

**Determination
on the
Maximum Level of Airport Charges at Dublin Airport
2020-2024**

Commission Paper 8/2019

24 October 2019

Commission for Aviation Regulation

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Foreword

This is our fifth Determination of the maximum level of airport charges for Dublin Airport. It is the first Determination made since the 2017 National Policy Statement on Airport Charges Regulation. This Determination applies to airport charges for the years 2020-2024 inclusive.

As during previous determinations, there has been a significant level of consultation and information exchange between the Commission, Dublin Airport, airlines and various stakeholders in arriving at this decision. This time, we added new voices to the process by engaging directly with passenger representatives through the newly formed Passenger Advisory Group.

I would like to thank all parties who made representations and the Passenger Advisory Group for their input. The views received significantly assisted the Commission in arriving at the decision laid out in this document.



Cathy Mannion
Commissioner
24 October 2019

1. Executive Summary

- 1.1 This document presents the fifth Determination on the maximum levels of Airport Charges that Dublin Airport may levy for the period starting 1 January 2020 and ending on 31 December 2024. Airport Charges cover charges for taking off, landing and parking aircraft, using airbridges, arriving and departing passengers and the transportation of cargo. As in past determinations, the maximum levels of airport charges are expressed as an annual euro per passenger yield.¹
- 1.2 In the Draft Determination, we proposed a flat price cap of €7.50 in each year. In the Final Determination we have decided to set different price caps in some years (see Table 1.1). Following the Draft Determination, we engaged Centrus Advisors Limited to conduct a further financeability assessment of Dublin Airport for 2020-2024. Part of its advice was that to increase confidence that Dublin Airport should be able to raise the full debt requirement to fund a significant programme of capital investment, the Commission could consider enabling a path for Dublin Airport to achieve improved financial ratios in the later years of the forecast period relative to those allowed for in the Draft Determination. To the extent that this means adjusting the price cap, the Commission could consider sculpting the adjustment to target a higher price in the later years. We have decided to follow this advice.

Table 1.1: Price Cap 2020-2024

	2020	2021	2022	2023	2024	Average
Price Cap per passenger (€)	7.50	7.50	7.88	8.12	8.32	7.87

Source: CAR Calculations

- 1.3 In 2020 the annual price cap will be €7.50, rising to €8.32 in 2024 in real terms.² Within the period of the Determination, these price caps can change for a number of reasons:
- Two runway triggers remain active and they are expected to add about €0.28 and €0.02 when the associated trigger events occur.³
 - The trigger for Terminal 2 Box 2 will be removed if Dublin Airport has not ever reached 33m annual passengers in any year.
 - Reprofiling triggers will apply if Dublin Airport fails to commence key investments reasonably in line with projected timelines.
 - A passthrough charge will apply to items for which the cost is largely outside the control of Dublin Airport (e.g. rates and regulatory charges). These costs will be recoverable after they have been incurred.
 - A quality of service regime is in place which puts up to €0.36 annually at risk if Dublin Airport fails to reach specified quality targets.
 - The price cap is in real terms and will be adjusted for inflation or deflation each year.
- 1.4 This price cap will allow Dublin Airport collect €1.4bn from Airport Charges over the 5 years, and we estimate a further €1.4bn from commercial revenues. It allows for up to €2.3bn in

¹ For brevity, throughout this document the maximum levels of airport charges are called the price cap.

² Unless otherwise stated, all costs and prices are reported in February 2019 prices using the Central Statistics Office's consumer price index (CPI) to convert nominal values into real values.

³ Exact amounts depend on outturn passenger numbers.

capital investment in the period.⁴

- 1.5 This decision is the culmination of a lengthy consultation process, with parties having an opportunity to make submissions following publication of an Issues Paper in April 2018 and a Draft Determination in May 2019. Thirty-seven parties responded to the Draft Determination, more than ever before. Since that time, we have engaged extensively with Dublin Airport and other stakeholders including the Passenger Advisory Group and have considered carefully all representations in finalising our Determination.
- 1.6 Each of the building blocks has significantly changed since the 2014 Determination resulting in large impacts on the price cap, operating in different directions. There are two main downward pressures on the price cap namely the target volume of passengers and the level of commercial revenues. The allowed increase in capital costs and operating costs are driving the price in the opposite direction. Within capital costs there are two elements, capital expenditure and the cost of capital, and they are moving in opposite directions, as the large Capital Investment Programme is being somewhat offset by a lower cost of capital.

Approach to Regulation

- 1.7 Our general approach to setting the price cap is consistent with previous determinations, using the Regulatory Asset Base (RAB) based building block approach. We generally continue to assign risk within a period to Dublin Airport; the exception is a passthrough mechanism for certain costs which we consider to be uncertain and outside the control of Dublin Airport. This is because, firstly, it is best able to manage these risks and secondly, this allocation of risk creates powerful incentives for Dublin Airport to outperform our targets. This outperformance is retained by the airport within the period and redistributed to users in the following period. This Determination redistributes the gain from the significant increase in passenger numbers and the higher than expected commercial revenues to users.
- 1.8 For each building block we use forecasts to arrive at targets. It is for Dublin Airport to meet or exceed these targets, viewing them holistically in the context of any changes in circumstances. Dublin Airport benefits from outperformance within the period, while it must deal with underperformance rather than pass associated costs on to airport users; Dublin Airport is encouraged to perform as a competitive company would. An exception to this is the treatment of some capital costs. In this case, unspent allowances are reconsidered at the end of the period.

Passenger Forecasts

- 1.9 The passenger volume forecasts used in the Determination are slightly higher than the estimates included in the Draft Determination due to updated October 2019 IMF forecasts of GDP and a change in elasticity from 1.05 to 1.01. We cross-checked our 2019 passenger estimate with outturns up to September 2019.

Table 1.2: Total Passenger Target

	2019	2020	2021	2022	2023	2024	Elasticity
Final Determination (m)	32.85	34.0	35.1	36.1	37.1	38.1	1.01
Draft Determination (m)	32.4	33.6	34.6	35.7	36.7	37.8	1.05
Difference Final – Draft (m)	0.5	0.4	0.5	0.5	0.4	0.3	-

Source: CAR Calculations

⁴ €1.9bn in the 2020 Capital Investment Programme and €360m in previously approved projects which have not commenced or are not completed.

Operating Costs

- 1.10 The Opex figures included in the Determination are higher than those included in the Draft Determination following continued engagement with stakeholders and an assessment of further information provided by Dublin Airport.

Table 1.3: Operating Costs

	2020	2021	2022	2023	2024
Final Determination (€m)	290.4	295.6	310.1	316.1	317.6
Draft Determination (€m)	273.1	273.1	283.9	289.7	291.1
Difference Final – Draft (€m)	17.3	22.5	26.2	26.4	26.5
Per Passenger €	8.54	8.42	8.58	8.51	8.33

Source: CAR, CEPA

- 1.11 Our targets for operating costs increase from €290.4m in 2020 to €317.6m in 2024. This compares to the latest expected costs of €287.6m in 2019.
- 1.12 We commissioned a bottom up assessment of Dublin Airport’s operating costs, which was carried out by CEPA. This is a comprehensive study which examined all aspects of Dublin Airport’s business and establishes an achievable level of efficient costs. We have decided to allow Dublin Airport until 2024 to achieve the more efficient level of Opex identified by our advisors. Accordingly, we have decided to use our latest expected 2019 forecast Opex as a starting point, from which we derive allowances trending towards the 2024 allowance for each year until 2024 itself.
- 1.13 We have introduced a mechanism which passes particular mandated costs through to the price cap. These are costs which are largely outside of the control of Dublin Airport, for example, costs relating to the funding of the noise regulator. We have decided to discontinue the use of rolling schemes for operating costs.

Commercial Revenue

- 1.14 While we have retained the same forecasting approach used in the Draft Determination, the figures included in the Final Determination are higher overall; the 2019 revenue forecasts have been updated, uplifts have been added for some commercial investments, the car parking elasticity has been adjusted to reflect short-term capacity constraints and passenger forecasts have been revised.

Table 1.4: Commercial Revenue Forecast (excluding rolling schemes)

	2020	2021	2022	2023	2024
Final Determination (€m)	264.3	274.1	289.3	300.1	312.6
Draft Determination (€m)	257.1	267.2	275.9	285.3	295.8
Difference Final-Draft (€m)	7.2	6.9	13.4	14.8	16.8
Per passenger, €	7.77	7.81	8.01	8.08	8.20

Source: CAR Calculations

- 1.15 We include rolling schemes for commercial revenues, to incentivise Dublin Airport to behave commercially throughout the period. On reviewing further evidence from Dublin Airport, we have reversed our Draft Determination position which was to discontinue these schemes.

Cost of Capital

1.16 In the Final Determination, the cost of capital has been set at 4.22% compared to 4% in the Draft Determination. The increase in the cost of capital occurred because we allowed a higher equity beta of 0.94 and an offsetting lower cost of debt. The cost of debt decreased because of updated evidence on the cost of embedded debt of Dublin Airport, lower market outturns and forecast of the cost of new debt and our allowance of a BBB+ cost of new debt.

Capital Allowances

1.17 We have decided to provide higher capital cost allowances than we proposed in the Draft Determination because of the increase in the cost of capital and following a review of further information provided to the Commission.

Table 1.5: Capital Cost Allowances, 2020-2024

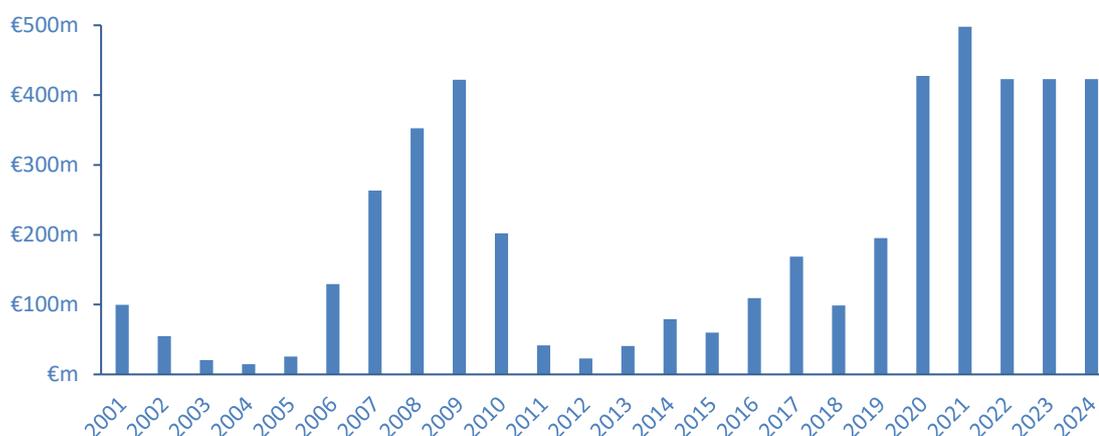
	2020	2021	2022	2023	2024
Final Determination (€m)	182.9	225.9	259.4	285.6	312.3
Draft Determination (€m)	189.6	238.9	254.2	270.9	288.0
Difference Final – Draft (€m)	-6.7	-1.3	5.2	14.7	24.3
Per passenger, (€)	5.38	6.43	7.18	7.69	8.19

Source: CAR Calculations

1.18 As in the Draft Determination we have made allowances for all projects proposed in the 2020 Capital Investment Programme. We have allowed for additional capital expenditure compared to the Draft Determination for two reasons a) we have increased the allowances for some specific projects based on further assessment of cost or new information provided by Dublin Airport and b) some projects from PACE and the 2015 Capital Investment Programme will continue past 2019.

1.19 This is an ambitious capital investment programme. Chart 1.1 compares it to Dublin Airport’s annual capital expenditure since 2001. The previous peak spend, in 2009, was during the construction of Terminal 2.

Chart 1.1: Annual Capital Expenditure by Dublin Airport



Source: CAR

StageGate

- 1.20 We have decided to implement a new process called StageGate. It is predominantly for larger scale projects to allow further flexibility for design and/or costings to change across the period, and to provide airlines further opportunities to reassess a project should circumstances change.

Reprofiling Triggers

- 1.21 A number of respondents to the Draft Determination were concerned that there was no mechanism to ensure that if there were substantial delays to planned projects or if projects were cancelled, users should not continue to pay the associated increases in capital costs together with a potentially unnecessary financial viability adjustment. To partly mitigate this risk, we have decided to introduce a set of reprofiling triggers which will adjust the capital remuneration profile downwards in the event of certain key projects being substantially delayed. We have allowed for slippage of at least a year relative to the most recent timeline provided by Dublin Airport, before the reprofiling trigger applies.

Financial Viability

- 1.22 In our Draft Determination, our initial financial viability assessment suggested there would likely be some pressure on Dublin Airport to maintain financial ratios consistent with an investment grade rating in the final two years of the period. To reduce this risk, we applied a financial viability adjustment to the price by bringing forward €133m of future depreciation into the 2020-2024 period resulting in improved financial ratios.
- 1.23 In response to some stakeholder representations, we subsequently engaged Centrus Advisors Limited to conduct a further financeability assessment of Dublin Airport for 2020-2024. They concluded that a minimum credit rating and certain financial ratios may be required to provide a reasonable level of comfort in accessing debt markets. They acknowledged that market conditions may change over the period of the Determination and that there was a risk that funder appetite may not persist over the full pricing period during which Dublin Airport will need to raise new debt. Accordingly, they suggested that the Commission consider taking certain actions to increase confidence that Dublin Airport should be able to raise the necessary debt to fund its significant capital programme. This would take account of both company specific adverse scenarios and in a potentially deteriorated debt market. We have followed the advice of Centrus Advisors Limited in making this Final Determination.

Quality of Service

- 1.24 In 2009 we introduced a link between the price cap and 12 different quality of service measures where Dublin Airport was incentivised to meet/exceed targets. With the assistance of the Passenger Advisory Group, we reviewed these measures and made some changes. In previous years quality of service measures were applied to all passengers as one group. In the coming years, we will continue to look at all the experiences of all passengers but will also focus on those passengers who require additional assistance. We have set a comprehensive range of 22 targets. If the standards are not adhered to by Dublin Airport, penalties will apply.

2. Maximum Levels of Airport Charges at Dublin Airport for 2020-2024

- 2.1 In accordance with Section 32 of the Aviation Regulation Act 2001, as amended, the Commission hereby determines that the maximum levels of airport charges that may be levied by daa at Dublin Airport in the period 1 January 2020 to 31 December 2024 shall be as set below.
- 2.2 daa shall ensure that, for each year of the regulatory period 2020-2024, the level of revenue collected from airport charges accrued in that year, expressed as a per passenger yield, does not exceed the maximum permitted revenue per passenger P_t , as set out by the following formulae. In the event that daa should collect more than permitted, it shall arrange to rebate users within 90 days of the year ending a sum sufficiently large such that revenues collected, net of this sum, on a per passenger basis, do not exceed the maximum permitted yield per passenger.

Regulatory Period 1 January 2020 to 31 December 2020

The maximum permitted yield per passenger for the regulatory period 1 January 2020 to 31 December 2020 shall be equal to:

$$P_{2020} = (\text{€ } 7.50 + \text{Trigger}_{2020} - \text{QS}_{2020}) * (1 + \text{CPI}_{2019})$$

Where:

$$\text{Trigger}_{2020} = \text{T2B2} + \text{M2} + \text{M3}$$

Triggers 2020	Description	Amount	Enters the formula if:
T2B2	Terminal 2 Box 2	- €0.32	Outturn total passengers at Dublin Airport have not ever reached 33 million per annum in any year.
M2*	If North Runway fully operational by end of 2019	€0.40*25m/Pax ₂₀₁₉	Dublin Airport provides us with the relevant evidence of accomplishment as set out in CP4/2017. ⁵
M3*	North Runway: if house buyout complete by end of 2019	€0.02*25m/Pax ₂₀₁₉	

* The Trigger values of M2 and M3 were recalculated based on the 2019 Determination WACC of 4.22%.

CPI_{2019} is the percentage change (whether positive or negative) in the consumer price index between February 2019 and October 2019.

$$\begin{aligned} \text{QS}_{2020} = & \text{Minimum} ((A + B + C + D + E + F + G), \text{€}0.21) \\ & + \text{Minimum} ((H + I + J + K + L + M + N + O), \text{€}0.07) + \text{Minimum} ((P + Q + R), \text{€}0.04) \\ & + \text{Minimum} ((S + T + U), \text{€}0.04) \end{aligned}$$

Where:

$A = \text{€}0.005$ * the number of days that the time passengers spend in security queue was less than 20 minutes 0 seconds less than 70% of the time but the maximum time passengers spend in security queue was less than 30 minutes 0 seconds

$B = \text{€}0.01$ * the number of days that the maximum time passengers spend in security queue was more than or equal to 30 minutes and 0 seconds but less than 45 minutes and 0 seconds

⁵ www.aviationreg.ie/_fileupload/Decision%20MASTERCOPY%202017-04-28.pdf

$C = \text{€}0.02$ * the number of days that the maximum time passengers spend in security queue was more than or equal to 45 minutes 0 seconds

$D = \text{€}0.01$ if, in total for the year, less than 95% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 15 minutes; or if less than 98% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 93% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 10 minutes; or if less than 93% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or less than 100% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 100% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 30 minutes; or if less than 100% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or if less than 100% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 20 minutes

$E = \text{€}0.01$ * the number of days where access to the outbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering departing bags through the outbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than thirty consecutive minutes due to a single event system failure

$F = \text{€}0.01$ * the number of days where access to the inbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering arriving bags through the inbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than 30 consecutive minutes due to a single event system failure

$G = \text{€}0.01$ * the number of quarterly where self-service check-in kiosks and bag drop machines are available, on average across units, less than 99% of the time in a quarterly

$H = \text{€}0.01$ in a year where Dublin Airport scores less than 9.0 in the 'satisfaction with assistance for mobility or sensory impairment' measure of the Customer Service Monitor survey of Dublin Airport for departing passengers in 2020

$I = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of security staff' measure on the Customer Service Monitor survey of Dublin Airport in 2020 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$J = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of airport staff' measure on the Customer Service Monitor survey of Dublin Airport in 2020 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$K = \text{€}0.01$ * the number of quarters Dublin airport scores less than 8.5 in the 'overall cleanliness of the airport terminal' measure of the Customer Service Monitor survey of Dublin Airport in

2020 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$L = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 8.5 in the 'overall satisfaction with the departure (arrival) experience' measure of the Customer Service Monitor survey of Dublin Airport in 2020 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment}$

$M = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 8.0 in the 'cleanliness of toilets' measure of the Customer Service Monitor survey of Dublin Airport in 2020 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment}$

$N = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 8.0 in the 'satisfaction with the departure lounges (gates)' measure of the Customer Service Monitor survey of Dublin Airport in 2020 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment}$

$O = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 7.5 in the 'overall walking distances to departure gate (from the plane to baggage reclaim area)' measure of the Customer Service Monitor survey of Dublin Airport in 2020 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment}$

$P = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 8.5 in the 'finding your way around' ('ease of finding the baggage carrousel for your flight') measure of the Customer Service Monitor survey of Dublin Airport in 2020 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment}$

$Q = \text{€}0.01 * \text{the number of quarters that Dublin Airport scores less than 8.5 in the 'flight information screens' category in the Customer Service Monitor survey of Dublin Airport in 2020 for departing passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment}$

$R = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 8.0 in the 'satisfaction with ground transportation information on arrival' measure of new ground transport survey of Dublin Airport in 2020 for arriving passengers}$

$S = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 9.0 in the 'satisfaction with facilities for passengers with reduced mobility' category in the Customer Service Monitor survey of Dublin Airport in 2020}$

$T = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 8.5 in the 'availability of baggage trolleys' ('Ease of finding a trolley') category in the Customer Service Monitor survey of Dublin Airport in 2020 for departing (arriving) passengers or in a year for departing passengers who used assistance for mobility or sensory impairment}$

$U = \text{€}0.01 * \text{the number of quarters Dublin Airport scores less than 8.5 in the 'satisfaction with Wi-Fi' category in the Customer Service Monitor survey of Dublin Airport in 2020 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment}$

Regulatory Period 1 January 2021 to 31 December 2021

The maximum permitted yield per passenger for the regulatory period 1 January 2021 to 31 December 2021 shall be equal to:

$$P_{2021} = (\text{€ } 7.50 + \text{Trigger}_{2021} - QS_{2021}) * (1 + CPI_{2020}) + w_{2021} + k_{2021}$$

Where:

$$\text{Trigger}_{2021} = T2B2 + M2 + M3 + RPT1 + RPT2 + RPT3$$

Where:

Triggers 2021	Description	Amount	Enters the formula if:
T2B2	Terminal 2 Box 2	- €0.31	Outturn total passengers at Dublin Airport have not ever reached 33 million per annum in any year.
M2*	If North Runway fully operational by end of 2020	€0.40*25m/Pax ₂₀₂₀	Dublin Airport provides us with the evidence of accomplishment as set out in CP4/2017. ⁶
M3*	North Runway: if house buyout complete by end of 2020	€0.02*25m/Pax ₂₀₂₀	
RPT1	Reprofiling Trigger CIP.20.03.013 Terminal 1 Departures Lounge	- €0.03	By Q1 2022, Dublin Airport does not provide us with evidence that by end of Q4 2021 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT2	Reprofiling Trigger CIP.20.03.011A Terminal 1 Check in	- €0.03	By Q1 2022, Dublin Airport does not provide us with evidence that by end of Q4 2021 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT3	Reprofiling Trigger CIP.20.03.051B West Underpass	- €0.09	By Q1 2022, Dublin Airport does not provide us with evidence that by end of Q4 2021 tendering is complete for the main construction contractor package and that contract is signed and work has commenced. ⁷

* The Trigger values of M2 and M3 were recalculated based on the 2019 Determination WACC of 4.22%.

CPI_{2020} is the percentage change (whether positive or negative) in the consumer price index between February 2019 and October 2020.

$$QS_{2021} = \text{Minimum} ((A + B + C + D + E + F + G + H + I + J), \text{€}0.21) \\ + \text{Minimum} ((K + L + M + N + O + P + Q + R), \text{€}0.07) + \text{Minimum} ((S + T + U), \text{€}0.04) \\ + \text{Minimum} ((V + W + X), \text{€}0.04)$$

Where:

A = €0.005 * the number of days that the time passengers spend in security queue was less than 20 minutes 0 seconds less than 70% of the time but the maximum time passengers spend in security queue was less than 30 minutes 0 seconds

B = €0.01 * the number of days that the maximum time passengers spend in security queue more than or equal to 30 minutes and 0 seconds but less than 45 minutes and 0 seconds

⁶ www.aviationreg.ie/_fileupload/Decision%20MASTERCOPY%202017-04-28.pdf

⁷ As an example for the reprofiling triggers, the contract referred for the West Underpass would be the contract to construct the physical underpass.

$C = €0.02$ * the number of days that the maximum time passengers spend in security queue was more than or equal to 45 minutes 0 seconds

$D = €0.01$ if, in total for the year, less than 95% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 15 minutes; or if less than 98% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 93% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 10 minutes; or if less than 93% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or less than 100% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 100% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 30 minutes; or if less than 100% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or if less than 100% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 20 minutes

$E = €0.01$ * the number of days where access to the outbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering departing bags through the outbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than thirty consecutive minutes due to a single event system failure

$F = €0.01$ * the number of days where access to the inbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering arriving bags through the inbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than 30 consecutive minutes due to a single event system failure

$G = €0.01$ * the number of months when Fixed Electric Ground Power (FEGP) is available, on average across units, less than 93.5% of operational time in the month for new units or less than 99% for old units

$H = €0.01$ * the number of months when the Advanced Visual Docking Guidance System (AVDGS) is available, on average across units, less than 93.5% of operational time in the month for new units and less than 99% for old units

$I = €0.01$ * the number of quarters where passenger-facing escalators, lifts and travellers in Terminal 2 are available, on average across units, less than 98% of the time within a quarter

$J = €0.01$ * the number of quarters where self-service check-in kiosks and bag drop machines are available, on average across units, less than 99% of the time in a quarter

$K = €0.01$ in a year where Dublin Airport scores less than 9.0 in the 'satisfaction with assistance for mobility or sensory impairment' measure of the Customer Service Monitor survey of Dublin Airport in 2021

$L = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of security staff' measure on the Customer Service Monitor survey of Dublin Airport in 2021 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$M = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of airport staff' measure on the Customer Service Monitor survey of Dublin Airport in 2021 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$N = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'overall cleanliness of airport terminal' measure of the Customer Service Monitor survey of Dublin Airport in 2021 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$O = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'overall satisfaction with the departure (arrival) experience' measure of the Customer Service Monitor survey of Dublin Airport in 2021 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$P = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'cleanliness of toilets' measure of the Customer Service Monitor survey of Dublin Airport in 2021 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$Q = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'satisfaction with the departure lounges (gates)' measure of the Customer Service Monitor survey of Dublin Airport in 2021 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$R = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 7.5 in the 'overall walking distances to departure gate (from the plane to baggage reclaim area)' measure of the Customer Service Monitor survey of Dublin Airport in 2021 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$S = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'finding your way around' ('ease of finding the baggage carrousel for your flight') measure of the Customer Service Monitor survey of Dublin Airport in 2021 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$T = \text{€}0.01$ * the number of quarters that Dublin Airport scores less than 8.5 in the 'flight information screens' measure in the Customer Service Monitor survey of Dublin Airport in 2021 for departing passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$U = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the satisfaction with ground transportation information on arrival' measure of new ground transport survey of Dublin Airport in 2021 for arriving passengers

$V = \text{€}0.01$ * the number of quarters Dublin airport scores less than 9.0 in the ‘satisfaction with facilities for passengers with reduced mobility’ measure in the Customer Service Monitor survey of Dublin Airport in 2021

$W = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘availability of baggage trolleys’ (‘Ease of finding a trolley’) measure in the Customer Service Monitor survey of Dublin Airport in 2021 for departing (arriving) passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$X = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘satisfaction with Wi-Fi’ measure in the Customer Service Monitor survey of Dublin Airport in 2021 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

w_{2021} allows for a pass through of legislatively mandated opex (LM OPEX) costs that comply with the conditions set out in Section 6. It is derived using the following formula:

$$w_{2021} = \frac{(LM\ OPEX_{CAR\ approved\ outturn2020} - LM\ OPEX_{CAR\ Forecast2020})}{PAX_{2021f}}$$

Where:

$LM\ OPEX_{CAR\ approved\ outturn\ 2020}$ is the outturn of legislatively mandated Opex costs for 2020, justified by Dublin Airport with supporting evidence set out in Section 6 and approved by the Commission

$LM\ OPEX_{CAR\ forecast\ 2020}$ is the forecast of legislatively mandated Opex in 2020 in the 2020 Price Cap

PAX_{2021f} is the latest available forecast of passenger numbers in 2021

K_{2021} is a correction per passenger to be made in the regulatory year 2021 on account of any under collection of airport charges accrued by Dublin Airport in the regulatory year 2019. It is derived using the following formula:

$$k_{2021} = \text{Minimum}((P_{2019} - P_{2019\text{outturn}}), (0.05 * P_{2019})) * (1 + I_{2019}) * (1 + I_{2020}) * (PAX_{2019}/PAX_{2021f})$$

where

$P_{2019, outturn}$ is the outturn yield per passenger in 2019;

PAX_{2019} is the 2019 outturn of total annual passengers at Dublin Airport

PAX_{2021f} is the latest available forecasts for total annual passengers at Dublin Airport in 2021.

I_t is the average daily three-month interest rate between 1 November in year t-1 and 1 November in year t using the Euribor rate or some other suitable measure ⁸

⁸ Euribor stands for Euro Interbank Offered rate.

Regulatory Period 1 January 2022 to 31 December 2022

The maximum permitted yield per passenger for the regulatory period 1 January to 31 December 2022 shall be equal to:

$$P_{2022} = (\text{€ } 7.88 + \text{Trigger}_{2022} - QS_{2022}) * (1 + \text{CPI}_{2021}) + w_{2022} + k_{2022}$$

Where:

$$\text{Trigger}_{2022} = T2B2 + M2 + M3 + RPT1 + RPT2 + RPT3 + RPT4 + RPT5 + RPT6$$

Where:

Triggers 2022	Description	Amount	Enters the formula if:
T2B2	Terminal 2 Box 2	- €0.30	Outturn total passengers at Dublin Airport have not ever reached 33 million per annum in any year.
M2*	If North Runway fully operational by end of 2021	€0.40*25m/Pax ₂₀₂₁	Dublin Airport provides us with the evidence of accomplishment as set out in CP4/2017. ⁹
M3*	North Runway: if house buyout complete by end of 2021	€0.02*25m/Pax ₂₀₂₁	
RPT1	Reprofiling Trigger CIP.20.03.013 Terminal 1 Departures Lounge	- €0.05	By Q1, 2023 Dublin Airport does not provide us with evidence that by Q4 2022 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT2	Reprofiling Trigger CIP.20.03.011A Terminal 1 Check in	- €0.05	By Q1, 2023 Dublin Airport does not provide us with evidence that by Q4 2022 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT3	Reprofiling Trigger CIP.20.03.051B West Underpass	- €0.13	By Q1, 2023 Dublin Airport does not provide us with evidence that by Q4 2022 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT4	Reprofiling Trigger CIP.20.03.029 Pier 5	- €0.28	By Q1, 2023 Dublin Airport does not provide us with evidence that by Q4 2022 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT5	Reprofiling Trigger CIP.20.03.030 US Preclearance Expansion	- €0.06	By Q1, 2023 Dublin Airport does not provide us with evidence that by Q4 2022 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT6	Reprofiling Trigger CIP.20.03.012 Terminal 1 Security	- €0.05	By Q1, 2023 Dublin Airport does not provide us with evidence that by Q4 2022 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.

* The Trigger values of M2 and M3 were recalculated based on the 2019 Determination WACC of 4.22%.

CPI₂₀₂₁ is the percentage change (whether positive or negative) in the consumer price index between February 2019 and October 2021.

$$QS_{2022} = \text{Minimum} ((A + B + C + D + E + F + G + H + I + J), \text{€}0.21) \\ + \text{Minimum} ((K + L + M + N + O + P + Q + R), \text{€}0.07) + \text{Minimum} ((S + T + U), \text{€}0.04) \\ + \text{Minimum} ((V + W + X), \text{€}0.04)$$

Where:

A = €0.005 * the number of days that the time passengers spend in security queue was less than 20 minutes 0 seconds less than 70% of the time but the maximum time passengers spend in security queue was less than 30 minutes 0 seconds

⁹ www.aviationreg.ie/_fileupload/Decision%20MASTERCOPY%202017-04-28.pdf

$B = \text{€}0.01$ * the number of days that the maximum time passengers spend in security queue was more than or equal to 30 minutes and 0 seconds but less than 45 minutes and 0 seconds

$C = \text{€}0.02$ * the number of days that the maximum time passengers spend in security queue was more than or equal to 45 minutes 0 seconds

$D = \text{€}0.01$ if, in total for the year, less than 95% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 15 minutes; or if less than 98% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 93% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 10 minutes; or if less than 93% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or less than 100% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 100% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 30 minutes; or if less than 100% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or if less than 100% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 20 minutes

$E = \text{€}0.01$ * the number of days where access to the outbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering departing bags through the outbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than thirty consecutive minutes due to a single event system failure

$F = \text{€}0.01$ * the number of days where access to the inbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering arriving bags through the inbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than 30 consecutive minutes due to a single event system failure

$G = \text{€}0.01$ * the number of months where Fixed Electric Ground Power (FEGP) is available, on average across units, less than 93.5% of operational time in the month for new units or less than 99% for old units

$H = \text{€}0.01$ * the number of months where the Advanced Visual Docking Guidance System (AVDGS) is available, on average across units, less than 93.5% of operational time in the month for new units and less than 99% for old units

$I = \text{€}0.01$ * the number of quarters where passenger-facing escalators, lifts and travellers in Terminal 2 are available, on average across units, less than 99% of the time within a quarter

$J = \text{€}0.01$ * the number of quarters where self-service check-in kiosks and bag drop machines are available, on average across units, less than 99% of the time in a quarter

$K = \text{€}0.01$ in a year where Dublin Airport scores less than 9.0 in the 'satisfaction with assistance for mobility or sensory impairment' measure of the Customer Service Monitor survey of Dublin Airport in 2022

$L = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of security staff' measure on the Customer Service Monitor survey of Dublin Airport in 2022 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$M = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of airport staff' measure on the Customer Service Monitor survey of Dublin Airport in 2022 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$N = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'overall cleanliness of airport terminal' measure of the Customer Service Monitor survey of Dublin Airport in 2022 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$O = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'overall satisfaction with the departure (arrival) experience' measure of the Customer Service Monitor survey of Dublin Airport in 2022 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$P = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'cleanliness of toilets' measure of the Customer Service Monitor survey of Dublin Airport in 2022 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$Q = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'satisfaction with the departure lounges (gates)' measure of the Customer Service Monitor survey of Dublin Airport in 2022 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$R = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 7.5 in the 'overall walking distances to departure gate (from the plane to baggage reclaim area)' measure of the Customer Service Monitor survey of Dublin Airport in 2022 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$S = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'finding your way around' ('ease of finding the baggage carrousel for your flight') measure of the Customer Service Monitor survey of Dublin Airport in 2022 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$T = \text{€}0.01$ * the number of quarters that Dublin Airport scores less than 8.5 in the 'flight information screens' measure in the Customer Service Monitor survey of Dublin Airport in 2022 for departing passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$U = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘satisfaction with ground transportation information on arrival’ measure of new ground transport survey of Dublin Airport in 2022 for arriving passengers

$V = \text{€}0.01$ * the number of quarters Dublin airport scores less than 9.0 in the ‘satisfaction with facilities for passengers with reduced mobility’ measure in the Customer Service Monitor survey of Dublin Airport in 2022

$W = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘availability of baggage trolleys’ (‘ease of finding a trolley’) measure in the Customer Service Monitor survey of Dublin Airport in 2022 for departing (arriving) passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$X = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘satisfaction with Wi-Fi’ measure in the Customer Service Monitor survey of Dublin Airport in 2022 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

w_{2022} allows for a pass through of legislatively mandated Opex (LM OPEX) costs that comply with the conditions set out in Section 6. It is derived using the following formula:

$$w_{2022} = \frac{(LM\ OPEX_{CAR\ approved\ outturn2021} - LM\ OPEX_{CAR\ Forecast2021})}{PAX_{2022f}}$$

Where:

$LM\ OPEX_{CAR\ approved\ outturn\ 2021}$ is the outturn of legislatively mandated Opex costs for 2021, justified by Dublin Airport with supporting evidence set out in Section 6 and approved by the Commission

$LM\ OPEX_{CAR\ forecast\ 2021}$ is the forecast of legislatively mandated Opex in 2021 in the 2021 Price Cap

PAX_{2022f} is the latest available forecast of passenger numbers in 2022

k_{2022} is a correction per passenger to be made in the regulatory year 2022 on account of any under collection of airport charges accrued by Dublin Airport in the regulatory year 2020. It is derived using the following formula:

$$k_{2022} = \text{Minimum} \left((P_{2020} - P_{2020outturn}), \left((0.05 * P_{2020}) + \left(\frac{LM\ OPEX_{CAR\ approved\ Outturn2020} - LM\ OPEX_{CAR\ Forecast2020}}{PAX_{2021}} \right) \right) \right) * (1 + I_{2020}) * (1 + I_{2021}) * (PAX_{2020}/PAX_{2022f})$$

where

$P_{2020, outturn}$ is the outturn yield per passenger in 2020;

Pax_t is the outturn of total annual passengers at Dublin Airport in year t

PAX_{2022f} is the latest available forecasts for total annual passengers at Dublin Airport in 2022.

LM OPEX_{CAR approved outturn 2020} is the outturn of legislatively mandated Opex costs for 2020, justified by Dublin Airport with supporting evidence set out in Section 6 and approved by the Commission

LM OPEX_{CAR forecast 2020} is the forecast of legislatively mandated Opex in 2020 in the 2020 Price Cap

I_t is the average daily three-month interest rate between 1 November in year t-1 and 1 November in year t using the Euribor rate or some other suitable measure

Regulatory Period 1 January 2023 to 31 December 2023

The maximum permitted yield per passenger for the regulatory period 1 January 2023 to 31 December 2023 shall be equal to:

$$P_{2023} = (\text{€ } 8.12 + \text{Trigger}_{2023} - QS_{2023}) * (1 + CPI_{2022}) + w_{2023} + k_{2023}$$

Where:

$$\text{Trigger}_{2023} = T2B2 + M2 + M3 + RPT1 + RPT2 + RPT3 + RPT4 + RPT5 + RPT6 + RPT7$$

Where:

Triggers 2023	Description	Amount	Enters the formula if:
T2B2	Terminal 2 Box 2	- €0.29	Outturn total passengers at Dublin Airport have not ever reached 33 million per annum in any year.
M2*	If North Runway fully operational by end of 2022	€0.40*25m/Pax ₂₀₂₂	Dublin Airport provides us with the evidence of accomplishment as set out in CP4/2017. ¹⁰
M3*	North Runway: if house buyout complete by end of 2022	€0.02*25m/Pax ₂₀₂₂	
RPT1	Reprofiling Trigger CIP.20.03.013 Terminal 1 Departures Lounge	- €0.06	By Q1 2024, Dublin Airport does not provide us with evidence that by Q4 2023 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT2	Reprofiling Trigger CIP.20.03.011A Terminal 1 Check in	- €0.06	By Q1 2024, Dublin Airport does not provide us with evidence that by Q4 2023 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT3	Reprofiling Trigger CIP.20.03.051B West Underpass	- €0.17	By Q1 2024, Dublin Airport does not provide us with evidence that by Q4 2023 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT4	Reprofiling Trigger CIP.20.03.029 Pier 5	- €0.37	By Q1 2024, Dublin Airport does not provide us with evidence that by Q4 2023 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT5	Reprofiling Trigger CIP.20.03.030 US Preclearance Expansion	- €0.08	By Q1 2024, Dublin Airport does not provide us with evidence that by Q4 2023 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT6	Reprofiling Trigger CIP.20.03.012 Terminal 1 Security	- €0.06	By Q1 2024, Dublin Airport does not provide us with evidence that by Q4 2023 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT7	Reprofiling Trigger CIP.20.03.036 Pier 1	- €0.20	By Q1 2024, Dublin Airport does not provide us with evidence that by Q4 2023 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.

* The Trigger values of M2 and M3 were recalculated based on the 2019 Determination WACC of 4.22%.

CPI₂₀₂₂ is the percentage change (whether positive or negative) in the consumer price index between February 2019 and October 2022.

$$QS_{2023} = \text{Minimum} ((A + B + C + D + E + F + G + H + I + J), \text{€}0.21) \\ + \text{Minimum} ((K + L + M + N + O + P + Q + R), \text{€}0.07) + \text{Minimum} ((S + T + U), \text{€}0.04) \\ + \text{Minimum} ((V + W + X), \text{€}0.04)$$

¹⁰ www.aviationreg.ie/_fileupload/Decision%20MASTERCOPY%202017-04-28.pdf

Where:

$A = €0.005$ * the number of days that the time passengers spend in security queue was less than 20 minutes 0 seconds less than 70% of the time but the maximum time passengers spend in security queue was less than 30 minutes 0 seconds

$B = €0.01$ * the number of days that the maximum time passengers spend in security queue was more than or equal to 30 minutes and 0 seconds but less than 45 minutes and 0 seconds

$C = €0.02$ * the number of days that the maximum time passengers spend in security queue was more than or equal to 45 minutes 0 seconds

$D = €0.01$ if, in total for the year, less than 95% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 15 minutes; or if less than 98% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 93% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 10 minutes; or if less than 93% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or less than 100% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 100% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 30 minutes; or if less than 100% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or if less than 100% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 20 minutes

$E = €0.01$ * the number of days where access to the outbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering departing bags through the outbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than thirty consecutive minutes due to a single event system failure

$F = €0.01$ * the number of days where access to the inbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering arriving bags through the inbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than 30 consecutive minutes due to a single event system failure

$G = €0.01$ * the number of months when Fixed Electric Ground Power (FEGP) is available, on average across units, less than 93.5% of operational time in the month for new units or less than 99% for old units

$H = €0.01$ * the number of months when the Advanced Visual Docking Guidance System (AVDGS) is available, on average across units, less than 93.5% of operational time in the month for new units and less than 99% for old units

$I = €0.01$ * the number of quarters where passenger-facing escalators, lifts and travellators in Terminal 2 are available, on average across units, less than 99% of the time within a quarter

$J = \text{€}0.01$ * the number of quarters where self-service check-in kiosks and bag drop machines are available, on average across units, less than 99% of the time in a quarter

$K = \text{€}0.01$ in a year where Dublin Airport scores less than 9.0 in the 'satisfaction with assistance for mobility or sensory impairment' measure of the Customer Service Monitor survey of Dublin Airport in 2023

$L = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of security staff' measure on the Customer Service Monitor survey of Dublin Airport in 2023 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$M = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of airport staff' measure on the Customer Service Monitor survey of Dublin Airport in 2023 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$N = \text{€}0.01$ * the number of quarters Dublin airport scores less than 8.5 in the 'overall cleanliness of the airport terminal' measure of the Customer Service Monitor survey of Dublin Airport in 2023 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$O = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'overall satisfaction with the departure (arrival) experience' measure of the Customer Service Monitor survey of Dublin Airport in 2023 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$P = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'cleanliness of toilets' measure of the Customer Service Monitor survey of Dublin Airport in 2023 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$Q = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'satisfaction with the departure lounges (gates)' measure of the Customer Service Monitor survey of Dublin Airport in 2023 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$R = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 7.5 in the 'overall walking distances to departure gate (from the plane to baggage reclaim area)' measure of the Customer Service Monitor survey of Dublin Airport in 2023 for departing and arriving passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$S = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'finding your way around' ('ease of finding the baggage carousel for your flight') measure of the Customer Service Monitor survey of Dublin Airport in 2023 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$T = \text{€}0.01$ * the number of quarters that Dublin Airport scores less than 8.5 in the 'flight information screens' measure in the Customer Service Monitor survey of Dublin Airport in 2023 for departing passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$U = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘satisfaction with ground transportation information on arrival’ measure of new ground transport survey of Dublin Airport in 2023 for arriving passengers in 2020

$V = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 9.0 in the ‘satisfaction with facilities for passengers with reduced mobility’ measure in the Customer Service Monitor survey of Dublin Airport in 2023 in 2020

$W = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘Availability of trolleys’ (‘Ease of finding a trolley’) measure in the Customer Service Monitor survey of Dublin Airport in 2023 for departing (arriving) passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$X = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘satisfaction with Wi-Fi’ measure in the Customer Service Monitor survey of Dublin Airport in 2023 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

W_{2023} allows for a pass through of legislatively mandated Opex (LM OPEX) costs that comply with the conditions set out in Section 6. It is derived using the following formula:

$$W_{2023} = \frac{(LM\ OPEX_{CAR\ approved\ outturn2022} - LM\ OPEX_{CAR\ Forecast2022})}{PAX_{2023f}}$$

Where:

$LM\ OPEX_{CAR\ approved\ outturn\ 2022}$ is the outturn of legislatively mandated Opex costs for 2022, justified by Dublin Airport with supporting evidence set out in Section 6 and approved by the Commission

$LM\ OPEX_{CAR\ forecast\ 2022}$ is the forecast of legislatively mandated Opex in 2022 in the 2022 Price Cap

PAX_{2023f} is the latest available forecast of passenger numbers in 2023

K_{2023} is a correction per passenger to be made in the regulatory year 2023 on account of any under collection of airport charges accrued by Dublin Airport in the regulatory year 2021. It is derived using the following formula:

$$k_{2023} = \text{Minimum} \left((P_{2021} - P_{2021\text{outturn}}), \left((0.05 * P_{2021}) + \left(\frac{LM\ OPEX_{CAR\ approved\ Outturn2021} - LM\ OPEX_{CAR\ Forecast2021}}{PAX_{2022}} \right) \right) \right) * (1 + I_{2021}) * (1 + I_{2022}) * (PAX_{2021}/PAX_{2023f})$$

Where

$P_{2021, outturn}$ is the outturn yield per passenger in 2021;

PAX_t is the outturn of total annual passengers at Dublin Airport in year t

PAX_{2023f} is the latest available forecasts for total annual passengers at Dublin Airport in 2023.

