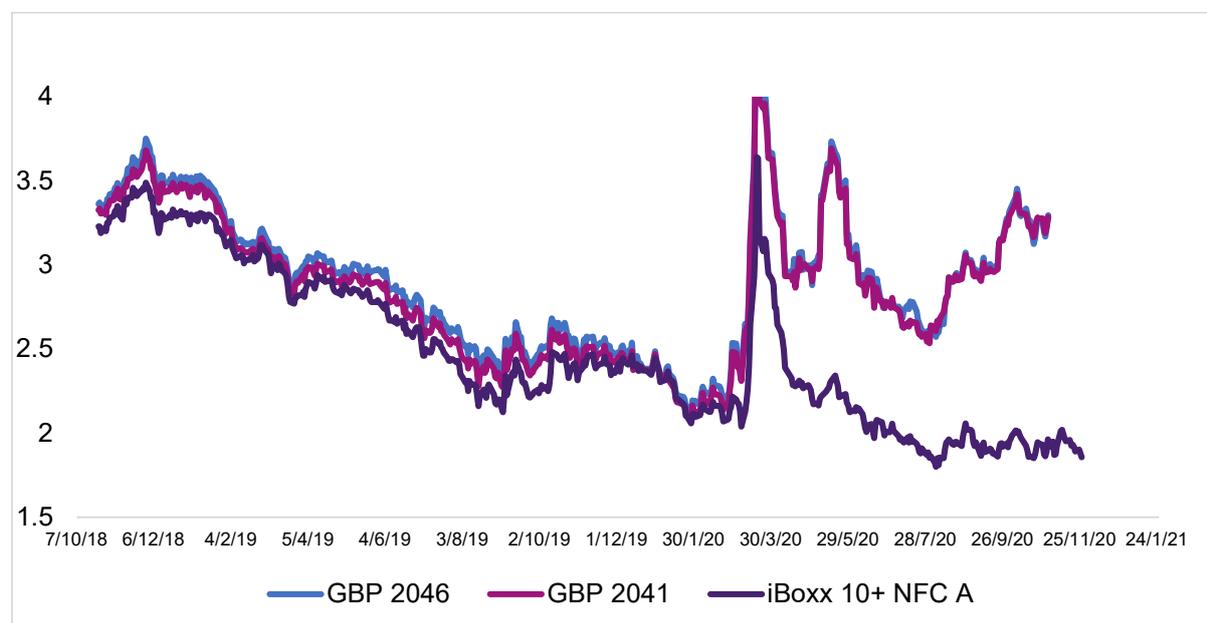
⁷⁰ The Fisher relationship calculates the nominal interest rate from the real interest rate and inflation from: $\text{nominal rate} = (1 + \text{inflation}) * (1 + \text{real rate}) - 1$

⁷¹ CAA CAP1180

⁷² Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p42

A key factor in the cost of new debt is the impact of Covid-19 on Heathrow's cost of debt. This is illustrated in Figure 3, which shows the yields on two Heathrow bonds and the yield on the iBoxx A 10+ NFC up to the end of October 2020. The bonds were chosen as their tenor brackets the tenor of the iBoxx index and they are the same credit rating.

Figure 3: Yield on Heathrow Bonds and iBoxx A index



Source: Bloomberg

Figure 3 shows that since March 2020, the spread on Heathrow debt has widened considerably compared to the iBoxx index, showing that Heathrow debt is now regarded as being significantly higher risk than corporate debt in general. We take this higher cost into account in our analysis.

Forecast iBoxx Index

The indexation of the cost of new debt requires a forecast to be made of the iBoxx index over the period to which the outturn iBoxx index can be compared. To forecast the iBoxx index we have:

- Used 6-months data to the end of October 2020 as a basis; and
- Applied a forward adjustment based on the movement in the implied 20-year nominal gilt rate over the period of H7.

Over the 6-months to the end of October 2020:

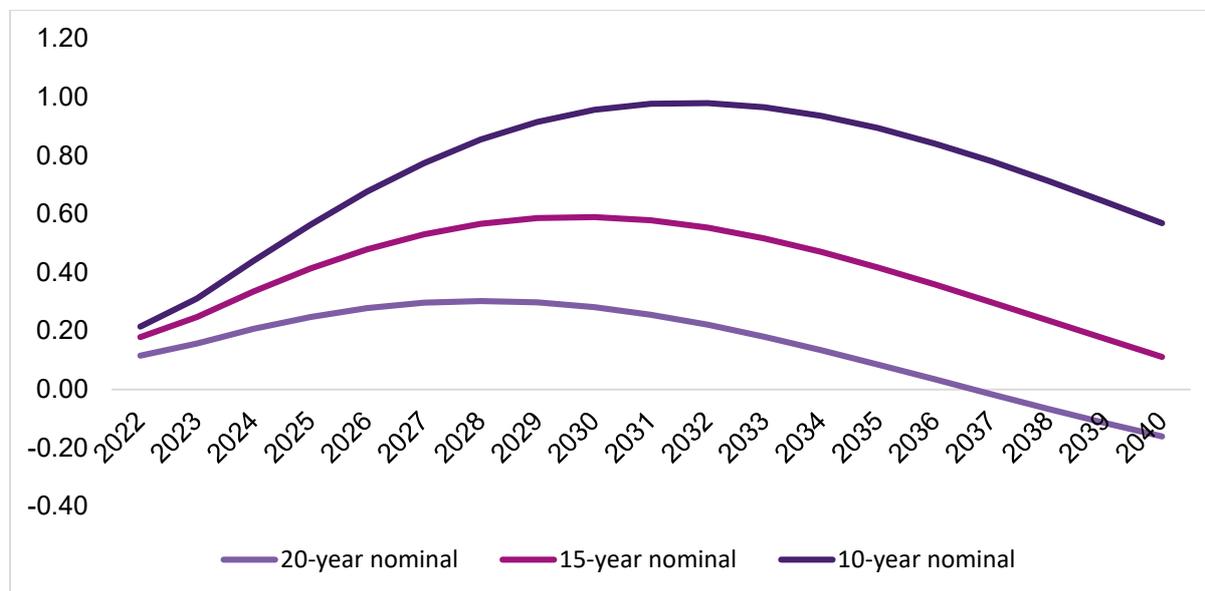
- The average yield on the iBoxx 10+ NFC A was 2.00%; and
- The average yield on the iBoxx 10+ NFC BBB was 2.34%.

This results in a current basis for the iBoxx index of 2.17%.

Forward Adjustment

The forward adjustment has been determined based on the movement of the implied 20-year nominal gilt rate over H7. The 20-year rate was used as this reflective of the tenor of the bonds in the iBoxx A (23 years) and B (17 years) series. The resulting uplift to interest rates in future years is illustrated in Figure 4 below, which shows the uplift based on tenors of 10, 15 and 20-year implied gilt rates.

Figure 4: Forward adjustment for different gilt tenors



Source: Bank of England/Heathrow Analysis

Figure 4 shows that the required adjustment is small at the start of 2022 but increases to around 0.3% for the end of the period. It also shows that using a 20-year tenor results in a lower uplift for future rates than using shorter implied tenor gilts.

In the Water inquiry, the CMA did not include a forward adjustment for the new cost of debt. This was because its calculations showed it was very small (for the period April 2020 to March 2025); because the parties had not provided evidence that this resulted in a better estimate of the future cost of debt than the current value; and because the debt indexation approach would ensure that the actual movement in the cost of corporate debt would be reflected eventually.⁷³

In the case of Heathrow, the period in question is 2022 to 2026, rather than 2020 to March 2025 and the calculated adjustment is bigger. In addition, parties to the inquiry have provided additional evidence that the adjustment results in a better forecast of interest rates in the period.⁷⁴ Moreover, although we agree that the indexation approach will ensure the correct value of the index is reflected eventually, we consider it is in consumers interest to make the expected value of any final adjustment small. Therefore, we consider that a forward adjustment remains appropriate for Heathrow in H7.

On average, the proposed forward adjustment is 0.20%. This is similar to the adjustment proposed by Flint of 0.23% to 0.25%.⁷⁵

⁷³ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.372

⁷⁴ Oxera, *Review of the CMA PR19 provisional findings*, Oct 2020, Section 2.4

⁷⁵ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, Table 8

Forecast iBoxx

The forecast uplift and iBoxx index is set out in Table 7 (in nominal cost terms).

Table 7: Forecast iBoxx index

	2022	2023	2024	2025	2026	2027	2028
Uplift	0.12%	0.16%	0.21%	0.25%	0.28%	0.30%	0.30%
Forecast iBoxx index	2.28%	2.32%	2.37%	2.41%	2.44%	2.46%	2.47%

Source: Heathrow

The forecast iBoxx index line in Table 7 is key in respect of debt indexation. Future debt indexation adjustments would be determined from the difference in the outturn iBoxx index in each year and the estimate in the table above.

Heathrow Cost relative to iBoxx

To estimate the cost of Heathrow debt relative to the iBoxx index we have adopted the following approach:

- Compared the yield on Heathrow debt with the yield on the comparable iBoxx index;
- Made an adjustment to reflect the cost of debt is higher at issuance than when it trades; and
- Made an adjustment to reflect that a proportion of debt will be index linked, and this debt has a higher cost.

In the Water appeals, the CMA considered the Ofwat arguments that water company cost was less than the iBoxx index average. They concluded that it was important to adjust for credit rating in tenor in making such a comparison, and that once such an adjustment was made, there was no evidence that water company outperformance compared to the index.⁷⁶

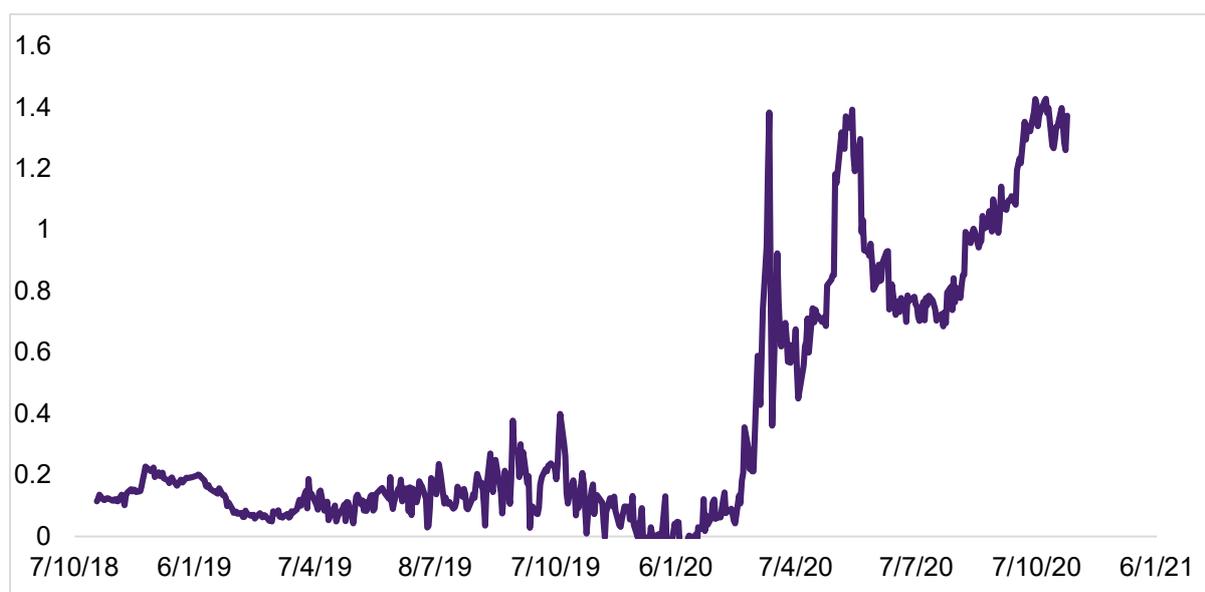
To compare Heathrow's cost of debt with the iBoxx series we have therefore chosen comparator bonds of a similar tenor to the index and of the same credit rating. This is to ensure consistency with the CMA approach that comparisons should be based on the same tenor and credit rating.

Market data on Bond yields

Figure 3 above compares the yields on Heathrow to the iBoxx index. Figure 5 shows the difference in yields between them.

⁷⁶ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Paras 9.352 and 9.353

Figure 5: Spread of Heathrow bonds to iBoxx



Source: Bloomberg/Heathrow analysis

Figure 5 shows that prior to the pandemic, the typical spread between Heathrow A rated debt with a tenor of 21 to 26 years and the iBoxx 10+ A index was 0.1% to 0.2%. Since March, the spread has increased significantly and reached as high as 1.4%. The average differences between the yield on the Heathrow debt and iBoxx index is shown in Table 8 for the period before Covid-19, and over the most recent six months up to the end of October.

Table 8: Difference between Heathrow and iBoxx spread

Yield %	Before March 2020	Last 6 months	Last 3 Months
Heathrow A GBP 2046	2.83	3.02	3.06
Heathrow A GPB 2041	2.87	3.00	3.06
iBoxx 10+ NFC A	2.68	2.00	1.93
Average difference	0.13	1.01	1.13

Source: Bloomberg/Heathrow

Table 8 shows the difference in spread between Heathrow’s debt and the iBoxx index adjusted for rating and tenor. This shows that over the last 6-months, the spread on Heathrow debt is 1.01% higher than the iBoxx index. However, this does not reflect the full difference in the cost of new debt, as when debt is issued the cost of the debt is higher than its initial yield. This is known as a new issue premium (NIP).

The recent raising of £1.4bn debt by Heathrow in October had a range of new issue premia ranging from 0.1% to 0.2%.⁷⁷

Including a new issue premium of around 0.1% to 0.2% results in a cost of new fixed debt that is 1.1% to 1.2% higher than the iBoxx index.

⁷⁷ UBS identified an NIP of 0.10% for the Sterling issuance. Deutsche Bank identified an NIP of 0.20% for the Euro issuance.

Note that this estimate is based on the average yield over the last six months so that it is consistent with other elements of the cost of debt. However, more recently, the spread has been around 0.4% higher. We will continue to review the market evidence on the cost of debt for Heathrow and update our estimates next year accordingly.

Index Linked Debt

A proportion of the debt issued by Heathrow is index-linked. In addition, Heathrow uses interest rate swaps to cover some of its fixed bonds so that overall impact is to give Heathrow a mix of fixed and index-linked debt.

This approach has also been used by the CAA in previous determinations, where they have assumed that 30% of Heathrow debt is index-linked when undertaking financeability assessments. This assumption resulted in an improved financeability position and was critical in giving the CAA assurance that its determinations were financeable. In practice, the proportion of debt that is indexed is between half and two-thirds.

The spread on index-linked debt is higher than that of the fixed debt used to construct the iBoxx index. Therefore, an adjustment needs to be made to reflect the proportion of the debt portfolio that incurs this higher cost. We set out an analysis of this difference in our IBP based on the difference in the spread over the underlying gilt of fixed and index-linked bonds of similar tenor. This analysis showed that the typical difference in cost between fixed and index-linked debt for Heathrow was 0.15%.⁷⁸

Applying the difference in cost of 0.15% to a notional balance sheet that has 30% index-linked debt results in an increase in the overall cost of new debt of 0.05%.

Conclusion on Cost Relative to the Index

In summary the analysis above shows that over the last six months, Heathrow debt has had a spread of 1.0% higher than the iBoxx. Once account is also taken of a new issue premium of 0.1%-0.2% and that a proportion of the debt is index linked, the overall cost of Heathrow debt is estimated to be 1.2% higher than the iBoxx index.

Evolution of Heathrow Debt in H7

The current high spread of Heathrow debt has been triggered as a result of investor concern following the pandemic. It is not clear whether this change reflects a permanent (or very long-duration) effect. However, the recent trend in the cost is upwards and there is no evidence that the spread will reduce in H7.

More widely, in respect of interest rates, Ofwat stated that there is no evidence of mean-reversion to historical levels and offered the view from Brattle that the best predictor of future rates is the current yield and that longer averaging periods risk including out-of-date data that

⁷⁸ Heathrow, *IBP*, 2019, Chapter 12, Table 53

is not relevant to the future.⁷⁹ In addition, the Brattle report states that ‘in theory’ the most recent rate or yield available will give the best prediction of the future rates.

Given this, we consider that it is appropriate to maintain this spread throughout H7.

Conclusion on Cost of new debt

The forecast cost of new debt is set out in Table 9.

Table 9: Forecast iBoxx index

	2022	2023	2024	2025	2026	2027	2028
Nominal cost of new debt	3.48%	3.52%	3.57%	3.61%	3.64%	3.66%	3.67%
Real cost of new debt	0.58%	0.62%	0.67%	0.71%	0.74%	0.76%	0.77%

Source: Heathrow

Over a 5-year H7 period, the average cost of new debt is 0.67% real. Over 2-year or 7-year periods, the average cost would be 0.6% or 0.7% respectively.

In the IBP, the average cost of new debt was assessed to be 0.05% over H7. The difference from the IBP reflects the combined impact from: the iBoxx index being 0.36% lower due to general falls in interest costs; +0.1% from a lower inflation assumption; and 0.88% higher as a result of the increased spread of Heathrow debt.

For the water companies the CMA estimated a cost of new debt based on a 6-month average of the iBoxx A and BBB 10+ NFC indices. The range they identified was 2.22% nominal to 2.53% nominal.⁸⁰ The spot value identified for the cost of new debt for water companies was the middle of this range at -0.54% real, RPI.⁸¹ This is consistent with our approach that has identified a 1.2% additional cost for Heathrow compared to the iBoxx index.

8.2.5.4 Cost of Embedded Debt

There are two key approaches to assessing the cost of embedded debt:

- Using a company’s actual debt costs; or
- Using a notional approach based on historic corporate debt costs.

In the IBP we set out our view that the most robust approach was to use the company’s actual cost of embedded debt. However, we also presented an analysis using the notional approach that resulted in a very similar estimate of the cost.

⁷⁹ The Brattle Group (2016), *Review of approaches to estimate reasonable rate of return for investments in telecoms networks in regulatory proceedings and options for EU harmonization*, section VI.A.4

⁸⁰ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.377

⁸¹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Table 9.27

The CMA has used both approaches in its recent appeals. In the NERL appeal it used NERL’s actual cost of embedded debt.⁸² For the water company appeal, where it was dealing with a number of water companies, it used a notional approach.⁸³

A key issue that needs to be considered before using a notional approach is the extent to which the companies cost of debt relative to the index is stable. If the cost relative to the index is not stable due to factors outside a company’s control, then using the index without appropriate adjustment would result in an incorrect estimate of the efficient cost of debt. This is an issue for Heathrow as illustrated by the increase in debt costs currently being experienced. A method of assessing Heathrow’s cost of embedded debt in the future that did not take into account this variation could significantly underestimate its cost. To properly adjust for this issue, a company specific cost of debt index would be required. However, in practice this is likely to be no different to using the company’s actual cost of debt.

Given that the spread of Heathrow’s debt is not stable, and that unlike in the water appeal situation there is not a number of similar companies, we consider that the most appropriate approach to estimating the cost of embedded debt is to use actual embedded debt costs. This is consistent with the approach the CMA adopted for NERL.

Actual cost of Heathrow Embedded Debt

To estimate the cost of embedded debt over H7 we have made a forecast of the interest costs of existing debt over the period. Table 10 sets out the forecast cash cost of embedded debt for Heathrow SP based on debt existing at the end of September 2020. It takes account of the retirement of debt over the period. It shows that the cost of debt is relatively stable over the period, albeit with a reduction in 2026.

Table 10: Forecast cost of embedded debt

	2022	2023	2024	2025	2026	Average
Embedded Debt Cash Interest %	3.70%	3.60%	3.43%	3.50%	3.25%	3.49%

Source: Heathrow

The interest rates in Table 10 do not include the cost of accretion for Index Linked debt (including swaps). The average proportion of Heathrow debt subject to accretion at September 2020 is 52%. Based on 2.9% inflation, this results in total interest costs being 5.00% nominal over the period at that inflation rate. The corresponding average real rate of debt is 2.10%.

The rates set out above exclude the impact of swaps Heathrow entered into this year to reprofile its interest rates and reinforce its financial resilience during the Covid-19 pandemic. These swaps have the impact of reducing debt costs in 2021 and 2022 by reprofiling interest charges into later years. This will impact the reporting of interest costs over this period (including in 2020 due to accruals) and in the quarterly statements we produce on our borrowings. The reprofiling resulting from the swaps is set out in Table 11.

⁸² CMA, *NATS (En Route) Plc / CAA Regulatory Appeal, Provisional findings report*, March 2020, para 12.154

⁸³ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.360

Table 11: Adjustment to Heathrow interest costs arising from 2020 swaps.

£m nominal	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Adjustment	134	128	-49	-51	-53	-62	-34	-18	-13	-12	-7

Source: Heathrow

The impact of the swaps is to push interest costs from 2021 and 2022 into the rest of H7 and beyond saving cash now and improving financial ratios during the pandemic. To avoid artificially inflating the estimate of embedded debt for H7, we have stripped out the impact of this swap and based our cost on the pre-swap position.

An issue that has been raised by the CAA and Flint is that using the actual cost of embedded debt may not result in the right cost of debt for a notionally geared company.⁸⁴ However, as discussed above, Oxera show that the cost of debt depends primarily on the credit rating of the debt and, given a specific rating, the cost is largely invariant to gearing.⁸⁵ The embedded debt of Heathrow was obtained at credit ratings (A- and BBB) that are consistent with a company with structured debt at a gearing of 60%. Therefore, the actual embedded debt costs of Heathrow are appropriate for a company at the notional gearing.

In its report, Flint states that Heathrow's A rated bonds are the best proxy for the cost of embedded debt under the notional structure.⁸⁶ This is not correct as it does not reflect the higher costs of Heathrow's class B debt. A notionally geared company at 60% gearing would typically have a credit rating of BBB+. In its approach to assessing the financeability of water companies, the CMA looked to target a credit rating of BBB+ for Water companies with a notional gearing of 60%.⁸⁷ This means that considering only Heathrow's class A debt and not considering the class B debt is not consistent with a notional approach to the cost of debt. Instead the costs of both the class A and class B debt should be considered.

Notional approach to cost of embedded debt

The notional approach to embedded debt is based on a trailing average of corporate bond indices over an appropriate period. The key issues to address in such an approach are:

- The appropriate corporate index to use (assumed to be iBoxx index for Heathrow);
- The period over which the index is averaged;
- Any adjustments to the average to take into account a difference between company costs and the index cost; and
- How to treat the retirement of existing embedded debt during the period.

These key issues are discussed below.

⁸⁴ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p27

⁸⁵ Oxera, *Asset risk premium relative to debt risk premium*, September 20, Table 4.1

⁸⁶ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p29

⁸⁷ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 10.91

Period of Averaging

In the IBP we argued that a trailing period of 20-years was appropriate. The Flint Global report for the CAA also identified 20-years as an appropriate averaging period.⁸⁸ In its water review, the CMA also agreed that a 20-year averaging period was appropriate for water companies.⁸⁹ There therefore appears to be a consensus that 20-years is the appropriate averaging period. The average yield on the iBoxx index over this period was 5.02%.

Adjustments to the index

If the relevant company's cost of debt is higher or lower than the index then an adjustment needs to be made to reflect the difference.

We asked NERA to assess the market evidence on the cost of raising debt for Heathrow compared to the average yield of the iBoxx 10+ A/BBB indices. NERA considered a wide range of market evidence: it compared the spread on yields of traded bonds for Heathrow to energy and water bonds; it compared Heathrow's yield at issue directly with the iBoxx index; it compared water and energy bond yield at issued with the iBoxx index; and it compared Heathrow's yield at issue compared to the yield at issue of energy and water bonds.

NERA showed that historically:⁹⁰

- Heathrow's yield at issue spread relative to the iBoxx benchmark suggests a debt premium of 40 bps; and
- Comparative analysis shows no evidence of a debt premium for energy or water bonds relative to iBoxx benchmark indices, whereas there is evidence that Heathrow's yield at issue is around 30 bps higher than energy and water bonds at issue.

In respect of embedded debt, the historical average of a 40bp premium to the iBoxx benchmark is relevant irrespective of the particular profile at different times.

For embedded debt, it is important to consider the actual historical average spread to the index. This is particularly the case for companies such as Heathrow, whose spread relative to the index varies over time. This variability is demonstrated by the current spread on Heathrow debt relative to the iBoxx index. It is not appropriate to look at the lowest spread historically and assume that this is the efficient cost.

In its report for the CAA, Flint concluded that no spread relative to the iBoxx index was required.⁹¹ This analysis was based on a visual comparison of the cost at issuance of four Heathrow bonds with a graph of the iBoxx index. Flint noted that two of the issuances had costs above the index and two in line with the index.⁹² We consider that this approach was flawed. In addition to the lack of precision in the approach, it ignored periods in the past when the efficient cost of debt for Heathrow was higher underestimating the true spread for embedded debt overall. This error would have been avoided if they had adopted a careful approach such as that by NERA.

⁸⁸ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p32

⁸⁹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.356

⁹⁰ NERA, *The cost of debt for HAL in H7*, April 2019, Section 2

⁹¹ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p30

⁹² *Ibid*, p30

Therefore, we conclude that the appropriate spread to the iBoxx index for Heathrow embedded debt is 0.4%. This results in a notional embedded debt cost of 5.42%.

Spread to Water Company Debt

When compared with water company bonds of a similar tenor and rating, the spread on Heathrow debt is much higher. This is demonstrated in Figure 6 below that compares the spread on the Heathrow 2028 bond with that of the Anglian Water 2029 bond.

Figure 6: Spread between Anglian Water and Heathrow Debt



Source: Bloomberg

Figure 6 shows that Heathrow debt has a spread of 0.3% over Anglian debt over the period. However, from March 2020 this spread has widened considerably to around 1.5%. This means that the embedded cost of debt for Heathrow should be at least 0.3% higher than that of Anglian. The variable spread, as shown in recent data, means that in the past the difference may also have been greater. Therefore, the potential additional cost of debt for Heathrow could be higher.

For the water companies the CMA used a 20-year rolling average of the iBoxx A and BBB 10+ NFC indices to estimate the water companies cost of debt. They identified a range of 4.81% nominal to 5.23% nominal for the cost of embedded debt for water companies.⁹³ Adding in the spread between Heathrow and Anglian water results in a comparable range for Heathrow of 5.11% to 5.53% for the embedded cost of debt.

⁹³ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Para 9.360

How to treat retirement of existing debt

There are broadly three approaches that can be adopted to account for the retirement of existing debt during the period:

- Making no adjustment;
- Using an average of a 20-year and 15-year trailing average; or
- Using a value at the bottom of the range.

In the IBP we argued that the most appropriate approach to take was making no adjustment. This is because retirements of debt include shorter term cheaper debt as well as longer-term debt. As a result, the impact of debt retirements can be to increase the cost of debt rather than reduce it. For Heathrow, as shown in Table 10 above, the cost of embedded debt is relatively stable over H7.

Using an average of the 16 to 20-year trailing averages was an approach adopted by Flint in their report for the CAA.⁹⁴ We consider that this approach is not acceptable as it assumes only older more expensive debt will be retired and takes no account of the retirement of shorter term less expensive debt. As a result, it overestimates the reduction in the cost of embedded debt that will occur. In a period of falling interest rates, such an approach is likely to underestimate the cost of debt. This would reverse in a situation where debt costs were rising, but only over the very longest of timescales, and will not happen before there have been at least 20-years of rising interest rates. It is not appropriate to adopt a policy that leads to asymmetric outcomes over such a long period.

This approach to adjusting for retirement of embedded debt results in an average index of 4.93%.⁹⁵

The CMA adopted the third approach for embedded debt in the Water appeals. In this case it chose an estimate at the bottom of its range i.e. 4.81% nominal or 1.85% real.⁹⁶ If the spread between Anglian and Heathrow debt is added to this value it results in an embedded cost of debt of 5.11% nominal.

Conclusion on notional approach to embedded cost of debt

The outcome of the notional approach to embedded debt depends upon the approach used to account for debt retirement during the period.

- Making no adjustment results in an estimate of 5.42% nominal based on the observed spread to the index of 0.40%;
- Using an average of the 20-year and 15-year trailing averages results in an estimate of 5.33% nominal (also based on observed spread to index);
- Using the CMA approach for Water Companies and adjusting for the observed spread between Heathrow and Anglian Water bonds results in an estimate of 5.11% nominal.

We note that the range from these approaches of 5.1% to 5.4% is above the actual cost of embedded debt over the period of 5.0%.

⁹⁴ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, Table 7

⁹⁵ Oxera, *Review of the CMA PR19 provisional findings*, Oct 2020, Table 4.1

⁹⁶ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Table 9.27

Conclusion on Cost of Embedded debt

Heathrow's expected cost of embedded debt in H7 is 5.0% nominal, equivalent to 2.10% real.

Using a notional approach to the cost of embedded debt results in a range between 5.1% to 5.4% depending upon the approach, equivalent to 2.2% to 2.4% real.

We note that Flint estimated the cost of embedded debt for Heathrow to be between 1.48% to 1.80% real.⁹⁷ We consider that this underestimates Heathrow's embedded cost of debt significantly. The entire range is below the bottom of the CMA range for water companies of 1.85% real, despite Heathrow's debt being typically 30bp more expensive than water company debt.

For the RBP we have adopted the actual cost of embedded debt of 2.10% real.

In the IBP, the assumed cost of embedded debt was 1.98%.⁹⁸ This was based on a nominal cost of embedded debt of 5.04% and an inflation rate of 3.0% (using the Fisher relation). For the RBP the nominal cost of embedded debt is now forecast to be 5.0%, i.e. marginally lower than the IBP assumption. This is offset by a lower inflation forecast of 2.9% to result in a slightly higher real cost of debt of 2.1%.

8.2.5.5 Weighting of New and Embedded Debt

In the IBP we set out different approaches to the proportion of new debt for the 2R and 3R situations. In the 2R case, we used an approach that was consistent with a 20-year trailing debt average, that assumed by the end of the period, new debt would amount to 25% of the debt portfolio. The appropriate weighting for the average proportion of new debt in H7 was therefore 12.5%. In the 3R case we used a higher proportion of 30% to reflect the much greater debt issuance in this situation.⁹⁹

Flint also followed this approach in their report for the CAA. For a case with notional gearing of 60%, they assumed a weight for new debt of 12.5% for H7.¹⁰⁰

For the RBP we have continued to adopt the same approach and use a weighting for new debt of 12.5%.

8.2.5.6 Issuance and Liquidity Costs

As well as the cost of debt related to the interest cost of the bonds raised, Heathrow incurs additional costs that are accounted for in the interest cost line rather than as opex. As such these need to be included in the total interest costs for Heathrow. These additional costs can be grouped into two areas:

- Issuance costs; and
- Liquidity costs.

In the 2020 water inquiry the CMA adopted an estimate of 0.1% for issuance and liquidity costs combined. This was based on Ofwat's view and the absence of alternative estimation

⁹⁷ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, Table 10

⁹⁸ Heathrow, *IBP*, Chapter 12, Section 3.4, Table 57

⁹⁹ Heathrow, *IBP*, Chapter 12, Section 3.5

¹⁰⁰ Flint, *Support to the Civil Aviation Authority: Business as usual WACC for H7*, April 2020, p39

approaches by the appellants.¹⁰¹ In the 2015 Bristol Water inquiry, they adopted separate estimates of 0.1% for issuance costs, and 0.1-0.2% for liquidity costs.¹⁰² In the 2014 NIE appeal, they allowed 0.20% for issuance and liquidity costs combined.¹⁰³

For the RBP, we base our assessment of issuance costs on Heathrow's actual costs of issuance and maintaining a debt platform. For liquidity costs, the estimate is based on the liquidity costs that a notionally geared company would incur. These are set out below.

Issuance Costs

Issuance costs are those costs, such as legal costs and bank fees, that are incurred in raising each issuance of debt. They are amortised over the life of the loan. In addition, there are other platform costs such as rating agency fees that are incurred annually but are not directly associated with any specific loan. Finally, there are occasionally one-off costs associated with the platform such as fees for updating covenants to reflect changes in accounting standards that are required in some years.

Estimates of Heathrow's costs are set out in the table below.

Table 12: Heathrow Issuance Costs

	Cost
Direct Issuance costs	0.034%
Annual Platform costs	0.003%
One-off costs	0.022%
Total	0.059%

Source: Heathrow

The direct issuance costs are based on the costs of issuance for bonds issued since 2014, each amortised over the life of the bond.

Annual platform costs are costs that are charged to interest each year, but that are not directly related to specific issuances. This is primarily fees to rating agencies. The typical annual cost for Heathrow is £0.3m, which in relation to debt of £13bn (forecast end 2021) is equivalent to 0.003% pa.

In addition, there are occasional one-off costs associated with maintaining the debt platform. An example of this is the cost of altering documentation as a result of changes to the accounting of leases under IFRS16. An additional, example is the cost of agreeing waivers during the pandemic. This type of activity is required periodically and we estimate the expected annual cost of these types of intervention to be £2.9m per annum, equivalent to 0.022% pa.

Note that the interest rate equivalent of the annual and one-off costs has been calculated in relation to actual debt. The rates would be higher if calculated in relation to notional debt.

¹⁰¹ CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Provisional Findings*, Sep 20, Paras 9.403 and 9.404

¹⁰² CMA, *Bristol Water Final Determination: Appendix 10.1*, 2015, Para 48

¹⁰³ CMA, *NIE Final Determination*, 2014, Para 13.77

Overall, this shows that issuance costs for Heathrow are 0.06%.

Liquidity Costs

Heathrow needs to maintain a liquidity facility to ensure that it has sufficient funds to meet its investment and debt repayment requirements over a reasonable future horizon. The importance of an adequate liquidity facility has been demonstrated through the current pandemic. We have estimated the costs of such a facility for a notionally geared company.

The required size of the facility for the notional company is based on requiring 18 months liquidity cover for debt repayments and capex. This is in line with both Heathrow's policy and the typical requirements of rating agencies for liquidity cover. The debt repayments for the notional balance sheet are assumed to be 5% of 74% of the closing 2021 RAB in each year (before the Covid-related RAB adjustment). The gearing of 74% reflects a company with notional gearing of 60% at the end of 2019 being impacted by Covid-19 in 2020 and 2021. Table 13 sets out the size of the required facility.

Table 13: Required size of liquidity facility

Facility Size		RBP
Closing RAB 2021	£m	16,437
Notional Debt	£m	12,163
Average Debt Tenor	Yr	20
Expected Repayments	£m	608
Peak Capex 22-26	£m	931
Annual Requirement	£m	1,508
Time Horizon Required	Months	18
Facility Required	£m	2,309

Source: Heathrow

The costs of the facility are based on arrangement costs of 75bp for a five-year facility and commitment (non-use) fees of 44bp (based on typical current market costs). Table 14 below sets out the effective cost of the liquidity facility based on the costs compared to the overall level of debt for the notional company.

Table 14: Cost of liquidity facility

Facility Costs		RBP
Facility Size	£m	2,309
Set up Costs		0.75%
Non Utilisation Fee		0.44%
Life	Years	5

Annualised cost of Facility	£m pa	13.6
H7 Average RAB	£m	18,980
Assumed Debt	£m	11,388
Effective interest rate	%	0.12%

Source: Heathrow

Therefore, we consider that the liquidity costs to be included in interest costs are 0.12%. It should be noted that these costs make no allowance for any cost of carry that is likely to arise as a result of maintaining positive cash balances in the business. At present, Heathrow is maintaining significant cash balances to provide security during the pandemic. Therefore, the approach above is likely to underestimate the actual cost of maintaining liquidity, especially early in H7.

Note that new issuance costs are separate from new issue premia (NIP). NIP are reflected in the actual cost of debt. New issuance costs relate to costs of raising debt and managing the debt platform that are not reflected in the interest costs of each specific debt instrument.

It is possible that following the impact of Covid-19, Heathrow will increase the size of liquidity facility that it considers appropriate. We will reflect our developing views in updates we provide to the CAA during 2021.

Conclusion on Liquidity and Issuance Costs

Table 15 sets out our view of the total issuance and liquidity costs that need to be included in the overall cost of debt for the RBP.

Table 15: Issuance and Liquidity Costs

	RBP
Issuance Costs	0.06%
Liquidity Costs	0.12%
Total	0.18%

Source: Heathrow

8.2.5.7 Summary on Cost of Debt

Table 16 sets out our estimates of the cost of debt for Heathrow in H7. The table shows the direct interest cost of the debt and the additional interest costs incurred for issuance and to maintain liquidity.

Table 16: Overall Cost of debt for H7

	H7
Cost of embedded debt	2.10%
Cost of new debt	0.65%

Weighting of new debt	12.50%
Cost of Debt	1.92%
Issuance and Liquidity Costs	0.18%
Overall Cost of Debt	2.10%

Source: Heathrow

The overall cost of debt of 2.10% is higher than the 1.93% included in the IBP.¹⁰⁴ This difference is driven by lower inflation of 0.1% increasing the real cost of debt in the RBP, and the higher current cost of new debt for Heathrow as a result of the impact of Covid-19.

8.2.6 Overall Conclusions on WACC

In the beginning of this chapter we explained that setting the right level of WACC is important for encouraging investment and achieving the right long-term outcome for consumers. Table 17 sets out Heathrow's estimate of the WACC required for H7 for our base case, and with sensitivities for higher notional gearing and in the case of no Covid-related RAB adjustment. The estimates are soundly based on current market evidence and robust and transparent analysis. We consider that the level of WACC set out in Table 17 is the minimum efficient level required for H7.

Table 17: Heathrow WACC for H7

	IBP	Base Case	High Gearing Case	No RAB adjustment case
Gearing	60%	60%	67%	60%
Cost of Equity Post Tax	8.3%	13.7%	16.8%	16.8%
Cost of Equity Pre-Tax	10.0%	16.9%	20.7%	20.7%
Cost of Debt	1.93%	2.10%	2.10%	2.10%
Post-tax (Vanilla) WACC	4.48%	6.73%	6.98%	7.99%
Pre-tax WACC	5.2%	8.0%	8.3%	9.5%

Source: Heathrow

For the RBP we have adopted the base case pre-tax WACC of 8.0%.

We will continue to review developments in market data during 2021 and provide the CAA updates on our estimate of the appropriate WACC in April and July.

The WACC of 8.0% is higher than the WACC the airlines assumed in their alternative business plan of 2.9% in Constructive Engagement.¹⁰⁵ We note that this assumption is lower than the

¹⁰⁴ Heathrow, *IBP*, Chapter 12, Table 61

¹⁰⁵ Heathrow Airline Community, Airline alternative business plan, October 2020, p3

pre-tax WACC for Water companies identified by the CMA of 2.96%¹⁰⁶. It is not reflective of the risk of airports pre-Covid, never mind post-Covid. We do not consider that the airline estimate reflects market data on the cost of capital for Heathrow. In contrast, our estimate is based on robust market data and consistent with the approach taken by the CMA in the Water and NERL appeals in 2020.

In the Outcomes chapter we provide sensitivities for 2-year and 7-year periods. Due to small differences in the cost of new debt over time, and the impact of the weighting of new debt increasing for longer periods, the appropriate WACCs for these periods are slightly different. For the 2-year case, the WACC is 8.08%, and for the 7-year case 7.96%.

¹⁰⁶ Calculated from post-tax cost of equity of 4.14% (RPI) and vanilla WACC of 2.57% (RPI) using a tax rate of 19% and gearing of 60%. See Table 9.27 of the CMA water interim findings.

8.3 - DEPRECIATION

Chapter Overview

- Depreciation is a critical building block to manage affordability and financeability as passenger numbers recover from very low levels.
- In H7 we will manage depreciation more actively than in Q6. We propose an approach using a forecast of statutory depreciation with an overlying adjustment.
- This approach balances charges better over H7 and the longer-term and is in consumers' interest in bringing the average charge down.
- Adjusting depreciation in this way relies upon on the implementation of the Covid-related RAB adjustment, without this no reduction in depreciation can be made.
- Adjusting depreciation also relies on a P0 adjustment and ensuring that cashflows do not drop below levels required for us to be financeable. This is a particular issue for 2022 and sets a maximum extent to which depreciation can be reduced.
- This minimum cashflow or EBITDA requirement means that charges cannot be lower in 2022 irrespective of the specific WACC or depreciation assumption – the two factors are essentially locked with each other in terms of charges impact
- The minimum EBITDA requirement in 2022 could not be reduced by assuming additional equity as this does not affect the relevant financing metrics.

8.3.1 Introduction

The Covid-19 pandemic has severely reduced the number of passengers at Heathrow and it will take many years for traffic to recover to previous levels (see Chapter 5 - Demand). A major consequence of fewer passengers during recovery over H7 is that meeting the revenue requirement puts pressure on the airport charge as more revenue is required from each passenger. Unaddressed, this would lead to escalating increases in the average H7 charge.

In this chapter we set out a proposal to use regulatory depreciation to mitigate much of the impact of lower passenger numbers on charges. This works by deferring recovery of some revenue into later periods. It allows significantly lower prices in the early years by using Heathrow's long-term financing platform, which will hasten recovery compared to a situation where Heathrow's charges rapidly rise in the short term. The benefits to consumers of faster traffic recovery (and therefore lower charges in the long term) vastly outweighs the effect on costs from 2026, and this proposal is therefore in consumer interests and supportive of wider recovery at the airport for airlines and others.

Reducing depreciation in a period results in lower net cashflows and a higher RAB. It behaves similarly to additional capital expenditure in that the reduction increases debt and RAB equally. This results in strong upward pressure in gearing as the marginal increase in RAB is funded 100% through debt. The impact of Covid-19 has already significantly increased the gearing of the notional company. In this chapter we show that the additional pressure on gearing that would come from reducing depreciation cannot be accommodated unless the Covid-related RAB adjustment is in place. This is true regardless of assumptions made on equity.

Although the impact of reduced depreciation is similar to higher capex, it is not exactly the same for financing. This is because unlike capex, reducing depreciation reduces operating

cashflows. Heathrow needs to maintain appropriate levels of operating cashflow compared to debt and interest in order to remain financeable. This is a legal obligation of our debt covenants. We show how this limits the extent to which depreciation can be profiled.

We believe that our RBP proposals deliver the best outcome for consumers by using the scope given by the Covid-related RAB adjustment to reduce depreciation enabling a flatter long-term price profile. Our proposal seeks to strike the right balance between risk and affordability both in the short and long term.

8.3.2 Changes since the IBP

The IBP did not include an adjustment to depreciation to adjust the charge profile. This was because the high level of capex associated with delivering Expansion did not allow space to reduce operating cash flows and still maintain financial ratios consistent with an appropriate credit rating.

As a result of the February 2020 Court of Appeal decision to set aside the ANPS, Heathrow and the airline community took the decision to pause work on the Expansion programme. This has meant that the level of capital expenditure in the RBP is much lower than the IBP reducing the upward pressure on pricing as a result of capital expenditure. Capital expenditure has been further reduced in the RBP from assumptions in the BBU.

However, the impact of Covid-19 on aviation has resulted in significant upward pressure on charges for two reasons. Firstly, the impact on demand means that the revenue requirement is spread over fewer passengers. Secondly, pressures in a number of other building blocks such as the impact of changes in VAT rules on commercial revenues or the increased risk and thus higher costs of financing in aviation post-Covid are putting pressure on Heathrow's economic model even despite mitigations outlined in this plan. Together, these provide significant upward pressure on charges particularly in the early part of H7.

To mitigate the short-term element of this price pressure we propose to reduce regulatory depreciation in H7 allowing prices to be smoothed over a longer period.

8.3.3 Using depreciation to improve affordability in H7

The reduced number of passengers in H7 places upwards pressure on charges, especially early on in the period. Profiling the charge so that it is flat over the period, mitigates the high charges that would otherwise occur in 2022 and 2023. This averaging is also a reason for a longer period – of at least five years – as this averages the revenue requirement over a higher average number of passengers per year.

Further mitigation can be provided by reducing depreciation. Reducing depreciation reduces costs to consumers in the short run but would (if all else remains unchanged) result in a higher RAB that leads to higher charges in later periods, effectively pushing some cost recovery into the future beyond H7. We believe that this is in consumers interests for several reasons. First, this change will hasten traffic recovery by reducing short-term charges when consumers are likely to be most price-sensitive – and therefore it facilitates a faster recovery from the current crisis, providing more benefits to consumers as a whole. Furthermore, because the assets of Heathrow that are being depreciated are generally longer-life assets that were intended to provide services to a full airport. By deferring depreciation, we are more closely aligning it with

the use of these assets by consumers. In addition, producing a flatter charge profile over H7 and into the next period results in greater intertemporal fairness for consumers.

In this Section, we set out the approach used to determine the baseline of depreciation; show how profiling and reducing depreciation can be used to reduce charges and then set out the longer-term implications of the deferment.

8.3.3.1 Unadjusted charges

Depreciation has been calculated in accordance with the approach used for reporting in our annual accounts. For depreciation of existing assets, the calculation is based on the existing asset register and lives. For new assets, depreciation is calculated based on the estimated cost of each scheme or programme using an average life of 20-years.

The resulting depreciation profiles for the £3.5bn and £2.1bn capital programmes are set out in Table 1 and Table 2 respectively.

Table 1: Base depreciation £3.5bn capital programme

[£m, 2018p]	2022	2023	2024	2025	2026
Depreciation on existing assets (2019)	767	730	660	642	622
Depreciation on additions 2020-2026	109	134	157	192	232
Depreciation of cost of change RAB adjustment	[REDACTED]				
Total Depreciation	885	872	825	843	863

Source: Heathrow

Table 2: Base depreciation £2.1bn capital programme

[£m, 2018p]	2022	2023	2024	2025	2026
Depreciation on existing assets (2019)	767	730	660	642	622
Depreciation on additions 2020-2026	109	129	143	164	185
Depreciation of cost of change RAB adjustment	[REDACTED]				
Total Depreciation	885	867	811	815	816

Source: Heathrow

8.3.3.2 Proposed approach

A key aspect of the approach that we have adopted is to determine separately:

- The profile of charges over H7; and
- The level of depreciation adjustment.

The profile of charges is set through a P0 adjustment and a subsequent X value. The pattern of passenger numbers over H7 which increases over the period means that the natural (unprofiled) charge increases significantly for 2022 and then falls through to 2026. This would require a very large P0 and then a negative X. However, this profile results in very high prices

at precisely the time when airlines and airport are most looking to recover passenger numbers. We therefore think such a profile is commercially undesirable, not in consumers interests and therefore is not appropriate.

We therefore propose a smaller initial P0 and then holding charges flat (X=0) for the whole of H7. This results in lower charges at the start of the period. We have ruled out an approach with a lower P0 and positive X value. The reasons for this is that it would result in insufficient income in 2022 when passenger numbers are still very low. Such a low level of income leads to breaches of our cashflow based on credit metrics thresholds – this financeability issue thus cannot feasibly be solved by other steps such as equity support (see Section 8.3.5 below).

Table 3 below sets out the price profile that arises from implementing a P0 adjustment and having level charges. It shows that profiling the charges results in an £8.53 lower airport charge at the start of the period, but has somewhat higher charges than the unprofiled charge at the end of the period.

Table 3: *Profiled and unprofiled charge*

[£, 2018p]	2022	2023	2024	2025	2026	Average
Unprofiled Charge	46.94	41.06	36.44	33.29	32.26	37.32
Profiled Charge	38.41	38.03	38.03	38.03	38.03	38.09
Difference	-8.53	-3.03	1.59	4.74	5.77	0.77

Source: Heathrow

Having chosen a price profile, we have then further applied a depreciation adjustment. The level of the depreciation adjustment has been determined based on:

- Consumer affordability and the desire to reduce the airport charge in early recovery;
- Constraints arising from gearing over the period; and
- The need to maintain appropriate interest and debt cover ratios.

The depreciation adjustment does not need to be profiled as this happens directly as a consequence of the proposed charge profile and the regulatory profiling adjustment. The regulatory profiling adjustment adjusts the RAB to reflect the difference in income due from the building block calculation and the income obtained as a result of the specific price profile.

Across this RBP we have applied a depreciation reduction of £635m per annum (2018p). This represents around 75% of the underlying depreciation of the assets in the period. This results in the average charge calculated by the PCM being reduced to £30.34 from £37.32 as shown in Table 4. Note that the charges in the table below include the impact of profiling NPV adjustments. The average charge presented elsewhere of £29.89 is the true average charge before profiling NPV adjustments are made.

Table 4: Profiled and unprofiled charge

[£, 2018p]	2022	2023	2024	2025	2026	Average
Unprofiled Charge	46.94	41.06	36.44	33.29	32.26	37.32
Profiled Charge	38.41	38.03	38.03	38.03	38.03	38.09
Final Charge after depreciation reduction	30.60	30.29	30.29	30.29	30.29	30.34
Difference Final to Unprofiled	-16.34	-10.77	-6.15	-3.00	-1.97	-6.98

Source: Heathrow

Table 4 shows that our combined proposed approach of both profiling and reduced depreciation reduces charges in 2022 by £16 per passenger compared to the unprofiled charge. It also reduces charges in 2026 by £2 per passenger, even with the effects of profiling over H7. This means that the H7 charge exit point is close to the natural level of charge.

The resulting effective depreciation profile is set out in Table 5 below. This shows the effective total depreciation in each year¹, the base depreciation and the resulting net adjustment.

Table 5: Profiled and unprofiled charge

[£m, 2018p]	2022	2023	2024	2025	2026	Average
Base Depreciation	885	872	825	843	863	858
Effective Depreciation	-369	18	235	543	722	230
Net depreciation adjustment	1,254	854	590	300	141	628

Source: Heathrow

Table 5 shows that the net adjustment in 2022 is very large at £1.3bn and results effectively in negative depreciation for the year. The scale of the net depreciation adjustment then decreases over the period reducing its impact on charge. Note that the difference between the base and effective depreciation is not equal to exactly £635m due to the NPV effects in the profiling calculation.

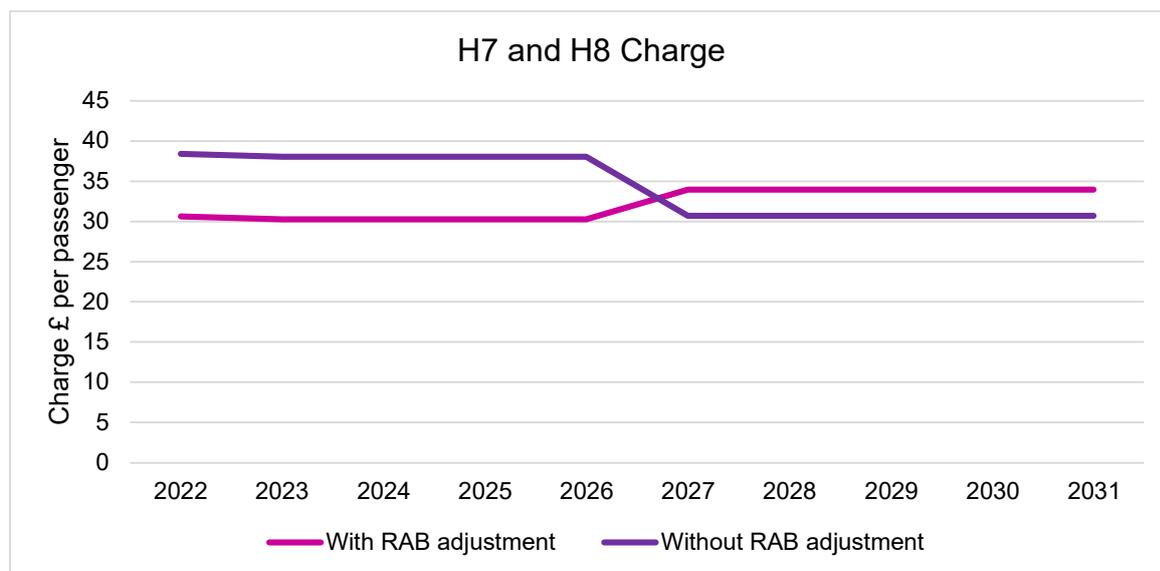
The constraints arising from depreciation and interest and debt cover ratios are set out in the following sections.

8.3.3.3 Impact on long-term charges

To show the impact over the longer term, we have assumed that the £3,175m of depreciation deferred from H7 is subsequently depreciated over 25 years. The impact of this on charges over the longer term is set out in Figure 1. This shows the charges for H7 and H8 with and without the depreciation adjustment. For this illustration, no depreciation adjustment has been applied for H8.

¹ The effective total depreciation in each year is the sum of the depreciation reduction and the profiling adjustment.

Figure 1: Long term impact on charges



Source: Heathrow

The impact of the adjustment is to reduce charges in H7 by around £7 per passenger and to increase charges in H8 by £3 per passenger on these assumptions. Overall, the long-term charge profile is much smoother where we do assume the adjustment.

A key issue in respect of reflecting depreciation appropriately in charges is ensuring intertemporal fairness. If the depreciation reflected in charges is lower than the underlying economic consumption of the assets, then consumers today would effectively pay less as a result of being subsidised by future consumers. This means that it is important that charges reflect the underlying consumption of the assets.

In most cases, the economic consumption of the assets is likely to be similar to the depreciation calculated from straight line depreciation over the useful life of the asset. However, in the case of Heathrow recovering from the impact of Covid-19 it is not clear that this remains the case. The lower passenger numbers mean that the economic benefit from these assets is lower in these years and therefore there is a strong argument that the economic consumption of the assets is reduced. In addition, having significantly higher charges during the recovery could reduce passenger numbers further. Therefore, there is an additional benefit to all consumers by ensuring that passenger numbers are as high as possible. This justifies a reduction in depreciation beyond that that would be obtained simply adjusting for passenger numbers.