LM OPEX_{CAR approved outturn 2021} is the outturn of legislatively mandated Opex costs for 2021, justified by Dublin Airport with supporting evidence set out in Section 6 and approved by the Commission

LM OPEX_{CAR forecast 2021} is the forecast of legislatively mandated Opex in 2021 in the 2021 Price Cap

I_t is the average daily three-month interest rate between 1 November in year t-1 and 1 November in year t using the Euribor rate or some other suitable measure

Regulatory Period 1 January 2024 to 31 December 2024

The maximum permitted yield per passenger for the regulatory period 1 January to 31 December 2024 shall be equal to:

$$P_{2024} = (\text{€ } 8.32 + \text{Trigger}_{2024} - QS_{2024}) * (1 + CPI_{2023}) + w_{2024} + k_{2024}$$

Where:

$$\text{Trigger}_{2024} = T2B2 + M2 + M3 + RPT1 + RPT2 + RPT3 + RPT4 + RPT5 + RPT6 + RPT7 + RPT8$$

Where:

Triggers 2024	Description	Amount	Enters the formula if:
T2B2	Terminal 2 Box 2	- €0.28	Outturn total passengers at Dublin Airport have not ever reached 33 million per annum in any year.
M2*	If North Runway fully operational by end of 2023	€0.40*25m/PaX ₂₀₂₃	Dublin Airport provides us with the evidence of accomplishment as set out in CP4/2017. ¹¹
M3*	North Runway: if house buyout complete by end of 2023	€0.02*25m/PaX ₂₀₂₃	
RPT1	Reprofiling Trigger CIP.20.03.013 Terminal 1 Departures Lounge	- €0.08	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT2	Reprofiling Trigger CIP.20.03.011A Terminal 1 Check in	- €0.07	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT3	Reprofiling Trigger CIP.20.03.051B West Underpass	- €0.21	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT4	Reprofiling Trigger CIP.20.03.029 Pier 5	- €0.45	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT5	Reprofiling Trigger CIP.20.03.030 US Preclearance Expansion	- €0.09	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT6	Reprofiling Trigger CIP.20.03.012 Terminal 1 Security	- €0.07	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT7	Reprofiling Trigger CIP.20.03.036 Pier 1	- €0.24	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.
RPT8	Reprofiling Trigger CIP.20.03.54 Apron 5 M	- €0.12	By Q1 2025, Dublin Airport does not provide us with evidence that by Q4 2024 tendering is complete for the main construction contractor package and that contract is signed and work has commenced.

* The Trigger values of M2 and M3 were recalculated based on the 2019 Determination WACC of 4.22%.

CPI_{2023} is the percentage change (whether positive or negative) in the consumer price index between February 2019 and October 2023.

¹¹ www.aviationreg.ie/_fileupload/Decision%20MASTERCOPY%202017-04-28.pdf

$$\begin{aligned}
 QS_{2024} = & \text{Minimum } ((A + B + C + D + E + F + G + H + I + J), \text{€}0.21) \\
 & + \text{Minimum } ((K + L + M + N + O + P + Q + R), \text{€}0.07) + \text{Minimum } ((S + T + U), \text{€}0.04) \\
 & + \text{Minimum } ((V + W + X), \text{€}0.04)
 \end{aligned}$$

Where:

A = €0.005 * the number of days that the time passengers spend in security queue was less than 20 minutes 0 seconds less than 70% of the time but the maximum time passengers spend in security queue was less than 30 minutes 0 seconds

B = €0.01 * the number of days that the maximum time passengers spend in security queue more than or equal to 30 minutes and 0 seconds but less than 45 minutes and 0 seconds

C = €0.02 * the number of days that the maximum time passengers spend in security queue was more than or equal to 45 minutes 0 seconds

D = €0.01 if, in total for the year, less than 95% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 15 minutes; or if less than 98% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 93% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 10 minutes; or if less than 93% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or less than 100% of pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 20 minutes; or if less than 100% of non pre-notified departing passengers with reduced mobility or disabilities were assisted from the terminal reception point within 30 minutes; or if less than 100% of pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 15 minutes; or if less than 100% of non pre-notified arriving passengers with reduced mobility or disabilities were assisted from aircraft to terminal holding point within 20 minutes

E = €0.01 * the number of days where access to the outbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering departing bags through the outbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than thirty consecutive minutes due to a single event system failure

F = €0.01 * the number of days where access to the inbound baggage belt system, in a terminal that has not fully implemented hold baggage screening standard 3 (HBS3), is denied to an airline or airlines for more than 30 minutes due to a single event system failure; or when the outcome of delivering arriving bags through the inbound baggage system, in a terminal that has fully implemented HBS3, is denied to an airline or airlines for more than 30 consecutive minutes due to a single event system failure

G = €0.01 * the number of months when Fixed Electric Ground Power (FEGP) is available, on average across units, less than 93.5% of operational time in the month for new units or less than 99% for old units

H = €0.01 * the number of months when the Advanced Visual Docking Guidance System (AVDGS) is available, on average across units, less than 93.5% of operational time in the month for new units and less than 99% for old units

$I = \text{€}0.01$ * the number of quarters where passenger-facing escalators, lifts and travellers in Terminal 2 are available, on average across units, less than 99% of the time within a quarter

$J = \text{€}0.01$ * the number of quarters where self-service check-in kiosks and bag drop machines are available, on average across units, less than 99% of the time in a quarter

$K = \text{€}0.01$ in a year where Dublin Airport scores less than 9.0 in the 'satisfaction with assistance for mobility or sensory impairment' measure of the Customer Service Monitor survey of Dublin Airport in 2024

$L = \text{€}0.01$ * the number of quarters where Dublin Airport scores less than 8.5 in the 'courtesy and helpfulness of security staff' measure on the Customer Service Monitor survey of Dublin Airport in 2024 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$M = \text{€}0.01$ * the number of quarters where Dublin Airport score less than 8.5 in the 'courtesy and helpfulness of airport staff' measure on the Customer Service Monitor survey of Dublin Airport in 2024 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$N = \text{€}0.01$ * the number of quarters Dublin airport scores less than 8.5 in the 'overall cleanliness of the airport terminal' measure of the Customer Service Monitor survey of Dublin Airport in 2024 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$O = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'overall satisfaction with the departure (arrival) experience' measure of the Customer Service Monitor survey of Dublin Airport in 2024 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$P = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'cleanliness of toilets' measure of the Customer Service Monitor survey of Dublin Airport in 2024 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$Q = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.0 in the 'satisfaction with the departure lounges (gates)' measure of the Customer Service Monitor survey of Dublin Airport in 2024 for departing passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$R = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 7.5 in the 'overall walking distances to departure gate (from the plane to baggage reclaim area)' measure of the Customer Service Monitor survey of Dublin Airport in 2024 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$S = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the 'finding your way around' ('ease of finding the baggage carousel for your flight') measure of the Customer Service Monitor survey of Dublin Airport in 2024 for departing (arriving) passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$T = \text{€}0.01$ * the number of quarters that Dublin Airport scores less than 8.5 in the ‘flight information screens’ measure in the Customer Service Monitor survey of Dublin Airport in 2024 for departing passengers or in a year for transfer passengers or departing passengers who used assistance for mobility or sensory impairment

$U = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘satisfaction with ground transportation information on arrival’ measure of new ground transport survey of Dublin Airport in 2024 for arriving passengers

$V = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 9.0 in the ‘satisfaction with facilities for passengers with reduced mobility’ measure in the Customer Service Monitor survey of Dublin Airport in 2024

$W = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘availability of baggage trolleys’ (‘Ease of finding a trolley’) measure in the Customer Service Monitor survey of Dublin Airport in 2024 for departing (arriving) passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

$X = \text{€}0.01$ * the number of quarters Dublin Airport scores less than 8.5 in the ‘satisfaction with Wi-Fi’ measure in the Customer Service Monitor survey of Dublin Airport in 2024 for departing and arriving passengers or in a year for departing passengers who used assistance for mobility or sensory impairment

W_{2024} allows for a pass through of legislatively mandated Opex (LM OPEX) costs that comply with the conditions set out in Section 6. It is derived using the following formula:

$$W_{2024} = \frac{(LM\ OPEX_{CAR\ approved\ outturn2023} - LM\ OPEX_{CAR\ Forecast2023})}{PAX_{2024f}}$$

Where:

$LM\ OPEX_{CAR\ approved\ outturn\ 2023}$ is the outturn of legislatively mandated Opex costs for 2023, justified by Dublin Airport with supporting evidence set out in Section 6 and approved by the Commission

$LM\ OPEX_{CAR\ forecast\ 2023}$ is the forecast of legislatively mandated Opex in 2023 in the 2023 Price Cap

PAX_{2024f} is the latest available forecast of passenger numbers in 2024

K_{2024} is a correction per passenger to be made in the regulatory year 2024 on account of any under collection of airport charges accrued by Dublin Airport in the regulatory year 2022. It is derived using the following formula:

$$k_{2024} = \text{Minimum} \left((P_{2022} - P_{2022\text{outturn}}), \left((0.05 * P_{2022}) + \left(\frac{LM\ OPEX_{CAR\ approved\ Outturn2022} - LM\ OPEX_{CAR\ Forecast2022}}{PAX_{2023}} \right) \right) \right) * (1 + I_{2022}) * (1 + I_{2023}) * (PAX_{2022}/PAX_{2024f})$$

Where

$P_{2022, \text{outturn}}$ is the outturn yield per passenger in 2022;

PAX_t is the outturn of total annual passengers at Dublin Airport in year t

PAX_{2024f} is the latest available forecasts for total annual passengers at Dublin Airport in 2024.

$LM \text{ OPEX}_{CAR \text{ approved outturn } 2022}$ is the outturn of legislatively mandated Opex costs for 2022, justified by Dublin Airport with supporting evidence set out in Section 6 and approved by the Commission

$LM \text{ OPEX}_{CAR \text{ forecast } 2022}$ is the forecast of legislatively mandated Opex in 2022 in the 2022 Price Cap

I_t is the average daily three-month interest rate between 1 November in year t-1 and 1 November in year t using the Euribor rate or some other suitable measure

Explanatory Memorandum

Purpose of the Formulae

- 2.3 We have structured the formulae and determined the key values of key terms in the formulae to affect the following policies:
- Provide a reasonable prospect for daa to make a reasonable rate of return on the regulatory value of assets employed in providing services at Dublin Airport
 - Reflect the levels of costs involved in operating Dublin Airport that we believe it is reasonable to assume, considering the scope for daa to be cost effective
 - Specify the formulae for determining allowed yields, thereby securing the economic incentives for daa to be cost effective
 - Provide for increases (decreases) in yield allowances should certain milestones (not) occur that warrant increases (decreases) in the levels of capital expenditure by daa
 - Provide for decreases in yield allowances should daa fail to provide suitable quality of service for users at Dublin Airport
 - Provide for daa to carry forward under-recovery of allowed yields accrued in a year into subsequent regulatory periods provided the amount is relatively small, including any under-recovery of allowed yield in 2019, to be consistent with the approach adopted in the fourth Determination
 - Provide for increases in legislatively mandated opex.
 - Provide for the automatic correction of allowed yields for the effects of inflation or deflation

Forecast Revenues Arising from the Formulae

- 2.4 We have specified the terms of the formulae to provide a reasonable prospect for daa to make a reasonable rate of return on the regulatory value of the asset base employed in providing services at Dublin Airport. The forecast outcome is set out in the yield table in Section 3, which is based on the scenario of none of the triggers occurring.

Triggers

- 2.5 In the formulae, we have included two runway triggers (M2 and M3) that will increase the maximum levels of airport charges if Dublin Airport meets the conditions set out in CP4/2017.¹² The formula will reduce the price cap according to the trigger for Terminal 2 Box 2, if Dublin Airport has not reached 33m annual passengers in any year between 2020-2024. We also introduced eight reprofiling triggers to reduce the price cap in a year if it becomes clear that the project relevant to each trigger is not progressing substantially in line with plans. There is further discussion on triggers in Section 9.

¹² www.aviationreg.ie/_fileupload/Decision%20MASTERCOPY%202017-04-28.pdf

Conditions for Opex Uncertainty Mechanism

- 2.6 We have included in the formulae a factor for cost passthrough of legislatively mandated Opex. It will apply to items for which the cost is largely outside the control of Dublin Airport (e.g. rates and regulatory charges). These costs will be recoverable after they have been incurred.

Quality of Service

- 2.7 We included in the formulae a quality of service term that decreases the maximum level of per passenger airport charges that Dublin Airport may levy should it be unable to achieve targets for various metrics. The quality of service term will not reduce the allowed level of airport charges by more than €0.36 in a year. The metrics are classified into 4 outcomes, each with a maximum possible reduction in the allowed level of airport charges.

Outcome 1

- 2.8 On a per passenger yield basis, measures in outcome 1 will never reduce the allowed level of airport charges by more than €0.21 a year. The measures in outcome 1 are the following:
- 1) maximum time passengers spend in security queue times,
 - 2) maximum time passengers wait for assistance for mobility or sensory impairment,
 - 3) availability of outbound baggage belts (before HBS3) and availability of outbound baggage system or a comparable alternative (after HBS3)
 - 4) availability of inbound baggage belts (before HBS3) and availability of inbound baggage system or a comparable alternative (after HBS3)
 - 5) availability of Fixed Electric Ground Power (FEGP),
 - 6) availability of Advanced Visual Docking Guidance System (AVDGS),
 - 7) availability of passenger-facing lifts, escalators and travellators, and
 - 8) availability of self-service check-in kiosks and bag drop machines.

Outcome 2

- 2.9 On a per passenger yield basis, measures in outcome 2 will never reduce the allowed level of airport charges by more than €0.07 a year. The measures in outcome 2 are passenger satisfaction with 1) PRM assistance, 2) helpfulness of security staff, 3) helpfulness of airport staff, 4) cleanliness of terminal, 5) cleanliness of toilets, 6) overall satisfaction, 7) departure gates and 8) walking distance.

Outcome 3

- 2.10 On a per passenger yield basis, measures in outcome 3 will never reduce the allowed level of airport charges by more than €0.04 a year. The measures in outcome 3 are passenger satisfaction with 1) finding your way around, 2) flight information screens, and 3) ground transport information on arrival.

Outcome 4

- 2.11 On a per passenger yield basis, measures in outcome 4 will never reduce the allowed level of airport charges by more than €0.04 a year. The measures in outcome 4 are passenger satisfaction with 1) PRM facilities, 2) availability of trolleys and 3) Wi-fi.

Size of Price Cap Adjustments

2.12 The size of the quality of service adjustment depends on which targets, if any, Dublin Airport is not able to achieve. They are not all assigned the same weight or measured in the same manner. These differences reflect judgments by us about the appropriate weight to attach to the different measures. Measures may entail daily, monthly, quarterly or annual adjustments to the price cap if Dublin Airport is not able to meet a required target:

Daily targets:

- 1) maximum security queue times,
- 2) availability of outbound baggage belts (before HBS3) and availability of outbound baggage system or a comparable alternative (after HBS3) and
- 3) availability of inbound baggage belts (before HBS3) and availability of inbound baggage system or a comparable alternative (after HBS3)

Monthly targets:

- 1) availability of Fixed Electric Ground Power (FEGP),
- 2) availability of Advanced Visual Docking Guidance System (AVDGS), and

Quarterly targets:

- 1) passenger satisfaction measures for arriving and departing passengers and
- 2) availability of passenger-facing lifts, escalators and travellers.
- 3) availability of self-service check-in kiosks and bag drop machines.

Yearly targets:

- 1) maximum wait times for PRM assistance,
- 2) passenger satisfaction measures for departing PRM passengers and transfer passengers.

Reporting Frequency

2.13 Dublin Airport will report quarterly on the performance of measures with daily, monthly and quarterly price cap adjustments, and annually, in the last quarter of the year, on the performance of measures with annual price cap adjustments. Dublin Airport will be responsible for arranging to have the necessary data collected for the service quality monitoring scheme. If Dublin Airport fails to provide necessary data for the scheme, it will be assumed to have failed to satisfy those targets for which necessary data are unavailable. Should Dublin Airport advise that it is unable to collect the data in a suitable format, for example in electronic format, we may waive the affected targets or substitute in an alternative means for measuring the target. Dublin Airport should notify us of any such changes.

Passenger Security Queue Time

2.14 We use the same measure of passenger security queue time as defined in the 2014 Determination. The queue start position is where the passenger joins the start of the queue (which may or may not be inside the security queue area). The queue end position is where the passenger reaches the walk-through metal detector.

2.15 Security queue time is measured with an automated system (currently Blip Track). In case of system failure or any other disruption, Dublin Airport should report it to the Commission and take manual measures of the queue every 15 minutes until the problem is resolved.

Formula for First Target: Security Queue Below 20 minutes at least 70% of time

- 2.16 Dublin Airport should calculate its performance for each terminal using the formula given below. We will compare the result of this formula to the target of minimum 70% of time equal to or less than 20 minutes. The denominator of the formula deducts the 15-minute windows, within operational hours, when the security queue time equals zero.

$$\% = \frac{\sum 15\text{minute windows in a day when the queue is equal to or less than 20 minutes 0 seconds}}{\sum 15\text{minute windows in a day when the queue was more than 0 seconds}}$$

- 2.17 The operational hours for the security queue measure are currently the following, but they may change during the regulatory period:
- 03:15 – 00:00 in Terminal 1
 - 04:00 – 00:00 in Terminal 2

Outbound and Inbound Baggage Systems

- 2.18 We monitor the availability of belts before the completion of Hold Baggage Screening (HBS) Standard 3 projects. After the completion of HBS3 scheduled in 2021 in Terminal 2 and 2023 for Terminal 1, we monitor the availability of the baggage system or a comparable alternative.

Availability of Belts Before HBS3: 2020 in T2 and 2020-2022 in T1

- 2.19 Before HBS3 is delivered, we will use the 2014 Determination target for outbound baggage belts and extend it to inbound baggage belts. We will expect Dublin Airport to avoid any delays of more than 30 consecutive minutes in providing ground handlers at check-in desks or at make-up positions with access to functioning belts. Dublin Airport will have missed these metrics if a baggage belt connecting to a check-in area (or from the make-up area to the arrivals carousel) is unavailable for more than 30 minutes and Dublin Airport is unable to provide an affected airline or ground handler access to an alternative baggage belt within 30 minutes of the party notifying Dublin Airport that it requires access to an alternative baggage belt.

Availability of Baggage System or a Comparable Alternative: 2023-2024 in T1 and 2021-2024 in T2

- 2.20 After HBS3 is delivered, Dublin Airport will be expected to avoid any delays of more than 30 minutes in providing ground handlers at check-in desks with access to a functioning outbound baggage system or a comparable alternative that achieves the outcome of delivering departing bags to the make-up position. Similarly, for the inbound baggage system, Dublin Airport will be expected to avoid any delays of more than 30 minutes in providing ground handlers at make-up positions with access to a functioning inbound baggage system or a comparable alternative that achieves the outcome of delivering bags to the arrivals hall carousels.
- 2.21 Dublin Airport will have not met the outbound (inbound) baggage system metric if the delivery of bags from the check-in area to the make-up position (from the make-up position to the arrivals hall carousel) is unavailable for more than 30 minutes and Dublin Airport is unable to provide an affected ground handler access to an alternative system within 30 minutes of the party notifying Dublin Airport that it requires access to the outbound baggage system.
- 2.22 The operational hours are currently 24/7 for outbound baggage and 07.00 to 00.00 for inbound baggage but may change during the regulatory period.

Fixed Electric Ground Power (FEGP) and Advanced Visual Docking Guidance System (AVDGS)

- 2.23 We will commence to monitor these monthly measures in January 2021. We set a 99% target for “old” units, defined as 1-year old or more, and a 93.5% target for “new” units, defined as less than 1-year old. Every quarter, Dublin Airport should report the number of new and old units existing at the airport. Dublin Airport will calculate the performance of FEGP units and AVDGS units using the formulas given below.

Availability of old units

$$\% = 100\% \times \left(1 - \frac{\sum \text{unavailable time per OLD unit in a month}}{\text{Number of OLD units} \times \text{Total operational time in a month}} \right)$$

Availability of new units

$$\% = 100\% \times \left(1 - \frac{\sum \text{unavailable time per NEW unit in a month}}{\text{Number of NEW units} \times \text{Total operational time in a month}} \right)$$

- 2.24 The operational hours of AVDGS and FEGP will be agreed by Dublin Airport in consultation with the airlines. They may differ across terminals according to airline operating models.

Passenger-Facing Lifts, Escalators and Travellators in T2

- 2.25 We will commence to monitor this quarterly measure in January 2021 with a target of 98%, which will increase to 99% in January 2022. Dublin Airport should calculate the performance using the formula below.

$$\% = 100\% \times \left(1 - \frac{\sum \text{unavailable time per passengerfacing unit in T2 in a quarter}}{\text{Number of passengerfacing units in T2} \times \text{Total operational time in a quarter}} \right)$$

- 2.26 The operational hours of passenger-facing lifts, escalators and travellators are currently 04.00 to 00.00 daily, but may change during the regulatory period.

Self-service check-in kiosks and bag drop machines

- 2.27 We will commence to monitor this quarterly measure in January 2020 with a target of 99%. Dublin Airport will calculate the performance per terminal using the formula below.

$$\% = 100\% \times \left(1 - \frac{\sum \text{unavailable time per unit in a quarter}}{\text{Number of units} \times \text{Total operational time in a quarter}} \right)$$

- 2.28 The operational hours of self-service check-in and bag drop are currently 04.00 to 00.00 daily, but may change during the regulatory period.

Passenger Satisfaction Measures from the Customer Service Monitor (CSM)

- 2.29 daa, as managing body of Dublin Airport, will conduct survey interviews with not less than 5,800 departing passengers and 2,700 arriving passengers per year. The interviews obtained shall reflect the expected profile of passengers travelling through the airport. Dublin Airport will design sampling on a quarterly basis to include a spread across month, day of week and

time of day. Departing passengers shall be interviewed at the gate or gate area immediately prior to boarding the aircraft, and/or other locations as agreed with the Commission. Arriving passengers shall be interviewed on the arrivals hall just before leaving the terminal building, and/or other locations as agreed with the Commission. Dublin Airport shall consult the airlines and the Commission if it intends to change the wording of any questions monitored in this Determination.

- 2.30 Dublin Airport will use the performance results of satisfaction measures up to two decimal places and will round them as appropriately to compare them to the targets. For example, if 9.0 is the target, an actual score of 8.94 or less will be rounded to 8.9 and will constitute a breach. If the actual score is 8.95 or more, Dublin Airport will round it to 9.0 and it will be deemed a pass.

Exemptions

- 2.31 Generally, if Dublin Airport does not meet a target, we will consider any evidence of extenuating circumstances that Dublin Airport may provide.

All Airport Assets

- 2.32 Airport assets are: baggage handling systems, FEGP, AVDGS, passenger-facing lifts, escalators, travellers, self-service check-in kiosks and bag drop machines.

- 2.33 Exceptions apply if Dublin Airport consults with users on the following types of work and specifies the duration of the works in advance:

- Planned and preventative maintenance where it does not impact on operations.
- Mandatory inspections.
- Equipment taken out of service while a major investment project is undertaken in the vicinity.
- Equipment taken out of service for replacement or major refurbishment work.

- 2.34 The above works may relate to both fixed equipment or relevant IT systems provided either by Dublin Airport or a third party. If works extend beyond the consulted period, without reasonable justification, then the additional downtime will count against the target. Dublin Airport will not be required to notify users of urgent issues that require immediate intervention to prevent worse damage or disruption. For IT systems, we consider that security threats might be an example of urgent issues that require immediate action.

- 2.35 Other exceptions are:

- for the inbound-baggage system, if there are delays in passenger processing through immigration.
- For baggage systems, any delays to baggage process due to a third-party issue. Examples are bag tag quality issues or bag messaging and connectivity system failures caused by airlines.
- Closure of passenger-facing escalators, travellers and lifts in T2 immediately adjacent to security queues where it is considered by the relevant managers that their continued use is likely to lead to unacceptable health and safety risks due to increased congestion.
- In the event of fire-alarm activation, sprinkler activation, terminal evacuations, emergency-stop activations or maintenance to address pressing safety concerns. In the

case of false alarms, the exception for each occurrence should be limited to an agreed time with users during which the assets should become available again;

- Equipment downtime due to damage, or misuse likely to have been caused by airlines or their agents or where an airline or agent has accepted responsibility or where the users agree with Dublin Airport in writing that the likelihood is that the damage has been caused by an airline or its agent;
- If any fault or stoppage occurs as a result of any resource issue or industrial action by a ground handler or airline;
- Downtime where a fault has been reported by airlines or their agents, but, when the engineers attend the site, no fault is found, and the equipment is working;
- In the event of serious disruption caused by weather.

3. Introduction

3.1 In accordance with Section 32 of the Aviation Regulation Act 2001, as amended, this document presents the report on our Determination on the maximum levels of Airport Charges that Dublin Airport may levy for the period starting 1 January 2020 and ending on 31 December 2024. Airport Charges cover charges for taking off, landing and parking aircraft, using air bridges, arriving and departing passengers, and the transportation of cargo. In this document, for brevity, the maximum levels of airport charges are called the price cap.

Final Determination

3.2 We have decided to set the annual per passenger price cap included in Table 3.1. Adjustments to the price cap will be made if:

- Dublin Airport does not meet the targets for quality of service as set out in Section 2 and 11. A total of €0.36 is at risk;
- The trigger for Terminal 2, Box 2 will be removed if Dublin Airport has not ever reached 33 m annual passengers in any year;
- Dublin Airport meets one or both of the runway triggers set in the first interim review of the 2014 Determination. If the triggers are met, they will enter the price cap as set out in Section 2;
- One or more reprofiling triggers are applied in the event that there are substantial delays in the commencement of key pieces of infrastructure as set out in Section 2 and 9;
- A passthrough charge is applied to allow the recovery of costs largely outside the control of Dublin Airport as set out in Sections 2 and 6; or
- There is inflation or deflation.

3.3 The final price cap does not include any sub caps.

3.4 Table 3.1 is the yield table. It shows the inputs under each building blocks which we use to arrive at the price cap. We have applied an adjustment for financial viability reasons by way of reprofiled depreciation (D).

Table 3.1: Yield Table

	2020	2021	2022	2023	2024
A = Operating costs (€m)	290.4	295.6	310.1	316.1	317.6
B = Commercial revenues base target (€m)	217.0	258.2	284.8	300.1	312.6
Rolling Schemes (€m)	47.2	15.9	4.5	0	0
Opening RAB (€m)	1,741.3	2,068.6	2,365.9	2,641.5	2,902.0
Closing RAB (€m)	2,068.6	2,365.9	2,641.5	2,902.0	3,146.2
C = Depreciation (€m)	92.0	104.8	118.5	134.1	150.4
D = Reprofiled depreciation (€m)	3.4	20.7	28.7	28.2	28.1
E = Return on capital (€m)	87.5	100.4	112.2	123.3	133.7
F = C + D + E = Total capital costs (€m)	182.9	225.9	259.4	285.6	312.3
G = A - B + F = Required revenue (€m)	255.2*	263.3	284.7	301.6	317.3
H = Passengers (m)	34.0	35.1	36.1	37.1	38.1
G / H = Price cap (€)	7.50	7.50	7.88	8.12	8.32

* Includes a reduction of €0.9m adjustments of k, w and ATI fees from the 2015-2019 period (see financial model for details).

Source: CAR

3.5 Table 3.2 shows the price cap before and after we apply the financial viability adjustment, by means of reprofiled depreciation. On a per passenger basis, we add, on average, €0.55 to the price cap to make it financially viable.

Table 3.2: Financial Viability Adjustment

	2020	2021	2022	2023	2024
Price without depreciation adjustment	7.40	6.93	7.13	7.44	7.69
Financial Viability Adjustment (D)	0.10	0.57	0.75	0.68	0.64
Price with depreciation adjustment	7.50	7.50	7.88	8.12	8.32

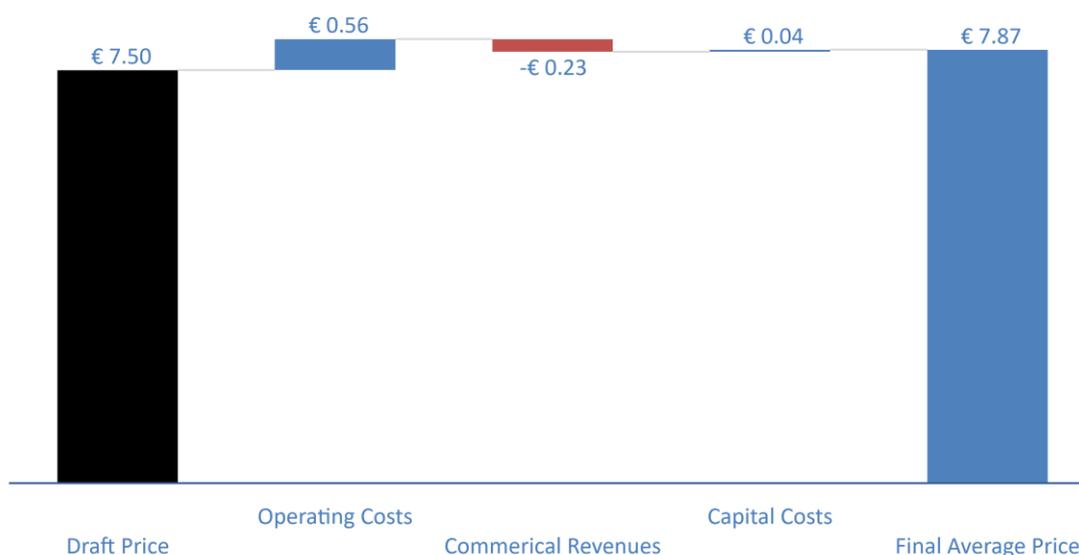
Source: CAR

3.6 The following sections of this report provide the rationale for the numbers in the table and for the calculation used.

Draft Determination to Final Determination

3.7 In the Draft Determination we proposed a price cap of €7.50 in all years. We have increased this by €0.37, to reach our decision of an average price cap of €7.87. A large number of changes have been made across all the building blocks, many of these changes cancel each other out. These changes are summarised in Chart 3.1 and the rest of this report discusses them in detail.

Chart 3.1: From Draft to Final Price Cap¹³



Source: CAR

3.8 We decided to provide for a higher operating cost allowance generally, and also more time to become more efficient. We use Dublin Airport’s 2019 operating costs as a starting point and expect the airport to achieve efficiencies we have identified by 2024. This represents a five-year glidepath. We have allowed Dublin Airport recover up to an additional €0.56 per passenger in operating costs.

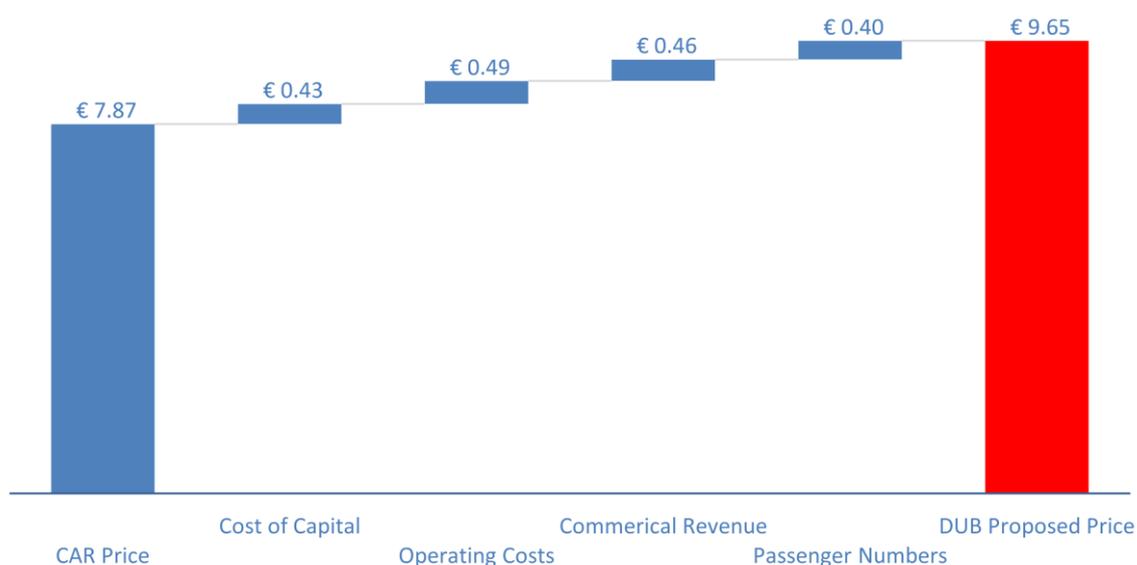
¹³ The chart provides an indication of financial impacts rather than a precise calculation as effects can impact on each other.

- 3.9 The revenue that Dublin Airport earns from activities such as retail and car parks is used to reduce passenger charges. Since making our draft decision, we have updated our assessment of how much revenue per passenger Dublin Airport is likely to earn from commercial revenues. The impact of this is to reduce charges by an average €0.23 per passenger.
- 3.10 We have allowed Dublin Airport recover slightly more capital costs than we included in our draft decision. This amounts to €0.04 per passenger.

Comparing Final Determination to Dublin Airport’s Position

- 3.11 Dublin Airport’s latest submission inculcates a price cap of €9.65 for 2020 to 2024. This is €1.87 higher than the price cap we set. The differences between our positions on the various building blocks is summarised in Chart 3.2.

Chart 3.2: Dublin Airport’s Proposed Price Compared to Final Price¹⁴



Source: CAR Calculations. Dublin Airport submissions.

- 3.12 We carried out a detailed review of the cost of capital. We decided that Dublin Airport should earn 4.22% on investments while its latest request was for 5.8%. This difference amounts to €0.43 per passenger.
- 3.13 Our position is that Dublin Airport can become more efficient and the difference between the money requested and the amount we have decided to provide for operating costs is €0.49 per passenger.
- 3.14 Dublin Airport does not think it will generate as much commercial revenue in each year as we suggest. As commercial revenue offsets airport charges, it is Dublin Airport’s view that we have applied too great a corresponding reduction, driving a difference equal to €0.46 per passenger.

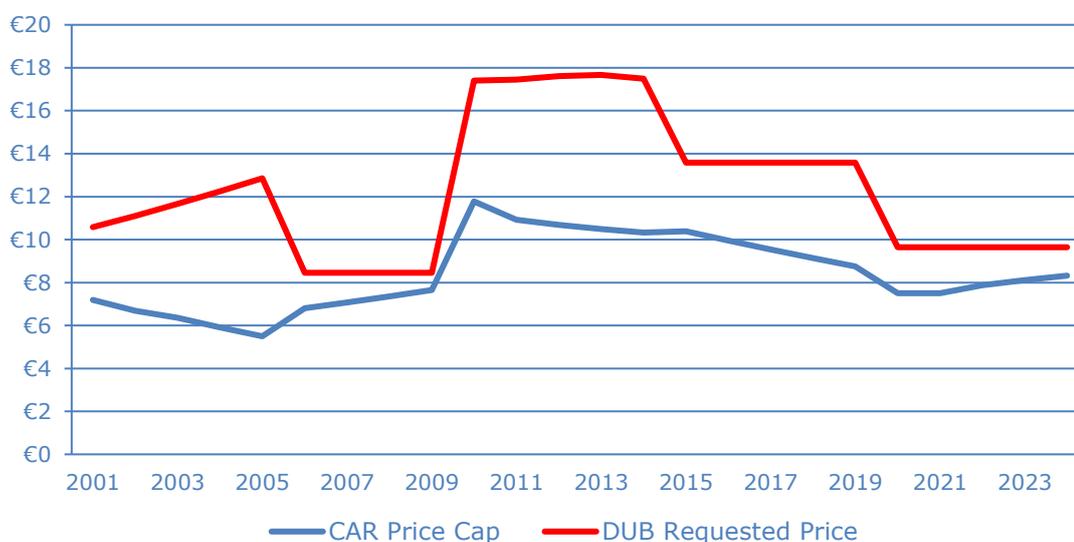
¹⁴ The chart provides an indication of financial impacts rather than a precise calculation as effects can impact on each other.

3.15 Passenger numbers are an important component of the price. If there is a fixed sum of money to be recovered, spreading this across fewer passengers leads to a higher price. Dublin Airport’s forecast provides for 32.9m passengers in 2020 increasing to 36.1m in 2024 (a 2% growth rate). Our assessment is that the 2020 figure should be 34m rising to 38.1m in 2024 (a 3% growth rate). The difference between what Dublin Airport has asked for and what we consider reasonable is €0.40 per passenger.

Comparing Final Determination with earlier Determinations

3.16 Chart 3.3 shows the difference between Dublin Airport’s requested price and the price cap set in each of the five determinations the Commission has made since it was established to regulate Dublin Airport.

Chat 3.3: Requested Price versus Price Cap



Source: CAR determinations

Predictability of Final Price Cap

3.17 We consider that the price cap set in this Determination is somewhat predicible. In our 2014 Draft Determination we laid out possible price paths for 2020 and the scenario most closely aligned with outturns suggested a price cap of €6.31 for 2020.

3.18 In 2018, as per its regulatory accounts, Dublin Airport’s operating costs were €268.2m, its commercial revenue €241.5m, the regulatory capital costs for 2018 were €176.0 resulting in a required revenue from airport charges of €202.7m. Passenger numbers in 2018 were 31.5m. If we were calculating a price cap based on those outturn numbers, it would have been €6.43 compared to the price cap in 2018 of €9.12. Passenger volume is driving this effect. This financial model has been published on our website since 2014.

3.19 Outturns for operating costs, commercial revenues and passenger numbers are key drivers of our future forecasts and are all known. The cost of capital is derived using standard formulas and market evidence which again results in a predictable outcome.

3.20 The main unknown factor, and the one which results in a higher price cap than those mentioned in the paragraphs above is the amount of capital investment the Commission would allow and how it would enter the price cap. For example, the use of triggers would be a factor. We have allowed for all of Dublin Airport’s proposed capital investment and it has entered the price cap over the period rather than being triggered. This has resulted in a higher price cap all

else being equal.

Consultation Process

- 3.21 On 30 April 2018, we started our process of engagement with stakeholders in preparation for the 2019 Determination with the public consultation of an Issues Paper. That paper sought comments from parties on how we should proceed, specifically asking about what regulatory policies we should adopt, what methodologies we should apply and what data sources we should use. The paper contained historical data as well as a discussion of many of the issues that might be relevant based on past experience of making determinations. We received five responses, from Aer Lingus, Dublin Airport, IALPA, IATA and Ryanair. Their views informed our Draft Determination, and we refer to the points the parties made in their responses throughout this document. The full responses are available on our website and a list is published in Appendix 3.
- 3.22 In October 2018, Dublin Airport issued a draft Capital Investment Programme to airport users for consultation. Following those meetings, in February of this year we received a final Capital Investment Programme for the period 2020-2024 from Dublin Airport. We have placed these documents on our website. We have also published written comments airlines provided to Dublin Airport on its investment plans following the meetings.
- 3.23 In May 2019, we published the Draft Determination which consulted on our detailed proposals. We allowed two months for the public consultation, from 9 May to 8 July. This is in accordance to the provisions of the Section 32 of the Aviation Regulation Act 2001, as amended, which set a minimum consultation period of one month. In July, we published the 37 submissions that we received from stakeholders in relation to the draft proposals. We have now published the Final Determination in October 2019, following a detailed review of all submissions received and ongoing discussions with stakeholders. Below we describe the supporting analyses that we have published alongside this Final Determination.

Supporting Evidence

- 3.24 We commissioned a number of studies from external consultants. In arriving at their final reports, the consultants had due regard to the relevant submissions received to the Draft Determination and other representations from stakeholders. Each report sets out the consultant's responses to stakeholders. We have used the final reports to inform our deliberations. The reports are published alongside this Determination.
- 3.25 CEPA conducted a review of the efficiency of the operating costs of Dublin Airport.
- 3.26 We commissioned Swiss Economics to provide advice on the appropriate Weighted Average Cost of Capital.
- 3.27 We commissioned Helios to carry out simulation modelling in relation to the airfield and terminal buildings, to support our assessment of Dublin Airport's proposed capacity enhancement projects.
- 3.28 Steer carried out a cost efficiency assessment of the proposed capital investment programme.
- 3.29 We commissioned Centrus Advisors Limited to conduct a financeability assessment of Dublin Airport for 2020-2024.
- 3.30 We established a Passenger Advisory Group and met with this group five times. We worked with the group to review existing quality of service measures at Dublin Airport and to consider

ways in which these could be improved.

Structure of Report

- 3.31 The subsequent sections in this document explain in more detail how we made this Final Determination. The structure is the same as in the Issues Paper.
- 3.32 Section 4 describes the general approach to regulation that we have followed.
- 3.33 Sections 5, 6, 7, 8 and 9 address the traditional regulatory building blocks of passenger forecasts, operating expenditures, commercial revenues, cost of capital and capital costs. In each case, we set out the values we decided to allow for over the next five years and how we had due regard to stakeholders' submissions and all the supporting evidence presented to us. We also discuss briefly how our projections differ to those in our Draft Determination and those proposed by Dublin Airport in its regulatory proposition or its latest available forecasts where available.
- 3.34 Section 10 sets out how the Final Determination enables daa to operate and develop Dublin Airport in a sustainable and financially viable manner.
- 3.35 Section 11 discusses how we propose to have regard to quality of service at Dublin Airport in our forthcoming Determination.
- 3.36 Section 12 deals with miscellaneous issues that do not fit in other sections. We discuss three issues identified in the Draft Determination: the regulatory treatment of incentive schemes, the volume risk and the k factor formula and the persons with reduced mobility charge. We also address stakeholder submissions in relation to peak pricing and the CPI adjustment of the price cap.
- 3.37 Section 13 shows how our Final Determination complies with our statutory requirements. We show how we have had regard to our three statutory objectives, nine statutory factors, government policy that we were notified of and Ministerial Directions issued to us by the Department of Transport, Tourism and Sport. This is typically done by referring to the preceding sections.
- 3.38 There are also two appendices to this report. Appendix 1 shows our responses to stakeholders in relation to capital projects. Appendix 2 provides details on the allowed capital projects for 2020-2024. The spreadsheet model used to calculate the price cap is available on our website <http://www.aviationreg.ie>.

4. Approach to Regulation

- 4.1 As in the Draft Determination, we continue with a general approach to regulation which is in line with previous determinations. We are setting a maximum average charge per passenger for a five-year regulatory period from 2020-2024 year, using the building blocks approach with a single till and with the remuneration of capital costs driven by the regulatory asset base (RAB).
- 4.2 Our methodologies throughout are consistent with previous Determinations and consistent more generally with approaches taken by other regulators when setting price caps.
- 4.3 In setting the price cap we do not have regard for how charges at Dublin Airport compare to other airports, rather we look to arrive at a price that an efficient operator of Dublin Airport would charge.