We therefore consider that the charging profile in Figure 1 results in reasonable intertemporal fairness and is in the best interests of customers.

8.3.4 Depreciation cannot be reduced without a substantial Covid-related RAB Adjustment

The impact of Covid-19 in 2020 and 2021 has been to reduce income significantly requiring operations to be funded by debt rather than revenue. The resulting increase in debt is reducing the equity value in the airport as gearing is much higher at the end of 2021 than the beginning. Such an increase in gearing and consequent loss of shareholder value would be true

irrespective of the initial level of gearing. As the immediate crisis recedes, shareholders will need to restore financial stability and return gearing to its initial level. Companies generally operate at an efficient level of gearing. Therefore, this desire to return gearing back to its initial level after a crisis would be true for any company, regardless of the initial level of gearing.

During H7, capital expenditure and depreciation adjustments impact the rate at which gearing can be reduced. Reducing depreciation increases pressure on gearing in a similar way to capital expenditure because it reduces net cashflows and increases RAB at a ratio of 1:1. In other words, the increase in RAB is funded 100% by debt, increasing gearing accordingly. The extent to which depreciation can be reduced is therefore limited by the need to restore gearing to initial levels during H7.

The Covid-related RAB adjustment also makes a significant difference to the evolution of gearing in H7. The adjustment mitigates around two-thirds of the increase in gearing directly. In addition, the higher cashflow associated with the return on the additional RAB also contributes. Without the RAB adjustment, it is not possible to restore gearing to initial levels in H7 and include a reduction in depreciation. We show this below by:

- Referring to the analysis in our response to CAP1966 that used a simplified financial model; and
- Including an analysis based on our proposed plan using the PCM model.

Greater investment or depreciation adjustment could be possible if the time taken to return to the original level of gearing is extended beyond the end of H7. However, we do not consider that this realistic or appropriate:

- Firstly, it would not be consistent with a notional approach to financing;
- Secondly, it is inconsistent with wider regulatory approaches to efficiency; and
- It is not a viable option for investors in practice.

The notional approach to financing assumes that a company is at a specific level of gearing. If the circumstances that a notionally financed company faces means that in practice its gearing is not at that notional level this would be inconsistent with a notional approach. In the case of Heathrow, if the level of gearing is not returned to the notional level by the end of the period then a different notional level would need to be considered.

In practice too, returning the gearing of the company to the desired level will be a high priority for any investors. They will want to manage the speed of this carefully, but certainly would not want to stretch it out over a longer period as restoring the original level of gearing also results in restoring the financial buffer and resilience to future events. In the case of Heathrow, this would be especially true in the event of no Covid-related RAB adjustment, as the lack of regulatory support would increase the need to restore financial headroom as quickly as possible.

Restoring gearing to its initial level is partly about returning the company to an efficient level of gearing. Achieving financial efficiency in this way will be important to investors. Doing this over a five-year period is consistent with wider regulatory approaches to efficiency that look to remove inefficiencies within one regulatory period.

An additional issue is that the need to restore gearing to original levels will create a significant disincentive to investment as reducing investment is one approach that can be used to help reduce gearing. This is particularly the case where historic returns to equity have been well below the cost of capital over an extended period. Investors would look to avoid this occurring

over an even longer period and therefore would put great pressure to reduce investment whilst the risk level was elevated due to higher gearing.

The recent judgement by the CMA in the water appeals has emphasised the need for regulation to deliver appropriate investment by setting the right level of WACC. Whilst the right WACC is a pre-requisite of delivering appropriate investment, post the impact of the loss of value from Covid-19. The need to recover from the impact of the pandemic results in strong pressure to minimise investment in the no adjustment scenario irrespective of the WACC allowed at H7. Such a pressure is not in the interests of consumers.

8.3.4.1 Simplified analysis

The interplay of capex, depreciation and gearing was illustrated by a simple model in our response to CAP1966. This model looked at the interplay of these factors based on a notional balance sheet with gearing of 60% at the end of 2019, returning to gearing of 60% by the end of 2026.

The modelling showed that with a Covid-related RAB adjustment, a capital programme of £3.5bn could be delivered with a £300m per annum reduction in depreciation.² However, with no Covid-related RAB adjustment, a capital programme of £2.0bn required an increase in depreciation of £250m per annum to restore gearing to the initial level by the end of H7.³ A depreciation increase would lead to an increase in the maximum allowable yield.

The analysis presented in the response to CAP1966 clearly showed:

- There is significant challenge to restore financial balance for the airport, even with very significant dividend forbearance by equity and regardless of initial gearing;
- Without a RAB adjustment, investment in H7 will be artificially curtailed unless depreciation is accelerated in H7, putting further pressure on H7 airport charges;
- Without a RAB adjustment it is not possible to reduce or smooth H7 depreciation and restore the balance sheet to the target gearing; and
- With a RAB adjustment, there is more scope to appropriately balance investment and adjust depreciation to manage airport charges as passenger numbers are recovering.

8.3.4.2 Updated analysis

We have set out a similar analysis using the PCM. In this, we set gearing to the notional level of 60% in 2019. We then show the impact of gearing during 2020 and 2021 as a result of Covid-19 and the Covid-related RAB adjustment and during H7 as a result of the investment programme and depreciation adjustments during the period. Table 6 sets out the cases we have investigated. Case 3 represents our proposal in this plan.

² Heathrow, *Economic regulation of Heathrow: response to its request for a Covid-19 related RAB adjustment* (CAP1966), November 2020, Table 2 and Figure 3

³ Heathrow, *Economic regulation of Heathrow: response to its request for a Covid-19 related RAB adjustment* (CAP1966), November 2020, Table 3

Table 6: PCM Cases

	RAB Adjustment	Capex	Depreciation Adjustment	Dividend Rate
Case 1	Yes	£3.5bn	0	12.3%
Case 2	Yes	£3.5bn	-£300m	11.1%
Case 3	Yes	£3.5bn	-£635m	9.9%

Source: Heathrow

The cases are based on our plan and assume a P0 and flat charges for each case. The cases used the PCM. Therefore, in each case, cashflows in year are used to ensure gearing remains at 60% in year. This does not produce a realistic profile of dividends compared to the decisions of a company balancing a range of other financial metrics. Consequently, we have used the average payout over the period. These scenarios do not represent actual dividend forecasts or proposals.

In Case 1, gearing can be returned to 60% with dividends at 12.3%. Case 2 shows that introducing a depreciation adjustment whilst still restoring gearing to 60% reduces the dividends payable to 11.1%. Case 3 represents our plan. This results in dividends being further reduced to 9.9% of regulated equity.

A clear benchmark for the appropriate level of dividends of a regulated business is the post-tax cost of equity. If a company is in steady state, i.e. it has no real RAB growth and constant gearing, then dividends must be equal to the (real) post tax cost of equity by definition. In a situation where the RAB was falling, dividends would be expected to be higher than this (to keep constant gearing), and if the RAB was growing, dividends would be lower. In the WACC chapter Table 6 we show that the post-tax cost of equity is 13.7%. Therefore, dividends being 13.7% of regulatory equity is an appropriate benchmark with which to compare dividends.

In the Cases above we set out dividends in terms of the percentage return on RAB. In Case C, our plan, the dividend payout capacity is 9.9% of regulatory equity, 3.8% below the benchmark of 13.7%. This represents a significant forbearance of dividends for the notional company amounting to £1.5bn over H7.

In practice Heathrow has higher gearing than the notional company. This creates greater pressure on actual dividends than is the case for the notional company. As a result, Heathrow does not anticipate paying dividends before 2023 and perhaps not until later. In addition, Heathrow is likely to look to restore its gearing to initial levels more quickly than we have assumed for the notional company.

Without a RAB adjustment the degree to which gearing needs to be reduced over the period is higher and further reductions in dividends would be required. Therefore, without the RAB adjustment, the challenge of restoring a notionally financed Heathrow back to its initial gearing is extremely hard and it is not possible to accommodate a depreciation reduction. This in turn will result in significantly higher prices in H7.

8.3.4.3 Conclusion

A depreciation reduction should be an important mitigation to escalating airport charges in the recovery phase of H7. However, it is not possible without an appropriate RAB adjustment before H7. This holds true at notional gearing – it is unrelated to initial or any subsequent given level of actual gearing. It is also not a financeability issue that can be solved, even theoretically, by assuming ever greater equity support. This is before even considering the consumer costs and practical investment feasibility of any such equity solution. We believe it is in consumers'

interests to reduce H7 depreciation. We have therefore included it in the RBP. But it is vital to understand that this relies upon an appropriate RAB adjustment as a first step to make it financially possible.

8.3.5 Operating cashflow requirements limit the degree to which depreciation can be reduced

The previous section discussed the limits on depreciation adjustments in terms of their impact on gearing. In addition to an impact on gearing, reducing depreciation also has an impact on operating cashflows. This in turn has consequences for cashflow related financial metrics such as EBITDA to debt. These metrics are important for retaining investor confidence in Heathrow ensuring it is financeable. They therefore provide additional constraints on the extent to which depreciation can be adjusted. In this section we discuss these constraints on operating cashflow and how these limit the extent to which depreciation can be used to reduce charges in H7.

8.3.5.1 Constraints on operating cashflow

Rating agencies use cashflow metrics as part of the suite of financial ratios they use to assess the creditworthiness of companies. Heathrow SP (i.e. the ring fenced, operating entity) is rated by Fitch and S&P. The key metrics used by them for Heathrow are set out in Table 1 in Section 8.1.6.3. A key metric used by S&P is FFO to debt. S&P sets minimum thresholds that are consistent with current credit ratings for the A and B rated debt of 8% and 6%. In assessing Heathrow's credit worthiness, it considers both the level in a specific year and the average over three years.

In order to maintain current credit ratings, it is important that the FFO to debt targets in our plan maintain headroom to the S&P thresholds. If they do not, then there is a significant risk of a downgrade in credit rating. Such a downgrade would reduce our Junior (BBB) debt to junk and severely impact Heathrow's ability to access debt finance (see Section 8.1.6.2). The risk is particularly amplified for 2022 as this year follows two years where ratings have been well below threshold as a result of the impact of Covid-19. To meeting the required thresholds requires sufficient FFO in each year and thereby effectively sets a minimum floor for FFO and EBITDA.

Reducing depreciation reduces the FFO to debt ratio. Therefore, the minimum acceptable level of FFO constrains the degree to which depreciation can be reduced. Depreciation cannot be reduced by so much that FFO falls below this threshold.

It is not appropriate to target the S&P thresholds directly. This is because outcomes are uncertain, and targeting the threshold exactly results in a high risk that the threshold will not be met in practice. Rating agencies consider a range of downside scenarios in their analysis and therefore our plan needs to target a ratio that is above the threshold. To reflect this, Heathrow has internal policy targets that provide an appropriate margin above the rating agency threshold.

Table 7 sets out the S&P thresholds for both classes of debt. It also sets out Heathrow's internal policy targets for the metrics and the outturn metrics in our plan for 2022 and 2022-24 average based on a £635m depreciation reduction.

Table 7: FFO thresholds

Ratio	Threshold	2022	Average 2022-2024
S&P A FFO/ND	8.0%	[REDACTED]	
S&P B FFO/ND	6.0%		

Source: S&P/Heathrow

A depreciation reduction of £635m results in ratios for class A and B debt close to the rating agency thresholds, both in 2022, but also on average over 2022-2024. [REDACTED]. A depreciation reduction of £635m is therefore the largest that can be accommodated without jeopardising the financeability of Heathrow.

The overall consequence of the financeability constraint is that a minimum level of EBITDA is required in each year irrespective of actual passenger numbers, capital expenditure or WACC in that year. This provides strong constraints on pricing in the early years of H7 when passenger numbers are low. In particular it means that that price in 2022 cannot be reduced below £29.9 without additional passengers or higher net-non aero.

This is illustrated in Table 8 and Table 9 below. Table 8 shows the EBITDA margin to the minimum FFO requirement for different combinations of WACC and depreciation adjustment. Table 9 shows the resulting prices in each case.

Table 8: 2022 EBITDA margin for different WACC and depreciation adjustments

2022 EBITDA margin [£m, 2018p]	Regulatory depreciation adjustment			
	£700m	£635m	£600m	£500m
WACC	[REDACTED]			
9.0%				
8.5%				
8.0%				

Source: Heathrow

Table 9: H7 charge impact for different WACC and depreciation adjustments

H7 Charge [£, 2018p]	Regulatory depreciation adjustment			
	£700m	£635m	£600m	£500m
WACC				
9.0%	32.0	32.8	33.2	34.4
8.5%	30.6	31.3	31.8	33.0
8.0%	29.1	29.9	30.3	31.6

Source: Heathrow

Table 8 shows that increasing WACC creates headroom to increase the regulatory adjustment further. [REDACTED]. Table 9 shows the effective charge consequence of this. In the previous example, the higher WACC can be offset by a higher (£700m) depreciation adjustment resulting in a charge of £30.6. If the depreciation adjustment was increased further to remove the £28m EBITDA headroom, the price would return to £29.9. The same constraints would apply if WACC were lower. A lower WACC would require an offsetting lower depreciation adjustment resulting in the price being unchanged.

In our modelling we have applied the constraint based on our actual debt structure. The binding limit for depreciation is ratios of the A rated debt compared to its threshold. The gearing of A rated debt for our scenario in 2022 is 56%, i.e. lower than the notional threshold. For a notionally geared company, S&P would apply a threshold of 8% to target a credit rating of BBB+ because there was no benefit from the structured debt platform. [REDACTED].

However, as the notional gearing is above the gearing of the A rated debt we are using, assessing this approach on a notional basis would result in a smaller depreciation adjustment being acceptable.

Finally, it is worth noting that because this is a cashflow metric, rather than a gearing metric, additional equity makes no practical difference to the constraint. Not only would assuming more equity be inconsistent with the notional gearing approach, the amount of equity required to make any meaningful impact on the ratio would amount to billions. In practice, such large amounts of equity simply to defer price increases for consumers are unlikely to be available. In particular there is no rational investor who would inject such equity with such poor prospects of a commensurate risk adjusted return.

8.3.6 Summary of depreciation approach

In our plan we have proposed to reduce depreciation for the duration of H7 by £635m per annum. This step alone reduces charges in H7 by £7 compared to no adjustment being made.

The reduction in depreciation in H7 will increase charges in H8 and beyond by £3 per customer, however it leads to a smoother long-term price path and we consider it leads to appropriate inter-temporal fairness for consumers and is in their interests.

The extent of depreciation adjustment is limited by the requirement to meet minimum FFO requirements consistent with rating agency requirements. Not meeting these requirements could lead to a downgrade in our debt with the class B debt moving to junk status. This would significantly curtail Heathrow's access to debt markets and raise the cost of capital further.

Meeting the minimum FFO requirement means that the resulting charge is effectively independent of WACC and the depreciation adjustment. Therefore, lower charges are not possible with the passenger numbers we forecast.

We have based the minimum level of FFO on our actual class A debt. The gearing of this is 56% in 2022 and therefore the constraint is less binding than would be the case for a notionally geared company. In addition, because FFO is a cash-flow based metric, it cannot be meaningfully improved by just assuming increased equity injections.

In addition to meeting the minimum FFO threshold, the depreciation adjustment is dependent upon the P0 adjustment and the Covid-related RAB adjustment. If these adjustments are not in place, no adjustment to depreciation can be made, and the charges in H7 would be significantly higher.

9.1 – REGULATORY FRAMEWORK

Chapter Overview

- In designing a regulatory framework for H7 we have focussed on two things:
 - Firstly, a framework which delivers for consumers by ensuring their best interests are at the heart of each of our decisions; and
 - Secondly, a framework which supports investment and investors by appropriately managing and compensating for risk, thus supporting our primary objective by allowing consumers to enjoy the benefits of sustainable and efficiently financed investment.
- In order to achieve this we are proposing a regulatory framework which enshrines principles of risk sharing and the right balance of risk and reward in the licence.
- We will also ensure that in exceptional circumstances necessary adjustments can be made to the price control in a manner which provides investors with the necessary confidence to continue to invest in Heathrow.
- This measured flexibility will be essential in ensuring the regulatory framework remains fit for purpose during the challenging times ahead.
- Inclusion of this flexibility and risk management supports a five year price control period which we believe best serves consumers and investors by providing a balanced approach to addressing the current challenges presented by Covid-19.
- We retain the aspects of the Q6 regulatory framework which worked well and develop those which need improvement. In particular, we move towards a system of Outcome Based Regulation to ensure that consumers' needs are fully met and that we can clearly measure our progress towards meeting them.

9.1.1 Introduction

A balanced and stable regulatory framework is key to both ensuring the price control delivers the right outcomes for consumers and navigating out of the current crisis. It keeps downward pressure on the cost of capital by providing Heathrow's investors with confidence in the predictability of the regulatory regime and ensures that the level of risk investors are exposed to is appropriately recognised. As the CAA set out in its CAP1966 document, RAB based regulatory frameworks are "intended to provide investors with a reasonable degree of certainty with respect to the remuneration of investment"¹. It is ensuring this certainty and consistency that ensures that investment can be delivered efficiently and effectively to further the interests of current and future consumers.

For H7, the regulatory framework will also be key to managing the uncertainty which will be inherent in the period. This will require a new and flexible approach, building on the strengths of the current regulatory framework and addressing the key issues which have become apparent over the course of the Covid-19 crisis. An appropriate regulatory framework is essential to lower financing costs, allowing better choices for service and capacity and giving Heathrow the funding it needs to support the airport through this crisis.

¹ CAA, CAP1966, page 26, para 2.7

In addition to ensuring that the regulatory framework itself is fit for purpose, there must be confidence that it will be implemented transparently and consistently by the regulator. Through 2020, confidence among investors that the CAA will do this has diminished, in particular due to the CAA's process for reviewing Heathrow's request for a Covid-related RAB adjustment. This means that we need to ensure the framework itself is clear on the implementation of key mechanisms, such as the ability to review or adjust the price control, to increase investor confidence in the framework and reduce the scope for interpretation of key provisions through the period.

The regulatory framework assumptions set out in our December 2019 IBP were very much based around ensuring the affordable and financeable delivery of an expanded Heathrow over a fifteen-year period. Furthermore, it did not contemplate the current crisis, in which core regulatory principles (such as the ability to earn a return of, and on, the regulated asset base) have stopped functioning. Following the Court of Appeal judgment and the impact of Covid-19 we are now operating in a very different environment, which poses different challenges for Heathrow's regulatory framework. Whilst this does not mean that all of our IBP proposals need to be revised, it does mean that we need to ensure that the regulatory framework is fit for purpose in this new world and is able to meet this new set of challenges brought about by Covid-19.

At this time of unprecedented uncertainty, stability where it can be achieved, is in the best interests of all stakeholders as it promotes transparency and consistency. Our RBP proposals, therefore, build on the successes of the Q6 framework and best practice from other UK regulated sectors and regulatory frameworks at European airports. It has a key focus of ensuring the economical and efficient operation, maintenance, enhancement and development of a two runway Heathrow over a five-year period. This will require us to strike the right balance between both risk and reward and stability and flexibility over the period.

Everything we are proposing is in the CAA's statutory powers to implement. We are confident that, with our proposed changes, the regulatory framework will be able to manage uncertainty by providing much needed predictability and hence further incentivise the efficient and economical management and development of Heathrow through H7.

9.1.2 Changes since the IBP

As a result of the February 2020 Court of Appeal decision to set aside the ANPS, Heathrow and the airline community took the decision to pause work on the Expansion programme. This has meant that the regulatory proposals put forward in our IBP, which were primarily designed to deliver the affordable and financeable delivery of Heathrow Expansion, are not the focus of our plans for the next five years.

Since the IBP the impact of Covid-19 on aviation demand has been devastating. To illustrate how extreme circumstances now are, based on its latest forecast Heathrow is likely to lose over 100m passengers over 2020 and 2021 compared to the forecasts set out at the end of 2019 and experience revenue losses of over £3.1bn. Consequently, the efficacy of Heathrow's regulatory framework has been thrown into sharp focus. Covid-19 has highlighted that Heathrow's regulatory framework and the risk reward balance it creates needs to be reviewed in its entirety. No stakeholder had anticipated the level of volume risk Heathrow is now subject to. The CAA therefore needs to take action to ensure investment can continue to be delivered in the most efficient way for the long-term benefit of consumers, rather than being driven only by short-term financial pressures.

This does not mean that all of the framework will be unsuitable for the H7 period. Indeed, the Q6 framework has many components of proven worth which will be important to retain for the H7 period to ensure a consistent and stable regulatory framework. But there are a number of key components which have been proven to not be fit for purpose including, in particular, the provisions that exist for reopening or adjusting Heathrow's price control.

Additionally, since the publication of the IBP, the CAA has continued to develop its thinking on the framework for the H7 period. Notable updates include (i) updated thinking on capital efficiency incentives, (ii) the design and duration of the price control and (iii) the development of outcomes-based regulation. We try to take these in to account and, where appropriate, reflect these changes in our plans.

Together, these changing circumstances have highlighted new and existing issues which need to be resolved through the regulatory framework for H7. It is also important to note that the CAA has not concluded its work on the H7 framework. Our RBP, therefore, largely sets out the regulatory framework which Heathrow needs for the successful delivery of the commitments in this business plan in this changing and uncertain environment.

9.1.3 Issues to be resolved through the H7 framework

The current circumstances mean that there are a number of issues which will require a different approach for the H7 price control. The over-riding issue which the regulatory framework needs to resolve is how to provide the long-term certainty that consumers, airlines and Heathrow need whilst maintaining some flexibility to respond to changing circumstances. The following are the issues we have identified which flow from this starting point:

- **The consequences of Covid-19 for the aviation sector remain unclear.** While the near-term impact of Covid-19 on passenger demand is quite clear, the longer-term consequences for aviation demand and the market in general are not clear. However, we do know that the industry will be smaller in H7 with much greater volatility. This could change the mix of carriers, number of seats available and fundamentally impact the structure of the aviation market and Heathrow's place and market strength within this changing and competitive market.
- **The current regulatory framework is not properly calibrated to reflect the degree of risk Heathrow faces and the current route to address this unbalance is unclear.** This is an issue that has always existed but has not previously been brought into full focus. Through the Covid-19 crisis, Heathrow has been exposed to full volume risk – for example, passenger numbers dropped by 52% in March, 97% in April and May 2020 and 95% in June 2020. While the Q6 settlement was clear that the price control could be reopened in extreme circumstances², the lack of clarity around this mechanism has led to confusion and a lack of trust in the regulatory framework. The CAA's initial response to Heathrow's request for a Covid-related RAB adjustment and the lack of urgent steps to secure regulatory certainty (even in these extreme circumstances) demonstrates the impact of this lack of clarity.

² CAA, CAP1103, page 242, paragraph 12.114

- **The current circumstances have eroded trust and stability in the regulatory framework.** Just as all other industry stakeholders have faced unprecedented challenges, the CAA has also faced an unprecedented need to change its approach and to act quickly, decisively and responsively. Unfortunately, the H7 price control process has fallen short of what is required in these circumstances, both in terms of regulatory best practice and its Statutory Duties. The process has been long and unwieldy, with decisions on key topic areas such as capital efficiency and the recovery of early costs still outstanding – which poses serious problems for Heathrow in preparing a revised business plan. With less than a year to the start of the H7 period, the CAA has not yet presented a clear and final timeline for the process. Additionally, the CAA has failed to make consistent, transparent and evidence-based decisions through the process. Examples of this include the revised approach taken to reviewing Q6 capital efficiency and its failure to engage with Heathrow’s submission for a Covid-related RAB adjustment in a timely manner. Taken together, these actions undermine investor confidence in the CAA’s process and framework, eroding the key requirement of regulatory consistency and stability which inevitably leads to a higher cost of capital.
- **The H7 period will be characterised by uncertainty in forecasts and operations.** The impact of Covid-19 has led to unprecedented uncertainty in forecasting passenger traffic levels. This, in turn, creates uncertainty on the levels of costs we will incur and the revenues we will receive over H7. Additionally, there will be uncertainty around how the needs of consumers and airlines will evolve through the period and the impact of one-off changes in areas such as Government policy on VAT. These uncertainties can only be addressed with a flexible regulatory framework that can respond agilely to the changing environment and ensure we can continue to be able to respond to consumers’ needs.
- **There is uncertainty surrounding the timeline for the delivery of Expansion.** Following the Court of Appeal decision in February 2020, Heathrow appealed this decision to the Supreme Court. On 16 December, the Supreme Court overturned the February judgment. While we continue to agree that setting the H7 price control on the basis of a two-runway airport is a pragmatic way forward, Heathrow is considering the best way forward for the delivery of expansion and will consult with stakeholders on what happens next. Therefore, we need to ensure that the framework is flexible to adapt to facilitate the delivery of Expansion in future.

9.1.4 Requirements of the regulatory framework for H7 and airline community engagement

Having identified the key issues to be solved, we have developed the key requirements of the regulatory framework for H7. These requirements build on the CAA policy proposals and the feedback gained through Constructive Engagement with the airline community.

For H7, the framework will need to reflect the following key requirements:

- Delivering on the key outcomes that are important for consumers by ensuring that the “range, availability, continuity, cost and quality”³ of airport operation services are furthered throughout H7;
- Enabling further competition between Heathrow and other airports by providing a regime which is flexible enough to allow Heathrow to respond dynamically to the market environment;
- Ensuring that Heathrow can finance its activities, including ensuring investors have certainty about the regulatory framework;
- Ensuring and promoting stability and consistency in line with good regulatory practice and in order to support efficient financing, with lower costs for airlines and ultimately consumers;
- Mitigating the uncertainty inherent in forecasting for the H7 period in order to provide confidence for investors, thereby supporting efficient financing;
- Responding to the realities of a changed aviation market and Heathrow’s position within an increasingly competitive market for airport services; and
- Providing the flexibility to respond to changing circumstances through the period to ensure the regime furthers consumers’ long-term interests, without undermining the need for long-term certainty.

Through the Constructive Engagement (CE) process, we have discussed the H7 regulatory framework at length with the airline community. In these discussions, we agreed that, while it is important that the regulatory framework can respond flexibly to uncertainty, the framework should also prioritise price predictability for airlines. This will allow airlines to plan their business for the H7 period and respond to the changing market conditions accordingly.

A key part of ensuring both price predictability for airlines and certainty for investors will be the retention of a price control period of at least five years. This will provide a clear view for airlines of the expected airport charge whilst at the same time ensuring the conditions of the regulatory settlement and incentives work for investors. We have concluded that a five-year period, or potentially longer, will also be critical to help manage the affordability challenges faced during this expected period of recovery and lower passenger volumes; additional years with higher passenger volumes could help to deliver a significant reduction in the average airport charge throughout H7.

H7 will be a fundamentally uncertain period making passenger numbers and associated costs and revenues difficult to forecast. Retaining a longer regulatory period will provide much needed stability. It is important that the framework allows this unprecedented uncertainty to be managed effectively to ensure the settlement continues to be fit for purpose. To achieve this balance we have structured our framework around a proposed price control adjustment mechanism to provide as much price predictability as possible alongside the current annual charges adjustments which ensure the charge reflects important developments within the period.

Our proposed price control adjustment mechanism introduces a risk sharing mechanism which protects against big deviations from forecast on Heathrow’s revenues. Rather than adjusting for the impact of these deviations in period, which could lead to large changes in charges. Our mechanism proposes using the RAB to smooth the impact of prices across future price control periods to preserve future price predictability and stability. This also recognises the importance placed by airlines on price predictability.

³ Section 1(1) of the Civil Aviation Act 2012

We are also proposing to retain and develop the current annual charges adjustments which ensure that the charge reflects investment and service levels through the period. While this means that there will undoubtedly be some change in the charge on an annual basis versus the forecasts set out in the RBP and, eventually in the CAA’s settlement. It will ensure the charge includes only the capital that has transitioned from Development to Core and makes some adjustments for service quality bonuses. The K factor will also ensure that Heathrow does not earn more or less than the per passenger price cap set out by the CAA.

Alongside the retention of current annual charges adjustments for capital expenditure, service quality bonuses and the correction factor this should help us to ensure that our charges reflect the service levels received by passengers, the level of capital actually invested and allow Heathrow to earn a fair return. Through our updates in 2021 we will continue to review the balance to ensure it meets the needs of the changing picture we are seeing.

Through the CE process, the airline community provided detailed feedback on specific points and questions around the regulatory framework, we have set out our response to these below:

Table 1: Airline feedback through CE

Heathrow’s position at BBU	Airline community feedback through CE ⁴⁵	Heathrow’s response in the RBP (For full details see Table 2)
<p>Price control duration of five years</p>	<p>The airline community hold a baseline position of a standard, five-year price control. However, a shorter H7 may be required due to limitations on passenger forecasting in particular.</p>	<p>In line with the airline baseline position, our central RBP is based on a price control of five years, with sensitivities showing the impact of other price control lengths.</p> <p>Our assessments, set out in more detail in section 9.1.5 show that a price control of five years or longer would be most beneficial to consumers for the H7 period. We recognise the airlines concerns about the limitations of passenger forecasting in this period and have proposed an adjustment mechanism which provides price predictability.</p>

⁴ Heathrow Airline Community, *Airline Community Response to H7 CE, October 2020*, pp.21-22

⁵ Heathrow Airline Community, Annex 13: *Regulatory Framework Airline Community Interim Feedback*, September 2020

Heathrow's position at BBU	Airline community feedback through CE ⁴⁵	Heathrow's response in the RBP (For full details see Table 2)
<p>Trigger event and process for establishing regulatory framework to allow for the delivery of Expansion.</p>	<p>H7 should not have any expansionary elements contained within it. The airline community do not support an expansion 'overlay' within H7.</p>	<p>In line with airline expectations, our proposed framework focuses on delivery of a two runway airport and does not include any expansion elements in the H7 period.</p> <p>However, we continue to believe that a defined process is needed to allow for the future delivery of expansion. This should set out how we establish a regulatory framework for the delivery of expansion when required.</p>
<p>Mechanism adjusting price control in the case that there is a material change in assumptions versus those used to set the price control.</p>	<p>The airline community believe the WACC set for H7 should incorporate all material risks within its assumptions, negating the requirement for a general shipwreck clause or explicit re-opening of the regulatory price control after being set ex-ante.</p> <p>Were any shipwreck clause to be introduced, it needs symmetry to ensure over-achievement is considered.</p>	<p>As discussed through CE and agreed with the CAA, through Section 22 of the Civil Aviation Act the Q6 settlement already includes provision for the CAA to revise the price control in appropriate circumstances.</p> <p>In line with our proposed mechanism to implement the Covid-related RAB adjustment, we propose that, to reduce uncertainty, upfront conditions are set for when the price control can be adjusted in Heathrow's Licence. This will centre around a quantitative revenue trigger.</p>

Heathrow's position at BBU	Airline community feedback through CE ⁴⁵	Heathrow's response in the RBP (For full details see Table 2)
<p>Potential for risk/reward sharing to reflect uncertainty inherent in passenger forecasts for H7.</p>	<p>There may be a need to consider volume risk sharing but this assessment needs to be considered through a number of factors including the length of the period, mechanisms for such and supporting detail including impacts on the WACC.</p> <p>The Airline Community are not considering 'risk sharing' mechanisms beyond passenger volumes.</p> <p>The Airline Community note the importance scenarios would play in establishing confidence in any future 'risk sharing' proposal.</p>	<p>We agree that some form of risk sharing/ adjustment mechanism is required to manage the unprecedented uncertainty in the H7 forecasts. Adequate risk mitigation around these uncertain forecasts will mean that we are able to plan for a longer regulatory period, leading to lower charges and more price predictability for airlines and revenue predictability for shareholders.</p> <p>We have therefore proposed a revenue sharing mechanism, as set out above, consistent with our proposed mechanism for a Covid-related RAB adjustment. This will help to manage uncertainty and ensure the price control remains fit for purpose in the event of large deviations against forecast.</p>
<p>Retention of Development and Core capex framework with potential ex-ante G3 incentives.</p>	<p>Development and Core seems to have advantages, but further discussion required on the capital efficiency incentives.</p>	<p>We agree that the Development and Core framework has advantages, in particular its inbuilt flexibility. For this reason we are proposing to retain it for the H7 period.</p> <p>We also agree with airlines that further discussion is required on ex-ante capital efficiency incentives. We are proposing that, if we and the airline community consider that they are in the long-term interests of consumers, they be implemented for our asset management programme.</p>
<p>RPI RAB indexation for the duration of the settlement.</p>	<p>Indexation is more of a regulatory policy question, but continuation of the existing regime ensures constant depreciation allowance, and accounts for inter-temporal asset use.</p>	<p>Through Constructive Engagement, the CAA confirmed to Heathrow and airlines that RPI indexation would be retained for H7.</p>

Heathrow's position at BBU	Airline community feedback through CE ⁴⁵	Heathrow's response in the RBP (For full details see Table 2)
General opex as per Q6	Agree with Heathrow's approach.	There is agreement between Heathrow and the airline community on this point. We therefore propose to retain the Q6 approach to general operational expenditure.
Pass through of unforeseen and uncontrollable costs outside of Heathrow's control, such as business rates or CAA fees	<p>Business Rates – process already exists so agree it should continue, but as a cost pass through where scrutiny must be allowed before finalising the charge to be passed on. Risk/gain share no longer applicable.</p> <p>CAA Licence Fees – not yet agreed.</p>	<p>We agree with airlines that the current Business Rate mechanism should be expanded to a cost pass through. We also agree that there should be airline scrutiny of the costs. To allow for this, we are proposing that Business Rates be passed through using the ORC mechanism, which already has in-built mechanisms to ensure transparency.</p> <p>Through CE we did not get agreement to pass through CAA Licence fees. We therefore propose to retain CAA Licence fees within general opex.</p>
Pass through of unforeseeable costs brought about by changes in security and safety policies and procedures.	The funding level should remain the same, but the scope of the S-Factor should increase to include Covid-19 costs.	As there is agreement with the airline community, we propose to widen the scope of the S-Factor to include costs related to changes in Health and Safety policy, including those related to Covid-19, with clear definitions set out in the Licence. We agree that the current cumulative deadband and sharing rate should apply.
Commercial revenues as per Q6 with no proposed tramlines outside of general price control adjustment mechanism	No clear airline feedback received.	Outside of the price control adjustment mechanism, which adjusts for revenue performance against forecast, we are not proposing any changes to the treatment of commercial revenues.

Source: Heathrow

9.1.5 Our proposals for the H7 framework

We are clear that the regulatory framework can evolve to address the issues highlighted by Covid-19.

Our proposals for the H7 period continue to be an evolution of the current framework, retaining regulatory stability and avoiding unnecessary change. The key focus of our proposed changes has been to make sure that the framework can also effectively manage the novel issues we will be facing in H7 and ensure that the framework effectively attributes and manages risk and reward through the period. We have sought to achieve this by:

- Including a codified price control adjustment mechanism to manage variances against forecast;
- Retaining a regulatory period length of at least five years;
- Widening the current S-factor definition to include changes in health and safety policy and requirements;
- Restructuring ORCs to better reflect the variable cost of using the services albeit not proposing as many changes as in the IBP;
- Retaining the Development and Core capital investment framework; and
- Evolving our service quality regime to better reflect the outcomes consumers want to see from their airport journey.

The overarching form of Heathrow's regulatory framework is driven by the CAA's January 2014 Market Power Determination.⁶ Our proposals for the framework are therefore based on the assumption that Heathrow will continue to be assessed as having market power through the H7 period, although we note that assumption may no longer hold true. Should circumstances change through 2021 or into the H7 period, this assumption may need to be formally reviewed.

The below sections set out the key basis of our proposed regulatory framework and then review each of our proposed changes in turn, setting out the issue to be addressed through the framework, the proposed solution and commentary on why we think this is the optimal solution for H7, including the outcome of Constructive Engagement discussions on the topic. A summary table is also included below to provide an overview of the proposed framework.

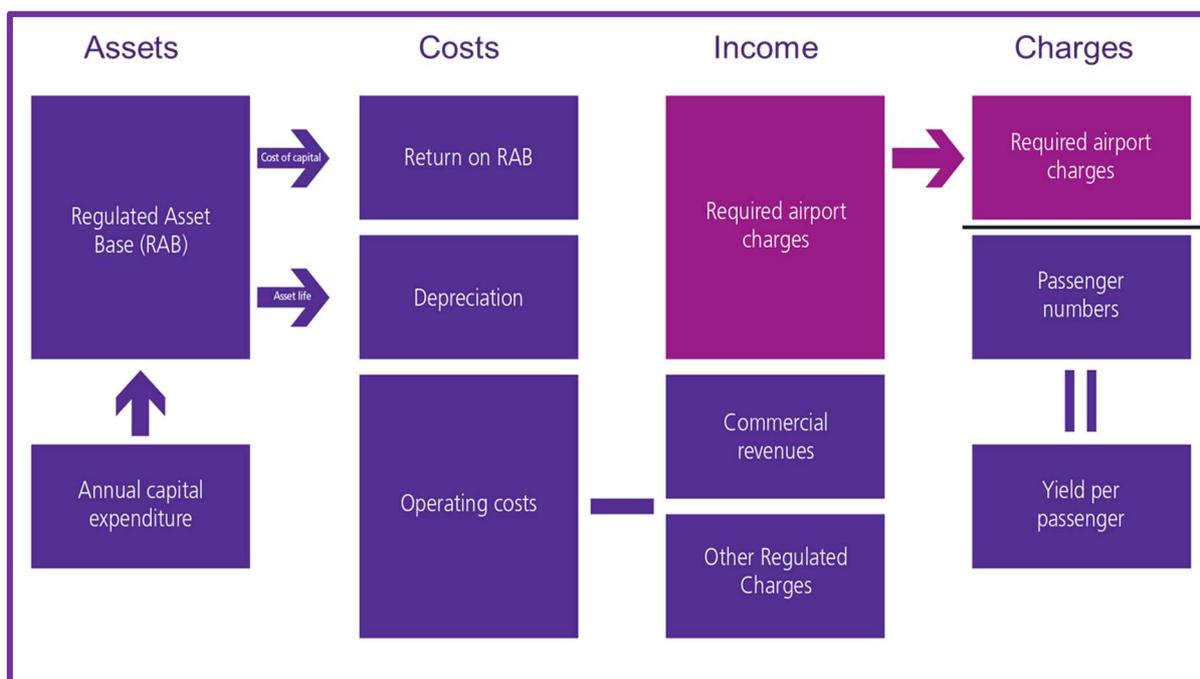
While proposals for WACC, financeability, capital efficiency, outcomes-based regulation and other regulated charges are set out in more detail in the relevant chapters of the RBP, a summary of these proposals is set out below for ease and completeness.

The basis of the H7 regulatory framework

We continue to use the single till regulatory framework as the basis for our proposals in the H7 period. The single till structure means that revenues generated by Heathrow from activities such as retail outlets, provision of food and beverage, property rentals, surface access products and cargo flights all serve to reduce the airport charge levied. The retention of this structure has been agreed with the airlines through CE.

⁶ CAA, *CAP1133 Market Power determination in relation to Heathrow Airport – statement of reasons*, January 2014

Figure 1: The Single till framework



Source: Heathrow

However, as outlined above, the changing nature of the aviation market and Heathrow’s place and market power within it may mean that we have to look again at the underlying structure or regulation. Additionally, Government changes to VAT and an increasing trend towards digital are likely to fundamentally reshape the airport commercial revenue model. When we have more evidence of the impacts of these changes through 2021, it may be relevant to question whether the single till remains appropriate.

Summary of the H7 framework

In order to provide a clear view of our proposed framework, we have followed the structure used in our IBP and set out our proposals for each component of the framework. The below framework underpins the delivery of our RBP. If one of these components is changed, the viability of the plan will need to be reviewed holistically.

Table 2: Summary of the regulatory framework underpinning the RBP

Building Block	Component	H7 Framework	Change from IBP?
Price Control Structure	Price Control Duration	We propose to base the framework on price control duration of at least five years.	Yes <i>Reduction from proposed 15 year period</i>
	Price Control Adjustment Mechanism	In line with our proposed mechanism to implement the Covid-related RAB adjustment. We	Yes <i>New element/ revision to</i>

		<p>propose that upfront conditions are set for when the price control can be adjusted through Heathrow's Licence.</p> <p>We propose an 8% revenue dead band threshold after which Heathrow is entitled to recover 95% of its lost revenues.</p> <p>In order to preserve price predictability, we propose that this revenue sharing be implemented through the RAB.</p> <p>We propose that there should also be a qualitative condition allowing stakeholders to request that the price control be adjusted in the case that there is a major change in assumptions from those on which the price control was based.</p>	<i>existing Q6 provision</i>
	Expansion Framework Trigger	<p>When the decision is taken to commence further work on the delivery of expansion, a process for establishing the regulatory framework for the delivery of expansion is triggered.</p> <p>The starting point for these discussions is the framework proposed in the IBP.</p> <p>Alongside this framework, we will need a clear policy on early expansion spend from the CAA to allow timely development and delivery of an expanded Heathrow.</p>	<p>Yes</p> <p><i>New element</i></p>
Passenger Forecasts	Overall Forecasts	Large deviations against forecast are protected against through our price control adjustment mechanism.	<p>Yes</p> <p><i>New element</i></p>
Capex	Incentives and Framework	<p>Retention of Development and Core framework for capital delivery.</p> <p>Introduction of a 15% ex-ante incentive for spend attributable only</p>	<p>Yes</p> <p><i>Development of our proposals for asset</i></p>

		to the asset management programme. This will allow us to streamline governance and reporting on this category of routine project. Increased benefits tracking and collaboration with airlines.	<i>management and governance</i>
	RAB Indexation	RPI for duration of the settlement as per the Q6 mechanism. This has been confirmed by the CAA through Constructive Engagement.	No
Opex	General Opex	As per Q6.	No
	Costs relating to changes in Security and Safety Policy	Expansion of the current S-factor to adjust for changes to security policy and policy relating to ensuring Heathrow's operations are safe, for example Covid-secure.	Yes <i>New element</i>
	Uncontrollable Costs	Pass through of uncontrollable costs such as business rates through ORCs. CAA licence fees to be subject to a pass through as part of the airport charge.	No
Commercial	General Commercial	Large deviations against forecast are protected against through our price control adjustment mechanism.	Yes <i>New element</i>
	Forecourt Access Charge (FAC)	Revenue included within single till subject to annual pass through against forecast	No
ORC	ORCs	Recategorisation to better reflect ORC decision tree. Removal of fixed costs (allocated costs and annuities) from the ORC recovery mechanism.	Yes <i>Revised categorisation</i>

Service Quality	Incentives	Outcomes based measures and targets replacing SQRB with potential for on-going evolution over the period.	Yes <i>Revised measures</i>
WACC	Cost of Debt	Debt indexation for new debt and defined allowance for embedded debt based on the actual cost of embedded debt.	No
	Cost of Equity	Fixed for duration of H7, including Beta and TMR.	No
	Financial Structure	60/40% Debt to Equity notional fixed to 2026.	No
	Tax	Based on notional structure, updated for corporation tax.	No

Source: Heathrow

Key Proposed Changes

Price Control Duration

Heathrow Proposal: Price control duration of at least five years

We are proposing a change to our IBP regulatory framework proposals, which set out a preference for a price control duration of 15 years. Instead, for H7 in this new market context, we are proposing a price control duration of at least five years. This reflects the need for stability of the regulatory framework for investors and price predictability for airlines.

We agreed with the airline community through Constructive Engagement that we should continue to plan on the basis of a five-year framework and continue to see that a price control of at least five years remains appropriate for the H7 period.

We acknowledge that, more than any previous regulatory period, forecasting for H7 will be inherently uncertain. However, we do not agree that shortening the regulatory period would mitigate these uncertainties in such a way that it provides a better outcome for consumers; in fact, a shorter period is likely to increase forecasting error and risk. Combining these factors with the fact that longer price control periods are preferable for investors has led us to conclude that a minimum five-year term is warranted.

Our view is that a regulatory period of five years, or even longer, combined with a price control adjustment mechanism, would be most beneficial to consumers:

- It would allow Heathrow to smooth the impact of lower passenger numbers on the airport charge over a longer period, leading to a lower average charge than otherwise across the H7 period (see below).

- On aggregate, five years provides protection against large variances between forecast and outturn performance. In the current circumstances, it is likely that the first years of the price control will be the hardest to forecast due to uncertainty about the shape or pace of recovery. This could lead to a higher chance of divergence between forecast and overall outturn in a shorter period, comprised solely of the most unpredictable years, than over a longer time horizon.
- It would also provide investors with a longer-term horizon and increased certainty on which to base investment decisions. This would promote longer-term planning, in turn leading to better outcomes for consumers across the recovery period.

Table 3: Assessment of relative pros and cons of regulatory settlement length

Shorter period (assumed two/three years)	Five-year period
<ul style="list-style-type: none"> ✓ Could mitigate the uncertainty of forecasting for the outer years of the period. ✓ Could help mitigate longer-term out/under performance. ✗ Impacts ability to limit the impact of lower passenger numbers in earlier years and smooth the charge over the period. ✗ Potential distortion of price control incentives due to shorter term time horizon leading to a reduced ability to drive structural change. ✗ Short term forecast likely to be most volatile and could magnify variance against outturn; later years of the period are likely to be easier to forecast / forecasting aggregate numbers over five years will be less volatile. ✗ Business planning assumptions have been made on the basis of a five-year price control, moving away from this risks undermining those assumptions. ✗ Very large regulatory burden, resulting from the commencement of the next round of price control activities shortly after H7 begins – Heathrow will have been in ‘settlement review’ for over 5 years. 	<ul style="list-style-type: none"> ✓ Allows for better smoothing of the charge within the regulatory period to retain a competitive charge over H7. ✓ Ensures efficiency incentives function as planned to promote long-term change and investment. ✓ Creates a longer planning horizon to deliver recovery. ✓ Provides greater certainty and stability for investors with a longer-term view of the framework for recovery. ✗ Forecasting for five years in current uncertainty could increase forecasting risk. ✗ Potentially greater out/under performance due to the longer period.

Source: Heathrow

A key benefit of a longer regulatory period is the opportunity to smooth the impact of lower passenger numbers on the level of the airport charge over a longer period of time. In our RBP, we have set out sensitivities showing the impact of different lengths of regulatory period on the airport charge for H7. This shows that a period of at least 5 years provides the lowest average charge across H7. Given the likely continuing impact of Covid-19 in the earlier years of the period, this will be crucially important for H7.

Table 4: H7 average charge

	2-year period	5-year period	7-year period
H7 Average Charge	£40.29	£29.89	£28.81

Source: Heathrow

Another important benefit of a longer-period is the stability it brings to the airline community, investors and ultimately to consumers. A longer period will provide the airline community with sight of the airport charge over a longer time horizon, allowing them to plan their business accordingly. For investors, a longer period provides much needed regulatory stability which will give them the confidence to invest in the services passengers want and need over a longer time frame as well as providing the right incentives to promote long-term change. For consumers, this all leads to a more stable H7 period with a clear view of the outcomes that can be delivered.

The sensitivities in our plan explored above show that a seven year regulatory framework could provide an opportunity to smooth the charge over a longer period of time and create a lower average charge for the H7 period, and give long term certainty on our plans. However, we are not blind to the uncertainty we will be facing in forecasting for the H7 period. Therefore, while we are willing to engage on a seven-year regulatory period where there is appetite to do so, we have based our central RBP case on a five-year framework.

Price Control Adjustment Mechanism

Heathrow proposal: Upfront conditions are set for when the price control can be adjusted or reviewed through Heathrow's Licence

In order to manage the uncertainty, which we will no doubt be exposed to over the H7 period, we need to make sure that there are clear and measurable conditions for adjusting or reviewing the price control should the price control period vary significantly from the assumptions on which the H7 settlement was based.

In the Q6 settlement, the CAA was clear that the price control could be reopened in appropriate circumstances through Section 22 of CAA12. However, no guidance was given on the mechanics of this process. This has led to unnecessary uncertainty over the iH7 period. This confusion is clear in the CAA's response to Heathrow's request for a Covid-related adjustment to the RAB and the lack of urgent steps to secure regulatory certainty (even in these extreme circumstances) given the extreme impact the Covid-19 crisis has had on Heathrow's regulatory settlement.

For H7, we therefore propose clear conditions are set out for both when and how Heathrow's regulatory settlement should be adjusted. This should be set out clearly as part of Heathrow's Licence, thus allowing all stakeholders to be clear on the conditions of the price control ahead of any such question arising. This proposal addresses the concerns raised by the CAA in its CAP1966 consultation document. As the CAA notes, the regulatory framework is designed to give investors "a reasonable degree of certainty with respect to the remuneration of investment"⁷. This has not been the case following the impact of Covid-19. In CAP1966, the CAA notes that, due to the impact of Covid-19, Heathrow has been unable to cover the costs of the depreciation on its regulatory asset base and, to a material degree, will have no ability

⁷ CAA, CAP1966 Economic regulation of Heathrow Airport Limited: response to its request for a covid-19 related RAB adjustment, page 26, para 2.7

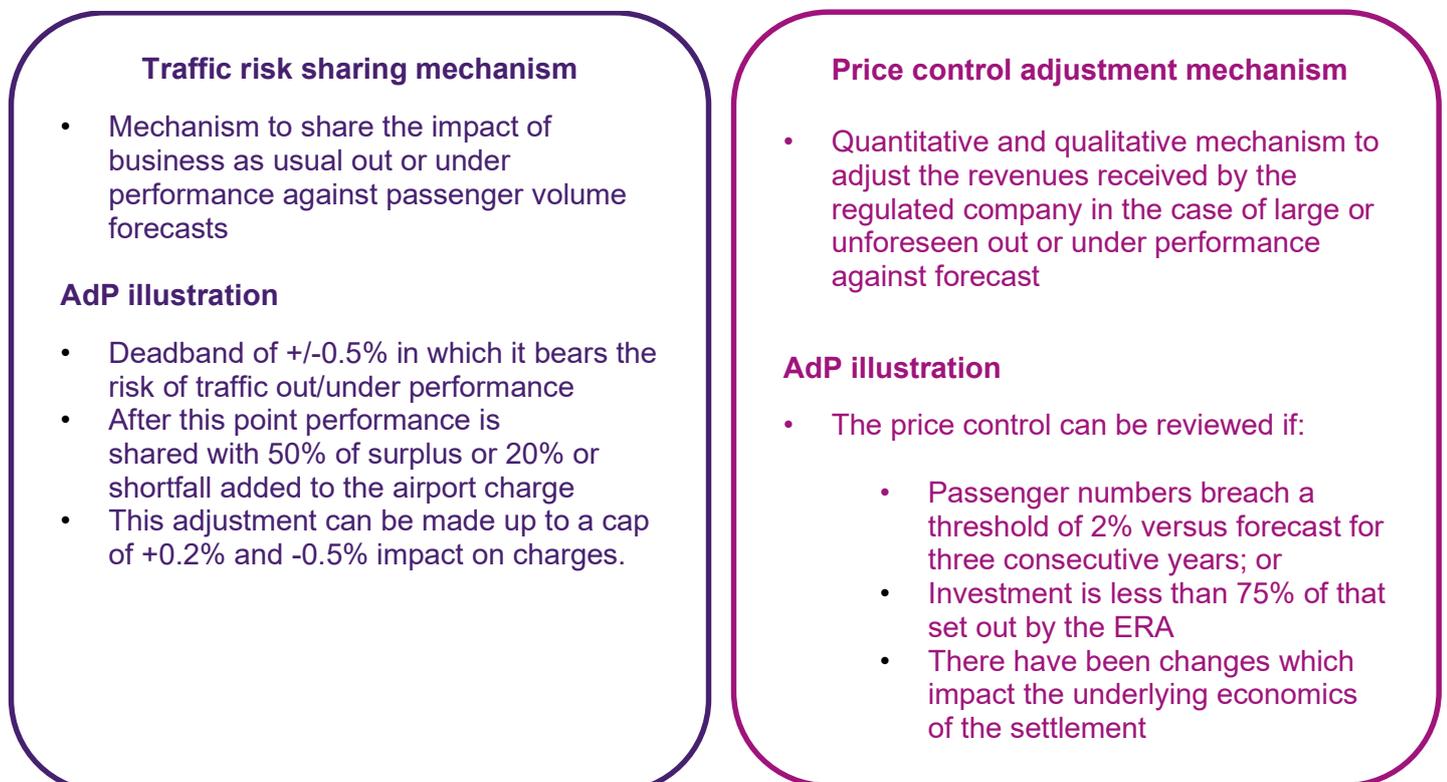
to do so in future. This means that Heathrow’s investors have not got a *reasonable degree of certainty* that their investment will be remunerated. Ensuring conditions are included in Heathrow’s Licence would contribute to this provision of certainty on how their investments will be remunerated in extreme circumstances.

Through Constructive Engagement and further trilateral engagement with the CAA and airline community we have discussed the need for traffic risk sharing and mechanisms to adjust the price control. Through these discussions there was clear consensus that some form of quantitative trigger and sharing of over/under performance around this would be needed to ensure that the unprecedented uncertainty we are facing in forecasting passenger demand can be mitigated.

However, there has also been clear consensus that Heathrow should not be insulated from all passenger demand risk and that any mechanism provides only the level of protection necessary to ensure that the price control remains fit for purpose in the event that there are large deviations between forecast and outturn performance. Another key area of agreement is that any mechanism implemented should not lead to large or frequent changes in price for airlines across the period, which could make it difficult for airlines to plan their business.

Therefore, rather than proposing a basic traffic risk sharing mechanism which can share small performance changes with airlines and could cause price instability across the period, we are proposing to implement a simple price control adjustment mechanism with a quantitative trigger. This approach is in line with our application for a Covid-related RAB adjustment and provides protection should outturn performance diverge significantly from the central forecast used to set the H7 price control.

Figure 2: Traffic risk sharing versus price control adjustment



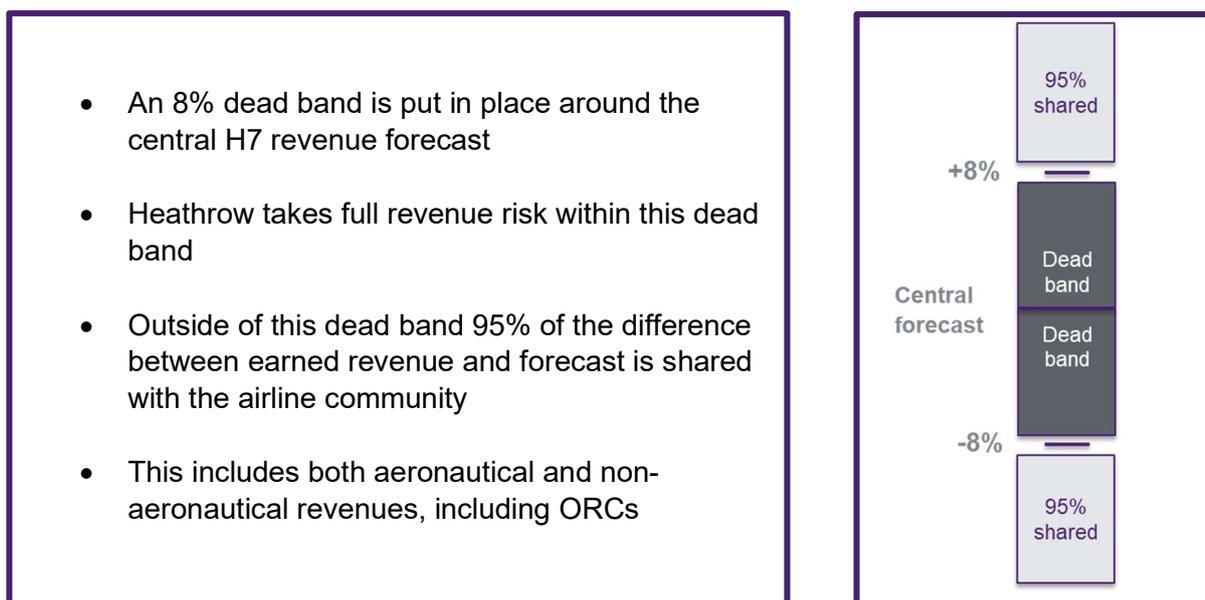
Source: Heathrow

The mechanism we are proposing in the RBP mirrors that put forward in our application to the CAA for a Covid-related RAB adjustment. This mechanism sets an 8% revenue deadband within which Heathrow takes full revenue risk. Outside of this deadband, 95% of the difference between forecast and actual revenues will be recoverable.

The mechanism, deadband level and sharing rate is based on robust benchmarking with other regulated entities, such as NERL, and Heathrow’s competitor airports. The mechanism and associated risk threshold are therefore clearly compatible with the asset beta levels at Heathrow’s comparator airports as used by the CMA for its findings in the NERL appeal. Further information on the analysis of these precedents can be found in Annex 36.

The mechanism would be structured in the following way:

Figure 3: Proposed H7 risk sharing structure



Source: Heathrow

A key benefit of this mechanism is that it retains price predictability and stability for the airline community through the period. This was listed as a key requirement for airlines during CE discussions. The mechanism does this by ensuring that, unlike traditional traffic risk sharing, adjustments are only made for large deviations against forecast which would be considered outside the business as usual risk Heathrow would be expected to bear.

Additionally, we are proposing that the impact of any adjustment is added to Heathrow’s RAB with recovery taking place during the following regulatory period. This will provide greater certainty on the level of airport charges for airlines through the period. It also reduces any in-year impacts, up or down, to the charge from an adjustment by spreading it over time.

We are also proposing to include the under recovery of ORC revenues as part of this mechanism if it is triggered. In all other circumstances the current annual over and under recovery process will apply. This approach will further ensure price stability for airlines by providing a clear and transparent mechanism for recovering these revenues in the case of a major change in passenger volumes.

The mechanism creates a clear process for future recovery of lost revenues due to large, unforeseeable events. This provides transparency for investors about the level of risk they are taking and ensures there is a stable framework on which to base future investment decisions.

We look forward to engaging with the CAA on the detail of the drafting ahead of H7.

Throughout discussions with airlines and the CAA, we have been clear that any risk sharing or adjustment mechanisms should be guided by the uncertainty we are seeing in forecasting for the H7 period. The mechanism set out above is the minimum protection we see as needed going forward in order to ensure that Heathrow's regulatory framework effectively balances risk and reward, and that airlines benefit from knowing that actual performance will not deviate too significantly from the forecast. If, through 2021, it becomes clear that our ability to forecast accurately for H7 is declining, it may be necessary to review whether a traditional risk sharing mechanism with further, smaller, deadbands are required to mitigate uncertainty. We will continue to keep this under review in our updates through 2021.

Alongside our proposed quantitative trigger, we are also proposing that a general review condition be included within the Licence, in line with AdP's mechanism. This will allow Heathrow or the airline community to request that the CAA reviews the current price control in exceptional circumstances which, for whatever reason, are not picked up as part of the quantitative trigger. This would provide more clarity over the process to request a review than is provided in the current framework. However, it is clear following the confusion around the current CAA process that a qualitative condition alone would not provide enough clarity and stability in the framework. Therefore, this will only be effective alongside the clear mechanism proposed above.

Additionally, we stand ready to engage with the airline community on any potential commercial agreements within the deadbands of our proposed mechanism for sharing risk and reward which could enhance our ability to work together to grow traffic through the H7 period. We see this as an additional way to adjust risk around uncertainty over the period in a way that may further align Heathrow's and airlines' interests and incentives.

Expansion framework trigger

Heathrow Proposal: ANPS reinstatement triggers a process for establishing the regulatory framework for the delivery of Expansion

Our proposals for the H7 price control are based on the operation, maintenance and development of a two-runway airport over a five-year period. The framework, therefore, does not include provision for the delivery of Expansion. This approach is in line with the CAA's views as set out in CAP1914 and CAP1940 and is aligned with discussions and agreements following Constructive Engagement.

However, the essential economic and consumer case for Heathrow Expansion remains strong. If demand recovers, Heathrow will again become constrained, reducing choice and increasing fares. Even in a scenario where passenger numbers are not fully recovered to 2019 levels, ATM capacity could be the key trigger for needing Expansion. Our forecasting shows it is possible that ATM capacity could be reached more quickly post-Covid than passenger capacity.

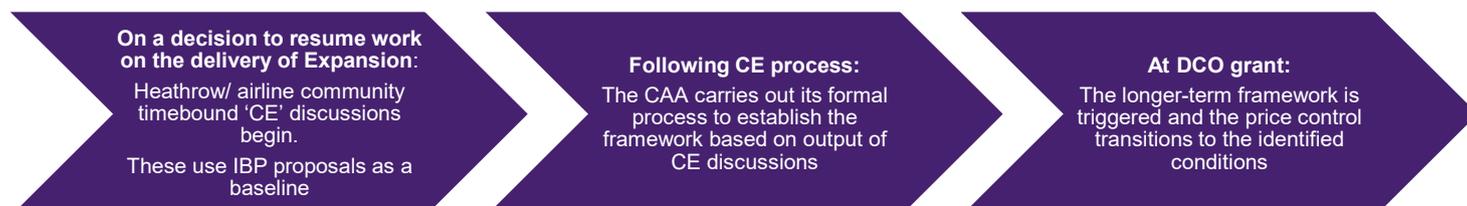
Due to the delay of years between submitting a DCO application and the actual delivery of capacity we should not wait for a fully biting capacity constraint before deciding how to add more Heathrow capacity. We consider it will be in the consumer's interest that Heathrow should be able to submit a DCO as swiftly as possible when required.

The H7 regulatory framework should thus have the flexibility to adapt to deliver Expansion in an automatic, predictable and timely way. In our IBP, we proposed including an event trigger

mechanism to trigger a predefined change in the framework if the circumstances around Expansion changed. This approach is equally valid now in changed circumstances.

We propose the following trigger process:

Figure 4: Proposed process trigger for the development of a regulatory framework to deliver expansion



Source: Heathrow

A process such as this, with a clear, simple and definite policy on early expansion expenditure, allows Heathrow and airlines to focus on establishing a two-runway framework in the short-term while having understood steps to incorporate Expansion within any future price control. We would also aim to avoid the drawn-out uncertainty and debate over regulatory policy for expansion seen in Q6. Setting out a comprehensive framework before substantive work were to resume on expansion would provide all parties with complete clarity on costs, incentives and the way forward. This means Expansion could be delivered in a timely manner when there is a clear enabling policy in place and if market conditions allow, maximising consumer benefit.

In addition, to ensure that the Expansion Programme can be delivered in a timely manner in the interests of consumers, the CAA will need to ensure that there is a clear policy in place for the treatment of early Expansion costs. In any scenario, costs will need to be incurred ahead of the DCO being granted and clear policy will be required on the treatment of these costs to avoid delays to delivery.

Opex - Costs relating to changes in security and safety policy

Heathrow Proposal: Expansion of the current S-factor to adjust for changes to security policy and policy relating to ensuring Heathrow's operations are safe

Heathrow's current price control includes an annual security related adjustment factor referred to as the S-Factor. The current S-Factor within the airport charge allows for adjustments where a change in security standards causes increased or decreased costs to Heathrow during the regulatory period. The mechanism includes a cumulative dead band of £21m after which 90% of the increased or decreased cost is passed through to passengers.

The current S-Factor is narrowly defined around changes to security standards which occur throughout the period:

“the increase or decrease in security costs at the Airport in the relevant Regulatory Period or Regulatory Year which arise as a result of a change in required security standards at the Airport, as certified by the CAA”⁸

For the H7 period, we are proposing to expand the definition of this adjustment to cover changes in health and safety policy and standards to ensure that the framework can manage the uncertainty around unforeseeable changes in operational requirements, for example due to the impact of Covid-19.

In line with the definition of the current mechanism, we do not think it would be appropriate for the mechanism to adjust for non-policy related changes such as increased cleaning due to increased passenger expectations which should continue to sit within the opex incentive structure. Instead, the intention would be for the mechanism to be used when changes to Government policy mandate changes in Heathrow’s operations for health and safety purposes. This could include, but is not limited to, situations such as:

- Requirements for testing at airports;
- Published Government standards regarding cleanliness or cleaning operations;
- Mandated changes in security operations to ensure Heathrow is safe, for example social distancing required for both passengers and colleagues to be Covid-19 secure; or
- Mandated changes in retail operations to ensure a Covid-19 secure environment.

We would like to engage with the CAA to draft the required changes to this condition through 2021.

Opex – Uncontrollable costs

Heathrow Proposal: Pass through of uncontrollable costs such as business rates through ORCs.

The current Q6 framework includes a mechanism within the annual airport charges calculation to adjust for changes between the forecast impact on business rates of the 2017 business rates revaluation and the outturn impact. This mechanism shares 80% of the difference between the forecast revaluation impact and the actual impact through the Q6 period with airlines on an annual basis. Through the period this has meant that airport charges have been reduced, with airlines benefitting from a £35m reduction in 2020 charges alone. It is unclear whether consumers have had that benefit shared with them.

For the H7 period we are proposing to expand this mechanism to reflect all changes against forecast and outturn business rates values using the ORC mechanism. This means removing business rates, which weren’t already recovered as ORCs, from airport charges and treating them as an ORC. This will allow us to ensure that the charges levied reflect the actual rates bill and that Heathrow is not able to either make windfall gains on favourable changes to the rates bill nor be exposed to risk it is not best placed to manage should the rates bill increase.

The ORC mechanism provides a framework to facilitate collaboration and transparency on the costs of services provided to airlines. Through CE we have also discussed with the airlines that an annual business rates review with the airline community would be beneficial. At this review point Heathrow and the airlines could assess the action taken to secure the best possible rates bill and verify this ahead of the annual setting of ORCs. The ORC mechanism would provide the right forums and governance to undertake this activity and allow Heathrow

⁸ Heathrow Airport Limited Licence granted under the Civil Aviation Act 2012

and the airline community to collaborate and ensure that the rates bill is as efficient as possible.

This proposal has precedent in other UK regulated sectors where it has been determined that it would not be appropriate for regulated entities to take risk on costs which they cannot control.

Figure 5: Treatment of Business Rates and Licence Fees in other sectors

ORR and Network Rail

- In CP5, ORR took the decision not to expose Network Rail to variances in the ORR safety levy and licence fee, as these costs are not controllable by Network Rail.
- Variances between forecast and outturn are logged up/ down at the end of the period.
- For business rates, the CP5 framework included an ex-ante forecast of business rates. However, this is logged up/down as required through the period through Network Rail's OPEX memorandum account.
- If it is shown that Network Rail negotiated revaluations efficiently, then the change in costs will be reflected in its revenue requirement.

Ofgem and RIIO-2

- As part of their provisions for managing uncertainty, Ofgem has decided to use pass-through mechanisms for both Ofgem licence fees and business rates for the RIIO-2 determination.
- The pass-through mechanism was implemented as part of the first RIIO determination due to:
 - Potential business rate revaluations, where companies have the ability to influence revaluations to a certain extent, therefore helping to drive efficiency.
 - Costs being out of the control of a Distribution Network Operator (DNO)

Commercial Revenues – Forecourt access charge (FAC)

Heathrow Proposal: Revenue within single till subject to annual pass-through against forecast

Chapter 7.4 outlines our proposal for the introduction of an forecourt access-based user charge in H7. This constitutes a new source of revenue for Heathrow in the period and therefore, it is important that the regulatory framework is able to incorporate this income stream.

The extensive consumer research which Heathrow has undertaken to understand the level of impact the introduction of a forecourt access charge could have at the airport is described in Chapter 7.4.

The CAA has also set guidance on how revenue for access charging could be used by Heathrow:

“Direct charges from one mode of surface access may be used to offset the costs of another, particularly where this would support measures to encourage modal shift from car to public transport which may be required

for the efficient operation of the airport and /or to support obtaining planning permission for airport expansion.”⁹

We have taken into account this policy guidance, the competing views of our stakeholders and the requirements to ensure the charge can be both implemented effectively and in a manner that protects consumers. We have therefore proceeded for the purposes of the RBP with including revenue from FAC in the single till and have proposed an annual pass-through of the road user charge revenues, relative to forecast as part of our regulatory framework. Detailed work will be completed between now and implementation to assess the charge level, scope and timing.

We have concluded on this approach in the RBP as it was judged to be most appropriate at this stage because it:

- Allows for revenues from the charge to subsidise our investment in surface access initiatives through the single till as set out in the CAA’s surface access policy.
- Results in any revenue from the charge, over and above that used to fund surface access initiatives, will be used to reduce the airport charge for the benefit of all passengers. Consequently, should revenues from the vehicle access charge not be included within the single till, this will have a material impact on the level of the overall airport charge, raising the level of the charge.
- Ensures that Heathrow has the flexibility to vary the charge to influence consumer behaviours and prevents Heathrow from being incentivised to hold the charge at a level that is unnecessary to influence behaviours.
- Does not expose Heathrow to risk that is not recognised in the proposed cost of capital for the period.

Further details of the FAC scheme are contained with Chapter 7.4.

Other Regulated Charges (ORC)

Heathrow Proposal: Recategorisation to better reflect ORC decision tree. Removal of fixed costs (allocated costs and annuities) from the ORC recovery mechanism.

The Other Regulated Charges mechanism allows Heathrow to charge airlines and other customers for the cost of providing services which:

- Are only provided by Heathrow;
- Are not directly linked to passenger numbers; and
- The usage can be measured and charged through a metric other than passenger numbers.

The mechanism for recovering ORCs is designed to be a robust and transparent process through which Heathrow and users can collaborate to drive efficiencies, incentivise efficient use of scarce capacity and increase service levels.

Through the Q6 process Heathrow and the airline community agreed a list of principles to define the cost items recovered through the ORC mechanism. These are:

- Heathrow is the sole provider of the service

⁹ Civil Aviation Authority, *CAP1847 Economic regulation of Heathrow Airport Limited: an update on the CAA surface access policy*, October 2019, page 20

- The service is necessary for airport users to fulfil their passenger proposition;
- The usage of the service varies between airport users, so a unit rate based on the user pays principle is appropriate;
- The driver of service usage is not purely related to passenger numbers;
- The usage volume can be measured; and
- Areas where Heathrow and the airlines can work together to drive efficiencies.

Throughout Q6, the ORC mechanism has proved to be successful in fostering collaboration and innovation and has led to a number of improvements and efficiencies. We are therefore proposing to retain the mechanism for H7. However, a number of issues and areas for improvement have also become apparent, principally:

- The ORC mechanism can disincentivise the use of sustainable alternatives, such as preconditioned air (PCA);
- The mechanism does not always incentivise better service where this is important to consumers; and
- The current treatment of over and under recovery against forecast is not suitable for large demand shocks.

For H7, we are therefore proposing to make a number of changes to ORCs to rectify these issues:

- Moving to a marginal cost approach where only the direct cost of the service is recovered through ORCs and annuities and allocated costs for services used by airlines and recovered through the ORC mechanism are moved to the airport charges;
- Adjustment for the over and under recovery of remaining ORC charges as part of the price control adjustment mechanism in the event of large changes in demand; and
- The recategorisation of some ORCs into the airport charge to reflect that they do not fit with the principles developed in Q6.

Further detail on the proposed changes is set out in chapter 9.4.

Service Quality

Heathrow Proposal: Outcomes based measures and targets replacing SQRB with potential for on-going evolution over the period.

For H7, the CAA has turned its focus to embedding outcomes-based regulation as part of Heathrow's regulatory framework. We are therefore proposing to align our approach to service quality to this outcomes-based focus.

Throughout the process of preparing our business plan for the H7 period we have stepped up our engagement with both current and potential future Heathrow passengers. This has allowed us to build on our existing knowledge base and understand the key outcomes that consumers want Heathrow to deliver. We have aligned both our plan and our proposed service quality regime around these outcomes.

Figure 6: Heathrow's consumer outcomes



Source: Heathrow

In order to ensure we are delivering these outcomes and measure our process against achieving them, we have made the fundamental change of aligning the service quality measures and incentives included in our regulatory framework to the delivery of these outcomes. This will ensure we are focused on delivering the right outcomes for the consumer, rather than focusing solely on the smaller input measures which are the focus of the Q6 service quality regime.

A passenger's airport experience is influenced by service provided by a number of different parties. However, through our engagement with consumers, we know that they are not aware of who provides the service they experience at different points of their airport journey. To ensure sufficient focus on the delivery of these key outcomes through all stages of the passenger journey, we are proposing to include measures of service quality for services which are not solely within Heathrow's control as reputational measures within our framework. This is in line with the policy set out by the CAA in CAP1540.¹⁰

This approach builds on best practice observed in other leading airports such as Copenhagen and Hong Kong. We are hoping that this will continue to encourage and further improve collaboration within Team Heathrow and ensure that the delivery of outcomes for consumers remains the key focus.

For measures fully within Heathrow's control we are proposing to retain financial rebates and bonuses. Following discussion with the airlines through CE, we are proposing to retain the current downside of 7% for the H7 period. In order to reflect regulatory precedent and best practice, reflect consumer value of service improvements and incentivise the best possible service for consumers we are proposing to increase the potential bonus levels with bonuses available for all measures where service above expected levels is provided. While this increases Heathrow's potential to earn a bonus in H7, our unit rate mechanism reflecting that

¹⁰ CAA, CAP1540, page 22, paragraph 2.11

consumers value each unit of performance means that our upside and downside exposure is not symmetrical.

We have reviewed the structure of the incentive mechanism and are proposing a move toward a sliding scale mechanism for rebates through H7. This prevents the perverse incentive currently present in the Q6 regime which means that, when Heathrow has not met the target there is little or no incentive to improve performance for the remainder of the month as the full rebate is automatically payable. Every unit of performance should count and so an increasingly larger rebate should be paid as performance worsens up to the maximum threshold.

We are also proposing to move forward with the proposals set out in our IBP to include a continuous improvement mechanism within our service quality framework. Currently, while the Licence includes a self-modification provision through which Heathrow and the airlines can modify service quality measure through the period, it does not include a process setting out how this can be implemented. We are proposing a process to address this, which will allow us to ensure that the service quality framework continues to reflect changing consumer needs through the period. We propose that this is an annual review process, managed through our Operations Board, through which Heathrow and the airline community can review the current measures and targets and decide whether these should be removed, amended or evolved due to changing consumer needs evidenced by consumer engagement.

If Heathrow and airline community are not able to agree on a proposed change that any party makes, then we propose the decision be will escalated to the CAA Consumer Panel to decide whether they believe that enough consumer evidence has been provided in order to justify the change being made to the scheme. Challenges to the CAA Consumer Panel would need to be resolved by the end of Q4 in each year so any changes could be implemented where possible in time for reporting in January the following year.

9.1.6 Next steps

Our RBP is based on the framework and balance of incentives set out above. Any changes to this framework will necessitate changes to our plans or forecasts.

We remain open to engage on our proposals through the H7 process and into the price control. This engagement will allow us to ensure that the regulatory framework is fit for purpose and can successfully manage the challenges of the H7 period.

Additionally, there are a number of policy areas on which the CAA has yet to set out its final views. We will review these developments through 2021 and update our plans and forecasts accordingly to ensure the framework provides the right consistent and transparent basis for the delivery of an economical and efficient Heathrow through H7.

9.2 – MEASURES, TARGETS AND INCENTIVES

Chapter Overview

- Heathrow has made significant progress through Q6 and currently delivers a world class level of service to passengers.
- As set out in our Consumer Insights and Passenger Experience chapters, while the high-level consumer needs which drive our outcomes have not changed, the impact of Covid-19 has changed their expectations. How we deliver on these outcomes will also need to change.
- In order to measure our delivery against these outcomes and priorities, we are proposing to evolve our current Service Quality Rebates and Bonuses (SQRB) scheme to include measures which cover the whole passenger journey. This includes measures that Heathrow contributes to but requires collaboration from other parts of the airport community to deliver.
- While the CAA has previously acknowledged that a degradation in service levels may be inevitable without regulatory support, our consumer insight demonstrates that this outcome is directly contrary to the interests of consumers. We know through our Willingness to Pay (WTP) and passenger prioritisation research that consumers value improvements in some areas of service and are willing to pay for these. Our H7 Choices Research showed that 67% of users preferred plans which offered targeted improvements in service and in the WTP research only 2% of passengers were willing to accept a reduction in service in return for fares decreasing slightly. As we have set out elsewhere in our plan, we are compelled to deliver what consumers value in order to do our part to hasten recovery: an outcome which is indisputably necessary to meet the CAA's statutory objectives.
- However, given the impact of Covid-19 on our financial position, we will not be able to make large scale improvements to all of these service areas. Our focus will therefore be maintaining our current, world class service levels by maintaining investment in the areas that continue to be important for consumers and making targeted improvements in punctuality, baggage and passenger experience.
- We believe that the levels of capital and operational expenditure in our plan, based on the implementing the proposed Covid related RAB adjustment, will allow us to do this.
- Our service level targets for the period are calibrated against the delivery of this £3.5bn capital plan and our forecast operational expenditure. We would have to take any alternative scenario with different spend into account in setting target levels.
- We are also proposing to ensure measures and incentives remain relevant throughout the settlement period by updating them regularly, and not waiting for a five-year reset.

9.2.1 Introduction

In this chapter we set out how we have translated the insights gained from our engagement directly with consumers, consumer groups and the airport community into a set of consumer-focused measures, targets and incentives to be implemented in H7. Our focus for H7

continues to be to design a performance framework that has quantifiable, achievable and controllable elements that ensures consumer outcomes are at the centre of our plans.

Heathrow is incentivised in two primary ways: 1) through commercial incentives; and 2) through the regulatory regime, currently implemented via the Service Quality Rebates and Bonuses Scheme (SQRB). While this chapter focuses on the implementation of the second of these factors it is necessary to keep in mind the important role that commercial incentives play throughout.

Heathrow is strongly commercially incentivised to deliver great service to consumers, and these incentives arise through commercial pressure, not solely as a result of regulatory intervention. Commercial incentives are multi-faceted as we face competition from other airports for both airlines and passengers and our retail offering faces competition from a broad range of alternatives. This strong competitive environment means that Heathrow is already incentivised to provide excellent service to ensure consumers choose to fly from here. Further, our airline partners benefit from us all working together to deliver these high levels of service for consumers and our interests are therefore aligned in this regard.

The impact of Covid-19 has changed the nature of aviation demand and the aviation market in the UK and Europe. This has served to both further sharpen these commercial incentives and heighten some consumer priorities. It has also had a severe impact on our financial position and, therefore, our ability to invest. This puts pressure on our ability to continue to deliver our current world leading service standards and makes materially improving service in line with consumer WTP valuations almost impossible.

For this reason, our proposed consumer measures, targets and incentives should be viewed in the wider context of the H7 operating environment. Whilst our focus remains strongly on ensuring we deliver against our consumer outcomes it is clear that we cannot expect the same measures to apply in H7 as they did in Q6. This is because both the operating environment and some of the drivers of satisfaction which will impact our ability to deliver these outcomes have changed.

The service standards we can provide are dependent on a wide range of variables, most notably the size of our capital envelope and our allowance for operating expenditure. The targets set out in this chapter are therefore closely linked to the forecasts set out in other areas of our plan and should not be adjusted without considering the impact elsewhere. If we are unable to make the targeted investments set out in our plan or if the additional operational expenditure for service and Covid-19 related spend is not granted, we cannot commit to meeting the targets set out below. This is discussed further in our Outcomes chapter.

Additionally, we are proposing to evolve the current SQRB scheme to ensure it is more fully and clearly linked to consumer outcomes and our golden thread of insight. The Q6 SQRB regime focused on a narrow set of measures where Heathrow directly delivered on the input rather than the outcome for the service as perceived and valued by the consumer.

We have seen examples from other airports, like Copenhagen and Hong Kong, of a shared set of consumer outcome focused measures across the whole airport. In those cases, the airport community collectively moved more quickly to deliver improvements to consumers' end-to-end journey.

Heathrow has also considered the CAA's guidance regarding the move towards outcome-based regulation and has taken onboard the CAA and Consumer Challenge Board's feedback

on our proposed set of measures that were published as part of our Initial Business Plan in December 2019.¹

As a result of that feedback, we have undertaken further direct engagement with consumers² to understand their views on how to measure performance and demonstrate how Heathrow and the airport community had managed to meet each of their desired outcomes. This has strengthened the ‘golden thread’ between consumer insight, each consumer outcome and the measures that will demonstrate how we are meeting consumer needs in H7.

Our revised proposal represents a fundamental change for H7 by ensuring that we are structuring the measures around consumer outcomes across their entire end to end journey. We propose to apply a wider approach by retaining measures for activity that sit within Heathrow’s direct control with financial incentives (financial measures) and complement them with wider measures (reputational measures) which Heathrow contributes to but which require close collaboration and support from other parts of the airport community, in order to deliver the service levels that consumers expect, e.g. Bag Misconnect Rate.

The remainder of this chapter provides the detail on the following:

- The package of measures we propose for H7 regulatory incentives;
- The targets we propose for each measure; and
- The incentives we propose around each target

9.2.2 Measures

The Q6 SQRB regime has been in place during a period where Heathrow’s service levels have significantly improved. Therefore, we have responded to the CAA and airlines’ desire to build on the existing SQRB. However, we also recognise that consumers’ high-level needs go beyond that which Heathrow has sole responsibility for.

“As long as I get an answer, it doesn’t really matter who is at fault. When you’re in the middle of your trip, you don’t have time to care...you just want to get to your destination.”³

Our consumer insight has also shown that there has been a change in consumer priorities following the impact of Covid-19. This puts cleanliness, reassurance, ease and value for money higher up consumers’ priorities than at the time of IBP publication. Our proposed H7 measures include focus on measuring our delivery of these key priorities.

We must work closely and collaboratively with airlines and the wider airport community to deliver the right outcomes for consumers, and our plan and measures should reflect this broader scope.

We have aligned our proposed measures closely to consumer outcomes (see Chapter 2.3 – Insights), that have been informed by a wide range of evidence from our consumer

¹ CCB, *The H7 Consumer Challenge Board Report on the Heathrow Airport Limited Initial Business Plan*, https://www.caa.co.uk/uploadedFiles/CAA/Content/Accordion/Standard_Content/Consumers/20200226%20CCB%20Report%20on%20IBP_REDACTED_20200521.pdf

² Blue Marble Research, *Consumer Outcomes – Future Measures*: September 2020

³ Populus *Resilience Qualitative Research*, October 2019

engagement programme including Passenger Synthesis⁴, Cost Benefit Analysis⁵ (CBA), Willingness to Pay (WTP)⁶, Passenger Priorities Research⁷ and our engagement with airlines.

We have balanced comprehensiveness with complexity and the practical ability to measure outputs required for any measures scheme. We have included measures that are easy to understand and action, following best practice in setting goals by using SMART criteria: **Specific, Measurable, Achievable, Realistic, Timely**.

For H7 we are proposing a comprehensive package of 36 measures, each of which clearly links back to our extensive consumer engagement programme and the consumer outcomes that represent what really matters to consumers across the end-to-end journey.

9.2.2.1 Approach

Since Heathrow's IBP and taking onboard the feedback from the CAA and Consumer Challenge Board⁸ we have continued to develop our thinking, focused on ensuring that our proposed set of measures align to the high level outcomes that consumers are looking for and can allow us to communicate our performance in delivering against these outcomes in a consumer friendly way. The stages of this work are set out below.

Further exploratory consumer engagement⁹

We engaged directly with consumers through our future measures work package to investigate the measures which consumers believed should be used to evaluate performance against each proposed outcome. The purpose of this work was to:

- Understand what mattered to them when travelling to, from and through an airport;
- Generate a set of measures which represent 'success' from a consumer perspective for each consumer outcome;
- Understand how other consumer outcome focussed organisations measure their performance; and
- Recommend how Heathrow could go about collecting data for each measure.

The key finding from this consumer engagement was that the types of measures consumers are looking for can be categorised into three different levels:

- **Overarching Measures:** linked to multiple, or all, consumer outcomes and can allow comparisons with other sectors and businesses;
- **Core Measures:** encompass all or a significant part of an individual consumer outcome; and
- **Diagnostic Measures:** related to a narrow specific aspect or sub theme of an individual consumers outcome.

Other key findings were that:

- Consumers expect both Operational and Attitudinal measures will be used to ensure the correct outcomes are delivered;

⁴ Blue Marble Research, *Consumer Outcomes – Future Measures*: September 2020

⁵ ICS, *Developing the Cost Benefit Analysis Framework - Parts 1, 2 & 3*, July 2019

⁶ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

⁷ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

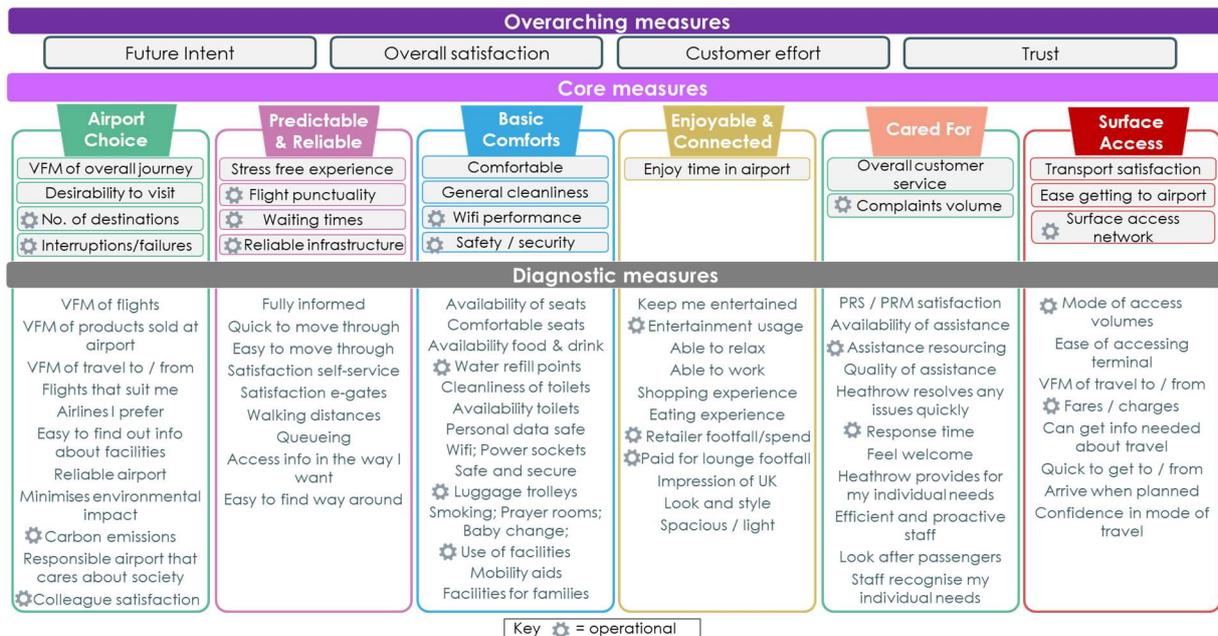
⁸ CAA, *CAP1940 Economic regulation of Heathrow: policy update and consultation*, 2020

⁹Blue Marble Research, *Consumer Outcomes – Future Measures*, September 2020

- The status of measures may change over time, e.g. some might become increasingly important to all consumers and move from being diagnostic to core measures (e.g. Cleanliness); and
- It is equally possible that measures will become less important, e.g. the roll out of 5G may decrease the importance of available Wi-Fi.

This piece of consumer engagement recommended that the measures that mattered most to consumers from their end to end journey were as described in Figure 1.

Figure 1: Consumer Engagement Measures



Source: Blue Marble Research, Consumer Outcomes – Future Measures, September 2020

We then took these findings and used them as the foundation for our revised set of measures by:

- **Cross checking with consumer insight** – We started by reviewing all the proposed Measures from the consumer engagement against all our other sources of consumer engagement.
- **Reviewing against Q6 SQRB** - We overlaid the existing suite of SQRB measures and were able to find a clear link between most of the existing measures and the expected measures from the consumer engagement.
- **Developing ‘Overarching and Core Measures’** – We looked at each measure and categorised it into Overarching, Core and Diagnostic. In terms of which measures had the greatest impact in understanding whether Heathrow and the airport community are delivering on the consumer outcomes during H7. We then concentrated on the Overarching and Core Measures in terms of the ones that would have the greatest impact in delivering the end benefit to the consumers as part of the measurement framework.
- **Reviewing with expert knowledge** – We captured the views of internal subject matter experts on proposed measures to ensure that operational integrity is not compromised.
- **Reviewed with Airport Community** – We then wanted to get the expert knowledge from the airline communities into this proposal as part of Constructive Engagement.

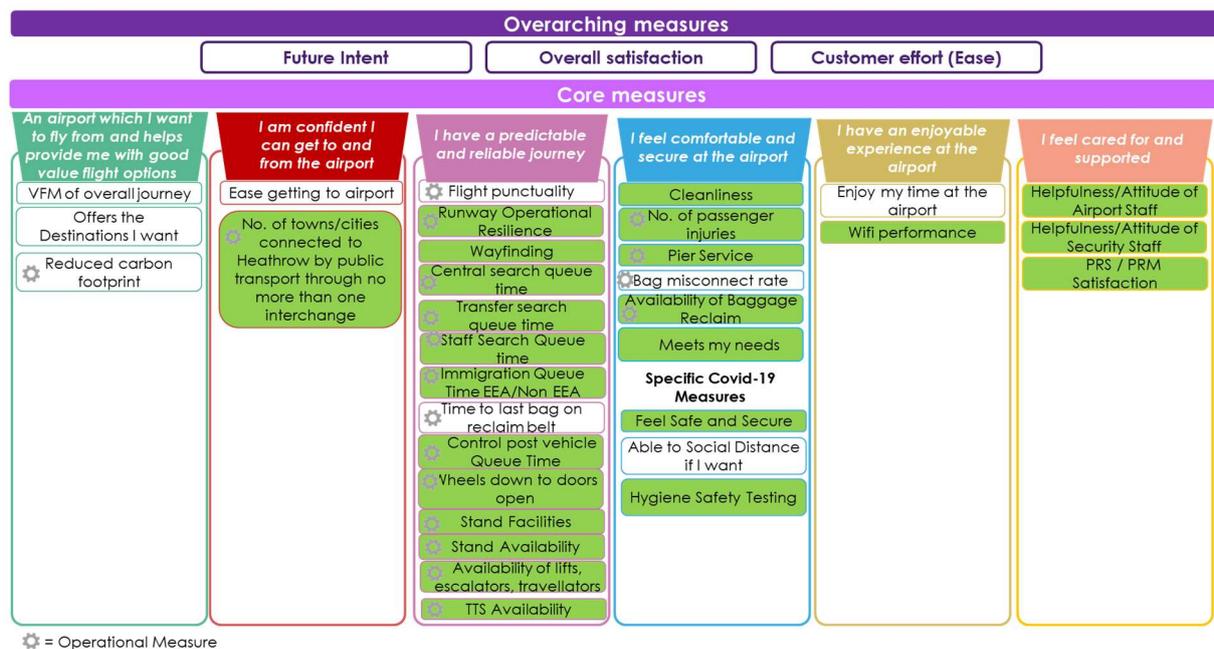
9.2.2.2 Airport Community Engagement

We used Constructive Engagement to incorporate the Airline Community view into the development of the measures by:

- Leveraging combined knowledge to ensure those parts of the airport journey that consumers are not directly aware of but are vital to meet consumers' desired outcomes were reflected, e.g. pre-conditioned air and fixed electrical ground power.
- Agreeing that as consumers are the ultimate beneficiary, we should map all outcome-based measures to consumer outcomes rather than have some mapped against a separate airline outcome as originally set out in the IBP.
- Agreeing to remove a few of the proposed consumer measures as we jointly felt we were not currently in a position to effectively measure or drive meaningful actions from them, e.g., trust and volume of complaints.
- Putting in place reviews throughout the regulatory period to ensure that what we are measuring remains important to consumers.

Constructive Engagement consisted of nine weeks of intensive engagement with the airline community. By the end of the Constructive Engagement process, we had jointly agreed on 24 of Heathrow's final 36 proposed measures; these are highlighted in green below.¹⁰¹¹¹²

Figure 2: Agreed consumer measures



Source: Heathrow

The main area of continued disagreement was around the interpretation and inclusion of reputational measures where Heathrow plays a coordinating role across the airport community in delivering the consumer outcome.

¹⁰ Constructive Engagement meetings and Heathrow Airline Community, *Airline Community Response to H7 CE*, October 2020, pp.7-10

¹¹ Heathrow Airline Community, Annex 6: *Proposed H7 Consumer Measures*, October 2020

¹² Heathrow Airline Community, Annex 7: *Measures Targets and Incentives - Additional Questions and Responses*, October 2020

The airline community does not agree it is appropriate for measures that are not within Heathrow's direct control to form part of an outcome-based framework that sits within Heathrow Airport Limited's overall regulatory model. They are happy for these measures to be used when discussing performance in other joint forums away from regulation.

As set out earlier, Heathrow believes that if we are going to fully deliver against each consumer outcome it is important that we include both measures that are within Heathrow's direct control and also those where Heathrow coordinates activity across the whole airport community. This will ensure that everyone across the airport community is focused on delivering for the consumer and that we increase the likelihood that we are able to meet the outcome the consumer desires. To achieve these consumer outcomes, we believe that it is important that we have one place where we measure, action and review how we are progressing in meeting them across the whole airport community.

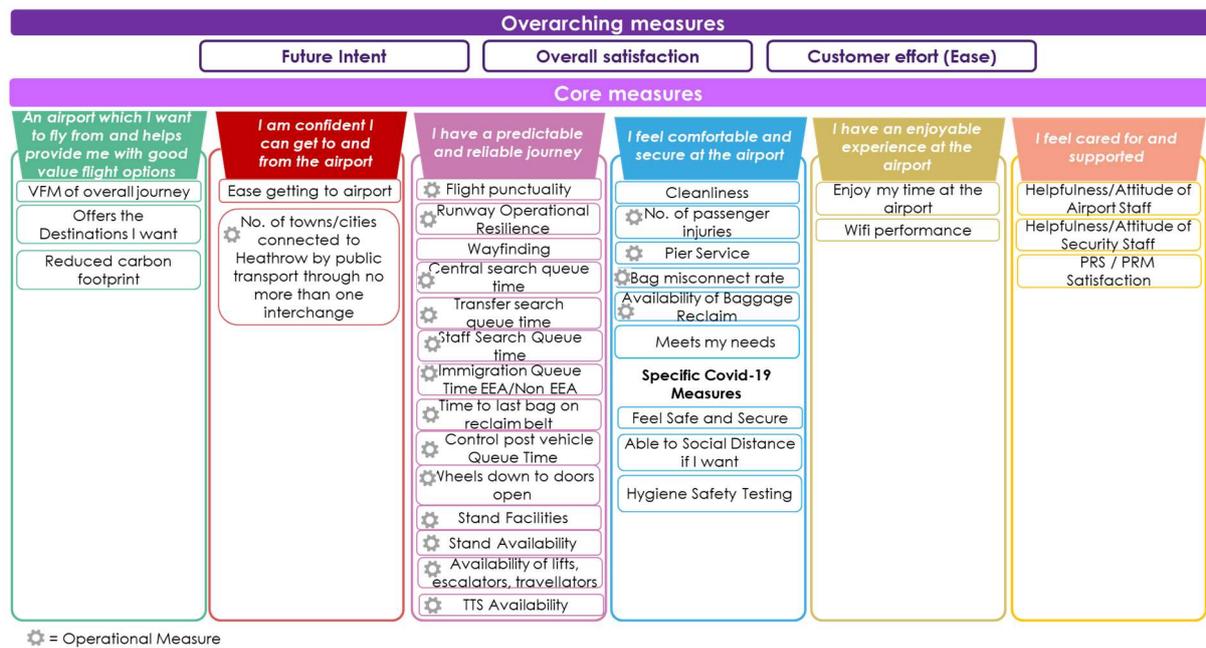
As part of Constructive Engagement, we ideally wanted to gain further consumer insight from the airline community particularly around consumers views on travelling following Covid-19, but unfortunately due to limited availability of Insights staff from the airline community preceding and during Constructive Engagement, the airport community was unable to provide consumer insight evidence for us to consider. This has meant that we have had to rely on the 39-consumer insight reports we have gathered since Covid-19 through our own engagement or publicly available sources.

9.2.2.3 Overview of Consumer Outcome Based Measures

A summary of the proposed measures is set out in Figure 3. This proposal is a clear development from our position in the IBP. It ensures that we have created a strong link back to our consumer outcomes and the aspects of the passenger journey that means most to consumers.

We are committed to continuously updating and improving how we measure service quality throughout the regulatory period. Rather than waiting for the next five-year price control review, having discussed this as part of constructive engagement we believe it would be more progressive to review, update and flex measures on an annual basis where the consumer evidence shows that consumer needs have evolved. This will ensure that our service quality regime continues to monitor and report on the key elements of service which are most important to consumers. It will also allow us to adapt to changing circumstances and the unprecedented uncertainty we are seeing as a result of Covid which will extend into the H7 period. More information on our proposed process for this is set out in Section 9.2.5 and in Chapter 9.1 – Regulatory Framework.

Figure 3: H7 measures against each consumer outcome



Source: Heathrow

As put forward in the initial business plan, this proposal removes the following Q6 SQRB measures :

- **‘Priority Passenger Sensitive Equipment (PSE)’** is now a subset of the newly renamed ‘lifts, escalators, travellers’ measure; we consider it to no longer be appropriate to distinguish priority from ‘non-priority’ equipment as consumers do not view it in this way.
- **‘Flight Information Display Screens (FIDS)’ availability** has been removed because it no longer reflects the different ways consumers source flight information and the impact of digital channels and airline apps. In order to capture the outcome that consumers were looking for we have a new measure of an ‘airport that meets my needs’.
- **Departure Lounge Seat Availability** has been broadened to capture a wider consumer metric of ‘airport that meets my needs’. Consumers told us¹³ it was not the number of seats that they cared about, rather they cared about an airport having a range of different facilities and amenities across their end to end journey to suit their needs. Departure Lounge seating is simply a small sub element of what they expect in this space.

We also propose changing the definition of four existing SQRB measures:

- **Control Post Queuing:** a single measure of performance will be calculated by averaging all vehicle queue times captured which better meets the SMART criteria by making it a more specific measure and means it can be more easily actioned.
- **Aerodrome Congestion Term:** has been renamed Runway Operational Resilience.
- **Passenger Sensitive Equipment General:** has been renamed Lifts, Escalators & Travellers and as explained above is merged with Priority Passenger Sensitive Equipment.

¹³ Caroline Thompson Associates, *Willingness to Pay Qualitative Research Findings*, November 2017

- **Availability of Stand Entry Guidance System, Pre-Conditioned Air, Fixed Electrical Ground Power and Jetty Availability:** have been combined together into a single new measure called 'Provision of Stand Facilities'.

In summary this means Heathrow is proposing making the following changes to the current Q6 SQRB set of measures:

Table 1: Heathrow's proposed changes to the current Q6 SQRB set of measures

Consumer Outcome	Measure	Retained Measure from Q6 SQRB	New Measure for H7	Measure removed from Q6 SQRB
Overarching Measure	Overall Satisfaction		✓	
Overarching Measure	Customer Effort (Ease)		✓	
Overarching Measure	Future Intent to use Heathrow		✓	
Airport Choice	Value for money of Overall Journey		✓	
Airport Choice	Offers flights that I want		✓	
Airport Choice	Reducing Heathrow's Carbon Footprint		✓	
Getting to and from Heathrow	Ease of access to the airport		✓	
Getting to and from Heathrow	No. of towns/cities connected to Heathrow by public transport through no more than one interchange		✓	
Predictable and Reliable	Departures flight punctuality - % flights depart off stand within 15 mins		✓	
Predictable and Reliable	Runway operational resilience	✓		
Predictable and Reliable	Wheels down to doors open		✓	
Predictable and Reliable	Provision of stand facilities	✓		
Predictable and Reliable	Stand Availability	✓		
Predictable and Reliable	Wayfinding	✓		

Consumer Outcome	Measure	Retained Measure from Q6 SQRB	New Measure for H7	Measure removed from Q6 SQRB
Predictable and Reliable	Central search queue time	✓		
Predictable and Reliable	Transfer search queue time	✓		
Predictable and Reliable	Staff search queue time	✓		
Predictable and Reliable	Immigration Queue Time EEA/Non-EEA		✓	
Predictable and Reliable	Control post vehicle Queue Time	✓		
Predictable and Reliable	Time to last bag on reclaim belt	✓		
Predictable and Reliable	Availability of lifts, escalators, travellers (renamed from PSE)		✓	
Predictable and Reliable	Priority Passenger Sensitive Equipment			✓
Predictable and Reliable	Terminal 5 Track Transit System (TTS)	✓		
Basic Comforts	Cleanliness	✓		
Basic Comforts	Hygiene Safety Testing		✓	
Basic Comforts	Number of passenger injuries per 1,000,000 passengers (excl. ill health)		✓	
Basic Comforts	Pier service	✓		
Basic Comforts	Baggage Misconnect Rate		✓	
Basic Comforts	Baggage System Reclaim Availability	✓		

Consumer Outcome	Measure	Retained Measure from Q6 SQRB	New Measure for H7	Measure removed from Q6 SQRB
Basic Comforts	Flight Information Display Screens			✓
Basic Comforts	Departure Lounge Seat Availability			✓
Basic Comforts	An Airport that meets my needs		✓	
Basic Comforts	Feeling safe and secure		✓	
Basic Comforts	Being able to social distance if I want to		✓	
Enjoyable and Connected	Enjoy my time at the Airport		✓	
Enjoyable and Connected	Wi-Fi Performance	✓		
Cared For	Helpfulness/Attitude of airport staff		✓	
Cared For	Helpfulness/Attitude of security staff		✓	
Cared For	Passengers with Reduced Mobility (PRM/PRS) satisfaction		✓	

Source: Heathrow

9.2.2.3 Proposed Measures by each Consumer Outcome

Overarching Measures

We have identified three overarching measures that will show how we are performing in meeting multiple outcomes.

a. Overall Satisfaction

This is an attitudinal measure. It shows how satisfied current passengers have been with the service that Heathrow and the airport community has provided and whether we have collectively managed to meet all their needs during the journey they have taken through the airport¹⁴. This will be measured and reported monthly on a Moving

¹⁴ Blue Marble Research, *Consumer Outcomes – Future Measures*: September 2020

Annual Average (MAA) basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

b. Customer Effort (Ease)

This is an attitudinal measure. The consumer synthesis¹⁵ has shown that having an easy journey through an airport is the fundamental basic element of how satisfied current passengers are and if they would decide to use that airport again in the future. This means Heathrow and the whole airport community should focus on delivering. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

c. Future Intent to use Heathrow

This is an attitudinal measure. If an airport is successfully understanding and meeting the needs of their consumers, they need to have consumers who intend to fly from them in the future¹⁶. This will be measured and reported quarterly through a combination of Heathrow trackers of customer satisfaction (Departures and Arrivals QSM) for current passengers and our Quarterly Brand tracker for Potential Passengers.

“An airport which I want to fly from and helps provide me with good value flight options”

a. Value for money of Overall Journey

This is an attitudinal measure. Perceived value for money to the consumer of their overall journey comes out as the top driver when deciding which airport to fly from¹⁷ and overall ticket price comes out on top in terms of airline choice¹⁸. This means that it is important that Heathrow and the airport community understand consumers perceptions of value for money and how this compares to other airports. This will be measured and reported quarterly through Heathrow’s Brand tracker of Current and Potential Passengers.

b. Offers flights that I want

This is an attitudinal measure. Offering the destination that consumers want to fly to is one of top 3 key drivers over which airport a consumer chooses to fly from¹⁹. It is important that Heathrow and the airport community work together in order to offer the range of flights that consumers expect so that we can jointly recover and then continue to grow. This will be measured and reported quarterly through Heathrow’s Brand tracker of Current and Potential Passengers.

c. Reducing Heathrow's Carbon Footprint

This is an operational measure. Reducing the carbon impact of aviation is something that is becoming increasingly important to consumers²⁰ and looks to have the potential to have a greater impact on consumers decision making over airport usage in the future. It is Heathrow’s responsibility to coordinate across the airport community to

¹⁵ Blue Marble Research, *Consumer needs synthesis*, November 2020

¹⁶ Blue Marble, *Consumer Outcomes – Future Measures: September 2020*,

¹⁷ The Numbers Lab, *Heathrow Brand Tracker Q2 2020 Report*, 2020

¹⁸ IATA, *Global Passenger Survey*, 2015

¹⁹ The Numbers Lab, *Heathrow Brand Tracker Q3 2020 Report*, 2020

²⁰ Incite Kin + Carta, *Understanding the sustainability landscape in 2020 and future initiatives for Heathrow*, September 2020

work collaboratively at reducing the impacts from carbon. This measure will look at reducing the level of CO₂ from departing flights at Heathrow per passenger kilometre. We will do this for departing flights, following international standards, to avoid double-counting with other airports' and countries' emissions. This will be reported annually.

“I am confident I can get to and from the airport”

a. Ease of access to the airport

This is an attitudinal measure. From our consumer evidence we know that ease of getting to the airport is one of the top three reasons for direct passengers choosing which airport they decide to fly from.²¹ Concentrating on this metric will mean that consumers receive a better end to end experience and it will help Heathrow and the airport community to attract new passengers to the airport. This will be measured and reported quarterly on a MAA basis through Heathrow's tracker of surface access customer satisfaction.

b. No. of towns/cities connected to Heathrow by public transport through no more than one interchange

This is an operational measure. One of the key elements of making the journey to Heathrow easier for consumers is by giving them more options about how they can get to the airport²². With improved public transport access to Heathrow it will help the airport to attract new passengers to fly from the airport in future as well as help to reduce carbon emissions. This measure will be reported on an annual basis.