General Representations Received

- 4.4 Dublin Airport states that it is one of the most price competitive large airports in Europe, and that we should change our regulatory framework by undertaking a top down benchmarking approach to price setting rather than a bottom up approach. Dublin Airport provides a list of comparator airports.
- 4.5 The Commission does carry out some degree of benchmarking to inform as opposed to set prices. Dublin Airport's benchmarking analysis suggestion does not appear to consider the fact that at certain airports, typically those with lesser degrees of market power, airports and airlines enter into bilateral deals on airport charges which are typically lower than the airport list prices. It is problematic to carry out such high level comparisons between different airports for a variety of other reasons and some of these are further explored in Section 6.
- 4.6 IATA supports the general approach to regulation, in setting price caps for a 5-year period, using the building blocks and single till. It also supports our current symmetric risk allocation of outturns differing from our forecasts.
- 4.7 Norwegian Air continues to support the current Regulated Asset Base (RAB) building block approach provided that Dublin Airport continues to meaningfully consult with the airport users on the building blocks i.e. Capex, Opex, the Cost of Capital and Commercial Revenues.
- 4.8 A number of respondents suggest courses of action which we could not take without a change in legislation. We cannot purposefully carry out a Market Power Assessment and potentially move away from price cap regulation, should the result of that assessment lead us to conclude that we should. Nor could we purposefully conduct a Regulatory Impact Assessment (RIA) to consider the impact of a regulatory model we are required by legislation to implement anyway. These questions were relevant for the review of the economic regulation of Irish airports carried out by the Department of Transport, Tourism and Sport in 2015-2016. Ultimately, that review concluded that the key elements of the regulatory model, in place since 2001, should continue to be applied by the Commission, given that Dublin Airport has Significant Market Power.
- 4.9 This phase of the process is therefore the continued implementation of the regulatory model, rather than a change to it. The Commission is required by legislation to make a new Determination specifying the maximum level of airport charges to apply from 2020. In doing so, in line with our statutory objectives, we seek to allow Dublin Airport to recover the level of Aeronautical Revenues required to operate and develop the airport in the interests of airport users, and no more than that.

- 4.10 The current determination, in which we set the price cap for each of the years 2015-2019, expires at the end of this year.
- 4.11 Other responses provide information or statistics which are not directly relevant to the determination process. We acknowledge receipt of these responses, however they do not relate to the technical application of the regulatory model as set out in the various sections of this document.

Allocation of Risk

- 4.12 In the next regulatory period, we generally continue to assign to Dublin Airport the risks, both upside and downside, of outturns differing from our forecast targets for passenger numbers, Opex targets, commercial revenues and the cost of capital. We allocate these risks to Dublin Airport on the basis that it is the party best able to manage and/or control these risks.
- 4.13 We continue to allocate these risks in two ways. Firstly, the per passenger price cap allocates the volume risk to the airport and secondly, there are generally no ex post adjustments when outturn operating costs, commercial revenues or cost of capital differ from the targets set. The exception is a new cost pass through mechanism for legislatively mandated operating costs. While the airport carries a lot of risk, it does so only for a time limited period.
- 4.14 At the end of the regulatory period, the price cap recalculation largely transfers to users the results of materialised risk.
- 4.15 Up to 2022, there will be a delay in the transfer of some of the risks. Between 2016 and 2018, Dublin Airport outperformed commercial revenues targets that we set in 2014. The rolling schemes set out in the 2014 Determination mean that Dublin Airport will continue to benefit from this outperformance into the new regulatory period. As set out in Section 6, we have decided to remove the rolling scheme for operating costs, thereby removing this delay in the subsequent regulatory period in relation to Opex. We have retained rolling schemes for certain categories of commercial revenues.

RAB based Building Blocks Approach

- 4.16 We continue to use a RAB based building blocks approach. The calculations of the building blocks require forecasts to set targets for passenger numbers, commercial revenues and operating expenditure. We continue with our approach to forecasts from previous Determinations. For passenger numbers and commercial revenues, we continue using historic driver elasticities and the drivers' forecasts. The driver of passenger numbers is Irish GDP, while the main driver for commercial revenues is passenger numbers. For operating expenditure, we continue to base our targets primarily on an external bottom up assessment of the operating costs of Dublin Airport.
- 4.17 We continue with our single-till approach, as refined in 2014, under which the regulation of airport charges continues to have regard to the costs and revenues associated with commercial services at Dublin Airport. We continue to include commercial revenues in our building blocks calculations, but we may exclude some costs and revenues from the till where it protects current and prospective users from the risks associated with a commercial investment that daa wishes to undertake. The opening RAB in 2020 is reduced by €48.1m for the till exit of Dublin Airport City, as decided in December 2014.¹⁵

¹⁵[www.aviationreg.ie/ fileupload/2014-12-10%20CP3%20Dublin%20Airport%20City%20valuation%20and%20till%20exit.pdf](http://www.aviationreg.ie/fileupload/2014-12-10%20CP3%20Dublin%20Airport%20City%20valuation%20and%20till%20exit.pdf)

- 4.18 The calculation of the building blocks also requires setting an allowance for capital costs which include depreciation and the return on capital. We continue to calculate these costs using a RAB based approach. At the time of a Determination, we roll forward the RAB by adding the costs of allowed investments and subtracting the costs of undelivered investment and regulatory depreciation. We discuss the capital costs and future reconciliation in Section 9.
- 4.19 The return on capital depends on the size of the RAB and cost of capital that we allow. We continue to calculate the allowed cost of capital based on the weighted average cost of capital (WACC), with the cost of equity based on the capital asset pricing model (CAPM). Our methodology is in line with regulatory precedent, the recommendations from the Thessaloniki Forum of airport charges regulators and the current thinking of other regulators. We explain this approach in Section 8.
- 4.20 Since 2009, we have set quality standards to help ensure that the cost efficiencies achieved by the airport are not made at the expense of the quality of service delivered to passengers and airlines. Section 11 presents the quality standards for the next regulatory period.
- 4.21 When arriving at a price cap, we enable the financial viability of Dublin Airport by checking that, when all the building blocks are taken together, Dublin Airport is able to raise the level of debt required to finance the regulatory settlement at an efficient cost. We continue to use the methodology of the 2014 Determination, based on which we assess a hypothetical Dublin Airport only company.

Interaction between Building Blocks

- 4.22 We continue to have regard to the interactions between building blocks. We facilitate the passenger numbers and commercial revenues targets by allowing achievable and efficient targets for operating costs and by allowing for the remuneration of the ambitious CIP that will enable the airport to handle 40m passengers per annum. We facilitate the remuneration of the CIP by allowing an efficient cost of capital and checking that the price cap enables the financial viability of the airport. In setting our quality of service targets, we have regard to the operational and capital costs building blocks.

5. Passenger Target

Total Passenger Target

Table 5.1: Total Passenger Target

	2019	2020	2021	2022	2023	2024	Elasticity
Final Determination (m)	32.85	34.0	35.1	36.1	37.1	38.1	1.01
Draft Determination (m)	32.4	33.6	34.6	35.7	36.7	37.8	1.05
Difference Final – Draft (m)	0.5	0.4	0.5	0.5	0.4	0.3	-

Source: Draft Determination, CAR Calculations

- 5.1 We forecast that passenger numbers will grow from 34.0m in 2020 to 38.1m in 2024 representing an average annual growth rate of 3.0%. These figures are slightly higher than those used in the Draft Determination.
- 5.2 While we use the same methodology as in the Draft, the forecast figures have changed because of a) updated IMF forecasts of GDP from October 2018 to those published in October 2019 as set out in Table 5.2 and b) a change in elasticity from 1.05 to 1.01 due to a small error in our earlier calculations.

Table 5.2: Irish GDP from the IMF

Irish GDP	2019	2020	2021	2022	2023	2024
Oct 2019	4.3%	3.5%	3.2%	2.9%	2.7%	2.7%
April 2019	4.1%	3.4%	3.1%	2.9%	2.7%	2.7%
Oct 2018	4.0%	3.5%	3.0%	2.8%	2.8%	

Source: IMF, World Economic Outlook, October 2018, April and October 2019.

- 5.3 We updated our 2019 passenger estimate to 32.85m assuming a 4.31% growth rate, which is the product of the 1.01 elasticity and the 2019 Irish GDP growth forecast of 4.3% published by the IMF on 15 October 2019. We cross checked the 2019 forecast that results from our model with outturns up to September 2019.
- 5.4 While we calculate our final target using the latest available IMF GDP forecast of 15 October 2019, for some of the analysis in this section, we used the IMF GDP forecast published in April 2019.

Submissions Received

- 5.5 In arriving at our final target, we considered Dublin Airport’s August and October 2019 passenger forecasts, its forecasting methodology and its review of our proposed target. We also considered other suggestions including (a) using variables such as Gross National Income or OECD GDP sources; (b) blending Irish GDP figures with those of other key markets; (c) treating outlier years in a different manner; (d) using variables such as oil prices, airport charges and air travel tax; (e) forecasting passenger numbers by key market segments; and (f) taking account of the capacity constraints, particularly the runway and stands.

Commission’s Overall Response to Submissions Received

- 5.6 We have carefully considered all submissions made in response to our May 2019 Draft Determination. In addition, we have met many of these respondents in the intervening period to further discuss and explore the points that they have raised. Following a detailed assessment of their proposals, we have decided to continue to use the methodology and data

sources set out in our Draft Determination. Where possible we have updated these by latest published inputs. The paragraphs below set out, in detail, the points raised by interested parties and our detailed responses to these points.

2019 Estimate of Dublin Airport

5.7 After we published our Draft Determination, Dublin Airport updated their 2019 forecast in August and subsequently in October. On 7 August, Dublin Airport updated its 2019 base forecast to 32.65m passengers (see Table 5.3).

5.8 It is worth noting that, subsequently, the outturn in August was 5.8%, compared to Dublin Airport’s estimate of 4%. This difference highlights the challenges of forecasting the outturns even for the same month.

Table 5.3: Dublin Airport’s August 2019 Submission

	Outturn								Dublin Airport Forecast				
2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Passengers	2.1m	2.0m	2.5m	2.8m	3.0m	3.2m	3.5m	3.37m	3.0m	2.8m	2.2m	2.2m	32.65m
Growth	5.1%	8.7%	8.8%	7.3%	4.0%	3.5%	3.8%	4.0%	3.0%	1.0%	-2.0%	-2.0%	3.7%

Source: Dublin Airport

5.9 In October, Dublin Airport further updated its base forecast to 32.75m (see Table 5.4). In this submission, Dublin Airport forecast 2.7% growth in October and contractions of 4.1% and 1.7% in November and December respectively.

Table 5.4: Dublin Airport’s October 2019 Submission

	Outturn								Dublin Airport Forecast				
2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Passengers	2.1m	2.0m	2.5m	2.8m	3.0m	3.2m	3.5m	3.4m	3.0m	2.9m	2.2m	2.2m	32.75m
Growth	5.1%	8.7%	8.8%	7.3%	4.0%	3.5%	3.8%	5.8%	4.2%	2.7%	-4.1%	-1.7%	3.9%

Source: Dublin Airport

Dublin Airport Forecast

5.10 In October 2019, Dublin Airport forecasts passenger numbers growing from 32.9m in 2020 (0.5% growth) to 36.1m in 2024. The airport assumes an average annual growth rate of 2.0% (compared to 2.2% in its regulatory proposition). Table 5.5 summarises the three submissions.

Table 5.5: Update in Passenger Forecasts of Dublin Airport

Dublin Airport Submissions of Passenger Numbers	2019	2020	2021	2022	2023	2024	Irish GDP Elasticity
February Regulatory Submission (m)	32.4	32.9	33.7	34.6	35.4	36.1	0.75
August update (m)	32.65	33.2	33.9	34.8	35.6	36.3	
October update (m)	32.75	32.9	33.7	34.6	35.4	36.1	0.70
October growth rate		0.5%	2.4%	2.7%	2.3%	2.0%	

Source: Dublin Airport, CAR Calculations

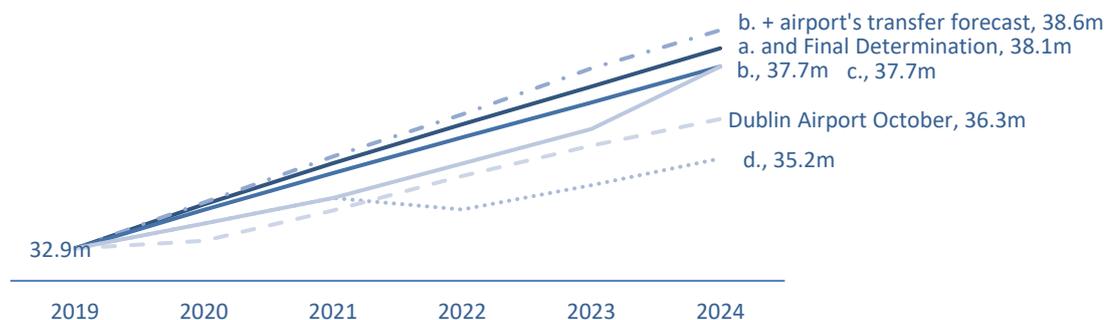
Dublin Airport Methodology

- 5.11 Dublin Airport’s forecast is based on regressions of passenger numbers by different markets and economic variables in the relevant markets, including GDP, unemployment rates and population. These forecasts are then adjusted based on market intelligence for three markets. The UK market growth is assumed to be flat for 2020-2024 due to Brexit. The transfer market growth is based on fleet plans of relevant airlines and the transit market is expected to decrease from 0.2m in 2018 to zero in 2021, also based on fleet plans of airlines.
- 5.12 It is our view that this methodology is difficult to replicate for robustness and the wide range of inputs open to many interpretations that would lead to different forecasts. In addition, the methodology has not provided accurate forecasts even for a few months ahead.

Review of our Target Commissioned by Dublin Airport

- 5.13 Dublin Airport commissioned Mott MacDonald (MM) to review our traffic forecast. We updated MM’s forecasts using our 2019 base in order to compare them to our target (see Chart 5.1). MM looked at four models:
- a log-log regression of total passengers with dummy variables from 2006 to 2009.
 - an unconstrained forecast based on key markets. Table 5.7 shows a variant of this model by replacing the MM’s forecast of transit passengers with that of Dublin Airport which is based on fleet plans.
 - a forecast based on runway and stand constraints
 - a night-restrictions forecast based on the runway and stand constraints of model c, in addition to the night restrictions for the north runway not being lifted within the next period.

Chart 5.1: Difference between the Mott MacDonald Forecasts and the Final Determination



Source: Dublin Airport regulatory proposition, CAR calculations

a. Log-Log Regression of Total Passengers with Dummy Variables of Mott MacDonald

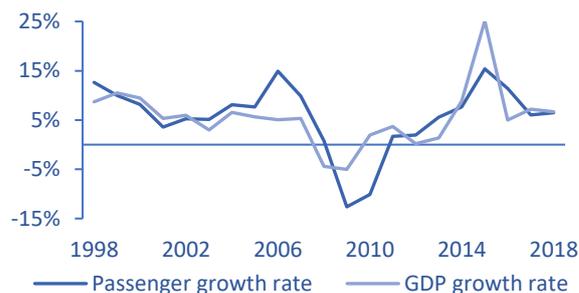
- 5.14 The review of our traffic forecast commissioned by Dublin Airport showed that the performance of the Irish GDP-based model could be improved if a dummy variable is included to correct for the variance seen in 2006 to 2009. The variance is illustrated in Chart 5.2. According to the review, this best-fit regression produces an Irish GDP elasticity of 1.001.
- 5.15 We estimate that this results in 37.9 million passenger demand in 2024, using an average growth of 2.76% from 2020-2024 and a 2019 estimate of 32.8m (based on the April 2019 GDP forecast of the IMF). We note that the approach proposed by MM only improves the fit for historic data but not for the forecast years because we cannot predict if and when there will similarly be outlier years in 2020-2024.

Chart 5.2: 1997-2018 GDP and Passengers



Source: Central Statistics Office (CSO), Dublin Airport

Chart 5.3: 1998-2018 Growth of GDP and Passenger



Source: Central Statistics Office (CSO)

5.16 We conclude that the regression analysis should take all available years from 1997-2018. The resulting elasticity would average all potential scenarios shown in Chart 5.3. An elasticity that averages all scenarios is consistent with the use of a long-term GDP forecast which can be also interpreted as an average of short-term economic cycles.

5.17 As a robustness check, we also ran two regressions with different sets of outlier years. The first regression includes dummy variables for 2006-2009 and 2015. The second regression includes dummy variables for 2006, 2009-2010 and 2015. The first choice of outlier years yields the same elasticity of 1.01 as the final target, while the second choice increases the elasticity to 1.03. The change in elasticity is not material and we do not include dummy variables in our final model as we cannot forecast the presence of outlier years in the next period.

b. Mott MacDonald Unconstrained Forecast by Key Markets

5.18 MM estimates its unconstrained forecast using level regressions of passengers in key markets and a GDP blend of Ireland and the relevant market. It assumes an average annual growth rate of 2.8%, higher than the 2% proposed by Dublin Airport and closer to our target of 3.0%. Table 5.6 shows that the unconstrained forecast is slightly lower than our target, by 0.1m in 2020 and 0.5m in 2024.

Table 5.6: Unconstrained Review Forecast Compared to the Final Target

Target of Passenger Numbers	2019	2020	2021	2022	2023	2024	Elasticity
Final Determination (m)	32.85	34.0	35.1	36.1	37.1	38.1	1.01
Mott MacDonald Unconstrained (m)	32.85	33.9	34.8	35.8	36.7	37.7	0.93
Difference Final - MM Unconstrained (m)	0	0.1	0.3	0.3	0.4	0.5	-
Mott MacDonald Unconstrained growth		3.1%	2.9%	2.7%	2.6%	2.6%	-

Source: Dublin Airport regulatory proposition, CAR calculations.

5.19 We note that the unconstrained forecast assumes a flat 3% growth in the transfer market despite recent growth from 2010 to 2018 being on average 23.6% annually. If the MM unconstrained forecast used the transfer passengers forecast that is estimated by Dublin Airport (based on fleet plans), the unconstrained forecast would be higher than our final target, reaching 38.5m in 2024. Table 5.7 shows that the implied Irish GDP elasticity of this modified unconstrained forecast would be 1.1, which is higher than our model.

Table 5.7: Review Forecast using Dublin Airport’s Transfer Forecast Compared to the Final Target

Target of Passenger Numbers	2019	2020	2021	2022	2023	2024	Elasticity
Final Determination (m)	32.85	34.0	35.1	36.1	37.1	38.1	1.01
MM Unconstrained + Dublin Transfer (m)	32.85	34.1	35.3	36.4	37.6	38.6	1.10
Difference Final - MM + Dub Transfer (m)	0	0	-0.2	-0.3	-0.5	-0.5	-
MM unconstrained + Dub Transfer growth		3.7%	3.6%	3.2%	3.3%	2.7%	-

Source: Dublin Airport regulatory proposition, CAR calculations.

c. Mott MacDonald Forecast Based on Runway and Stand Constraints

- 5.20 Compared to the MM unconstrained forecast, the MM stand and runway capacity constrained forecast assumes lower growth rates from 2020 to 2023 and a higher growth rate in 2024. Table 5.8 shows that the constrained forecast differs from our target by roughly 1m passengers per annum from 2021 to 2023.

Table 5.8: Constrained Review Forecast Compared to the Final Target

Target of Passenger Numbers	2019	2020	2021	2022	2023	2024	Elasticity
Final Determination (m)	32.85	34.0	35.1	36.1	37.1	38.1	1.01
Mott MacDonald Constrained (m)	32.85	33.5	34.2	35.1	36.0	37.7	0.96
Difference Final - MM Constrained (m)	0	0.5	0.9	1.0	1.1	0.5	-
Mott MacDonald Constrained growth		2.0%	2.0%	2.7%	2.6%	4.6%	-

Source: Dublin Airport regulatory proposition, CAR calculations.

- 5.21 For 2020-2022, MM assumes a constrained passenger growth of 2% that results from a 1% increase in runway slot utilisation and a 1% increase in the busy 14-hour period declared capacity. The assessment does not consider any change in aircraft load factors.
- 5.22 Historic data shows that passenger growth above the assumptions of the MM model has been achieved due to different combinations of increased slot utilisation, load factors and slot capacity. Table 5.9 shows, for example, that:
- In 2017, passenger growth was 6% due to a 3.1% growth in slot utilisation and an average yearly load factor increase of 1%. The 6% passenger growth was despite no growth in slot capacity in the peak hour (for total movements).
 - In 2018, passenger growth was also 6%, allowed by slot utilisation growth of 2.6%, and peak hour capacity (totals) growth of 0.7%. Passenger growth of 6% was despite no growth in the annual average load factor.

Table 5.9: 2013-2019 Passenger Growth, Slot Utilization, Peak Hour Capacity and Load Factors

	2017	2018
Passengers growth (%)	6%	6%
Slot Utilisation (%) - Summer peak week change year on year	3.1%	2.6%
Change in available slot capacity	0%	0.7%
Load factor change year on year	1%	0%

Source: Dublin Airport and CAR Calculations

d. Mott MacDonald Constrained Forecast with Night Restrictions for North Runway

- 5.23 In this calculation, MM assumes runway and stand constraints, in addition to the night restrictions in the planning permission for the north runway not being lifted in this regulatory period. This forecast assumes 2% increase in 2020-2021, 0.9% decrease in 2022 and 2%

increase in 2023-2024 resulting in 35.2m passengers in 2024.

- 5.24 Dublin Airport submitted a passenger forecast that is higher than the MM forecast with night restrictions and has not asked us to consider the night-restrictions. Using a forecast with night restrictions would substantially impact the other building blocks and the identified CIP capacity requirements in the next regulatory period; we could not allow for a CIP intended to meet a 40 million passengers per annum demand requirement in line with the Summer 2018 busy day profile, while also forecasting passenger numbers based on considerably lower assumptions.

Brexit and Economic Shock

- 5.25 Airport Council International (ACI), Chambers Ireland, Dublin Airport, Dublin Chambers, Fingal County Council and Irish Exporters Association state that we do not prepare for a shock to the system, whether sector specific or economy wide (e.g. Brexit, protectionism, industrial action, planning restrictions and climate change).
- 5.26 Section 10 of this paper sets out options available to Dublin Airport if, for instance, there is a no deal Brexit.

Volume Risk

- 5.27 Chambers Ireland suggests using an estimated passenger range with conditional triggers to account for unexpected economic shifts.
- 5.28 IATA supports our current approach of allocating risks (upside and downside) on outturns differing from our forecasts on the basis that Dublin Airport is the party best able to manage them.
- 5.29 MM suggests that due to Dublin Airport's capacity constraints and the potential downside economic risks, traffic volume risk was asymmetrically distributed.
- 5.30 At the outset of this process we asked Dublin Airport to consider options in relation to volume risk. Dublin Airport has stated that it chooses to continue to manage this risk. Based on Dublin Airport's view and our own assessment we have decided to continue setting a per passenger price cap which assigns symmetric (upside and downside) volume risk to Dublin Airport. It is best placed to influence passenger numbers and/or respond to changing levels of traffic. This volume risk allocation incentivises the airport to increase traffic in order to increase revenue.
- 5.31 While the airport carries this risk, it does so only for a time limited period. At the end of each regulatory period, the price cap recalculation largely transfers to users the results of materialised risk. As noted in paragraph 5.26 above, Section 10 of this paper sets out options available to Dublin Airport if, for instance, there is a no deal Brexit.

Gross Domestic Product

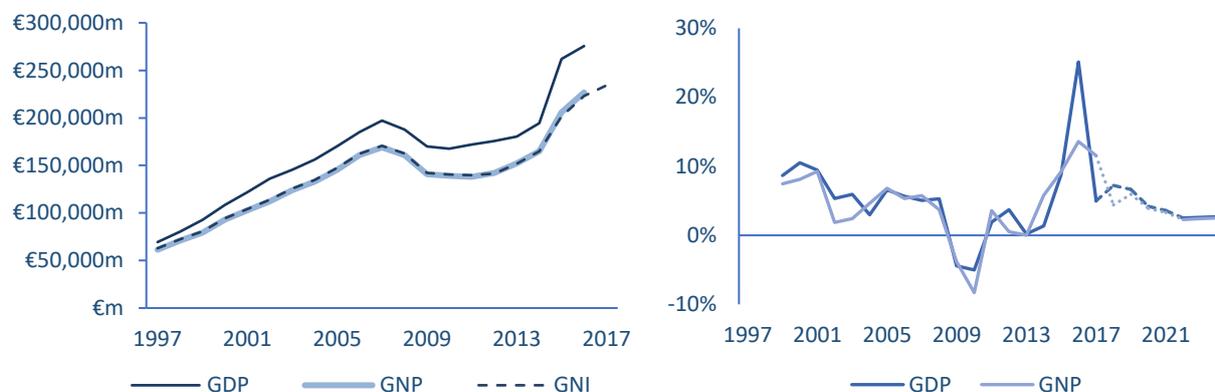
Alternatives Measure

- 5.32 Chambers Ireland suggests that we use alternative income variables such as the GNI because the GDP "has had a poor track record as a proxy for passenger numbers in the past" and "is an increasingly poor measure of activity in the Irish Economy". The GNI is defined as the GDP plus net primary incomes from abroad.¹⁶

¹⁶ www.cso.ie/en/releasesandpublications/er/nie/niear2016/

5.33 In response to Chambers Ireland, we investigated the impact on the passenger forecast of using a national product measure, as opposed to a domestic measure. We used the GNP at constant prices that is readily available since 1997. For this analysis, the GNP can be used as a substitute for the GNI (see Chart 5.4). The sources of GNP are the Central Statistics Office (CSO) for outturn data and the Department of Finance for forecast data.

Chart 5.4: Comparison of GDP, GNI, modified GNI and GNP **Chart 5.5: GNP and GDP growth rates**



Source: CSO. GDP and GNP in constant prices (2016 reference).

5.34 We ran a log-log regression of passenger numbers on Irish GNP for 1997-2018 data. Chart 5.5 shows that the historic GNP growth rate has been equal or lower than the GDP. The largest difference was recorded in 2015. However, the lower historic GNP growth rate results in a higher GNP elasticity of 1.19 compared to the GDP elasticity of 1.01.

5.35 Table 5.10 shows that while the 2020-2024 forecast GNP growth rate is slightly lower than the IMF GDP forecast, the higher elasticity results in a higher forecast. The forecast based on GNP reaches 38.2m in 2024, which is slightly higher than our target of 38.1m based on GDP.

Table 5.10: Passenger Forecast Based on GDP Elasticity and on GNP Elasticity

	2019	2020	2021	2022	2023	2024
Passenger forecast - GDP (m)	32.85	34.0	35.1	36.1	37.1	38.1
real GDP growth forecast		3.5%	3.2%	2.9%	2.7%	2.7%
Elasticity x GDP		3.5%	3.2%	2.9%	2.8%	2.7%
Passenger forecast - GNP (m)	32.8	34.1	35.0	36.0	37.1	38.2
real GNP growth forecast		3.3%	2.3%	2.4%	2.5%	2.5%
Elasticity x GNP		3.9%	2.7%	2.8%	3.0%	3.0%

Source: CAR; Department of Finance Economic and Fiscal Outlook Budget 2019; IMF World Economic Outlook, October 2019.

Alternative Sources

5.36 Chambers Ireland suggests that we use alternative GDP sources such as those provided by the OECD noting that using the OECD GDP forecast of 2.5%, on average, would yield a lower forecast by 1.5m over the 5 years.

5.37 We considered this point but decided to continue using the IMF forecast as the reason provided for changing our GDP source was not compelling. In addition, Table 5.11 shows that the IMF forecast is closer to the forecasts of Department of Finance and the OECD for 2019 and 2020. It is also noted that the OECD long-term estimates are not updated as regularly as the IMF forecast.

Table 5.11: Long-term GDP forecasts

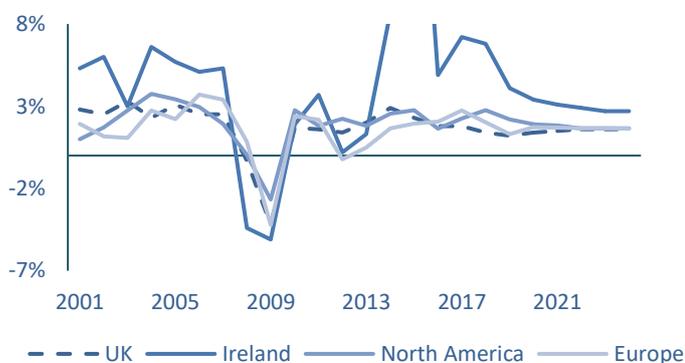
Long Term	Forecast date	2019	2020
Department of Finance	Apr 19	3.9%	3.3%
IMF	Apr 19	4.1%	3.4%
	Oct 19	4.3%	3.5%
OECD	Jul 19	2.8%	2.2%

Source: Department of Finance Economic and Fiscal Outlook Budget, IMF World Economic Outlook; OECD Economic Outlook.

Alternative Markets

- 5.38 Dublin Airport states we should blend Irish GDP growth rates and four key markets and make a separate analysis for transfer traffic. It states that “our model essentially tasks Dublin Airport with growing half of its traffic (non-Irish originating) at the same record high levels as Ireland’s economic growth (estimated to be 76% higher than an average of the UK, US and EU forecasts for 2020-2024)”.
- 5.39 Our model, based on Irish GDP, does not task Dublin Airport with growing half of its traffic at the same levels as Irish GDP growth. Dublin Airport is correct in noting that the Irish GDP forecast is higher than that of the UK, North America and Europe, as shown in Chart 5.6. However, by definition, an econometric forecast based on the Irish GDP, which has a relatively higher growth rate, will yield a lower elasticity than a model based on a blend of Irish, European, North American and UK GDP, which has a lower growth rate. This is the same effect that was shown in the analysis of the Irish GDP versus Irish GNP.

Chart 5.6: Outturn and Forecast GDP Growth in Ireland, Europe, North America and UK



* We cut-off the vertical axis of the chart at 8% because the 2015 GDP in Ireland was 25%.

Source: IMF, World Economic Outlook, April 2019

- 5.40 As suggested by Dublin Airport, we regressed total passengers (except for transfer) using a GDP blend of 50% Ireland and 50% Europe, North America and UK. The GDP forecast used for the blended model is the April 2019 IMF forecast. The weights are based on recent survey data provided by Dublin Airport. We then added the transfer passenger forecast by Dublin Airport.
- 5.41 We obtained a blended GDP elasticity of 1.4 for the total passengers excluding transfers and 1.5 for total passengers including transfers. The implicit Irish GDP elasticity of the blended GDP regression is 1.2 which is higher than the 1.01 elasticity estimated using Irish GDP. The total passenger forecast until 2024 is 39.4m and the average growth is 3.6%, compared to our target of 38.1m and average growth of 3%. Table 5.12 shows both forecasts and their difference.

Table 5.12: Comparison of Total Traffic Forecast using Irish GDP and a Blend of Four Key Markets

Target of Passenger Numbers	2020	2021	2022	2023	2024
Final Target (m) – Total Passengers using Log-log	34.0	35.1	36.1	37.1	38.1
Blended GDP – 50% Ireland and 50% Europe, North America, UK + transfer forecast of Dublin Airport (m) *	34.2	35.5	36.9	38.2	39.4
Difference (m)	-0.2	-0.4	-0.8	-1.1	-1.3

* IMF April 2019 data used for the Blended GDP model

Examine Cost Variables such as Oil Price, Airport Charges and Air Travel Tax

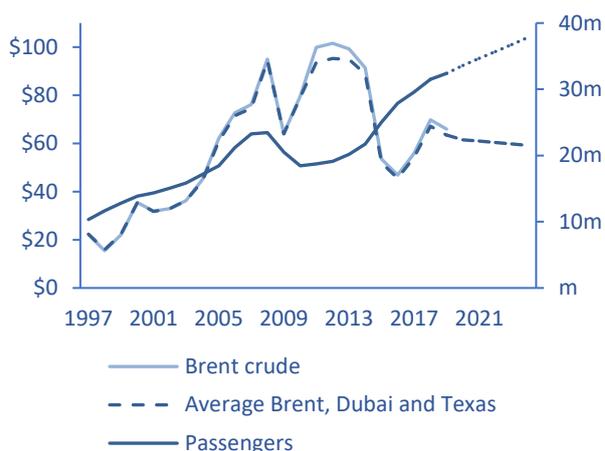
- 5.42 Some respondents to the Draft Determination suggest that we include cost variables when forecasting passenger numbers. Dublin Airport’s review of our methodology states we consider only a single explanatory variable, Irish GDP, although other factors are likely to influence air traffic. These include GNI, oil price and the GDP of economies at the other end of a route.
- 5.43 Ryanair states that the change in the estimated elasticity (from 1 in 2009 to 1.15 in 2014) is due to other cost related factors rather than the relationship to GDP varying over time. Ryanair suggests that, in the future, the formula should recognise a feedback loop between the level of charges proposed and the passenger forecast.
- 5.44 We ran a log-log regression of passenger numbers on Irish GDP (April 2019 IMF forecast), oil price per barrel, and the sum of airport charges and the travel tax from 1997-2018. The regression results in Table 5.13 shows that the oil price elasticity is near zero but positive (0.16). As shown in Chart 5.7, during the analysed period passenger numbers grew despite oil prices steadily increasing from 1997 until 2013 and from 2016-2018.
- 5.45 Table 5.13 also shows that the sum of airport charges and air travel tax yield a negative elasticity of -0.15. Chart 5.8 shows that airport charges increased in 2010 due to the opening of Terminal 2, and that the air travel tax was in place from 2009 to 2013. At the same time passenger numbers fell in 2009-2010. We note that it is difficult to disentangle the negative effect on passenger numbers of increased airport charges and tax from the economic crisis that started in 2008.

Table 5.13: Log-log Regression of Passengers on GDP, Oil Price, Airport Charges and Travel Tax

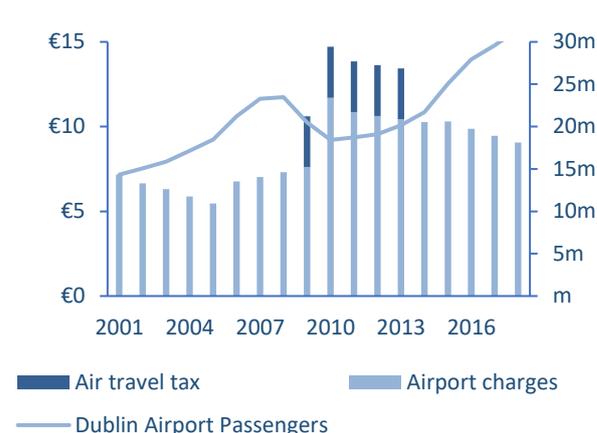
Elasticities	Regression results	Significance
GDP *	0.97	***
Oil price	0.16	***
Airport charges and travel tax	-0.15	*
Adjusted R Square	0.94	

*IMF April 2019 data

Chart 5.7: World Bank Oil Price Historic and Forecast



Char 5.8: Passengers - Airport Charges and Tax



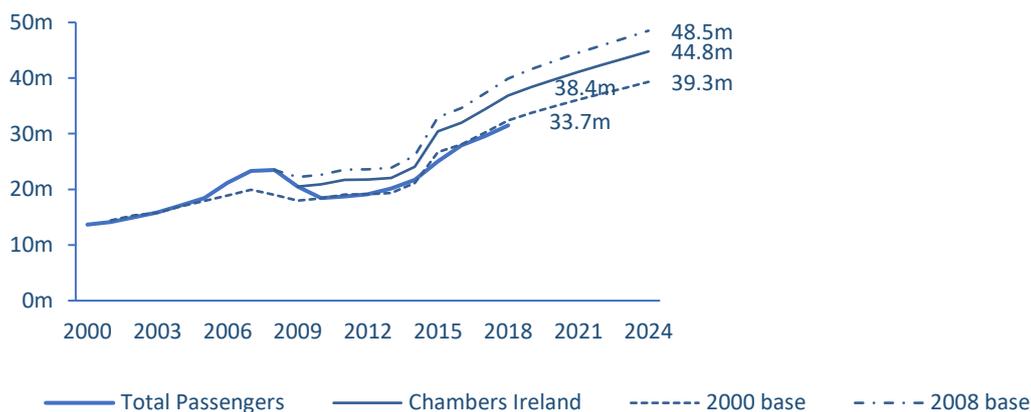
Source: World Bank Commodity Price Data (updated on July 2019) crude oil prices (dollar per barrel) in real 2010 US Dollars.

- 5.46 We also note that including additional cost variables in the model would add the inherent error of each forecast (GDP and oil) to the passenger forecast. Air fares are a better measure of travel costs than airport charges; but historic data is not publicly available.
- 5.47 Donal Lamont states that while we forecast an annual growth rate in 2019 and 2020 of 3.33%, the growth in 2019 over 2018 has already been between 6 and 7%. In response, we note that we have revised our 2019 base forecast from 32.4m to 32.85m. The updated 2019 base forecast implies a 4.31% growth rate from 2018. This is in line with the current 2019 Irish GDP forecast of the IMF published on 15 October 2019.

Different Base Year

- 5.48 Chambers Ireland states that if we had been able to accurately model real Irish GDP in the 2014-2019 period, and we had applied our 2019 draft determination, then our projected 2019 throughput would be in excess of 42m passengers. It also states that if the baseline year had been 2009, the 2019 estimate would be circa 58m passengers.
- 5.49 In response, the best fit of the model is obtained by starting with the first outturn year and forecasting passenger numbers using the outturn GDP growth times the estimated elasticity. This forecast would reach 39.3m in 2024. It is depicted by the “2000 base” line in Chart 5.9. While the model underestimates the growth between 2006-2009, it has a close fit for the rest of the years.
- 5.50 Once we estimate the elasticity, we choose a base year considering the most updated passenger outturn and expectations. For this reason, we lowered the 2019 base from the model estimate of 33.7m to 32.85m and obtain a 2024 forecast of 38.1m (the final target). If we use the 2009 base, as suggested, the forecast for 2024 would be 44.8m (based on the April 2019 IMF GDP forecast). If we use the 2008 base, which is even higher, the 2024 forecast would reach 48.5m. However, we update the base year using the latest available outturn data.

Chart 5.9: Passenger Forecast According to Selected Base Year



Source: CAR Calculations. IMF April 2019 data.

5.51 If we had accurately modelled real Irish GDP for the 2014-2019, and had we applied our 2019 Draft Determination then our 2019 projected throughput would be 34.6m. It would not be over 42m, as stated by Chambers Ireland. Finally, if the baseline year had been 2009, the 2019 estimate would be 38.4m and not 58m as suggested.

Alternative Forecast Methodologies

5.52 Respondents to the Draft Determination ask us to estimate the total passenger forecast by estimating key regional markets. Below, we examine the use of alternative models (levels compared to log-log regression) as used by Dublin Airport and their review of our traffic forecast model.

Linear vs Log-Log regression: Forecast of Total Passengers

5.53 The International Civil Aviation Organization (ICAO) recommends the log-log model for estimation of traffic demand at an aggregate level. Table 5.14 shows that estimating total passenger numbers at Dublin Airport based on the Irish GDP (April 2019 IMF Forecast) and using either log-log or levels regressions yield similar results (38.1m vs 37.7m in 2024). It also shows that using the blended GDP of Ireland, Europe, North America and UK, as suggested by Dublin Airport, yields higher targets both for log-log and levels regressions (39.4m and 38.7m in 2024).

Table 5.14: Comparison of Total Traffic Forecast using Log-log and Levels Regressions

Target of Passenger Numbers	2020	2021	2022	2023	2024
Irish GDP					
Final Target (m) – Total Passengers using Log-log (Oct 2019 IMF GDP)	34.0	35.1	36.1	37.1	38.1
Alternative - Total Passengers using Levels *	33.9	34.9	35.9	36.8	37.7
Difference	0.1	0.2	0.2	0.3	0.4
Blended GDP – 50% Ireland and 50% Europe, North America and UK*					
Log-Log	34.2	35.5	36.9	38.2	39.4
Levels	34.0	35.2	36.5	37.7	38.7
Difference between final Target and Levels	-0.1	-0.2	-0.5	-0.7	-0.7

Source: CAR Calculations. *IMF April 2019 data.

Linear vs Log-Log regression: Forecast by Markets

- 5.54 ICAO acknowledges that “a prior analysis of the traffic trends in a specific situation and a given market may lead to different choices [of models]. The type of functional relationship to be used for an econometric traffic forecast must be developed through judgement and experimentation or through experience and prior knowledge of the market concerned.”¹⁷
- 5.55 For the regressions by market, we estimated elasticities for seven markets that represented 94% of total passengers in 2018. The markets are shown in Table 5.15. We replicated MM’s forecast which uses levels regression and a 50%-50% blend of Irish and the GDP in the relevant market. In addition, we estimated market forecasts using log-log regressions and the same type of GDP blend. Similar to the forecasting approach of Dublin Airport, we combined the elasticities for 94% of the markets with the following judgement-based forecast:
- for the transfer market (6% of total passengers), we used the forecast of Dublin Airport as it is based on fleet plans of airlines.
 - for the Domestic and General Aviation Market (0.3% of total passengers), we used the assumption of MM. MM assumes that the forecast converges gradually every year to the level forecast by Dublin Airport in 2024 (77,000 passengers). For reference, Dublin Airport assumes zero growth for the 2020-2024 period.
- 5.56 In summary, compared to the MM levels regression by market, the only different assumption that we made was that of the transfer market.

Table 5.15: Summary of Forecast Markets and their 2018 share

Markets	Share of Total passengers in 2018	Average Growth in 2000-2018	Average Growth in 2017-2018
Estimated			
UK	30.7%	1.7%	0.2%
Western Europe	23.0%	6.5%	8.3%
Southern Europe	20.0%	6.8%	5.5%
Transatlantic	9.2%	6.9%	15.5%
Eastern Europe	7.0%	31.7%	3.2%
Other Long haul	2.9%	48.9%	13.8%
Transit	0.8%	777.4%	17.3%
Total Estimated Share	93.7%		
Not estimated- other assumptions			
Transfer	6.0%	55.7%	26.2%
Domestic and General Aviation	0.3%	-6.2%	12.6%

Source: Dublin Airport, CAR Calculations

- 5.57 Table 5.15 shows historic growth rates for the markets that we forecast. For the most recent years 2017-2018, average growth rates range from almost no growth (0.2% in the UK market) to rapid growth, e.g. 14% in other long-haul, 15% in transatlantic and 26% in transfers. For comparison, during the whole analysed period of 2000-2018, Eastern Europe has annually grown on average by 31.7%, other long-haul by 49% and transfer by 55.7%.

¹⁷www.icao.int/MID/Documents/2014/Aviation%20Data%20Analyses%20Seminar/8991_Forecasting_en.pdf

5.58 Table 5.16 compares the implied Irish GDP elasticities by market of the MM unconstrained model, Dublin Airport and our estimated levels and log-log regressions.

Table 5.16: Summary of Irish GDP Elasticities for Final Target and Various Models by Markets

Markets	Dublin	MM	CAR Levels	CAR Log-log
Overall	0.75	0.94	1.16	1.70
Estimated				
UK	0.09	0.38	0.4	0.4
Western Europe	0.78	1.13	1.13	1.53
Southern Europe	0.79	1.13	1.13	1.52
Eastern Europe	0.71	1.75	1.55	4.34
Transatlantic	0.95	1.22	1.21	1.8
Other long-haul	1.45	2.18	2.2	4.56
Transit	-6.36	-16.20	1.85	3.2
Not estimated- other assumptions				
Transfer	2.76	0.99	3.48*	3.48*
Domestic and GA	0.09	-2.12	-2.12	-2.12

Source: Dublin Airport, Mott MacDonald, CAR Calculations IMF April 2019 data.

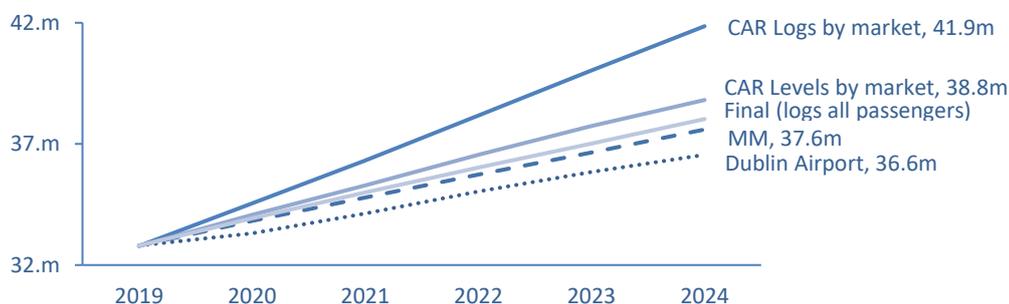
* We obtain a higher average elasticity than Dublin Airport. We use the forecast of Dublin Airport for 2020-2024 adjusted by our 2019 estimate of 32.8m derived with IMF April 2019 GDP forecasts.