“I have a predictable and reliable journey”

a. Departures flight punctuality - % flights depart off stand within 15 mins

This is an operational measure. Punctuality of flights is something that consumers continue to tell us is fundamentally important when travelling²³. It is Heathrow's responsibility to coordinate the airport community in order to deliver the levels of punctuality that consumers expect. This will be reported monthly on a MAA basis.

b. Runway operational resilience (was previously called Aerodrome Congestion)

This is an operational measure. This measure looks at the variance in actual versus estimated air traffic movements due to material events. A material event is characterised as a failure on the part of Heathrow Airport, NATS or one of Heathrow's respective agents or contractors. It is not any external event having an influence on the operational performance of the runways, rather it is an event caused by Heathrow Airport, or one of its respective agents or contractors. This will be reported on a monthly basis.

c. Wheels down to doors open

This is an operational measure. Once a plane touches down at Heathrow consumers want to disembark as quickly as possible and continue on their journey²⁴. It is

²¹ The Numbers Lab, *Heathrow Brand Tracker Q2 2020 Report*, 2020

²² IPSOS, *Heathrow Surface Access Insight Summary*, 2019

²³ Accent, *H7 Service Package Choices Follow up Research*, October 2020

²⁴ Caroline Thompson and Associates, *What matters to passengers - Qualitative research findings*, 2017

Heathrow's and the airport community's responsibility to ensure that this is achieved as efficiently as possible. This new measure will track how the airport community is working together to minimise the time from touchdown to doors being opened. This will be reported on a monthly basis.

d. Provision of stand facilities

This is an operational measure covering the overall combined availability of Stand Entry Guidance, Pre-conditioned Air, Fixed Electrical Ground Power & Jetties. Once a consumer reaches their departure gate, they want to receive a punctual departure and comfort journey on their plane²⁵. It is Heathrow's responsibility to ensure that the equipment and assets are available to help enable to airport community to deliver this for the consumer. This measure will be reported monthly and will be the average availability of Stand Entry Guidance, Pre-conditioned Air, Fixed Electrical Ground Power & Jetties.

e. Stand Availability

This is an operational measure. It is essential to enable punctuality on arrivals and departures that consumers are looking for²⁶. It is important that Heathrow provides the airport community with working stands to park their aircraft at. This measure will be reported monthly and is the percentage of time that stands are serviceable and available for use, independent of any other element.

f. Wayfinding

This is an attitudinal measure. The ability of consumers to navigate through the airport is critical to ensure they arrive at their aircraft on time and can efficiently leave the airport once they land²⁷. Wayfinding is a key driver of both Departures and Arrivals Satisfaction, so it is Heathrow's responsibility to make this clear and intuitive for consumers to follow. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

g. Central search queue time

This is an operational measure. Consumers see security as one of the most stressful parts of their departures journey²⁸. Consumers are looking for security to deliver four key things; get me through efficiently, keep me safe, make me feel cared for and keep me informed about what I need to do.²⁹ This measure ensures Heathrow moves consumers through security quickly and will show the percentage of queue times measured once every 15 minutes that are less than 5 minutes and less than 10 minutes, between 05:00 to 22:30. It will be reported on a monthly basis

h. Transfer search queue time

This is an operational measure. Similar to central search queue times, security experience is a key driver for connecting passenger overall satisfaction with their airport experience³⁰. This measure ensures Heathrow moves consumers quickly through security and will show the percentage of queue times measured once every

²⁵ IATA, *Global Passenger Survey*, 2015

²⁶ Accent, *H7 Service Package Choices Follow up Research*, October 2020

²⁷ ACI, *Guidelines for Passenger Services at European Airports*, 2011

²⁸ KPMG, *Overview - Passenger centric journeys - Approach and Findings*, 2016

²⁹ Heathrow/Join the Dots, *Customer Needs in Security*, 2020

³⁰ Heathrow, *2018 KDA_Departure_Arrivals_Connections*, 2018

15 minutes that are less than 10 minutes, between 05:00 to 22:30. It will be reported on a monthly basis.

i. Staff search queue time

This is an operational measure. Targeting predictable queue times for colleagues is required in order to give consumers the predictable and reliable journey they are looking for.³¹ It is important that airport community colleagues are able to efficiently get Airside in order to maintain punctuality. This measure concentrates on Heathrow moving staff through security quickly and will show the percentage of queue times measured once every 15 minutes that are less than 10 minutes, between 05:00 to 22:30. It will be reported on a monthly basis.

j. Immigration Queue Time EEA/Non-EEA

This is an operational measure. A key driver of consumers' overall arrivals experience is the experience they have at immigration³² particularly in relation to the time it takes. We know that this is one area that consumers are looking to see improvements³³. Even though Immigration is run and managed by Border Force it is Heathrow's role to coordinate across the airport community in order to help deliver for consumers. This measure will be reported monthly and is the percentage of queue times measured once every 15 minutes that are less than 45 minutes for Non-EEA passengers and less than 25 minutes for EEA. The period for which this is measured is 05:00 to 22:30

k. Control post vehicle queue time

This is an operational measure. Predictable journeys for airfield vehicles is required in order to give consumers the predictable and reliable journey they are looking for.³⁴ It is important that airport community colleagues and their equipment are able to efficiently get Airside in order to maintain punctuality. This measure will be reported monthly and looks at the average queue time across all vehicles queue times captured.

l. Time to last bag on reclaim belt

This is an operational measure. When a consumer arrives on a flight at Heathrow their key focus is getting through arrivals quickly.³⁵ Consumer do not want a long wait to reclaim their bags. To deliver this Heathrow and the airport community must collaborate to drive improvements. This measure will be reported monthly and looks at the average time it has taken for the last bag to be delivered to a reclaim belt based on aircraft size (small, medium and large).

m. Availability of lifts, escalators, travellators (renamed from PSE)

This is an operational measure. It is required to give consumers the predictable and reliable journey they are looking for.³⁶ It is important that Heathrow maintains the different lifts, escalators and travellators that assist consumer in having a smooth journey. If these are not available, it leads to delays in the passenger journey which can impact punctuality and satisfaction. This measure will be reported monthly and looks at percentage of time lifts, escalators and travellators are serviceable and available for use, independent of any other element.

³¹ Blue Marble Research, *Consumer Outcomes – Future Measures*, September 2020

³² Heathrow, Heathrow, *2018 KDA_Departure_Arrivals_Connections*, 2018

³³ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

³⁴ Blue Marble Research, *Consumer Outcomes – Future Measures*, September 2020

³⁵ Join the Dots, *Horizon Report Arrivals*, 2018

³⁶ Blue Marble Research, *Consumer Outcomes – Future Measures*, September 2020

n. Terminal 5 Track Transit System (TTS) Availability 1 and 2 trains

This is an operational measure. It is required to give consumers the predictable and reliable journey they are looking for.³⁷ It is important that Heathrow maintains the track transit system in T5 to ensure consumers reach the satellite buildings in a timely manner. If this is not available, it leads to delays in the passenger journey which can impact punctuality and satisfaction. This measure will be reported monthly and looks at percentage of time the track transit system has one and separately two cars serviceable and available for use, independent of any other element.

“I feel comfortable and secure at the airport”

a. Cleanliness

This is an attitudinal measure. Cleanliness has always been a key driver of consumer overall satisfaction with their airport experience³⁸ but since Covid-19 it has come under a greater spotlight, thus moving up consumers priority list³⁹. It is Heathrow's responsibility to ensure that the airport remains clean and safe for consumers to use. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

b. Hygiene Safety Testing

This is an operational measure. Cleanliness has always been a key driver of consumer overall satisfaction with their airport experience⁴⁰ but since Covid-19 it has come under a greater spotlight, thus moving up consumers priority list⁴¹. In order to encourage consumer to travel again it is important that we build confidence by ensuring that Heathrow keeps airport surfaces Covid-19 safe. This will be measured based on Heathrow resolving Amber test results within 24 hours and Red Test results within 4 hours

c. Number of passenger injuries per 1,000,000 passengers (excl. ill health)

This is an operational measure. Consumers have a fundamental expectation that they will be kept safe at all times while travelling⁴² and so this underpins everything else that Heathrow and the whole airport community does. This measure looks at the number of passengers that are injured while travelling through Heathrow and will reported on monthly on a MAA basis per 1,000,000 passengers.

d. Pier service – % passengers accessing pier served stand (excl. T5)

This is an operational measure. It is required as consumers prefer to be able to walk onto their plane directly from a terminal building, compared with being exposed to the elements or bussed to their plane.⁴³ It is Heathrow's responsibility to ensure that we plan and maintain the pier to enable consumers to be provided pier service. This will

³⁷ Blue Marble Research, *Consumer Outcomes – Future Measures*, September 2020

³⁸ Heathrow, *Heathrow, 2018 KDA_Departure_Arrivals_Connections*, 2018

³⁹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁴⁰ Heathrow, *2018 KDA_Departure_Arrivals_Connections*, 2018

⁴¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁴² Truth Consulting, *DNA Integrated Analysis: The way forward*, May 2017

⁴³ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

be measured and reported monthly on a MAA basis of % passengers accessing a pier served stand.

e. Baggage Misconnect Rate

This is an operational measure. Consumers see that it is important that their bags with their belongings in reaches their destination at the same time as they do⁴⁴. Heathrow needs to coordinate across the airport community to ensure that everyone collaborates together in order to meet this basic expectation. This will be measured monthly on a MAA basis and represents the number of bags that depart Heathrow on the correct flight and is made up of airline/handler and Heathrow performance.

f. Baggage System Availability – arrivals carousel

This is an operational measure. It is required because consumers want to be safely reunited with their baggage as soon as possible so they can smoothly continue on their journey⁴⁵. It is Heathrow's responsibility to make sure that we provide the airport community with a working baggage system to enable this. This is measured by the percentage of time the system is serviceable and available for use, independent of any other element. Performance will be reported monthly.

g. An airport that meets my needs

This is an attitudinal measure. Consumers say they want an airport that is able to understand and meet their individual needs in terms of both physical and emotional needs.⁴⁶ Consumers view this as covering the provision of places to sit, relax, rest and wait as well as provision of food and drink.⁴⁷ It is Heathrow's responsibility to coordinate across the airport community to ensure that we are collectively deliver the products and services that meet this expectation. This will be measured and reported monthly on a MAA basis through Heathrow tracker of customer satisfaction (Departures QSM).

h. Feeling safe and secure

This is an attitudinal measure. Consumers have a fundamental expectation that they will feel that they are been kept safe and secure at all times while travelling⁴⁸. Delivering this underpins everything else that Heathrow and the whole airport community does. With Covid-19 consumers have become more anxious about flying⁴⁹ and so the feeling of being safe and secure has become more elevated in consumer minds⁵⁰. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

i. Being able to social distance if I want to

This is an attitudinal measure. Consumers are more anxious about the risks of catching Covid-19 while travelling by air given the need to be in close proximity of other people⁵¹. Even though it is very difficult to follow strict social distancing guidelines at all points in the airport journey, in particular on the plane itself where distancing is not possible, it is important to minimise anxiety levels by ensuring that Heathrow coordinates across

⁴⁴ Accent, *H7 Service Package Choices Research*, November 2019

⁴⁵ Join the Dots, *Horizon Report Arrivals*, 2018

⁴⁶ Blue Marble Research, *Consumer needs synthesis*, November 2020,

⁴⁷ Blue Marble Research, *Consumer Outcomes – Future Measures*: September 2020,

⁴⁸ Truth Consulting, *DNA Integrated Analysis: The way forward*, May 2017

⁴⁹ Join the Dots, *Passenger priorities post COVID 19*, June 2020

⁵⁰ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁵¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

the airport community to give consumers the opportunity to keep safe and follow the national guidelines. This measure will only remain in place during H7 for as long as national social distancing guidelines remain in place. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

“I have an enjoyable experience at the airport”

a. Enjoying my time at the airport

This is an attitudinal measure. Once consumers have had their basic comforts met, they are then looking for other experiences to enhance their levels of enjoyment and prevent them from becoming bored and dissatisfied with their experience.⁵² It is Heathrow’s role to coordinate across the airport community in order to deliver an experience that consumers enjoy. This will be measured and reported monthly on a MAA basis through Heathrow tracker of customer satisfaction (Departures QSM).

b. Wi-Fi performance

This is an attitudinal measure. Consumer expectations over the availability and speed of internet connection in public spaces has increased in importance overtime⁵³. Heathrow is responsible for making sure that we deliver a reliable and fast Wi-Fi service for consumers to use. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

I feel cared for and supported

a. Helpfulness/Attitude of airport staff

This is an attitudinal measure. Consumers do not distinguish between which company someone at the airport works for, if they require help along their journey then they expect that anyone working at the airport will be able to assist them⁵⁴. It is Heathrow’s role to coordinate across the whole airport community to ensure that any staff at Heathrow are able to provide consumers with the help and support that they need. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures and Arrivals QSM).

b. Helpfulness/Attitude of security staff

This is an attitudinal measure. Consumers see security as one of the most stressful stages of their departures journey⁵⁵. Heathrow’s security staff play a key role in reassuring consumers and making them feel cared for.⁵⁶ This measure ensures that as well as processing consumers quickly that Security staff are also providing good customer service. This will be measured and reported monthly on a MAA basis through Heathrow trackers of customer satisfaction (Departures QSM).

⁵² Truth Consulting, *DNA Integrated Analysis: The way forward*, May 2017

⁵³ Truth Consulting, *DNA Integrated Analysis: The way forward*, May 2017

⁵⁴ Populus, *Resilience Qualitative Research*, October 2019

⁵⁵ KPMG, *Overview - Passenger centric journeys - Approach and Findings*, 2016

⁵⁶ Heathrow/Join the Dots, *Customer Needs in Security*, 2020

c. Passengers with Reduced Mobility (PRM/PRS) satisfaction

This is an attitudinal measure. Some consumers require additional support when travelling through an airport⁵⁷. If Heathrow and the airport community are able to design and deliver an experience that provides for this segment of passengers it will have a halo effect on the experience that all consumers have when using the airport. This will be measured and reported monthly on a MAA basis through Heathrow tracker of Special Assistance customer satisfaction (SPA QSM).

Since the Initial Business Plan additional potential measures have emerged, either as part of recent consumer engagement⁵⁸ or from the airport community through constructive engagement.

Having considered each of these suggested measures against our SMART criteria, we have decided not to take them forward for the following reasons:

Table 2: Unused measures and reason

Performance Measure	Why it didn't make the shortlist
Trust	This is a difficult measure to track and develop action plans against so through constructive engagement we agreed with the airport community that it should be excluded for the start of H7 and reviewed if a suitable way of tracking could be developed in the future
Net Promoter Score	This was considered as a potential overarching measure, particularly as it can provide a link to other sectors. But when investigated with consumers they didn't relate to the idea of recommending an airport to friends and family and so were unable to answer the question in a meaningful way that could drive specific actions
Value for Money of the Passenger Service Charge	Consumers have limited awareness of the Passenger Service Charge ⁵⁹ . When we investigated this with consumers ⁶⁰ the outcome they were after was the value for money of their overall journey of which the cost of the PSC was seen as an input measure. As a result, this has been excluded from the proposed measures.
Airborne hold time	Heathrow does not have sufficient level of influence or control on this measure as this is largely influenced by NATS and airlines. External factors affecting this measure are the London Terminal Manoeuvring Area controlled by NATS and the on-time arrivals performance of airlines.
Infrastructure to support social distancing	Even through these could be useful input measures, human beings don't tend to behaviour rationally and tend not to use spaces efficiently. The outcome that consumers

⁵⁷ Revealing Reality, *Understanding the Airport Needs of Passengers Requiring Support*, October 2020

⁵⁸ Blue Marble Research, *Consumer Outcomes – Future Measures*: September 2020

⁵⁹ Accent, *H7 Service Package Choices Research*, November 2019

⁶⁰ Blue Marble Research, *Consumer Outcomes – Future Measures*: September 2020

	are looking for is a sense of feeling safe and secure while at the airport and having the opportunity to social distance if they want. As a result, we feel these two measures captured the outcome consumers were after and could be actioned.
Availability of Departures Baggage System	This cannot be measured. Additionally, depending on baggage volumes some areas of the system may not be in operation or 'available' to ensure efficient operations. This presents the opportunity to undertake activities including maintenance and reduces utility costs which ultimately gives a commercial benefit to the airlines and consumers through the other regulated charges framework. The outcome that passengers are looking for is the assurance of travelling with their bags. Recording this information would not reflect delivery against this outcome.
Availability of Transfers Baggage System	This cannot be measured. Additionally, depending on baggage volumes some areas of the system may not be in operation or 'available' to ensure efficient operations. This presents the opportunity to undertake activities including maintenance and reduces utility costs which ultimately gives a commercial benefit to the airlines and consumers through the other regulated charges framework. The outcome that passengers are looking for is the assurance of travelling with their bags. Recording this information would not reflect delivery against this outcome.
Availability of Check-in, Bag drop and Self-Service Check-in	This cannot be measured. Additionally, depending on baggage volumes some areas of the system may not be in operation or 'available' to ensure efficient operations. The outcome that passengers are looking for is the assurance of travelling with their bags. Recording this information would not reflect delivery against this outcome.

Source: Heathrow

A number of the measures that are being proposed to monitor how we are performing against each consumer outcome are ones that Heathrow does not routinely capture. It will therefore be necessary for us to collect a sufficient amount of baseline data in order to be able to set an informed target that is achievable over the course of H7. During 2021, and for some measures the first half of 2022, we will collect the required baseline data that will enable a target to be set, with these targets in place no later than Q3 2022. For the start of H7 they will be reported for monitoring purposes only. When we have sufficient baseline data, we will engage with the airlines through 2022 in order to set targets for the period.

The new measures where we need to collect a sufficient baseline are:

- Customer Effort (Ease)
- Future Intent to use Heathrow
- Wheels down to doors open
- An airport that meets my needs
- Being able to social distance if I want to

- Enjoying my time at the airport
- Helpfulness/Attitude of airport staff

9.2.3 Targets

Having defined the measures, we will then need to set targets. As we have made clear throughout our plan, H7 will be a period of unprecedented uncertainty for Heathrow, airlines and consumers alike. The impact of Covid-19 means that we will not have the financial resources to materially shift our service levels through H7. In fact, due to our current service levels being world leading, even maintaining these will be a challenge under our current plan.

84% of consumers rated their experience at Heathrow as either 'Excellent' or 'Very Good' between April '19 – March '20⁶¹ which has significantly improved since 2006, where it was only 41% of consumers. This shows that, in the main Heathrow is already delivering the experience that consumers expect.

In line with regulatory best practice, seen in particular in the recent PR19 price control review for water, we have used a toolbox of consumer evidence, benchmarking, expert evidence and cost benefit analysis to calibrate our proposed targets. This ensures that they are in line with consumer expectations, historic performance and the proposed cost base of our business plan.

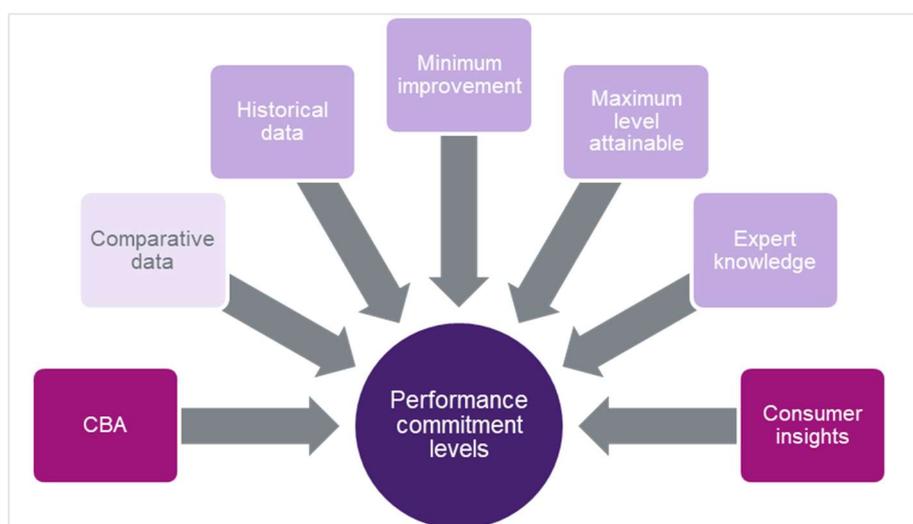
The targets we are proposing as part of our regulatory incentive scheme are set to ensure that baseline consumers' expectations are being met for each service measure. This means we are incentivised to provide the base level of service that consumers expect and ensures that only performance which is truly above this baseline level which should be delivered by our plan is rewarded through a bonus. The targets are also calibrated to our proposed capital portfolio and our forecast operational expenditure. In the case that either of these changed, we would need to revise our targets accordingly.

9.2.3.1 Approach

Figure 4 illustrates the wide range of approaches and evidence that we used to develop our H7 targets.

⁶¹ ACI, ASQ Survey Q1 2020 Report, 2020

Figure 4: Approach to setting targets



Source: Heathrow

An outcomes-based approach to regulation is well developed in the water sector and our approach draws heavily on the methodology used in the most recent water price control. For PR19, Ofwat reviewed and improved its approach to setting service quality targets, moving from an approach which focused heavily on the use of CBA to one which used a variety of information to set performance targets for the period.

Figure 5: Ofwat's PR19 approach to setting incentives

Case Study – Ofwat PR19 methodology

- As part of its PR19 methodology Ofwat stated that companies should challenge their performance level commitments using:
 - cost benefit analysis;
 - comparative information;
 - historical information;
 - minimum improvement;
 - maximum level attainable; and
 - expert knowledge.
- This approach was taken after Ofwat realised the issues in relying solely on WTP data
- It then set out that it expected companies to place a greater weight on building a robust, balanced and proportionate evidence base

Source: Ofwat's PR19 price control methodology⁶²

⁶² <https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf>, page 45

Consumer evidence

In developing targets, we first reviewed Passenger Priorities post Covid-19, WTP, CBA, historical performance, and consumer insights to identify consumer expectations. Our consumer engagement has shown that consumers want to see the service levels Heathrow offers maintained or ideally improved. For example, the H7 Choices Research showed that 67% of users preferred plans which offered targeted improvements in service and in the WTP research only 2% of passengers were willing to accept a reduction in service in return for fares decreasing slightly.⁶³ This demonstrates that consumers support improvements in service. In addition, both phases of our choices research pre and post covid-19 has shown that consumers prefer options where service levels are maintained or improved over those where service levels are reduced.^{64 65}

However, in setting targets for service levels we need to balance the value to consumers, gathered through our robust evidence base of consumer insights, and the cost of delivery. Balancing this is a particular challenge in the current operating environment. Consumer expectations are changing and Heathrow's ability to invest is more limited than it has been in previous regulatory periods.

While we will continue to be guided by consumer priorities when setting targets and prioritising any discretionary capital expenditure we may have through the period, our H7 capital plan does not allow for the transformation of service levels. Instead, our plan prioritises maintaining our current service levels with some areas of targeted improvement where this is possible. This approach is therefore reflected in our targets for the period.

Where our £3.5bn capital plan does allow for discretionary spend, we propose to focus on the three key areas of Punctuality, Baggage and Passenger Experience. Consumers have consistently told us^{66 67 68 69} that these are three service areas that they would value Heathrow making improvements to. For these three areas, our H7 service ambitions under our current capital plan are to:

- Increase Departures Flight Punctuality from 78.4% in 2019 to 80.5% in 2026
- Reduce Baggage Misconnect Rates from 9/1000 in 2019 to 7/1000 in 2026
- Increased Passenger Experience satisfaction rating from 4.24 in 2019 to 4.26 in 2026

However, if less than £3.5bn capital is available or the CAA does not implement our request for a Covid related RAB adjustment, then we will be unable to make these targeted improvements.

Historical data

We have also reviewed our historical data to try to inform what our future targets could be. By analysing historical data, we can assess whether there are clear patterns which may suggest that our performance should improve by some minimum level.

⁶³ Systra, *Aggregate Benefit Value Study*, March 2019

⁶⁴ Accent, *H7 Service Package Choices, Research*, November 2019

⁶⁵ Accent, *H7 Service Package Choices Follow up Research*, October 2020

⁶⁶ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

⁶⁷ Accent, *H7 Service Package Choices, Research*, November 2019

⁶⁸ Accent, *H7 Service Package Choices Follow up Research*, October 2020

⁶⁹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

In the IBP, we set out the challenges we faced in maintaining current service levels in a growing airport. Our historical data clearly showed that as traffic increases, pressure on our services and infrastructure also increases. While, in the short term, we are no longer facing this same challenge, the impact of Covid-19 on both our operating model and financial position poses a new one. As in our IBP, these changes and the uncertainty as to how long they will last, mean we are mindful that our historic data may not provide precise insights into our ability to deliver the same service levels in the future. However, it gives us a starting point for review of our service levels.

We have therefore reviewed our performance against the existing SQRB measures throughout the Q6 period. This has shown that for our perception measure on Wayfinding we have consistently performed above target and earned a bonus through the Q6 period. For H7, we are therefore proposing to increase the target from 4.10 to 4.15 to reflect this. Wayfinding is the only QSM measure where this has consistently been the case.

Since Covid-19 consumer expectations related to cleanliness have understandably risen, it is important that we respond to this challenge if we are going to reassure consumers that it is safe to fly again. As a result, for H7 we are proposing to increase the target for Cleanliness for 4.00 to 4.05 to reflect the increased focus in this area.

Minimum improvement and maximum level attainable

For a number of our Q6 measures which we will be retaining for H7 our target is already set at 99% or at a level that is among the top performers in the world. This means that for these measures we face diminishing returns - for example going from 99% to 100% for asset availability will be harder and more costly to achieve than an improvement from a lower level of performance.

While, in principle, performance at 100% could be achieved, for a variety of reasons we believe that this would not be a realistic or suitable target as a baseline level of service:

- **Controllability:** While these measures are mostly within our control, they are not fully within our control. This has been made clear through the impact of Covid-19, where international lockdowns have impacted on the availability and speed of delivery of key parts for asset repair and maintenance. Therefore, for many measures there will be always be a small risk that some external factor could result in us not hitting 100% even if we have done the best that we possibly could. It would therefore be inappropriate to incentive 100% performance on these measures.
- **Diminishing marginal returns:** If 100% performance were possible, closing the gaps to ensure 100% performance would be costly. Delivering an additional unit of improvement becomes more and more costly and given the current financial situation and the consumer evidence we have gathered; it will neither be possible nor in the interests of users to close this gap through the H7 period.

However, every passenger is important to us and while attaining 100% performance may not be efficient or even feasible, we are proposing to investigate through the H7 period whether any additional safeguards are needed to protect passengers that experience the “tail end” of performance. This is particularly important for measures such as security queue time, where attainment of 100% of passengers queuing for under 10 minutes may not be possible

efficiently, but some passengers in the remaining 1% may experience service levels which are significantly below the required standard. This means that we will:

- Investigate the actual performance that passengers at the “tail end” receive;
- Monitor performance, for example, for security queueing we will monitor how many passengers that queue for more than 10 minutes end up queuing for more than say, 15 minutes, or 20 minutes;
- With this extra information, we can then consider whether it would be appropriate to introduce new targets to help provide extra protection for these passengers. We will engage with consumers, airlines and the CAA to discuss our findings as part of our annual review of measures.

Comparative data

As we discussed at length in both our IBP and in Constructive Engagement, all airports and their incentives and regulatory models are different. They are designed differently, experience a different mix of passengers and therefore need to cater for different passenger preferences. For this reason, it is challenging to carry out meaningful benchmarking of airport service quality.

However, from both ASQ metrics and high-level benchmarking such as Skytrax’s “World’s Top 100 Airports”⁷⁰, it is clear to see that Heathrow already provides a world class passenger experience. This, along with the analysis presented above regarding maximum levels attainable, give us confidence that our current service levels and accompanying regulatory targets means that passengers are experiencing a best in class airport service.

Figure 6:

[REDACTED]

Expert knowledge

In order to set our targets, we have engaged extensively with experts throughout the business. This ensures that our targets fully reflect the operational reality of the airport and our H7 capital and operational plans. This allows us to validate that our targets do represent the baseline level of service that consumers should expect to receive through our plans.

In order to set our targets for H7, we have engaged extensively with colleagues across the business:

⁷⁰ <https://www.worldairportawards.com/worlds-top-100-airports-2019/>

- Airport Planning
- Airside Operations
- Airspace Operations
- Baggage
- Commercial
- Engineering
- Health and Safety
- Resilience
- People
- Security
- Services
- Sustainability
- Terminal Operations

9.2.3.2 Proposed H7 Targets

Of the proposed 36 measures, 16 are within our direct control and as such should have financial rebates attached them. For the additional 20 measures, our role is to coordinate the collaboration across the airport community in order to deliver the outcomes that the consumers desire, failure to meet these targets will have a reputational impact on both Heathrow and the airport community.

Table 3 below sets out our proposed targets for measures that are within our direct control.

Table 3: Proposed H7 Financial Rebate Targets for Measures within Heathrow's direct control

Consumer Outcome	Measure	Q6 Target	H7 target in £3.5bn Capex Plan
Predictable and Reliable	Runway operational resilience (was previously called Aerodrome Congestion)	As per Q6 licence ⁷¹	As per Q6 licence
Predictable and Reliable	Provision of stand facilities	N/A	99.0%
Predictable and Reliable	Stand Availability	N/A	99.0%
Predictable and Reliable	Wayfinding	4.10	4.15
Predictable and Reliable	Central search queue time		
	% queue times < 5 mins	95.0%	95.0%
	% queue times < 10 mins	99.0%	99.0%

⁷¹ A rebate is payable if a material event has occurred which was caused primarily by a failure of Heathrow or the provider of air traffic services at the airport and has generated a material operational impact. Material operational impacts include a flow rate restriction at less than the declared runway scheduling limit, the cumulative number of actual movements is less than the cumulative reference number of movements by at least four for the duration of the material event.

Consumer Outcome	Measure	Q6 Target	H7 target in £3.5bn Capex Plan
Predictable and Reliable	Transfer search queue time % queue times < 10 mins	95.0%	95.0%
Predictable and Reliable	Staff search queue time % queue times < 10 mins	95.0%	95.0%
Predictable and Reliable	Control post vehicle Queue Time % vehicle queue times < 15 mins	95.0%	95.0%
Predictable and Reliable	Availability of lifts, escalators, travellers (renamed from PSE)	99.0%	99.0%
Predictable and Reliable	Terminal 5 Track Transit System (TTS) Availability 1 train target Availability 2 trains target	99.0% 97.0%	99.0% 97.0%
Basic Comforts	Cleanliness	4.00	4.05
Basic Comforts	Hygiene Safety Testing Amber Test results resolved < 24 hours and Red Test results resolved < 4 hours	N/A	100%
Basic Comforts	Pier service – % passengers accessing pier served stand (excl. T5)	95.0%	95.0%
Basic Comforts	Baggage System Reclaim Availability – arrivals carousel	99.0%	99.0%
Enjoyable and Connected	Wi-Fi performance	N/A	4.00
Cared For	Helpfulness/Attitude of security staff	N/A	4.10

Source: Heathrow

Targets for measures that have a reputational impact on Heathrow are set out in Table 4 below. These are measures where Heathrow plays a coordinating role across the airport community in terms of delivering the overall outcomes that consumers desire from their Airport

journey. But Heathrow not in a position to deliver them in isolation without the collaboration from across the airport community.

Table 4: Proposed H7 Targets for Reputational Measures that Heathrow coordinates across the airport community

Consumer Outcome	Measure	2019 Performance	2026 target with £3.5bn Capex Plan
Overarching Measure	Overall Satisfaction	4.24	4.26
Overarching Measure	Customer Effort (Ease)	Target will be set in Q1 2022 once baseline has been established	
Overarching Measure	Future Intent to use Heathrow	Target will be set in Q1 2022 once baseline has been established	
Airport Choice	Value for money of Overall Journey	Target will be set in Q1 2022 once baseline has been established	
Airport Choice	Offers flights that I want	Target will be set in Q1 2022 once baseline has been established	
Airport Choice	Reducing Heathrow's Carbon Footprint	Target will set during 2021 alongside airport community's carbon commitments	
To and from the airport	Ease of access to the airport	Target will be set in Q4 2021 once new baseline has been established	
To and from the airport	No. of towns/cities connected to Heathrow by public transport through no more than one interchange	65	Due to impacts of Covid-19 on surface access, target will be set during 2021
Predictable and Reliable	Departures flight punctuality - % flights depart off stand within 15 mins	78.4%	80.5%
Predictable and Reliable	Wheels down to doors open	Target will set during 2021 alongside airport	

Consumer Outcome	Measure	2019 Performance	2026 target with £3.5bn Capex Plan
		community during 2021	
Predictable and Reliable	Time to last bag on reclaim belt Small Aircraft Medium Aircraft Large Aircraft	31 minutes 35 minutes 43 minutes	35 minutes 35 minutes 50 minutes
Basic Comforts	Baggage Misconnect Rate	9 bags in a 1000	7 bags in a 1000
Basic Comforts	An Airport that meets my needs	Target will be set in Q2 2022 once baseline has been established	
Basic Comforts	Number of passenger injuries per 1,000,000 passengers (excl. ill health)	5.6	4.5
Basic Comforts	Feeling safe and secure	97.5% of passengers agreeing	97.5% of passengers agreeing
Basic Comforts	Able to social distance if I want to	Target will be set in Q4 2021 once baseline has been established	
Enjoyable and Connected	Enjoy my time at the airport	Target will be set in Q1 2022 once baseline has been established	
Cared for	Helpfulness / Attitude of Airport Staff	Target will be set in Q4 2021 once baseline has been established	
Cared for	Passengers with Reduced Mobility (PRM/PRS) satisfaction	3.95 (April 2019 – March 2020)	4.00

Source: Heathrow

In the case of financial measures, it is both regulatory and business best practice that, as well as paying a rebate if they fail to deliver the service levels that consumers expect, businesses are rewarded for exceeding consumers expectations. This position has become commonplace among regulators across UK regulated industries as well as at other regulated airports across

Europe. More information on this and our rationale for the size and implementation of bonuses can be found in section 9.2.4.3.

Table 5: Proposed H7 Financial Bonus Targets for Measures within Heathrow's Direct Control

Consumer Outcome	Measure	Q6 Bonus Target	H7 Bonus target in £3.5bn Capex Plan
Predictable and Reliable	Runway operational resilience (was previously called Aerodrome Congestion)	N/A	N/A
Predictable and Reliable	Provision of stand facilities	N/A	100%
Predictable and Reliable	Stand Availability	N/A	100%
Predictable and Reliable	Wayfinding	4.20	4.30
Predictable and Reliable	Central search queue time % queue times < 5 mins % queue times < 10 mins	N/A N/A	99.0% 100%
Predictable and Reliable	Transfer search queue time % queue times < 10 mins	N/A	99.0%
Predictable and Reliable	Staff search queue time % queue times < 10 mins	N/A	99.0%
Predictable and Reliable	Control post vehicle Queue Time % vehicle queue times < 15 mins	N/A	99.0%
Predictable and Reliable	Availability of lifts, escalators, travellators (renamed from PSE)	N/A	100%
Predictable and Reliable	Terminal 5 Track Transit System (TTS) Availability 1 train target Availability 2 trains target	N/A N/A	100% 99.0%
Basic Comforts	Cleanliness	4.20	4.25
Basic Comforts	Hygiene Safety Testing Amber Test results resolved < 24 hours and Red Test results resolved < 4 hours	N/A	N/A

Consumer Outcome	Measure	Q6 Bonus Target	H7 Bonus target in £3.5bn Capex Plan
Basic Comforts	Pier service – % passengers accessing pier served stand (excl. T5)	N/A	99.0%
Basic Comforts	Baggage System Reclaim Availability – arrivals carousel	N/A	100%
Enjoyable and Connected	Wi-Fi performance	N/A	4.25
Cared For	Helpfulness/Attitude of security staff	N/A	4.35

Source: Heathrow

9.2.4 Incentives

Once targets are set the regulatory incentives need to be designed. Incentives are needed to ensure we have pressure on us to deliver on our targets and to incentivise delivery over and above the baseline service level where this is in the interests of consumers. As set out in the IBP we propose some changes to Q6 incentives to sharpen the commercial rationale for service delivery for Heathrow and ensure our incentive package is in line with CAA policy as set out in CAP1540.⁷²

“We expect the majority of targets to have financial incentives although reputational incentives could also be considered where appropriate. Where practicable incentives should be both positive (reward) and negative (penalty)”

Our approach to incentives builds on the approach set out in the IBP, applying this methodology to our proposed measures and using our updated evidence base. Our proposed approach includes:

- A mixture of financial and reputational incentives, applying reputational incentives to measures which are not directly within Heathrow’s control;
- Implementing a sliding scale approach to rebates to ensure that every unit of performance counts; and
- Implementing bonuses as well as rebates for our financially incentivised measures.

9.2.4.1 Approach

Figure 6 below illustrates the approach we have used for H7 to determine our incentive structure. We have based our approach on the best practice seen in other sectors. The approach detailed below builds on the methodology used in our IBP and which was set out in detail in our IBP and included in Annex 23 – Measures, Targets & Incentives.

⁷² CAA, CAP1540, Page 23, Paragraph 2.14

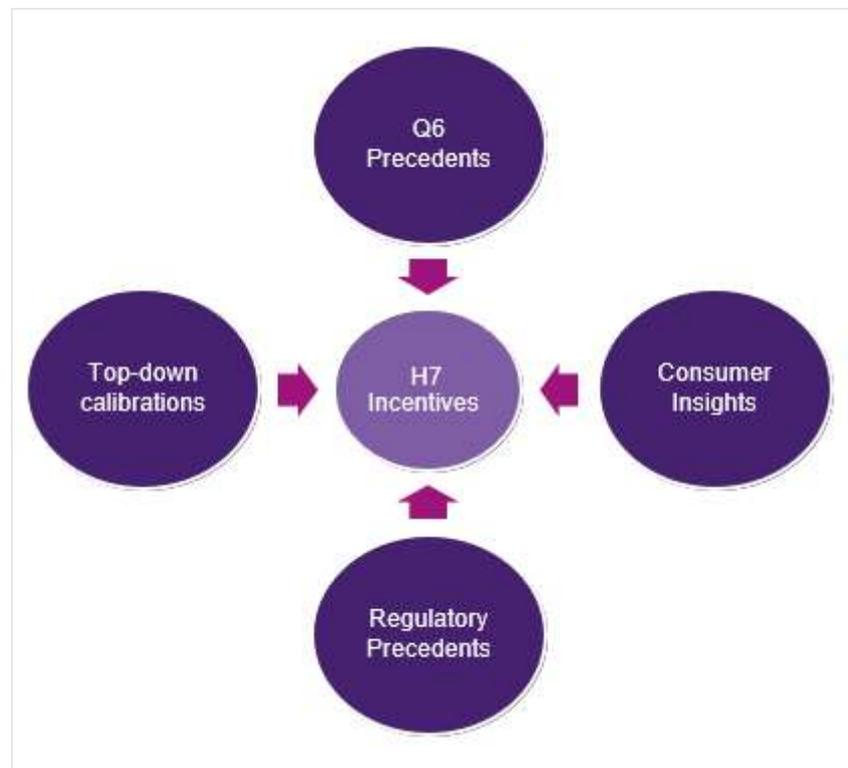
Our approach is based on the key principle that incentives should reflect consumer insights and that outperformance should be incentivised, particularly in areas where consumers value better performance.

We assessed the incentives which should be assigned to each measure in three steps:

1. Identifying whether targets should have reputational or financial incentives;
2. Identifying the appropriate design for financial incentives; and
3. Identifying the appropriate incentive rate for financial incentives based on what passenger priority.

In order to design our H7 incentives, we have used the following evidence base, which takes Q6 as a starting point and uses consumer insights, CAA policy and regulatory precedent to develop the design of our proposed incentives.

Figure 6: Approach to incentive design



Source: Heathrow

9.2.4.2 Reputational or financial incentives

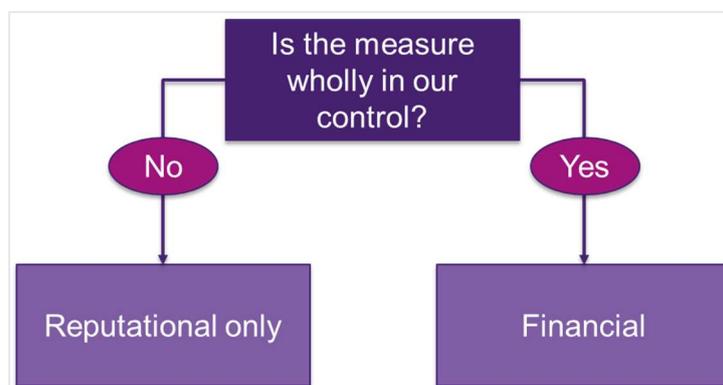
As we set out in the introduction to this chapter, we already face strong incentives to deliver the levels of service consumers want in their airport journey outside of those set as part of our regulatory service quality incentives. These incentives are both commercial and reputational and have been sharpened following the impact of Covid-19 on the aviation market and Heathrow's position within it. Following Covid-19, Heathrow is no longer the biggest airport in Europe. This means that, now more than ever, we are facing intense competition for passengers. We are therefore strongly incentivised, outside of the regulatory framework, to provide the levels of service that passengers want and need and ensure that our reputation remains strong.

- **Commercial Incentives:** Our regulatory framework incentivises us to grow passenger numbers and non-aeronautical income. If we provide the outcomes passenger want from their airport journey, the more they are likely to engage with our retail offering and the more likely they are to return to Heathrow. This commercial incentive is particularly important following the impact of Covid-19 where passengers are more likely to be anxious about their journey⁷³. We now know that a safe, clean and easy airport experience will help to ensure passengers return to Heathrow. This makes achieving the right service levels more commercially important than ever.
- **Reputational incentives:** Our reputation underpins our ability to both attract passengers and airline customers, but also to deliver transformational change in the form of Heathrow Expansion when the ANPS is reinstated.

As part of our Q6 framework, we were also financially incentivised to provide a baseline service level through the SQRB scheme. The Q6 SQRB framework only included measures which were under our direct control and, as a result, used mostly financial incentives to incentivise performance. However, unlike the Q6 scheme, our proposed H7 framework increasingly includes measures which are not largely within Heathrow’s direct control but matter to consumers in delivering the end to end experience that they desire. This approach is a change from the current Q6 structure and also a significant build on the proposals in our IBP.

In order to ensure these different measures are properly incentivised we have decided to retain the principle set out in our IBP that only measures within Heathrow’s direct control should be subject to financial incentives:

Figure 7: Approach to assigning financial and reputational incentives



Source: Heathrow

This approach is consistent with CAA guidance set out through Constructive Engagement. In session 6 of CE, the CAA confirmed that, while measures of service outside of Heathrow’s control can be proposed as part of the framework, financial incentives should only be placed on those areas directly controlled by Heathrow.⁷⁴ This approach is also consistent with regulatory best practice. As part of its RIIO methodology, Ofgem stated that “*the network company should have full or a sufficient degree of control over performance against the*

⁷³ Heathrow/Join the Dots, *The Post-Covid Airport Experience – a passengers’ perspective*, May 2020

⁷⁴ Constructive Engagement Minutes, Measures, Targets and Incentives, Session 6, Item 2

primary outputs, with the strength of any incentive taking account of the degree of controllability”.⁷⁵

Therefore, while the majority of our measures will be incentivised financially, consistent with CAA guidance,⁷⁶ we have adopted reputational incentives for measures where performance is not wholly within our control but where they are important in meeting consumers outcomes. For new measures, which don’t yet have a baseline, as set out in Table 4, we will monitor performance against delivery and set targets by Q1 2022. All other proposed measures will be subject to financial incentives.

9.2.4.3 Structure and design of incentives

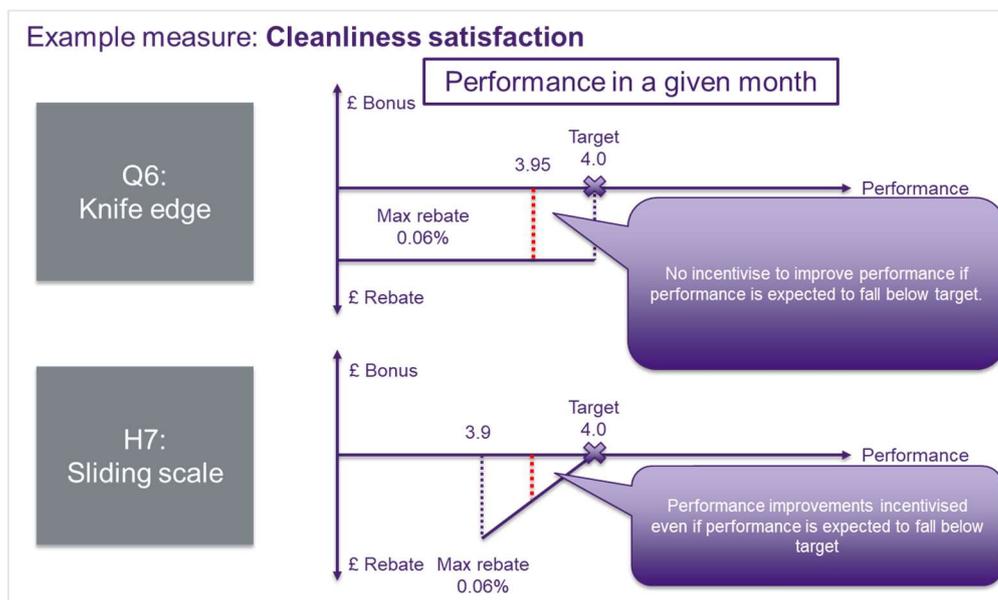
The next consideration is the design and structure for our proposed financial incentives. This focuses mostly on the following questions:

1. Whether to use a knife-edge or sliding scale approach to incentive design;
2. Whether to include bonuses as well as rebates;
3. How to use caps, collars and dead bands; and
4. How rebates and bonuses are paid.

Knife edge or sliding scale?

There are broadly two options for incentives design in the H7 period. These are knife edge and sliding scale incentives. The difference between the two designs is set out below in Figure 8.

Figure 8: Knife edge and sliding scale incentive structures



Source: Heathrow

The Q6 SQRB design structure included a knife edge approach for all financial rebates. Under this structure, the full rebate is paid as soon as service drops below target levels. This structure fails to reflect the actual service levels experienced by consumers as Heathrow pays the same rebate whether it has marginally failed the target or underperformed on a large scale. This can

⁷⁵ [Handbook for implementing the RIIO model \(ofgem.gov.uk\)](#), page 35, paragraph 6.13

⁷⁶ CAA CAP1540, page 23, paragraph 2.14

lead to a distortion of the incentives faces by a company, as once a company has not met the target there is no financial incentive to improve performance for the remainder of the month as the full rebate will need to be paid. Additionally, there is no link to consumer valuations for each unit of performance as every additional unit of underperformance would face no further penalties.

In contrast to this approach, we consider that every unit of performance should count and we should pay increasingly larger rebates if our performance was to worsen. Similarly, every unit of outperformance should be rewarded. This approach allows us to better reflect our evidence base of consumer insights, in particular our passenger priorities⁷⁷ and WTP work packages⁷⁸, which show that consumers place value on every additional unit of performance. We will also expand our evidence base on this to underpin our approach by testing this further with consumers through acceptability testing in 2021.

As well as providing the right incentive properties and reflecting our consumer insight, a sliding scale approach to incentive design is also in line with precedent in other UK regulated sectors:

- In Water, Ofwat has determined a 'unit rate' for each financial incentive, such that as under- / out-performance increases, the size of penalties / bonuses also increases.⁷⁹ This is based on the principle that every unit of performance should count. (This idea was supported in a Frontier Economics report, prepared for Ofwat, outlining the principles of incentive design)⁸⁰
- In Energy, Ofgem uses sliding scale financial incentives for a number of measures as part of RIIO 2. For example, the financial incentive for its consumer satisfaction measure includes a sliding scale.⁸¹

Given this evidence, we propose to move to a sliding scale incentive design for the H7 service quality framework. This ensures that our incentive scheme makes every unit of performance, reflecting consumer evidence, and also ensures that our approach is aligned with leading UK regulatory precedent on the implementation of outcomes-based regulation.

Bonuses and rebates

As part of its decision on outcomes-based regulation in CAP1540, the CAA notes that "*Where practicable incentives should be both positive (reward) and negative (penalty)*"⁸². Using this guidance and our increased evidence base of consumer insight we have reviewed the current balance of rebates and bonuses in the service quality regime. In order to ensure there is a proper risk and reward balance across all of the measures we consider that it is appropriate that Heathrow should be able to obtain bonuses for all measures.

Rewards and penalties align consumer, management and shareholder interests by increasing the focus on improving services and giving shareholders a return for the effort and risk-taking needed to deliver higher levels of service quality. It continues to be our vision to give passengers the best airport service in the world. It is also clear that consumers value improved performance in many areas, so our incentive scheme should reflect this. Consumer insights

⁷⁷Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁷⁸Systra, *Heathrow Airport Customer Valuation Research*, November 2018

⁷⁹ <https://www.ofwat.gov.uk/wp-content/uploads/2017/07/Appendix-2-Outcomes2.pdf>

⁸⁰ https://www.frontier-economics.com/media/2253/ofwat-report_performance-commitments-outcome-delivery-incentives-pr19.pdf

⁸¹ https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_gd.pdf

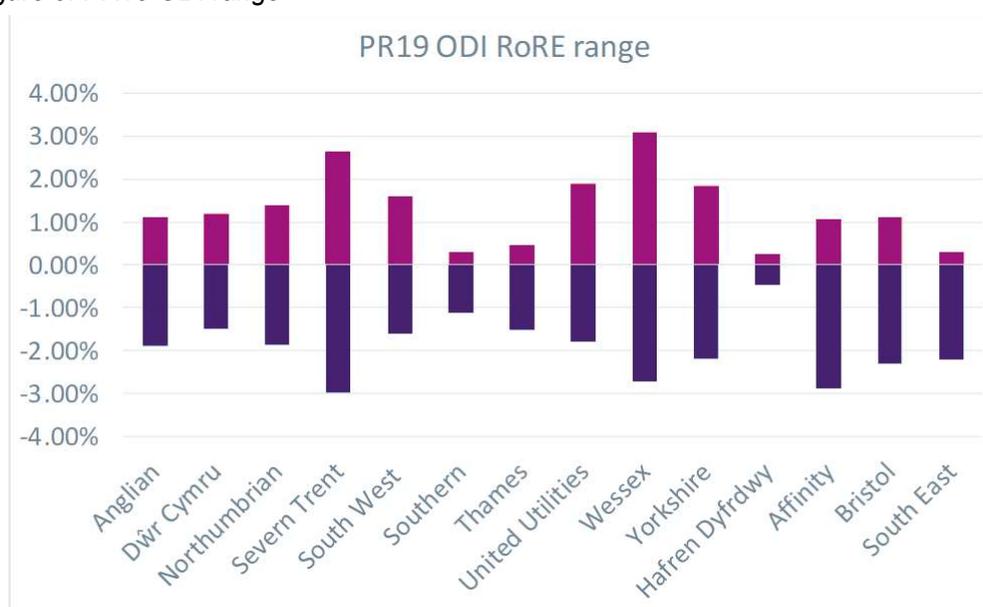
⁸² CAA, CAP1540, Page 23, Paragraph 2.14

suggest that consumers are willing to pay more for better service.⁸³ Whilst it will be challenging for us to maintain performance against current targets it is appropriate for us to have incentives to improve performance if we can find innovative and cost-efficient ways of doing so. This is particularly important in the current financial and operating environment.

Our proposed approach is also in line with regulatory best practice seen in other UK sectors:

- In Water, the chart below, Figure 9, shows the RoRE impact of Ofwat’s draft determination at PR19 with respect to service quality incentives⁸⁴. The chart shows that most companies have a larger downside than upside (i.e. the scope for penalties is greater than the scope for rewards). However, in the vast majority of cases, the balance is much more even than our current package in Q6 (where the downside is 7 times greater than the upside).

Figure 9: PR19 ODI range



Source: Ofwat PR19 draft determination

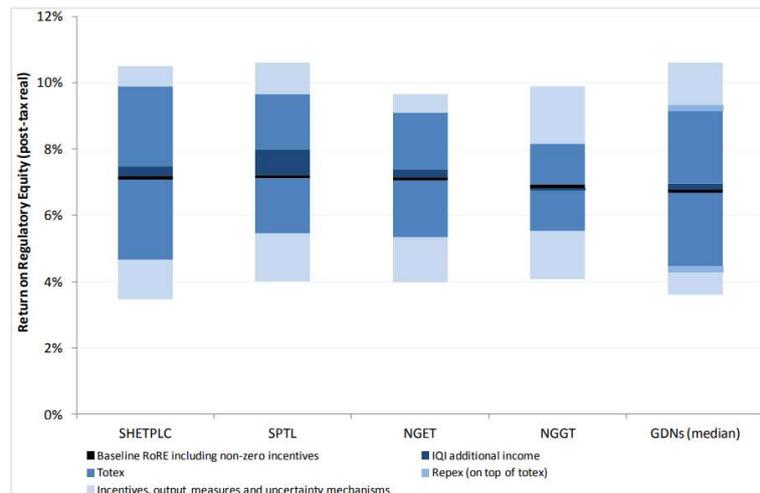
- For RIIO-GD1, energy companies have scope for rewards⁸⁵. In fact, as shown below in Figure 10 the scope for rewards (incentives, output measures and uncertainty mechanisms) was actually greater than the scope for penalties.

⁸³ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

⁸⁴ <https://www.ofwat.gov.uk/regulated-companies/price-review/2019-price-review/draft-determinations/>

⁸⁵ <https://www.ofgem.gov.uk/ofgem-publications/48156/3riiogd1fpfinanceanduncertainty.pdf>

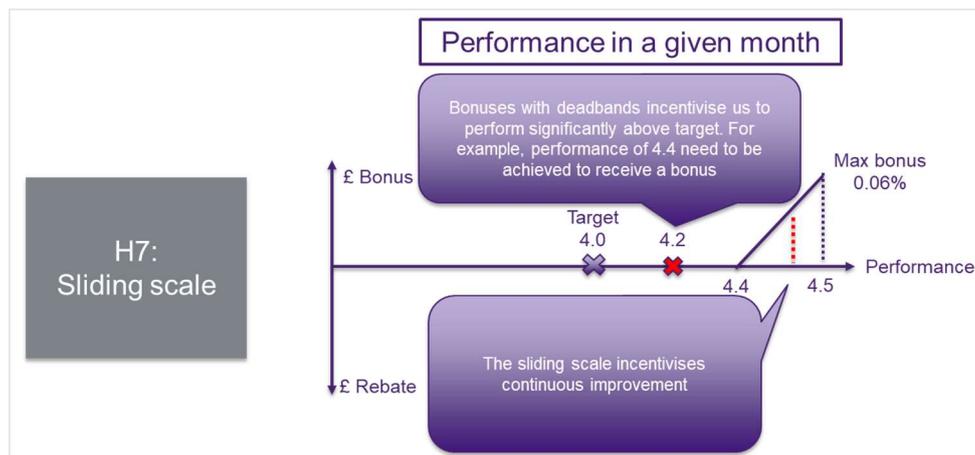
Figure 10: Estimated RoRE ranges for RIIO-GD1 and T1



Source: Ofgem RIIO determination

In light of this evidence, we have designed our incentive scheme to include scope for bonuses as well as rebates. To reflect consumer valuations of service, we propose that the unit rate for bonuses should be equal to that of our rebates. While this provides increased symmetry in our financial incentives, it will not mean that we have equal scope for earning bonuses and paying rebates. For many of our measures our target is 99%, meaning that there is only scope for one percentage point of outperformance but scope for many percentage points of underperformance. Therefore, for many measures, while the unit rates may be symmetrical, the maximum bonus is less than the maximum rebate. This is demonstrated in the example below:

Figure 11: Bonus incentive design



Source: Heathrow

Caps, collars and dead bands

Caps, collars and dead bands provide protections to companies and consumers by limiting the overall size of rebates and bonuses. Caps and collars place a maximum limit on the size of bonuses and rebates respectively, and dead bands are a specified range of performance within which financial incentives are zero – i.e. financial incentives only apply beyond a certain point.

Due to the knife edge only incentive design, our Q6 incentive structure effectively includes a collar at the target level for each of our measures. Our measures with bonuses also have bonus dead bands and caps. For H7, we are proposing to retain caps, collars and bonus dead bands in order to continue providing protections for consumers and ourselves.

Like the Q6 framework, our proposals for rebates in H7 include a collar. However, unlike Q6, the sliding scale incentive structure means that the collar is set at 2 percentage points below the target, rather than at the target itself. This means that the rebate increases as performance deteriorates until a rebate collar is reached. If performance falls below the rebate collar the rebate does not grow any further. Our proposals for rebates do not include any dead bands with performance below the target automatically triggering the start of bonus payments.

For bonuses however, we have included a dead band above the target. It is only if performance exceeds this dead band that Heathrow would start to earn a bonus. For our measures with a target of 99%, the bonus dead band has been set at 100%. This ensures that we only receive bonuses for delivering exceptional performance. Mirroring the collar mechanism for rebates, our bonus structure also includes a cap. This means that if performance improves above the cap, then the bonus will not grow any further.

Application and payment of rebates and bonuses

Rebates and bonuses can be applied at either the airport or terminal level and paid at different points in the year. For H7, we are proposing to retain the methodology set out in the IBP which sets out the following conditions for the application and payment of service quality incentives:

- Performance will be compared to target monthly at terminal level (apart from control posts which will be a campus wide average of all queue times captured) with rebates and bonuses determined for each terminal or control posts as a whole. This means that we are incentivised to meet our targets across all terminals and cannot trade off performance in one terminal against another in order to meet our service targets
- Rebates would be calculated every month of the year. This helps to ensure that performance is incentivised equally throughout the year.
- Rebates would be paid monthly one month in arrears of assessing the performance.
- Bonuses would be incorporated into the airport charging mechanism as for Q6.

9.2.4.4 The appropriate incentive rate

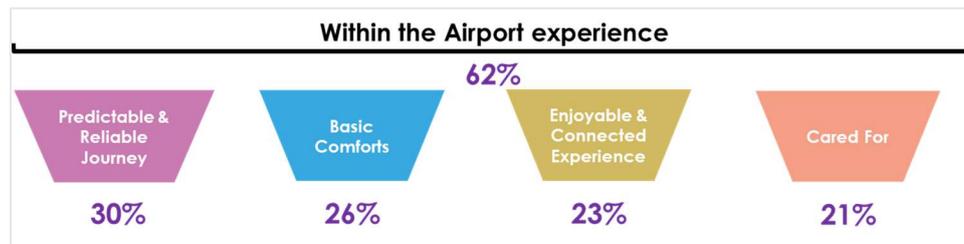
With the design and application of the incentives agreed, the next question is the appropriate incentive rate and how big or small the rebates and bonuses should be. For Q6, the maximum total bonus that we can earn in a given year is 1.44% of our total airport charges. The maximum rebate that we can pay out in a given year is 7.0% of total airport charges. This implies that the potential downside is considerably greater than the potential upside – i.e. the downside is seven times greater than the upside.

The Q6 SQRB rebates and bonuses were largely based on Q5 precedent and did not take account of Consumer Outcomes and Priorities. For our H7 incentives, we have taken a wider, more consumer-based approach in order to set the appropriate incentive rate for our proposed measures. This ensures that in the event of underperformance our rebates reflect how much consumers would have actually valued the performance in order to compensate them appropriately. Equally, it allows us to ensure that any bonuses paid reflect consumer valuations of the increased service levels they have received.

We firstly used our Passenger Priorities Post Covid-19 Research in order to understand the relative importance to passengers of our different proposed financial measures by:

- We started by mapping each of the proposed financial measures against the different consumer outcomes and individual needs from the Consumer Research synthesis⁸⁶
- Each measure was then prioritised by assigning an importance score across the four consumer outcomes that the proposed financial measures linked to:

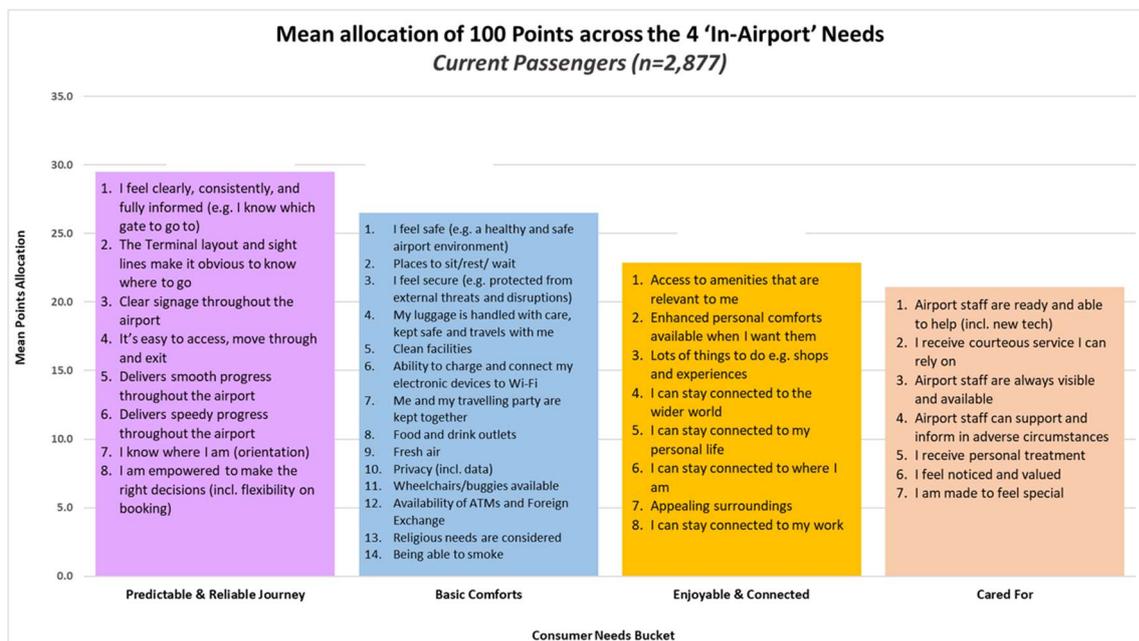
Figure 12: Weighting of passenger priorities against the four outcomes which are impacted by financially incentivised measures



Source: Systra, Passenger Priorities Post Covid-19 Research, 2020

- Then based on Passenger Priorities each need was then assigned a ranking from 10-1 with the Top ranked need receiving a 10, the 2nd top need receiving a 9 and so on.

Figure 13: Allocation of priorities against outcomes



Source: Systra, Passenger Priorities Post Covid-19 Research, 2020

- Combining these 2 elements together then created a relative importance weighting for each proposed financial measure.
- We used this weighting to proportion out the rebate levels across each financial measure

⁸⁶ Blue Marble Research, *Consumer Outcomes – Future Measures*, September 2020,

- The per-unit rate used for calculating the maximum rebate was then used to set bonuses

Taken together, we are proposing incentives that lead to a maximum upside/downside range of **[REDACTED]** of aeronautical revenue. The proposed level of downside exposure reflects the Airline Community view that the current Q6 downside exposure is appropriate to incentivise the right behaviours. Our increased upside potential comes from the inclusion of bonuses for most measures which are incentivised financially using our unit rate methodology set out above. The only two measures which do not have a bonus assigned to them are the measures of Runway Operational Resilience and our measures on hygiene testing. This is because:

- The Runway Operational Resilience measure only measures material events, therefore only includes possible rebates due to material events within Heathrow's control; and
- The Hygiene Safety Testing measure has a target set at 100% due to the safety critical nature.

Figure 14:

[REDACTED]

As shown in **Error! Reference source not found.** above, a significant proportion of our airport charges is at stake, with the downside remaining greater than the upside. This illustrates that our package of incentives will ensure we are incentivised to deliver positive outcomes for consumers.

Incentives for each measure are summarised in Table 6.

Table 6: Proposed incentives

Measure	Rebate start	Rebate collar	Q6 max rebate ¹ (2018 airport charges)	H7 max rebate ² (2018 airport charges)	Bonus start	Bonus cap	Q6 max bonus (2018 airport charges)	H7 max bonus (2018 airport charges)
Runway Operational Resilience								
Provision of stand facilities								
Stand Availability								
Wayfinding								
Central search queue time: % queue times < 5 mins % queue times < 10 mins								
Transfer search queue time % queue times < 10 mins								
Staff search queue time % queue times < 10 mins								

[REDACTED]

Measure	Rebate start	Rebate collar	Q6 max rebate ¹ (2018 airport charges)	H7 max rebate ² (2018 airport charges)	Bonus start	Bonus cap	Q6 max bonus (2018 airport charges)	H7 max bonus (2018 airport charges)
Control post vehicle Queue Time								
% vehicle queue times < 15 mins								
Availability of lifts, escalators, travellators (renamed from PSE)								
Terminal 5 Track Transit System (TTS)								
Availability 1 train target								
Availability 2 trains target								
Cleanliness								
Hygiene Safety Testing								
Amber Test results resolved < 24 hours and Red Test results resolved < 4 hours								
Pier service – % passengers								

[REDACTED]

Measure	Rebate start	Rebate collar	Q6 max rebate ¹ (2018 airport charges)	H7 max rebate ² (2018 airport charges)	Bonus start	Bonus cap	Q6 max bonus (2018 airport charges)	H7 max bonus (2018 airport charges)
accessing pier served stand (excl. T5)								
Baggage System Reclaim Availability – arrivals carousel								
Wi-Fi performance								
Helpfulness/ Attitude of security staff								

[REDACTED]

Source: Heathrow

Notes relating to Table 6:

1 Where the Q6 licence includes different rebates or bonuses for each terminal, we have used the T5 number as this represents the largest terminal. Where an incentive does not apply to T5, we have used the next biggest terminal.

2 For measures with two components, we have split the maximum rebate across the two components in an even way.

In line with CAA guidance, we have also expressed the upside and downside as a return on regulated equity (RoRE). This gives an indication of the impact and relevance of our proposed approach for shareholders and its impact on our shareholders. This of course shows only the impact of these formal service quality incentives, not the total RoRE variance of the settlement or risk taken by investors which is significantly greater and provide strong incentives as well. As shown below:

- The upside amounts to a RoRE upside of [REDACTED] during Q6
- The downside amounts to a RoRE downside of [REDACTED] during Q6.

Figure 16:

[REDACTED]

We have also compared the RoRE impact of our proposed financial incentives to that under similar approaches in other regulated sectors. In the water sector, companies' RoRE impact of similar service quality financial incentives vary and tend to be in the region of -2% to +1%. Similarly, for RIIO-GD1, the RoRE impact was around -1% to +1%. This suggests that our proposed H7 approach is broadly in line with regulatory precedent in water and shows that the current Q6 incentive regime is out of step with regulatory precedent in other sectors.

Given this, we see that our proposed H7 approach to service quality incentives is an important step forward in ensuring that Heathrow is properly incentivised to deliver the right baseline level of service to consumers as part of a balanced regulatory framework. Regulatory precedent clearly shows that the Q6 structure is not in line with regulatory best practice in this regard.

9.2.5 Further development throughout H7

As we have seen in 2020 consumer priorities can alter depending on what is going on in the world around them. This then creates new pressures and opportunities for the airport. We therefore think that it is important to ensure that the service quality incentive regime should become more flexible and agile, allowing it to evolve more quickly over time to meet these changing consumer expectations rather than having to wait for a potential 5-year regulatory reset.

Additionally, our insights identified some measures of success that could give us useful insight into how we are performing against our outcomes but which we cannot currently introduce because they are not clearly defined, not tested or it is unclear whether they would be cost beneficial. Examples include measuring the level of trust a consumer has in the airport, as suggested by Blue Marble in their future measures work.⁸⁷

To both incorporate changing consumer expectations and new measures as they become available, we want the ability to continually improve our service quality framework. This builds on our continuous improvement proposals set out in the IBP and the discussions held with the Airline Community through CE.

We will work closely with consumers and our stakeholders to innovate, learn and adapt our approach to performance monitoring. Our approach pushes the boundary on regulatory best practice as similar issues arise in other sectors. For example, in the water sector innovation regarding measures has been limited between PR14 and PR19 as companies generally have

⁸⁷ *Blue Marble Research, Consumer Outcomes – Future Measures, September 2020*

used metrics that already exist. Unlike these sectors we will not wait until the next price control to update our measures.

We propose to set up an annual review mechanism at the end of Q3 2021, where we will review Heathrow and the airline community's' consumer insight evidence against our current set of measures and aim to reach agreement about whether any of the current set of measures need to be removed, amended or evolved due to changes in consumer's needs and wants. We want this process to be as agile and flexible as possible, however a key principle must be that any changes do not change the level for regulatory risk to which Heathrow is exposed through the service quality framework.

If Heathrow and airline community are not able to agree on a proposed change that any party makes, then we propose the decision be will escalated to the CAA Consumer Panel to decide whether they believe that enough consumer evidence has been provided in order to justify the change being made to the scheme. Challenges to the CAA Consumer Panel would need to resolve by the end of Q4 in each year so any changes could be implemented where possible in time for reporting in January the following year.

9.3 – CAPITAL GOVERNANCE

Chapter Overview

- The capital efficiency framework is a key aspect of the regulatory framework to ensure that capital investments are made efficiently and in the interests of consumers.
- The Q6 capital efficiency framework has facilitated the delivery of around £3bn of efficient capital investment over the Q6 period, with the Independent Fund Surveyor (IFS) confirming that the changes implemented have addressed the key learnings from Q5.
- The CAA has been reviewing its policy on capital efficiency for H7 and is continuing to consult on its proposals to move towards an ex-ante capital efficiency framework.
- As yet, the CAA has not evidenced the need to change its approach to capital efficiency and has not provided an impact assessment of its proposed move to ex-ante incentives.
- Given the CAA has not yet put forward final proposals we have set out our views on the right framework for H7 and the benefits it would provide for consumers and the airline community.
- H7 will be a period of unprecedented uncertainty, meaning that flexibility in the regulatory framework will be key. Our proposals to retain the Development and Core framework ensure that the flexibility inherent in the Q6 framework remains.
- Additionally, a move towards a full ex-ante based framework risks increasing costs for consumers exactly when Heathrow needs to focus on providing a competitive airport charge. Our proposals to apply ex-ante incentives only to our asset replacement programme ensures that the capital efficiency framework does not increase costs to consumers.

9.3.1 Introduction

Arrangements for capital governance are an important aspect of the regulatory framework to ensure that capital investments are made efficiently and in the interests of consumers. It is also an important part of ensuring regulatory stability for investors through the incentives applied to ensure capital efficiency.

Through Q6, Heathrow and the airline community have worked together to improve the arrangements for capital efficiency and capital governance. Building on the lessons learned from the Q5 period, the Development and Core framework allows for increased flexibility in the delivery of Heathrow's capital portfolio. It ensures that Heathrow is remunerated only for works undertaken and sets out a clear role for the airline community in agreeing the capital portfolio.

The uncertainties of the H7 period means that we will need to retain these levels of flexibility and collaboration. Our capital portfolio will need to be able to adapt to meet the needs of consumers and the uncertain operating environment we find ourselves in.

In our IBP we set out an initial view of capital governance for the H7 period. Since the IBP there have been a number of changes which have required us to review and update our proposals. The proposals put forward in this chapter build on our response to the CAA’s CAP1951 consultation.

9.3.2 Changes since the IBP

Our IBP was very much based around the efficient and affordable delivery of Heathrow Expansion. Heathrow’s Revised Business Plan (RBP) and proposed framework for the H7 period are focused on the operation and development of a two runway airport. The same goes for Heathrow’s capital efficiency proposals.

Additionally, over 2020 the CAA has provided increased detail on its proposals for capital efficiency in the H7 period. These documents build on the CAA’s initial thinking regarding the implementation of a stronger ex-ante capital framework in H7. There was extensive discussion regarding these proposals through the Constructive Engagement process.

Our proposals in the RBP take into account both the CAA’s proposals in CAP1951 and its CAP1940 guidance as well as the extensive discussions held through Constructive Engagement.

9.3.3 Airline community engagement on capital efficiency

Our capital governance means that we are constantly engaging with airlines on our capital portfolio through governance forums and engagement with the IFS. This allows us to continuously review airline priorities for capital. In particular, there has been intense engagement on our capital plans for 2020 and 2021 to reflect the need to reduce capital investment in the near term.

We also engaged with the airline community on capital efficiency through Constructive Engagement, which facilitated trilateral discussion over the course of nine weeks on the future capital efficiency framework. The focus of the discussion was particularly on the impact of the CAA’s proposals in CAP1951.

Table 1: Heathrow's position on capital efficiency following airline feedback

Airline community feedback through CE ¹	Heathrow’s response in the RBP
<p>Evolution of Leadership & Logistics (L&L)</p> <ul style="list-style-type: none"> • Business cases should no longer include a % for L&L • Propose managing remaining L&L costs as Heathrow currently does, as separate and stand-alone costs that support the portfolio 	<p>The proposal to treat L&L as a separate standalone item is something that Heathrow will consider in terms of both financial accounting applicability, and also any impact the H7 regulatory framework (ex-ante, ex-post) would have on the working arrangement.</p>

¹ During Constructive Engagement meetings or Heathrow Airline Community, *Airline Community Response to H7 CE*, October 2020, pp.12-14

<ul style="list-style-type: none"> • Need to understand what drives the L&L costs in regular reviews (quarterly) of actuals and forecasts, developing KPIs for measurement and challenging the requirement to spend if savings are required 	<p>More information on our current views on L&L is set out in section 9.3.8 of this chapter.</p>
<p>The airline community remains supportive of Heathrow's forecasting approach to using P80 (pre-G3) and P50 (post G3) estimates to generate a capital project budget.</p>	<p>Heathrow will continue with this forecasting approach.</p>
<p>The airline community would like to see an improvement in the transparency on how risk money is allocated and spent, and ultimately the governance over approved money with unknown allocation at the time of sign off.</p>	<p>The risk processes for H7 will be developed alongside the other regulatory aspects with potentially differing routes for ex-ante and ex-post projects.</p>
<p>The airline community also expect a greater degree of development with regards to the procurement strategy</p>	<p>Heathrow will continue to keep the airline community updated with regard to the procurement strategy. It is currently planned to give an update on progress at the IFS Working Group in the first months of 2021.</p>

Source: Heathrow

Additionally, we have also continued to engage with the airline community following our response to CAP1951 to understand airline views on our proposed approach. Through 2021 we propose to use the IFS Working Group to develop the capital efficiency measures for H7, ensuring ongoing engagement with both the airline community and the IFS on implementing these proposals.

9.3.4 The CAA's CAP1951 proposals

Through 2020, the CAA has further developed its thinking on capital efficiency, setting out proposals in its CAP1940 and CAP1951 documents. However, the CAA has not yet provided a final view on the capital efficiency framework for H7. The CAA's overriding objective was to build on the success of the current Development and Core framework, responding to feedback by stakeholders, the IFS and Arcadis.

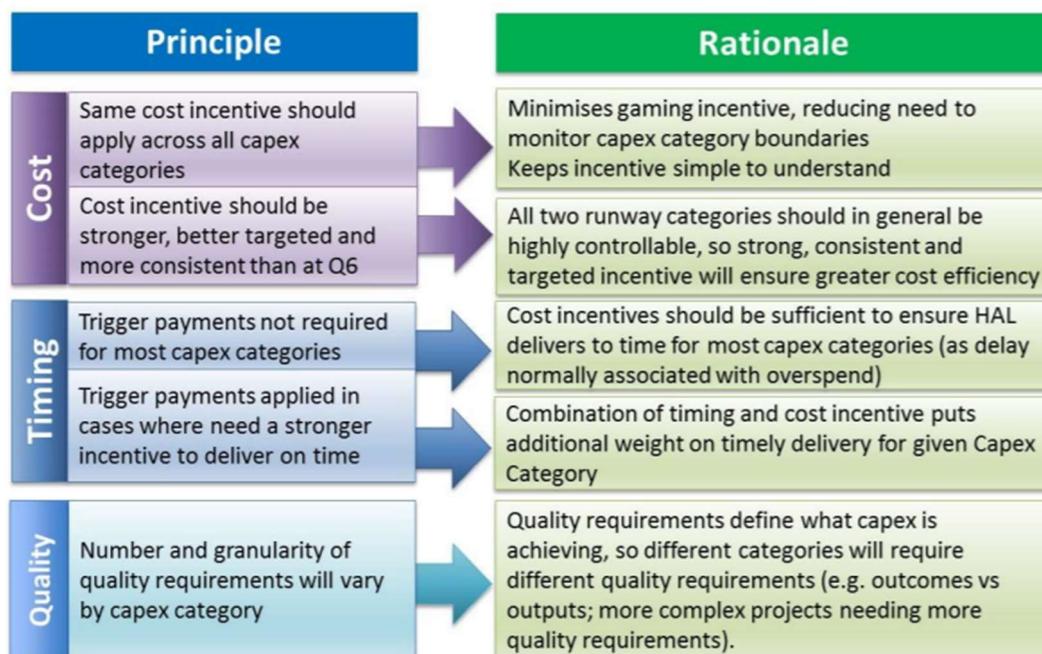
We agree with this approach at a level of principle and that, where possible, we should improve governance through H7, building on the improvements made through Q6. However, through the process, we have raised concerns with the CAA's approach to capital efficiency for H7. In particular, we are unclear on the problem the CAA is trying to resolve through its proposals. We still await evidence from the CAA on the need for any of its proposed interventions.

Neither has the CAA explained how its proposals are proportionate – how they respond to a clearly identified problem in a way which is targeted and no more onerous than necessary – and therefore how they are consistent with the CAA's statutory duties. This is particularly

evident given that airlines support the Development and Core framework from Q6. Indeed, Heathrow’s view is that the CAA proposals will only increase costs to consumers, through a higher cost of capital which would reflect the additional risk which Heathrow will become subject to and are therefore contrary to the CAA’s primary statutory duty.

The CAA’s proposals continue to move towards an ex-ante based capital efficiency framework. The CAA also proposes changes to incentives around delivery, with an increased focus on benefits delivery, and suggested changes to improve governance in line with comments from airlines and reports from the IFS.

Figure 1: Key principles of the CAA’s approach to capital efficiency, as set out in CAP1951



Source: CAA²

The CAA provided explanations of its proposals through Constructive Engagement and in a separate trilateral stakeholder session, however it is important to note that, at this point, the CAA has not provided a final view on the capital efficiency framework for H7. Given this, we have based the capital efficiency framework in our RBP on the framework we proposed in our response to the CAA’s CAP1951 proposals. Our proposal builds on Constructive Engagement and the successes of Q6.

9.3.5 The Q6 framework and the foundations for H7

At the start of Q6, Heathrow and the airline community agreed on the definition of efficient capital investment:

“Efficient capex is the delivery of an asset in a manner which optimises and balance scope, time, cost and risk, provided in an appropriate manner having followed a structured development process with appropriate decision points and governance”³

² CAA, CAP1951

³ Capital Efficiency Handbook, April 2015

Through the Q6 process and the subsequent regulatory period Heathrow and the airline community jointly developed and improved the Development and Core framework in order to ensure that capital was delivered efficiently. The Q6 capital efficiency framework was designed to provide flexibility and facilitate collaboration between Heathrow and the airline community by learning the lessons of Q5. The IFS has been clear that the changes made in the Q6 framework and the development of the process throughout Q6 have addressed the majority of the learning points from Q5.⁴ While areas for improvement were identified in the IFS' end of Q6 report, it was clearly stated that cost and time overruns for high value and high complexity projects are often caused by reasons outside of the project team's control, with low value and low complexity projects generally delivered on time and under budget.

The introduction of Development and Core has proved a success in both allowing Heathrow and the airline community to adjust the portfolio during the regulatory period and ensuring that passengers only pay for the projects which have been carried out through airport charges. By the end of 2019 around 720 projects passed the Gateway 3 process with a total value of £2.9 billion (2018 prices). These projects were completed within 0.5%⁵ of their estimated G3 value.

The following key aspects of the Q6 framework make it an effective process for managing efficient delivery of capital:

- **A well-defined governance framework codified in the Enhanced Engagement Protocol and Capital Efficiency Handbook:** with a particular view of getting early airline engagement on the most relevant business cases. This has been a successful development that has taken place in Q6.
- **Gateway process:** our investment decisions go through a gateway process known as the Heathrow Gateway Lifecycle, which means that our business cases are reviewed at key points in their life. Gateway 3 (G3) represents a key milestone where the airline community agree to the business case proceeding into implementation, and where triggers (where relevant) are defined. The G3 business case value represents the cost allowance for Heathrow to recover through airport charges setting strong ex-ante cost incentives for delivery. In addition, G3 sets ex-ante costs incentives for Heathrow in the form of trigger payment definition for timely delivery of investment. We would continue to see this form of ex-ante incentive playing a role in H7
- **Ex-post evaluations of expenditure:** at the end of the price control period, the CAA reviews whether Heathrow has efficiently delivered projects. Any expenditure that is considered inefficient is removed from the RAB and therefore not allowed to be recovered through airport charges in subsequent price control periods.
- **Independent Fund Surveyor (IFS):** the IFS is jointly commissioned by Heathrow and the airline community to guide, review and scrutinise our spending decisions in real time. The IFS play a role throughout the majority of the gateway process. Its input is also used in the ex-post evaluation of final expenditure by providing impartial records and judgements of decisions at the time they were taken as opposed to years afterwards.

The Q6 process has also provided the CAA and airlines with a wealth of information and evidence on the efficiency and effectiveness of Heathrow's capital delivery. Over the Q6 period, the IFS has provided in excess of 650 reports on Heathrow's capital delivery. This has

⁴ Gardiner & Theobald, *End of regulatory period Q6 report for CAA*, Page 5

⁵ excluding the tunnels, HBS and T3IB projects

provided unparalleled levels of transparency for airlines and the CAA, helping stakeholders engage fully in both everyday governance and ex-post reviews of Heathrow's performance.

Governance arrangements across the Q6 period have also been largely successful with no escalations being made to the CAA through the period. Through CE, airlines agreed that the Q6 framework had been successful in allowing us to invest in a flexible, collaborative and transparent manner. We are therefore proposing to use the Q6 framework as the basis for our H7 capital efficiency proposals.

While the Q6 framework focuses mostly on an ex-post assessment of Heathrow's capital delivery to review efficiency, the structure of the framework has meant that Heathrow has also faced an average ex-ante incentive of 13% across the period. However, as part of its proposals for H7, the CAA is proposing to remove ex-post reviews of efficiency and focus solely on the use of ex-ante incentives with an incentive rate of between 13% and 50%. The level of risk to which Heathrow is exposed through this current 13% incentive rate is factored into Heathrow's WACC as well as factored into the approach Heathrow takes to delivering projects, for example through our contracting approach and risk allowances.

The effectiveness of this framework is clear, with around £3bn of capital invested in Q6, the CAA's ex-post assessment of efficiency pointed to only a handful of projects where there could be potential evidence of inefficiency, totalling around £12.7m in the CAA's initial assessment.⁶ We therefore consider that the strength of the current incentives on Heathrow have provided adequate incentives to ensure efficiency, as evidenced by the CAA's document and the IFS's review of our Q6 delivery⁷, while ensuring we can put every pound to work for the interests of consumers. For H7, it is important that we retain the balance to allow us to continue delivering value for money.

For these reasons, we are proposing to retain the Development and Core ex-post framework for the delivery of larger, one-off projects which require extensive airline review and engagement.

However, if the CAA evidences ex-ante incentives are required and we believe it can be appropriately applied to smaller categories of capital investment, we would propose in this case that the incentive rate remains close to the current 13% rate at around 15%, in order to maintain the balance struck by the current framework.

9.3.6 Key requirements of the capital efficiency framework in H7

Building on the CAA's approach, airline feedback through CE and our assessment of the environment we will be facing in H7, we consider that the key requirements of the H7 framework are:

- To build on the Development and Core governance used in the Q6 price control with any changes representing an evolution of the current framework. This includes:
 - Retention of the Development and Core framework;
 - Retention of the current method for setting and adjusting airport charges; and

⁶ CAA, CAP1964

⁷ Gardiner & Theobald, *End of regulatory period Q6 report for CAA*

- Ensuring that airport charges continue to reflect only capex which transitions from Development to Core through the period;
- To aim for a clearer more streamlined approach to governance, reflecting the resourcing constraints on the industry and the need to be clear about roles and responsibilities;
- Any framework must be flexible to deal with the fundamental uncertainty which is characterising the H7 period to ensure that the capital plan is able to evolve and reflect the changing needs of consumers through the period;
- Heathrow and the airline community should retain the scope to agree the capital portfolio, change as necessary and only escalate to the CAA in the event of disagreement to ensure that the capital plan continues to include only investment that is needed and can drive benefit; and
- The framework should not place unreasonable risk on Heathrow by fundamentally changing the ex-ante incentive to which Heathrow is currently exposed and should provide clear and symmetrical incentives.

9.3.7 Our proposal for the H7 framework

Our proposals build on the Development and Core framework by improving and streamlining governance and providing greater transparency on the objectives we are hoping to achieve through the capital plan. The proposals also build on the experience from Q6 of which projects require greater focus by ensuring that these remain the key focus of engagement between Heathrow and the airline community.

We are proposing to retain the Development and Core framework for the delivery of our capital plan. We are also proposing to retain the ex-post nature of the current framework for at least part of our capital portfolio in order to retain the flexibility and simplicity of the current framework. Our proposal does, however, make provision for the implementation of ex-ante incentives, but only on programmes which meet the clear criteria set out by Frontier Economics⁸ to be regulated through an ex-ante framework. This centres around our asset replacement programme, within which projects are smaller in nature, repeatable and able to be easily benchmarked.

⁸ Frontier Economics, *Ex ante incentives for investment at Heathrow*, April 2018

Figure 2: Our proposed capital programmes

Strategic Priority	Objective	Capital Target	Priority Definition	PROGRAMMES							Illustrative Projects	Consumer Outcome	
				Asset Replacement	T2 Baggage	Regulated Security	Commercial Revenue	Efficient Airport	Carbon & Sustainability	Future Ready Airport			
Protect the Business	Critical Asset Management & Compliance	£1,800m	Deliver critical safety and security projects and comply with the imposed standards.	Critical Safety, Security & Compliance Scope only £1,200m	T2 Baggage £180m	Minimal compliance achieved £420m						<ul style="list-style-type: none"> Tunnels T1 Baggage Prolongation Regulated Security Upgrade 	<ul style="list-style-type: none"> Airport Choice Getting to/from the airport Basic Comforts
	Protect Efficiency and Revenue	£278m	Protect existing commercial revenues and avoid material opex increases which would increase the airport charge				Protect existing Revenues £100m CrossRail £78m	Avoid material Opex Increases £100m				<ul style="list-style-type: none"> Retail shell & core CrossRail Contribution Cargo 	<ul style="list-style-type: none"> Airport Choice Predictable and Reliable Enjoyable & Connected
Win the Recovery	Efficient Airport	£504m	Drive down the total cost of operation at Heathrow for the whole community			Security Transformation £130m		Automation & Digitalisation £374m			<ul style="list-style-type: none"> Security Transformation Automation & Digitalisation 	<ul style="list-style-type: none"> Airport Choice Predictable and Reliable 	
	Commercial Revenue Generation	£600m	Unlocks incremental revenue generation by delivering consumer outcomes over and above the critical compliance				Generate Incremental Revenues £600m				<ul style="list-style-type: none"> Road User Charging Safe to Fly Next Gen Retail Touchless Technology 	<ul style="list-style-type: none"> Basic Comforts Airport Choice Predictable and Reliable Basic Comforts Enjoyable & Connected Cared For 	
Build Back Better	Carbon & Sustainability	£181m	Tackling carbon and addressing air quality impacts - Decarbonising airport infrastructure - Enabling emissions reductions on the ground - Reducing Aircraft emissions						Carbon & Sustainability £150m		<ul style="list-style-type: none"> Sustainable Aviation Fuels Electric Ground Fleet Community investments 	<ul style="list-style-type: none"> Airport Choice 	
	Future Ready Airport	£150m	Build resilience, unlock capacity and transform service	Potential to use some allocation for this activity				Potential to use some allocation for this activity		Build Resilience, Capacity & Service £150m T5 Station Fit Out £31m	<ul style="list-style-type: none"> Improve baggage and passenger connections T5 Station Fit Out Automated Airfield 	<ul style="list-style-type: none"> Airport Choice Getting to/from the airport Predictable and Reliable Basic Comforts 	
Total Programme		£3,513		£1,200m	£180m	£550m	£778m	£474m	£150m	£181m			

Source: Heathrow

We are proposing to adapt our approach to defining and tracking objectives, outputs and benefits from our capital portfolio, starting with setting high level Delivery Objectives in our RBP ahead of the H7 period. We will then refine these through the period to set more detailed quality requirements which will replace the current capital triggers approach and be used to incentivised delivery of the agreed scope and outputs to the agreed timescale, at G3.

We are responding to the changing nature of our operating environment and the impact this has had on resource levels both at Heathrow and airlines, by proposing a streamlined governance process focused on the delivery of benefits and outputs at a programme level. This will allow us to focus more strategically on the key outputs across the capital portfolio and ensure more time is allocated to focusing on the projects which really drive consumer benefit or require more detailed airline input.

Table 2 sets out the implementation of our proposed framework across the milestones of the regulatory process:

Table 2: Heathrow's proposed H7 capital efficiency process

Point in the process	Proposed capital efficiency framework
<p>Setting the H7 price control</p>	<ol style="list-style-type: none"> 1. Use of the proposed capex plan set out in our RBP and subsequent 2021 updates to set an overall capex envelope. This will allow for the H7 baseline charge to be calculated. This baseline includes: <ol style="list-style-type: none"> a) The sum of Development expenditure and Core expenditure set out through projects to which we have already committed spend (it should be noted the vast majority will be Development expenditure at this stage) b) An initial view of expenditure on a programme basis 2. The RBP and subsequent 2021 updates divide proposed capex into clear, programme level categories for management of costs, deliverables, benefits and governance. 3. Where ex-ante incentives are justified and suitable to be implemented, the incentive rate and required outputs for the programme should be set. Our current view is that this would be suitable for implementation on the asset replacement programme only. 4. Delivery Objectives are set for programmes, setting out the high-level outcomes that Heathrow and the airline community will work to deliver. 5. The Leadership and Logistics percentage is set for the period.

During the period

6. Business case, deliverables, quality and timescales are assessed and validated by the IFS with delivery against these reported on at Capital Programme Board (CPB) on a quarterly basis.
7. Changes to quality requirements are agreed with airlines through governance forums subject to changing needs and priorities.
8. In the case of projects forming part of the asset replacement programme, if these were to be subject to ex-ante incentives they will transition through the Gateway process, with the cost baseline set at the P2 programme level. This P2 level governance groups together what would currently be G3 level events for individual projects into tranches as per the IFS's programme level guidance, to reduce the number of G3 events. Performance against delivery for asset replacement projects will be reported at a total programme level through the period. This will take place on a quarterly basis at CPB. If there is a material change in assumptions related to asset replacement requirements, then a change to agreed project baselines can be requested and implemented on agreement with airlines, using the existing governance forums.
9. For all other programmes the current Development and Core process would remain for the governance of associated projects. The volume of Development to Core activities would potentially reduce if asset replacement were part of an ex-ante framework. Another opportunity that would be considered, building on the performance of outturn versus G3 during Q6, is the option of taking scope through G3 in larger scope packages to promote efficiency.

<p>Governance through the period</p>	<p>10. In order to ensure that governance is improved where required and reflects the current situation in regard to resourcing we propose that the following changes are made:</p> <ul style="list-style-type: none"> a) Focus monitoring and engagement at programme level to align with capex categories and ensure airline input at a strategic level. This should build on the approach developed by the IFS and agreed with the community for FT2 and HAC b) Gather more formal written input from the airline community through these governance forums to provide an appropriate audit trail, ensure appropriate and detailed input early in the process and avoid repetition through different governance groups c) Capital working groups are continued in order to receive appropriate input and oversight from the airline community d) Refocus the IFS role to provide airlines with more comfort on technical scrutiny of the portfolio at both portfolio and programme level in order to streamline airline governance e) Increased focus on benefits reporting at programme level with quarterly formal updates to CPB and monthly written updates on benefits delivery
<p>Reflection in annual airport charges</p>	<p>11. On an annual basis, airport charges are adjusted to reflect the maturing of the portfolio (actual and planned Development capex, and capex transitioning from Development to Core), as per the arrangements in Q6.</p> <p>12. Performance against the delivery of project scope and timing within the airport charges year in question is reviewed and rebates/bonuses are adjusted for through the annual charge.</p> <p>13. Actual expenditure is added to the RAB on an annual basis but is not reflected in the annual charges adjustment, as per the Q6 process.</p>

End of H7 process	<p>14. At the end of the price control the CAA will need to carry out two reviews:</p> <ul style="list-style-type: none"> a) Ex-post review of programmes which are not governed through the ex-ante framework b) Light touch review of expenditure within the asset replacement programme adjusted for the ex-ante incentive applied
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Source: Heathrow

9.3.7.1 Defining cost categories

We agree with the CAA that it is possible to identify categories of capital investment by the outputs they are expected to achieve. This could allow Heathrow and the airline community to define delivery objectives for the portfolio at a manageable level which could be tracked and reported on easily.

Building on feedback from the IFS, we propose that capital be categorised at a programme level. This will allow us to properly set out the objectives the programme is seeking to achieve and track progress of the delivery against these objectives. It will also allow us to better structure the governance process to reflect the changed resource level across our organisations by streamlining reporting and portfolio management to focus on a programme level view.

We have shown this categorisation based on our current capital plan in Chapter 6 of our RBP and Figure 2.

9.3.7.2 Defining Delivery Objectives

We agree that ensuring the agreed outputs and benefits are delivered is important to protect the interests of consumers. Building on the CAA's proposals and feedback from airlines in CE, we are setting high-level delivery objectives for each of our programmes of capital investment in our RBP.

In contrast to the CAA's proposed 'Delivery Obligations', these Delivery Objectives set out the aims of each programme of capital expenditure for the H7 period. This will provide the CAA with clarity on how our proposed capital plan will benefit consumers through the H7 period and why our proposed expenditure is needed. It will also provide Heathrow and the airline community the opportunity to engage on these overall aims for the capital plan and ensure we have a defined objective for each programme ahead of starting the H7 period.

The high-level nature of these objectives means that, while they provide a clear objective for what our capital plan should deliver over the period, they can be refined and adapted into more detailed delivery and quality requirements through the Gateway process. More information on this is set out in the section below on quality requirements and timing incentives.

9.3.7.3 Setting cost baselines

As set out in Table 1 above, the retention of the Development and Core framework means that cost baselines are set at the G3 gateway through the H7 period. In our RBP, we have proposed a capital envelope for the H7 period, which has been used to calculate the passenger charge for the period. The charge will then be adjusted through the period, as per the current Q6 process, to reflect actual capital expenditure which has transitioned from Development to Core, ensuring that airport charges reflect only capital which has been transitioned through the period.

This approach retains the basis of our Q6 framework for setting baselines and reflecting capital expenditure in the airport charge. This approach is transparent for airlines, in that it ensures the airline community continue to have a prominent position within the capital investment process. Additionally, it provides transparency for consumers, with the airport charge only reflecting the capital expenditure that is being put to use in delivering benefits. In contrast, the CAA's proposal of setting agreed baselines in the H7 settlement removes the important airline role in the process of prioritising and agreeing capital expenditure.

9.3.7.4 Cost efficiency incentives

As we set out in our IBP⁹ and in our responses to CAA consultations¹⁰, there has been no evidence to suggest moving to a purely ex-ante capital efficiency framework benefits consumers or would increase Heathrow's capital efficiency. Even if it were to be evidenced that this approach was required to strengthen efficiency incentives on Heathrow and deliver better outcomes for consumers, it would not be appropriate to implement a purely ex-ante framework for every project undertaken by Heathrow due to their specific characteristics and the increased risk this may cause.

The benefits of the move to an ex-ante framework have not yet been quantified by the CAA. This makes it unclear how the CAA could proceed in line with its statutory duties for example, its duty to have regard to the need to ensure regulation is proportionate. A stronger ex-ante incentive would impact the risk to which Heathrow is exposed, potentially leading to an increase in the WACC, and could drive a change in contracting behaviour, which could lead to an increase in project costs. Together these would increase costs to consumers. In their report, provided with the IBP and available at Annex 38, Steer clearly state that under an ex-ante model *"there is little evidence that costs to consumers would reduce"* and that the higher risks associated with ex-ante would lead to investors needing a higher return on equity or a higher margin on debt.¹¹

If an ex-ante regime is implemented, it is clear from previous evidence set out by Frontier Economics¹², provided alongside IBP and available at Annex 11, and Steer that it would only be appropriate to implement for a subsection of Heathrow's capital plan. The evidence from Frontier Economics' report is provided below at Figure 3.

⁹ IBP Capital Investment chapter, pages 165-199

¹⁰ Heathrow responses to CAP1541, CAP1658, CAP1782, CAP1876, CAP1951

¹¹ Steer, *Heathrow Airport – Assessment of CAA-consulted ex-ante capital allowance process*, December 2019, page 32

¹² Frontier Economics, *Ex ante incentives for investment at Heathrow*, April 2018

Figure 3: Suitable conditions for implementing ex-ante incentives

Condition	Assessment of suitability
When the regulated party has a large degree of control over costs	If the regulated party does not have a large degree of control over the costs, this could lead to inflated cost estimates
When the cost involved does not make up a significant proportion of the firm's total costs	In the case a project makes up a large proportion of costs, even low levels of risk may have a large impact on financing costs leading to higher costs for consumers
Short-duration projects	This may increase the ability to predict costs with reasonably low levels of risk
When benchmarking wider cost categories	While individual capital projects may have relatively high degrees of risk, wide ranges of capex projects may diversify a large proportion of that risk
When multiple projects are not interdependent	If projects are interdependent, the risks are typically correlated and not, therefore, diversified
When similar projects are repeated over time	This might imply that the costs involved are more predictable and increasingly able to be benchmarked, and therefore carry less risk
When there are suitable comparators from other companies or sectors	Again, this could mean more reliable cost estimation and less exposure to uncertainty and risk

Source: Frontier Economics, *Ex ante incentives for investment at Heathrow*

Steer's assessment was similar stating that "Each programme of works will have a portfolio of routine, maintenance projects that will be highly understood and/or have a high degree of cost certainty. These projects could lend themselves to being under an ex-ante regime"¹³. Given this evidence base, we consider that only projects related to asset management, which are small, repeatable, benchmarkable and well understood would be suitable for an ex-ante regime. Our proposals provide ex-ante incentives to be applied to this category of capital expenditure only.

If implemented, we propose that a constant ex-ante incentive of around 15% would be appropriate for this programme of spend. This would provide a higher incentive rate than that applied in Q6 but avoid material changes in Heathrow's risk exposure and contracting approach, which would be driven by an incentive rate higher than this. We agree with the CAA's proposal that ex-ante allowances be set at the G3 gateway. In order to streamline the process and reduce governance burden, we propose to set these cost allowances for tranches of projects as part of the new P2 programme level gateway under our proposed programme approach to governance. This is set out in more detail in the section below on governance improvements.

In order to monitor delivery of this programme of spend, we propose quarterly updates of delivery against budget as part of the capital governance. Should increases in expenditure be required due to increasing passenger numbers or increases in service standards be required,

¹³ Steer, *Heathrow Airport – Assessment of CAA-consulted ex-ante capital allowance process*, December 2019, page 33

this change in scope will be taken through capital governance processes and the cost allowance changed accordingly through the Development and Core process.

For other programmes of capital expenditure, we propose to retain the current ex-post framework. Based on the evidence set out from Frontier Economics in Figure 3 and our evidence from Steer, larger programmes would not be suitable for stronger ex-ante incentives as they are usually broad, complex, one-off programmes of spend.

“Projects that are less fully understood, or may not even be at the design stage, have very little cost certainty. These projects will evolve in their size, specification and scope over time and are less suited to a fixed-cost regime. These projects appear more suited to the current Heathrow model where projects are collaboratively developed over time, and with the support of the IFS, are able to have their budgets jointly approved by the airport and airlines, so long as the costs are still considered by the IFS as being efficient.”¹⁴

We therefore propose that these projects continue to be governed through the Development and Core capital process to allow for increased airline engagement and monitoring in the governance process and to ensure that costs are not increased for airlines and consumers. This would therefore retain the average 13% ex-ante incentive over the period, as per the Q6 framework.

9.3.7.5 Quality requirements and timing incentives

Following on from the establishment of high-level Delivery Objectives, we propose to refine these requirements through the Gateway process to establish more detailed Quality Requirements against which Heathrow’s performance in delivering agreed capital investment can be assessed and incentivised. These quality requirements should build on the current triggers approach and set out the agreed deliverables, quality and timescales. Our proposal therefore assumes that these new quality requirements replace the current capital triggers.

These quality requirements should have a financial incentive attached to them. We propose that these are symmetrical incentives and are implemented in a similar way to the current trigger process with reconciliations taking place annually through the airport charge calculation. It should be noted that we also would recommend that for H7, this revised ‘trigger’ process is applied with a proportional assessment of achievement. We have seen the binary nature of the trigger assessment used negatively in Q6, and we believe that a proportional approach will be fairer for all. Changes to the timing and deliverables could be made by agreement with the airline community through existing governance processes. These changes would then be reflected in the reconciliation process.

We are not proposing to include financial incentives relating to the delivery of project benefits. As discussed through CE, the delivery of benefits can be difficult to fully and robustly estimate given the large number of factors which influence performance across the airport. This is particularly true of financial and passenger satisfaction benefits which can be heavily influenced by other initiatives or external events. We do, however, acknowledge the importance of identifying expected project benefits as part of the business cases jointly agreed with the airline community. We also accept that benefits tracking is an important part of assessing the success of the capital portfolio. We therefore propose quarterly reporting of

¹⁴ Steer, *Heathrow Airport – Assessment of CAA-consulted ex-ante capital allowance process*, December 2019, page 33

progress against the Delivery Objectives identified at the programme level through capital governance forums alongside monthly written updates.

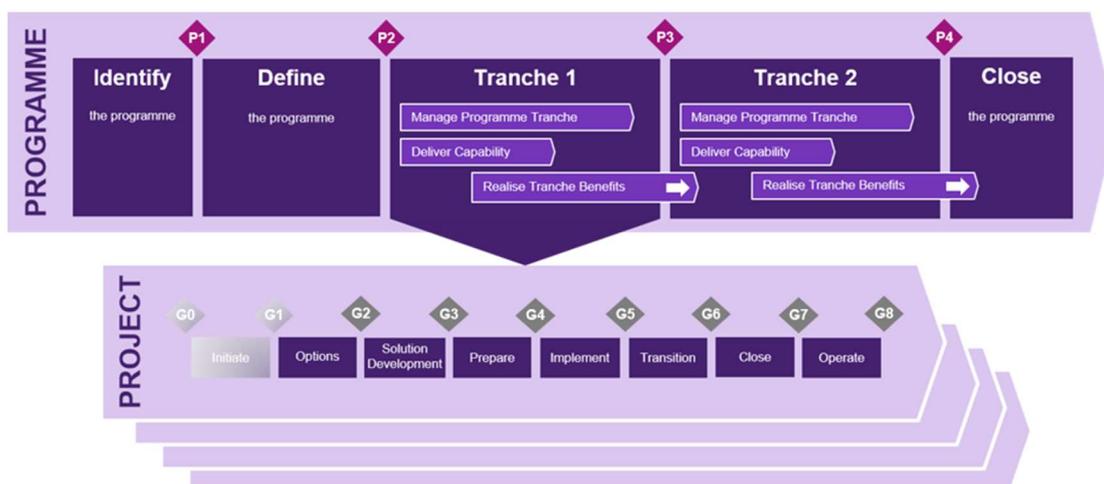
For asset replacement projects, which could be subject to an ex-ante incentive framework, Quality Requirements are already set through the service quality framework. Through CE conversations, the airline community has been clear that it expects Heathrow to retain measurement of asset replacement metrics as part of the future outcomes-based regulation service quality scheme. These prescribed measures and targets serve as the Delivery Objectives for the asset replacement programme and can be used to track delivery of Heathrow’s capital programme. Additional financial incentives are therefore not needed for asset replacement projects.

9.3.7.6 Governance improvements

For the H7 period, it will be important to ensure that the governance process both builds on the areas of improvement identified by stakeholders, IFS and Arcadis and makes allowance for the changed operational environment for both Heathrow and the airlines, where resources will be more constrained than ever. To strike this balance, we are proposing to move to a more programme-based approach to capital governance and refocus the IFS role to provide more technical scrutiny at programme and project level.

This will build on the approach developed by the IFS and previously agreed with the airline community. The below diagram illustrates our proposed approach:

Figure 4: Heathrow programme lifecycle aligned to project lifecycle



Source: Heathrow

This approach would build on the work initiated under the more recent Q6 programmes where the IFS started to review the Future Terminal 2 and Heathrow Additional Capacity programmes and produced a ‘Programme Management Assessment Criteria’. P2 would be where the regulatory incentives are set, with appropriate governance with the community. The IFS would also assess the programme maturity at P2 to provide an independent view of the assessment of costs and benefits

Therefore, under this approach, programmes subject to ex-ante incentives would focus governance activity on the P2 gateway. At this gateway, a cost baseline would be set for the

tranche of projects going through the gateway process. Projects would then be managed by the Heathrow team, with airline governance and updates on progress focused on the programme level. This would continue until the P3 gateway where the next tranche of projects is ready to progress through governance.

For more complex programmes which are not subject to ex-ante incentives, the setting of Quality Requirements and the cost baseline at would continue to be governed through the more bottom-up programme approach with regulatory incentives being set at G3. However, where possible, we would endeavour to group projects in suitable tranches to minimise G3 gateway events and associated governance.

For reporting on delivery against objectives and benefits of delivery, we propose to focus on the programme level. We propose to provide quarterly reporting on benefits delivery to CPB along with monthly written updates in order to ensure that airlines have transparency on benefits delivery and programme progress.

Detailed governance arrangements for capital efficiency in H7, including any updates required to the current protocol, will be made through 2021 and into the H7 period. As discussed through CE and as was the case in Q6, we will need full clarity on the arrangements for capital efficiency for the H7 period before detailed governance can be outlined. We will work with the airlines through 2021 to develop this detail.

9.3.8 Leadership & Logistics

Leadership and Logistics (L&L) costs are made up of capital costs which are not directly attributable to specific projects and include Heathrow staff costs, design and delivery integration services, and construction related logistics. In Q6, an allowance of 13.4% of all capital expenditure was included in the settlement, consistent with industry benchmarks for similar organisations with major infrastructure development. Over the Q6+1 period, Heathrow has outperformed this allowance, spending only 13.3%.