5.59 Our results show that:

- Dublin Airport’s forecast has the lowest elasticities for most markets (overall is 0.75),
- Our levels model and MM’s model are similar except for transit and transfer market assumptions, and
- our log-log model yields higher elasticities than our levels model, in particular for the fast-growing markets of Eastern Europe and other long-haul (overall is 1.7).

5.60 Chart 5.10 compares the final target with the regressions by market of MM, Dublin Airport, and our log-log and level models.

Chart 5.10: Forecasts by Market using Log-log and Levels Models



Source: CAR Calculations. IMF April 2019 data.

5.61 The levels regression by market supports the final target forecast, while the log-log regression by market is above the final target. Our level regressions by market forecast 38.8m in 2024, which is higher than the final target of 38.1m. As shown in Table 5.16, the implied Irish GDP elasticity of the levels regression by market is 1.16 compared to 1.01 of the final target. The log-log regressions by market forecasts an even higher total traffic that reaches 42m in 2024

and a higher implied elasticity of 1.7.

5.62 Charts 5.11-5.14 show the markets where our log-log estimate were considerably higher than our levels estimate. The markets are transatlantic, Eastern Europe and other long-haul. For the transfer market, we replaced our estimates with the Dublin Airport forecast because we considered that the estimate from our levels model was too low, and from our log-log model was too high. The transfers forecast of Dublin Airport is a centre line between our log-log forecast and MM’s forecast, as shown in Chart 5.14.

Chart 5.11: Transatlantic

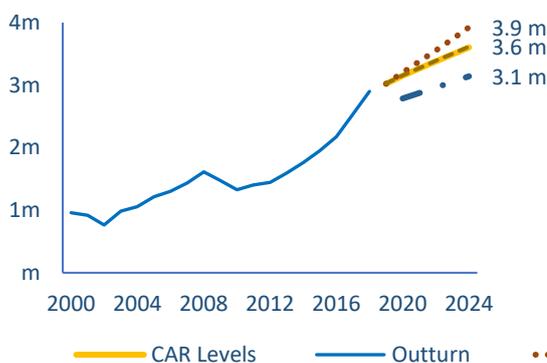


Chart 5.12: Eastern Europe



Chart 5.13: Other Long-haul

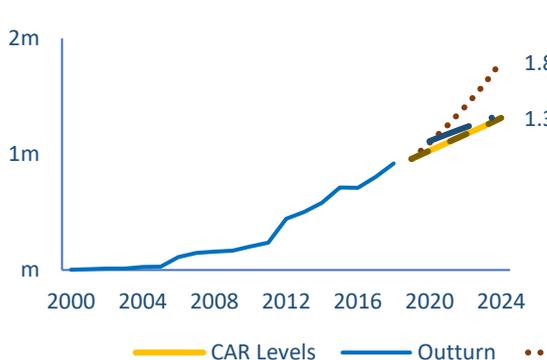
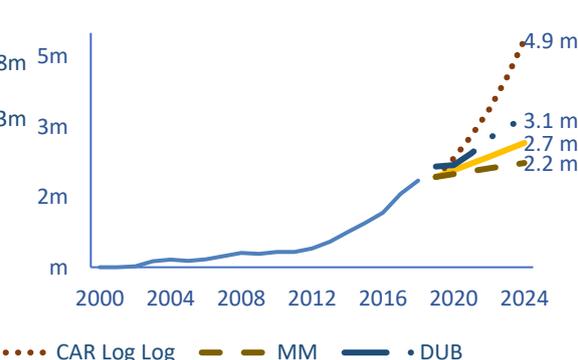


Chart 5.14: Transfer



Source: CAR Calculations. IMF April 2019 data.

Growth in a Capacity Constrained Airport

Limit Growth

5.63 Dublin Airport states that:

- our unconstrained approach is invalid due to severe capacity constraints until 2023/24. The new runway is fully operational in summer 2022.

5.64 MM recommends a constrained target growth rate of 2.76% for the next period, with phasing adjustments to the constrained early years in the cycle.

5.65 In setting our final target, we examined evidence in relation to capacity which shows that Dublin Airport can continue to expand its business within the existing infrastructure in 2020-2024. This is in line with its 2018 annual report where Dublin Airport stated it “is facing some capacity constraints but can continue to expand in smart ways by, increasing transfers, attracting new airlines, and growing into the existing infrastructure through filling off-peak periods, increasing load factor and up-gauging aircraft. This will position us for the future when

constraints are addressed".¹⁸ On other occasions, such as the 2018 supplementary capex consultation, Dublin Airport has given examples of potential passenger growth within the current infrastructure.

Menu of Airport Charges and Efficiency Incentives for Airlines

- 5.66 Dublin Airport can offer a menu of airport charges and incentive schemes or reach bilateral agreements that incentivise airlines to grow traffic and/or load factors and increase the spread in use of infrastructure.
- 5.67 The Thessaloniki Forum of EU Airport Charges Regulators states that EU airports typically offer discounts or rebates to users in exchange for growth in traffic, increase in routes or flight frequencies and the efficient use of infrastructure.¹⁹ Bilateral agreements exist at other airports. For example, Heathrow Airport stated that, on March 2019, it *"reached an agreement with its airline users on airport charges which it claims will encourage airlines to increase average load factors."*²⁰ Below we show data of Dublin Airport that shows the possibilities that exist to increase passenger traffic within the current infrastructure at Dublin Airport.

Runway Constraints and Load Factors

- 5.68 MM partly justifies their capacity constrained forecast due to Dublin Airport being within the top four European airports by slot utilisation. We investigated passenger growth from 2012-2018 at these airports, shown in Table 5.17.

Table 5.17: Passenger Growth Top 4 European Airports by Slot Utilisation – Busy Week

Airport	Slot Utilisation*	Average Annual Growth 2012-2018				2018 Load Factors
		Movements	Pax per Movement	Pax (%)	Pax	
Heathrow	98%	0%	2.1%	2.1%	1.5m	79.4%
Lisbon	97%	6%	3.9%	10.3%	2.0m	82.6%
Gatwick	95%	2.2%	2.8%	4.6%	1.8m	86.7%
Dublin	93%	6%	1.7%	7.8%	1.8m	83%

**Source: Mott McDonald. Summer season busy week slot utilisation– based on declared runway capacity*

- 5.69 We found that, during the analysed period, Heathrow grew on average by 2.1% due to increased load factors and without an increase in movements, on average. In 2019, Heathrow expects to grow due to strong load factors (increasing from 79.4% to 79.9%), increased seat capacity and a slightly higher number of movements.²¹ In 2018, Lisbon and Gatwick grew by 10.3% and 4.6%, respectively, due to increased movements and passengers per movement. Similar to these slot constrained airports, Dublin may grow its total passengers by increasing load factors.
- 5.70 In 2018, the annual average load factor at Dublin Airport was 83%. Load factors vary between airlines and routes. It is possible for airlines and routes below the average to increase passengers per movement and allow for additional growth. Data shows that, in off-peak months, there is potential to increase load given the short-term capacity constraints. Chart 5.15 shows that, in 2019, the lowest load factor was 75%. We acknowledge that there is lower

¹⁸ www.daa.ie/wp-content/uploads/2019/04/daa_Annual_Report_2018.pdf

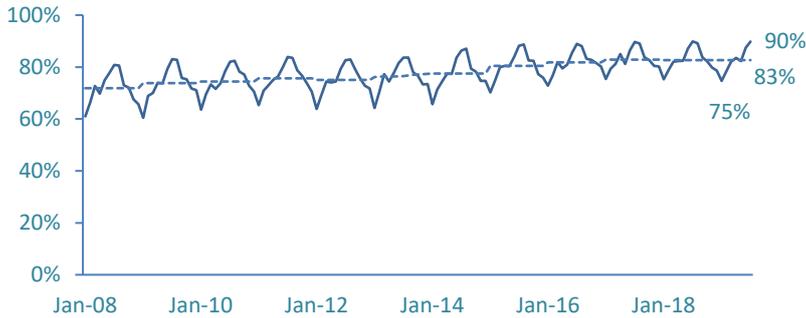
¹⁹ www.aviationreg.ie/fileupload/2018/Incentives%20and%20Discounts.pdf

²⁰ www.aerosociety.com/news/heathrow-encourages-airlines-to-increase-load-factors/

²¹ [www.heathrow.com/file_source/Company/Static/PDF/Investorcentre/heathrow-\(SP\)-investor-report-june-2019-final.pdf](http://www.heathrow.com/file_source/Company/Static/PDF/Investorcentre/heathrow-(SP)-investor-report-june-2019-final.pdf)

potential to grow over the 90% load factors in the peak months.

Chart 5.15: Monthly load factors at Dublin Airport from 2008 to 2019

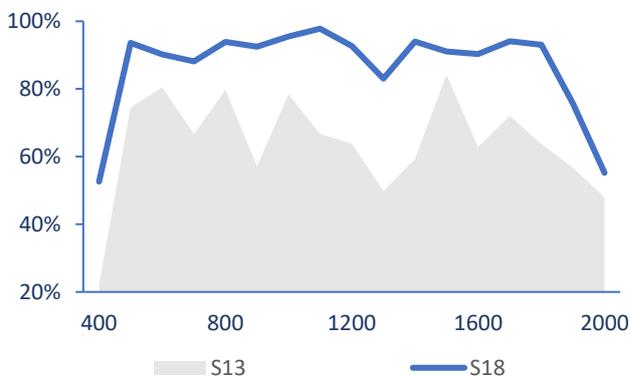


Source: Dublin Airport

5.71 Passenger numbers may grow in off-peak months at Dublin Airport because airlines may expand their existing routes outside of peak Summer, as referenced by Dublin Airport in its annual report. The scope for growth in off-peak months is shown by the area below the dotted line and the solid line in Chart 5.15. Over the last number of seasons, we have observed that where demand for prime slots cannot be satisfied, airlines are prepared to accept slots at other times to meet their passenger demand. For example, in recent years, there has been substantial growth in departures in the 04:00 hour. Also, Tourism Ireland has been working closely with airlines to maximise national tourism through the promotion of new off-peak routes that bring visitors from the US and France.²²

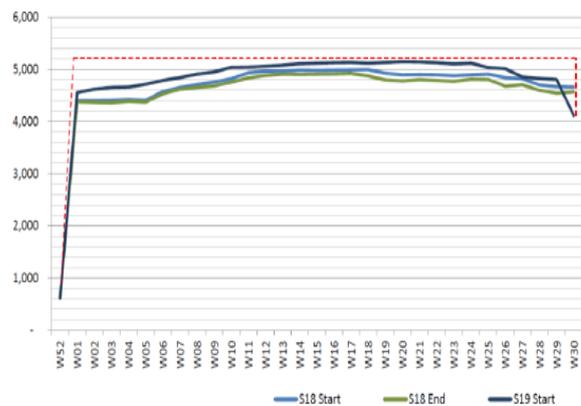
5.72 Within a day, departure slots in the evening off peak hours (1700-2300) could also be used to increase passenger numbers. For example, these slots could be used by non-based aircraft, whether operated by based airlines or non-based airlines. Chart 5.16 shows that, in Summer 2018, the average hourly runway utilisation in off peak hours (from 1700-2300) remains low at 57.4%, compared to 92.1% in peak hours (from 0500-1800). Even during the main part of the operational day in summer, there remains scope for growth in movements due to airlines willing to pick up slots which are not lined up across each week of a particular operation (see Chart 5.17). In particular, these slots can be more useful when considered in conjunction with other historic slot entitlements.

Chart 5.16: Hourly Runway Utilisation, S2013 and S2018



Source: ACL

Chart 5.17: Movements by Week Season



²² www.adworld.ie/2019/07/12/tourism-ireland-kicks-off-major-campaign-in-usa/
www.tourismireland.com/Press-Releases/2019/May/Tourism-Ireland-welcomes-new-Ryanair-flight-from-T

Stand Constraints

- 5.73 Our passenger target should incentivise Dublin Airport to 1) deliver stands and related infrastructure on time, and 2) ensure the availability of stands and other infrastructure during the construction phase to support growth. The final passenger target could be achieved, for example, by means of a higher stand utilisation ratio. This could be realised, as suggested by some stakeholders, by adopting new stand allocation guidelines, management and operational procedures that facilitate more efficient use of stands.
- 5.74 Having considered Dublin Airport's response in relation to possible runway and stand constraints, we do not consider these points to be persuasive to the extent that our demand driven forecast is not valid. Therefore, we continue to forecast passenger numbers on the basis of demand led forecasts.

Growth Forecasts

- 5.75 Aer Lingus acknowledges that the passenger forecast is prudent but continues to incentivise the airport to outperform the growth target within the regulatory period.
- 5.76 Dublin Airport suggests that we await the October 2019 publication of the IMF GDP forecasts for Ireland.
- 5.77 IATA supports us developing our own independent model, given the negative "incentives that exist when an airport has the volume risk and defines its own traffic forecast". IATA states that the proposed forecast appears reasonable and asks if we sought inputs from at least the largest airlines in the making of our forecast.
- 5.78 Norwegian agrees with our annual passenger number forecast of 3% as this modest increase is in line with what they are expecting at similar sized airports in their network.
- 5.79 Ryanair states that the forecasts proposed seem reasonable considering the forecast economic growth for Ireland and the proposed real price cap for the period.
- 5.80 Evidence shown in this section supports the final target. The target is robust to estimation by levels or log-log of total passengers. Our target is lower than the target estimated by adding the forecast of key markets. We found no evidence of runway or stand constraints to show that our target is not achievable. Dublin Airport may continue to use the menu of airport charges, discounts and bilateral agreements to incentivise an efficient use of capacity and achieve the target passenger growth.

Decision

- 5.81 As noted above, having considered the submissions and evidence, we decided to continue using the methodology and data sources set out in the Draft Determination. We estimate an Irish GDP elasticity of passenger volume based on historical data and then use this elasticity and GDP forecasts to estimate passenger numbers.
- 5.82 As set out in paragraph 5.2, we use the same methodology as in the Draft but the forecast figures have changed because of a) updated IMF forecasts of GDP from October 2018 to October 2019 and b) a change in elasticity from 1.05 to 1.01 due to a small error in our earlier calculations.
- 5.83 After implementing the changes set out above, we set a passenger volume target ranging from 34.0m in 2020 to 38.1m in 2024 (see Table 5.18). That is an average annual growth rate of

3.0%. Our passenger target has driven our analysis of other building blocks, where relevant; in particular, the level of Capex and Opex we allow for, and our Commercial Revenue targets.

Table 5.18: Total Passenger Target

Elasticity	Target of Passenger Numbers	2019	2020	2021	2022	2023	2024
1.01	Final Determination (m)	32.85	34.0	35.1	36.1	37.1	38.1

Methodology

- 5.84 As in previous determinations, we estimate Irish GDP elasticity by means of a linear regression of the natural logarithm of total passengers on the natural logarithm of Irish GDP. This is known as a log-log regression. The log-log regression is an appropriate methodology for estimating total passenger growth. ICAO states that “for estimation of traffic demand at an aggregate level such as global, regional or major traffic flows, the multiplicative (log-log) model is generally considered the most appropriate to use”.²³ Also, Airports Council International (ACI) states that it is common in the aviation industry to use log-log regressions to produce forecasts.²⁴
- 5.85 We estimate the elasticity of 1.01 using historic annual data from 1997 to 2018. We source outturn passenger numbers from Dublin Airport and Irish GDP from the Central Statistics Office (CSO). The target passenger growth rate for each year 2020 to 2024 is estimated by multiplying the elasticity of 1.01 by the Irish GDP forecast growth rate from the International Monetary Fund (IMF).
- 5.86 We estimate passenger growth based on a 1.01 Irish Gross Domestic Product (GDP) elasticity. In the Draft Determination, we estimated an elasticity of 1.05 which we later corrected to 1.01 due to a rounding error in our earlier calculations. The elasticity of 1.01 is very similar to the one we used in 2009 and lower than the elasticity of 1.15 that we used in 2014.

2019 Passenger Estimate Update

- 5.87 We updated our 2019 passenger estimate to 32.85m, which is 0.1m higher than the October 2019 submission of Dublin Airport of 32.75m. Our final 2019 estimate assumes a 4.31% growth rate, which is the product of the 1.01 elasticity and the 4.3% Irish GDP growth forecast of the IMF for 2019.
- 5.88 Our estimate is reasonable and conservative considering the 5.4% outturn growth recorded from January to September 2019. Table 5.19 shows that, for example, a higher 2019 forecast of 33m (5% annual growth) could be achieved by Dublin Airport if the lowest monthly growth of this year (3.5%) continued from October to December.

Table 5.19: Example - 2019 Outturn and CAR Forecast Monthly Passenger Growth

	Outturn									CAR Forecast Example			
2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Passengers	2.1m	2.0m	2.5m	2.8m	3.0m	3.2m	3.5m	3.4m	3.0m	2.9m	2.4m	2.3m	33m
Growth	5.1%	8.7%	8.8%	7.3%	4.0%	3.5%	3.8%	5.8%	4.2%	3.5%	3.5%	3.5%	5.0%

Source: Dublin Airport, CAR assumptions

²³ www.icao.int/MID/Documents/2014/Aviation%20Data%20Analyses%20Seminar/8991_Forecasting_en.pdf

²⁴ ACI also reports that the ICAO uses a full logarithmic (log-log) model to forecast revenue passenger kilometers. store.aci.aero/wp-content/uploads/2018/05/ACI_Guide_to_World_Airport_Traffic_Forecasts_2016-2-1.pdf

6. Operating Expenditure

Summary

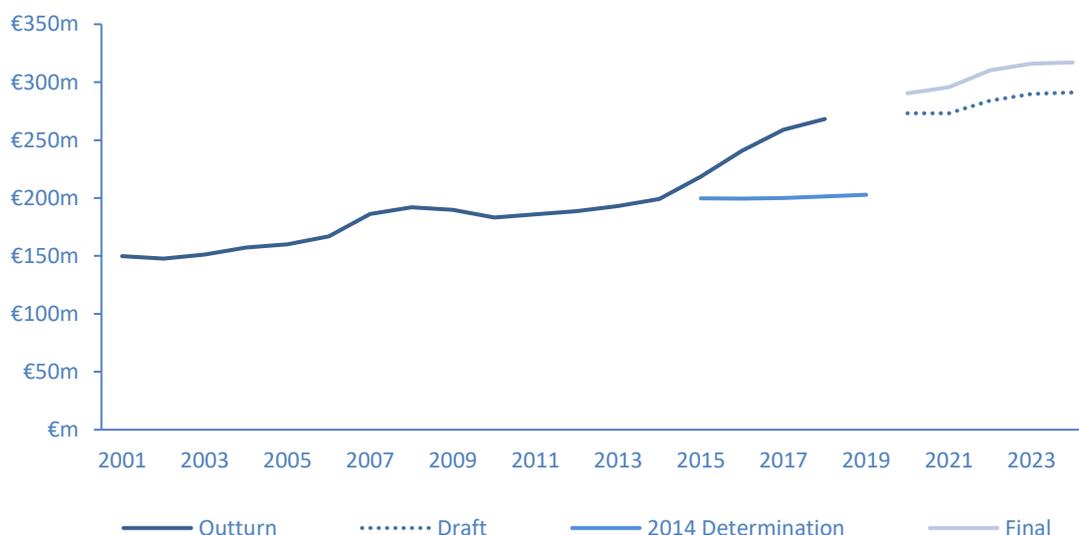
Table 6.1: Operating Expenditure Allowances, 2020-2024

Year	2020	2021	2022	2023	2024
Allowance (€m)	290.4	295.6	310.1	316.1	317.6
Per Passenger (€)	8.54	8.42	8.58	8.51	8.33

Source: CAR, CEPA

- 6.1 We have decided to use a latest estimate of Dublin Airport’s 2019 Opex as the starting point for deriving allowances for this Determination period. This is above the more efficient level of Opex arrived at by CEPA, our consultants. We have decided to put in place a glidepath from 2020 to 2024 to allow Dublin Airport more time to achieve the level of efficiency gains highlighted by CEPA. Table 6.1 summarises operating expenditure (‘Opex’) allowances for the period.

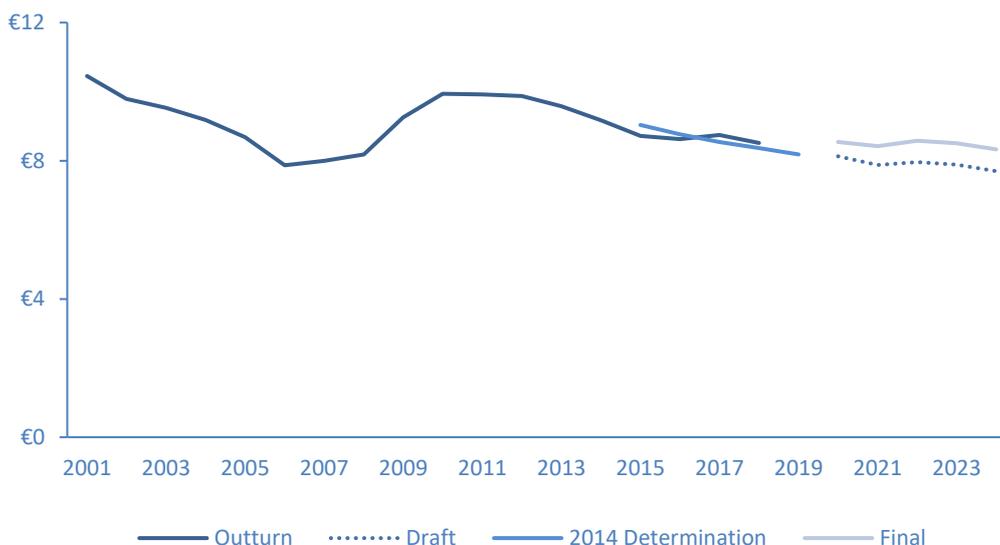
Chart 6.1: Opex Allowances and Outturns



Source: CAR

- 6.2 Chart 6.1 shows that Dublin Airport has significantly exceeded the operating expenditure allowances set in the 2014 Determination. In real terms, Dublin Airport’s operating costs have grown from €199m in 2014 to an expected €287.6m in 2019. This is against a background of substantial and unexpected passenger growth during the last Determination period.
- 6.3 On a per passenger basis, we are expecting Opex to fall from the 2018 level of €8.75 per passenger to €8.33 by 2024. We expect Dublin Airport to benefit from economies of scale, with the cost associated with additional passengers generally being lower than the average per passenger cost. The exception to this is 2022, when step increases which we allowed for, associated with new facilities, outweigh this effect.

Chart 6.2: Opex per Passenger, Allowances and Outturns



Source: CAR

6.4 These targets are higher than in the Draft Determination for two main reasons:

- In response to the CEPA assessment, Dublin Airport has provided substantially more detailed evidence which has caused us to change our view on the level of Opex required to efficiently operate the airport in the interests of airport users over the coming regulatory period.
- We consider that it is necessary to allow Dublin Airport more time to achieve the efficiencies identified by CEPA. Consequently, we first calculate a 2019 starting point based on actual data from the first 9 months of the year and forecasts for the remaining 3 months. We use this to develop a glidepath starting in 2020 and ending in 2024 at CEPA's target, excluding the CIP uplifts. We then add the CIP uplifts.

6.5 We have also introduced a passthrough mechanism for particular costs which we consider to be largely outside the control of Dublin Airport and subject to uncertainty, such as rates or particular regulatory charges. Most notably, an increase in Dublin Airport's rates bill could add an additional €0.40-€0.50 per passenger to these allowances over the period. In this Final Determination, we provisionally maintain the rates allowances as per the Draft Determination. There will be annual reconciliations between these estimates and the ultimate exposure of the regulated entity.

Opex Targets

6.6 Our targets remain derived from a bottom-up Opex efficiency assessment conducted by CEPA, supported by Tailor Airey. The final version of this analysis, in which CEPA responds to submissions on its draft report, is published alongside the Determination. Figures vary somewhat from those reported by CEPA as we have updated the passenger forecasts in the Opex model, and adjusted the price base to February 2019.

Submissions Received on the Opex targets

- 6.7 Here we focus on submissions which relate to Opex more generally.
- 6.8 Aer Lingus supports the proposed Opex targets, stating that Dublin Airport should be confident in its ability to improve its unit cost performance over the period 2020-2024.
- 6.9 Dublin Airport states that €215m of Opex has been disallowed, impacting the financeability of the CIP. It considers that a baseline reduction of €31.5m allows for no glidepath to achieve the targets, comparing it to a €3m baseline reduction in the 2014 Determination. Dublin Airport does not consider that ‘a 247/9% staff reduction by 2020, six months from now, provides any such glidepath Dublin Airport to achieve the target set by the Commission’. Dublin Airport states that the variance in assumed FTEs is 338 by 2024.
- 6.10 Dublin Airport provides a report from Stratus Consulting which sets out some principles of employment law and collective bargaining. It also provides a peer review of the draft CEPA report, written by Frontier Economics.
- 6.11 IATA is fully supportive of the operating cost efficiency analysis.
- 6.12 ICTU considers the CEPA analysis to be flawed in a number of respects. It states that it is crucial that we do not impede the normal functioning of the collective bargaining process at Dublin Airport. It states that, in order to comply with the Draft Determination, Dublin Airport would need to reduce staff by 217 by the end of 2019, questioning how this is possible. It asks whether we are suggesting that Dublin Airport embark on programme of outsourcing and/or compulsory redundancies. It states that CEPA conclude that pay movement should be regulated over the coming period such that all employees move to the ‘more efficient’ post-2010 rates.
- 6.13 Norwegian Air is encouraged by the outcome of the CEPA analysis, as it considers that further discipline is required from Dublin Airport in relation to Opex.
- 6.14 While Ryanair is generally supportive of the analysis carried out by CEPA, it does not agree with the two year glidepath we proposed before using the CEPA numbers. It considers that it is not appropriate or reasonable to continue to allow more time to achieve efficiencies which have been identified repeatedly in previous determinations, which continue to be paid for by airport users. It states that if Dublin Airport was subject to competitive pressures, it would have been forced to address these issues, and consequently the regulatory model is not yet mimicking competition. It suggests that we need to set ‘stringent and binding’ targets.
- 6.15 Ryanair further states that we should claw back a proportion of Opex allowed for in the current period to reimburse users for the inefficiencies which were not addressed, which it estimates at €48m.

Decision on the Opex Targets

- 6.16 It is worth highlighting that there is no requirement for Dublin Airport to reduce staffing to comply with our price cap determinations. The Commission does not set the levels of staffing or pay at Dublin Airport. The only compliance element of the Determination relates to the overall price cap. Dublin Airport is not required to achieve the individual targets precisely as we set out, or indeed to achieve the Opex target at all.
- 6.17 For example, Dublin Airport has increased the level of retail staffing in 2018/2019 as part of a strategy to bring more retailing in-house. In the Draft Determination, we sought to exclude

uplifting for both the Opex and associated Commercial Revenues; to the extent that the business case for this move was positive over the period, Dublin Airport would therefore have been in a position to pay for additional retail staff relative to our Opex assumptions, from the additional revenue they were generating relative to our retail revenue assumptions. Clearly, we cannot take account of only one side of such a change. Given the responses received, we now consider it necessary to take account of both, which we have done.

- 6.18 Therefore, assumptions regarding the number of assumed FTEs which we use to build up our targets should not be considered as a requirement to staff to those numbers or to implement the corresponding organisational structure.
- 6.19 That point notwithstanding, Dublin Airport does not appear to have applied the 0.6% overall efficiency target which it set itself to its FTE forecasts, which, if it were not to be achieved in relation to payroll costs, would need to be achieved more extensively elsewhere.
- 6.20 As we do not predetermine staffing or wage levels, the price control process should not interfere with the normal functioning of collective bargaining at Dublin Airport. For example, the 2014 Determination assumed wage growth in line with inflation only, i.e. 0% real growth. This did not mean that actual wage growth was capped at or driven by this value.
- 6.21 In this Determination, CEPA figures allow for an overall real wage growth of 9% by 2024, to which we will add inflation across the period. Considering the analysis set out by CEPA, the 0% real growth assumption in the 2014 Determination has clearly not driven collective bargaining outcomes in the current period. To clarify, the potential efficiencies reflected in the CEPA allowances did not and do not include outsourcing, which is aligned with the 2014 Determination in that regard. Any decisions on outsourcing, such as the current cleaning contract for the South Apron PBZ, are taken by Dublin Airport.
- 6.22 We understand the contractual nature of employment law. As set out above, any suggestion by Dublin Airport that it is required to break employment law or impose mandatory redundancies to comply with a Determination is incorrect relative to the mechanics of the regulatory model, set out in this Determination.
- 6.23 The ICTU statement that CEPA assume all staff move to post-2010 pay rates over the coming period is not accurate. CEPA continue to assume that a pay premium for these staff over the period will continue to exist.
- 6.24 The 2014 Opex allowances were set in the context of Dublin Airport outperforming the targets set in the 2009 Determination, with real Opex in 2013 having remained broadly flat since 2007. The 2014 Determination set out a target for Opex to continue to remain broadly flat from 2015-2019. On the other hand, we are now considering new targets in the context of unprecedented increases in expenditure, where the evidence suggests that these were not fully justified. However, we do accept that a significant proportion of this overspend was justified in the context of the increase in passenger numbers, which is now driving a lower price cap.
- 6.25 Where Dublin Airport incurs operating expenditure inefficiently, it can have no certainty that we will require airport users to pay for this in subsequent regulatory periods. To provide any such certainty would create a clear moral hazard. For that reason, as set out by CEPA, their work is both forward looking and backward looking. The purpose of the CEPA study was not to ensure that its figures are immediately achievable, given current levels of expenditure, while maintaining service standards. For that reason, we proposed a 2-year glidepath in the Draft Determination. We did not propose to use the CEPA figures immediately.

- 6.26 We understand Ryanair’s point in relation to not allowing more time to achieve efficiencies which have been identified repeatedly in previous determinations. We agree that, if Dublin Airport had been subject to ongoing competitive pressure across the period, it is likely that operating expenditure would not have developed as it did. We consider that unprecedented outperformance on passenger numbers, together with commercial revenues, substantially dulled the incentive to improve efficiency in operating cost performance which the 2014 Determination had sought to provide. In relation to clawing back Opex allowances from the current period, this was not a feature of the 2014 Determination and not something that we would consider.
- 6.27 Following on from the Draft Determination, we now have a clear picture of likely expenditure in 2019, which is expected to be €287.6m. While some €3m lower than proposed by Dublin Airport in February, it does remain substantially higher than our 2020 Draft target, or the revised CEPA 2020 figure. While we consider that the draft allowance for 2020 likely remains achievable given that the level of staff turnover means that an amount of Opex remains uncommitted for next year, we consider that the revised CEPA figure is likely not to be achievable without compromising service standards, which is not in the interests of airport users and would not be consistent with our approach to the Quality of Service targets.
- 6.28 We have therefore concluded that a further adjustment towards achievability within this building block is required, relative to the CEPA finalised figures. We have decided to use the latest expected 2019 figure as a baseline. We run a smooth glidepath from this figure to the CEPA 2024 figure, excluding CIP related cost uplifts. The CIP uplifts do not relate to the current operation and thus are excluded from the glidepath. We then add the CIP uplifts back in. We are therefore giving Dublin Airport five years to achieve the level of efficiencies identified by CEPA.

Benchmarking

- 6.29 Dublin Airport states that Opex per passenger is a more appropriate metric than FTEs per passenger, which it believes should never have been used without adjusting for differing levels of outsourcing at different airports. Based on annual reports data, it sets out Opex per passenger for 2018 for a sample of airports, concluding that Dublin Airport is efficient at €8.51 per passenger.
- 6.30 We have not chosen to rely on high level benchmarking, such as Opex per passenger or FTEs per passenger, in setting our Opex targets. In this section we set out the reasons why. Dublin Airport’s suggested metric also suffers from severe comparability issues. In particular, airports in the sample which process substantially more cargo is not a factor in Dublin Airport’s analysis, nor are those which are involved in ancillary businesses such as groundhandling or operating hotels on campus. On the other hand, Dublin Airport incurs costs associated with the US Preclearance facility, unlike most other airports. These are just a few examples of the factors which undermine the validity of such high level comparisons.
- 6.31 Another example is where Dublin Airport’s benchmark suggests that its Opex per passenger is 5% higher than the average of Copenhagen, Oslo and Stansted. This does not consider cargo operations. If instead, an industry standard Opex per work load unit (WLU), is considered, Dublin Airport’s Opex per WLU is 9% higher than the average of these airports.²⁵ This is one of many points of difference in business models, each of which undermines the comparability of these figures in a different way. A 4% difference in allowed Opex equates to roughly €10m in annual Opex, which shows how sensitive high level comparisons can be to taking account of these factors and consequently the extent to which overlooking any such factor can lead to a

²⁵ 1 WLU is either 1 passenger or 100kg of cargo

conclusion which is substantively flawed.

- 6.32 This is illustrated even more starkly in the Opex per passenger data presented by Frontier in Dublin Airport’s regulatory submission. Based on Airport Transport Research Society (ATRS) data for 2017, Dublin Airport appears to be one of the least efficient airports in the sample with Opex per passenger of €18.31. Frontier Economics correct the Dublin Airport figure to better reflect Opex per passenger as it pertains to the Dublin Airport regulated entity, arriving at a figure of €8.70 for 2017. However, many airports operate within complex structures and would require similar adjustments. If the corresponding assessment was carried out on behalf of one of the other airports in the sample, it would have wrongly concluded that Dublin Airport’s Opex per passenger was €18.31 and, with the exception of Munich, that it was more efficient than Dublin Airport.
- 6.33 From our interactions at a European level with the Thessaloniki Forum, we are aware that many airports present benchmarks which appear to indicate relative efficiency at a high level, sometimes in direct contradiction of each other. Furthermore, the EU has determined that airports with 5 million annual passengers or more have market power and consequently must be regulated under the 2009 Airport Charges Directive, with any further economic regulation at the discretion of Member States. In practice these airports are subject to varying degrees of economic regulation. In this context, comparing Dublin Airport to other airports with market power risks comparing with other airports which also contain elements of inefficiency, effectively benchmarking regulatory models against each other. This would lead to a false conclusion on the efficiency frontier across the sample of airports more generally as it could actually reflect a comparison of the regulatory approaches taken at each airport.
- 6.34 The bottom-up approach we have taken is in line with the methodology suggested by Dublin Airport in response to the Issues Paper. In that response, Dublin Airport stated that while benchmarking may be useful for drawing high level comparisons, there are well known limitations which mean that any such benchmark ‘should only be used as broad indicators of relative performance rather than as a basis for establishing an efficiency frontier’.
- 6.35 We have concluded, as did Dublin Airport and Frontier economics previously, that using such a high level top-down metric is not a sufficiently robust way to set Opex targets for Dublin Airport.
- 6.36 Setting aside these issues, if the sample airports set out in Dublin Airport’s response are considered appropriate comparators, this implies that the efficiency frontier for Dublin Airport in terms of Opex per passenger is €7.90, in line with Oslo or Stansted. Even if we were to allow until 2024 for Dublin Airport to achieve this efficiency frontier, the target would be lower than the Opex per passenger target we have set, which is €8.33. We therefore consider that this approach would not sufficiently remunerate Dublin Airport for expenditure which is in the interests of airport users.

New Costs in Dublin Airport’s response

- 6.37 Dublin Airport requested that we provide additional Opex, over and above its original submission, for costs associated with a drone detection system it included in the CIP, Metro coordination and bussing from the Pre-Boarding Zones (PBZs). In relation to bussing, since May 2019, arriving passengers are now directly bussed to the injection point rather than being initially routed through the PBZ as occurred previously.
- 6.38 In relation to the drone detection system, we have validated Dublin Airport’s estimate by means of a supplier quote. We consider drone detection to be in the interests of airport users, so we have included this request. We also accept the requirement for Dublin Airport to

coordinate with the Metro project. These combined changes add just under 300k per year and have been included by CEPA.

- 6.39 A substantial step change in the cost of bussing from the PBZ due to the above referenced procedural change is not in line with our understanding of Dublin Airport's previous advice and proposals on this issue. Our understanding was that associated costs would be minimal, with the change primarily involving redeployment of existing resources and vehicles, which would make sense given what the change actually involves. Dublin Airport provides no explanation as to why this procedural change would drive a step increase in cost, nor substantiation for its figures. Therefore, we do not allow for the step change, although CEPA does continue to include a passenger driven elasticity for these bussing costs.

Links with Quality of Service

- 6.40 Dublin Airport states that the Draft Determination set new quality of service targets without considering Opex implications. In particular, it states that the revised security metric drives an Opex increase of €1.5m.
- 6.41 The statement that we did not consider the Opex/quality of service overlap is not accurate. CEPA/Tailor Airey based the security FTE requirement on staffing to a 10-minute queue time, in a way which accounts for randomness within passenger presentations. In the Draft Determination, we further considered this issue by ensuring that, based on outturn queue times, for each of the days used by CEPA/Tailor Airey the revised quality of service targets would not have been breached despite not being in place at the time. The CEPA/Tailor Airey analysis does not include any requirement for queue times to increase relative to the current situation.
- 6.42 There was therefore no inconsistency between our Opex targets and our quality of service targets. We have however adjusted some of the targets for reasons unrelated to Opex, as discussed in Section 11. As the 70% target is now lower than we proposed in the Draft, at 20 minutes rather than 15 minutes, the Opex allowances remain consistent with this target. We have now decided to retain the 30 minute metric at the current 100% target; we confirm that Dublin Airport met this target on each day used by CEPA.

Cost Passthrough Term

- 6.43 Dublin Airport is concerned that unanticipated or under-anticipated costs largely outside its control may not be remunerated given that risk is allocated to Dublin Airport. In particular, it references rates, costs associated with security regulations, and energy costs. It suggests the introduction of a cost adjustment mechanism which would remain compatible with incentive regulation. It states that we must allow for CAR costs which have gone unremunerated over the current period. Dublin Airport states that alternatively, any delay in remuneration until after 2024 should also compensate for the delay.
- 6.44 We had already adjusted for outturn CAR costs, as we explained in the Draft Determination, and we continue to do so.
- 6.45 Allocation of the risk that outturns deviate from targets to Dublin Airport is an important feature of the regulatory model. Dublin Airport is generally best placed both to control its own Opex, and, where elements of Opex are less within its control, to manage the risk that they deviate while having regard to its overall performance and changes in circumstances. This creates appropriate incentives for the regulated entity.

- 6.46 However, we consider that there is good reason to include a cost passthrough term in the price cap formula for the forthcoming regulatory period. This is particularly the case due to current uncertainty over the cost of local authority rates for the period. The new rates bill, which will apply from 2020, could add up to €0.40-€0.50 per passenger to the charges. If we do not allow for associated remuneration within the regulatory period, this could impact the financial metrics to an extent which would undermine our analysis; equally if we reflect this in full in the price cap formula, users may pay more than necessary. This mechanism is limited to specific scenarios which we consider to be robust to the potential risk that only cost increases are reported while cost reductions are not.
- 6.47 The cost passthrough term is limited to:
- Local Authority Rates applicable to the regulated entity and not rechargeable.
 - Direct charges set out in new or amended primary or secondary legislation, which are outside the control of Dublin Airport, which exceed €0.5m and relate to activity undertaken by the regulated entity. An example would be a charge levied to cover the costs of the new noise regulator, the Commission, or potential Irish Aviation Authority Safety Regulation Division charges relating to security.
- 6.48 Cost changes other than these are not relevant for the mechanism, whether reductions or increases. In particular, where changes in regulations or responsibilities drive or allow for changes in operations, any associated cost increases or decreases remain at the risk of Dublin Airport. To take an example from the current period, any costs associated with Dublin Airport's security function becoming responsible for Hold Baggage Screening from 2018, would not have been relevant for the uncertainty mechanism.
- 6.49 In order for a relevant cost to be included in full in the passthrough term, Dublin Airport must demonstrate that it took all reasonable measures to achieve the best value for airport users. We will consider including the cost of achieving best value as part of the cost passthrough term on a case by case basis. We cannot set out what this precisely would entail in the abstract, however we are happy to engage with Dublin Airport as any such issues arise.
- 6.50 In relation to rates, we will allow the passthrough of Dublin Airport's appropriate share of the ultimate rates bill and no more; in particular, we will exclude rates costs which are or should have been re-charged to tenants/concessionaires or relate to value which does not form part of the regulated entity.
- 6.51 As regards timing, we want to avoid delay in appropriate remuneration to the extent possible while avoiding the potential for substantial unexpected price cap variation within a particular year. We therefore split the uncertainty mechanism into two terms, the K Factor and the W Factor. The W factor operates with a one year lag on remuneration, while the K Factor operates with a two year lag.
- 6.52 Ordinarily, there is a 5% limit on the extent to which under-recovery can be carried forward through the K Factor. The K factor continues to allow for under-recovery more generally, however we have amended it such that if the application of the cost passthrough mechanism means that Dublin Airport has under-recovered by more than the 5% relative to the finalised price cap, we will not apply the 5% cap to the portion associated with that mechanism. Specifically, we will allow for under-recovery up to a limit of the quantum generated through the cost passthrough mechanism, plus 5%, to be recovered. Dublin Airport will be appropriately remunerated for the delay in relation to both the W and K factors, as currently occurs through the K Factor. Both of these terms are de-risked in relation to volume; this means Dublin Airport will recover exactly the amount intended with no variation due to

differences in passenger numbers.

- 6.53 For example, if Opex within the scope of the uncertainty mechanism is €10m higher than we included in the base price cap in 2020, we will increase the provisional 2021 price cap to allow for our best estimate of the increase required to recover this amount through the W Factor. Recovery will then be perfected in the K factor to apply in 2022, which will ensure any variation from assumptions made in the provisional 2021 cap is corrected for.
- 6.54 We have asked CEPA to maintain the rates costs as per the Draft Determination as we do not consider that there is any degree of certainty over 2020 at this time.

Voluntary Severance Scheme

- 6.55 Dublin Airport states that there may be merit in a voluntary severance scheme (VSS) in order to achieve efficiencies, stating that the total cost of the investment would need to be remunerated. It has redacted the details of its proposal so we cannot consider the specifics set out by Dublin Airport in this paper.
- 6.56 Our targets do not rely on a voluntary severance scheme to be achievable. However we want to set out how we would account for any such scheme introduced by the daa to ensure that Dublin Airport is appropriately remunerated. We would expect the payback period for such a scheme to be about 3-6 years, so should it be implemented early in the Determination period, we expect that such a scheme would approximately pay for itself through savings achieved, including a return on capital invested of 4.22%. At the time of the 2024 Determination, should the VSS costs not have been fully offset by payroll savings, we will roll this into the next Determination. The WACC set in the 2024 Determination, or its equivalent should there be a change in methodology, will be applied from 2025. The payback period should be such that all remuneration ends by the end of 2027.
- 6.57 In assessing the payroll savings generated, we will consider the average pre-2010 pay premium in each relevant CAR category, multiplied by the number of VSS uptakes within that category.
- 6.58 Should Dublin Airport not seek to address this issue through the provision of such a scheme, we do not expect to continue to allow for the remuneration of the pay premium for pre-2010 contracted staff in the 2024 Determination to the extent that we have done in this Determination.

Rolling Schemes

- 6.59 We did not receive submissions regarding our proposal to discontinue the Opex rolling schemes. We have not changed our view on this point; consequently, no Opex rolling schemes apply in relation to this Determination.