This mechanism incentivises Heathrow to drive efficiencies and reduce overhead costs as no more than 13.4% can be included in airport charges, but if Heathrow spend less than 13.4% the savings on top of the expenditure are added to the RAB and airport charges.

The H7 portfolio remains immature as outlined in the Capital Investment Chapter, with a high percentage of business cases remaining at concept stage. This level of uncertainty of the types of projects that will be included in the prioritised allowances means it is difficult to define the optimum procurement and logistics strategy to deliver efficiencies. As such, the L&L allowance for H7 remains at 13.4%, representing an appropriate benchmark of overheads within the portfolio, as long as the current regulatory capital framework remains as it is today.

Through Constructive Engagement, the airline community requested us to consider different mechanisms for managing L&L, including managing the costs as a separate project which are not then allocated to individual projects but periodically added to the RAB as one 'asset'. This mechanism of allocation is one we can consider however will be dependent on any change to the regulatory framework.

We know that H7 will be unlike any other recent regulatory period; there will be no material new infrastructure or capacity added and the focus on critical compliance will likely result in multiple small, less complicated projects. These factors present both opportunities and risks to the current efficiency target of 13.4%.

Opportunities to reduce the overhead costs exist through:

- Reducing the amount of governance needed as a result of a potential ex-ante treatment of these smaller asset replacement projects, and with simpler design needed pre-G3 which may reduce early costs.
- Driving an innovative approach to asset replacement which may precipitate a higher proportion of technological asset replacement than ever before, reducing logistics costs on top of the reduction in physical movement of large infrastructure components which increase warehousing and control post costs.
- The impact of undertaking more manufacturing off site and what efficiency benefits that could bring. The efficiency benefits could change the profile of costs, with say a factory or logistics hub being required.
- The move to a higher proportion of colleagues working from home will reduce the need for large on-site accommodation and associated costs such as car parking.
- Benefits from the Magenta transformation programme will help to realise efficiencies in capitalisable costs, allowing us to make further savings against the L&L percentage.

However, a high proportion of overhead costs are fixed and are required regardless of the size and quantity of the capital portfolio; a smaller portfolio does not unlock the economies of scale we have enjoyed in previous regulatory periods. Additional risk factors are:

- The impact of the delay to projects in 2020 and 2021 has meant that we have scaled overheads back wherever possible to the bare minimum and this has resulted in a loss of skills and knowledge; there will be a significant impact to any larger portfolio than the critical compliance as we rebuild the capacity and skill sets needed to manage a more complicated suite of projects.
- An ex-ante settlement on more complex projects would require more accurate cost forecasting pre-G3, increasing the design and governance costs, and time taken in the early stages.
- The risk that Covid-19 distancing may continue for a long period, requiring larger welfare facilities
- Present economic uncertainty may drive costs up.
- Uncertainty about the economic impacts of Brexit and other issues which could drive costs up.

The proposals for Leadership and Logistics will be developed prior to H7 commencing alongside the maturing of the portfolio and greater understanding of the Capital Efficiency policy and other operational elements ahead of H7.

9.3.9 Benefits of our approach

We have developed our approach with the H7 requirements in mind, to ensure that the framework drives the right outcomes for consumers and the airline community:

- We should build on the Development and Core governance used in the Q6 price control with any changes representing an evolution of the current framework. This includes retention of Development and Core framework and the current method for setting and adjusting airport charges, ensuring that airport charges continue to reflect only capex transitioned from Development to Core through the period

Our proposal continues to use the Development and Core framework and builds on the flexibility it provides. We continue to propose the same method of setting and adjusting airport charges.

- We should aim for a clearer more streamlined approach to governance, reflecting the resourcing constraints on the industry and the need to be clear about roles and responsibilities

We propose a significantly streamlined approach to the governance of regular asset replacement projects, focusing governance at the programme level. Our proposals for improving governance focus on providing a clearer role for the IFS and ensuring we can gain clearer, written input from the airline community to inform project delivery.

- Any framework needs to be flexible to deal with the fundamental uncertainty which is characterising the H7 period to ensure that the capital plan continues to reflect the changing needs of consumers through the period

Our proposal retains the Development and Core framework, allowing Heathrow and the airline community to work together to ensure the capital portfolio reflects the projects necessary to improve operational performance to airlines and the passenger experience.

- Heathrow and the airline community should retain the scope to agree the capital portfolio and only escalate to CAA in the event of disagreement to ensure that the capital plan continues to include only investment that is needed and can drive benefit

Our proposal retains the current central place of airline governance for all projects. This retains the central role of the airline community and the CAA's role as an escalation point through the period. For programmes and associated projects subject to ex-ante incentives, airline governance will remain central, but will be carried out at a more strategic level to reduce the need for complex processes.

- The framework should not place unreasonable risk on Heathrow by fundamentally changing the ex-ante incentive to which Heathrow is current exposed and should provide clear and symmetrical incentives.

Our proposal only suggests movement to a stronger ex-ante incentive regime where the projects meet the characteristics set out by our evidence base. Our proposal of a symmetrical 15% incentive rate for these projects ensures that Heathrow is exposed to a consistent incentive at a level which would not materially alter Heathrow's risk exposure and therefore Heathrow's airport charges. We are also proposing the evolution of the current trigger incentive framework, through which triggers will be replaced by a symmetrical incentive framework which covers the delivery of both scope and timing.

9.4 - OTHER REGULATED CHARGES (ORCs)

Chapter Overview

We plan to make several changes to the structure and scope of ORCs to deliver better consumer outcomes and a more efficient, sustainable operation. In particular we plan to:

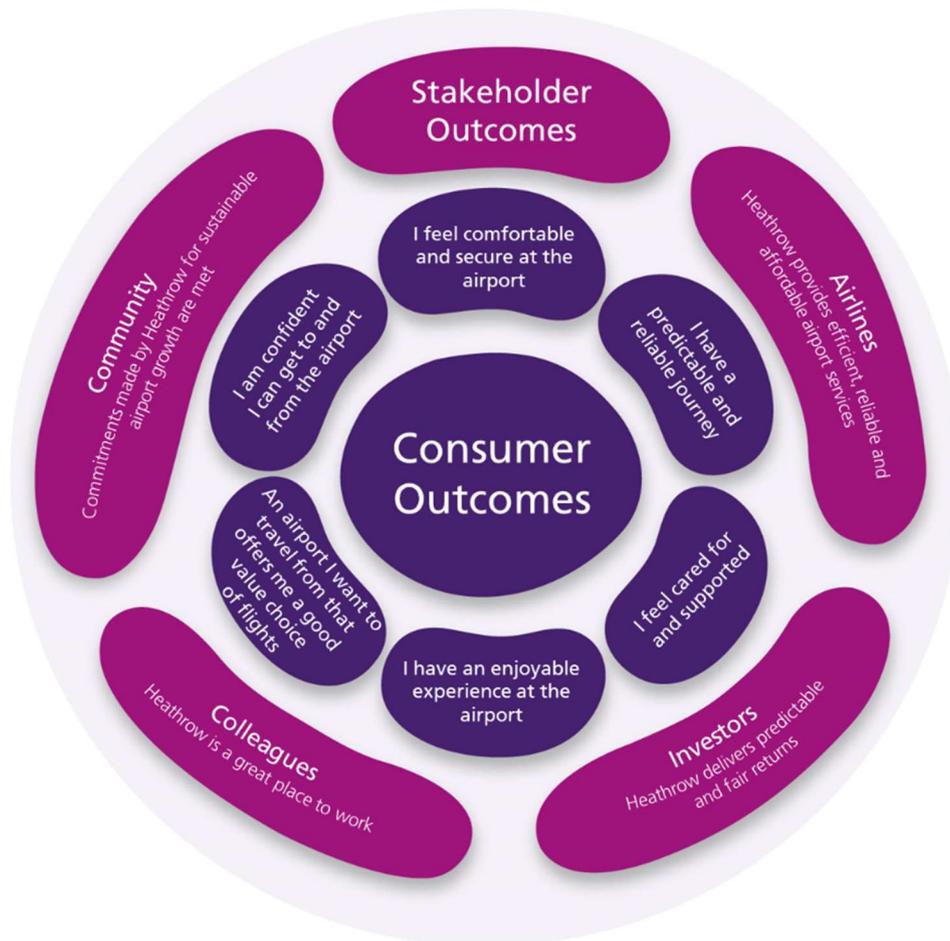
- Build upon proposals in the IBP and subsequent engagement with airlines.
- Simplify the cost structure of ORCs, reducing the administrative burden and focussing on the controllable cost base through a 'marginal' approach to cost allocation.
- Change some pricing structures to ensure efficient or sustainable outcomes are delivered through pricing.
- Move some ORCs into the aeronautical charge where there is little rationale to retain them as specified charges.
- Create flexibility in the licence for the creation of some new ORCs.

9.4.1 Introduction

Other Regulated Charges (ORCs) are a mechanism to cover the costs of services provided by Heathrow that are not appropriate to include in the airport charge. The mechanism is designed to be robust and transparent. Heathrow does not earn any profit on ORCs, other than where specific gainshare mechanisms are pre-defined. Through the ORC mechanism, the airport and its users can work together to drive efficiencies, incentivise the efficient use of scarce capacity and increase service levels for key elements of the passenger journey.

The ORC mechanism is also important for the delivery of consumer and stakeholder outcomes:

Figure 1: Our Consumer and Stakeholder Outcomes



Source: Heathrow

“I have a predictable and reliable journey”

ORCs cover the provision of some of the key infrastructure required to provide a predictable and reliable airport journey for our passengers. This includes stand facilities, such as pre-conditioned air (PCA) and fixed electrical ground power (FEGP), and our proposed winter resilience ORC.

A key area of consumer need is a predictable and reliable airport experience. This need came out strongly from our synthesis of consumer insights¹ and improvements to ensure a predictable and reliable airport experience have constantly been valued highly by consumers in our research. It is therefore more important than ever that the ORC mechanism incentivises efficient use of Heathrow systems and services that enable journeys to be predictable and reliable.

¹ Blue Marble Research, *Consumer needs synthesis*, November 2020

“I feel comfortable and secure at the airport”

Feeling comfortable and secure is a key outcome for consumers as part of their airport journey. Consumers want to know that they can travel with their bags, on time.

“Obviously, I want accuracy - my baggage arriving in the same place that I do - but subject to that, the thing that would most delight me is cutting all your check-in times by half an hour. That might well involve innovation, particularly in baggage handling and security, but I am happy for that innovation to be unseen by me.”²

The ORC mechanism includes many of the facilities that are key to meeting this consumer outcome, primarily baggage systems. Our 2019 Willingness To Pay research showed that ensuring passengers, in particular connecting passengers, can reliably travel with their bags is valuable to them³. Furthermore, our post-Covid consumer priorities research has shown that consumers continue to assign a high disbenefit value to any deterioration in baggage service levels⁴. It will therefore be important that ORCs can continue to drive collaboration between Team Heathrow to ensure that passengers are travelling with their bags. We are reflecting the importance of this by including new reputational measures as part of our service quality incentive scheme focused on the availability of the baggage systems and the baggage misconnect rate. More information can be found in Chapter 9.2 – Measures, Targets and Incentives.

“An airport I want to travel from that offers me a good value choice of flights”

The sustainability agenda has evolved rapidly since the start of Q6. The pace of change continues to accelerate. Additionally, our consumer engagement has shown that consumers are concerned about sustainability and ensuring that their choice of airport reflects their values when it comes to sustainable behaviour⁵.

To support sustainable growth, it is important that the ORC mechanism is adapted to incentivise sustainable behaviours. An example would be adjusting the cost recovery mechanism and implementing pricing structures to incentivise more sustainable behaviours by airlines and airport users.

“I feel cared for and supported”

Our consumer engagement has highlighted the importance for passengers requiring support of services such as check-in and assistance in their passenger journey. Through one of the largest ever studies in UK aviation and with support from Revealing Reality⁶, we identified that 39% of Heathrow passengers required additional support. Following the results of this study, we have evolved beyond our historic lens of Passengers with Reduced Mobility (PRM) to

² Join the Dots, *Innovations at Heathrow Report v1.0*, January 2019

³ Systra, *Heathrow Airport Customer Valuation Research*, November 2018

⁴ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

⁵ Incite Kin + Carta, *Understanding the sustainability landscape in 2020 and future initiatives for Heathrow*, September 2020

⁶ Revealing Reality, *Understanding the Airport Needs of Passengers Requiring Support*, October 2020

Passengers Requiring Support (PRS), by expanding our understanding to a broader range of personal circumstances that may affect passengers and their airport needs.

It is necessary to ensure that the needs of these consumers are being met. The PRS charge and service contract managed within the ORC mechanism is therefore key to ensuring that PRS are receiving the right levels of service. We are proposing that our progress against meeting these needs is measured through our service quality scheme with a new reputational measure on the satisfaction among PRS.

9.4.1.1 ORCs in Q6

Principles to define the cost items appropriate to be included in the ORC mechanism were decided with airlines and agreed by the CAA during the Q6 process. These principles are:

- Heathrow is the sole provider of the service;
- The service is necessary for airport users to fulfil their passenger proposition;
- The usage of the service varies between airport users, so a unit rate based on the user pays principle is appropriate;
- The driver of service usage is not purely related to passenger numbers;
- The usage volume can be measured; and
- Areas where Heathrow and the airlines can work together to drive efficiencies.

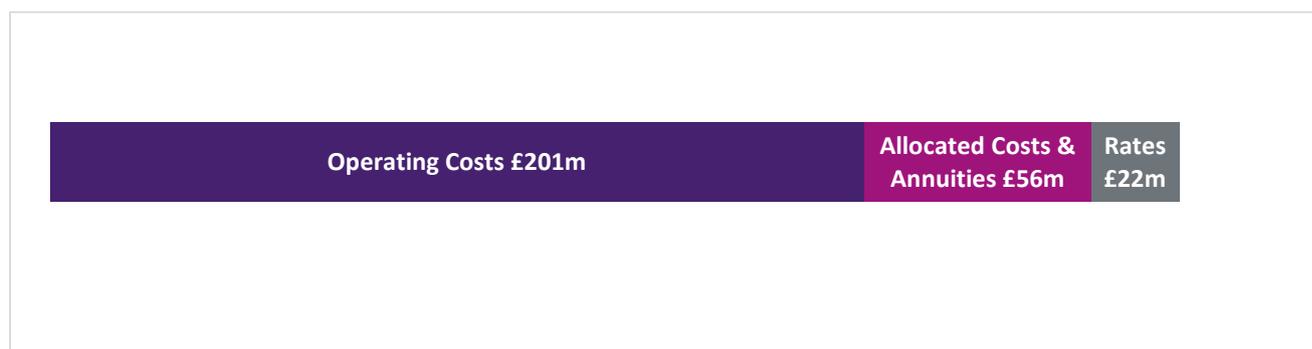
We agreed with airlines that for Q6 charges these areas would be levied on a purely cost recovery basis. This was intended to incentivise collaboration in achieving efficiencies and to ensure that Heathrow did not benefit, or suffer, from out/under performance in these areas. We also agreed that ORC costs would be made up of two parts, the cost of providing the service and the related annuity for the required infrastructure.

Throughout Q6, in collaboration with the airport community (airlines, handlers and other parties operating at the airport), Heathrow has driven a number of improvements and savings in areas recovered through the ORC mechanism. These include:

- Driven over £25m of annualised savings in the baggage and electricity charges.
- Supported Team Heathrow Baggage to reduce the misconnect rate from 18/1000 in 2014 to only 9.9/1000 in 2019 – saving c.£25m per annum in airline misconnected bag costs.
- Implemented higher service levels for our passengers requiring support (PRS).
- Led the implementation of self-bag drop and self-boarding gates.
- Enhanced security ID procedures to protect against increasing threat.
- Other pass through mechanisms such as the Business Rates Revaluation Factor in the airport charge returned over £40m a year in value to users.
- Using the ORC mechanism to pass through £49m in cost reductions in response to Covid-19 in 2020.

ORCs are composed of a number of cost types, the below shows the composition of the underlying 2020 budgeted cost base (pre-Covid savings), excluding brought forward under-recovery.

Figure 2: ORC Costs by Type - 2020 Budget



Source: Heathrow

However, we have also seen areas where the implementation of ORCs has not led to the right outcomes, for example:

- Recovering the full cost of electricity, made-up of the unit price and infrastructure annuity, through ORCs can serve to disincentivise the use of sustainable services such as PCA.
- The current structure does not include incentive mechanisms to recognise where the provision of the service is important to consumers (e.g. baggage).

There have also been cases throughout Q6 that have demonstrated that changes in uncontrollable external policy costs can lead to windfall gains or losses for Heathrow when included within the cost base of the airport charge. It is therefore appropriate to consider whether these areas, such as business rates, can be better dealt with using the transparency and cost recovery principles of ORCs.

9.4.2 Summary of approach to ORCs in H7

9.4.2.1 Changes since IBP

ORCs will continue to play an important role in the efficient delivery of services for consumers and airport users, and this was reflected in the two key outcomes for ORCs identified in our 2019 Initial Business Plan (IBP) - efficiency and sustainability. In the IBP we proposed several changes to the structure of ORCs in order to deliver these outcomes.

These changes primarily consisted of moving annuities for certain ORCs to the airport charge to reduce the usage costs of electricity and electricity dependant ORCs. This would allow us to provide these services at unit cost and incentivise use of these sustainable services. We also proposed the introduction of a market rate charge for staff car parking to incentivise public transport mode shift and fund sustainability initiatives in partnership with the airline community.

Since publication of the IBP, the Covid-19 crisis and the impact it has had on our cashflows has emphasised the importance of our ability to recover ORC costs in a timely manner. This will remain critical as we enter into H7, since delayed recovery of costs and the impact this would have on cashflows would result in additional strain on our financial covenants.

Despite the Covid-19 pandemic impacting ORCs in the immediate cost-recovery sense, it does not fundamentally change the consumer outcomes we are seeking to achieve. Fine tuning the alignment of ORCs is as relevant in a two runway H7 Heathrow as in a scenario with expansion.

Airline feedback has confirmed that we mutually see opportunities to adjust the mechanism. However, as a result of what we have learnt from Covid-19 and as a function of a shorter H7 than assumed at IBP, we are proposing to further refine some of the specific proposals that were in the IBP. We have also refined our thinking with the airline community through Constructive Engagement and have highlighted below how our plans have been shaped by this process.

Finally, following the CAA's July 2020 decision on the recovery of hold baggage screening costs, these now sit as part of the ORC mechanism and will be retained as such into H7.

There are three key changes to ORC proposals since the IBP:

1. Firstly, we propose to move to a marginal cost approach for all ORCs. This will move any fixed costs paid by airlines into the airport charge, as opposed to recovering them through the ORC. This will not only support the sustainability initiatives identified at IBP but will also provide greater price stability for airlines in the face of uncertain passenger volumes. It will also promote greater simplicity in ORCs, allowing Heathrow and the airline community to focus on the manageable elements of the cost base and simplifying the recoverable cost base.
2. The second key change is pausing the proposal to move staff car parking to a market-based charge. A phased approach to this was appropriate in a longer H7 with key infrastructure change planned to be delivered through the period, shifting the public transport catchment. However, given the shorter H7 period and the changes to our surface access investment plans, we have agreed through consultation with the airline community to pause this proposal for H7.
3. Thirdly we have agreed with the airline community to adjust our IBP proposals and to retain the Passengers Requiring Support (PRS) contract as an ORC rather than moving it into the airport charge.

As in our IBP, we are proposing to carry over the 'ORC Principles' outlined earlier in this chapter. These principles include the user pays principle, particularly for services where usage varies significantly between different airlines, or where non-airline users also consume the service. This ensures that users across the airport are charged fairly for the services they use. Aligned to this, we retain the principal that Heathrow and the airline community are able to work together to get the right balance of service, efficiency and cost for services within the remit of ORCs.

9.4.2.2 Challenges for ORCs in H7

In the IBP, we focused in on some of the challenges for ORCs that would materialise through H7 as a result of the demands of airport expansion and increasing passenger numbers putting airport capacity under ever greater pressure. While Covid-19 has reduced passenger volumes, which are unlikely to recover to 2019 levels for a number of years, challenges around

the themes of efficiency, sustainability and service remain. We know from our insight that these are all important areas to consumers:

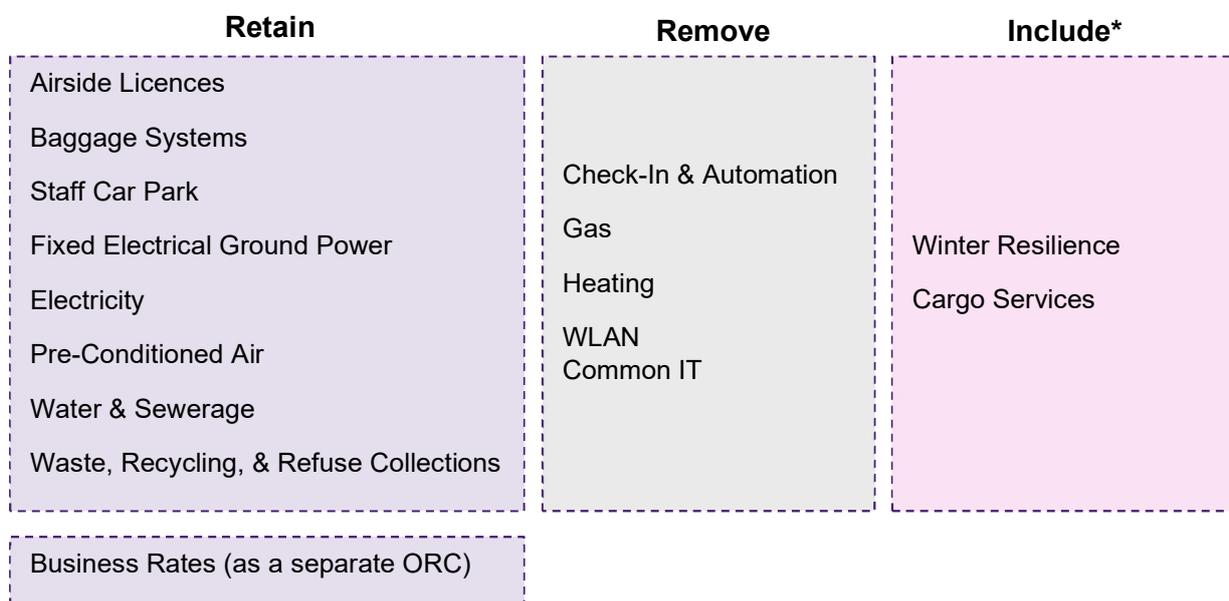
- Using capacity efficiently remains a key priority.
- Covid-19 has not changed our aspiration to operate the airport as sustainably as possible in the future. We believe that the 2020s are the right time for Heathrow to accelerate action on decarbonisation.
- It is necessary to ensure that consumer needs are being met and, in some cases, this sensibly involves Heathrow taking a leading role and having clear incentives on it to ensure that these services are provided to the standard required by consumers. It is therefore appropriate to review whether the ORC mechanism is the best way to achieve the required outcomes for some of these services.

9.4.3 Detail of proposals for ORC changes in H7

9.4.3.1 Scope of ORCs in H7

As discussed earlier in the chapter, we propose to retain the core principles used to define ORCs in Q6 through the agreed decision tree. We propose to make the following changes to the services covered under the scope of the ORC mechanism for H7 a:

Figure 3: Proposed changes to ORC services for H7



*Subject to future consultation with relevant parties

Source: Heathrow

9.4.3.2 Retained ORCs

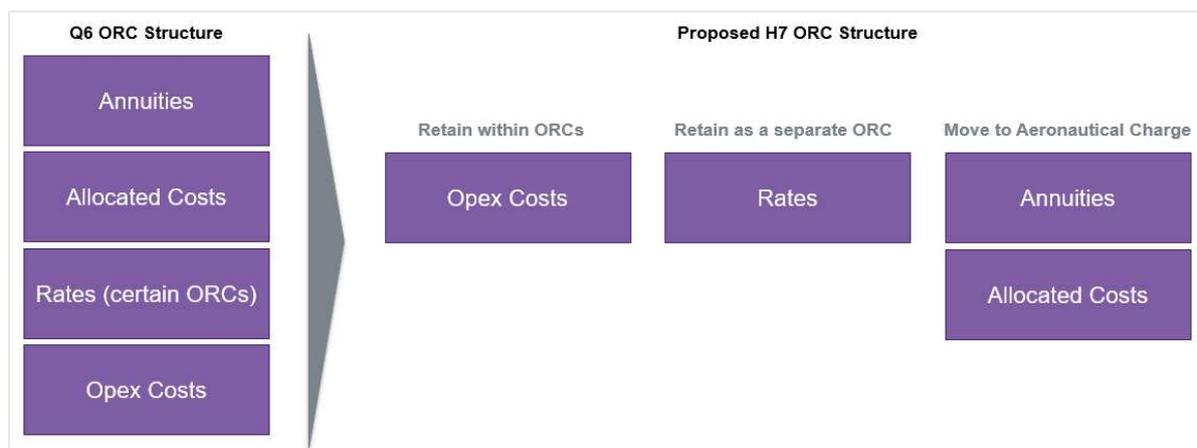
Over Q6, the majority of ORCs had a cost base comprised of direct costs, annuities, allocated costs and, for some ORCs, a portion of the business rates bill. For H7, we propose to simplify

this cost base, moving annuities paid by airlines and allocated costs from ORCs into the airport charge.

We propose that business rates paid by airlines will sit as a separate ORC, charged on a per passenger basis, ensuring transparency of these costs.

We believe we should retain the user pays principle. This means that for non-airline users the allocated costs, annuities and rates payable will still be charged to these users. However, we propose a simplified way of doing so. Non-airline annuities and allocated costs would be defined at the beginning of the regulated period. The airline versus non-airline share of business rates would be fixed at the beginning of the period, with the actual variations in the rates bill flowed through in these respective proportions. These changes will markedly simplify the setting of ORC prices. This will save time and cost and increase transparency.

Figure 4: Proposed changes to structure of ORCs for H7



Source: Heathrow

Further details of how we propose to manage this approach to ensure that all users pay their fair share of the charges are contained in section 9.4.3.3 below.

As well as simplifying the approach to ORCs, this change will make prices more stable by reducing the swings as a result of volume changes. It will also help to make sustainable choices more cost efficient for users as illustrated in the examples of FEGP, electric vehicles and PCA considered below.

Marginal Cost Approach

The pricing mechanism for electricity is becoming increasingly important for incentivising sustainable behaviours, in particular services such as FEGP, PCA and electric vehicle charging. The shift to a marginal cost approach will support this, as the unit price of these services for user will reflect only the unit cost of the electricity used. This will lead to both an immediately lower price for initial use and to the same price irrespective of total use in any given period. This second effect will mean incentives for uptake are the same even at lower levels of use in earlier adoption. Under the existing Q6 structure the reverse is true - the price is driven higher in earlier adoption as fixed costs are spread over fewer users, disincentivising take-up. Both effects should make the services more commercially attractive to users, leading to more sustainable behaviours over time.

As a means of demonstrating this, the current tariff for low voltage electricity at the point of use is £0.32 per KWh, which would reduce to £0.12 under the marginal cost approach. This represents a 63% reduction in the usage price. This same price would also apply to FEGP, currently £0.52 per KWh and PCA, currently £1.00 per KWh.

9.4.3.3 Maintaining the User Pays principle as part of our H7 proposals

Approach for Annuities and Allocated Costs

As part of the shift to marginal costs, we must recognise the need to maintain the user pays principle. 44% of all ORCs are paid not by airlines but by other airport users, such as retailers and ground handlers. The key ORCs affected are electricity, staff car parking and water.

We propose introducing a hybrid approach to pricing to ensure that non-airline users continue to pay their fair share of costs on ORCs that have both airline and non-airline users. This ensures only the airline share of annuities and allocated costs will be charged through the airport charge. Other ORC users will continue to pay for these costs through ORC pricing. Dual tariffs will be published in the general notice to reflect this dynamic and we propose to use the 2019 actual split of airline versus non-airline usage to determine the appropriate sharing of these costs. For example, in electricity we expect the differential to be c.61% in the early years of H7.

Approach for Business Rates

The user pays principle would also be maintained by having business rates as a separate ORC charged to airlines on a per passenger basis. We would follow the hybrid split approach outlined above for non-airline users: the percentage recovered from airline versus non-airline users would be fixed from the beginning of H7 and would be maintained for the duration of the period. The actual rates bill each year would flow through this fixed allocation. We estimate 7% will be paid by non-airline users, though this needs to be validated in 2021. This approach ensures the process is simple and transparent. It will also ensure that Heathrow is not subject to windfall gains or losses from a cost over which it has limited influence, with benefits for users in the pass through as shown in Q6.

Table 1: ORCs with airline and non-airline users requiring a hybrid approach

Hybrid Approach ORCs
Utilities (Electric, Water, Waste)
Staff Car Parking
Staff IDs
Business Rates

Source: Heathrow

9.4.3.4 Removed ORCs

Check-in and Automation

Check-in charges now include operating costs associated with automated passenger services, and this has grown the cost base over time. All costs for check-in and automation are currently recovered using an allocation based on the amount of time users are logged into check in desks. We recognise that this pricing mechanic is no longer fit for purpose as passenger behaviours and airline processes change. Automated passenger facilities are increasingly used by all passengers equally, meaning it becomes ever less relevant to charge them on a per passenger basis. Check-in and automation costs are also now largely fixed with little variation in practice based on numbers using them.

We therefore propose moving all these charges to the airport charge, ceasing to recover the costs through ORCs. The airline community was supportive of this through Constructive Engagement, provided that service quality is ensured through the regime.

Heating and Gas

Heating and gas ORCs are a small part of total ORC charges (0.01% of total ORCs). They are also hard for users to influence individually, as they are now largely collectively managed. We therefore propose to remove these charges from ORCs. Heating charges will continue to be levied to property tenants as part of lease agreements. Gas is now primarily used to heat the baggage system and therefore is already paid for by the airline community. Moving this charge to the airport charge is therefore aligned to simplifying the cost base. Airlines were supportive of this approach in Constructive Engagement.

WLAN

Wireless LAN services are used primarily by passengers and airlines and are also a small part of overall ORCs (0.14% in 2019). Given the low materiality of this ORC and the near-universal use by passengers and airlines, we view it more appropriate to recover the cost through the airport charge. Additionally, the provision of WLAN can be viewed as a hygiene factor in the running of the airport. The airline community was supportive of this in principle, provided there were appropriate measures in place to control for service quality and cost.

Common IT

Common IT services are used exclusively by airlines for facilities such as check-in and baggage. Heathrow provides infrastructure and a service contract is held by the airline community. Given that Heathrow costs are fixed and only used by airlines, we propose to move these charges to the airport charge, which the airline community supported in Constructive Engagement.

9.4.3.5 Potential additional ORCs in H7

There is potential to create new ORCs over the course of H7 to support services with benefits for airlines and consumers. The two clearest examples of this are shared de-icing services as part of winter resilience and increased operating costs resulting from further investment in the cargo proposition. Both would be brought forward on the basis of cost savings or revenue gains delivered through the new services. We seek flexibility in the licence to create these new ORCs if and when Heathrow and the airline community agree to introduce these services. They would only be introduced on the basis that the cost and service levels were agreed in advance of establishing the ORC. As this is still to be established, we have not reflected any such costs in the financial analysis of this RBP. Through Constructive Engagement, the airline community said it was open to further conversations on these items, provided it was jointly agreed to introduce the services at a specified cost and service level.

9.4.3.6 CAA Licence Fees as an adjustment to the airport charge

CAA licence fees are levied on Heathrow by the regulator. They vary year-to-year as a result of the work undertaken by the CAA. These costs are not controllable, nor can they be forecast very accurately. To give airlines and users transparency on these costs being accurately assessed by Heathrow, and as a matter of consistency with other regulated businesses⁷, we propose that CAA licence fees sit as an adjustment factor to airport charges.

9.4.3.6 Pricing

We propose to continue to shape and evolve the structure of prices for ORCs to incentivise efficient and sustainable user behaviours. For example, we may explore differential pricing based on efficient use of systems such as baggage, rewarding behaviours that maximise the value delivered by assets. This theme will be central to ongoing governance discussions. We agreed with the airline community through constructive engagement that this is a core element of the business as usual agenda for ORCs. Decisions in this space do not directly affect the financials for this RBP but will be important for success in H7.

9.4.4 ORC Revenues in H7

Table 2: ORC Revenues Forecast for H7

ORC Forecast [£m, 2018p]	Q6	iH7			H7			
	2019	2020	2021	2022	2023	2024	2025	2026
ORC Revenue	[REDACTED]							

Source: Heathrow

⁷ In CP5, ORR took the decision not to expose Network Rail to variances in the ORR safety levy and licence fee, as these costs are not controllable by Network Rail. Additionally, as part of their provisions for managing uncertainty, Ofgem has decided to use pass-through mechanisms both Ofgem licence fees

9.4.5 Airline community engagement

We have continued to engage extensively with airlines through our ongoing Other Regulated Charges Group (ORCG). In addition, we have undertaken nine weeks of intensive discussions with airlines in Constructive Engagement following the publication of our BBU (Building Blocks Update).

These discussions have meaningfully shaped our ORC plans. Table 2 below gives a summary view of changes we have made in the transition from the BBU to RBP, driven by engagement with the airline community through Constructive Engagement.

Table 3: Heathrow's position on ORCs - IBP/BBU vs. RBP

Heathrow's Position at IBP and BBU	Airline Community Feedback through CE ⁸⁹	Heathrow's Response in the RBP
Annuities and allocated costs and business rates removed from ORCs and recovered through airport charges	Support the principle that allocated costs and annuities are removed from ORCs given that they remain fixed for the duration of the settlement and therefore not influenceable due to the single till formula.	In line with airline support we have included airline share of annuities and allocated costs to be recovered through airport charge. Non- airline users would continue to be charged through ORCs.
Moving PRS into the airport charge	No support to move PRS from ORC to airport charges.	We have agreed with the airline community to retain the PRS charge as an ORC.
Align colleague car parking charge to market rates to incentivise public transport mode shift and fund sustainability initiatives	No support from airline community.	We have listened to the airline community and will pause the H7 introduction of a market aligned colleague car parking charge.
Rates and CAA Licence Fees recovered through airport charges	Support business rates being removed from all ORCs and centralised under the proposed cost pass through mechanism. Though do not currently support the CAA licence fee change.	We agree with the airline community and business rates will form part of a separate charge and levied on a per passenger basis. However, we continue to consider CAA licence fees should be treated on a cost pass through basis. Listening to feedback, it will not be part of ORCs but as an adjustment factor to the airport charge.

⁸ During Constructive Engagement meetings or Heathrow Airline Community, Airline Community Response to H7 CE, October 2020, pp.18-19

⁹ Heathrow Airline Community, Annex 12: Other Regulated Charges - Airline Community Financial Assessment, October 2020

Inclusion of Control posts within ORCs	Do not believe this will lead to the intended consequences of more efficient usage	Agreed to step away from this proposal given airline community feedback
Introduction of shared de-icing services as part of winter resilience and a separate cargo charge	Winter Resilience recovery mechanism through ORCs but subject to agreement at a later stage but must ensure costs are new and incremental. But do not support a separate cargo charge at this stage but will keep this under review.	We agree with the airline community that we will keep both of these services under review during H7. We have not included these two services as a new ORC and would need to agree the cost and scope of any such service prior to introduction.
Check in desks recovered through airport charges	Support this move to airport and there is to be an SQR/outcome measure related to this.	We agree with the airline community and these charges will be recovered through airport charges, but do not agree a specific measure is required as it is inherently captured within the measure of ease and overall satisfaction.
Proposal to remove Taxi feeder park and bus and coach facilities	Should be retained as ORCs and consulted with users of services.	Agree with the airline community position.

Source: Heathrow

10.1 – OUTCOMES:CONCLUSIONS

Chapter Overview

- This chapter summarises the outcome of our plans for consumers and for other airport stakeholders.
- We demonstrate the clear “golden thread” that has linked insights to our plans, and tangible ways in which consumer outcomes have been optimised.
- We demonstrate that while we have optimised consumer interests we have appropriately taken in to account the interests of other airport stakeholders.

10.1.1 Introduction

Our RBP is structured across three interdependent pillars.

1. Deliver for our future consumers	2. Keep Heathrow efficient and competitive	3. Restore investor confidence in regulation
Refresh our passenger proposition	Drive recovery by incentivising growth	Evolve the framework to manage a volatile and uncertain future
Act to cut carbon	Become even more efficient	Enable investment to be made efficiently
Make our cargo offer better	Win back commercial revenues	Unlock growth through Government policy

The purpose of this chapter is to outline how a focus on these three pillars delivers the best possible outcomes for consumers and takes in to account the interests of other airport stakeholders.

In doing so we draw three conclusions:

- There is a clear golden thread that links our consumer insights with our plans, with tangible outcomes for consumers, which are appropriately targeted and incentivised.
- By linking all our plans to outcomes that we know consumers value, we can be confident this plan is consumer-led and efficient insofar as it prioritises the interventions most likely to be impactful to those outcomes.
- We have appropriately balanced the interests of other stakeholders, particularly airlines, whose feedback we have meaningfully engaged with. We have taken bold steps to reduce the cost of airport services.

We consider each of these conclusions in turn and refer to other chapters where further information is available.

10.1.2 Consumer outcomes & the golden thread

The purpose of this section is to confirm how our plan responds to consumer outcomes, linking the evidence from our consumer insights with the anticipated impacts of our plans, concluding the “golden thread”.

Chapter 2.3 – Consumer Insights outlines the extensive consumer research we have undertaken before and since our Initial Business Plan. It draws on a significant body of evidence to confirm that the six consumer outcomes we outlined in our Initial Business Plan are broadly unchanged. These six outcomes (outlined below) are the north star around which we structure our plan and seek to measure.

Figure 1: Our Consumer Outcomes



Source: Heathrow

While the outcomes are unchanged, there is evidence that what consumers prioritise has changed as a result of Covid-19:

- The importance of a predictable and reliable journey has become elevated. Our research indicates that 25% of consumers have become nervous about flying as a result of Covid-19¹ – in the midst of contending with this increased nervousness, it is more important than ever to consumers that their airport journey runs according to plan with minimum additional stress.

¹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

“I expect Heathrow to make everything reliable and predictable, so I don't have to be worried or thinking about it.”²

- Consumers have come to place greater emphasis on cleanliness, which they now consider in a context beyond the traditional areas of toilets and washrooms to ensure their basic comfort needs are met. They expect to see more evidence of cleaning and other actions to promote hygiene across terminal spaces, such as provision of hand sanitiser at regular intervals.

“Perhaps it should have been mentioned in basic comforts, but post Covid-19 availability of hand sanitiser and adoption of social distancing protocols, temperature scanners, which I'm sure LHR is all over anyway³.”

- To ensure they feel cared for and supported in the face of new processes and the concern generated as a result of Covid-19, consumers feel more need than ever to be informed and to have colleagues on hand to assist and guide them through their airport journey.

“Information - I think this is kind of there, but given that we might be expected to undergo new screening, how about expected times to queue for screening/security/etc.?⁴”

- Having sufficient personal space is now of greater importance to consumers than previously and now has a greater bearing on them feeling comfortable and secure – this applies not only in waiting areas, but through the whole passenger journey. More than ever before, consumers do not want to be caught in busy queues as they make their way through the terminal.

“I think earlier gate allocation would speed passengers throughout the airport better. If people know their gate at bag-drop, they have reduced need to congregate in central areas and near screens and will flow to areas where they are more likely to only be in contact with others on their flight.⁵”

Chapter 3 – Passenger Experience describes how we have used consumer insights, and those of other insights chapters, to bring together a framework for how we want to refresh passenger experience at Heathrow in H7.

We conclude that outcomes related to “comfortable and secure”, “predictable and reliable” and “cared for and supported” were in danger of deteriorating if we did not meaningfully respond to heightened passenger expectations. While there was the chance that some of these heightened expectations were not permanent, we concluded that we would focus on ensuring passengers’ journeys through Heathrow were easy, clean, reassuring and provided value for money – and that a proposition which delivered these outcomes would be “no regrets”, as it was valued by all passengers in any future.

The six outcomes and our ambitions for passenger experience in H7 inform our capital plan (outlined in Chapter 6 – Capital Investment) and our forecasts for operating costs and commercial revenue (Chapter 7.1 – Operating Costs and Chapter 7.2 – Commercial

² Join the Dots, *Passengers Priorities Post COVID-19*, June 2020

³ Ibid

⁴ Ibid

⁵ Ibid

Revenues). Each investment or change to process that we propose is organised around what outcomes we expect to be delivered, with those likely to make the biggest impact given the greatest priority in our plans.

In Chapter 9.3 – Measures, Targets & Incentives, we consider how we measure our success and how we should be financially incentivised to meet our targets. We set out three overarching targets to measure our performance:

- Overall Satisfaction – where we target a rise from an ASQ of 4.24 in 2019 to 4.26 in 2026.
- Customer Effort (Ease) – new target to be set in Q1 2022
- Future Intent to use Heathrow – new target to be set in Q1 2022

Taken together we can draw a clear “golden thread” from our consumer insights, through to our investment and operating plans, and into clear targets as to how we expect this to impact consumer outcomes.



By being faithful to this evidenced approach to our business planning, we can confidently give future consumers a view of how we expect their airport experience to change relative to Q6. We can also draw on the specific consumer thread for each outcome – demonstrating how the latest evidence has driven our plans, and how we will be judged against refreshed targets to incentivise us to deliver.

Evidence of this robust approach to delivering consumer outcomes can be seen through the delivery of enhanced cleanliness across the airport in the wake of the Covid-19 pandemic:

- Our consumer research highlighted the elevated importance of cleanliness to consumers post-Covid, with 79% of current passengers concerned about transmitting or catching the virus at the airport⁶.
- We have therefore made cleanliness one of four key components of our future passenger proposition (easy, clean, reassuring and value for money).
- Our capital plan has provision for targeted investment in touchless technologies and our operating costs include enhanced cleaning and increased sanitisation facilities being made available to passengers.
- The revised measures, targets and incentives scheme for H7 includes an upgraded target for “Cleanliness” and a new Hygiene Safety measure.

This joined up approach gives us confidence that our plans will be impactful and we have created the right framework structure to ensure they are efficiently delivered. By replicating this across all six outcomes, we can give an evidenced view as to how we expect consumer outcomes to improve or be maintained over the H7 period.

⁶ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World*, November 2020

Figure 2: The impact of our plans on consumer outcomes in H7



Source: Heathrow

“I feel comfortable and secure at the airport”

Consumers want to feel comfortable and secure at the airport. While every consumer is different, Covid-19 has heightened the importance of visible cleanliness and social distancing to the meeting of this outcome⁷. Whether this is a permanent change or a temporary one, we know each investment planned will **deliver for our current and future consumers**:

- We have accounted for the additional costs of enhanced cleaning in the Covid-19 overlay to our operating cost forecasts. This will ensure that the high standards of cleanliness – which were among the best in Europe before Covid-19 – are maintained throughout H7. This is developed further in Chapter 7.1 – Operating Costs.
- Investments in new security scanners, self-service check-in and boarding gates mean that flow rates are higher, giving a greater sense of movement and less perception of being stuck in a crowd or a queue. The concept is developed further in Chapter 4 – Building Back Better and the precise capital plans are outlined in Chapter 6 – Capital Investment.
- Automation (including the investments at boarding gates and check-in) reduces the number of people passengers need interact with, while touchless technology allows us to make nearly the entire airport journey navigable without touching any surface frequently used by others. This is developed further in Chapter 6 – Capital Investment.

⁷ Join the Dots, *Passengers Priorities Post COVID-19*, June 2020

- Almost 4 in every 10 passengers have additional needs that we must consider (Passengers Requiring Support). Automation, touchless and digital wayfinding technologies give them more control and security that their needs will be met. We have also ensured through our service overlay to our operating cost forecasts that welcoming, attentive and proactive colleagues will be available to support them at key stages of their journey. This is developed further in both Chapter 6 – Capital Investment and Chapter 7.1 – Operating Costs.
- We will invest in both digital retail and digital wayfinding. This gives passengers more control over their journeys – with their app telling them where there are spare seats/shorter queues – and the chance to engage in our retail offering without needing to enter a shop. This is developed further in Chapter 4 – Building Back Better and Chapter 7.2 – Commercial Revenues.

We believe that this investment can **improve consumer outcomes** relative to Q6.

In Chapter 9.3 – Measures, Targets & Incentives we propose a number of new and improved measures:

Measure	Target
Cleanliness	4.00 → 4.05
Hygiene Safety Measure	New for H7
Baggage misconnect rate	9/1,000 → 7/1,000
Passenger injuries per 1,000,000	5.6 → 4.5
“An airport that meets my needs”	New measure for H7
“Feeling safe and secure”	New measure for H7
“Being able to social distance if I want to”	New measure for H7

“I have a predictable and reliable journey”

Evidence is clear that all consumers value their journey being on time and that they can move through the airport at the pace that suits them – with no surprises on the way. Covid-19 heightens this need further as passengers are more anxious than before about new or more rigorous screenings and expect that queue times will be longer⁸.

Making journeys more predictable and reliable is a critical way in which we **deliver for our future consumers**:

- Our future security experience will mean passengers will no longer have to remove electronic items from their bags. This will not only mean less hassle for consumers, it will also mean faster moving flows of people. This is developed further in Chapter 6 – Capital Investment.
- We will continue to make investments to ensure our baggage resilience and service levels mean more passengers travelling with their bags. This includes a £180m investment in the baggage system that currently serves Terminal 2. This is developed further in Chapter 6 – Capital Investment.
- Investment in automation not only gives passengers more control and takes out cost, but it also ensures a far higher consistency of service, both in terminals and on the

⁸ Join the Dots, *Passengers Priorities Post COVID-19*, June 2020

airfield. Our ambitions are developed further as a concept in Chapter 4 – Building Back Better and in detail in Capital 6 – Capital Investment.

- We have established a portfolio of up to £150m to improve resilience at the airport, including enabling the opportunity for airspace change. This will mean more predictable journeys in the air, less stacking and the opportunity to recover from disruption quicker. This is developed further in Chapter 7.3 – Resilience.
- We are investing in digital wayfinding, giving passengers real time information about their journey through the airport. This will ensure their airport experience matches their expectations, with standards set by other sectors of the transport industry. This is developed further in Chapter 6 – Capital Investment.

The contribution of Team Heathrow is of vital importance in the delivery of this outcome. Several touch points of the passenger journey are fulfilled by third parties, and we will continue to work with them to improve our levels of service. For example, immigration is a key area of underperformance⁹ and we will keep on working with Border Force to automate the border and ensure adequate levels of resourcing. This is described in Chapter 3 – Passenger Experience.

We believe that the investment we make here will **improve consumer outcomes** relative to Q6.

In Chapter 9.3 – Measures, Targets & Incentives we propose a basket of measures that are new or upgraded for H7:

Measure	Target
Departures Flight Punctuality	79% → 80.5%
Wayfinding	4.20 → 4.30
Wheels down to doors open	New measure for H7
Immigration Queue Time	New measure for H7
Availability of lifts, escalators, travellers	New measure for H7

“I feel cared for and supported”

Research continues to confirm that consumers want to feel looked after, valued and supported in all situations¹⁰. Different passengers have different needs at different points in the journey. We know that this sense is heightened at times of disruption where passengers are under more stress.

Covid-19 has increased consumer anxiety on a number of issues, with passengers expecting a different, unfamiliar and sterile environment when they return to flying again¹¹. The need to care for and support our consumers has never been greater, and is a key component of our plan to **deliver for our future consumers**:

- Our passenger proposition will focus on reassurance, which will ensure that colleagues will be available to support passengers through their journey if required and be trained

⁹ Systra, *Understanding Consumer Need Priorities in a (Post) Covid-19 World.*, November 2020 - improvements in passport control are the most valuable improvements for current and potential passengers.

¹⁰ Blue Marble Research, *Consumer needs synthesis*, November 2020

¹¹ Join the Dots, *Passengers Priorities Post COVID-19*, June 2020

in our Service Signatures (Notice and Care; Share what we know; Make things better). Our digital products will give passengers real-time information and personalised wayfinding to give passengers more control and greater visibility of the next step through the airport. This is developed further in Chapter 3 – Passenger Experience.

- Our investment in service will enable us to better engage with our passengers, predominantly through the effective use of the Service Signatures, extending training to Team Heathrow and ensuring that colleagues are always available when required through dynamic deployment. This is accounted for in our service overlay in our operating cost forecasts and developed further in Chapter 7.1 – Operating Costs.
- We will make use of latent runway capacity and more efficient use of our existing infrastructure to recover faster from disruption – reducing the situations where passengers will face heightened senses of stress and anxiety. This is developed further in Chapter 7.4 – Resilience.

We believe that with these targeted investments in digital, empowering our colleagues and collaborating across Team Heathrow to make better use of infrastructure, we can deliver a tangible **improvement in consumer outcomes** for H7 for an efficient cost.

In Chapter 9.3 – Measures, Targets & Incentives we propose new and upgraded measures to track our performance:

Measure	Target
Helpfulness/Attitude of airport staff	New measure for H7
Helpfulness/Attitude of security staff	4.10 (new for H7)
PRS satisfaction	3.95 → 4.00

“I have an enjoyable experience at the airport”

Our consumer insights confirm that once basics are met, consumers want Heathrow to give them a personalised experience that connects them with the world outside the airport¹². Covid-19 has understandably raised the bar on how those basics are met, but there is no evidence that this has blunted desires to enjoy being at an airport.

- We will meet new levels of heightened basics to enable passengers to have an enjoyable experience, by concentrating on a proposition that is easy, clean, reassuring and value for money. This is developed further in Chapter 3 – Passenger Experience
- Our new retail proposition will change the way our consumers can engage in experiences at the airport. This includes a ‘contactless’ in-terminal pre-order food & beverage service, an improved mobile app to guide passengers through their journey and to keep them reassured and safe, as well as restarting our retail online ‘reserve and collect’ service. This is developed further in Chapter 7.2 – Commercial Revenue.
- Our plans also include investment in our Wi-Fi infrastructure to improve speed and reliability to ensure passengers stay connected. This is developed further in Chapter 6 – Capital Investment

While these targeted investments are impactful, we do not consider them to be transformative – but they are sufficient to ensure that **consumer outcomes remain the same as today**.

¹² Blue Marble Research, *Consumer needs synthesis*, November 2020

In Chapter 9.3 – Measures, Targets & Incentives we propose two specific measures to assess our performance:

Measure	Target
“Enjoying my time at the airport”	New baseline for H7
Wi-Fi performance	New target for H7

“An airport I want to travel from that offers me a good value choice of flights”

Our consumer research confirms that consumers have basic economic needs from travel. Consumers want direct flights to a choice of destinations at times that suit them, with a choice of carriers to choose from¹³. Since our Initial Business Plan, we have noted that consumers place a particular emphasis on value for money from their journey.

Covid-19 has meant that without mitigating action, consumers would have a worse outcome than before:

- Demand is considerably lower than pre-Covid, and we forecast it is unlikely to return fully to pre-Covid levels during H7. Hub airports offer unique levels of connectivity – and therefore choice – by aggregating demand. Lower demand limits network breadth (destinations served directly) and depth (number of frequencies).
- Covid-19 has led, and may continue to lead, to airline failures among both our home carriers (for example Flybe) and away-based carriers. This reduces the number of routes from Heathrow that are competed, limiting carrier choice, and reducing airline competition – leading to higher fares in the long term.

A key pillar of our plans is to keep Heathrow fares competitive and to increase consumer choice. The return of demand and the restoration of the hub model is critical. While not everything that will deliver this is in our control, we must do what is in our gift to accelerate recovery, increase passenger choice and build the foundations for our hub to grow back and be competitive with our rivals in Europe:

- We will deliver an updated passenger proposition that delivers on our consumer outcomes and reflects consumer priorities post Covid-19, ensuring our potential passengers believe flying through Heathrow is easy, clean, reassuring and value for money. This is developed in Chapter 3 – Passenger Experience.
- We will support an efficient cost of operation for airlines and incentivise their growth (and attract new entrants), by focussing on the levers that will smooth the airport charge across the period. We outline our approach to downward adjustment to regulatory depreciation in Chapter 8 – Depreciation.
- We will support efficient, reliable and easy connections, including using occupancy reviews as a lever to drive efficient use of space and also to maximise intra-terminal connections. We outline our approach to the reopening of our terminals and efficient use of infrastructure in Chapter 7.1 – Operating Costs.
- We will support an efficient cargo operation, both in belly-hold and for dedicated freighters, ensuring Heathrow is a competitive proposition for cargo owners. We outline our proposals to invest in our cargo proposition in our Chapter 6 – Capital Investment.
- We will protect Heathrow’s existing operating hours to ensure flights arriving from critical long-haul markets can access the airport at times that suit premium travellers.

¹³ Blue Marble Research, *Consumer needs synthesis*, November 2020

We outline how this is compatible with our commitments to noise and sustainability in Chapter 4 – Building Back Better.