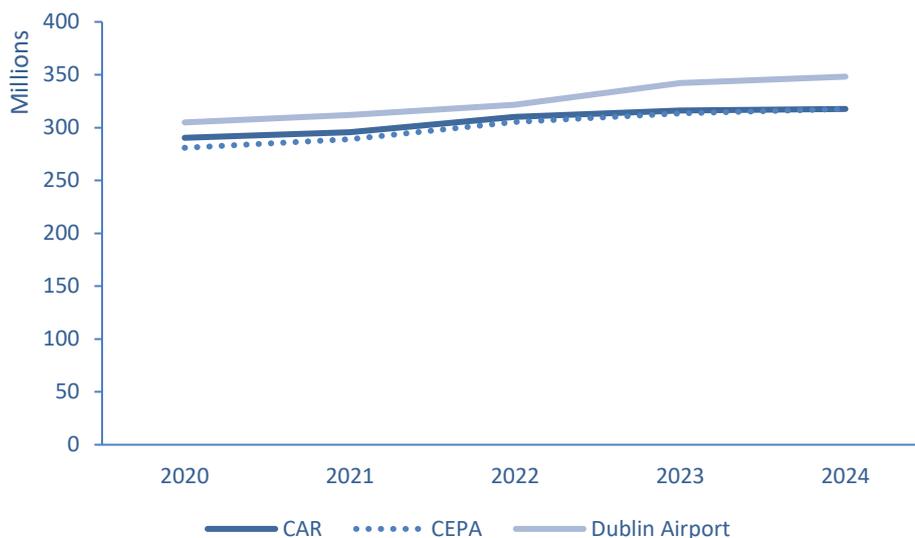
Comparison with Dublin Airport

- 6.60 The methodology through which Frontier Economics arrived at Dublin Airport's proposed allowances was similar to that employed by CEPA, with the difference driven by application. Frontier concluded that the 2018 actual level of Opex was an appropriate efficient baseline on the basis that, facing a similar situation, an operator subject to competitive constraints might 'plausibly' have responded in the way Dublin Airport did. For payroll costs, Frontier applied wage growth forecasts to predict unit cost increases, and volume elasticities to drive increases in FTEs where appropriate. Elasticities were also applied in relation to certain categories of non-pay Opex. Frontier then added in incremental cost increases identified by Dublin Airport, as well as costs associated with the CIP as identified by Dublin Airport. Ultimately, Frontier

concluded that Dublin Airport’s unit cost allowance should increase by 12.9% in real terms, from €8.57 in 2018 to €9.67 by 2024.²⁶

6.61 On the other hand, CEPA concluded that an operator subject to competitive constraints would have responded more cost effectively than Dublin Airport did over the last number of years. It also considered specific potential savings and efficiencies over the forthcoming period, as well as costs. CEPA reflected these findings in its cost baseline and/or across the regulatory period. CEPA also established its own view on appropriate elasticities, which in some cases were lesser than those identified by Frontier, and in some cases greater.

Chart 6.3: Dublin Airport has five years to achieve the efficiencies identified by CEPA



6.62 For the purposes of the comparison in Chart 6.3, we maintain Dublin Airport’s requested Opex as per the Frontier report. In its response to the Draft Determination, Dublin Airport and Frontier have subsequently requested a range of further increases and different assumptions which were not included in the original Frontier report.

²⁶ 2018 annual CPI is the same as February 2019 CPI

7. Commercial Revenues

Table 7.1: Commercial Revenue Forecast

	2019	2020	2021	2022	2023	2024
Total Forecast CR, €m	255.0	264.3	274.1	289.3	300.1	312.6
Rolling Scheme Adjustments	-	47.2	15.9	4.5	-	-
CR used in Price Cap, €m	-	217.0	258.2	284.8	300.1	312.6
Per passenger, €	7.76	7.77	7.81	8.01	8.08	8.20

Source: CAR

7.1 We forecast that commercial revenues will be €57.6m higher in 2024 compared to 2019. The main reasons for this growth are the increase in passenger numbers and additional revenue generated through the airport’s capital investment plan. Table 7.1 provides annual figures for forecast commercial revenues and these are broken down into the constituent parts in table 7.2.

7.2 While we have retained the same forecasting approach used in the Draft Determination, our forecasts differ for the following reasons:

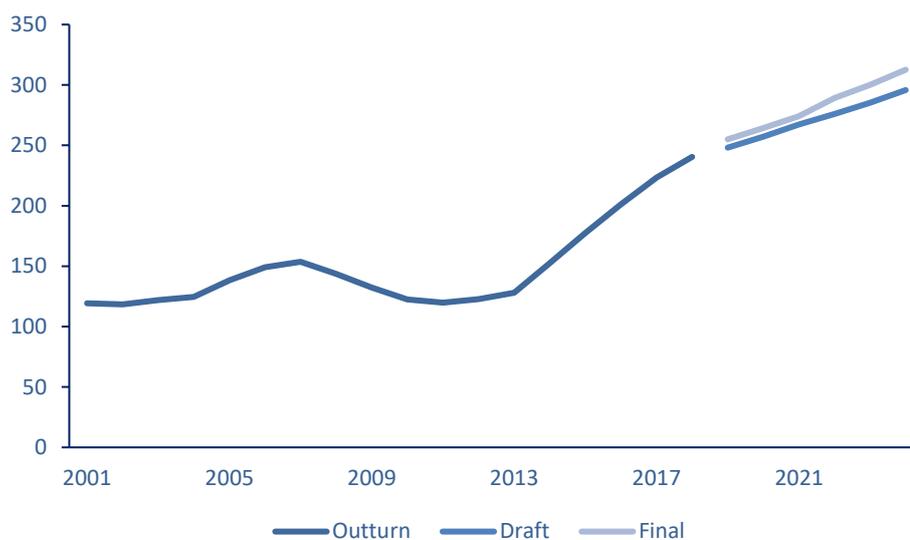
- Dublin Airport has provided final outturn revenue numbers for 2018;
- 2019 revenue forecasts have been updated to reflect outturn revenues from January to August and these have been used as our baseline. This is in line with our approach to Opex;
- The car parking elasticity has been adjusted to reflect short-term capacity constraints at the airport;
- We have adjusted our approach to uplifts associated with Commercial Revenue CIP projects;
- The US Preclearance passenger forecasts for 2020-2024 has been updated; and
- The passenger forecast has been revised, as discussed in Section 5.

Table 7.2: Commercial Revenue Forecasts per Pax (€)

Category	2020	2021	2022	2023	2024
Retail, (€)	3.21	3.23	3.42	3.42	3.43
Car Parking, (€)	1.59	1.60	1.62	1.67	1.75
Property Rents, (€)	0.79	0.73	0.70	0.72	0.73
Property Concessions, (€)	0.87	0.86	0.85	0.85	0.84
Lounges, Fast Track & Platinum Services, (€)	0.49	0.56	0.57	0.58	0.58
US Preclearance, (€)	0.52	0.52	0.54	0.55	0.58
Property Advertising, (€)	0.16	0.17	0.17	0.17	0.17
Other, (€)	0.14	0.13	0.13	0.12	0.12

Source: CAR

Chart 7.1 Commercial Revenue Forecast (€m)



Source: CAR

Submissions Received

- 7.3 Aer Lingus, American Airlines, IATA, Ryanair and Dublin Airport comment on our commercial revenue forecasts.
- 7.4 Aer Lingus acknowledges our decision to reduce forecasts throughout the period to reflect displacement of revenue generating assets but states that consideration should be given to upward adjustments once the displacement has occurred. Aer Lingus agrees with our proposed discontinuation of rolling schemes.
- 7.5 American Airlines recognises the considerable passenger growth Dublin Airport has experienced in the last regulatory period. It hopes this trend will continue and that the resulting revenues would be used to offset airport charges.
- 7.6 IATA supports the elimination of the rolling incentive schemes and states that it is unclear if such schemes provided the intended incentives. It argues that it was difficult to determine if any outperformance was due to efficiency-related matters or other reasons.
- 7.7 IATA supports the use of elasticities but considers it prudent to seek external advice on whether Dublin Airport could improve its commercial offering and revenue beyond our proposals in the Draft Determination. It notes that many of the elasticities have changed between regulatory periods and recommended that we further analyse and explain what has driven such changes.
- 7.8 IATA states that it would be appropriate for us to examine why exponential growth occurred in the Lounges, Fast Track and Platinum category and why we assume that this could not happen again. IATA argues that US preclearance should not be treated as a commercial activity, but rather as a regulated activity.
- 7.9 Ryanair argues that the forecasts in the last determination lacked ambition and that Dublin Airport did not necessarily out-perform targets as they were set at too low a level to start with.
- 7.10 Ryanair argues that concessions should be in the per passenger category for rolling forward the 2014 rolling schemes rather than the gross revenue category given that in the Draft

Determination we said, “the revenue from commercial concessions responds to changes in passenger numbers.”

- 7.11 Ryanair welcomes the refinements made to the modelling we used, which resulted in higher elasticities than the previous period. It notes that although elasticities derived from econometric modelling have value, they should not be considered in isolation of other measures. It recommends adapting the methodology to reflect a broader range of commercial drivers along with appropriate benchmarking. Ryanair also argues that indicative benchmarking would be a useful addition to our methodology to determine if Dublin Airport has been under or over-performing in generating commercial revenues.
- 7.12 Ryanair argues that we need to set more stretching targets for commercial revenues to ensure users benefit from increased commercial performance rather than Dublin Airport retaining a large part of the upside it regularly achieves.
- 7.13 Ryanair suggests that we examine revenue generating schemes more closely to evaluate their potential for increased revenue generation and hold the airport accountable if it does not achieve the additional revenue.
- 7.14 Ryanair argues that there is no substantial evidence to support our claim that some of the potential uplifts resulting from capital projects are implied in the elasticities or that the proposed projects are required to protect existing revenue streams. Ryanair states that we should consider the interaction between commercial revenues and other building blocks to ensure that any additional Capex or Opex delivers the targeted increases in revenue.
- 7.15 Ryanair argues that some commercial projects should only be allowed if the uplift in commercial revenues exceeds the costs in both Opex and Capex. In addition, it argues that any revenue should be included transparently in the Determination, in order to track the performance of the investment and ensure it delivers the intended targets.
- 7.16 Ryanair supports the US Preclearance charge remaining as a commercial revenue. It argues that if removed from commercial revenues, airlines and users who do not use the service would be obliged to pay for it, which would be intrinsically unfair.
- 7.17 Dublin Airport states that the revenue forecasts are highly ambitious but not unreasonable, with the exception of the car parking revenue category and passenger forecasts more generally. Dublin Airport urges the Commission to resist any proposals by other stakeholders to increase the commercial revenue forecasts in the Final Determination.
- 7.18 Dublin Airport argues that the car parking revenue forecasts for 2020-2024 do not consider current capacity constraints. It argues that our car parking forecasts are overly ambitious and unachievable for this reason. Dublin Airport also states that it had not obtained planning permission for the additional car parking space proposed in its capital investment plan and that no additional car parking capacity will be delivered until 2022-23.
- 7.19 Dublin Airport argues that it can only benefit from passenger growth in car parking if the growth occurs at times during the week where demand is currently lower. It also claims that it will take time to rebuild its customer base and fill the additional capacity, following the delivery of the car parking projects.
- 7.20 Dublin Airport argues that until car parking capacity increases, any growth in revenue can only be achieved in the shoulder periods or through yield increases. It argued that the prices required to meet our car parking targets are likely to be above customers willingness to pay threshold. It states that improvements to public transport servicing the airport would put

increased pressure on the price of car parking at the airport. Dublin Airport argues that car parking targets should be revised downwards to account for market limitations and capacity constraints.

- 7.21 Dublin Airport claims it would need an increase in retail floor space in order to maintain and improve its commercial revenue in line with passenger traffic.
- 7.22 Dublin Airport claims that commercial property is operating at 99% occupancy, leading to customer requests for property being unsatisfied.
- 7.23 Dublin Airport states that commercial concessions (car hire) is operating at capacity, imposing operational pressure on services and impacting the customer experience.
- 7.24 Dublin Airport claims that its commercial businesses are under threat from high street and online retailers and airlines' on-board sales. It also claimed digital technologies could threaten the airports concession businesses.
- 7.25 Dublin Airport claims that there is a fundamental disconnect and inconsistency across the regulatory building blocks as we did not allow any uplift in costs to fund additional officers for US Preclearance. It argues that this should be corrected in the Final Determination. Dublin Airport supports US-precleanance remaining as a commercial revenue stream, claiming it is only relevant for airlines operating US transatlantic services and is entirely optional.
- 7.26 Dublin Airport does not support the discontinuation of rolling schemes. It states that, without this mechanism, it would not have been incentivised to negotiate revenue deals it entered into in the later years of the determination period.
- 7.27 Dublin Airport states that Ireland's macroeconomic climate is uncertain, with signs of slow-down and developments that could adversely affect the airport's commercial revenue streams. It claimed that trends across European markets suggest that there could be a slowdown in retail growth approaching. It argues that Brexit could have several potential impacts on the aviation industry through passenger numbers, reduction in disposable income and increased operating costs. In addition, it claims that movements in exchange rates will affect the competitiveness of the airports offering.
- 7.28 Dublin Airport recommends that the commercial revenue targets for the Final Determination be recalibrated based on a more realistic forecast of passenger numbers over the regulatory period.
- 7.29 In the paragraphs below we provide detail on the different elements comprising our forecasts for commercial revenues and respond to the comments received and summarised above.

Decision on Commercial Revenues

Commercial Revenue forecast summary

- 7.30 We continue to forecast commercial revenues using econometric estimations of revenue-passenger and revenue-GDP elasticities based on historical Dublin Airport data. These elasticities are combined with our revenue forecasts for 2019 and the selected drivers to arrive at the target for each revenue category.
- 7.31 Data on outturn commercial revenues from January to August of 2019 shows that Dublin Airport has significantly outperformed on retail compared to our Draft forecast for the year. We consider that this is likely driven by the increase in directly operated retail stores in place of concessionaires and by retail refreshes as discussed with Dublin Airport. We have adjusted our 2019 commercial revenue forecast for all categories to reflect the outturn revenues from the first 8 months of the year. This is consistent with our approach to retail Opex, where our targets assume FTE increases associated with this change.
- 7.32 Given that it was requested by a number of respondents, we also conducted some benchmarking analysis to compare Dublin Airport's commercial revenues and offerings to those of comparable airports as suggested by some respondents to our consultation.
- 7.33 The expected revenue per passenger by 2024 has increased from the Draft Determination. Revised passenger forecasts for the period, updated 2019 revenue forecasts and revised elasticities reduced the per passenger revenue. The addition of uplifts for some revenue generating capital projects increased the per passenger revenue.
- 7.34 Outturn revenues for January to August of 2019, inflated to a forecast for the full year, are used as the base for our forecasts. This revenue was calculated by adjusting the outturn per passenger commercial revenue from the first 8 months up to the full 12 months using our passenger forecast for 2019.
- 7.35 Our updated 2019 forecast accounts for under or outperformance seen in the outturn commercial revenues from January to August compared to our forecast for 2019 in the draft determination.

Elasticities and Econometrics

- 7.36 We have re-estimated our elasticities since the Draft Determination for the following reasons:
- Since the Draft Determination, Dublin Airport has provided us with final monthly outturn data for 2018. The difference between the outturns and the estimates used in the Draft Determination are very small and have not resulted in any change to the elasticities.
 - We have included all uplifts for revenue generating car park capital projects but revised the elasticity down to the 2014 level of 1 to account for the capacity constraints the airport is currently facing.
- 7.37 The new elasticities used to forecast revenues are listed in Table 7.3. Elasticities were calculated by regressing revenues in each category from 2001-2018 against GDP figures or passenger numbers depending on the category.
- 7.38 IATA recommends that we further examine the change in elasticities over the regulatory periods. We investigated how category elasticities changed over the period 2001-2018. Due to the small sample size, elasticities from early years were insignificant. The change in elasticities over the periods is likely a combination of growth in commercial revenues in recent years and

a larger sample size from which to derive them.

Table 7.3: Changes in Elasticities from Draft to Final Determination

Category	Draft Determination	Final Determination	Driver
Retail	1.1	1.1	Total Passengers
Car parking	1.47	1.0	
Commercial Concessions	0.7	0.7	Irish GDP
Commercial Property	1.0	1.0	
Advertising	0.7	0.7	Total Passengers
Lounges, Fast Track & Platinum	1.0	1.0	US Preclearance Passengers
US Preclearance	1.0	1.0	
Other	0.0	0.0	

Source: CAR

Benchmarking

- 7.39 We conducted some benchmarking analysis to compare historical and forecast commercial revenues generated by Dublin Airport with those generated by its peers in 2018, given that this was requested by a number of respondents.
- 7.40 However, while benchmarking of this sort can be useful to determine if there is scope for efficiency gains within an airport, it should be recognised that benchmarking analysis is rarely entirely reliable and has its flaws. These flaws tend to be more pronounced with high level benchmarking. Airports operate in different conditions and environments. The composition of each revenue category may differ across airports so that not all categories in each airport are comparable. Airports have differing airline and passenger demographics which can influence the amount of revenue an airport has the potential to generate. Therefore, the results of our benchmarking analysis were used to inform and provide a sense check on our decisions on commercial revenue targets for the period rather than to set the actual level, similar to our approach to Opex.
- 7.41 The study was informed by data sources and insights including Dublin Airport's historical commercial revenue data, our commercial revenue forecasts, airport annual reports and the Civil Aviation Authority's passenger survey data.
- 7.42 The 2010 to 2018 data has been gathered from publicly available sources and data provided by Dublin Airport. Like Dublin Airport, the sample includes medium to large European airports. Data from Manchester Airport and London Gatwick airport have been adjusted from financial years to calendar years. Table 7.4 gives a glossary of the airport codes used throughout the benchmarking section of this chapter.

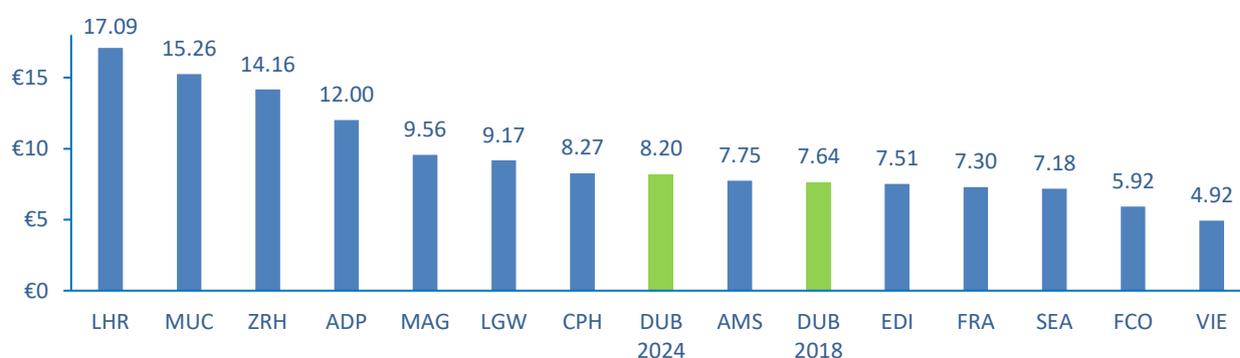
Table 7.4: ICAO/ Group Codes for airports used in the benchmarking analysis

ICAO/Group Code	Airport
ADP	Aeroports de Paris
LHR	London Heathrow
LGW	London Gatwick
MAG	Manchester
AMS	Amsterdam Schiphol
FRA	Frankfurt
CPH	Copenhagen
MUC	Munich
VIE	Vienna
FCO	Aeroporti di Roma
ZRH	Zurich
SEA	SEA Milan Airports
EDI	Edinburgh
DUB	Dublin

Source: ICAO

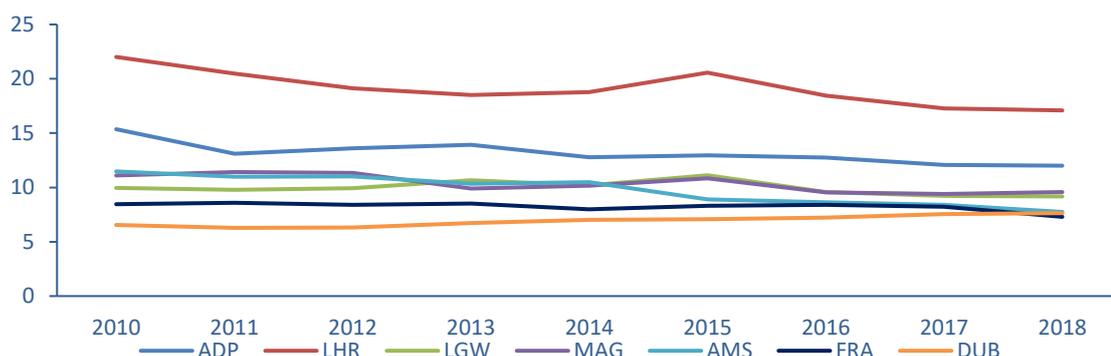
7.43 The total commercial revenue per passenger generated by Dublin Airport in 2018 benchmarks below that of its peers. The average total commercial revenue per passenger from the airports in our analysis was €9.55 in 2018. By comparison, Dublin Airport generated €7.64 per passenger in non-aeronautical revenue. This is illustrated in Chart 7.2. Our projected total commercial revenue of €8.20 per passenger in 2024 still places Dublin Airport below the average of its peers.

Chart 7.2: Total 2018 commercial revenue per PAX (€) of Dublin Airport and peer airports



Source: CAR

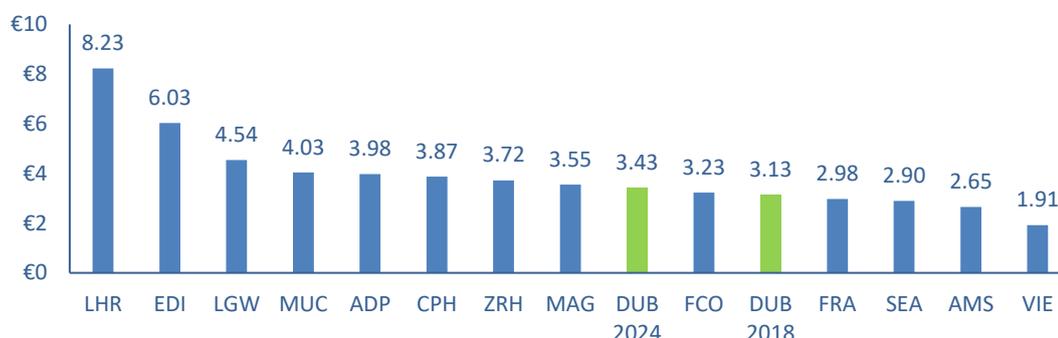
Chart 7.3: Total Commercial Revenues per PAX(€) from 2010-2018 for Dublin Airport and Peer Airports



Source: CAR

7.44 Our net retail target for Dublin Airport’s commercial revenues in 2024 puts Dublin Airport slightly below the average retail revenue generated by peer airports in 2018. This is illustrated in Chart 7.4.

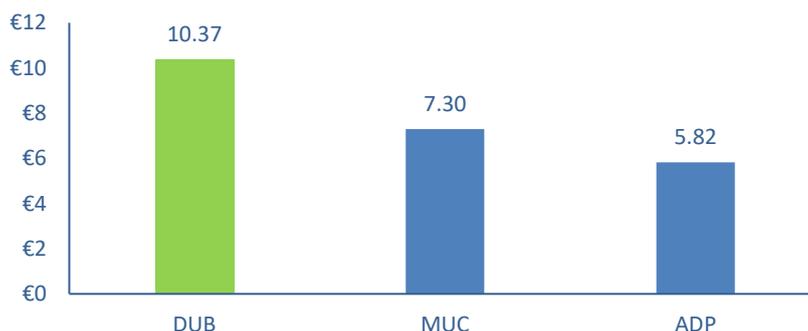
Chart 7.4: 2018 Retail revenue per pax (€) of Dublin Airport and peer airports



Source: CAR

7.45 However, when considering retail revenue per square meter, Dublin Airport performs more favourably as set out in Chart 7.5, albeit in comparison to a smaller sample size.

Chart 7.5: Retail Revenue per Square Meter of Retail Space



Source: CAR

7.46 The retail revenue category was broken down into two categories: Food and Beverage and Shops and Concessions. These categories were also benchmarked against other peer airports where there was data available. Dublin Airport generated €0.69 in Food and Beverage revenue per passenger in 2018, benchmarking in the middle of other peer airports. This can be seen in Chart 7.6.

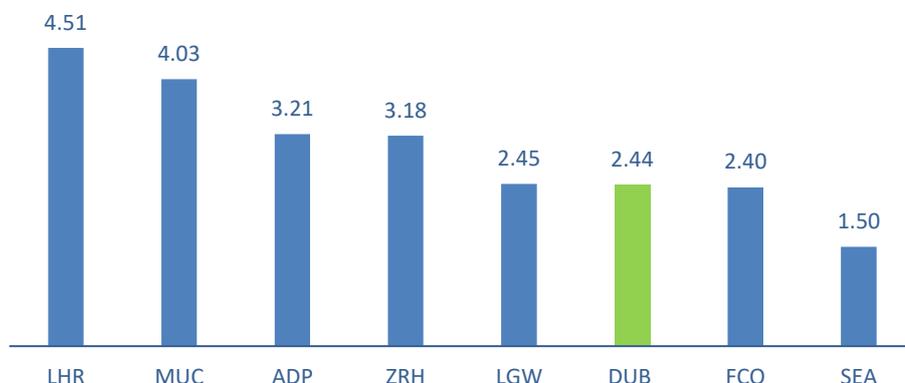
Chart 7.6: 2018 Food and Beverage Revenue per PAX (€) of Dublin Airport and peer airports



Source: CAR

7.47 Retail revenue consisting only of revenue from shops and retail concessions was €2.44 per passenger in 2018. This benchmarks in the middle of the category compared to other similar airports which is illustrated below in Chart 7.7.

Chart 7.7: 2018 Retail revenue- shops and retail rents revenue per PAX (€) of DUB and peer airports

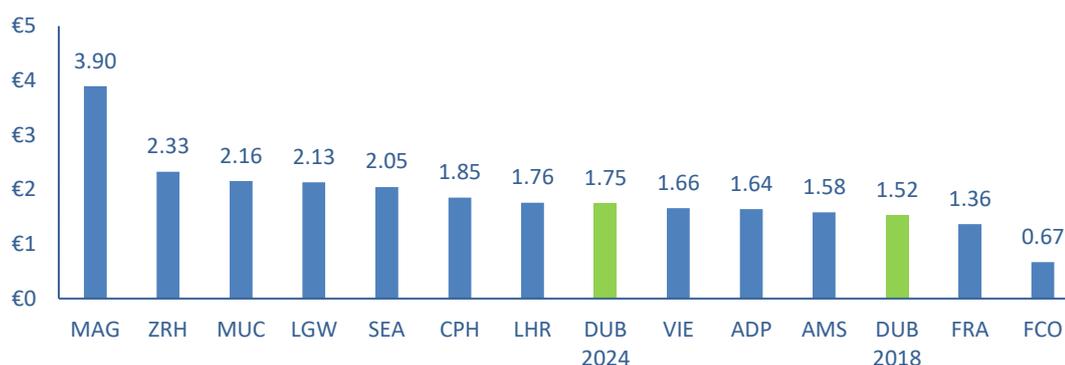


Source: CAR

7.48 Dublin Airport benchmarks on the lower end of the peer group range for car parking revenues. We also looked at car parking revenue per car parking space, where Dublin Airport benchmarked below peers.

7.49 Dublin Airport’s 2018 car parking revenue per passenger benchmarked below its peers. In its response to the Draft Determination Dublin Airport argued that it is facing capacity constraints in car parking and could not immediately achieve the targets we had set out for the category. These targets have been revised to increase once additional capacity has become operational. In 2024 our commercial revenue forecast for car parking per passenger increases to place Dublin Airport’s revenues in the middle of its peer group.

Chart 7.8: 2018 Car parking revenues per PAX (€) of Dublin Airport and peer airports



Source: CAR

7.50 We analysed car parking revenue further by looking at the revenue generated per residential Origin- Destination (OD) passenger.²⁷ In 2018 Dublin Airport generated €3.13 per residential OD passenger. Our forecast for 2024 still places Dublin Airport generating less income than its peers in 2018.

²⁷ An origin-destination passenger flies directly from the airport of origin to the final airport of destination. When a passenger instead uses an airport as a hub, the passenger will not use a car parking space.

Chart 7.9: 2018 Car parking revenue (€) per residential OD PAX in Dublin Airport and peer airports



Source: CAR

7.51 Revenue per car parking space in Dublin Airport is below that in Manchester, Munich and London Gatwick Airport. Our revenue forecasts for car parking and the additional car parking capacity planned in the CIP2020 put Dublin Airport’s revenues per car parking space closer to the revenue its peers generate. Chart 7.10 shows how Dublin Airport compares to peer airports in generating revenue per car parking space.

Chart 7.10: Revenue per car parking space (€’000) in Dublin Airport and other peer airports

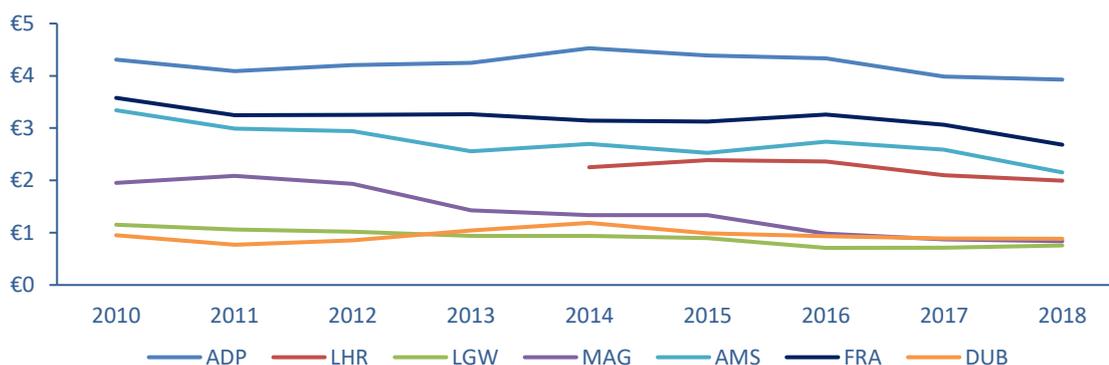


Source: CAR

7.52 Dublin’s total property revenue (property concessions and property rents) were also benchmarked against other airports. Dublin Airport’s revenues are below those of its peers. Total property revenue is however, driven by space available for development along with the airports approach to development and their ability to charge high rent to tenants.

7.53 Chart 7.11 illustrates the property rents revenue per passenger generated in Dublin Airport and other peer airports from 2010-2018. Dublin Airport benchmarks below comparable airports in generating property rents revenue per passenger.

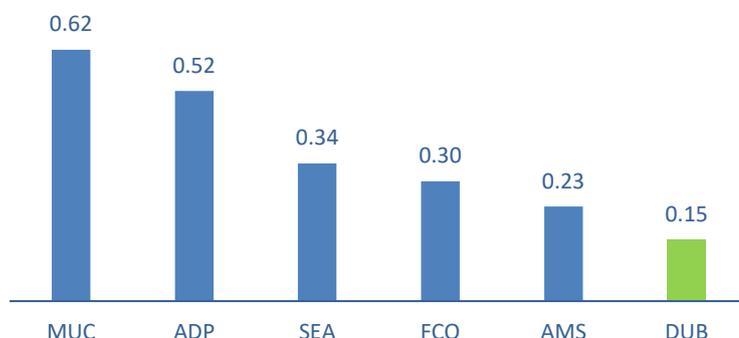
Chart 7.11: 2010-2018 Property Rents Revenue Per PAX (€) in Dublin Airport and Other Peer Airports



Source: CAR

- 7.54 Dublin Airport benchmarks below its peers in the advertising revenue per passenger category. Dublin Airport’s advertising revenue includes revenue from property advertising where revenues for other airports only contains commercial advertising revenue.

Chart 7.12: Advertising revenue (€) from Dublin Airport and other peer airports



Source: CAR

- 7.55 We view these benchmarking results as supportive of our decision on commercial revenue targets for 2020-2024. They suggest that Dublin Airport has scope to increase its performance compared to other peer airports, continuing the improvements it has achieved over the last number of years, and that our forecasts are challenging but achievable. However we do not apply any further increases to the commercial revenue targets on the basis of this analysis, given the risks associated with such analysis highlighted above and elsewhere in the Determination.

Adjustments for Revenue Generating Capital Projects

- 7.56 Ryanair suggests examining revenue generating capital projects more closely to evaluate their potential to generate increased revenues over the regulatory period. It also argues that there was little evidence to support our claim that proposed uplifts are necessary to protect income streams or implicit in our elasticities.
- 7.57 In the Draft Determination we included uplifts for Lounges, Fast Track and Platinum services, Advertising and adjusted the Property Rents targets for displacement over the regulatory period. We continue to include these adjustments, however we have reconsidered our approach more generally, ultimately concluding that the revenue generating potential of a number of CIP projects was understated in the Draft Determination. We take a more nuanced approach for the Final Determination in deciding whether to include commercial revenue uplifts and assessed uplifts on a case by case basis.
- 7.58 The East Lounge is being repurposed following Etihad’s termination of a property license. Our Draft Determination uplift for Lounges did not take this into consideration in 2020, where we now include the expected revenue for this facility net of expected incremental Opex. From 2021, this uplift remains as per the Draft Determination, aligned with a substantial Opex uplift allowed for by CEPA.
- 7.59 In its submission, Dublin Airport argues that we should stagnate revenues as additional car parking capacity would not be delivered until 2022. We accept that the forecasts for car parking should better align with the CIP, however there remains scope for increased occupancy outside of peak periods. We therefore adjust the elasticity to the 2014 level of 1 but include all uplifts for capital projects in line with the timelines from the business case for the projects.

- 7.60 Uplifts for retail refurbishments and marketing installations are now included, however we do not include an uplift for the additional retailing space which will be provided through CIP.20.03.013 (T1 IDL), despite the substantial Opex uplift. We consider that an increase in the size of the T1 IDL, a core centralised facility, is likely required to maintain historic elasticities despite increased passenger numbers. However, the retail refurbishments project provides for new units in targeted locations. The project also enables a continuation of the move from concessionaire to in-house run stores, which is based on the enhanced margin that Dublin Airport can achieve from a direct operating model. We therefore uplift for the revenue (net of lost concessionaire revenue) expected to be generated by CIP.20.08.001, also providing an annual Opex uplift of €4.5m for this project as set out by CEPA. We have also included the uplift for retail marketing and media installation (CIP.20.08.002) as this project provides a distinct output which we consider unlikely to be implicit in our forecasts.
- 7.61 We continue to exclude uplifts for the F&B projects as we still consider that increased facilities of this scale are likely required to maintain historic elasticities, and consequently uplifts associated with these projects are likely to be implicit in our targets. Again, this aligns with our approach on Opex.
- 7.62 In the Draft Determination we adjusted the 'Property Rents' revenue targets down to account for the displacement due to north and south apron development. However, we did not include the displacement of one catering tenant- which was included in concessions- to facilitate the south apron development in our retail revenue forecasts. This has been rectified in the Final Determination targets. We have also reassessed our initial view on not including uplifts for property rents associated with West Apron accommodation and welfare facilities (CIP.20.04.021) and the Office Consolidation project (CIP.20.07.010), although the Opex saving associated with the latter project was factored in by CEPA. These projects provide for new commercial office, storage, and welfare facilities available for rent. Consequently, we include associated revenue uplifts, in line with our approach to the displacement.
- 7.63 Aer Lingus states that consideration should be given to upward revenue adjustments once displacement has occurred. Along with displacement adjustments for property rents, revenue uplifts for the West apron development and office consolidation have also been applied to the property rents category.
- 7.64 We have not included uplifts for potential new office, retail or F&B space in the other capacity developments, most notably Pier 5 and the Pier 1 extension. We consider that facilities in line with those in current piers would be required to maintain historic passenger elasticities.
- 7.65 As referenced in Section 9, we have allowed for CIP.20.01.071 which provides for new public electric charging facilities for vehicles. As pointed out by Ryanair, the revenues associated with these facilities were not included in our commercial forecasts. Dublin Airport advised that no business case for this project had been developed. Therefore, rather than disallowing this project, we allow for it while assuming it will break even over its 10 year asset life, and apply an uplift to our commercial revenue forecasts accordingly.

Table 7.5: Contribution from Revenue Generating Capital Projects

	Project Cost, (€m)	Uplift/ Displacement, total 2020-2024(€m)
Retail Marketing Installation	1.5	2.0
Retail Refurbishments	8.0*	18.9
Short Term Car Park T1	17.4	1.6
Short Term Car Park T2	14.9	1.9
Long Term Car Park	9.4	5.3
Staff Car Park	5.8	2.0
South Apron Development Revenue Displacement	N/A	-14.8
North Apron Development Revenue Displacement	N/A	-4.5
West Apron Development	4.5	0.9
Office Consolidation	11.6	0.6
Gate Gourmet Displacement	N/A	-5.3
Lounges	11.4	8.3
FastTrack	1.7	3.0
Platinum	2.1	0.6
Digital Advertising Infrastructure	2.2	1.9
Electric Charger Network Facilities	1.6	0.5

* There is an Opex uplift associated with this project of 4.5m per annum from 2022.

Source: CAR, CIP2020, Steer

Interaction between Commercial Revenues, Opex and Capex

- 7.66 Dublin Airport argues that there was a fundamental disconnect between the building blocks in the Draft Determination as we set targets for increasing commercial revenues from US Preclearance, but did not allow for incremental Opex to cover the cost of additional officers required to facilitate the level of throughput. Ryanair states that we should consider the interaction between commercial revenues and other building blocks to ensure any additional Capex or Opex delivers the targeted revenue.
- 7.67 Having considered Ryanair’s argument, we have included uplifts for car parking, property rents and retail in addition to those included in the Draft Determination. We have sought to ensure an approach which is internally consistent across these building blocks.
- 7.68 The additional officers required to meet our US Preclearance targets have been allowed for in the Final Determination, having been overlooked in the Draft Determination.

Lounges, Fast Track and Platinum Services

- 7.69 IATA suggests that we examine why exponential growth occurred in the Lounges, Fast Track and Platinum Services category and why we assume it could not happen again.
- 7.70 The exponential growth in Lounges, Fast Track and Platinum services occurred between 2015-2017, with revenues growing by 45% on average per annum. We did not use our estimated elasticity of 2.73 in the Draft Determination as we believe this growth is unlikely to happen again in the next regulatory period. Growth in the Lounges, Fast Track and Platinum Services revenue has slowed down; this is evident in the 2018 outturn revenue data.
- 7.71 While it is possible that Dublin Airport could again outperform our targets, we do not consider that an assumption that it will do so would form the basis of reasonable targets with a reasonable balance between upside and downside risk. As has occurred in this period, if Dublin

Airport outperforms these targets again, it will benefit initially, with the benefit then ultimately being passed on to future airport users.

- 7.72 Since the Draft Determination, Dublin Airport has been notified by Revenue that the Fast Track Service is no longer VAT exempt. This reduces our 2019 baseline forecast by €0.7m.

Car Parking

- 7.73 Dublin Airport argued that we did not consider the capacity constraints faced because no planning permission has been obtained for any car parking capital projects. We have changed the passenger revenue elasticity for car parking from 1.47 to 1 to reflect these constraints.
- 7.74 Dublin Airport suggests that we should stagnate our revenue targets until the additional spaces become operational in 2023-2024. However, the carparks are not full outside of peak summer.
- 7.75 We have, somewhat, accounted for this position by reducing the car parking revenue elasticity and uplifting the target for capital projects as they are expected to come on-stream. These targets forecast Dublin Airport's revenues will grow in line with passenger growth, rather than more elastically as it has done historically, and then increase once additional car parking capacity has been completed.

Passenger Forecast

- 7.76 Dublin Airport argues that a more realistic forecast of passenger numbers should be used to estimate the commercial revenue targets.
- 7.77 Our passenger forecasts for the next regulatory period have been re-examined, the details of which are set out in Section 5.

Macroeconomic Factors

- 7.78 Dublin Airport states that we should consider the current macroeconomic climate when setting commercial revenue targets. It claims that the commercial business is threatened by an economic slow-down as well as high street, online and on-board retailers.
- 7.79 Although Dublin Airport hold the risk of commercial revenues not materialising, they also enjoy all the benefits of outperformance if they beat our targets. Our passenger forecasts reflect GDP and are a good proxy for macroeconomic outlooks.
- 7.80 In Section 10, we discuss Brexit and how a hard Brexit could be dealt with.

US Preclearance

- 7.81 We use the same methodology to estimate US Preclearance revenues as in the Draft Determination.
- 7.82 Since the Draft Determination, Dublin Airport revised its passenger forecasts for US Preclearance downwards. We have decided to not base our Final Determination target on the updated forecast as we consider that our previous forecasts remain reasonable. Any further reduction would also add further inconsistency with the 40 mppa flight schedule that was used to justify the scale of the US Preclearance CIP project. At that time, Dublin Airport was forecasting proportionate increases in US Preclearance passengers in excess of the targets we have set in this Determination, rather than below.
- 7.83 We have updated our US Preclearance forecasts based on the forecasts submitted to us by

Dublin Airport before the Draft Determination and adjusted proportionally to our updated forecast for total passenger numbers.

- 7.84 Aer Lingus and IATA state that US preclearance should be treated as a regulated activity, not a commercial revenue stream. Aer Lingus states that daa is a monopoly provider of this service at Dublin Airport, with access to certain aeronautical facilities preferentially allocated to Preclearance flights.
- 7.85 Ryanair and Dublin Airport both argue that US Preclearance should remain as a commercial activity. Ryanair claims that it would be intrinsically unfair for airlines and users who do not use the service to have to pay for it. Dublin Airport argues that US preclearance is only relevant for airlines operating US transatlantic flights and the offering is entirely optional.
- 7.86 Dublin Airport submitted the following arguments as to why US Preclearance should remain outside the scope of regulated charges:
- US pre-clearance is a commercial offering;
 - the definition of “Airport Charges” does not extend to commercial activities;
 - using Preclearance in Dublin gives airlines economic and operational advantages compared to the costs of arriving to international terminals;
 - Dublin Airport has no current or future role in the management or organisation of the services provided in the US Preclearance facility. Dublin Airport is not carrying out an activity of “processing passengers”; and
 - consistency is required to deliver incentive based regulation.
- 7.87 We have decided to maintain US Preclearance as a commercial activity. We do not consider that we have been provided with persuasive evidence that we should change our approach and consider it an Airport Charge as defined under the Air Navigation and Transport Act, 1998.²⁸

Table 7.6: US Preclearance Forecast

	2020	2021	2022	2023	2024
Draft Determination, (€m)	17.5	18.2	19.4	20.1	21.9
Final Determination, (€m)	17.7	18.3	19.5	20.3	22.0

Source: 2020-2024 CAR forecasts, CAR Draft Determination.

Rolling Schemes

- 7.88 Aer Lingus, IATA and Ryanair agree with discontinuing the rolling schemes.
- 7.89 Dublin Airport disagrees with our proposal to end rolling schemes, claiming that it would not have been incentivised to procure revenue deals if the rolling schemes were not in place.
- 7.90 IATA argues that there is no evidence to suggest rolling schemes incentivise Dublin Airport to generate more commercial revenues.
- 7.91 Ryanair suggests that, in reconciling 2014 rolling schemes, concessions should be in the per passenger category rather than the gross revenue one, as in the Draft Determination we stated

²⁸ As amended by European Communities (Dublin Airport Charges) Regulations 2011

that the revenue from commercial concessions responds to passenger numbers.

7.92 Dublin Airport has argued that the rolling schemes incentivised them to undertake the following commercial projects:

- US Preclearance Lounge, completed in 2016;
- T2 Multi Storey Car Park, Dublin Airport built 4 floors instead of 2;
- Price increase for lounges were negotiated with airlines throughout the period, rather than waiting for 2020;
- Grant Thornton sponsorship of the Fast Track product from 2018-2020.

7.93 In reconciling the 2014 Determination schemes, we have kept concessions in the per passenger category as the methodology was set out in the 2014 Determination and we need to implement that decision as set out.

7.94 Having considered the arguments put forward, we have changed our position in relation to commercial rolling scheme incentives for 2020-2024. We accept that the rolling schemes incentivised Dublin Airport to act commercially across the period, rather than postpone revenue generating initiatives to 2020. We consider that unbalanced incentives across the period could lead to decision making which is ultimately sub-optimal for all stakeholders. We therefore include rolling scheme incentives for four categories which we consider are most likely to be at risk of such an outcome; these are set out in Table 7.7.