There is also evidence that consumers will base their perception of value – and therefore potentially their choice – on whether their journey is sustainable, and steps have been taken to mitigate the impact of their journey on both the local community and the planet¹⁴:

- We will meet consumer expectations that the impact their journeys have on local communities and the planet will be mitigated. We will do this by investing up to £150m to offset those impacts, as well as incentivising the cleanest and greenest aircraft through our airport charges. This is developed further in Chapter 4 – Building Back Better.

Regardless of these mitigating actions, we forecast that aggregate demand at the airport will remain lower than before Covid-19, and therefore the choice of destinations and airlines will be lower too – and a **marginally worse outcome** for consumers in H7.

In Chapter 9.3 – Measures, Targets & Incentives we propose three new measures to assess the meeting of this outcome:

Measure	Target
“Value for money for overall journey”	New measure for H7
“Offers flights that I want”	New measure for H7
Reducing Heathrow’s Carbon Footprint	New target set in 2021

“I am confident I can get to and from the airport”

Consumers continue to value the convenience of their entire journey – including to and from the airport. The mode they choose is a personal preference, weighing up the ease, speed and trust they have of each option¹⁵. There is no doubt that Covid-19 has had an impact on the choices of consumers, particularly as Government advice continues to be for people to avoid public transport where possible. However, we are firmly of the view that the most appropriate medium term strategy if for passengers to move towards public transport, our plan supports this proposition.

We assess this in Chapter 7.4 – Surface Access, where we outline how we **deliver for our future consumers** by investing in public transport:

- We will continue to operate our award-winning Heathrow Express service until at least 2028, with new rolling stock to make passenger journeys even more comfortable and improve the resilience of our services.
- Crossrail will begin to serve Heathrow from 2024, reducing travel times and interchanges for our passengers arriving from central and east London.
- We will invest in fitting out the station box in Terminal 5 in time for the arrival of Western Rail access at some point in H8.
- We intend to restore a free travel area around the airport as soon as we have the financial capacity to do so.

¹⁴ Incite Kin + Carta, *Understanding the sustainability landscape in 2020 and future initiatives for Heathrow*, September 2020

¹⁵ Blue Marble Research, *Consumer needs synthesis*, November 2020

We recognise that the introduction of a Forecourt Access Charge will not be welcome by some consumers. However, it is a necessary measure to encourage more sustainable travel choices and support the recovery of commercial revenues to keep the charge competitive.

We believe the aggregate of these investments is sufficient to **maintain the same consumer outcomes** relative to Q6.

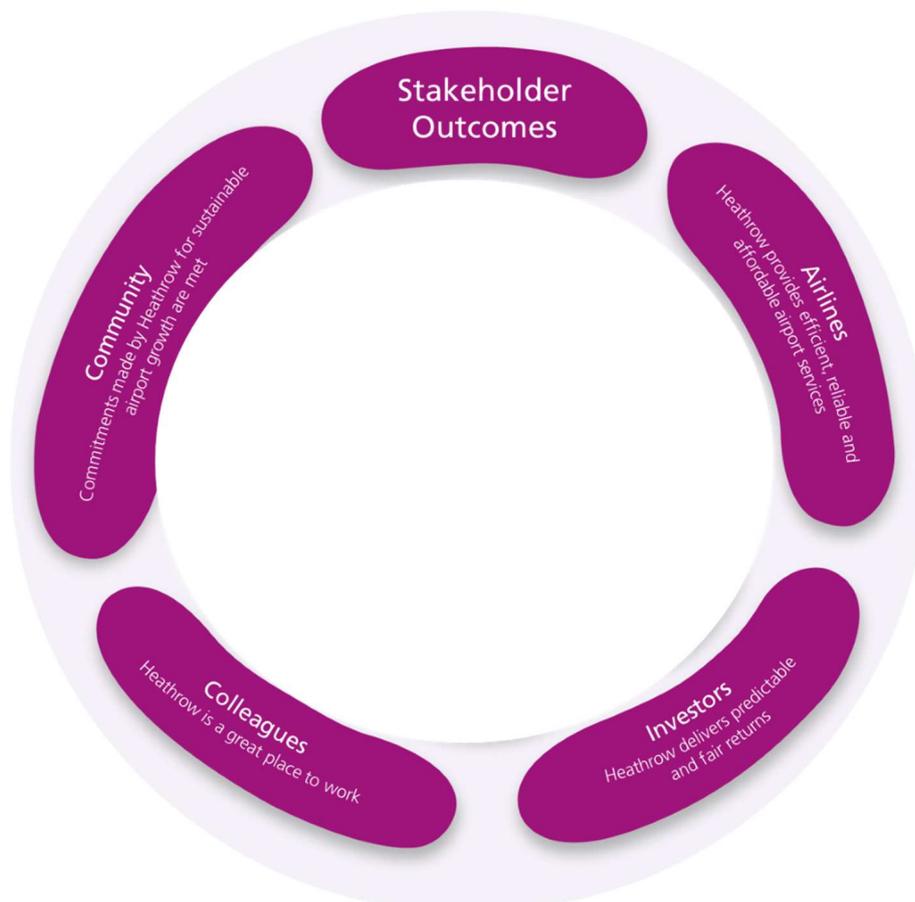
In Chapter 9.3 – Measures, Targets & Incentives we propose two measures from which we will judge our success by:

Measure	Target
“Ease of access to the airport”	Target to be set in 2021
“Number of towns and cities connected to Heathrow by public transport”	Target reset in 2021

10.1.3 Outcomes for other stakeholders

The purpose of this section is to confirm how, after optimising for consumer outcomes, we balanced the needs of other stakeholders to deliver outcomes for them. Considering the needs of these stakeholders is vital to secure the long-term viability of Heathrow, and therefore to protect consumer interests over future periods.

Figure 3: Stakeholder Outcomes



Source: Heathrow

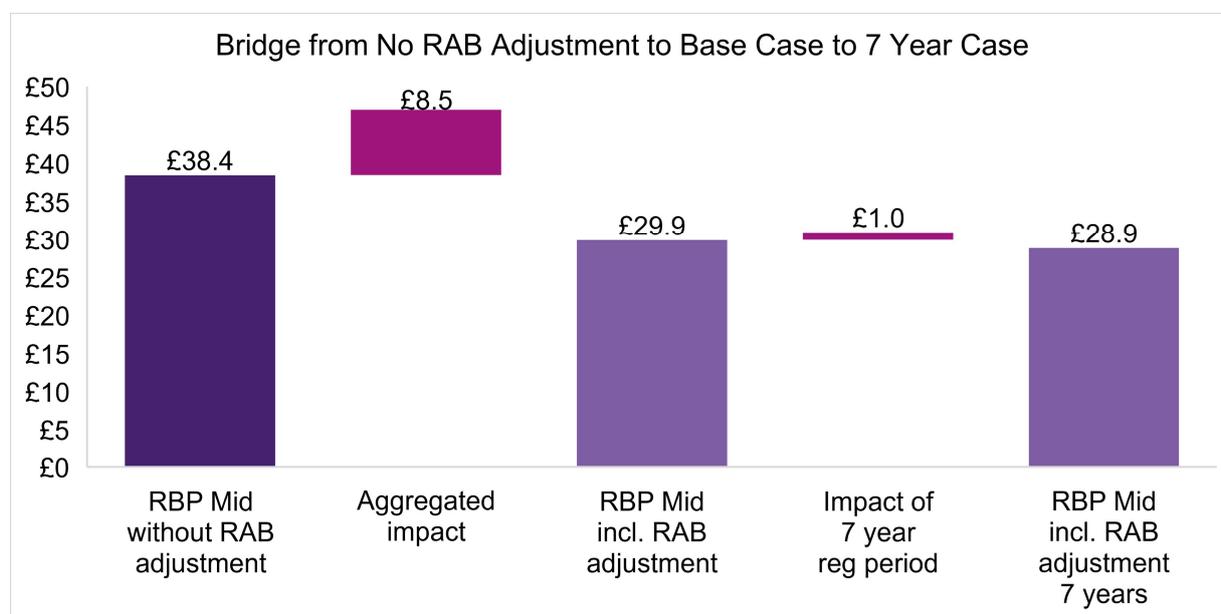
10.1.3.1 Airlines

After over 130 hours of formal engagement since publishing our Initial Business Plan, we continue to strive to give airlines efficient, reliable and affordable airport services. This feedback is summarised in Chapter 2.4 – Constructive Engagement and our detailed response to feedback is embedded in each chapter.

We recognise that the impact of Covid-19 on airline balance sheets, discussed in full in Chapter 2.3 – Market Insights, has placed even greater emphasis on ensuring that the cost of operating at Heathrow is efficient.

The nature of depressed demand – meaning Heathrow’s asset base designed for 80+ million passengers being used by far fewer than that, and increased risk leading to a higher cost of capital – has resulted in an upwards pressure on the charge. We have taken bold and unprecedented measures to **keep Heathrow efficient and competitive**:

Figure 4: Airport Charge - Bridge from No RAB Adjustment to Base Case to 7 Year Case



Source: Heathrow

- We have proposed an adjustment to our RAB to reflect the regulatory intervention required in the current settlement to account for the unforeseen circumstances of Covid-19. A return to predictable regulation reduces the cost of capital by 149 basis points (from 9.49% to 8.0%) and creates the financial capacity to enable the suspension of an element of regulatory depreciation for the duration of H7. The combined impact of this change reduces the unmitigated charge by approximately £8.50 per passenger – putting c. £2.5bn back into the pockets of airlines or consumers over H7. See Chapter 8 – Financial Platform for further information.
- We have also presented other options to make even more efficient use of the airport that we want to explore further with our airlines. These include using our terminals and airfield more efficiently, enabling the restart of operations in Terminal 4 to be delayed into H7 without impacting service levels, with opex savings flowing to consumers through a lower charge. This is outlined in Chapter 7.1 – Operating Costs.

- We are also interested in exercising other levers that can bring the airport charge down further. These include a regulatory period of longer than five years, which would allow the later years of the period where demand has recovered to offset weaker demand in earlier years. In this plan we put forward a sensitivity for a seven-year period that could deliver a further £1.1 reduction per passenger relative to a five-year period. This is considered in the sensitivities in this chapter, and also in Chapter 9.1 – Regulatory Framework.

We have also taken steps to tailor our investment plans to airline feedback. Our plan is strictly limited to what is necessary to keep the airport safe and operational, with all discretionary spend targeted at making Heathrow even more efficient helping to counter the upwards pressure on the charge as a result of Covid-19. These investments, outlined in concept in Chapter 4 – Building Back Better and in detail in Chapter 6 – Capital Investment, also have the potential to support airline ambitions to reduce their costs by enabling the automation of more processes above and below wing:

The Efficient Airport programme will expand the automation of the passenger journey through further investment in self-service bag drop and boarding gates, reducing the number of airline colleagues required to carry out transactional processes, enabling them to focus on supporting passengers who require assistance, manage exceptions and get the aircraft away on time. Self-service boarding has delivered boarding times which are up to 30% faster, and we will continue to prioritise investment such as automation, which both improve consumer outcomes and reduce airline costs.

Our ambitions for automation expand to the airfield, including prepositioning, docking and undocking of aircraft, push back and elements of ground clearance. Over time, the introduction of enhanced taxiing services, such as electric landing gear drives and remotely controlled tugs, would make a push-back service unnecessary – improving safety, punctuality and reducing costs for airlines.

While the steps above ensure we have done what we can to keep airports services efficient, reliable and affordable, success of airlines at Heathrow will ultimately be a consequence of how quickly demand returns. We recognise this is not fully in our control or that of the airline community, but our plan includes measures that ensure we will do what we can to accelerate recovery and protect the hub model that airlines value. We also welcome further engagement with airlines on the role that incentives and other changes, or fixes, to our tariff structure can play in supporting growth, delivering more certainty and supporting them to invest efficiently.

10.1.3.2 Community and Environment

Maintaining our commitment to sustainable growth remains core to our recovery and paving the way for long term success. We have outlined how we will do this in Chapter 4 – Building Back Better. We have made significant progress on sustainable growth in the last four years, following the launch of Heathrow 2.0 and a capital investment programme of £150m in Q6 to address Heathrow’s sustainability impacts. There is an expectation from Government, investors and consumers that companies will deliver net zero and address their key sustainability impacts. This expectation has continued to gather momentum during the Covid-19 pandemic. With over half of UK adults agreeing that Covid-19 economic recovery must put

the environment first¹⁶, it is important that we maintain a focus on climate change and sustainability in our H7 plan.

Although expectation and ambition remain high, our plan must consider the financial constraints of H7. As Heathrow recovers, we will focus available resources on where we can make most difference and we will update our Heathrow 2.0 plan to reflect this:

- Prioritising progress towards net zero emissions in the air and on the ground.
- Continuing to work with our neighbours to improve quality of life by:
 - Managing our noise impact
 - Supporting local employment and skills
 - Improving our local environment.

A lot can be achieved in H7 through advocacy, collaboration with partners and using incentives to drive sustainable change. Where our recovery supports capital investment in sustainable growth, we will target projects that deliver the greatest impact.

Net zero emissions in the air and on the ground

The direction for carbon is clear. The UK aviation sector has agreed to net zero emissions by 2050 and Heathrow has set out its own Target Net Zero plan to deliver a zero-carbon airport and support the industry goal.

Our ambition is for 2019 to be the year of peak carbon emissions from Heathrow, driven by accelerated retirement of older aircraft as a result of the Covid-19 pandemic and with urgent action by the Government to scale up sustainable fuel.

Heathrow cannot get to net zero alone. Carbon emissions at Heathrow are generated by airlines, other Team Heathrow partners, passengers and colleagues. That is why our Target Net Zero plan and our H7 plan are built around the following goals and associated projects.

- Working with our industry partners, Government and passengers to decarbonise flight.
 - Driving the uptake of sustainable aviation fuels through advocacy and industry collaboration.
 - Taking direct action to cut emissions from aircraft in the air and on the ground. Airspace modernisation, air traffic management efficiency and pre-conditioned air would deliver good levels of carbon reduction in H7.
- Working with Team Heathrow and passengers to eliminate carbon on the ground.
 - Supporting the shift to electric vehicles by providing the right charging infrastructure in the right locations and at the right price to meet growing demand from consumers and Team Heathrow.
- Finishing the job of getting our own house in order as the airport.
 - Maintaining our track record on energy efficiency and considering opportunities to grow our renewable electricity projects that cut our costs.
 - Completing the design work that is needed for decarbonising Heathrow's heating supply and upgrading the electricity network in H8. Both are necessary to achieve a zero-carbon airport.

¹⁶ <https://environmentjournal.online/articles/over-half-of-uk-adults-call-for-a-green-recovery-from-covid-19/>

In H7 we plan to focus our efforts on delivering the biggest carbon ‘bang for buck’ across all the three goals above. In a challenging period for our company and sector, Heathrow can still make progress in H7 on decarbonising the airport, while supporting our partners to cut emissions and support the delivery of the aviation net zero roadmap.

Being a good neighbour

Being a good neighbour means taking steps to improve the quality of life for those living near Heathrow. We want to benefit our local community, not detract from it. That can only happen if we take the time to listen to the people around us. Local people tell us noise impacts their lives in many ways, so during H7 we will continue collaborating with airlines and researchers to reduce its negative effects.

Heathrow will remain at the forefront of efforts to tackle aircraft noise. This is partly in response to the number of people affected by noise from our airport. Through working with airlines and NATS, the noise footprint of Heathrow has reduced markedly over the past few decades. Local communities understandably expect the airport to continue to invest in addressing noise impacts and to provide predictable and equitable periods of respite, all based on new research and evolving standards.

We also understand that our communities’ greatest immediate need is help to respond to the economic impact of the pandemic. As a significant employer in the sub-region, we have a responsibility to ensure that recovery is inclusive of the neighbouring communities and businesses that depend on us.

The Local Recovery Plan¹⁷ brings together recommendations from Heathrow and its neighbouring local authorities, local enterprise partnerships and key partners. Together we will enable support for local communities affected by the aviation downturn as the airport sector recovers. Through delivering this plan, we will work collaboratively with education providers in the local area to ensure our future workforce is equipped with the skills that will allow innovation and participation in growth areas, such as green industries and growth economies.

We will seek to understand how best to support local industries through our recovery. This means instilling new standards for best practice at Heathrow. We will work with business representative organisations to help break down barriers to joining our supply chain; this will ensure that the benefits of our economic reach are not just felt nationally, but also locally by all community members and businesses of all sizes.

As we look to the future, the delivery of the Heathrow Local Recovery Plan will serve as part of the foundation to Heathrow’s own longer term planning and ensure that, as we build back better, we do so with stronger relationships with our local stakeholders and communities. With the ongoing commitment of our local partners, we will have the best chance to drive forward a sustained, inclusive, recovery for our communities surrounding the airport and tackle the challenges as they emerge.

Finally, we will continue our work to improve the local environment. The quality of the air around Heathrow is an important issue for local communities and for colleagues working at the airport. We know the main cause is road vehicles, so we will keep working to ensure this

¹⁷ <https://mediacentre.heathrow.com/pressrelease/details/81/Corporate-operational-24/12624>

is not a car-led recovery. All of the actions and investments on carbon outlined in this plan will also reduce the emissions that contribute to local air quality.

10.1.3.3 Colleagues

We want to make Heathrow a great place to work for our colleagues. We know that doing so makes it easier for all businesses based at Heathrow to attract and retain talent. Talented, motivated people deliver exceptional results and great service for consumers.

Covid-19 has led to an unprecedented crisis in demand, which has forced Heathrow, airlines and a number of other airport businesses to make difficult decisions on reducing people costs so as to ensure the survival of our businesses. As demand recovers, we have ensured that our plans continue to support Heathrow as a great place work and have a career.

Our plans include:

- A reward framework that delivers pay parity, improved transparency and clear career paths while ensuring market alignment. All roles, and new hires, are assessed annually against market rates using benchmarking data, as well as other data sources where appropriate, to ensure we remain market competitive. This is developed further in Chapter 7.1 – Operating Costs.
 - Our investments in automation and technology will make processes simpler and faster, meaning workdays with less hassle. This includes the changes to security posts that mean shorter processing times and drones to make aircraft inspections easier and safer. This is developed further in Chapter 6 – Capital Investment.
- We want to continue to make progress on Diversity & Inclusion, and our goal remains to reflect the diversity of the local community at every level by 2025. To be a workplace where everyone feels able to bring their whole self to work and perform at their best. This is developed further in Chapter 4 – Building Back Better.

10.1.3.4 Investors

Heathrow is one the largest private infrastructure companies in the UK, and this plan ensures it is completely privately funded throughout H7. To meet our financing requirements, we cannot take investors – equity and debt – for granted. Our plan ensures we can offer a sufficient investment proposition while mitigating any risk of increased cost of financing.

Our shareholders have not achieved their expected and allowed return over the last 10-15 years. That underperformance has been even further exacerbated by Covid-19, with billions of equity value lost. We have proposed a mitigant, a RAB adjustment, that requires regulatory protections and a clear statement of policy intent to be enacted. By acting now, the CAA will confirm the proper functioning of the regulatory regime and the underlying principles on which their investment decisions have been based. This will restore investors' confidence in regulation and support equity investability as we move into H7. This will in turn ensure investment is appropriately incentivised and will keep airport charges lower than they would otherwise be.

During H7, we must also achieve a fair return. Our plan appropriately reflects the higher risks now associated with airports, including Heathrow, in our cost of capital. A fair return ensures that investors can rationally continue supporting Heathrow.

With a RAB adjustment and a fair return, we will also be able to unlock capacity to delay the recovery of our regulatory depreciation. Critically, this will help smooth airport charges during one of the most, if not the most, challenging crisis our sector has gone through. Our plan has looked to stretch our capacity to delay these cashflows but that capacity must be reconsidered if a RAB adjustment or the cost of capital changes from that proposed here.

Finally, we must restore healthier credit metrics and return to our strong A- credit rating. Covid-19 has had an unprecedented impact on investor perceptions about our sector, our cashflows and has increased significantly the risk attached to our business. As a consequence, our credit ratings have been downgraded or put on negative outlook. Any further downgrade will add millions of pounds to our cost of debt. We have estimated that a rating downgrade lasting two years could cost at least an additional £300m to consumers.

Restoring stronger credit metrics is fundamental to maintaining creditors' confidence and ensures that we can continue to access the most cost-efficient debt financing. To meet this challenge, we will need a tariff profile that generates sufficient and timely cashflows. Our plan includes a one-off adjustment in 2022 that allows us to better match our revenue requirements and therefore to support our credit metrics. In addition to this adjustment, our creditors and credit rating agencies will continue to look for the comfort provided by ongoing equity support. Equity investability will therefore have significant bearing on our credit community's support.

Our plan is financeable. It ensures equity remains investable and supportive of our credit story. It also restores healthier credit metrics and a strong A- rating to ensure we can maintain our credit community's confidence and access the most cost-efficient debt financing.

10.2 - OUTCOMES: NEXT STEPS

Chapter Overview

- This chapter summarises the outcome of our plans for consumers and for other airport stakeholders.
- As requested by airlines and the CAA we consider six separate sensitivities to our plans and how we would change our approach – demonstrating how our plans deliver the best outcomes for consumers.
- We demonstrate our plans are robust to all reasonable futures and confirm the nature of updates in 2021.

10.2.1 Introduction

We set out in our summary document that we want to **fix the formula, not the input assumptions** because we fully expect that our plan will need to be adaptable to changing events in 2021 and beyond.

We use this chapter to demonstrate our plans are robust to different futures, and we use this chapter to give clear indications as to which building blocks will adapt and how this would impact consumer and stakeholder outcomes.

We also know that the factors that impact our plans most are determined by factors largely outside our control:

- Passenger demand, shaped by the Covid-19 pandemic, international travel restrictions, the wider UK and global economic recovery and global airline capacity.
- The proposed adjustment to the RAB, which will be determined by the CAA and a decision on which is pending following its recent consultation (CAP1966).
- The length of the regulatory period, which is also determined by the CAA and is yet to be confirmed.
- Further shifts in markets and investor risk perception or financing costs and access.
- UK Government policy on VAT, rates and other issues post Brexit and Covid-19.

These have a large influence on our capacity to invest (and therefore to meet consumer outcomes) and the level of the airport charge during the period. While we consider below different sensitivities to our plan, they do not change the central aims:

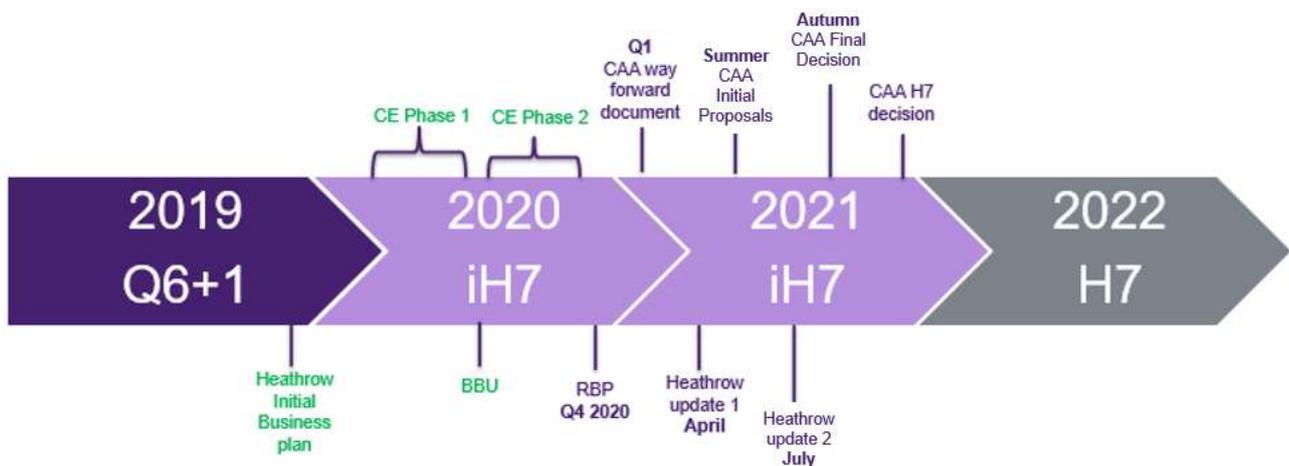
- Never compromise on safety and compliance.
- Optimise consumer outcomes with the resources available whatever the circumstances and build the best passenger proposition to help Heathrow compete to accelerate the return of demand.
- Target whatever discretionary investment and operating spend we have to make Heathrow structurally more efficient, commercial and sustainable.
- Ensure Heathrow achieves its financeability metrics and remains financeable by private investors.

- Require fair, stable and predictable regulation that seeks to manage uncertainty rather than magnify it.

10.2.2 2021 Updates

Our intentions are to issue further updates to key building blocks in April and July of 2021, accounting for any changes in factors outside of our control. The thrust of our plan will not change but updating with more accurate information means we can calibrate our plan – and the financial outcomes – before the period begins.

Figure 1: H7 timeline



Source: Heathrow

Our intentions in Q1 2021 are to:

- Update our consumer research, focused on confirming consumer acceptance of the outcomes outlined in this RBP.
- Update the input assumptions and modelling drivers for passenger forecasts based on the latest available data.
- Update the overlay assumptions in our drivers-based commercial revenue and operating cost assumptions based on the latest data, including information on the impact of Government VAT changes and the impact of Covid-19 on consumer behaviour.
- Update the assumptions that drive our forecast for WACC with the latest market data.
- Refine our plans to reflect the CAA's decision on Heathrow's application for a Covid-related RAB adjustment and the contents of the CAA's Way Forward document.
- Update for changes in CAA policy on issues such as capital efficiency and risk sharing.

We also plan to issue a further update in response to the CAA's initial proposals (expected Q3 2021).

10.2.3 Sensitivities

In Constructive Engagement, airlines asked us to consider different sensitivities to understand how our plans will evolve in 2021.

In our plan we have considered a base case around three key assumptions:

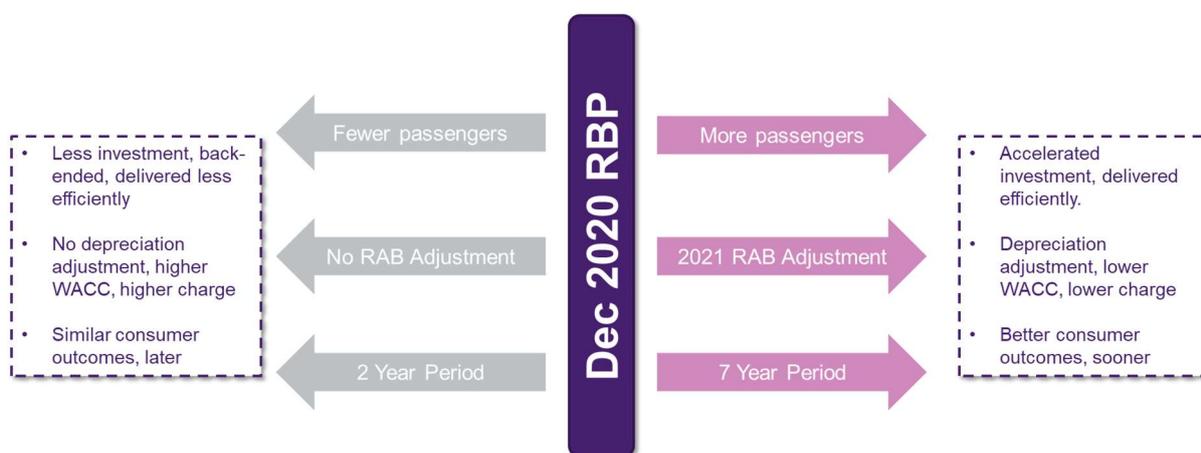
- A P50 passenger volume forecast;
- A Covid-related RAB Adjustment that is made at the start of the H7 price control; and
- A five-year length to H7, ending on 31 December 2026.

We consider six sensitivities to our RBP. In each, we set out specific changes to the building blocks and identify the impact on the charge and consumer outcomes. This gives a high-level view of how our plans will evolve in response to changing events. We present the sensitivities not as an alternate plan but to preview how our decision making might have to alter and confirm that the plan is sufficiently robust to adapt to potential futures. If those futures were to become more likely over the course of 2021, we would revisit these sensitivities and how changes to one or more building blocks have a more profound effect on our plans.

The sensitivities have been developed at the request of our airlines and include:

- Higher (P90) and lower (P10) passenger demand forecasts;
- The absence or alternate timing of the decision on Heathrow’s application for a Covid-related RAB adjustment; and
- Shorter (two-year) and longer (seven-year) regulatory periods.

Figure 2: RBP sensitivities



Source: Heathrow

As requested by our airlines, for each we have outlined the likely changes to other building blocks, and the consequent impact to our targeted consumer outcomes and the airport charge (which are summarised in the table below).

Table 1: Building block scenarios and their consequent impact on consumer outcomes

Passenger Demand	Lower	Our Plan	Higher
Overall Satisfaction	< 4.26	4.26 by 2026	4.26 by 2026
H7 Average Charge (2018p)	£39.59	£29.89	£25.29

RAB Adjustment	No Adjustment	Our Plan	Early Adjustment
Overall Satisfaction	< 4.26	4.26 by 2026	4.26, earlier
H7 Average Charge (2018p)	£38.44	£29.89	£29.96

Length of H7	2 Year Period	Our Plan	7 Year Period
Overall Satisfaction	4.24 by 2023	4.26 by 2026	4.26 by 2026
H7 Average Charge (2018p)	£40.29	£29.89	£28.81

Source: Heathrow

Table 2: Assumptions for sensitivities used to calculate the impact on the airport charge.

(2018p)	<u>OUR PLAN</u>	High Passengers (P90)	Low Passengers (P10)	2021 RAB Adjustment	No RAB Adjustment	Two Year Period Length	Seven Year Period Length
Reg period length	5 yrs	5 yrs	5 yrs	5 yrs	5 yrs	2 yrs	7 yrs
Traffic – 2022+	P50	P90	P10	P50	P50 higher shock	P50	P50 (extended to '28)
Total H7 Capex Envelope	£3.5bn	£3.5bn	£2.1bn	£3.7bn	£2.0bn	£1.1bn	£5.3bn
WACC	8.00% pre-tax real	8.00% pre-tax real	8.00% pre-tax real	8.00% pre-tax real	9.49% pre-tax real	8.08% pre-tax real	7.96% pre-tax real
RAB Adjustment	Yes	Yes	Yes	Yes, in 2021	No	Yes	Yes
Regulatory Depreciation	£635m p.a. reduction	£635m p.a. reduction	£635m p.a. reduction	£679m p.a. reduction	None	£300m p.a. reduction	£635m p.a. reduction

Source: Heathrow

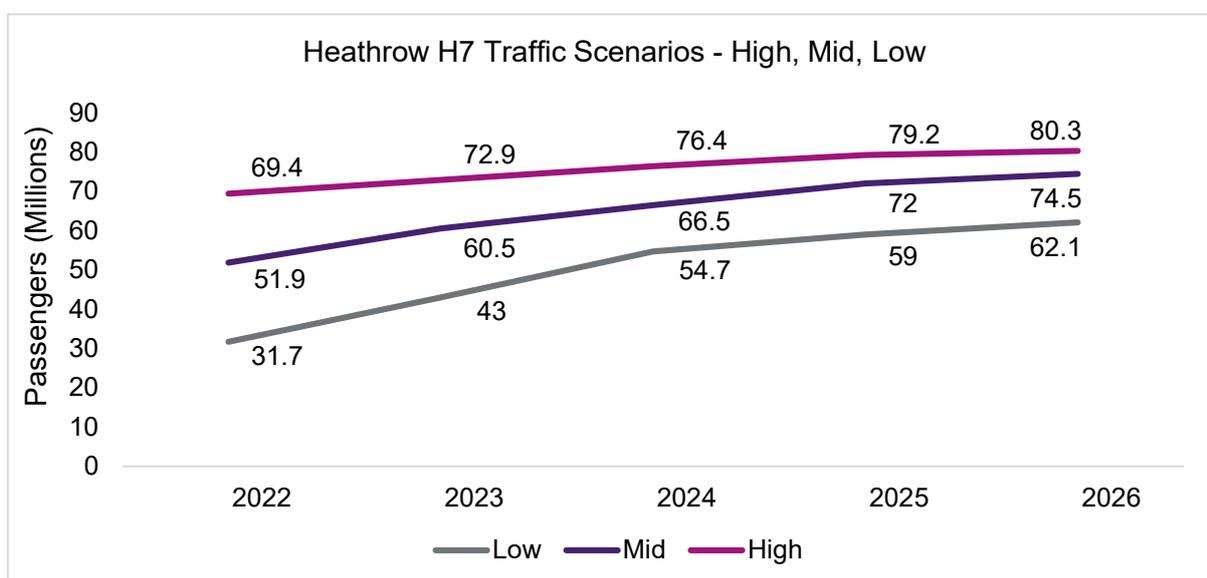
10.2.3.1 Passenger Demand

The level of passenger demand is the key driver of the level of the airport charge. The majority of Heathrow's cost base is fixed, meaning it does not vary much with the number of passengers travelling through the airport. An increase in demand means the burden of those costs is spread over more passengers and the charge is lower. A decrease in demand inevitably means the opposite.

In Chapter 5 – Demand we outline the assumptions that drive our central (P50)¹ forecast. We also outline two other sensitivities that we will consider in our planning:

- A “High” sensitivity, that takes the P90 of the modelled range.
- A “Low” sensitivity, that takes the P10 of the modelled range.

Figure 3: Heathrow H7 traffic scenarios



Source: Heathrow

High Volumes

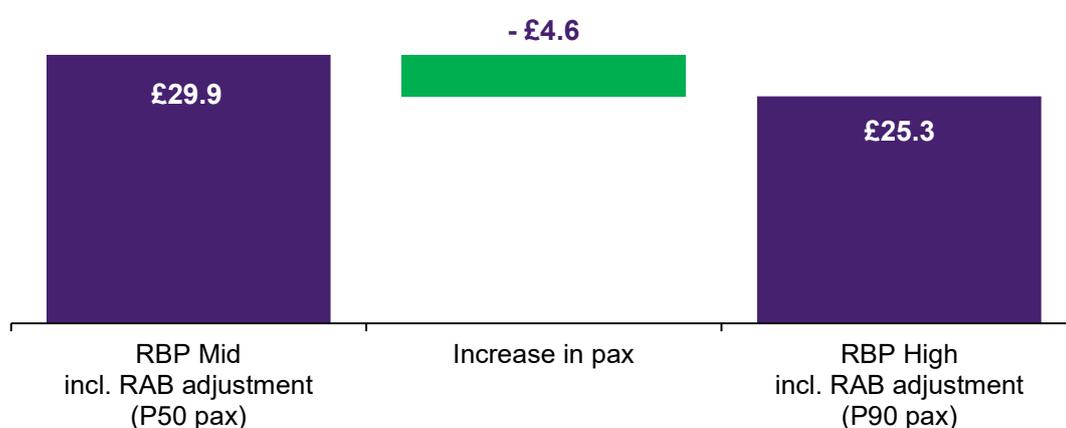
If in 2021 the outlook for demand in H7 becomes materially more positive, we will reflect this in the passenger forecast we provide in the updates. This change would flow through into our opex and commercial revenue forecasts using the drivers model.

¹ P50 is defined as the midpoint of the estimates where, by definition, 50% of estimates exceed the P50 and 50% of the estimates fall below the P50. P90 means 90% of the estimates are below this point and just 10% of the estimates are above. It does not mean that the estimate has a 90% chance of occurring – that is a very different concept. The central limit theorem indicates that the P50 estimate has a higher chance of occurring than P90 or P10 estimates.

If we kept all other building blocks the same, the greatest difference in our plans is the required airport charge, which would fall from £29.89 to £25.29 (2018p) because there are more passengers to spread the fixed costs of Heathrow’s asset base over.

Higher passenger volumes in H7 would mean the charge is structurally lower, negating the need for a downward adjustment to regulatory depreciation at the levels we have proposed in this plan. In these higher scenarios the balance between current and future passengers may be different and a lower depreciation adjustment may be appropriate as this would reduce charges in H8 and beyond. This will be considered carefully for our updates and before developing this fully we would seek to engage the airline community on their views before updating our proposals.

Figure 4: Bridge from base case to P90 case



Source: Heathrow

Consideration of this sensitivity confirms that the best means to deliver efficient, reliable and affordable airport services is to unlock the return of demand. We remain committed to doing what is in our control to accelerate recovery and are open to further engagement with airlines, including on incentives and tariff structure, that will unlock more demand. We also note that there are other key levers to unlocking recovery in the hands of Government:

- The UK Government must become a world-leader in pre-departure testing pilots and trials with some of the UK’s most important trading markets. Wider scale testing in aviation, and developing common international standards are vital to rebuild consumer confidence and re-open global markets for trade, travel and tourism.
- The Chancellor should introduce an emergency 12-month Air Passenger Duty (APD) waiver, which research shows would boost passenger demand by around 12% over the next 12 months.

Low Volumes

If the demand outlook worsens, the inevitable consequence is a higher airport charge as the fixed costs of our asset base are spread over fewer passengers. In the P10 scenario considered, passenger numbers adapt to a “new normal”, meaning that passenger numbers may never recover to pre-Covid levels. In this case, there is a need over time to adapt the airport to the new reality. This means lowering capital expenditure to the minimum that will keep the business operational – deferring projects to improve service, efficiency, commercial and sustainability.

Table 3: Low capital plan including deferrals

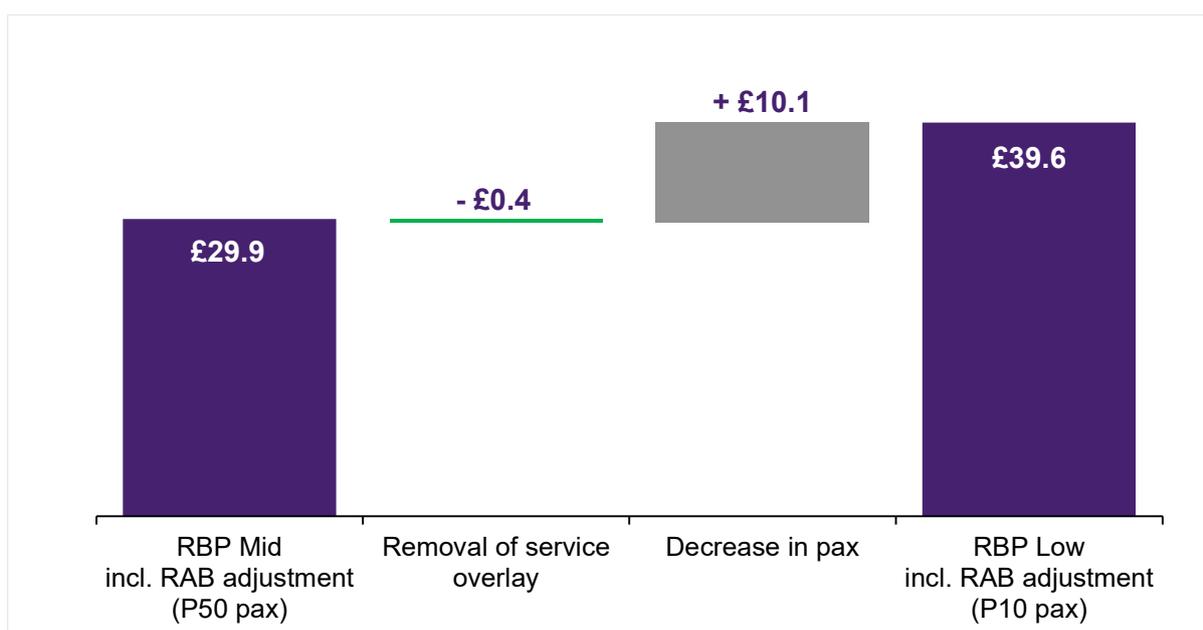
£m 2018p	Strategic Projects / categories	2022	2023	2024	2025	2026	H7
Protect the business	Critical Compliance (all assets)	240	240	240	240	240	1200
	T2 Baggage	29	26	41	42	42	180
	Regulated Security	-	105	105	105	105	420
	Critical Opex Avoidance	20	20	20	20	20	100
	Critical Commercial Revenue	20	20	20	20	20	100
	Crossrail Contribution	39	39				78
	Total Minimum £2.1bn Plan	348	450	426	427	427	2,078

Source: Heathrow

The result of these deferrals is a direct impact on consumer outcomes and the efficiency of the airport. It will see the absence of:

- Security transformation, at cost to efficiency and the consumer outcome of “predictable and reliable journeys”. While we will deliver the regulatory requirements, we will not be able to introduce elements that will increase efficiency and improve the passenger experience further.
- Some commercial revenue generation, and a negative impact to the consumer outcome of “enjoyable experience”. Heathrow will not be able to invest in digital transformation, increasing the range of retail or offering wider services. This will also have an impact on the charge, since it will limit our commercial revenues.
- Investment in efficient airport initiatives, impacting on the charge and limiting our ability to deliver further efficiencies for Team Heathrow operations. It will also limit investment in automation and touchless technologies that we know are critical to the “comfortable and secure” outcome.

Figure 5: Bridge from base case to the P10 case



Source: Heathrow

This means outcomes are lower, and, despite the mitigations, at a significantly higher airport charge. In lower scenarios it is possible that we will not need to open T3 or T4 in the H7 period, and we will use our update to confirm the impact this would have on overall operating costs.

This would also have an impact on our Measures, Targets & Incentives proposals. As discussed in Chapter 9.2, these are relevant in the context of a £3.5bn capital plan. A Low scenario, with a £2.1bn capital plan, would require a re-evaluation so that targets are calibrated to a future where there is less investment in service.

Figure 6: Consumer outcomes and passenger volume sensitivities

Passenger Demand Sensitivities	High	Our Plan	Low
I feel comfortable and secure at the airport	Improvement on today	Improvement on today	Significantly worse than today
I have a predictable and reliable journey	Improvement on today	Improvement on today	Significantly worse than today
I feel cared for and supported	Improvement on today	Improvement on today	Significantly worse than today
I have an enjoyable experience at the airport	Significantly worse than today	Significantly worse than today	Significantly worse than today
An airport I want to travel from that offers me a good value choice of flights	Significantly worse than today	Worse than today	Significantly worse than today
I am confident I can get to and from the airport	Significantly worse than today	Significantly worse than today	Significantly worse than today
H7 avg. charge (2018p)	£25.3	£29.9	£39.6

Improvement on today	Same as today	Worse than today	Significantly worse than today
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Source: Heathrow

10.2.3.2 RAB Adjustment

Our plans are based on our proposal for a Covid-19 related adjustment to our Regulated Asset Base. We assume that this adjustment takes place at the end 2021/the start of the H7 price control period.

This adjustment protects our credit rating to keep investment efficient, restores investor confidence in the regulatory regime to help mitigate increases in the cost of capital and unlocks the possibility of amending regulatory depreciation and investment. The adjustment is integral to delivering consumer outcomes and to keeping the charge lower. It is therefore unquestionably in the consumer interest, and consistent with CAA duties, to make such an amendment.

The CAA are yet to decide on whether to accept such an adjustment. We expect they will reach this decision in Q1 2021. We therefore consider two sensitivities to preview how our plan might be updated in 2021:

- “Q1 2021 Adjustment”, where a policy decision is made in Q1 2021 to remove regulatory depreciation for 2020 and 2021, and to make a further adjustment effective at the end 2021 (so sum of both is equal to the adjustment assumed in our plan); and
- “No Adjustment”, where the CAA choose not to stand by the principles of the Q6 settlement and do not make any intervention due to the Exceptional Circumstances resulting from the Covid-19 pandemic.

Early Decision on the Covid-related RAB Adjustment

Our application for a Covid-related RAB adjustment made clear why an immediate decision on an adjustment would be in the best interests of consumers as it would help Heathrow invest efficiently and ensure that service standards are maintained in 2021.

In CAP1966, the CAA indicated that it considered urgent action was not justified and that it would review the merits of an adjustment in the context of the H7 price control. We have therefore predicated the base case to this plan on the basis of an adjustment forming part of the H7 price control, notwithstanding that we do not believe this to be the best outcome for consumers or other stakeholders. As the consideration of this sensitivity confirms, a decision on a Covid-related RAB adjustment in Q1 2021 will enable Heathrow to invest more efficiently and bring forward the measures that will improve the outcomes that we know consumers value.

As confirmed in Chapter 2.1 – Impact of Covid-19, we have had to make additional cuts to our investment in 2021 following the publication of CAP1966. If on making its decision in Q1 2021 the CAA makes an immediate policy decision to implement an adjustment to the RAB effective from the start of H7 we would seek to:

- Reverse as far as appropriate the decisions to reduce investment in 2021; and,
- Bring forward where there is a business case to do so some investments planned for H7, including regulated security.

We have identified £210m (2018p) of additional capital expenditure that would be accommodated in 2021 if a decision was made in Q1:

- Security Transformation could be brought forwards by 18 months, meaning up to 90 million more passengers will experience hassle-free security processes in H7, and enable the efficient delivery of the programme in terminals that are currently non-operational.
- Runway resurfacing, northern perimeter road repairs and baggage works can be restored to 2021 asset replacement programmes, lowering the risk of failure of assets that we know contribute to consumers having a predictable and reliable journey.
- Automation projects such as Self-Service Bag Drops and Self-Service Boarding Gates that enhance the passenger experience and help our airlines make material opex efficiencies.
- Critical maintenance required in Terminal 4 that needs to be undertaken before it can return to service for passengers, meaning it can return to service before 2023 should passenger demand be higher than our P50 forecasts.

- Sustainability investment such as enhanced Time-Based Separation (eTBS) Pairwise, that not only cuts carbon but improves resilience and reduces the number of late runners.
- Essential maintenance on the CTA Tunnel, enabling resilience benefits of these works to be realised 8 months sooner and a shorter delivery window enabling an overall reduction in the cost of the project by c. £6.5m

A decision on a Covid-related RAB adjustment in Q1 2021 would also mean different choices on operating the airport:

- We can train security officers in-line with the return of demand, ensuring there are no points where our trained security officer capacity could limit the volumes we can serve.
- We can restore the Free Travel Area around the airport as early as Q3 2021.
- We can restore the budget for noise insulation and vortex schemes.

The consequence of bringing forward those investments while ensuring they are delivered as efficiently as possible means we expect better consumer outcomes, sooner. It also has tangible improvements to outcomes for airlines, colleagues and our local community. Most importantly it will ensure Heathrow is able to deliver service and reopen capacity during 2021 and 2022 where recovery is forecast to be at its fastest and also most fragile.

A decision in Q1 2021 is likely to limit the downward pressure on our credit rating in the remainder of iH7, making it less likely that Heathrow will be downgraded further ahead of H7. This will ensure Heathrow can raise and invest capital efficiently.

In this case we have continued to target a minimum EBITDA in 2022. The higher capital investment in 2021 and 2022 increases RAB and therefore return on RAB. Consequently, the depreciation adjustment for this case is £679m pa. The resulting charge is £0.07 higher.

No Adjustment

If the CAA was not prepared to allow the adjustment of Heathrow's RAB for Covid-19 related losses in the manner requested by Heathrow, this would have a number of serious impacts:

- Investors' view of Heathrow's risk will be higher resulting in a higher cost of capital:
 - In Chapter 8.1 – Financial Principles we explore how this would further undermine Heathrow's credit rating and make the cost of borrowing more expensive and investment less efficient.
 - With regards to WACC, further detail is available in Chapter 8.2 – WACC, where we forecast a WACC that is 149 basis points higher without an adjustment.
- Our capacity to use regulatory depreciation to bring the price down in the short term will be removed, taking the total annual sum of deferred depreciation from £635m p.a. to zero and resulting in a material increase to the charge. This is explored further in Chapter 8.3 – Depreciation.
- Our ability to invest will be limited, particularly in early years of H7, so our capital plans will revert immediately to the critical minimum to protect remaining liquidity and even

that will be back ended. We outline our proposed capital plan for any future passenger scenario without an adjustment below.²

Table 4: No adjustment capital plan

£m 2018p	Strategic Projects / categories	2022	2023	2024	2025	2026	H7
Protect the business	Critical Compliance (all assets)	240	240	240	240	240	1200
	T1 Baggage Prolongation		26	41	41	72	180
	Regulated Security		105	105	105	105	420
	Critical Opex Savings				20	20	40
	Critical Commercial Revenue	10	10	20	20	20	80
	Crossrail Contribution	39	39				78
	Total		289	420	406	426	457

Source: Heathrow

In the longer-term a lack of investment would lead to an inability to deliver on key areas of need such as expectations on seating, connectivity and Wi-Fi as well as infrastructure to ensure we can continue to improve the predictability and reliability of the airport journey over time. The key impacts are on the following outcomes:

“I have a predictable and reliable journey”

- The impact on our ability to consistently deliver shorter queue times and an improved security experience.
- We also expect to see an impact on overall flight punctuality caused by these delays through the airport journey. This will mean that passengers will take longer to get to their gate, increases the risk of stand facilities being faulty and ultimately impacts on time departure of flights.
- If the 80/20 slot alleviation is ended, this could lead to airlines recovering ATM volumes at pace in order to protect slots. A quicker return to ATM capacity could lead to further delays caused due by a reduction in the resilience of critical assets due to lower investment in maintenance and asset replacement.
- Heathrow is also likely to become constrained in reopening terminals to passengers or other infrastructure (e.g. runways, stands) to aircraft if there is a more rapid increase in activity. With the absence of an appropriate adjustment on our finances the safe and most efficient way to operate would be to mothball capacity on long lead times, meaning this capacity would not be available at short notice. This would further constrain either ‘an airport I want to travel from that offers good value flights’ or require a trade-off between capacity, predictability and reliability

² A greater capacity for investments can be expected at the end of the period to begin the projects that deliver the outcomes consumers value. But this will be at a significantly later date than our current plan – falling into the period beyond H7 – and at a structurally higher airport charge than would otherwise be the case.

“I feel comfortable and secure at the airport”

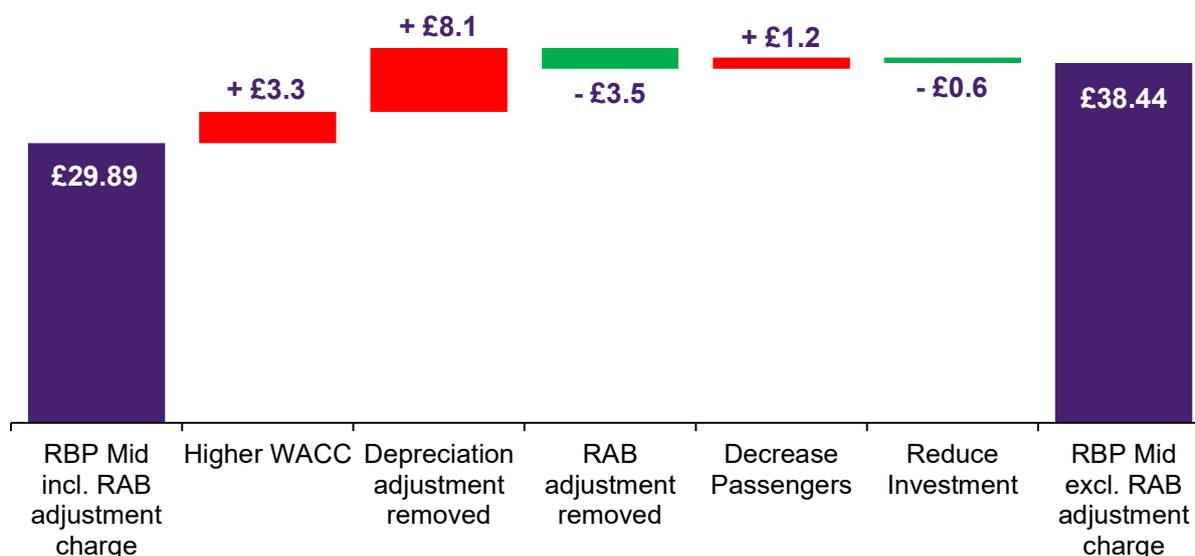
- We have been clear that we will always strive for safety and cleanliness and so do not expect our delivery of this critical requirement to change.
- As part of feeling comfortable and secure, consumers want to know that they have all their belongings with them and expect to travel with their bags. Without continued investment, we cannot maintain or improve important metrics such as the baggage misconnect rate. This will likely result in fewer people travelling with their bags.
- A key requirement of basic comforts is ensuring that passengers have a selection of basic food and beverage outlets. Due to current market conditions, we are seeing a number of these food and beverage outlets failing. Without the ability to invest in stripping and reconfiguring these outlets, we will not be able to attract new concessionaires to provide this service.
- Consumers told us that they value having different places to sit, wait and rest aligned with their needs. We would not be able to invest in replacing and improving these facilities; if social distancing continues when passenger numbers increase this will further exacerbate an existing challenge.
- Another key area of need for consumers is charging points which allow them to stay connected to their friends and family or carry on with their work while travelling. Without the ability to invest, this consumer need will not be met throughout H7.

As a result we will need to downgrade the targets we outlined in Chapter 9.2 – Measures, Targets & Incentives, which were calibrated to a £3.5bn capital plan.

The impact on the airport charge is equally stark given the shift in some of the key drivers:

- Increase the WACC from 8.00% to 9.49%.
- Change the depreciation adjustment from £635m p.a. to £0.
- Recalibrate the passenger shock factor from 1.46% to 4.85%

Figure 7: Bridge from no adjustment to base case



Source: Heathrow

The outcome is consumers paying more for less – which is not in their interest and counter to the CAA’s duty to consumers. It also undermines our efforts to ensure airlines have access to efficient, reliable and affordable airport services.

Figure 8: Consumer outcomes and passenger volume sensitivities

RAB Adjustment Sensitivities	2021 Adj	Our Plan	No Adj
I feel comfortable and secure at the airport	Improvement on today	Improvement on today	Significantly worse than today
I have a predictable and reliable journey	Improvement on today	Improvement on today	Worse than today
I feel cared for and supported	Improvement on today	Improvement on today	Significantly worse than today
I have an enjoyable experience at the airport	Significantly worse than today	Significantly worse than today	Worse than today
An airport I want to travel from that offers me a good value choice of flights	Worse than today	Worse than today	Worse than today
I am confident I can get to and from the airport	Significantly worse than today	Significantly worse than today	Significantly worse than today
H7 avg. charge (2018p)	£30.0	£29.9	£38.4

Improvement on today	Same as today	Worse than today	Significantly worse than today
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Source: Heathrow

10.2.3.3 Period Length

Our plans are based on a five-year regulatory period, which is supported by airline community feedback. This length of time is typically sufficient to forecast demand, operating cost and revenues without the need for significant resets and also creates sufficient certainty on investment incentives to unlock transformative projects that typically take longer to mature. This is discussed in more detail in Chapter 9.1 – Regulatory Framework.

We note that the CAA has yet to confirm that they believe a five-year period is appropriate, so we consider two sensitivities to our plan:

- A two-year period, where H7 ends on 31 December 2023.
- A seven-year period, where H7 ends on 31 December 2028.

Two-year period

We recognise that a superficially attractive option to deal with the uncertainty of current times is to plan for a shorter period while so many of the key building blocks are so volatile. However, reducing the time period has several unintended consequences that deliver worse outcomes for consumers and inevitably a significantly higher airport charge.

In a five-year period, the impact of lower passenger numbers on the airport charge at the start of the period can be off-set by anticipated growth later on in the period – creating a smooth price path that is competitive throughout. A shorter period limits the extent to which higher numbers later in the period can make up for inevitably lower numbers at the start – leading to a significantly higher airport charge in the critical years where recovery is most fragile. This will have long-term consequences for Heathrow’s competitive position in London and Europe.

A shorter period also risks magnifying the uncertainty around passenger demand. In the current situation, where we have no certainty on the shape or speed of recovery in the near term, it concentrates the price control on what are likely to be the most uncertain years. This could severely skew the price control and lead to a higher likelihood of forecasts being wrong across the period.

Moreover, a shorter period limits the certainty over the conditions that investors have over their investments, meaning it is unlikely that there would be sufficient incentives to deliver transformative projects, leading to Heathrow being structurally less efficient, commercial and sustainable than it could otherwise be. It is also likely this will have an impact on the cost of capital.

If the CAA outline their anticipation of a shorter length to H7, we will likely update our plans to:

- Cut the capital plan at end 2023.
- Include a smaller depreciation adjustment of £300m to reflect the uncertainty from 2024 onwards for investors.
- Marginally increase the cost of capital from 8.00% to 8.08% to reflect additional uncertainty.

The result is a charge that is £40.29 – over £9 higher than our five-year base case.

While the outcomes we aim for do not change, many will be delayed until the next control period of enough length to unlock those investments. This means:

- A delay to delivering the outcomes we know consumers value
- Significantly higher cost to airport services at a time when recovery is most fragile
- Less efficient investment

This would also have an impact on our Measures, Targets & Incentives proposals. As discussed in Chapter 9.2, these are relevant in the context of a £3.5bn capital plan, with the progress towards those targets taking place over a five-year period. A two-year period, with less investment and less time to make progress against those targets, would require a re-evaluation so that targets are calibrated to a shorter period and less investment in service.

We do not consider that a shorter period is in the consumer interest and it is clearly counter to the CAA’s duties to consumers and efficiency.

Seven-year period

A longer period has the opposite effect. With more certainty over the conditions to invest, the cost of capital is likely to marginally reduce. A longer period balances out the early years of weaker demand with more years where we expect demand to have recovered.

We assume:

- passenger volumes continue growth trend into 2027 and 2028.
- the capital run rate in 2027 and 2028 is the same as 2026.
- the WACC is 7.96%, 4bps lower than our current plan.

The outcome is the same consumer outcomes at a lower average airport charge – £28.81, £1.07 lower than our five-year base case.

We note that while the average charge is lower than the base case, the charge will be the same as the base in at least 2022 and 2023 in order to meet Heathrow’s EBITDA requirements. The charge could then fall below the base case in 2024 onwards, but we recognise the need to consider the appropriate profile of the price path in consultation with airlines and will do so if there is appetite to consider a longer period.

We recognise that critical to unlocking an extended period would be ensuring the settlement and our plans can be flexible to divergences from expected outcomes. We present detailed proposals to manage this in Chapter 9.1 – Regulatory Framework and Chapter 9.3 – Capital Governance.

Figure 9: Consumer outcomes and passenger volume sensitivities

Length of period sensitivities	7 year period	Our Plan	2 year period
I feel comfortable and secure at the airport	Improvement on today	Improvement on today	Significantly worse than today
I have a predictable and reliable journey	Improvement on today	Improvement on today	Significantly worse than today
I feel cared for and supported	Improvement on today	Improvement on today	Significantly worse than today
I have an enjoyable experience at the airport	Significantly worse than today	Significantly worse than today	Significantly worse than today
An airport I want to travel from that offers me a good value choice of flights	Worse than today	Worse than today	Worse than today
I am confident I can get to and from the airport	Significantly worse than today	Significantly worse than today	Significantly worse than today
H7 avg. charge	£28.8	£29.9	£40.3

Improvement on today	Same as today	Worse than today	Significantly worse than today
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Source: Heathrow

11 – ASSURANCE

Chapter Overview

- Heathrow is governed by the Board and has an embedded governance framework in line with best practice corporate governance principles.
- The Board and management have engaged extensively in preparing the Revised Business Plan to understand consumer views and ensure affordability and financeability.
- The Revised Business Plan has been assured by Heathrow’s Executive Committee, Board and a set of external reviews on each element of the overall plan.
- We have tested how the Revised Business Plan addresses the CAA’s business plan guidance, meeting the CAP1940 criteria in full.

11.1 Introduction

The following section sets out the governance framework at Heathrow, and the assurance activity undertaken, that enables the Board of Heathrow Airport Holdings Limited (the “Heathrow Board”) to have confidence in the affordability, financeability and deliverability of our business plan.

Our governance and assurance strategy reflects the CAA’s primary duty when assessing our business plan: that is, to ensure the plan furthers the interests of current and future passengers and cargo owners (collectively, ‘consumers’). We have taken into account the interests of other stakeholders, including through the Constructive Engagement process which has been described in Chapter 2.4 – Constructive Engagement, but we have been clear in preparing this Revised Business Plan that the interests of our passengers and cargo owners is paramount. We have therefore developed our plan primarily by listening to consumers directly, rather than assuming that other stakeholders such as airlines are good proxies for consumers interests. This approach is consistent with the Civil Aviation Act 2012 and we explain the rationale for this approach further in Chapter 2.0 – Consumer Insights. We have taken an approach to assurance which is both comprehensive and appropriate, however, given the inherent uncertainties that the aviation industry is currently facing it is likely that material updates will be necessary during 2021.

Finally, this is a business plan and whilst it has been compiled with the principles of regulation in mind it is a good faith commercial document and not a formal regulatory submission. If there are inconsistencies between this plan and previous regulatory submissions relating to matters of regulatory policy, then those submissions take primacy.

11.2 Board and Governance

The Heathrow Board determines the long-term strategy, direction, and monitors the performance of the Heathrow Group, including approval of the Budget and Management Business Plan. It provides oversight to ensure that the Group acts ethically, has the resources to meet its objectives and meet its responsibilities as a leading airport company.

The Board consists of mainly Non-Executive Directors of which over half are shareholder representatives and a minority (including the Chairman), are independent Non-Executive Directors. The Chief Executive, Chief Financial Officer and Chief of Staff and General Counsel sit as Executive Directors on the Board.

Our Board is led by our independent Non-Executive Chairman, Lord Deighton, who was appointed on 22nd June 2016. Our Chief Executive Officer, John Holland-Kaye, has overall responsibility for the management of Heathrow and delegated authority from the Board to implement the Board’s decisions.

Figure 1: The Heathrow Board

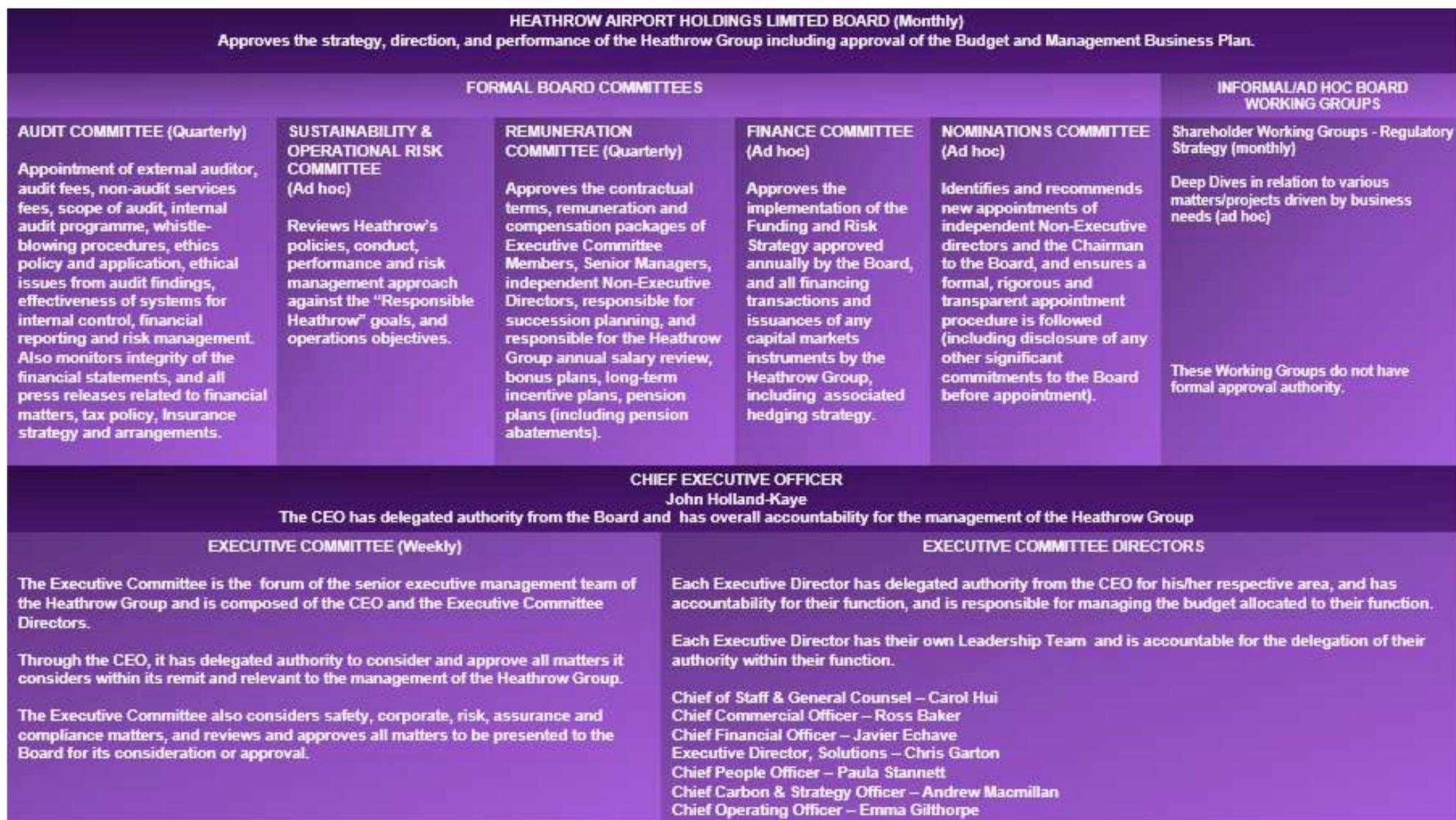
Non-Executive Chairman – Lord Deighton			
Executive Directors	Non-Executive Directors [Shareholder Representatives]		Independent Non-Execs
John Holland-Kaye Chief Executive Officer	Akbar Al-Baker Qatar Holdings	Ahmed Ali Al-Hammadi Qatar Holdings	Professor David Begg
Javier Echave Chief Financial Officer	Benjamin Bao CIC	Chris Beale Alinda	Rt Hon Ruth Kelly
Carol Hui Chief of Staff & General Counsel	Stuart Baldwin GIC	Olivier Fortin CDPQ	
	Jorge Gil Ferrovial	Fidel Lopez Ferrovial	
	Ernesto Lopez-Mozo Ferrovial	Mike Powell USS	

Source: Heathrow

Further details of Board members can be found at [Leadership | Heathrow](#).

Our Board meets every month and there is also well-established governance framework of Board Committees that support the Board in discharging its governance responsibilities. This framework consists of an Audit, Risk, Sustainability and Operational Risk (SORC), Remuneration, Nominations and Finance Committee. All Committees are chaired by Non-Executive Directors.

Figure 2: Heathrow's Governance Structure



Although Heathrow is not subject to the same requirements as publicly listed companies, the Heathrow Board always seeks to adopt high standards in corporate governance and ethical behaviour.

The directors of the Heathrow Board acknowledge their statutory duty under section 172 of the Companies Act 2006 to act in a way which they consider, in good faith, will promote the success of the company for the benefit of its members as a whole, when making decisions, setting corporate culture, strategy and developing policies. In discharging their section 172 duty, the Heathrow Board have regard to the factors set out below and any other factors which they consider relevant to the decision being made:

1. The likely consequences of any decisions in the long-term.
2. The interests of the company's employees.
3. The need to foster the company's business relationships with suppliers, customers and others.
4. The impact of the company's operations on the community and environment.
5. The desirability of the company maintaining a reputation for high standards of business conduct.
6. The need to act fairly as between members of the company.

11.3 Risk management

Risk management is a key element of Heathrow's corporate operations. As explained in Heathrow's Annual Report and Financial Statements, Heathrow's corporate risk management function sets the risk management strategy to provide the necessary framework to manage key risks and embed a risk management culture. The principal risks identified are set out in Heathrow's Annual Report and Financial Statements, along with the mitigation strategies in place.

Updates on the risk outlook are presented to the Board on a quarterly basis. Matters of risk management, alongside safety, corporate, assurance and compliance matters, are considered at monthly meetings of the Executive Committee, which is chaired by the Chief Executive Officer.

In addition, to support the discharging of the Executive Committee's risk management accountabilities, there is an Executive Risk and Assurance Committee established as a sub-committee of the Executive Committee, chaired by the Chief of Staff and General Counsel, and attended by the Chief Financial Officer and Chief Carbon and Strategy Officer. The Executive Risk and Assurance Committee meets on a monthly or bimonthly basis and reports to the Executive Committee, the Audit Committee, the SORC and Heathrow Board. It is responsible for reviewing the effectiveness of the risk management strategy and framework and for reviewing the principal risks and risk outlook.

As referred to earlier in this section, the SORC is a committee which is part of Heathrow's Board governance. The focus of this Board committee is on operational and environmental risks and it meets to review policies, risk management strategies and performance in relation to sustainability objectives and operational risks and incidents. The SORC is chaired by David Begg, an Independent Non-Executive Director. Its members include the CEO and three shareholder Non-Executive Directors who also attend the Board. Financial risks are reviewed by the Audit Committee and joint sessions of the Audit Committee and SORC are held to review the risk outlook.

11.4 Plan governance and scrutiny

Given the importance of the H7 price control, our Board has subjected this plan to an extensive level of scrutiny and challenge commensurate with the additional risks Heathrow faces at this time. The level of scrutiny also reflects the commitment of the Board to ensuring the continued long-term success of the airport.

In developing this Revised Business Plan, and to ensure alignment across our short, medium and long-term ambitions of the airport, we have followed our business as usual governance processes. The co-ordination of the plan has been managed by the Planning Steering Group – a senior level working group established to fulfil Executive accountabilities on regulatory and planning matters, chaired by the Chief Financial Officer. The plan has also been subject to specific reviews by Executive Committee and Board members as the different elements of the plan have been progressed, with multiple reviews of the totality of the plan as it matured and as part of the sign-off process.

In addition to overseeing the development and progress of the plan against key milestones and overarching assurance, the Heathrow Board had oversight of Constructive Engagement and the integration of research and insight into the plan, and the processes that ensure the affordability and financeability of the plan.

Consumer Engagement

Members of the Heathrow Board have worked closely with Heathrow's Executive Committee, and management to ensure that our plan is based on what matters most to consumers. Consumer research findings and the research synthesis have been shared with and reviewed by the Executive Committee and Board. Board members have also observed consumer workshops hosted by our Horizon on-line platform, and members of our Executive Committee have participated personally with Horizon consumers at consumer workshops, observed passenger feedback surveys and engaged in multiple structured passenger engagement and service sessions in the last two years. This direct involvement in our consumer engagement initiatives has enhanced both our Board and Executive Committee's understanding of our current, and future, passengers' needs, priorities and concerns.

Affordability and Financeability

The Heathrow Board and Executive Committee have overseen extensive work to ensure that the charges proposed in our business plan are affordable and financeable. This work includes commercial and financial modelling that tests the plans presented here against key credit metrics as well as market insights that benchmarks our costs and services against other airports.

11.5 Approach to Assurance

Heathrow has a well-established assurance framework in place to provide confidence to the Board, Executive Committee, and internal and external stakeholders that information provided on the company's future plans and current performance can be trusted. The Board has been fully engaged in the planning and preparation of our Revised Business Plan and this plan and assurance statement has been approved by the Board.

This assurance framework consists of five key elements –

1. **Board Oversight** – Board of Directors, Audit Committee, Remuneration Committee, Nomination Committee, Sustainability and Operational Risk Committee, Finance Committee

2. **Executive Committee Oversight** – including sub-groups
3. **Independent Assurance** – Internal audit and external assurance providers as required
4. **Corporate Oversight** – Risk Management, Health & Safety and Environmental compliance audits, Legal Assurance
5. **Management Assurance** – Executive Committee Leadership Teams and sub-groups, Internal controls (including delegated financial authorities and approvals)

Our business plans are developed in a framework that includes robust internal controls and assurance, in line with our business as usual arrangements.

Independent RBP Assurance

In addition to our business as usual assurance arrangements, additional independent assurance has been completed for the H7 process, recognising the scale and level of risk associated with our plans.

1. **Towerhouse LLP** have reviewed each key chapter and considered the legal and regulatory risks associated with our proposals.
2. **Steer** have reviewed our approach to modelling and considered the quality and consistency of our approach.

In addition, we continue to re-use previously assured information on Heathrow's cost and revenues as benchmarked against competitors by KPMG and Pragma, first presented in our Initial Business Plan.

11.6 Meeting the CAA's business plan criteria

We are confident that our business plan meets the criteria set out by the CAA or that any divergence has been fully explained. We are also confident that it meets our regulatory obligations and is designed to further the interests of consumers (passengers and cargo-owners). We have undertaken an extensive programme of assurance to enable our Board to have confidence that we have met the CAA's requirements in the preparation of our Initial Business Plan and Revised Business Plan or, where appropriate, we are on track to meet them in any subsequent updates.

An overview of our assessment against the CAA's criteria is set out in the table below, including references to the relevant sections of the plan and annexes.

Area	Number	Criteria	Our assessment	Location reference
	C01	<p>The RBP should be:</p> <ul style="list-style-type: none"> • Transparent, and publicly available to all stakeholders; • Supported by a robust evidence base, drawing on industry best practice; • Well-structured and well-integrated between different elements of the plan; • Designed to reflect consumers' views and preferences to the fullest extent practicable; • Based on efficient costs and financing assumptions; • Affordable (including in terms of affordability of charges to airlines); and • Deliverable (including in respect of financeability). 	<p>Our RBP will consist of two main documents:</p> <ul style="list-style-type: none"> • Publicly available summary document • Detailed RBP chapters, published under NDA • Supporting annexes <p>In addition to the summary document, we will make the necessary redactions to our detailed plan and publish this in January 2021 to ensure transparency for all stakeholders.</p> <p>Our RBP is supported by annexes setting out our evidence base. These provide both internal and external evidence based on regulatory best practice and external market information.</p> <p>Our plans are centred around the delivery of our consumer and stakeholder outcomes which are constant throughout the plan. In addition to our consumer insight and the delivery of outcomes, our passenger forecasts provide the basis for our forecasts of operating costs and commercial revenues through our driver-based forecasting methodology.</p> <p>As evidenced by robust external benchmarking, our plans are based on efficient costs, a cost of capital based on regulatory developments and market evidence</p>	<p>Summary document</p> <p>Heathrow RBP</p> <p>Annexes</p>

Area	Number	Criteria	Our assessment	Location reference
			<p>and deliverable and financeable across the H7 period.</p> <p>The impact of Covid-19 on passenger numbers has exposed the weaknesses of the RAB-based framework. Due to the functioning of the regulatory framework, a high fixed cost base spread across lower passenger numbers will automatically impact on the level of the charge. We have done everything in our power to temper this impact. We believe that this results in an affordable charge level for H7.</p>	
	C02	<p>Link revenues and costs clearly to recovery scenarios for passenger numbers, taking account of recent developments including, in particular, the impact of the Covid-19 pandemic. HAL should also clearly identify risk, contingency and efficiency assumptions throughout its plan</p>	<p>Our passenger forecasts use robust scenario analysis to create three cases, high, mid and low. Our RBP presents our plan based on the mid-scenario. This flows through all of our forecasting chapters and informs our assessment of how we can deliver on consumer outcomes.</p> <p>Chapter 10.2 – Outcomes - Next Steps sets out the impact of different passenger volume, regulatory period length and RAB adjustment scenarios on our plan.</p> <p>Our driver-based forecast shows clearly the assumptions we are making on efficiency within the plan. Our external and internal evidence shows that we are entering H7 as an efficient operator.</p>	<p>Chapter Demand 5.0</p> <p>Chapter Outcomes – Next Steps 10.2</p>

Area	Number	Criteria	Our assessment	Location reference
	C03	Present all financial, cost and revenue data in the RBP in nominal and real prices, with real values in 2019 prices (or an alternative price base with clear justification provided). HAL should specify what price index it has used (for each item if different indices have been used) to convert data from nominal to real prices. We also require HAL to use a consistent base year when forecasting any quantified elements of the plan. HAL should provide a clear justification and evidence for the choice of base year as part of its forecasting methodology.	<p>Our RBP is presented in 2018 prices to provide consistency with our IBP and BBU. This will provide increased transparency for stakeholders.</p> <p>Our RBP models show the price index used for each line of our forecast.</p> <p>Our operating cost and commercial revenue forecasts use 2019 as the base year. This is consistent with discussions with the airline community through Constructive Engagement and with the airline community's response to the BBU.</p> <p>Using 2019 as the base year allows us to clearly and transparently identify the impacts of expansion and Covid-19 and make forward looking adjustments for these in our forecasting.</p>	<p>RBP model</p> <p>PCM</p> <p>Chapter 7.1 Operating Costs</p> <p>Chapter 7.2 Commercial Revenues</p>
	C04	Ensure its Board reviews and approves the RBP, certifying that it is consistent with the criteria set out in this guidance and fully explaining any divergence from these criteria.	The RBP has been reviewed and approved by Heathrow's Board. We have provided a Board Statement in the Assurance chapter confirming that our plan is based on robust evidence and consumer insight and that it is affordable, deliverable and financeable, as per CAA guidance.	Chapter 11 - Assurance
Scenarios	C05	<p>Jointly agreed scenarios should take account of the following factors:</p> <ul style="list-style-type: none"> Scenarios or forecasts of economic activity, both for the UK economy as a whole and for the economies of the key 	Passenger scenarios were not jointly agreed with the airline community, but through Constructive Engagement we discussed and agreed the key drivers.	<p>Chapter 10.2 – Outcomes – Next Steps</p> <p>Chapter 5.0 - Demand</p>

Area	Number	Criteria	Our assessment	Location reference
		<p>passenger destinations served by air transport services from Heathrow;</p> <ul style="list-style-type: none"> • The impact on passenger demand of current and potential future quarantine measures, or other restrictions of movement across borders, by both UK Government and other governments; • The impact of other restrictions in airports or on board aircraft (such as social distancing requirements) on airport and airline fleet capacity. 	<p>Chapter 5.0 – Demand outlines that we have used a scenario-based approach in the RBP for passenger forecasting, developing four scenarios to reflect the potential circumstances that may emerge over the coming years. These are:</p> <ul style="list-style-type: none"> • Early Vaccine; • Testing & WHO Vaccine; • Rolling Quarantine; and • Permanent Reduction. <p>These scenarios consider the impact of economic activity, potential future quarantine measures and the impact of other airport restrictions on passenger demand and the supply of capacity by airlines. Our model splits Heathrow demand by 40 geographic markets to allow for more nuanced border opening assumptions and distinguish weightings of travel purpose to markets.</p> <p>These scenarios are then combined and weighted through Monte Carlo analysis to provide three main scenarios, high, mid and low on which we have assessed our plans. Our RBP is based on the mid-case scenario in order to provide a clear plan for the H7 period. Chapter 10.2 Outcomes – Next Steps shows the impact of these different passenger numbers on our plans for the H7 period.</p>	

Area	Number	Criteria	Our assessment	Location reference
Scenarios	C06	Jointly agreed scenarios should be developed in a way that presents integrated outcomes for passenger numbers, capex, opex and commercial revenues in the RBP at a suitable level of disaggregation. Given the requirements of criterion C05, scenario analysis should be disaggregated, as a minimum, into key geographic markets.	<p>Our driver-based forecasting methodology uses our passenger forecast scenarios to forecast opex and commercial revenues for the H7 period. Our passenger forecasts provide the basis for passenger related movements in costs and revenues as well as informing costs and revenues based on terminal space and usage, which will reflect the terminal space required to serve our forecast passenger numbers.</p> <p>Chapter 7.1 Operating Costs and Chapter 7.2 Commercial Revenues present our cost and revenue forecasts based on our mid-case passenger volumes. Chapter 10.2 Outcomes – Next Steps shows the impact of the high and low cases on our costs and revenues.</p> <p>Chapter 6.0 Capital investment shows our proposed capital envelope in our mid-case passenger forecast. As requested by the airlines in Constructive Engagement, this chapter identifies both the capital envelope required for critical compliance and the discretionary capital expenditure for the period. Chapter 10.2 Outcomes - Next Steps shows the impact of the high and low passenger scenarios on our capital envelope.</p>	<p>Chapter 10.2 – Outcomes – Next Steps</p> <p>Chapter 7.1 – Operating Costs</p> <p>Chapter 7.2 – Commercial Revenues</p> <p>Chapter 6.0 – Capital Investment</p>
OBR	C07	HAL should develop an OBR strategy over the short term, recovery period and longer term. As a minimum, this should focus on delivering consumers’ and airlines’ core needs and priorities so that they continue to	The RBP focuses on our long-term plans for service quality for the H7 period. Discussions regarding short and medium term SQRB changes sit outside of our H7 plans. However, airline and consumer views on the potential	Chapter 9.2 - Measures, Targets and Incentives chapter

Area	Number	Criteria	Our assessment	Location reference
		<p>receive an appropriate level of service over this time. HAL's focus should be on two areas which must be progressed in parallel:</p> <ul style="list-style-type: none"> • update the SQRB scheme for the short term and recovery period; and • develop the H7 OBR framework and plan for continuous improvement of the framework over the longer term. <p>Any modified form of the SQRB scheme should be appropriately brought together with longer term work to develop HAL's H7 OBR framework. The H7 OBR framework should be developed to take account of new consumer insights and other developments in the sector so that OBR remains responsive to consumers' evolving needs.</p> <p>A section of the RBP should set out HAL's strategy and a methodology for bringing this work together as well as the progress made in doing so.</p>	<p>impacts on service quality and the measurement of service quality post-Covid have informed our proposed framework.</p> <p>Our OBR framework has been updated since IBP to include research and engagement carried out post-Covid to understand changes in consumer needs. This has led to an update to one of our outcomes to reflect the growing importance of value for money to consumers.</p> <p>Following CCB feedback, we have aligned our measures, targets and incentives for the H7 period with the delivery of our consumer outcomes and consumer valuations of service improvements. This ensures that our service quality scheme is centred around consumer needs.</p> <p>Our H7 framework includes a proposed continuous improvement process for our service quality scheme. In addition to the current governance centred around delivery of service quality, we will carry out an annual review process with the airline community to ensure that our service quality scheme continues to reflect consumer needs.</p>	<p>Chapter 2.3 – Consumer Insights</p>

Area	Number	Criteria	Our assessment	Location reference
Consumer Engagement	C08	<p>In ensuring the RBP is fully informed by consumers' core needs, priorities and preferences. HAL should:</p> <ul style="list-style-type: none"> • consider which elements of its existing consumer research and engagement remain relevant for the RBP; • refine and build on its existing consumer evidence base with emerging intelligence and, where appropriate and practicable, through new research and engagement; • update its existing consumer research and engagement strategy, setting out how it intends to engage with consumers to understand their core needs, priorities and preferences; • consider airlines' consumer research and insights; and • address relevant findings and recommendations in the CCB's IBP report on consumer research and engagement and continue to follow the CCB's principles of good consumer engagement. <p>In doing this, HAL should consult the CAA and airlines on its future research and engagement plans and reflect the feedback it receives in its work on the RBP. HAL should also demonstrate how it will manage practical issues on consumer participation</p>	<p>For the RBP, we have reviewed our evidence base, commissioned new engagement to test whether consumer priorities have changed. We have subsequently updated our synthesis of insights and consumer outcomes to reflect this. Our evidence base of consumers insights is set out in Chapter 2.3 – Consumer Insights.</p> <p>Chapter 3.0 – Passenger Experience sets out our updated passenger proposition in line with our updated consumer insights and considering the impact of Covid-19 on passenger priorities.</p> <p>We have carried out an interim update to our Consumer Engagement Strategy alongside our RBP. We will be carrying out a fuller review through 2021 when we have increased certainty about our ability to carry our further consumer research and engagement.</p> <p>We have reflected feedback from the CCB in our plans and, in particular in our approach to Measures, Targets and Incentives. We have reviewed our proposed measures to ensure that they have a clear golden thread back to our consumer outcomes and that they are measuring the key areas which impact the airport experience, including services which are not wholly within Heathrow's control.</p> <p>Our approach also took on-board insight and views from the airline community. Through</p>	<p>Chapter 9.2 - Measures, Targets and Incentives chapter</p> <p>Chapter 2.3 – Consumer Insights</p> <p>Chapter 3.0 – Passenger Experience</p> <p>Annex 4 – of Synthesis consumer insights</p>

Area	Number	Criteria	Our assessment	Location reference
		and results that may have been distorted by the impact of the Covid-19 pandemic.	Constructive Engagement the airline community was unable to give us further consumer insight, however their views have shaped our approach to our final list of 36 measures, 24 of which were agreed with the airline community.	
Consumer Engagement	C09	HAL should consider what the implications of its future scenarios might be for the service quality that consumers and airlines will expect and should receive. To the extent practicable, HAL should demonstrate a clear link between its consumer insights and future plans under the range of scenarios being assessed, drawing on existing consumer insights, new intelligence and research to support these scenarios where possible.	<p>Chapter 10.1 – Outcomes – conclusions sets out the impact of our plan on our delivery of consumer outcomes.</p> <p>Chapter 10.2 – Outcomes – Next Steps sets out the impact of different scenarios on our plans and, consequently, on our ability to deliver against consumer outcomes. We show this for the following scenarios:</p> <ul style="list-style-type: none"> • High and low passenger forecasts • Covid related RAB adjustment implementation in early 2021 • No Covid related RAB adjustment • Two-year regulatory period • Seven-year regulatory period 	<p>Chapter 10.1 – Outcomes – Conclusions</p> <p>Chapter 10.2 – Outcomes – Next Steps</p>
Capex	C10	<p>The RBP should set out capex proposals at a sufficiently detailed level of disaggregation. For each project at a sufficiently advanced stage of development, HAL should identify key categories of costs, such as:</p> <ul style="list-style-type: none"> • leadership and logistics; and • risk and contingency. 	Chapter 6.0 – Capital sets out our proposed capital plan for H7 at an appropriate level of disaggregation to reflect our current place in the capital process. In line with the Development and Core capital process, we are working with the airline community through CPB to prioritise projects for delivery.	<p>Chapter 6.0 – Capital Investment</p> <p>Chapter 9.3 – Capital Governance</p>

Area	Number	Criteria	Our assessment	Location reference
		<p>We will discuss and agree the full list of categories with HAL and airlines in advance of the publication of the RBP.</p>	<p>As this process has only just been completed for 2021 and we will work with the airline community through 2021 to complete the process for 2022 onwards. This will allow us to establish key priorities and produce detailed business cases.</p> <p>In line with our response to CAP1951, we have disaggregated our proposed capital portfolio to a programme level. These programmes form part of three capital portfolios which reflect the different types of spend for the H7 period.</p> <p>Further work will be required on our approach to risk and contingency and L&L following further detail on the CAA's capital efficiency policy for H7. We will continue to review with the airline community through 2021. Our RBP assumes a continuation of the Q6 approach.</p> <p>We agreed with the airline community that the Q6 approach to forecasting, P80 (pre-G3) and P50 (post G3) estimates, would be used to set estimates.</p>	
Capex	C11	<p>HAL should clearly identify risk, contingency and efficiency assumptions in its capex proposals, both</p> <ul style="list-style-type: none"> • at the project level; and • at the overall portfolio level. 	<p>As above, we will continue to refine our approach to risk and contingency through H7. This will be heavily impacted by the CAA's proposed capital efficiency framework and, in particular, any movement towards an ex-ante capital framework.</p>	Chapter 9.3 – Capital Governance
Capex	C12	<p>HAL should identify expected outputs and benefits associated with each project. The RBP should set out how the capex</p>	<p>As set out in our response to CAP1951, setting out outputs and benefits on a project-by-project basis in the RBP is not workable and</p>	Chapter 6.0 - Capital Plan

Area	Number	Criteria	Our assessment	Location reference
		<p>programme delivers value for money, on a whole life cost basis, for customers and consumers during H7. This should include an estimation of measurable benefits.</p>	<p>would require our capital portfolio to be agreed at the time of the H7 business plan.</p> <p>As suggested by the airline community through Constructive Engagement, our approach to the capital portfolio in the RBP has been to allocating allowances to key delivery objectives.</p> <p>This allows us to reassess existing business cases with the airline community to ensure that they meet the post-Covid consumer needs and to prioritise those which deliver the greatest benefits within any available capital.</p> <p>This approach means the portfolio can flex to different capital allowances and can adjust more easily if priorities change. As the market evolves and opportunities are identified, investments will be added to the portfolio which are evaluated as the highest priority.</p> <p>Through discussions with the airline community at capital governance boards we are developing seven programmes with clear delivery objectives, aligned to delivering consumer outcomes. These link to the three priorities of Protect the Business, Win the Recovery and Build Back Better into more detailed definitions and proposed investments within each programme.</p>	

Area	Number	Criteria	Our assessment	Location reference
Capex efficiency incentives	C13	HAL should set out its understanding of our proposed broad approach to capex incentives and how it has taken account of this in the RBP, including any key assumptions.	<p>The CAA’s approach to capital efficiency is still developing. Our approach, as set out in Chapter 9.3 – Capital Governance, is based on our response to the CAA’s CAP1951 consultation. This takes the CAA’s guidance, output from CE and the learnings from Q5 and Q6 to build a suggested capital efficiency framework which can adapt to the uncertainty of the H7 period.</p> <p>Our key assumptions are that:</p> <ul style="list-style-type: none"> • Our capital portfolio will be categorised at a programme level • The Development and Core mechanism for capex and the current mechanism for reflecting capex in airport charges will remain • There is an ex-ante incentive applied to our asset replacement programme • Airline governance groups remain, but with a programme level focus to reflect changing levels of resource available. 	Chapter 9.3 – Capital Governance
Capex efficiency incentives	C14	<p>The RBP should contain detail on the capex portfolio and, where capex programmes are sufficiently developed, initial views on:</p> <ul style="list-style-type: none"> • capex categories, and “core” and “development” capex; • delivery obligations (“DOs”) and quality requirements; and • any timing incentives. 	<p>Chapter 6.0 – Capital Plan categorises our capital portfolio into programme level categories. This is consistent with the approach taken in our response to CAP1951 and with advice from the IFS.</p> <p>Given the impact of Covid-19 we have had to significantly scale back our capex for 2020 and 2021. This has meant that many projects that had been planned for 2020-21 have also been</p>	<p>Chapter 9.3 – Capital Governance</p> <p>Chapter 6.0 - Capital Plan</p>

Area	Number	Criteria	Our assessment	Location reference
			<p>stopped in order to protect short term liquidity. This means that the current pipeline, while clear at a programme level, remains relatively immature. We will continue to evolve projects with the airport community over the course of the coming months and evaluate them for inclusion within the allowances through the existing capital governance forums.</p> <p>In line with our response to CAP1951, Chapter 6.0 – Capital Plan sets out the high-level delivery objectives for our capital programmes. We are developing these seven programmes and their delivery objectives with airlines through capital governance boards.</p> <p>Our RBP also sets out a preliminary view of the measures which could be used to monitor delivery against these capital programmes. We have agreed with the airline community to work through these measures and further detail on the implementation of our proposed capital efficiency framework as part of the 2021 IFS working group meetings.</p>	
Capex efficiency incentives	C15	HAL should provide details of the proposed governance process to support the capex incentives, including how it will address the issues arising from the Q6 arrangements identified by the IFS and CAA.	Our governance process builds on areas of improvement identified by stakeholders and the IFS; we are proposing to move to a more programme-based approach capital governance and refocus the IFS role to provide more technical scrutiny at programme and project level.	Chapter 9.3 - Capital Governance

Area	Number	Criteria	Our assessment	Location reference
			<p>Beyond Constructive Engagement we have continued to engage with the airline community following our response to CAP1951 to understand airline views on our proposed approach. Through 2021 we propose to use the IFS Working Group to develop the capital efficiency measures for H7, ensuring ongoing engagement with both the airline community and the IFS on implementing these proposals.</p>	
<p>Opex and commercial revenues</p>	<p>C16</p>	<p>HAL should consider whether its forecasting methodology remains appropriate in the context of the impact of the Covid-19 pandemic and the Court of Appeal's judgment.</p> <p>Forecasts should be fully explained, taking account of past performance, the impact of measures to address the impact of the Covid-19 pandemic and expected operational efficiency and commercial revenue generation.</p>	<p>Section 7.1.6 in Operating Costs and section 7.2.4.3 in Commercial Revenues outline our forecasting methodology. We have incorporated feedback from the airline community and made changes where appropriate, Heathrow has clearly evidenced the driver-based approach and discussed the methodology and output at length with both the airline community and the CAA.</p> <p>We continue to believe it offers both proven accuracy, represents regulatory best practice and has the ability to adapt to different passenger growth scenarios.</p> <p>We have included Covid-19 impacts in both our operating costs and commercial revenues forecasts. We have also included the impacted of key changes such as the Government decision on VAT and specific operating cost efficiencies such as the Cost of Change project.</p>	<p>Chapter 7.1 - Operating Costs</p> <p>Chapter 7.2 - Commercial Revenues</p>

Area	Number	Criteria	Our assessment	Location reference
Opex and commercial revenues	C17	<p>We expect the RBP to set out consistent historical and forecast data at a level of detail that supports appropriate scrutiny by the CAA and airlines.</p> <p>We expect historical data to cover the Q6 period as a minimum and we expect HAL to ensure that all historical data included in its RBP submission is fully reconcilable to its published Regulatory Accounts.</p>	<p>We have used 2019 as our base year and efficient starting point, as agreed with the airline community during Constructive Engagement.</p> <p>Using 2019 as the base year also ensures full transparency of both the cost pressures and savings we have made during 2020 and how we expect them to evolve in 2021. It provides the most 'normal' year prior to the impact of Covid-19.</p> <p>Q6 data is provided in supporting models and is reconcilable to regulatory accounts, as set out in Constructive Engagement.</p>	<p>Chapter 7.1 - Operating Costs</p> <p>Chapter 7.2 - Commercial Revenues</p> <p>RBP Model</p>
Opex and commercial revenues	C18	<p>HAL should demonstrate that its forecasts of opex and commercial revenues are integrated with other areas of the RBP: opex forecasts should be clearly linked to anticipated operational activity (e.g. increased use of a particular terminal by passengers) and changes in service quality during the H7 period.</p> <p>HAL should show that its opex and commercial revenue forecasts are consistent with planned capital investment.</p> <p>Evidence should be provided to demonstrate that a range of operating and capital solutions have been considered to deliver the activities and levels of service planned for H7 efficiently. The RBP should clearly</p>	<p>Operating costs and commercial revenues forecasts are driven by forecasts of available terminal space and passenger volumes, this is fully integrated with investment decisions and passenger forecasting.</p> <p>Operating costs forecasts are linked to both capital expenditure through expected efficiencies from capital projects and potential impacts of lower levels of capex due to financial constraints. We base our assessment of this on robust literature on the impacts of capital substitution.</p> <p>Our proposed measures, targets and incentives are based on our capital envelopes and opex forecasts. Our opex forecasts include overlays for additional opex related to</p>	<p>Chapter 7.1 - Operating Costs</p> <p>Chapter 7.2 - Commercial Revenues</p>

Area	Number	Criteria	Our assessment	Location reference
		show how the best and most efficient options have been selected, and how optimum value for money will be achieved.	Covid-19 and increases in service quality. These forecasts have been used to inform our service targets, in particular improvements in passenger experience which lead to a forecasted rise in overall satisfaction levels as measured by QSM.	
Cost of capital	C19	<p>HAL's proposal for the WACC should be consistent with efficient financing and its assumptions on risks and incentives.</p> <p>HAL should assume a cost of capital for H7 no more than the efficient level necessary to compensate HAL for the business and regulatory risks it faces.</p>	<p>In the WACC chapter we explain that setting the right level of WACC is important for encouraging investment and achieving the right long-term outcome for consumers.</p> <p>We set out Heathrow's estimate of the WACC required for H7 for our base case, with sensitivities for higher notional gearing and in the case of no Covid-related RAB adjustment. The estimates are soundly based on current market evidence and robust and transparent analysis. We consider that the level of WACC set out is the minimum efficient level required for H7.</p>	Chapter 8.2 - WACC
Cost of capital	C20	<p>In estimating the efficient cost of capital for its business plan, HAL should align this with:</p> <ul style="list-style-type: none"> • recent UK regulatory precedent (including the CMA decisions on RP3 and Ofwat's PR19 determinations wherever available); • market evidence on cost of capital parameters; and • the business risks it faces. 	<p>In the WACC chapter we describe Heathrow's approach to WACC in H7 based on current market evidence on the cost of finance. We also take account of recent regulatory precedent in the CMA appeals for NERL and Water Companies. These appeals provide important precedent about certain key inputs to the WACC. They also demonstrate the CMA's readiness to adjust errors by regulators and ensure consistency across sectors.</p> <p>Primarily using CMA parameters and latest market data, we provide our views on the cost</p>	Chapter 8.2 - WACC

Area	Number	Criteria	Our assessment	Location reference
			of equity, the cost of debt and the specific impact the Covid-related RAB adjustment has on both.	
Financeability	C21	<p>HAL should provide robust evidence that its RBP is financeable and affordable.</p> <p>Analysis of affordability and financeability should be conducted under the same range of planning scenarios as provided in the RBP. This assessment should also be undertaken with reference to the CAA's statements on financeability policy and we would expect HAL to examine the same key metrics.</p> <p>Stress testing is not required for the RBP but will be necessary in 2021.</p>	<p>Chapter 8.1 – Financial Platform sets out that our plan for H7 is financeable with a mix of cashflows from operations, debt financing and ongoing equity commitment. Our approach ensures that we can swiftly return to an A-credit rating in order to ensure access to efficient borrowing over the period.</p> <p>Our financeability assessment has been undertaken using the CAA's PCM. Our approach is consistent with the CAA's financeability policy, taking account of both debt and equity financeability and looking at the impact of the use of tools such as regulatory depreciation. Our assessment shows that under a notional structure and based on historic rating agency guidance our plans are financeable.</p> <p>Our assessment of financeability tests the following stress scenarios:</p> <ul style="list-style-type: none"> • Using a tariff profile without a P0 adjustment • Using a lower WACC • Increasing the cost of new debt to 5% in 2022 	<p>Chapter 8.1 – Financial Platform</p> <p>Price Control Models</p>

Area	Number	Criteria	Our assessment	Location reference
			<ul style="list-style-type: none"> • Reducing inflation to 2% over H7 • Reducing passenger numbers to our P10 forecast <p>Our assessments review the impact on the following key credit metrics:</p> <ul style="list-style-type: none"> • FFO/Net Debt • Net Debt/ENITDA • PMICR 	
Financeability	C22	<p>HAL should outline what structural and regulatory options and/or changes would best support the credit rating it targets in the RBP, while being consistent with the interests of stakeholders.</p> <p>The assessment of the targeted credit rating for each relevant scenario should consider the net impact of having a higher or lower credit rating.</p>	<p>Chapter 8.1 – Financial Platform sets out the regulatory tools which will support financeability and our swift return to an A- credit rating. These are:</p> <ul style="list-style-type: none"> • Utilising a P0 adjustment ensures we can restore stronger credit metrics and minimise the detriment to consumers of higher financing charges • Implementing an adjustment to Heathrow’s RAB will ease the pressure expected in the early years of H7. A scenario without a RAB adjustment will adversely impact the PMICR without a P0 adjustment <p>Our plan targets a return to an A- credit rating which will drive the most cost-effective debt financing. Chapter 8.1 sets out the impact of moving to a lower credit rating, setting out that if we raised around £3bn of debt in the next two years with an average duration of 10 years, the incremental cost to consumers of a downgrade to our cost of debt would be</p>	Chapter 8.1 – Financial Platform

Area	Number	Criteria	Our assessment	Location reference
			around £300m over the course of the financing.	
Financeability	C23	<p>HAL should consider the appropriate notional financial structure taking into account the guidance provided on financeability and cost of capital in chapter 4.</p> <p>Analysis should include an evaluation of the advantages and disadvantages of different notional financial structure options developed by HAL.</p>	Our notional balance sheet assumes a fixed gearing of 60%. This is in line with the approach taken by the CAA since Q4. Maintaining stability in this assumption is key to ensuring regulatory consistency.	Chapter 8.1 – Financial Platform
Financial modelling	C24	<p>Analysis of affordability and financeability should include a baseline assessment using the CAA’s price control model (“PCM”). If assumptions are not detailed in the business plan itself, a data book detailing the rationale for the assumptions adopted in the RBP should be provided.</p> <p>HAL should discuss with the CAA any structural and formula changes required to the PCM in advance of submitting the RBP to agree a version of the PCM for HAL for use in the submission.</p> <p>If HAL uses models other than the PCM in the RBP, they should be accompanied with commentary and analysis reconciling the results to those of the PCM.</p>	<p>We have used the CAA’s PCM to carry out our financeability assessment.</p> <p>There has been ongoing dialogue with the CAA about the PCM and structural changes required for the H7 plan. This includes points on RAB indexation and profiling.</p> <p>We will submit different versions of the PCM to reflect the different scenarios assessed in our RBP.</p> <p>Alongside the PCM we are also submitting our RBP model setting out or operating cost and commercial revenue forecasts. This is consistent with our approach to IBP.</p>	<p>Chapter 8.1 – Financial Platform</p> <p>Price Control Model</p> <p>RBP model</p>

Area	Number	Criteria	Our assessment	Location reference
ORCs	C25	The rationale for any cost reallocation needs to be clear and robust, with the implications for changes in risk and incentives explained. HAL needs to highlight why these changes would be in the interests of consumers.	<p>We have provided clear and robust rationales for proposed ORC changes in H7. This includes shifting to a simpler marginal cost approach whilst retaining the user pays principle.</p> <p>Reasons are provided for the ORCs that we propose to remove in H7; these changes were supported by the airline community either fully or in principle through Constructive Engagement.</p>	Chapter 9.4 – Other Regulated Charges
ORCs	C26	For each ORC, HAL needs to explain the rationale for the proposed treatment of over and under-recovery mechanisms clearly and demonstrate why this would be in the interests of consumers.	<p>We note in the Other Regulated Charges chapter that there have been cases throughout Q6 which have demonstrated that changes in uncontrollable external policy costs can lead to windfall gains or losses for Heathrow when included within the cost base of the airport charge. This has driven us to consider whether these areas, such as business rates, can be better dealt with using the transparency and cost recovery principles of ORCs.</p> <p>The marginal cost approach for all ORCs will also promote greater simplicity in ORCs, allowing Heathrow and the airline community to focus on the manageable elements of the cost base and simplifying the recoverable cost base.</p> <p>Within the Price Control Adjustment Mechanism in the Regulatory Framework chapter, we are also proposing to include the under recovery of ORC revenues as part of</p>	<p>Chapter 9.3 – Other Regulated Charges</p> <p>Chapter 9.1 – Regulatory Framework</p>

Area	Number	Criteria	Our assessment	Location reference
			<p>this mechanism if it is triggered. In all other circumstances the current annual over and under recovery process will apply. This approach will further ensure price stability for airlines by providing a clear and transparent mechanism for recovering these revenues in the case of a major change in passenger volumes.</p>	
Resilience	C27	<p>HAL should explain how it plans to maintain resilience as passenger numbers increase through H7.</p>	<p>In the Resilience chapter we note that Heathrow has not lost the ability to operate an 80 million passengers per annum airport. The extreme shock of Covid-19 has demonstrated Heathrow can deal with unprecedented uncertainty in addition to the high passenger volumes and capacity constraints previously experienced.</p> <p>In addition to plans for terminal management (per criterion C28), we set out a number of key initiatives relating to airspace modernisation, operational efficiency and improving performance. These initiatives, as well as the proposal of a Joint Resilience Plan for H7, will all contribute to Heathrow's ability to maintain resilience as passenger numbers increase through H7.</p>	<p>Chapter 7.3 - Resilience.</p>
Resilience	C28	<p>HAL needs to set out its plans for terminal management and accommodating a recovery of passenger numbers over the H7 period.</p>	<p>In the Resilience chapter we explain that we will continue to look at Demand v. Capacity on an ongoing basis.</p> <p>We have established a triggers process to govern the return of capacity and shared principles for how the return would take place.</p>	<p>Chapter 7.3 - Resilience.</p>

Area	Number	Criteria	Our assessment	Location reference
			<p>Once full terminal capacity returns, we will establish existing scheduling and capacity limit processes to manage the schedule development and ensure that the operation and resilience are protected, including terminal over-crowding.</p> <p>This may include a recalculation of limits as appropriate depending on the extent to which capacity is permanently altered, or identification of interventions to change the terminal process to return additional lost capacity – however it will not be possible to determine this until more is known about the rate and shape of demand return, and any lasting impacts of Covid-19 on capacity reduction.</p>	

1.7 Board Statement

As the Board of Heathrow Airport Holdings Limited it is our duty to set the long-term strategic direction for Heathrow Airport Limited, to promote good corporate governance and to ensure a robust system of risk management and internal controls is in place.

We note the impact of Covid-19 on the passenger volumes, revenues and our financial platform and the new challenges this has brought to Heathrow's business. In planning for recovery from these challenges we have sought to prioritise meeting consumer needs, ensured our plan is efficient and financeable and that airport services remain as affordable as practicable. We note this is not without challenges, and above all else requires Government and the CAA to deliver a regulatory and policy environment that will restore investor confidence. We consider that this includes the requested Covid-related RAB Adjustment that will lower the cost of capital, safeguard financeability and unlock regulatory depreciation to smooth the airport charge and restore confidence in the regulator.

In developing our plan, we have kept in mind that a successful and growing Heathrow will deliver value for current and future passengers, and cargo owners, as well as being in the interests of our airline customers, colleagues, local communities, and our investors. Whilst difficult choices have had to be made, we have focussed on ensuring that a return to growth and success is both achievable and affordable for future users of the airport and financeable by investors.

Our Revised Business Plan has been developed through significant engagement with consumers and other stakeholders. We have always taken a consumer led approach but in the current climate with rapidly evolving consumer wants and needs we have conducted extensive research to understand how this evolution should be reflected in our long-term planning. This engagement has been wide ranging and includes consultation with: current consumers; potential future consumers; airlines; cargo operators and other interested parties. Our RBP also builds on the specific feedback received from the CAA's Consumer Challenge Board on our Initial Business Plan, this ensures our plans are grounded in robust consumer insight. Throughout the process we have built a plan which develops the existing mechanisms to make them fit for current requirements and is consistent with the overarching objectives of the Civil Aviation Act 2012.

This Revised Business Plan sets a clear plan for a challenging environment that will deliver a resilient, affordable, financeable, efficient and sustainable airport for current and future passengers and airlines. We will return to the forecasted building blocks twice in 2021 to ensure they are updated with current data and thereby ensure our plan is calibrated to the financial constraints of the period. We certify that the plan is consistent with the criteria set out by the CAA or that, where there is any divergence from such criteria, it has been fully explained.