Table 7.7: Per Passenger Commercial Revenue Targets for Rolling Schemes

Revenue Category, €	2021	2022	2023
Retail Revenue	3.23	3.42	3.42
Car Parking Revenue	1.60	1.62	1.67
Lounges, FastTrack & Platinum Services	0.56	0.57	0.58
Advertising	0.17	0.17	0.17

Source: CAR

7.95 Outperformance relative to these targets will be rolled into the 2024 Determination in the same way as we have done in this Determination.

8. Cost of Capital

Table 8.1: Allowed Pre-tax Weighted Average Cost of Capital (WACC)

	Final Determination	Draft Determination
Pre-tax WACC	4.22%	4.0%

Source: CAR, Swiss Economics Draft and Final Reports on the Cost of Capital

- 8.1 We allow a cost of capital of 4.22%. The final rate is 22 basis point higher than the 4% that we proposed in the Draft Determination. We continue to use the same overarching methodology, namely the weighted average cost of capital (WACC) for the overall rate and the capital asset pricing model (CAPM), using a total market return approach, for the cost of equity.
- 8.2 Compared to the Draft Determination, we changed the methodology for estimating the cost of new debt from a) using airport bonds adjusted by premia for country risk and a BBB credit rating to b) using a bond index for European non-financial corporations with a BBB credit rating plus an uptick for BBB+. This is consistent with the advice provided by Centrus on the appropriate credit rating to be used in the financial viability assessment for Dublin Airport.
- 8.3 We increased the final rate of 4.22% from the draft position because we allow a higher equity beta of 0.94, compared to 0.84. However, we allow a lower cost of debt which offsets to some extent the effect of a higher equity beta. The allowed cost of debt decreased due to 1) updated evidence on the cost of embedded debt of Dublin Airport, 2) lower market outturns and forecast of the cost of new debt and 3) our allowance of a BBB+ cost of new debt.
- 8.4 We commissioned Swiss Economics to assess the efficient cost of capital of Dublin Airport for 2020-2024. This is timely as we last conducted an external review of the cost of capital in 2005. Since the Draft Determination, Swiss Economics have updated their estimate of the cost of capital based on 1) stakeholder submissions to the draft methodology, 2) outturn market data and 3) latest market forecasts available as of the end of August 2019. The final report of Swiss Economics on the cost of capital is published alongside this document.
- 8.5 We continue to be guided by the 2016 recommendations on how to estimate the cost of capital for an airport issued by the European Commission's Thessaloniki Forum of Airport Charges Regulators.²⁹
- 8.6 This section summarises at a high level the submissions received, our decision and the changes from the Draft Determination, and a comparison with the cost of capital estimates submitted by Dublin Airport and Ryanair. The full details of the analysis of the cost of capital and technical responses to stakeholders are in the Swiss Economics report.

Submissions Received

- 8.7 We received eight submissions in relation to the cost of capital. Aer Lingus, IATA, Lufthansa Group Airlines and Norwegian support our proposed estimate as it is based on market evidence which they say indicates a fall in the cost of capital. ACI, Chambers Ireland and Dublin Airport express concern that the cost of capital may be too low. ACI and Dublin Airport state that the sector is exposed to volatility and risk. Chambers Ireland state that extra debt requirements in the next period may increase the cost of capital beyond our proposed allowance. Ryanair state that the evidence points to a lower rate.
- 8.8 The submissions by Dublin Airport, IATA and Ryanair made specific comments about the data

²⁹ www.aviationreg.ie/_fileupload/ACD/Thessaloniki%20Forum%20WACC%20Dec%202016.pdf

and technical details of the methodology for each component. IATA and Ryanair also ask us to update the components that have continued to decline since the Draft Determination, namely the risk-free rate and the cost of debt.

Commission's Overall Response

- 8.9 As in the Draft Determination, Swiss Economics assessed each cost of capital component based on stakeholder submissions, quantitative and qualitative evidence, taking account of economic theory and regulatory best practice. The sources of evidence used include financial economics and corporate finance theory; empirical results from academic studies; market data of government and corporate bond yields, stock returns, and central bank interest rates; and regulatory precedent in Ireland and Europe.
- 8.10 In response to the submissions by IATA and Ryanair, Swiss Economics employs data up to August 2019, which reflects the continuous downward trends in the cost of debt and the risk-free rate. In response to the submission by Dublin Airport, we changed the methodology for estimating the cost of new debt. The final methodology uses the estimate from a bond index for European non-financial corporations with a BBB credit rating. We decided to use the methodology proposed by Dublin Airport as it is simpler and more robust than the draft methodology which used airport bonds adjusted by premia for country risk and a BBB credit rating.
- 8.11 In response to the submissions of stakeholders, Swiss Economics employ several sensitivity analyses and robustness checks to understand their impact on the equity beta estimates. See the Swiss Economics report for the following sensitivity analyses:
- weighting schemes of asset betas of comparator airports (Section 5.3);
 - the effect on asset betas of changes in data frequencies, time horizons, and market indices (Appendix A.2.1, A.2.2, and A.2.3);
 - effect of two formulas to de- and re-lever Betas (Appendix A.3);
 - GARCH models (Appendix A.2.4); and
 - Beta adjustments according to Blume and Vasicek (Appendix A.4).
- 8.12 Appendix B of the Swiss Economics report responds to the relevant submissions on the technical aspects of the methodology and data.
- 8.13 Having considered the submissions received and the relevant evidence, we have decided to allow a cost of capital of 4.22%, as estimated by Swiss Economics.

Changes from the Draft Determination

- 8.14 We increased the allowed rate by 0.22% from the draft position because we allow a higher equity beta of 0.94, compared to 0.84. The change in the equity beta is due to the use of European stock market indices instead of national indices for European airports, and the use of equity market values rather than book values employed to de-lever the asset beta of peer airports. The change to European indices is consistent with using European market data to estimate the risk-free rate, the cost of debt and the total market returns. The use of equity market values follows best international practice.
- 8.15 At the same time, we allowed for a lower cost of debt because of:
- updated evidence on the cost of embedded debt of Dublin Airport, namely an undrawn

EIB loan agreed in July 2019.

- lower market outturns and forecast (forward rates) for the cost of new debt.
- the allowance of a BBB+ cost of new debt. Appendix C of the Swiss Economics report shows the estimation of the uptick to arrive to a BBB+ cost of capital.

Regulatory Precedent and European Guidelines

8.16 Below we consider regulatory precedent and relevant guidelines of the European Commission's Thessaloniki Forum of Airport Charges Regulators to inform our decision on each component of the cost of capital.

Risk-Free Rate

8.17 As proposed in the Draft Determination, we allowed a real risk-free rate that reflects current yields on 10-year Irish and German government bonds and considers market expectations on future government bond yields. This methodology is in line with the recommendations of the Thessaloniki Forum, the 2014 Determination and with other Irish regulatory precedent.

8.18 Swiss Economics note that in 2019 the 10-year Irish government bonds have reached a new low of negative yields not only in real terms but also in nominal terms. Irish and UK regulators also acknowledge a drop in the estimate of the risk-free rate based on current market evidence. In Ireland, the Irish Aviation Authority (IAA) consulted in August 2019 on a cost of capital that includes a 0% risk-free rate for the next Air Navigation Services Control (RP3 2020–2024). In its consultation of the 2020-2024 Irish Water Revenue Control, the Commission for Regulation of Utilities (CRU) cites current market evidence indicating a range of risk-free rate between -0.14% and -0.05%, as of July 2019.³⁰

8.19 While the CRU considered the current market evidence, it is consulting on a 2% long-term (equilibrium) estimate of the risk-free rate. Compared to the CRU, we do not allow for a long-term equilibrium estimate of the risk-free rate for consistency with our estimation of current cost of debt of Dublin Airport, which we allow to be 0.7% for the next period. Financial theory requires the risk-free government bond yields to lie below the cost of debt of comparatively riskier assets, such as airport bonds.

8.20 In the UK, the CAA decided to allow a risk-free rate of -1.7% for NERL's RP3 cost of capital in August 2019.³¹ Also, a 2019 working paper of the CAA shows a current thinking of risk-free rate for Heathrow Airport ranging from -1.5% to -1%.³² Ofwat also adopted an early view of a real risk-free rate ranging from -1.27% to -0.48% for the cost of capital for the next regulatory period 2020-2025.³³

Equity Beta

8.21 The equity beta estimate of 0.94 is consistent with the Thessaloniki Forum recommendation that airport betas should be lower than 1. The Forum states that the commercial and traffic risk of airports are strongly mitigated by a resilient air transport demand and a low level of

³⁰www.cru.ie/wp-content/uploads/2019/08/CRU19091-Irish-Water-Revenue-Control-3-Consultation-Paper-7.pdf

³¹ publicapps.caa.co.uk/docs/33/CAP%201830a%20appendices.pdf

³² publicapps.caa.co.uk/docs/33/CAP1762%20Update%20on%20cost%20of%20capital%20for%20RP3%20and%20H7.pdf

³³ ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-12-Risk-and-return-CLEAN-12.12.2017-002.pdf

competition.³⁴

Asset Beta

- 8.22 We allow an asset beta of 0.50 using market data for nine listed airports and regulatory decisions for three airports. The evidence from these airports is weighted based on similarities to Dublin Airport in terms of regulatory environment, demand structure and business structure. This methodology is in line with the Thessaloniki Forum recommendations that suggests assessing the level of risk according to the airport size, the existence of traffic volume risk and the type of regulation.
- 8.23 We note that in 2019 we allow an asset beta for Dublin Airport of 0.5 which is higher than the 2013 mid-point estimate for Heathrow of 0.47.

Equity Risk Premium and Total Market Equity Returns

- 8.24 We did not change the overarching methodology and data proposed in the Draft Determination for estimating the total market returns (TMR). The methodology estimates the total market returns and then splits it into the risk-free rate and the equity risk premium. The TMR methodology follows recent regulatory precedent, for example, the WACC decision of the CRU for Gas Networks Ireland (GNI) from October 2017.³⁵ In that decision, the CRU referred to regulatory practice in the UK (particularly Ofgem) to justify this methodology.
- 8.25 The majority of past Irish WACC decisions are based on our 2014 approach and rarely report an explicit value for total market returns. However, as shown in our cost of capital report, our estimated total market return is very close to the values implied in Irish precedent.
- 8.26 Our approach is also in line with three recommendations of the Thessaloniki Forum. First, the total market returns were estimated using a reference study (Dimson, Marsh, and Staunton). The same study was also used in 2014 but for the equity risk premium. Second, the study uses historical data over a substantial period, specifically from 1900 to the present. Third, the total market returns were cross checked using forward looking estimates from a dividend discount model.

Cost of Debt

- 8.27 As proposed in the Draft Determination, we allow for costs of embedded debt and new debt. Our methodology is in line with the Thessaloniki Forum recommendations. The Forum states that acceptable practices include reviewing observable market rates for new debt and reviewing the actual debt portfolio of the airport and its refinancing opportunities for embedded debt.
- 8.28 Our cost of debt is lower than other recent Irish precedents because they give a lower emphasis to current market data. In 2019, the CRU is proposing for Irish Water a cost of debt of 2% considering regulatory precedent and historic performance rather current market evidence. The CRU states that current market data points at a cost of debt estimate of 1%.³⁶ In 2017, The CRU also chose the upper end of its cost of debt range (2.5%) for Gas Networks

³⁴ aviationreg.ie/fileupload/ACD/Thessaloniki%20Forum%20WACC%20Dec%202016.pdf

³⁵ www.cru.ie/wp-content/uploads/2017/06/CER17260-PC4-CER-Transmission-Decision-Paper.pdf

³⁶ www.cru.ie/wp-content/uploads/2019/08/CRU19091-Irish-Water-Revenue-Control-3-Consultation-Paper-7.pdf

Ireland rather than the lower range of 1% based on the current market evidence at the time.³⁷

Transaction costs

8.29 We allow 0.1% as transaction costs for new debt in accordance with regulatory precedent in Ireland and the UK. In August 2019, the CAA allowed for an uptick of 0.1% for the RP3 price control.³⁸

Gearing

8.30 The weighting of the cost of debt and cost of equity is based on a notional capital structure of 50%. The gearing assumption we use is the same as in the 2019 Draft Determination and in 2014. The Thessaloniki Forum recommends a notional gearing. Other airport regulators have typically chosen values for the notional gearing ratio between 50% and 60%. Examples are Fraport, Aeroporti di Roma, Heathrow and Gatwick. No stakeholder has raised any concerns in connection with our proposal to keep the gearing rate at a level of 50%.

Aiming up

8.31 We allow an aiming up allowance of 0.5% as proposed in the Draft Determination. The aiming up reflects the investment planned by Dublin Airport in the CIP 2020+ and ongoing capital projects (such as the North Runway) and the regulatory precedent in Ireland that has allowed an aiming up, albeit implicit in each cost of capital component.

Comparison with Dublin Airport

Table 8.2: WACC Components 2019 vs Dublin Airport

	2019 CAR		Dublin Airport Range
	Range	Estimate	
Gearing	45% - 55%	50%	40% - 50%
Risk Free Rate	-1.1% - -0.1%	-0.6%	0.0% - 2.0%
Total Market Returns	6.0% - 6.8%	6.4%	6.5% - 6.7%
Equity Risk Premium	6.6% - 7.4%	7.0%	6.5% - 4.7%
Asset Beta	0.48 - 0.51	0.5	0.6
Equity Beta	0.91 - 0.95	0.94	1.0 - 1.2
Cost of Equity (after tax)	5.3% - 6.5%	6.0%	6.5% - 7.6%
Cost of Debt	0.3% - 0.9%	0.6%	0.81% - 3.3%
Pre-tax WACC (pre aiming up)	3% - 4.3%	3.72%	4.8% - 6.0%
Aiming up		0.50%	-
Pre-tax WACC		4.22%	4.8% - 6.0%

Source: CAR 2014 Determination

8.32 In October 2019, Dublin Airport provided to us its latest estimate for the cost of capital range, as shown in Table 8.2. The range lies between 4.78% and 6%. Our cost of capital differs from the lower bound estimate of Dublin Airport as it has a lower gearing of 40% and a higher equity beta of 1.0.

8.33 We note that a gearing of 40% is inconsistent with the current gearing estimate of Dublin

³⁷ www.cru.ie/wp-content/uploads/2017/06/CER17260-PC4-CER-Transmission-Decision-Paper.pdf

³⁸ publicapps.caa.co.uk/docs/33/CAP%201830a%20appendices.pdf

Airport of 50%. We calculate that increasing the lower bound gearing from 40% to the current gearing of 50% would decrease the cost of capital estimated by Dublin Airport to 4.12%, all else being equal. We also calculate that reducing the transaction costs estimated by Dublin at 0.2% to our estimate of 0.1%, further reduces their estimated cost of capital 4.07%. Both estimates would be below the rate of 4.22% that we will allow.

- 8.34 Dublin Airport estimates the upper bound of the risk-free rate of 2% based on regulatory precedent and does not reflect the current market outturns and expectations.
- 8.35 Dublin Airport estimates an upper bound cost of capital of 3.3%, which is four times its lower bound estimate of 0.81%. Dublin Airport estimates its lower bound cost of debt based on the current outturn cost of its embedded debt and current market outturns and expectations for the cost of new debt; and it estimates the upper bound by adding the risk-free rate of 2%, a debt premium of 1% and transaction costs of 0.3%. We note that the debt premium alone is higher than the lower bound cost of debt of 0.81%.
- 8.36 We also note that Dublin Airport estimates an equity beta ranging from 1 to 1.2 based on its estimated asset beta of 0.6 supported by evidence of Aeroports de Paris, AENA and Auckland. We note that Auckland Airport is an outlier within the sample of listed airports, with an asset beta ranging between 0.6 and 0.8. AENA is a group of many very diverse airports and therefore this questions its comparability with Dublin Airport. Swiss Economics estimate an average asset beta of 0.51 for Aeroports de Paris, which is very close to our final asset beta estimate of 0.5 for Dublin Airport.

9. Capital Costs

Table 9.1: Capital Cost Allowances, 2020-2024

	2020	2021	2022	2023	2024
Return on Capital, (€m)	87.5	100.4	112.2	123.3	133.7
Return of Capital, (€m)	92.0	104.8	118.5	134.1	150.4
Return of Capital (extra depreciation) (€m)	3.4	20.7	28.7	28.2	28.1
Total, (€m)	182.9	225.9	259.4	285.6	312.3
Per passenger, (€)	5.38	6.43	7.18	7.69	8.19

Source: CAR

- 9.1 We have decided to provide capital cost allowances which are higher than in the last period. Allowed capital costs will increase up to €312.3m by 2024. By 2024, passengers using Dublin Airport are expected to pay about €3 more each in capital costs than is the case in 2019. This is driven by the large investment programme which we have allowed for, somewhat offset by the reduced cost of raising capital to fund the programme.
- 9.2 We received a range of submissions on the various Capital Expenditure ‘Capex’ topics, which are summarised and addressed below, in Appendix 1, and in the Steer final report. We have carefully considered these submissions, making a number of adjustments since the Draft Determination, which, overall, have led to higher baseline capital cost allowances relative to those we proposed in the Draft Determination. We have:
- Increased the allowances across a number of allowed projects in CIP2020 (offset by a smaller reduction in a number of others).
 - Set reprofiling triggers in relation to a number of large scale CIP2020 projects to ensure that the remuneration profile better aligns with the project timeline in the event that the timeline slips substantially.
 - Reduced the assumed asset lives in relation to 4 key CIP projects.
 - As set out in Section 8, we have increased the allowed cost of capital from 4% to 4.22%.
- 9.3 We have also made some adjustments to the projects we previously identified for inclusion in the StageGate process.
- 9.4 As we noted in the Draft Determination, there are two main drivers of change relative to the 2014 Determination, which have caused capital costs to move in opposite directions. First, the lower cost of capital drives the return on capital down for a given Regulatory Asset Base (RAB). Second, the RAB will increase substantially in the period, driving capital costs up. The RAB will continue to increase across the period, reaching €3146.2m by the end of 2024. This is driven by:
- A baseline capital investment programme for the period 2020-2024 of €2bn.
 - Remuneration commencing for Terminal 2 (T2) ‘Box 2’, adding €193.5m.
 - An allowance for a supplementary capital investment programme, PACE, which we set in 2018.
- 9.5 The rest of this section discusses the RAB roll forward, the CIP2020 programme, and the StageGate process.

RAB Roll Forward

Opening RAB 2020

9.6 The 2020 opening RAB is €1741.3m. We have corrected an error from the Draft Determination which led to the opening RAB being overstated by some €15m. The opening RAB has increased marginally relative to what it should have been in the Draft Determination as we have allowed for a portion of the costs associated with the PBZ, namely, the portion which is not nugatory as a result of the planned redevelopment of the South Apron.³⁹ We have not made any other adjustments to the RAB roll forward.

Table 9.2: Deriving the 2020 Opening RAB

RAB Summary Table	€m	€m
Opening RAB 2015	1624.6	
2015-2019 Capex		343.0
Standard Regulatory Depreciation		-340.9
Accelerated Regulatory Depreciation		-84.4
2015 Till Exit- Dublin Airport City		-48.1
T2 Box 2		193.5
North Runway Trigger		25.2
Pier 2 Segregation Trigger		16.8
PACE Projects ⁴⁰		29.4
Interest Adjustment for deliverables		-2.9
2014 Outturn Spending Adjustment		7.3
2015-2019 Outturn Spending Adjustment		-21.1
Opening RAB 2020	1741.3	

Source: CAR

Submissions Received on the RAB Roll Forward

9.7 Dublin Airport states that it does not agree with our decision ‘not to remunerate safety critical and operational critical airport investments’.

9.8 In the Draft Determination, we stated that there were two mechanisms open to Dublin Airport to increase capex allowances which it did not avail of, namely an interim consultation as per the 2014 Determination, or the supplementary capex process. Dublin Airport states that an interim consultation would have been a flawed process as it requires ‘unanimous support of users’. Dublin Airport also states that the supplementary capex process would have been ‘totally unsuitable’ as most of these projects were urgent and safety critical. It stated that key projects would not have fallen within the required parameters of this process, as the Supplementary Capex paper states that ‘the project must not have been previously approved as part of the prevailing determination’, and that consequently our position is flawed and

³⁹ A PBZ is a satellite Pre-Boarding Zone served by bussing

⁴⁰ PACE references the Programme of Airport Campus Enhancement- an interim investment programme in relation to which the Commission completed an Interim Review aof the 2014 Determination in 2018.

inaccurate.

- 9.9 Highlighting two specific projects within the airfield maintenance grouping, one project in terminals maintenance and one project in commercial revenues, Dublin Airport states that we have not followed our own RAB roll-forward principles in not allowing group overspends which Dublin Airport ascribes to these projects. Dublin Airport sets out detailed justifications in relation to these projects, stating that the benefits of consultation would have been questionable. It references Dublin Airport Operations Planning Group (DAOPG) minutes in which airport users expressed concern over a proposal to extend the possession period of the Runway 10/28 works in order to expedite delivery of the project.
- 9.10 Dublin Airport believes that not allowing for the South Apron PBZ, despite it being consulted on and requested by stakeholders, is against the principles of economic regulation. It states that a decision not to fully remunerate the PBZ calls into question the reliability of the StageGate process. It states that permanent planning permission has been obtained in relation to PBZ infrastructure accounting for €9.7m of the allowance, which, it states, must be remunerated now. It states that the remainder should be received once planning permission is obtained; it intended to lodge a planning application in Q3 of this year. Subsequently, we have been advised that this application was approved.
- 9.11 In the Draft Determination, we stated that there were three outstanding Deliverable projects from 2014 in relation to which further investigation was required to determine whether they had been delivered. Dublin Airport states that these three projects are fully complete.

Decision on the RAB Roll Forward

- 9.12 The nature of the RAB roll forward is the implementation of decisions and commitments previously made by the Commission. The statement that we have not followed the RAB roll forward principles is not accurate. We have carefully implemented the RAB roll forward principles as per the 2014 Determination. We consider that any decision to retrospectively change the roll forward principles or the PACE remuneration condition in relation to Masterplan compliance would give rise to exactly the uncertainty and inconsistency which Dublin Airport states that we need to avoid.
- 9.13 Dublin Airport's response demonstrates a misconception as to how the grouped allowance mechanism works. To clarify, the project specific overspends referenced by Dublin Airport were not specifically disallowed, and we are not suggesting that these projects should not have proceeded or should have been delayed. Rather, overspend across a number of groups is disallowed, most notably airfield and landside maintenance. The 2014 Determination allowed flexibility to reallocate project allowances across projects in the same group, provided that the overall group allowance is not exceeded; the six groups are set out in Table 9.3.
- 9.14 Where the project allowances are grouped, overspend can only occur at a group level. In the unjustified absence of meaningful consultation on increasing the grouped allowances during the regulatory period, as per the 2014 Determination there is no possibility of retrospectively increasing the allowances. We see no reason why an interim consultation(s) could not have been carried out once Dublin Airport identified that the grouped allowance was insufficient to carry out the works it deemed necessary. Interim consultations are discussed further below in the context of the 2020-2024 allowances.
- 9.15 In relation to the US Preclearance Lounge, the disallowed overspend on Commercial projects relative to the group was €0.5m only. This grouping included a €10m allowance which originally related to a car hire consolidation centre, which did not proceed. A similar project is now allowed for in CIP2020. We also noted other aspects of projects which we allowed for

over the period 2015-2019, but were not delivered, namely phase 3B of the T1 roof repairs, Runway 10/28 Approach Lighting, and more significant works in replacing the HVAC system in the Pier 3 services core.⁴¹ Again, these works are now scoped within CIP2020 projects. Given the flexible grouped allowances approach, none of these allowances are clawed back; there is an element of ‘double-remuneration’ which balances against the overspends on other individual projects.

- 9.16 We have sought and reviewed all DAOPG minutes covering the period referenced by Dublin Airport. We concluded that these meetings cannot be considered an interim consultation on increasing any of the group allowances, as it was not presented as such to stakeholders or the Commission and did not include the relevant elements of such a consultation.
- 9.17 We stated that the other option which could have been considered by Dublin Airport was the supplementary capex process. To preclude the possibility of regulatory gaming, whereby an allowance could be reallocated to a disallowed project and then the request for the exact same allowed project resubmitted on the basis that it had already been allowed, the supplementary capex process does not allow for the same project to be submitted twice. Dublin Airport explains in detail how the scope of these projects changed relative to that which was set out in consultation ahead of the 2014 Determination. There was no restriction on projects which are similar to projects consulted on at the time of the prevailing determination, but varied in scope, being reconsidered as part of a supplementary capex request, as this is precisely what happened in relation to the PACE FEGP project.⁴²
- 9.18 We have revised our estimates for 2015-2019 outturn expenditure against the original CIP as a result of more up-to-date forecasts for 2019, however the group allowance remains the overall limiting factor to RAB entry in each case. Therefore we have not made any adjustments to the finalised 2015-2019 allowances, which are summarised in Table 9.3.

Table 9.3: Finalised CIP 2015 Allowances (excluding triggers)

	Allowance (€m)	Adjusted Allowance (€m)	Spent (€m)	Enters RAB (€m)
Airfield Maintenance	125.4	104.2	137.8	104.2
Business Development	67.2	67.2	73.3	67.2
IT	41.1	41.1	41.3	41.1
Landside Terminals Maintenance	39.1	39.1	55.7	39.1
Revenue	56.2	56.2	56.7	56.2
Other	14.0	14.0	14.2	14.0
Total	343.0	321.9	378.9	321.9

Source: CAR, Dublin Airport

- 9.19 Dublin Airport’s submission in relation to the PACE consultation included a section which assessed and cleared the South Apron PBZ as being compliant with the developing airport Masterplan.⁴³ The PACE Interim Review relied on this assumption, noting that Dublin Airport will be expected to show how projects with allowances carrying forward into the next period are not inconsistent with the Masterplan, and further stating that should this transpire not to be the case in future periods, there could be no certainty of ongoing remuneration.⁴⁴ Less than

⁴¹ HVAC is the Heating, Ventilation, and Air Conditioning systems

⁴² FEGP stands for Fixed Electrical Ground Power

⁴³

[www.aviationreg.ie/ fileupload/PACE/20180118%20DAP%20PACE%20Submission%20to%20CAR%20corrected.pdf](http://www.aviationreg.ie/fileupload/PACE/20180118%20DAP%20PACE%20Submission%20to%20CAR%20corrected.pdf), Page 39-40

⁴⁴[www.aviationreg.ie/ fileupload/PACE%20Draft%20Decision/2018-02-20%20Draft%20Decision%20final%20draft.pdf](http://www.aviationreg.ie/fileupload/PACE%20Draft%20Decision/2018-02-20%20Draft%20Decision%20final%20draft.pdf)

two years later and despite these conditions, Dublin Airport now considers that it should be remunerated by the generality of airport users both for an asset which will no longer be there, as well as €400m of expenditure on the South Apron which includes its removal.

- 9.20 Towards the end of the PACE process, we became aware that potential developments on the South Apron could involve moving the PBZ. Although this was not in line with information presented during the consultation, we still sought to provide flexibility in relation to the masterplan compliance condition specifically relating to the South Apron PBZ, considering that there may be a possibility for the continued remuneration of the net benefit of moving the PBZ relative to constructing a new one as part of broader South Apron developments. We instead stated that to retain funding, Dublin Airport needed to obtain permanent planning permission in relation to a location where the PBZ would provide similar benefit to users as it does in its current location. Subsequently it transpired that the PBZ would in fact be demolished. While we referenced the planning permission issue in the Draft Determination, clearly it will not be providing similar benefit to users if it is demolished, with the current location required for pavement on the South Apron. Dublin Airport's submission in relation to the planning permission only considers the first element of this condition, which appears to have now led it to seek permanent planning permission for a structure it intends to demolish.
- 9.21 On further review, we note that €1.6m of costs associated with the PBZ were associated with bussing from Pier C, and thus will not be nugatory. We therefore allow for this portion of the cost. Also, we have netted the remaining cost of the PBZ off the Pier 5 reprofiling trigger discussed below. Should Dublin Airport not proceed with Pier 5 and the trigger is activated, we assume that the PBZ would remain in place and consequently we allow for its remuneration in that scenario. Should this occur and the PBZ remain in place, operational and demonstrably not inconsistent with the masterplan, we will again allow for the remaining value at the next Determination. We continue to allow for completed, masterplan compliant PACE projects to directly enter the opening RAB rather than phasing them in along with the other allowances.
- 9.22 It is worth pointing out that overall the decision in relation to the RAB roll forward, relative to Dublin Airport's view, has minimal impact on the price cap for the forthcoming period as it is subsumed by the financial viability adjustment which we discuss in Section 10. Furthermore in relation to the South Apron PBZ, while the majority of associated capital costs will not be remunerated in this Determination, neither was associated passenger traffic included in the 2014 Determination. Given that the PBZ will have facilitated roughly 3m additional passengers over the period 2017-2019, it will have contributed to Dublin Airport's outperformance relative to the 2014 Determination to an extent broadly commensurate with the cost of constructing it. No element of this outperformance is clawed back either.
- 9.23 In relation to the outstanding Deliverables from 2014 which we flagged in the Draft Determination as requiring further investigation, we have followed up on this issue with Dublin Airport. We consider that ultimately these allowances were used to generate similar outcomes which have benefitted airport users to an extent commensurate with the allowances. On that basis we consider that it would be disproportionate to change our Draft position on these projects, and we consider them to have been delivered.

Treatment of other PACE projects

- 9.24 Dublin Airport states that as there is significant interrelatedness between a number of the PACE and CIP2020 projects, it has sought to align these where sensible. However, this has meant that 7 projects will not commence onsite by the end of 2019, and thus will not meet the initial trigger as set out in the PACE decision of June 2018. Dublin Airport requests a 6

www.aviationreg.ie/_fileupload/PACE%20final%20decision/Final%20Decision%20Final%20Draft.pdf

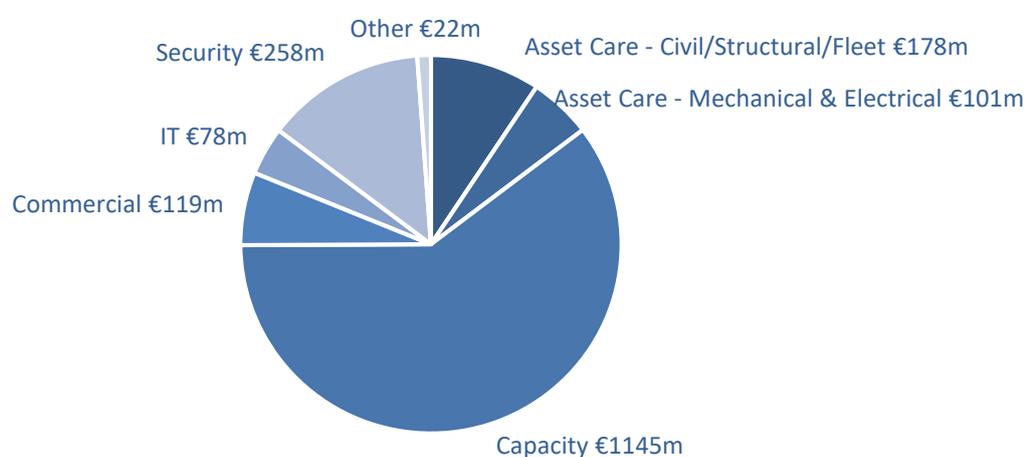
month extension.

- 9.25 The Initial Trigger was set out primarily as a mechanism to provide certainty over remuneration to Dublin Airport given that these projects were expected to span across determination periods. We accept the logic of Dublin Airport’s course of action and agree to provide the requested 6 month extension. We consider that proceeding with each of the PACE projects listed in Table 7.1 of the Dublin Airport submission remains in the interests of airport users, and consequently so does associated remuneration. As we did in the Draft Determination, we continue to allow for these projects. With the exception of the 6 month extension, these projects will be reconciled in 2024 in line with the conditions set out in the PACE decision. We note that the review of Stand Allocation Rules has been carried out, with resulting actions expected to be implemented by the end of the month. Thus we consider this condition to have been met.

CIP2020 Projects and Allowances

- 9.26 Many respondents express their support for CIP2020, or at least for capacity expansion, in broad terms. A number of others request that, should the scale of the CIP be revised downwards given statements made by or correspondence received from Dublin Airport, the reassessment should be carried out equitably.
- 9.27 Ryanair and Dublin Airport provide specific comments in relation to the Steer costings. Those comments are addressed in the final report from Steer. Ultimately, based on the substantial further detail provided, Steer has revised its view in relation to a number of cost line items. We have worked closely with Steer in ensuring that responses in relation to the costings are fully considered and addressed.
- 9.28 Joseph Ryan considers that the reduction we have applied to the CIP2020 costings is very significant, stating that over optimism should not trump prudence. We would point out in response that the Steer costings are derived from a full bottom-up assessment of the individual cost line items that make up the various projects; they allow for cost escalation in line with industry and project development standards.
- 9.29 We continue to allow for each project which we allowed for in the Draft Determination. We also now allow for the Second MV Connection Point project. The allowances by category are summarised in Figure 9.1. Detailed submissions received in relation to individual CIP2020 projects are addressed in Appendix 1.

Chart 9.1: Allowances by Category



Source: CAR

Submissions Received in relation to Capacity Projects

- 9.30 Aer Lingus generally either supports or does not object to the individual capacity projects. The exception to this is the West Apron Underpass at Pier 3 which is addressed further in Appendix 1. Aer Lingus suggests that we incentivise the delivery of the CIP within the regulatory period.
- 9.31 Aer Lingus provides detailed feedback on the Helios simulations. It questions the currently envisaged dual runway usage philosophy and STARs.⁴⁵ It suggests that Runway 10 operations should also be modelled, and the IAA should confirm that the modelled flight schedule is achievable. It states that the relatively poor performance in terms of simulated taxi-out times for aircraft using the Pier 5 stands is unacceptable, an issue which it believes is exacerbated by pushback conflicts in the modelled flight schedule as well the absence of a loop taxiway in the South Apron, together with the aforementioned runway usage philosophy. It states that on-time towing is a key element of operational performance, and these details were not provided in the simulations.
- 9.32 In relation to the Terminal building simulations, Aer Lingus notes that the simulation assumes full staffing of facilities. It questions a number of the passenger processing assumptions, also noting that the modelling indicates a 'disadvantage for T2 operators' at Check-In and Security. In relation to T2 immigration, Aer Lingus questions whether 10 e-gates currently in operation have been modelled.
- 9.33 CityJet urges us to protect continued investment in the timely development of facilities at Dublin Airport.
- 9.34 IALPA does not support many of the capacity projects. It considers that a West Apron satellite pier should be developed rather than the continued focus on the East Apron, which it considers to have been driven by 'dominant base carriers'. IALPA states that it is not apparent that long term policy decisions in relation to the development of the airport are being challenged by CAR.
- 9.35 IALPA questions the validity of assumptions used in the Helios modelling. It further states that a 32 million annual passenger planning restriction on the eastern campus, in relation to T2, is 'an overhang to the entire CIP'.
- 9.36 Ryanair states that the Helios assessment considered whether the CIP2020 programme can deliver an airport that can cater for 40 million annual passengers, however overall we have not considered whether it is efficient to allow for each of these projects as scoped. It considers that the Helios modelling indicated that many of the terminal capacity projects are overscoped as:
- The flight schedule used by Helios is more 'peaky' than a Summer 2019 busy day identified by Ryanair, namely the August 2019 bank holiday Friday.⁴⁶ This in turn affected the identified facility sizing requirements, as a less peaky, smoother schedule in a given day can operate from lesser sized facilities despite containing the same number of aircraft and/or passengers. It noted that this is particularly noteworthy for the hourly arrivals peak in the 40 million passengers per annum (MPPA) flight schedule. It also pointed out that the modelling does not consider upgauging of aircraft, which means

⁴⁵ A STAR is a Standard Terminal Arrival Route; a standard arrival routing towards an airport

⁴⁶ 'Peakiness' in this context implies the extent to which there are peaks and troughs in a daily profile, relative to a smooth profile across the day.

that the airfield infrastructure requirements for a given level of passenger traffic would reduce as there are more passengers per aircraft.

- It considered that even despite the peaky flight schedule, the modelling indicates 'over design' in relation to a range of the terminal processors for much of the day, and thus these are over-scoped.
- 9.37 Ryanair believes that it is doubtful that Dublin Airport will actually be able to spend the projected amounts in a managed fashion in a live airport environment, arguing for a cautious approach to account for potential timeline slippage. In particular it references potential planning delays.
- 9.38 Ryanair does not support the West Apron Underpass or Apron 5M and states that the Terminal 1 Departures Lounge project should be considered from the perspective of a commercial rather than capacity project. In summary, Ryanair considers that the level of allowed Capex should be substantially reduced.
- 9.39 While welcoming the CIP2020 programme generally, IATA states that further engagement with airlines is required in relation to the West Apron Underpass. IATA is particularly supportive of the T2 Check-In and Early Bag Store projects.
- 9.40 IATA believes that we should reconsider the approach whereby capital allowances are only clawed back at the end of a period, given the risk that with such a substantial capital programme, there may be even more pre-funding than set out in the regulatory settlement due to timeline slippage or projects not proceeding within the period.
- 9.41 Lufthansa supported the proposed capex allowances generally, but particularly the Pier 2 Airbridges project.
- 9.42 Norwegian Air was supportive of the programme, but noted that in the current economic climate some elements of the plan might need to be reviewed or scaled down. It considered that further safeguards in relation to the delivery of CIP2020 are required, as it has been contacted by Dublin Airport to advise that work on the CIP has been stood down.

Decision on Capacity Projects

- 9.43 In relation to the simulations, we do not consider the wide range of other scenarios proposed for simulation to be appropriate or necessary for this process. The key output from the simulations was whether, all else being equal, the CIP2020 infrastructure programme, combined with PACE and the North Runway, would allow for 40 mppa at an appropriate level of service both in the terminals and on the airfield. We expect that the operating concept will be subject to further development over the coming years as infrastructure comes on stream and operating procedures are developed. We consider that there would be little value in trying to simulate various scenarios relating to alternative taxiway routings, required runway separations, STARS and SIDs, the dual runway operating concept, or other factors, at this time as part of this process.
- 9.44 We also expect that A-CDM will deliver improved operational performance over the coming years⁴⁷. In summary, we cannot at this stage seek to fully predict how the airport will operate in 5 years' time, however the modelling clearly indicates infrastructure based improvement relative to the current situation, with a level of throughput commensurate with 40 mppa. We have again reviewed the assumptions and are confident that they are appropriate for the

⁴⁷ Airport Collaborative Decision Making is an operational process aimed at improved operating efficiency.

purposes of this assessment.

- 9.45 In order to test out Aer Lingus' suggestion that the poor performance of the Pier 5 stands could be due to aircraft pushback timing conflicts on the South Apron, Helios have re-run the simulation with minor flight re-times to avoid such conflicts. Results are included in the airfield simulation results published alongside this paper; as suggested by Aer Lingus, a substantial improvement was observed. In relation to the T2 Immigration Hall, we can confirm that 10 e-gates and 12 booths have been modelled.
- 9.46 We are aware from previous engagement that IALPA considers this programme of substantial development on the eastern campus to be sub-optimal, considering a widebody satellite pier on the western campus to be superior and more efficient development. However, it is not our role to design the airport; that is the role of Dublin Airport. In the context of capital project allowances, we consider projects which are presented by Dublin Airport to us for remuneration. If we consider that allowing for a particular project at a particular point in time better protects the interests of users relative to not allowing for that project, we allow for the project. We cannot compel Dublin Airport to build any particular piece of infrastructure, and we could not provide allowances for alternative projects in relation to which Dublin Airport has not sought an allowance.
- 9.47 Ryanair suggests that as the simulated flight schedule is more peaky than a Summer 2019 busy day, particularly for arrivals, the modelled flight schedule was not consistent with efficient use of infrastructure. Over the last number of years, the flight schedule has become progressively smoother across the day as insufficient capacity in busier hours has resulted in operations being coordinated to less busy hours. The flight schedule we modelled was derived from a 2018 busy day uplifted to align with annual passenger numbers of 40mppa; we are not surprised that it is more peaky than a Summer 2019 busy day.
- 9.48 There is a balance between efficient use of infrastructure through coordinating demand away from the peaks, relative to airlines not obtaining slots at or near requested times, which impacts the viability of routes or additional aircraft rotations. Slot capacity utilisation at Dublin Airport was among the highest in Europe in Summer 2019; we have no reason to conclude that the Summer 2018 level of 'peakiness' did not strike an appropriate balance between these two factors for the purposes of our modelling. We would also note that the CIP2020 terminal processor expansion projects are predominantly focused on departing passengers, while Ryanair's main issue is with the arrivals peak.
- 9.49 We assume that facilities in the terminal buildings are fully staffed as the goal is to consider the sizing of the facilities themselves. Ryanair states that many of the projects are overscoped as many of the processors are identified as at 'Over-Design' for much of the day, with reference to the IATA service standards.⁴⁸ However, given the staffing assumption, an indication of overdesign outside of the peak periods is not a cause for concern. In reality, these facilities would not be fully staffed at those times. The key issue is the daily peak(s) at the various processors.
- 9.50 We consider that an ideal result is one where the peak is either optimal or briefly and moderately sub-optimal; from that perspective, as we noted in the Draft Determination the only CIP project which we considered to be overscoped was the T1 Departures Lounge, with the relocated T1 Central Search being just marginally optimal. We continue to allow for both projects as scoped in the Draft Determination; developments in relation to these projects are discussed further in the appendix. Some of the projects referenced by Ryanair as being

⁴⁸ IATA ADRM, 10th Edition. The IATA ADRM is an international reference manual setting out standards for airport design.

overscoped are not significantly driven by any CIP project, but rather a function of the airport's current infrastructure; for example, the simulated space per passenger in each of the current piers or the check-in halls.

- 9.51 In line with standard modelling practice the flight schedule is intended to be a busy, not absolute peak day, so it could be expected that on the very busiest days the level of service would be somewhat lower than indicated in the modelling.
- 9.52 We are aware that there is an element of capacity headroom allowed for in our regulatory settlement, given that we have allowed for a CIP programme targeted at 40 mppa at an improved level of service, while we are only forecasting 38m passengers by the end of the period. As we originally set out in the Issues Paper⁴⁹, we consider that a substantially constrained airport is not in the interests of airport users more broadly. Ultimately, should downside traffic risk materialise, we expect that elements of the CIP would be postponed.

Submissions Received in relation to Core Projects

- 9.53 IALPA does not support certain elements of the Asset Care projects which relate to developments in Piers 2 and 3, as it considers that more fundamental redevelopment of these piers is required.
- 9.54 Ryanair considers that the quantum of maintenance capex is excessive and beyond what users might reasonably expect to pay over a five year period. It provides a benchmarking analysis compared to Luton, Gatwick, and Manchester, in which maintenance capex at these airports is identified as lower than at Dublin Airport.
- 9.55 Ryanair considers that the assumptions regarding the extent to which the areas of pavement identified as requiring remedial works will require full reconstruction had inflated these cost estimates unnecessarily.
- 9.56 Ryanair does not agree with improvements for the approach lighting, LVP lighting, and ground lighting for Runway 16/34 on the basis that once the North Runway is operational, operations on Runway 16/34 will be confined to small aircraft in crosswind conditions. In relation to LVP lighting Ryanair considers that this will only be used for 2-3 days in a year. Ryanair also questions the costs associated with the Terminal 1 façade replacement, Skybridge Maintenance and Heavy Fleet Vehicles.
- 9.57 Ryanair considers that we have not sufficiently accounted for expected growth in Commercial Revenues from the commercial projects we have allowed, as well as the public Electric Charger Facilities. Alternatively, it considers that some of the projects are overscoped or overly costly.
- 9.58 Ryanair considers that the IT and Security allowances are excessive.
- 9.59 Overall Ryanair estimates that, across the core categories, the allowances should be reduced by €90-€100m.

Decision on Core Projects

- 9.60 We agree with Ryanair to a certain extent in relation to the commercial projects and have consequently made some adjustments to our Commercial Revenue targets, which are set out in detail in Section 7.

⁴⁹ www.aviationreg.ie/_fileupload/2019%20Determination/2018-04-30%20CP7%20Issues%20Paper.pdf

- 9.61 Based on Ryanair's comment on the Heavy Fleet Vehicles, we have removed the cost associated with two foam tenders from that allowance.
- 9.62 Other than that, as we set out in the Draft Determination, we consider that these projects are in the interests of airport users and consequently we continue to allow for them. Rather than benchmarking Dublin Airport's maintenance requirements against other airports, we assessed whether there was sufficient evidence to demonstrate that proceeding with the individual project was in the interests of airport users.
- 9.63 Similar to Opex, we consider that no two airports are alike in terms of overall capital maintenance requirements. For that reason, we sought and were provided with detailed evidence on the need for the individual maintenance projects as scoped by Dublin Airport. We concluded that these projects are in the interests of airport users, and we have not seen any persuasive evidence to change that view. Steer has carried out a detailed bottom-up assessment of the costs associated with these projects. We therefore consider that in each case, providing an efficient allowance better protects the interests of airport users relative to not providing an allowance.
- 9.64 In the Draft Determination, we noted that there remains substantial uncertainty over the cost of rehab of the identified sections of pavement, and for that reason we included both the apron and taxiway rehab projects in StageGate. This remains the most appropriate mechanism to address this cost uncertainty.
- 9.65 In relation to IT, while the allowance is considerably higher than previous IT allowances, we consider that this trend is not unique to Dublin Airport. The IT projects will help with achieving targets we have set on other building blocks. The allowance encompasses not just replacement of existing assets, but projects which will lead to more efficiency in airport processes to benefit users in the form of both cost reductions and processing improvements. We expect Dublin Airport to deliver substantial improvements on the basis of this allowance.
- 9.66 There is a degree of overlap between Opex and Capex in relation to IT. Dublin Airport has identified a risk that accounting rules may require changes in the categorisation of IT expenditure. For that reason, at Dublin Airport's request, when reconciling the IT Capex in the next Determination we will also consider Opex expenditure; effectively we are providing a Totex allowance for IT. This means that if Dublin Airport underspends relative to the Capex allowance, we will capitalise any overspend on IT Opex up to the finalised IT Capex allowance.

Time Profiling and Asset Lives

- 9.67 Dublin Airport did not agree with the 40 year asset lives we assigned to a number of large scale projects. Reconsidering its initial position on these asset lives, it submitted a bottom-up project-component weighted asset life calculation for each of the four projects in question.
- 9.68 We have reconsidered these asset lives with the support of Steer, using Dublin Airport's revised asset lives as a starting point. We generally consider the Dublin Airport proposal to be reasonable. We do continue to assume an asset life of 40 years for the core building structure, which is in line with the RAB methodology used by the Commission; most notably where an investment becomes obsolete before the end of its asset life, the RAB is not adjusted downwards correspondingly. The overall reduction in these asset lives increases the baseline level of capital costs remunerated over the period, but as this change is subsumed by the ongoing requirement for a financial viability adjustment this does not substantially impact the price caps for 2020-2024. These changes are summarised in Table 9.3.

Table 9.4: Revised Asset Lives

	Draft Determination	Dublin Airport Response	Final Determination
Pier 5	40	24	28
South Apron Expansion	40	32	34
Pier 1 Extension	40	28	32
Apron 5M	40	32	32

Source: Dublin Airport, CAR, Steer.

Final Determination asset lives rounded to the nearest year for the purposes of calculating annuities.

- 9.69 IATA considers that our approach to time profiling leads to a significant degree of pre-funding, which is true. Similarly, Ryanair suggests that a material portion of capital costs should not impact the price cap until a project has been agreed through StageGate. However, we have not changed this approach in the base case regulatory settlement. Pre-funding of infrastructure needs to be considered on a case-by-case basis; in this case it is necessary to ensure that we provide Dublin Airport with a financially viable regulatory settlement. We consider that the clear need for capacity expansion justifies this approach.
- 9.70 However, we accept and share the concerns raised by a range of respondents in relation to the lack of a mechanism in the Draft Determination to ensure that should Dublin Airport not proceed with elements of CIP2020 or delay it substantially, whether at its own discretion or due to planning, deliverability issues, or other factors, users should not continue to pay the associated increases in capital costs together with a potentially unnecessary financial viability adjustment. The adjustment would be partly or wholly unnecessary because the capital programme is lesser than originally anticipated due to certain projects not progressing as per Dublin Airport’s timeline.
- 9.71 To partly mitigate this risk, we have decided to introduce a set of reprofiling triggers to the regulatory price cap formula which will adjust the capital remuneration profile downwards in the event that these projects have not gone on-site. The concept was also flagged as an option by Centrus. We have sought to balance them across the north/T1, south/T2 and west. They apply to the capital costs associated with the following projects, as per Table 9.5:

Table 9.5: Reprofiling Triggers, €

Project	2020	2021	2022	2023	2024	Due Onsite
Pier 5	-	-	0.28	0.37	0.45	Q4 2021
US Preclearance Expansion	-	-	0.06	0.08	0.09	Q1 2021
T1 Security Relocation	-	-	0.05	0.06	0.07	Q1 2021
T1 IDL Expansion	-	0.03	0.05	0.06	0.08	Q4 2020
T1 Check-In	-	0.03	0.05	0.06	0.07	Q4 2020
West Apron Underpass	-	0.09	0.13	0.17	0.21	Q4 2020
Apron 5M	-	-	-	-	0.12	Q1 2023
Pier 1	-	-	-	0.20	0.24	Q3 2022
Total	0.00	0.16	0.62	1.00	1.34	

Source: CAR

- 9.72 For each year, if the project is not on-site by the end of that year, the reprofiling trigger will postpone the capital cost remuneration out of that year. We have allowed for timeline slippage of at least a year relative to the most recent timeline provided by Dublin Airport, which has itself slipped in relation to a number of projects relative to that which was set out in the CIP consultation, before the reprofiling trigger event occurs.

- 9.73 For example, the Pier 1 extension project is expected to be on-site in Q3 2022. Provided it is on-site by the end of 2023, there is no reprofiling of remuneration. If it is not on site by the end of 2023, the final price cap for 2023 will reduce by 20c which equates to the capital cost allowance for that year. If it is then on-site by the end of 2024, the reprofiling trigger will no longer apply and there is no price cap adjustment for 2024 in relation to the Pier 1 Extension project. If it is not on-site by the end of 2024, the final price cap for 2024 will reduce by 24c. In the limit case where none of these projects have gone on-site by the end of 2024, the 2024 price cap reduces by €1.34.
- 9.74 We define on site as tendering complete for the main construction contractor package and that the contract is signed and work has commenced. Each project as per the above table is defined as the project as scoped currently, which is set out in this Determination and the accompanying Steer report, unless scope changes have been driven by the StageGate process.
- 9.75 We are seeking to balance our statutory objectives, allowing for Dublin Airport to develop the airport in a way which is in the interests of airport users, while seeking to ensure that the timing of remuneration does not become entirely misaligned with the programme.
- 9.76 There was also a substantial risk in the Draft Determination that if Dublin Airport did not progress these projects, it could have faced an unprecedented clawback of Capex allowances in the next period. If, as has been suggested, Dublin Airport were to 'stand down' the CIP entirely, this clawback would have numbered in the hundreds of millions. These reprofiling triggers mitigate the impact of a potentially large clawback of unused capital allowances by spreading it over two periods, rather than a potential large price cap impact from 2025 even before other building blocks are considered.
- 9.77 We stress that this does not affect the certainty over the level of remuneration, which remains driven by the output from the StageGate process, but just the timing. The activation of one of these triggers will, all else equal, result in a correspondingly higher level of capital costs being recovered in future periods if the project proceeds. These reprofiling triggers relate to the capital costs only; in the interests of proportionality we do not include the Opex uplifts or commercial property revenue reductions associated with these projects, nor the financial viability adjustment which is discussed further in Section 10.
- 9.78 Projects with an allowance, which successfully went through StageGate if relevant, which commenced in this period can extend into the next period and have assurances on remuneration provided any other conditions set out in this Determination are met.

Reporting Requirements

- 9.79 Dublin Airport suggests that reporting on CIP2020 should be broken down into Flexible or Deliverable projects, and StageGate projects, with a revised timeline driven by the StageGate process being used for reporting also. Dublin Airport seeks clarity on how frequently reporting will be required, whether reporting on individual allowance reallocations will be required, and whether initial reallocations can change later in the period.
- 9.80 We agree with Dublin Airport's suggestion that further reporting on StageGate projects, based on a timeline driven by that process, would be beneficial.
- 9.81 As referenced in the Draft Determination, we consider that quarterly reporting on the progress of the CIP2020 projects would be appropriate. This is aligned with current reporting requirements in relation to the PACE projects. In providing quarterly reports, Dublin Airport does not need to identify specific quantified reallocations at an individual project level, i.e. from one project to another. The report will need to focus on the projects themselves, setting

out any changes relative to the timelines in Dublin Airport's regulatory proposition. This includes identifying any projects which are expected to be delayed or fast-tracked, significant changes in project scope and/or estimated costs, any projects which have been postponed or cancelled, or any new projects. Rather than setting out individual reallocations, it should include an update on expenditure at a group level, relative to the allowance. We will work with Dublin Airport in developing a revised reporting template which sets out these key issues. Flexibility across project groupings is discussed further below.

- 9.82 Initial reallocations can change later in the period; there is no requirement to lock down specific reallocations within the period. Ultimately, when carrying out the roll forward, we will simply take either the finalised group allowance (which may be adjusted either for undelivered Deliverables and/or allowed group overspend) or Dublin Airport's actual expenditure, whichever is lower.

Regulatory Conditions

- 9.83 Dublin Airport states that conditioning the remuneration of the South Apron projects, including the US Preclearance project, on the provision of dual code E Z/B1 taxiways has the potential to delay these projects while exposing Dublin Airport to the risk of non-remuneration of initial works.
- 9.84 The evidence we have assessed clearly indicates that the South Apron developments are highly dependent on the provision of dual Code E taxiways Z and B1. The project to deliver this improvement was allowed for under PACE; at that time the safety case approval was expected within months, while the project was expected to be completed for Summer 2021. However, there still remains uncertainty over the safety case, while the estimated delivery date has been substantially delayed to the end of 2022. Consequently at this time there can be no guarantee of ongoing remuneration of the South Apron projects in the absence of the delivery of the PACE project; should the taxiways project prove not to be possible, we consider that a fundamental review of the South Apron projects would be required; this could be facilitated through StageGate.
- 9.85 We further confirm that, as set out in the 2014 Determination, remuneration of the North Runway remains contingent on the airport remaining usable for arriving traffic in conditions that the existing runway configuration currently allows for.

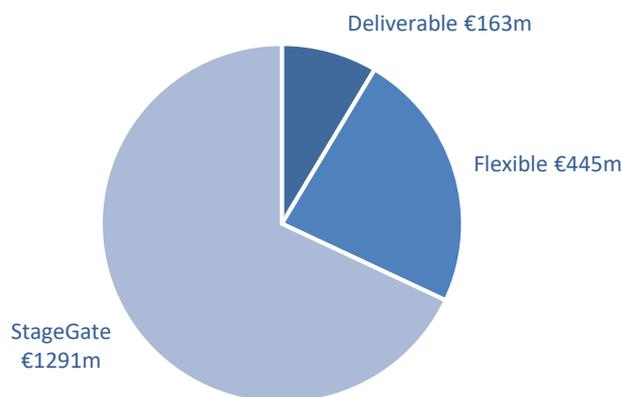
Deliverability and Future Reconciliation- Flexible and Deliverable Projects

- 9.86 Aer Lingus supports a number of other projects which were not ultimately included in the final CIP programme by Dublin Airport. It suggests that there should be flexibility to allow Dublin Airport to proceed with these projects.
- 9.87 In relation to the RAB roll forward principles, Dublin Airport seeks clarification that overspend due to an emergency capex requirement is considered to be outside of Dublin Airport's control. Where an investment is abandoned prior to completion, Dublin Airport considers that the principles do not fairly address a scenario where airport users are reluctant to support the abandonment of a project which cannot be progressed, for example due to regulatory non-approval.
- 9.88 Dublin Airport supports flexibility in the core capital allowances, with the projects grouped for reconciliation. It points out that T1 HVAC had been set out as Deliverable in Appendix 7 of the Draft Determination despite our stated intention that it be flexible. It does not dispute the categorisation of the Screening and Logistics Centre as a Deliverable, but requested that the time-specific deliverability element be adjusted to apply only to Phase 1 of that project, which

includes two compounds to supplement construction access in the short term, rather than Phase 2 which is the main screening centre.

- 9.89 We consider that the Draft Determination provided an appropriate level of flexibility, with the StageGate process providing a new level of flexibility relative to previous determinations given that the quantum of allowances can adjust without the requirement for an Interim Review.

Figure 9.2: Allowances by Regulatory Treatment



Source: CAR

- 9.90 The approach for reconciling grouped allowances, which are not part of the StageGate process, will be the same as that used for the 2015-2019 CIP. Should Dublin Airport consider that overspending relative to a group allowance is in the interests of airport users, it should consult with airport users on the group allowance in advance of committing to the group overspend. This consultation should provide an update on the status of all projects in the group, in particular any identified scope reductions or deferred projects which have resulted in reallocations, together with the reason(s) for there still being a requirement for additional expenditure. We are willing to work with Dublin Airport to agree the precise requirements for any consultation, given the particular set of circumstances.
- 9.91 Should airport users unanimously support an increase in the group allowance, Dublin Airport has certainty that the Commission will reflect this increased allowance in the subsequent RAB roll forward. Should there not be unanimous support but Dublin Airport proceeds to overspend the allowance, the Commission will consider the outcome of the consultation process and the degree to which positions were constructive and supported by evidence in deciding whether to increase the group allowance and by how much. As noted above, the other option available to Dublin Airport in that scenario is a Supplementary Capex request.
- 9.92 In relation to emergency capex, for example in relation to a catastrophic asset failure which requires immediate expenditure directly leading to a group overspend, we do acknowledge that it in some circumstances it would not be reasonable for us to expect consultation in advance of committing to expenditure which exceeds the group allowance. A situation such as this is covered below, i.e. overspend on a group allowance which is outside Dublin Airport's control. However, we would expect Dublin Airport to consult on this overspend as soon as reasonably possible afterwards, and in particular we would expect Dublin Airport to seek to avoid committing to any further group overspend in advance of carrying out that consultation.
- 9.93 We have accepted Dublin Airport's suggestion in relation to the scenario where investment is abandoned prior to completion. Instead the treatment to be applied in the event of an individual project being abandoned is now driven by whether the project is categorised as

Deliverable or Flexible. Thus, this scenario will not be relevant for the 2024 reconciliation and we have removed it. How we view 'expected output' depends on the classification of the allowance. In the case of Deliverable projects, the expected output is the specific project for which the allowance was afforded. Where an allowance is Flexible, the expected output is expenditure on projects which would fall within the same grouping for which the allowance was afforded.

- 9.94 The RAB roll-forward principles which will be applied in the next determination, which should be read in light of the above clarifications, are set out in Table 9.6.

Table 9.6: RAB Roll Forward Principles for Non-StageGate Projects

Scenario	Treatment
Investment delivers expected output at lower cost than allowed for.	The lower cost enters the RAB. Dublin Airport benefits from the saving within the determination period only, as the additional capital cost allowance earned over that time is not clawed back.
Investment delivers expected output at higher cost than allowed for.	The overspend will not enter the RAB, unless Dublin Airport can demonstrate substantial user support for the overspend or that the overspend was outside its control.
Investment does not take place, output is not delivered.	The RAB is revised down accordingly. The associated capital cost allowance is clawed back.
Investment delivers different output to that initially envisaged.	The RAB is revised down accordingly and the associated capital cost allowance is clawed back, unless Dublin Airport can show that the changed scope was due to user requirements.
Existing asset in RAB has become obsolete or needs to be removed for other development.	No effect on the RAB.
Existing asset in RAB has been sold.	The RAB is revised down by the amount for which the asset was sold (provided that this was at or close to market price).

Source: CAR

- 9.95 We have corrected the error in the appendix in relation to the T1 HVAC project; our intention was for this allowance to be Flexible. We consider that the benefit of the Screening and Logistics Centre is significantly time dependant and needs to be in place for a substantial portion of the CIP2020 works in order for us to conclude that it is in the interests of airport users. However, we also understand that Phase 1 is important in facilitating works on other CIP projects and do not want to jeopardise this element through a time-dependant condition relating to Phase 2.
- 9.96 We have decided to effectively split this project into two time-dependant deliverables, Phase 1 and Phase 2, both with a delivery date of the end of 2022. Therefore, if Phase 1 is completed by the end of 2022, Dublin Airport has certainty over the ongoing remuneration of the portion of costs associated with Phase 1. If Phase 2 is completed by the end of 2022, Dublin Airport has certainty over the ongoing remuneration of the full allowance. We have built some redundancy into the timeline, relative to that which was set out by Dublin Airport.

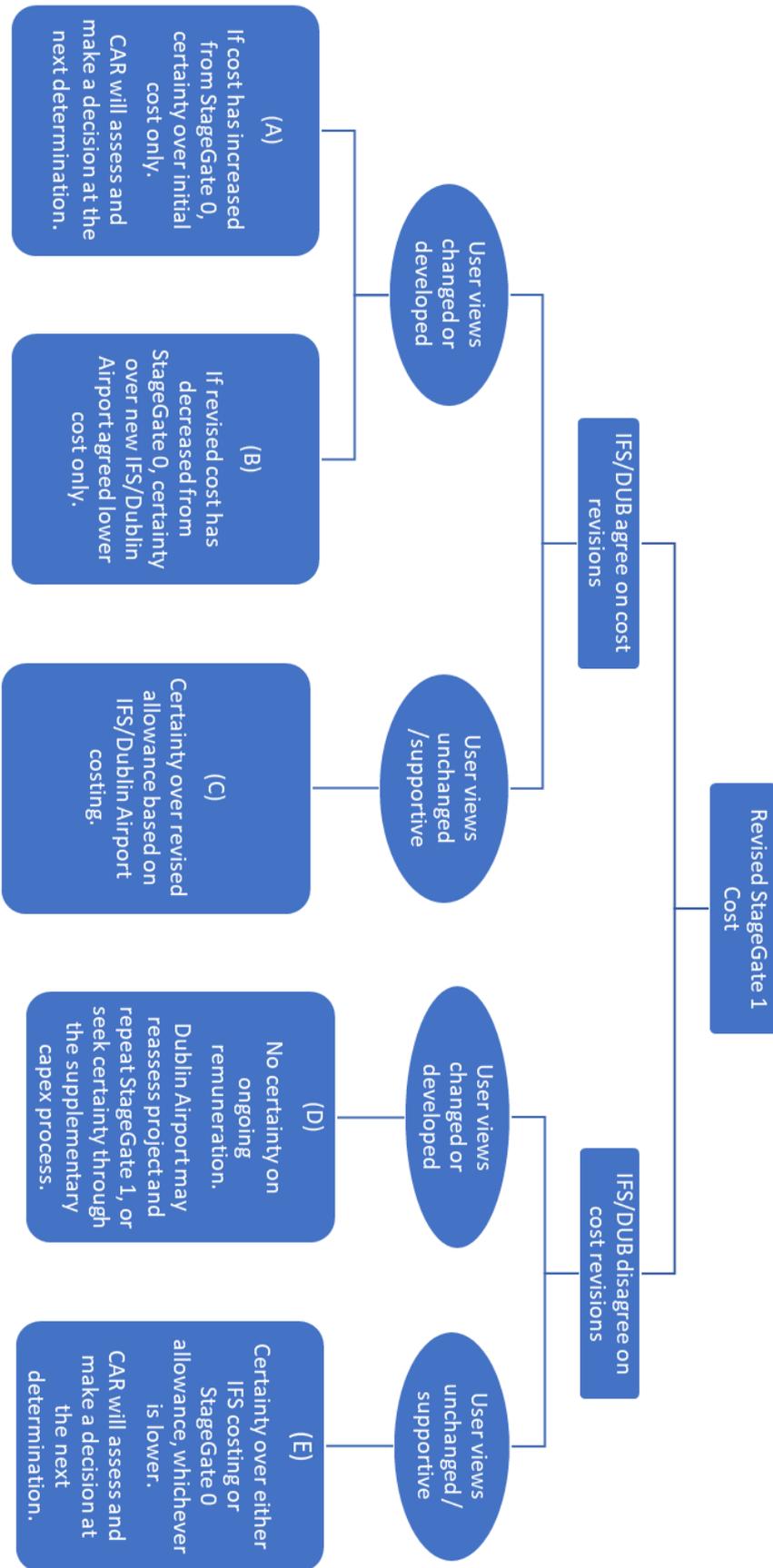
Other Issues

- 9.97 In the Draft Determination, we did not include allowances for the Second MV Connection Point feasibility study or Metro Coordination on the basis that we did not consider them to constitute capex projects, not because we did not consider them to be in the interests of users. Dublin Airport suggests that we should provide an Opex allowance for Metro Coordination. It further suggests that we include the allowance for the Second MV Connection Point feasibility study and include the project in StageGate, with the bulk of associated costs to be developed through that process.
- 9.98 We have included an Opex allowance for Metro Coordination which is discussed in Section 6. In the Draft Determination, we noted that the Dardistown substation presents a single point of failure for the airport campus and that further exploration of this issue was warranted. In order to allow for the further exploration and implementation of this project, through providing a path to certainty over remuneration for Dublin Airport without further delay, we have now allowed for this project and categorised it as StageGate.

StageGate

- 9.99 The StageGate process is intended to improve the regulatory model by allowing for ongoing flexibility for the scope and/or cost of certain projects to evolve throughout the regulatory period, rather than being set in advance. The process will involve Dublin Airport, airport users, the Commission, and an Independent Fund Surveyor (IFS) to continue to assess cost developments across the various projects. The output from the process will ultimately feed through to the Commission's final decision on cost allowance for these projects, which will be made after the project is complete.
- 9.100 On 7 June, we issued a document setting out our proposal for permutations regarding cost certainty through the StageGate process. This followed on from the Draft Determination, in which we identified a draft set of projects which would need to go through the process.
- 9.101 We have decided to implement this process as we set out; the certainty permutations are set out in Figure 9.3. In this diagram, the IFS refers to the Independent Fund Surveyor to be appointed as part of the StageGate process, while DUB refers to Dublin Airport.
- 9.102 However, we have adjusted the set of projects included to target those where we consider the process will add the most value. The number of StageGate projects has reduced from 21 to 17. In Q4 this year, we will engage further with stakeholders regarding the mechanics, in particular appointing the IFS and the frequency and format of meetings.

Figure 9.3: StageGate Permutations



Submissions Received on StageGate

- 9.103 Aer Lingus is generally supportive of StageGate. It states that strict timelines are required to avoid the opportunity for tactical delay, noting that the €20m proposed threshold may lead to project splitting by Dublin Airport in future periods to avoid projects falling within the threshold of the process. Aer Lingus suggests that the Independent Fund Surveyor (IFS) should be funded by the Commission directly.
- 9.104 Dublin Airport supports StageGate. It suggests a more targeted approach to project selection; of the 21 projects we proposed, it suggests removing 11 of the smaller scale projects and adding in the second MV Connection Point, which we had disallowed in the Draft Determination. Dublin Airport considers that it is not appropriate to designate Asset Care projects such as Apron Rehab, Taxiway Rehab, and T1 Façade as StageGate projects, as this would could impede the ability to manage these works in an agile way.
- 9.105 Dublin Airport suggests that an in-term entry mechanism should be included for projects where the anticipated final cost exceeds €50m and for new projects. Dublin Airport suggests that a StageGate committee meet monthly, while costs incurred up to the decision point should be capitalised and allowed in the event that a project does not proceed. It suggests that contingency allowances should be managed at a portfolio level.
- 9.106 Having reviewed similar processes internationally, Dublin Airport states that the IFS is normally appointed by the airport and airlines.
- 9.107 Dublin Airport flags potential cost risks including planning delay and local authority development rates, stating that StageGate should allow for engagement among stakeholders in the event of materialisation of such risk. It states that safety critical projects should not be subject to user veto, instead being assessed by the IFS only.
- 9.108 Dublin Airport is concerned that any stakeholder could veto a project irrespective of size of operation or relevance of that project to the user in question, suggesting that the threshold should be 'substantial user support'. In relation to the permutations tree in Figure 9.3, it states the following:
- Scenario A will lead to uncertainty over project costs until the next determination.
 - Under Scenario B, the cost saving should become a flexible allowance to cater for new projects/contingency.
 - Scenarios D and E should be revised to provide for certainty over either the initial allowance (also termed the StageGate 0 allowance) or the IFS cost, whichever is higher.
- 9.109 IALPA is supportive of StageGate. It states that IATA should be a key stakeholder in the process.
- 9.110 IATA is supportive of the StageGate process.
- 9.111 Norwegian seeks clarity on how StageGate can impact the price cap over the period 2020-2024.
- 9.112 Ryanair is supportive of the StageGate process generally and the scope of projects we proposed for inclusion.
- 9.113 Accepting that standard assumptions have been used for contingencies, Ryanair nevertheless considers that across a programme of this scale it can be expected that the sum total of all risks that come to fruition will be less than the sum of all the contingency allowances across

all of the projects. It suggests reducing the overall level of contingency, with required expenditure of a centralised contingency amount to be determined through StageGate. Ryanair further states that the process does not negate the importance of ensuring that the initial assumptions on the level of Capex to be added to the RAB are correct.

Decision on StageGate

9.114 We have accepted Dublin Airport’s suggestion regarding the selection of projects, moving away from the broad €20m threshold, which also addresses Aer Lingus’ concern regarding the tactical splitting of projects in future periods. We include the projects set out with the aim of ensuring that this pilot process is focused on the large scale infrastructural projects rather than relatively smaller projects. We do continue to include the Apron Rehab and Taxiway Rehab projects; in the absence of the full condition report we do not consider that there is sufficient certainty over the cost of these works to provide a grouped allowance, when the alternative is for the costs to be validated by the IFS through the StageGate process. This should not impede these works; once a more detailed assessment has been carried out, Dublin Airport may choose to advance these projects through StageGate either all together or in different sections as they relate to different areas of pavement.

Table 9.7: StageGate Projects

Project	CIP.20	Initial Allowance
Apron Rehab Programme	01.002	€40.2m
Taxiway Rehab Programme	01.003	€16.4m
Second MV Connection Point	02.002	€1.0m
T1 Check-In (Partial Shoreline)	03.011A	€26.0m
T1 Central Search Relocation	03.012	€31.5m
T1 Departures Lounge	03.013	€32.9m
T2 Early Bag Store and transfer lines	03.028	€27.9m
Pier 5	03.029	€298.7m
Expansion of US Preclearance	03.030	€55.1m
South Apron Expansion	03.031	€71.3m
North Apron Development	03.036	€163.5m
T1 Piers- New Airbridges	03.043A	€23.3m
West Apron Underpass- Pier 3	03.051B	€169m
Surface Water Environmental Compliance	03.052	€51.6m
Apron 5M- 17 NBES	03.054	€82.5
HBS Standard 3- T2	07.031	€200m
HBS Standard 3- T1	07.033	
Total		€1290m

Source: CAR

9.115 We also maintain three interlinked T1 departures projects in StageGate as we consider that there is significant uncertainty over the required scope of the project to relocate Central Search to the mezzanine.

9.116 We have not adjusted the certainty permutations as suggested by Dublin Airport. The permutations relate to certainty only; a threshold such as ‘substantial user support’ is itself uncertain and would defeat our objective of allowing certainty to be achieved through the process. Should the StageGate process lead to an outcome where certainty has not been achieved, the Commission will make the final decision on the final allowance. In that situation, the Commission will have a detailed body of contemporaneous consultation based evidence

to consider in deciding on the finalised allowance. At that time we would consider the extent to which any objections were reasonable and evidence based. This in itself is a substantial improvement relative to the status quo. We will reconcile each of these projects individually on the basis of the outturn expenditure relative to the finalised allowance. In relation to the specific permutations, we point out the following:

- Under scenario A, there remains certainty over the allowance as set out in Table 9.7; there can be no less certainty than would have been the case in the absence of the StageGate process. Furthermore a user can only 'veto' the project if it supported or did not object to it in response to Dublin Airport's consultation on the CIP, or if a material change in cost or scope is proposed.
- In relation to scenario B, we consider that any cost changes to StageGate projects should be considered on their own merits. Thus, where a saving is identified on a particular project, this saving will drive the final allowance for that project. On the other hand, where there is a cost increase proposed, the specific factors which have driven the increase should be considered as part of the process as it relates to that project.
- In scenario D, we cannot allow for this outcome to lead to cost certainty; the process needs to empower users where there is no agreement on costs and user views have moved against the project. As well as the options to re-assess the project or make use of the Supplementary Capex process, in this scenario Dublin Airport could always choose to align itself with the IFS costing and therefore attain one of scenarios A,B or C.
- Similarly, in scenario E, users may be supportive of a project proceeding despite the IFS assessing that Dublin Airport's position on cost is not reflective of efficiency. In those circumstances, Dublin Airport would have certainty that the ultimate allowance will be no lower than the view of the IFS or the initial allowance as per Table 9.7, whichever is lower. Again, we cannot allow for the process to be one-sided; ultimately the Commission would be in a position to implement an informed RAB roll forward at the time of the next determination.

9.117 We continue to define these terms in the following way:

- User views having changed implies that a user which supported or did not object to the project at the time it was consulted on as part of Dublin Airport's consultation on the Draft CIP, now opposes the project.
- User views having developed implies that, regardless of the users initial view, there has since been a material change in the scope of the project or the scope of the project is more advanced, meaning that the user may not support the project as now presented. Alternatively, a user view may develop regardless of its initial view if there has been an increase in the estimated cost of the project from StageGate 0 (the initial allowance) to StageGate 1.

9.118 We have not included an in-term entry mechanism. To do so would create a moral hazard where only projects with cost increases would be proposed for entry into the process, while it would also undermine the grouped allowances process through which non-StageGate projects will be reconciled. There are other mechanisms more suited for considering new projects, namely Capex group flexibility and interim consultations, or the Supplementary Capex process. Therefore a new project could only be added to StageGate by means of an Interim Review of this Determination. Neither do we distinguish between projects which are identified as 'safety critical', and those which are not. If, as suggested by Dublin Airport, the IFS is aligned with Dublin Airport in relation to the cost of such a project, the process cannot erode certainty beyond the initial allowance unless a lower cost is agreed by both Dublin Airport and the IFS.

- 9.119 The StageGate process does not provide for within-period price cap adjustments; it will not impact the price cap over the period 2020-2024. It is intended to allow for consideration of materialised risks such as those set out by Dublin Airport. Early design costs can be remunerated either through Opex or capitalisation; we do not consider that the StageGate process should lead to a particular step change in such costs.
- 9.120 As accepted by Ryanair, Steer has allowed for standard assumptions regarding contingencies. We do not agree that the scale of the programme in itself invalidates these assumptions when considering contingencies in totality. The assumptions regarding contingency equate to the expected amount, on average, that would be required to deal with unexpected factors and thus result in no overspend or underspend on the project. Therefore, across a larger investment programme, it can be expected that contingency allowances will overall prove more accurate than would be the case for a smaller programme. This is because risk will materialise to a different extent across different projects. We agree that Dublin Airport should manage contingency spend across the programme of projects. This will be subject to IFS oversight with details being provided to users as part of the StageGate process.
- 9.121 We agree with Ryanair that the StageGate process does not remove the need to ensure that the initial cost allowance is appropriate, to the extent possible given the level of project development. For that reason, Steer has carried out a full review of the proposed costings and we have allowed for costs based on Steer's advice. The Commission has separately considered the need for the projects and identified that they are in the interests of airport users.

Topics which Remain Unchanged

- 9.122 We continue to allow for other uncompleted PACE projects alongside the CIP2020 projects, with the exception of the PACE Level 15 Bus Gates project which is not proceeding.
- 9.123 We continue to allow for T2 Box 2, as we expect the 33m passenger threshold to be reached in 2020. Should it not be reached, we have included a reverse trigger to remove it from the price cap. Once the 33m threshold is reached, remuneration of Box 2 continues for the remaining asset life of T2 even if passenger numbers subsequently drop below 33m.
- 9.124 We continue to apply Milestone based triggers for the North Runway project, with the bulk of associated remuneration to commence following the attainment of Milestone 2, the runway being in use for operations. Milestone 1 is already being remunerated, while M3 will trigger once the associated house buyout scheme is complete and closed. As noted in the Draft Determination, the 50/50 risk sharing mechanism remains in place for this project.
- 9.125 We continue to allow for the North Runway triggers M2 and M3 in the price cap formulae. The exact figure is subject to outturn passenger numbers in the year in which the trigger event occurs. However based on current expectations, M2 would add approximately 28c.
- 9.126 We continue to reconcile and allow for the Pier 2 Segregation project, as the trigger event occurred in 2017.
- 9.127 We continue to reduce the RAB by €48.1m to complete the exit of lands associated with Dublin Airport City from the regulatory till. This amount is based on a valuation we conducted in 2014 and a policy paper published at that time.⁵⁰

⁵⁰ <http://www.aviationreg.ie/fileupload/2014-12-10%20CP3%20Dublin%20Airport%20City%20valuation%20and%20till%20exit.pdf>

Capital Costs- Comparison with Dublin Airport's submission

9.128 Our capital costs are lower than Dublin Airport's submission for the following key reasons:

- Our cost of capital is 4.22% compared to Dublin Airport's higher proposals.
- While we have allowed projects in the CIP, based on our cost assessment, we have reduced the cost by just under €100m. This reduces both the depreciation and the return on capital.

10. Financing, Risk and Financial Viability

Table 10.1: Financial Viability Adjustment

	2020	2021	2022	2023	2024
Price without depreciation adjustment	7.40	6.93	7.13	7.44	7.69
Financial Viability Adjustment	0.10	0.57	0.75	0.68	0.64
Price with depreciation adjustment	7.50	7.50	7.88	8.12	8.32
FFO/Net Debt	25%	20%	18%	18%	18%
Net Debt/EBITDA	3.61	4.58	4.9	4.9	4.9

Source: CAR

- 10.1 This section examines Dublin Airport's ability to raise finance in a cost-efficient way to fund the development of the airport. We make an adjustment to the price cap to improve the Net Debt/EBITDA ratio; the adjustment is driven by the Debt/EBITDA ratio but also improves other financial ratios including the key FFO/NET DEBT ratio.⁵¹ After making this adjustment the price cap is consistent with enabling Dublin Airport to operate and develop in a sustainable and financially viable manner in the interests of airport users. The adjustment totals €109m across the period.
- 10.2 We established that ratios consistent with those in the Draft Determination are financeable in today's markets provided Dublin Airport is a reasonably efficient operator (that is, efficient to the levels we deem achievable). That is, FFO/NET DEBT in the mid-teens and Net Debt/EBITDA below 6x. However, to protect against downside risk we have now aimed for an FFO/NET DEBT ratio above 15% and a Net Debt/EBITDA ratio of less than 5x.
- 10.3 We have assessed the Business Risk Profile of the regulated entity. In Standard and Poors' (S&P) terminology, we have concluded that the business risk profile of the regulated entity would be strong and is likely to remain strong for the period of this price cap. This business risk profile is supported by a strong and stable regulatory environment.
- 10.4 Our objective is the same as the Draft Determination; to assess Dublin Airport's ability to finance the regulatory settlement and if necessary, adjust the price cap upwards to increase confidence in Dublin Airport's ability to raise the necessary finance.
- 10.5 Our methodology and inputs have changed since the Draft Determination as follows:
- We engaged financial advisors, Centrus Advisors Limited (Centrus), who assisted us in further assessing the financeability of the regulatory settlement.
 - On our behalf, Centrus has conducted an extensive exercise to establish how a rating agency would assess the rating of a standalone regulated entity, Dublin Airport, in the forthcoming period. This analysis has assessed both the Business Risk Profile and financial risk profile.
 - On our behalf, Centrus has examined the current market conditions for raising debt and advised how the market may respond to debt issued by Dublin Airport (standalone entity).
 - On our behalf, Centrus has considered a reasonable range of downside scenarios and

⁵¹ FFO/Net Debt = Free Funds from Operations/Net Debt where FFO is Earnings before depreciation but net of interest and tax

Net Debt/EBITDA is Debt net of Cash divided by earnings before interest, tax, depreciation and amortisation. For example, 6x would mean Net Debt = 6*EBITDA

advised how a level of comfort in Dublin Airport's ability to raise finance can be maintained in a range of reasonable downsides.

- Based on a review of further information submitted by Dublin Airport, we have gained a better understanding of what Dublin Airport's opening net debt will likely be on the 1 January 2020, almost €50m less than we anticipated in the Draft Determination. This reduces the debt requirement in the period.
- We have gained a better understanding of likely debt requirements in the forthcoming period and of the loan agreements currently in place. We have reduced the debt requirement by €70m due to expenditure which has already occurred on the Capital Investment Plan 2020-2024, net of expenditure on CIP 2015-2019 which will occur in 2020. This reduces the debt requirement in the period.

Submission Received

- 10.6 Airports Council International (ACI) urges us to fully test our proposals for financeability in order to protect future users.
- 10.7 Aer Lingus are of the view that the proposals in the Draft Determination are financeable. However, it would support a financial viability mechanism which adds an adjustment in later years if needed but removes it if the CIP is not on track for on time delivery. Aer Lingus also proposes that we should seek external expertise in this area which would assess credit rating outlook, market conditions and investor appetite.
- 10.8 Dublin Chambers suggest that it would prudent for us to seek independent advice on the financeability of the capital investment plan.
- 10.9 Fingal Chambers suggest that we should engage independent advice on the financeability of the capital investment plan.
- 10.10 Dublin Airport's position can be summarised as follows. It:
- requests that we engage independent advisors to assess the financial viability of our pricing proposal.
 - claims that we incorrectly identified BBB as an appropriate minimum stand-alone credit rating for Dublin Airport given Dublin Airport is not in a position to encumber the State-owned airport assets and provide security or covenants to lenders. It claims that the Draft Determination would not support a BBB rating.
 - claims it is wrong to base our assessment on our forecasts of building blocks because those forecasts are not achievable.
 - states that we have not applied an adequate range of sensitivity analysis to our assessment of financeability.
 - states that our proposed adjustment is not logical and that it is targeting a price rather than ratios.
 - criticises our reliance on two financial metrics in determining the financeability adjustment required and not taking into account wider debt market considerations or directly looking at how Dublin Airport will finance the €2bn of capital investment that is required.
 - calls on us to examine the Business Risk Profile in more detail, in particular looking at the link between a supportive regulatory environment and the business risk profile, arguing that changes in price should be steady and predictable. Dublin Airport also states

that us disallowing the expenditure on the PBZ project would put its Business Risk Profile at risk.

- claims that we gave no consideration to how Dublin Airport would fund the investment plan, the terms, or to the government approvals required for borrowings. Dublin Airport urges us to pay sufficient attention to the fact that Dublin Airport is Government owned.

10.11 Ryanair made the following observations:

- In the Draft Determination we allowed virtually all of the Capex requested by Dublin Airport to enter the RAB in the forthcoming period despite us admitting that there is a considerable likelihood that the airport will not be able to deliver the full CIP in the period. Ryanair's view is that the capital requirements in the forthcoming period may be substantially less than we proposed (this view is discussed in Section 9), and that if the capital expenditure was to be reduce then the quantum of required debt would reduce and the need for the financial viability adjustment would also reduce.
- When assessing the level of required debt we should match it to the changes in the RAB.
- Dividends should not be set at a predetermined level, 30-40% of post-tax normalised profit, but rather should depend on business performance. It is inappropriate for the financial ratios to incorporate any aspect of Dublin Airport's dividend policy. Doing so sends a negative signal to debt lenders that the shareholders are unwilling to sacrifice dividend payments to fund expansion. Debt holders should have a higher priority over a company's cash flows which helps reduce the risk for lenders.
- It is important that the Government's ownership of Dublin Airport does not distort the financial assessment. Noting that in a commercially competitive environment there would be no pre-determined dividend policy.
- S&P reaffirmed an A- rating for Dublin Airport in its report subsequent to the Draft Determination. This confirms that Dublin Airport can proceed with its investment plan at the level of charges proposed in the Draft Determination.
- We could minimise the need for a financial viability adjustment by carefully taking account of the true Capex requirement in the next five years and by taking a prudent approach to dividend policy.

10.12 Ryanair provides a discussion of market evidence showing the financial ratios of other airports who are raising debt in the market. It notes that there is strong appetite for infrastructure debt in the current market. It also notes strong demand for Irish bonds, both sovereign and corporate, with high subscription rates seen in the last year.

10.13 Ryanair also notes Dublin Airport's proven ability to raise debt, with the €350m EIB loan announced in June 2019.

10.14 While IATA understands the purpose of reprofiling depreciation and supports its usage in specific circumstances, it urges great care before using it. It asks that we assess whether bringing forward depreciation is required at all. It notes that in the 2014 Determination, we brought forward some €84m of depreciation which resulted in a higher level of charges and that given traffic in the period was significantly above forecast, Dublin Airport had a significant benefit from that adjustment. That is, due to the higher volume the amount collected due to the adjustment was higher than anticipated.

10.15 IATA disagree with some of the assumptions we made in the Draft Determination to arrive at the required financial viability adjustment. In particular, IATA disagrees with the assumption that daa's shareholder does not make any capital injection (in other words, assuming equity

would only be based on returned earnings), and that Dublin Airport pays dividends over the period of around €137m (noting that the depreciation amount brought forward in the Draft Determination was very similar, at €133m).

- 10.16 IATA states that it understands “that there is significant capital expenditure forecast and understand that the CAR wants to ensure that daa can finance such investment, but in the context of a significant capital expenditure it is hard to understand why the shareholder is not expected to inject capital (or at least forgo its dividends) until the capital expenditure program is delivered.”
- 10.17 IATA states that it would be preferable if the Commission did not make dividend policy decisions, noting that we should calculate the financial ratios on the basis that the notional 50% gearing ratio will be maintained throughout the period and leave decisions on how to deal with the equity proportion to the shareholder.
- 10.18 IBEC encourages us to procure independent advice on financeability.
- 10.19 The Ireland Canada Business Association urged us to carry out a third-party assessment of financeability.
- 10.20 The Irish Tourism Industry Confederation encourages us to conduct an independent assessment of financeability.

Responses to Submissions

- 10.21 In response to representations made we engaged Centrus Advisors Limited to conduct a financeability assessment of Dublin Airport for 2020-2024.
- 10.22 In relation to submissions from Ryanair and IATA on dividend policy, we consider that dividends should be payable in the base case, but when dealing with downside or adverse scenarios adjustments to dividends may be part of the remedies examined by Dublin Airport.
- 10.23 In relation to submissions by Ryanair and Aer Lingus on profiling of capital expenditure, we have introduced reprofiling triggers, as discussed in Section 9. Should delays be encountered in the Capital Investment Plan, for certain projects, the reprofiling triggers will postpone elements of the price cap associated with the projects.
- 10.24 We disagree with Dublin Airport’s position that our decision on disallowing the South Apron PBZ would put its Business Risk Profile at risk. This is an example of predictable, stable regulation. In our decision, in 2017, on allowances for supplementary capex, including the South Apron PBZ we set out clear rules on remuneration of projects. The South Apron PBZ is not being remunerated because Dublin Airport is not in compliance with those rules as discussed in Section 9.
- 10.25 This determination follows a predictable approach for arriving at the price cap. This is discussed in Section 4.

Centrus’ Assessment of Financeability

- 10.26 The scope of Centrus’ assessment was to:
- Advise on appropriate thresholds for financial ratios and target credit rating for Dublin Airport to enable it to access the debt markets at an efficient cost.
 - Reflect on S&P’s approach to assessing Dublin Airport (in particular the business risk

assessment and the uplift for potential state intervention).

- Engage with Dublin Airport, its debt advisors and other stakeholders identified by the Commission or Centrus.
- Provide a high-level review of financial and business risk from a funder perspective given the proposed pricing level.
- Advise on investor appetite for regulated infrastructure businesses (bank, bonds and EIB), and any relevant factors that may influence this outside of the core financial ratios and the credit rating.

10.27 Centrus was also asked to consider:

- any specific conditions under which Dublin Airport must access the debt markets (e.g. any particular requirements of its shareholder, for example in relation to debt security, credit rating, etc.)
- The effect of the rest of the daa group on the financial and business risk (CAR regulates Dublin Airport only, but daa raises debt as a group.)
- If deemed necessary, advise the Commission on any adjustments it should make to the risk assignment in the regulatory settlement to improve investor appetite.

10.28 In its report Centrus' analysis addresses representations we received on financeability and should be read in full alongside this Final Determination. Centrus reached the following conclusions, which for ease are quoted here directly from its report:

- Standard and Poor's do not provide a credit rating for the regulated entity but, by considering the components of its ratings methodology for business risk profile, it is reasonable that its business risk profile may be assessed as "strong". Furthermore, analysis of the forecast profitability based on the financial ratios produced by the pricing model using CAR's preliminary price determination forecast that profitability would not decline to a level that would likely lead to a downgrade of this assessment, as long as the regulatory regime itself remains stable.
- Funders may assess the standalone credit profile ("SACP") of the regulated entity as an 'a-/bbb+' rating category currently. If the SACP were to move toward 'bbb+' at the end of the price determination period, it is likely many of Dublin Airport's funders would also give consideration to the government support uplift which could continue to place its overall credit rating in the 'A'- category. These are rating levels which could be considered to support continued access to debt markets over the pricing period.
- In order to understand debt funders' likely requirements for the appropriate credit rating and financial thresholds for the regulated entity over the price determination period, we also undertook a level of market analysis. Having considered same, we conclude that based on current market conditions a minimum BBB+ credit rating and financial ratios with FFO/Net Debt in the mid-teens and Net Debt/EBITDA of less than 6.0x may be required to provide a reasonable level of comfort in accessing debt markets. In addition, CAR is setting a price cap for a 5-year period and we note that market conditions remain subject to change. Therefore, there is a risk that funder appetite at these levels may not persist over the full pricing period during which Dublin Airport will need to raise new debt.
- To increase confidence that Dublin Airport should be able to raise the full requirement for c.€1bn of new debt to fund a significant programme of capital expenditure forecast over the pricing period, CAR could consider enabling a path to Dublin Airport achieving an FFO/Net Debt above 15%, and a Net Debt/EBITDA of less than 5.0x in the later years

of the forecast period. This would take account of both company specific adverse scenarios and in a potentially deteriorated debt market, while also moving it closer to the financial ratios of many of the airport operators with government ownership in its peer group.

- Any proposed move from a target FFO/Net Debt from 13% to above 15% and to a Net Debt/EBITDA target move from less than 6.0x to below 5.0x, needs to be carefully balanced to ensure users are not being asked to pay more for financial viability than is required. CAR has a number of levers to enable this path, for example a further increase in accelerated depreciation, consideration of the timing or size of capex, etc.
- For price adjustments to facilitate these targets, such as accelerated depreciation, CAR could consider sculpting the adjustment to target a higher price in the later years where ratios come under most pressure.
- CAR could give consideration to re-evaluating financeability midway through the period to examine if the financial viability adjustment allowed at the start is still required towards the end of the period. If it is not required it could be then removed from the price for the final 2 to 3 years. This would provide confidence to debt funders at the outset of the price determination period that the forecast capital expenditure programme will remain financeable if Dublin Airport performs in line with the base case scenario but could also help ensure that passengers do not overpay if the out-turn performance due to factors beyond Dublin Airport's control does not warrant the allowances made. It is important that funders have certainty and hence the removal (to work from a funder perspective) would need to be structured in such a way as to only be removed if ratios were being met and forecast to be met over the period. For example, this could be implemented as a form of reverse trigger which is used following an assessment for delays in capital expenditure which in turn reduces the overall debt requirement over the remaining period.

Decision on Financial Viability

- 10.29 Based on Centrus' advice, representations received and our own judgment we have decided to protect against reasonable downside risks by aiming for a Net Debt/EBITDA ratio of less than 5x in all years. This results in an FFO/DEBT above 18% in all years.
- 10.30 There are a number of options available to us to improve the Debt/EBITDA ratio. The most obvious is to cut capital expenditure and thus cut the amount of debt required. However, we have already identified that all capital projects in the CIP are in the interests of both current and future users. Therefore, if proportionate, such an adjustment be avoided as it would not fully align with our statutory objectives.
- 10.31 There are a number of other options, which can be divided into two groups; firstly, those which increase the price cap at no cost to the airport (e.g. an increase in the cost of capital or a simple increase in the price cap) and secondly, those which reprofile future revenues into the current period which will result in lower revenues in future periods (e.g. accelerated depreciation or shorter asset lives assumed for investments). Reprofiting capex would have elements of both.
- 10.32 The advantage of reprofiling revenues is that the next period would start with a lower RAB, all else being equal. Therefore, while airport charges would increase in the current period, users should benefit from the infrastructure at lower cost in future periods than would be the case if we chose a methodology which would simply increase the price cap.
- 10.33 We have decided that reprofiling depreciation is the option which is most consistent with our statutory objectives. We have brought forward €109m of depreciation into the period to

achieve these favourable financial ratios. We will also use this reprofiling to increase the base price cap to €7.50 in 2020 and 2021. The price then increases further thereafter. The increased price in later years will be at a time when the adjustment is most needed.

- 10.34 On target ratios, focusing on Net Debt/EBITDA (as, at this time, it is the ratio which drives the adjustment) we conclude, in line with Centrus' advice, that a Net Debt/EBITDA ratio of less than 6x is sufficient in the base case. In this scenario we allow for Dublin Airport paying a dividend in line with its current dividend policy. We note that that dividend policy expires at the end of 2019. This is the approach we took in the Draft Determination.
- 10.35 Next, following Centrus' advice, we further consider downside scenarios. There are a number of reasonable downside scenarios which could occur in the next 5 years. To reasonably protect the financeability of the Capital Investment Plan in those scenarios we target a downside protection ratio for Net Debt/EBITDA of less than 5x. As this is a downside scenario, we assume dividends are not paid in this scenario.
- 10.36 This is in line with the Commission's regulatory precedent and regulatory precedent more generally. We note that this is in line with both daa plc's dividend policy and the shareholders expectation, whereby dividend is payable subject to daa plc maintaining a minimum credit rating of BBB+ and also having regard to the investment strategy of the business. In reality, dividends may be payable in many downside scenarios while staying below 6x on Net Debt/EBITDA.
- 10.37 In modelling target ratios:
- we continue to use our forecasts on building blocks. We have set targets across the building blocks which are achievable. In its downside scenario analysis Centrus included scenarios in which our building block targets were not achieved, including protecting against reasonable downsides where Dublin Airport fails to improve its performance as per the targets we set.
 - We use an opening net debt of €602m. This reflects Dublin Airport's current forecast of the opening debt position for 1 January 2020. This reduces the debt requirement in the period.
 - We have taken account of expenditure which will already have occurred on CIP 2020-2024 and also expenditure which will occur on CIP 2015-2019, PACE projects and the Northern Runway post 1 January 2020. This reduces the debt requirement in the period.
- 10.38 We have introduced reprofiling triggers. These are discussed in Section 9. If the capital projects associated with the reprofiling triggers are significantly behind schedule, then the associated Capex in the price cap is removed until the project is ready for construction start. In the event that projects are behind schedule the debt requirement will have changed and so the higher price cap will not be required at that time.
- 10.39 These reprofiling triggers protect the interests of users but will not impact negatively on financeability as the debt requirement will also have been reprofiled by the capex delay. In past Determinations triggered capex was not in the price unless a triggered event occurred. The Northern Runway and Terminal 2 Box 2 triggers which continue into this Determination are examples. However, for the reprofiling triggers, the capex is in the price cap unless construction does not commence.
- 10.40 The amounts associated with these triggers are more modest that they could have been as we have not included the financial viability element associated with the capex or the additional Opex associated with the projects. In this regard, there is additional downside protection for

Dublin Airport built into these triggers.

Conclusion on Financial Viability

- 10.41 The price cap set is consistent with Dublin Airport being able to raise debt at reasonable costs. We have a statutory objective, *“to enable daa to operate and develop Dublin Airport in a sustainable and financially viable manner.”* In addition to this, we also have regard to Dublin Airport’s ability to raise debt as it is in the interest of current and future users that Dublin Airport can fund the Capital Investment Plan.
- 10.42 With this price cap we have aimed to strike a balance between:
- enabling Dublin Airport to generate timely cash flows from airport charges and raise investment grade debt to maintain and develop the airport infrastructure in an efficient manner; and
 - protecting users against increases in the price cap that shield investors in Dublin Airport from general business risk or that serve to cross-subsidise the financial risk of the daa group as a whole.
- 10.43 Here, as in 2014, we focus on a Dublin Airport standalone entity rather than daa plc. This is somewhat hypothetical as Dublin Airport does not raise debt itself, nor does it have a standalone credit rating. All debt is raised at a group level. daa group engages in a number of activities with different risk profiles compared to Dublin Airport and which have significant capital requirements - altering the financial risk of the group. For example, daa group is developing a €1bn office development, Dublin Airport Central, which falls outside of the regulated entity.
- 10.44 It is the responsibility of daa plc to ensure that the group is financially viable. We focus on enabling the financial viability of the regulated entity part of the group.
- 10.45 Dublin Airport and those who provide debt to it have certainty that capital expenditure which enters the RAB will be remunerated efficiently for the life of the assets. This gives investors long term assurances that, if Dublin Airport follows the clear processes set out in our Determinations, it will have sufficient funds to service debt. In setting the cost of capital in this price cap we had regard to embedded debt, which gives investors additional certainty.
- 10.46 In this forthcoming period, we will strengthen the regulatory processes for large scale capital investment projects, by introducing a new process for ongoing assessment of larger projects which has been termed StageGate. Under the new process Dublin Airport will still be incentivised to deliver projects at an efficient cost, but if circumstances change, it will provide a more tailored and project specific process for dealing with potential cost changes. This will help to ensure that capital projects continue to meet the needs of airport users across the period, and also reduce the risk that Dublin Airport is not remunerated for associated efficient capital expenditure.
- 10.47 We have introduced additional flexibilities in the regulatory model in the last 5 years, primarily a process for the assessment of supplementary capital expenditure within a period, to, for example, deal with unexpected passenger traffic demand or unexpected security requirements.
- 10.48 Overall, the regulatory system delivers a low risk proposition for investors. This is particularly true in the long term, with the assurances on remuneration of the RAB and with the reassessment of risk at the start of each period.

Potential for Review

- 10.49 If circumstances change significantly within a period, we can review the determination to assess if it still meets our statutory objectives, on our own initiative or if requested by an interested party, amending it if necessary.
- 10.50 At the time of making this determination we do not anticipate conducting an interim review. Centrus discussed the potential for having an interim review to remove the financial viability adjustment if it is no longer required mid-period. While we see merit in this, the design of such a review would be complex. We are of the view that the reprofiling triggers we have added achieve some of the same effect and incentives but in a simpler mechanistic way which does not defeat other incentives which this Determination seeks to provide.

Brexit

- 10.51 We have protected against reasonable downside risks. However, we have not protected against all possible large scale downsides. A hard Brexit is one such risk. It is very difficult to assess the impact of the event and it would be inappropriate to price in such an unknown risk now given the current level of uncertainty.
- 10.52 We are minded that a hard Brexit (or disorderly Brexit) would represent substantial grounds for reviewing the determination. Such a review would be on request only, as Dublin Airport is likely to be in a position to manage many scenarios without such a review. It could be asked for at any time after a hard/disorderly Brexit (were either to occur) when the scale of the effects of such an event may be better understood.
- 10.53 The consequences of Brexit with a deal may well be less severe. In such a scenario, if requested, we would examine if substantial grounds existed to conduct a review.

11. Advancing Passenger Interests through Quality of Service

Summary of Standards

- 11.1 In 2018, we established a Passenger Advisory Group composed of organisations representing the diversity of passengers at Dublin Airport. We asked the Group for their views on quality of service measures and our proposals. We also sought the views of stakeholders on quality of service in the 2018 Issues Paper and the 2019 Draft Determination. In response to the advice we received from the Group and the submissions by stakeholders, we amended most of the existing measures and introduced 10 new ones, many of which focus on the satisfaction of passengers requiring additional assistance. Other suggestions made by the Group will be progressed by the Commission outside of this Determination.
- 11.2 The measures set out in the following paragraphs target many aspects of the passenger journey. In previous years quality of service measures were applied to all passengers as one group. In the coming years, we will continue to look at all the experiences of all passengers but will also focus on those passengers who require additional assistance.
- 11.3 We have set a comprehensive range of 22 targets to support passengers in their enjoyment of a high quality of service throughout the airport. If the following standards are not adhered to by Dublin Airport, penalties will apply. We decided not to implement the proposed bonuses as they were not supported by stakeholders.

Security queues

- 11.4 All passengers should queue for less than 30 minutes and for less than 20 minutes at least 70% of the time. A further penalty will apply if passengers are required to queue for more than 45 minutes.

Wait times for passengers requiring additional assistance

- 11.5 All passengers that have pre-advised the airport of the assistance they will require should be assisted from the terminal reception point within 20 minutes of their arrival. All pre-advised arriving passengers should be assisted from the airplane within 15 minutes of their arrival.

Baggage systems

- 11.6 Before the Hold Baggage Screening Standard 3 project (HBS3) is completed, outbound and inbound baggage belts in each terminal should be available 100% of the time within 30 minutes of an airline's request. After HBS3 is complete, the outcome of delivering arriving and departing bags should be available within 30 minutes of an airline's request.

Satisfaction of departing passengers

- 11.7 There are 11 quarterly targets. We have added two new measures looking at satisfaction with walking distance and availability of trolleys. The other measures relate to the helpfulness of security staff, helpfulness of airport staff, cleanliness of terminals, cleanliness of toilets, overall satisfaction, departure gates, finding your way around, flight information screens and Wi-Fi.

Satisfaction of departing passengers requiring additional assistance

- 11.8 There are 13 annual targets specifically looking at the quality of service provided to passengers that may require additional assistance. Eleven are the same as for departing passengers except that they are calculated on an annual basis. In addition, there are two new targets relating to

the assistance provided to passengers that request it and facilities available to these passengers. Dublin Airport needs to meet a high satisfaction standard of 9 out of 10 for the two new measures.

Satisfaction of transfer passengers

- 11.9 There are 3 annual targets. These relate to overall satisfaction, finding your way around the airport and flight information screens.

Satisfaction of arriving passengers

- 11.10 There are 8 new quarterly targets for passengers arriving into the airport. The measures are overall satisfaction, cleanliness of terminal, cleanliness of toilets, satisfaction with walking distance, finding your way around, ground transportation information on arrival, availability of trolleys and Wi-Fi.

Asset availability

- 11.11 From 2020, self-service check-in kiosks and bag drop machines must be available, on average across units, 99% quarterly.
- 11.12 From 2021, passenger-facing lifts, escalators and travellers must be available, on average across units, 98% quarterly (99% from 2022).
- 11.13 From 2021, Fixed Electric Ground Power (FEGP) and Advanced Visual Guidance System (AVDGS) must be available, on average across units, 99% of time monthly (and 93.5% for new units).
- 11.14 Dublin Airport has a very good track record in meeting its quality of service standards. To get an appreciation of the potential financial impact, in the extremely unlikely event that Dublin Airport fails to meet all quality of service standards the revenue it can earn in that year will reduce by €0.36 per passenger per annum or over €10m.
- 11.15 Since 2009, Dublin Airport has met most of the targets despite the significant increase in passenger numbers. To date our approach to service quality has worked well and the continued focus on targets will assist Dublin Airport as it continues to respond to the needs of present and future passengers.

Quality of Service Targets to apply in 2020 to 2024

- 11.16 In the remainder of this section we examine, in detail, the targets that apply, highlight where there are changes from our Draft Determination and comments received from interested parties and our responses. The detailed formulae underlying relevant quality of service measures can be found in Section 2.

Security Queue Times

Table 11.1: Maximum Security Queue Time

Final Target		Price ap at risk	Draft Target		Price cap at risk
No bonus			Bonus: the highest price cap adjustment will be waived if 80% of the time the queue is below 10 minutes every month		
Breach if the security queue is:		Daily	Breach if the security queue is:		Daily
less than 20 minutes for less than 70% of the time but less than 30 minutes 100% of the time		-€0.005	equal to or less than 15 minutes less than 70% of the time but less than 25 minutes at least 97% of the time		-€0.005
is equal to or greater than 30 minutes but less than 45 minutes , at any time		-€0.01	97% of time the queue is equal to or longer than 25 minutes but less than 40 minutes		-€0.01
is equal to or greater than 45 minutes , at any time		-€0.02	97% of time the queue is equal to or longer than 40 minutes but less than 60 minutes		-€0.02
			97% of time the queue is equal to or longer than 60 minutes		-€0.03

Source: CAR Draft Determination

- 11.17 Table 11.1 summarises the changes from the Draft Determination to the Final Determination. We made three adjustments to the security queue target based on stakeholder submissions.
- 11.18 We have decided to revert to the existing 30 minute maximum queue target. We set the price cap at risk for this target to €0.01 which is an increase on the current €0.004. The higher level of the price cap at risk provides a further incentive to Dublin Airport to manage staff and capital infrastructure to meet passenger demand. This will be important at a time when Dublin Airport has plans to invest substantially in security related projects in the next CIP.
- 11.19 We are introducing some refinements to this target. First, we will set a new target where all passengers should queue less than 20 minutes at least 70% of the time. The price cap adjustment for not meeting this target is €0.005 per day. Second, there is an added penalty if the queue time exceeds 45 minutes where the price cap adjustment increases to €0.02.

Wait Times for Passengers requiring Additional Assistance

Table 11.2: Maximum wait time for assistance – departing and arriving passengers

Final Target	Pre-advised	Non pre-advised	Price cap at risk
Breach if the percentage of passengers in a day that are assisted from the terminal reception point is lower than the targets	95% within 15 min 100% within 20 min	98% within 20 min 100% within 30 min	Annually
Breach if the percentage of passengers in a day that are assisted from aircraft to terminal holding point onwards is lower than the targets	93% within 10 min 100% within 15 min	93% within 15 min 100% within 20 min	-€0.01

Source: CAR Draft Determination, Dublin Airport and OCS Service Level Agreement effective as of 2019.

- 11.20 We are making no changes from the Draft Determination to the target and price cap adjustment for this measure, which we summarise in Table 11.2. The targets are equal to the current service level agreement between Dublin Airport and the service provider (currently OCS). Under Regulation 1107/2006, Dublin Airport is responsible for the provision of this service.

Baggage Handling Belt and IT Systems

Table 11.3: Availability of Baggage Belt and IT Systems

Baggage	Final Target	Price cap at risk	Draft Target	Price cap at risk
3.Outbound	(Before the system has implemented HBS3) belts: available within 30 minutes of request	Per event -€0.01	All system: 0% unavailable within 30 minutes	Per event -€0.01
	Outcome of delivering departing bags: available within 30 minutes of request			
4. Inbound	(Before the system has implemented HBS3) belts: available within 30 minutes of request	Per event -€0.01	All system: 99.5% available monthly	Monthly -€0.03
	Outcome of delivering arriving bags: available within 30 minutes of request			

Source: CAR Draft Determination

- 11.21 We made three changes to the baggage infrastructure measures in recognition of the challenges that Dublin Airport might face to minimise the operational disruption while installing the Hold Baggage System Standard 3 (HBS3) project. The changes are summarised in Table 11.3. Before the HBS3 is installed in each terminal, both the inbound and outbound baggage belt target will be the same. That is, both belts, or a comparable alternative to the belts, must be available 100% of time within 30 minutes following an airline request.
- 11.22 After the systems in a terminal have fully implemented HBS3, the target will be that the outcome of delivering departing and arriving bags is available 100% of the time within 30 minutes of an airline’s request. This will provide Dublin Airport with more flexibility by allowing it to achieve the outcome of delivering bags, including by means of an alternative method that is reasonable for both the airport, airlines and passengers.
- 11.23 The measures that apply after the systems have fully implemented HBS3 will better protect the interests of airlines and passengers of Dublin Airport because they are based on outcomes rather than on the availability of one part of a system.
- 11.24 Finally, we have now set equivalent penalties for the outbound and inbound baggage targets given that both measures are now identically defined.

Availability of Airport Assets

Table 11.4: Availability of Airfield and Terminal Equipment

Availability of:	Final Target	Price cap at risk	Draft Target	Price cap at risk
5. Fixed Electric Ground Power (FEGP)	From 2021, for new units, 93.5% available on average in the first year and 99% thereafter.	Monthly -€0.01 From 2021	99% available	Monthly €0.03 from 2021
6. Advanced Docking Guidance System (AVDGS)				
7. Passenger-facing escalators, travellers and lifts in T2	In 2021: 98% available, on average across units. From 2022: 99%	Quarterly -€0.01 From 2021		
8. Self-service check-in kiosks and bag drop machines	99% available on average across units.	Quarterly -€0.01	8.7 score in satisfaction with automated check-in	-€0.01 Quarterly

11.25 We have made a number of changes in relation to the measures of asset availability.

- The targets from 2021 of Fixed Electric Ground Power (FEGP) and Advanced Docking Guidance System (AVDGS) are 99% available on average across units per month for operational units, and 93.5% on average across new units in the first year and 99% thereafter.
- The availability target of passenger-facing lifts, escalators and travellers will increase from 98% quarterly, on average across units, in 2021 to 99% from 2022. While the target changed from monthly to quarterly, it is set at a high level of 99%. The quarterly target reflects the submission of Dublin Airport that a monthly target would allow only for circa 3 hours downtime, which is a limited time to respond to issues while having regard to health and safety of maintenance staff.

11.26 In relation to automated check-in, we have replaced a passenger satisfaction measure related to the ease of use of automated check-in with an availability measure of self-service check-in kiosks and bag drop machines. We made this change because the satisfaction with automated check-in is not entirely within the control of Dublin Airport as it depends on airline staffing and third-party IT systems. Therefore, it would not be reasonable to penalise Dublin Airport for not meeting this target. In contrast, the availability of self-service check-in kiosks and bag drop machines is within the control of Dublin Airport.

11.27 Third, we reduced the price cap adjustment associated with the Fixed Electric Ground Power (FEGP), Advanced Docking Guidance System (AVDGS) and passenger-facing lifts, escalators and travellers from €0.03 to €0.01 to recognise the risk borne by Dublin Airport with targets related to new infrastructure.

Passenger Satisfaction Measures

Table 11.5: Passenger Satisfaction Measures

Passenger care	Departing	Departing with Assistance	Arriving	Transfer	Final Target	Draft Target	
					Breach	Breach Bonus	
9. Additional Assistance		✓			9.0	9.0	9.8
10. Helpfulness of security staff	✓	✓			8.5	9.0	9.5
11. Helpfulness of airport staff	✓	✓			8.5	Monitoring	
12. Cleanliness of terminal	✓	✓	✓		8.5	8.7	9.3
13. Overall satisfaction	✓	✓	✓	✓	8.5	8.5	9.3
14. Cleanliness of toilets	✓	✓	✓		8.0	8.3	9.0
15. Departure gates	✓	✓			8.0	8.0	8.7
16. Walking distance	✓	✓	✓		7.5	7.5	8.5
Passenger information							
17. Finding your way around	✓	✓	✓	✓	8.5	8.7	9.7
18. Flight information screens	✓	✓		✓	8.5	8.7	9.3
19. Ground transport information on arrival			✓		2020-21 - 8.0 2022-24 – 8.5	No draft target	
Passenger facilities and services							
20. Facilities for Passengers who require additional assistance		✓			9.0	8.9	9.3
21. Availability of trolleys	✓	✓	✓		8.5	8.5	9.7
Satisfaction with ease of automated check in	✓					8.7	9.0
22. Satisfaction with Wi-Fi	✓	✓	✓		8.5	9.0	9.5

- 11.28 Four passenger segments at Dublin Airport will benefit from an enhanced monitoring regime of customer satisfaction. These are departing passengers requiring additional assistance (13 measures), (b) departing passengers (11 measures), (c) arriving passengers (8 measures) and (d) transfer passengers (3 measures). This compares to 2014, when there were a total of 9 measures surveyed among departing passengers only.
- 11.29 Table 11.5 summarises the passenger satisfaction measures that will apply and changes compared to the Draft Determination. We made four changes compared to the Draft Determination. First, in response to the advice of the Passenger Advisory Group and submissions by stakeholders, we will monitor three key measures of transfer passengers on an annual basis. The measures are overall satisfaction, satisfaction with finding your way around and flight information screens, as these relate to the most important aspects of the transfers journey,
- 11.30 Second, we will retain helpfulness of airport staff as a financial measure (rather than a measure that is only monitored as proposed). On reflection this continues to be key to passengers – particularly at a time of significant infrastructure development at the airport.
- 11.31 Third, we simplified the target levels that apply to the different measures. The chosen benchmarks reflect both current levels of passenger satisfaction and their importance to passengers passing through the airport.
- 11.32 The measures with an 8.5 target relate to helpfulness of airport and security staff, terminal cleanliness, overall satisfaction, finding your way around, flight information screens, Wi-Fi and availability of trolleys. We set a target of 8.5 for both airport and security staff although the satisfaction with the helpfulness of security staff is currently above 9.0. A target of 8.5 is

regarded as a high standard and it is reasonable to expect the same quality of service from all staff at Dublin Airport irrespective of their function.

- 11.33 The measures with an 8.0 target relate to the satisfaction with cleanliness of toilets, departure gates and ground transport information. The lowest target of 7.5 relates to walking distance. These targets reflect the inherent difficulty for Dublin Airport to improve its performance in these areas in the short term. Since the ground transport information is a new target, we propose to start with a target of 8.0 and increase it to 8.5 in 2022.
- 11.34 Finally, we decided not to implement bonuses as they were not supported by stakeholders who stated that they could potentially incentivise the airport to incur operational expenditure beyond efficient levels.
- 11.35 Compared to the Draft Determination, we did not change the price cap adjustment for not meeting each passenger satisfaction measure (€0.01).
- 11.36 In expanding the range of outcomes being measured, we considered the administrative burden that would be placed on Dublin Airport. The passenger satisfaction measures that we will monitor are already being captured by the Customer Monitor Survey (CSM) of the airport.

Stakeholders' Comments and Commission's Responses

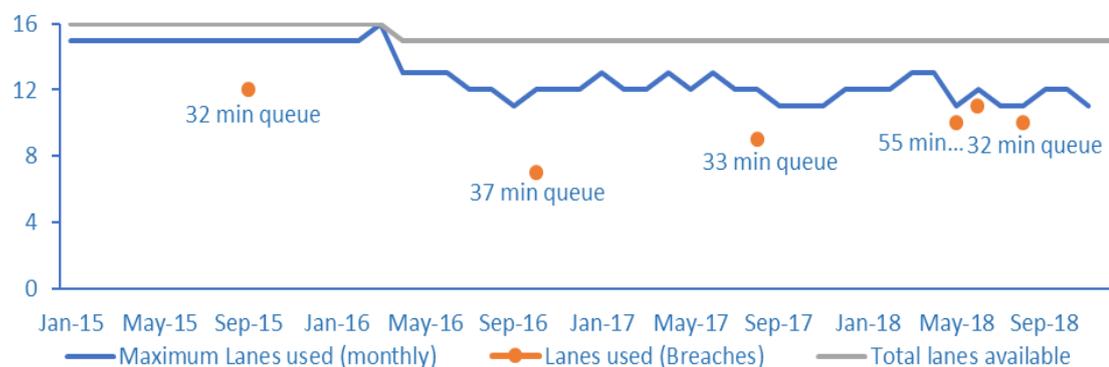
- 11.37 Below we respond to the submissions by stakeholders in relation to quality of service standards.

General Submissions

- 11.38 Aer Lingus supports the proposed regime as it focuses on the consistent provision of the facilities and services of value to passengers and expands the range of outcomes being measured without requirement for new data collection resources.
- 11.39 Dublin Airport states that higher targets and penalties are a punishment for improving quality of service in the short-run. The airport also states that we have not considered additional Opex or capital investments that will be required to achieve the new targets proposed.
- 11.40 Fáilte Ireland supports every effort aimed at setting, monitoring and meeting the highest standards of customer service, as they impact directly upon the tourists' experience. Fáilte Ireland suggests that the following factors influence the airport experience of tourists: ease of accessing the airport, ability to get reliable information quickly, ease of check-in, queuing times, ability of staff to deal with unexpected complications and events and cleanliness.
- 11.41 In response to Dublin Airport's points, we set new targets to protect passengers from any substantial deterioration in the current quality of service. The targets reflect the technological advance at the airport, for instance, brought by new assets and automated monitoring systems installed as part of capital investment programmes. Therefore, we introduced new targets of availability for assets, security queues and wait times for passengers requiring additional assistance.
- 11.42 We use security queue times as an example of a target that should improve over time to reflect better assets and higher technological capabilities due to on-going capital investment. For example, the deployment of the Automatic Tray Return System in 2016 in Terminal 1 has improved the efficiency of the central search. Chart 11.1 shows that, on days when the airport did not meet the security target, it opened a number of X-ray lanes that was lower than the capacity available and this was to the detriment of service provided to passengers. This shows

that targets are needed to ensure that passengers benefit from the quality of service that can be achieved by the capital infrastructure that passengers fund through airport charges.

Chart 11.1: 2015-2018 Available versus Maximum Lanes used per month in Terminal 1



Source: Dublin Airport and CAR Calculations

11.43 The enhanced security targets will provide a further incentive to Dublin Airport to effectively use the infrastructure to meet demand and benefit passengers. The security-related projects, scheduled to be delivered by 2022, should enable a faster and more efficient security check. The projects include the deployment of Automatic Tray Return System (ATRS) lanes in Terminal 2, longer ATRS lanes in Terminal 1 and the relocation of the Terminal 1 central search to the mezzanine level.

11.44 In response to Fáilte Ireland, we will apply quality of service measures that relate to (a) the ability to get reliable information quickly (signage, flight information screens and ground transport information on arrival), (b) security queue times and wait times for passengers requiring additional assistance, and (c) cleanliness of terminal and toilets.

Security Queue Times

11.45 Aer Lingus supports two options:

- a change in the median filter to the 75th percentile if we set a target of 97% of time below 25 minutes.
- the median filter with a target of 100% of time below 25 minutes or less.

11.46 Aer Lingus also supports the tiered structure of penalties for differing lengths of security queue to give a clear incentive to Dublin Airport to bring the queue back to target. Aer Lingus does not support the bonus.

11.47 Dublin Airport states that it needs an allowance of €0.2m to alter the Blip Track system to report different measures (namely the target of 70% of time below 20 minutes). The airport states that “the new target increases the complexity of the reporting of the queue times to security staff on a real time basis.” According to the airport, “this is a vital aspect of the system to ensure that staff are aware if a breach is imminent.” In further correspondence with us, Dublin Airport confirmed that they refer to all security staff being aware if a breach is imminent.

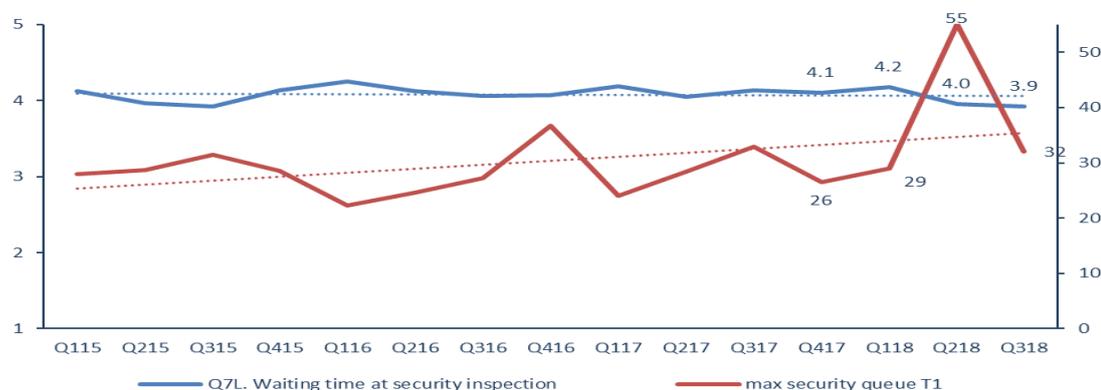
11.48 IATA supports the change in the security queue target to ‘70% below 15 minutes’ and 97% below ‘25 minutes’ from ‘100% under 30 minutes’. However, IATA states that it still does not meet the recommended target of 10-20 minutes per economy passenger that is classified as ‘optimum’ in IATA’s Level of Service guidance.

- 11.49 In response to Aer Lingus, in 2016-2017 we audited the automated system and median filter used to calculate the security queue times at Dublin Airport.⁵² In the audit, we found that the median times were good estimates of passenger queue times.
- 11.50 In response to Dublin Airport, we will not make an Opex allowance to change the Blip Track system to report to all security staff the real time performance of queue times. We are not convinced that all security staff must be informed on a real time basis of an imminent breach. Screening staff need to focus on delivering a robust check that is compliant with security regulations and that is efficient and courteous.
- 11.51 In response to IATA and Aer Lingus, the target of queue times below 20 minutes is within the upper range of the optimum level of service recommended by IATA for economy passengers for at least 70% of time.

Security Targets and Passenger Satisfaction

- 11.52 Dublin Airport suggests that the proposed new targets of maximum security queue times are unnecessary and disproportionate considering the performance and passenger satisfaction relating to this measure. Dublin Airport states that its ACI Airport Service Quality scores for wait time at security inspection has averaged 4.1 (out of 5) over the current control period, which reflects the views and satisfaction of passengers.
- 11.53 In response to Dublin Airport, we show that the new targets of security queue times are needed to protect the interests of passengers. Surveys might not necessarily be conducted when the target of security queue is breached. Therefore, surveys might not reflect the views of the passengers who queued near and beyond the maximum time.
- 11.54 Below, we show that satisfaction with queue times over this period has not changed despite of widely fluctuating maximum queue times. Chart 11.2 shows that, as Dublin Airport indicates, the ACI survey results of passenger satisfaction with queue times have been stable. For example, the satisfaction scores from Q4 2017 and Q3 2018 were very similar, around 4.1 out of 5, despite the maximum queue times being 26 and 55 minutes. Based on survey results alone, we would not be able to protect passengers against having to queue for excessively long periods.

Chart 11.2: ACI Scores of Satisfaction with Security Queues and Security Queue Times in T1



Source: ACI ASQ scores reported by Dublin Airport

⁵² www.aviationreg.ie/_fileupload/2019%20Determination/2018-04-30%20CP7%20Issues%20Paper.pdf

Security Targets, Capacity and Staffing

- 11.55 In its submission to the Draft Determination, Dublin Airport suggests a metric of 97% in 30 minutes and 70% in 20 minutes as it is achievable without requiring additional resources.
- 11.56 Having due regard to its submission, we will implement the target of security queue times below 20 minutes at least 70% of the time, as proposed by Dublin Airport. This will benefit passengers while having regard to the sustainable development of the airport. However, we did not support the suggestion of the airport of setting a metric of 97% of time below 30 minutes, as this would be a deterioration in the current quality of service for passengers of maximum 30 minutes 100% of the time. The general position of the Passenger Advisory Group is to oppose any deterioration in the current quality of service level. In further correspondence with us, Dublin Airport stated its preference to keep the 30-minute maximum queue time 100% of time if we cannot accept a target of security queues below 30 minutes at least 98%-99% of time.

Other Measures Related to Security Target

- 11.57 Dublin Airport states that our proposed measure of satisfaction with security staff for passengers that may require additional assistance creates a conflict with the security queue target. Also, the airport suggests that it needs a separate lane for these passengers that is not accounted for in the measure and an allowance for more customer service training.
- 11.58 We found no reason to justify a separate lane. ATRS currently installed in T1 (and planned to be deployed in T2) allow for any passenger to take the time they need to prepare for security check without impacting on the queue. This is because there is space for several passengers to prepare at the same time. Once passengers are ready, they are able to bypass a passenger who is not ready. That is, the queue keeps moving even if any particular passenger needs to take more time to make their preparations. Also, the median filter applied in the calculation of the security queue times uses the 50th percentile, taking out a portion of queue readings above that threshold.
- 11.59 Since 2009, we have provided Dublin Airport with an appropriate Opex allowance that covers staff training costs and costs of helping passengers that may require additional assistance and we have continued to do this in this Final Determination. This allows Dublin Airport to comply with its obligations under Regulation 1107/2006 to provide “disability-equality and disability-awareness training to all their personnel working at the airport who deal directly with the travelling public”. Dublin Airport is also allowed by the Regulation to establish a reasonable, cost-related and transparent charge in cooperation with airport users, which is subject to the overall price cap.

Wait Times for Passengers Requiring Additional Assistance

- 11.60 Dublin Airport states that it does not provide this service internally but outsources it to OCS.
- 11.61 IATA supports the timeliness and quality of assistance for this service. IATA supports tracking performance by arrivals, departures, pre-notified, and not pre-notified, to better identify any problems.
- 11.62 In response to stakeholders, we will monitor the wait times for the provision of assistance in the interest of all passengers. In first place, it ensures that passengers receive assistance within the agreed times. Second, it benefits all passengers from less flight delays caused by assistance not being provided in time.

- 11.63 Under Article 8 of Regulation (EC) No 1107/20063, Dublin Airport is responsible for ensuring the provision of this service, even if it contracts for the provision with a third-party supplier. The Regulation allows Dublin Airport to levy a specific charge on airport users for funding this assistance and to set the level of quality of service provided in cooperation with airline users. We will monitor compliance with the agreed times for assistance.

Availability of Baggage Systems

- 11.64 In the Draft Determination, we proposed to revise the scope of the baggage availability targets to include all parts of the baggage system, not only the belts.
- 11.65 Dublin Airport indicates that it will not be able to achieve this target until the new Hold Baggage Screening (HBS) Standard 3 system is installed.
- 11.66 IATA agrees that the monitoring of the baggage handling system is best done in its entirety rather than belts only.
- 11.67 In response to the submission of Dublin Airport and IATA, we will start monitoring the outcome of delivering departing and arriving bags, rather than just the belts, after the planned delivery of the HBS3 project. The measures that will apply after HBS3 is completed are based on quality of service outcomes rather than on a single kind of asset. Therefore, we expect that these measures will better protect the interests of airlines and passengers of Dublin Airport.

Fixed Electric Ground Power (FEGP) and Advanced Visual Docking Guidance System (AVDGS)

- 11.68 Dublin Airport welcomes our proposal that FEGP and AVDGS will not impact the price cap in 2020. However, the Airport states that €0.03 per passenger is severe for a new system that is bound to experience problems in the beginning. Dublin Airport suggests that we use a progressive approach, similar to Aeroports de Paris, with targets starting at 93.5%.
- 11.69 IATA supports the introduction of Fixed Electrical Ground Power (FEGP), which is monitored at many airports.
- 11.70 We considered all submissions and decided to adjust the targets of both FEGP and AVDGS to reflect the risk born by the airport during the embedding period of new assets. We have set a target of 93.5% availability on average across new units, which increases to 99% from the following year. We have also reduced the price cap adjustment from €0.03 to €0.01 to reflect the same risk.

Availability of Passenger-facing Lifts, Escalator and Travellators in T2

- 11.71 Dublin Airport states that overall annual performance on this measure in 2018 was above the monthly target proposed by a narrow margin of 0.4%. The airport also indicates that monitoring this target monthly allows only for circa 3 hours downtime and, therefore, it eradicates any contingency that was allowed for in the internal KPI of the airport.
- 11.72 IATA supports adding the availability of passenger lifts, escalators and travellators, as they are critical to the smooth functioning of the airport.
- 11.73 We considered all submissions and decided to set a quarterly target of 98% average availability across units in 2021, increasing to 99% in 2022. In setting a quarterly target, we had regard to the fact that a monthly target allows limited time to respond to issues while, at the same time, having regard to health and safety regulations.

Customer Satisfaction Monitor

11.74 Aer Lingus supports:

- the change from the ACI survey to the CSM survey under the assumption that we are satisfied with the robustness of the data collection methodology, sample sizes and auditability of reported outcomes.
- the inclusion of all the proposed measures of passenger satisfaction, the passenger categories to be monitored and the targets set for each measure.
- the monitoring of measures for transfer passengers.

11.75 In response to Aer Lingus, we have examined the robustness of the survey methodology that is conducted by RED C on behalf of Dublin Airport. We are satisfied that the departing Customer Survey Monitor (CSM) has almost double of the sample size of the Airports Council International (ACI) departing survey (5,800 versus 3,000).

11.76 RED C informed us that it designs sampling on a quarterly basis to include a spread across month, day of week and time of day. It further distributes sampling by destination and by terminal to capture those flights that carry 95% of passengers. The CSM is conducted on computers that allow to quickly review and ensure that the resulting interviews reflect the airport schedule.

11.77 RED C states that it follows European and Irish Market Research Standards. It monitors and supervises on a regular basis the interviewing process. Also, it makes regular technological and human checks to ensure the accuracy of the survey data.

11.78 We expect Dublin Airport to maintain the sample sizes and robustness of the CSM over the next regulatory period. Dublin Airport shall not change the questions that we are monitoring under the Determination without previous consultation with us.

Satisfaction of passengers requiring additional assistance

11.79 Dublin Airport supports the addition of specific measures of satisfaction with assistance and facilities for passengers requiring assistance. Dublin Airport agrees that feedback from passengers who require assistance should be monitored for the remaining eleven measures proposed. However, the airport suggests that there is no need to apply separate annual targets to this group of passengers.

11.80 The National Council for the Blind Ireland (NCBI) states that signage as well as websites and apps, flight information screens, airport maps and public access terminals need to comply with accessibility standards set out by the National Disability Authority's Centre for Excellence in Universal Design.

11.81 Having considered all submissions, we decided to measure separately the satisfaction of passengers requiring additional assistance along their departing journey. This is because the satisfaction of these passengers might be affected in different ways compared to other departing passengers. For example, a lower trend in the satisfaction with:

- the helpfulness of security or airport staff could indicate that training for those staff needs to be improved.
- Signage or flight information screens could indicate that some passengers' needs are not being considered (e.g. height, contrast, font size, content of screens and signs, etc).

- The cleanliness of toilets could indicate a gap in the quality standards between disabled toilets and the rest of the toilets.

11.82 In response to the NCBI, while it is not within our remit to enforce the compliance of the communications of Dublin Airport with the accessibility standards set out by the National Disability Authority (NDA) we would encourage Dublin Airport to take account of universal design when developing how best to present information to passengers.

Satisfaction with helpfulness of security staff

11.83 Dublin Airport states that a 9.0 target for security staff is too high, considering their security duties.

11.84 We set a target of 8.5 because it is reasonable to expect the same target from airport and security staff and a standard of 8.5 is adequately high.

Satisfaction with walking distances

11.85 Dublin Airport states that satisfaction with walking distance is currently monitored in the CSM to adapt future investment plans. Dublin Airport does not support a target with penalty because, in the short term, it has a very limited range of options to mitigate the impact of a growing airport footprint.

11.86 We have decided that we will monitor this measure as an indicator of passenger needs that should be mitigated in the short-term, but ultimately be addressed by future capital investment programmes. The Passenger Advisory Group also supports the monitoring of this measure, which is particularly important for the elderly. We set a target for this measure at 7.5 in the short-term but will keep this under review.

Satisfaction with ease of automated check In

11.87 Dublin Airport states that it does not control the substantive aspects of the automated check-in experience and therefore should not have a target associated with it.

11.88 We accept the point made by Dublin Airport and have decided to replace this measure with the availability of self-service check-in kiosks and bag drop machines. The availability target is appropriate as it is objective and within the control of Dublin Airport.

Targets and Bonuses

11.89 Dublin Airport states that the targets set are high (in particular that of 9.7) and penal. Ahead of the Draft Determination, Dublin Airport submitted annual performance results for all the measures in the CSM. We used the annual data to calculate the targets and bonuses in the Draft Determination. In its submission, Dublin Airport indicates that the targets and bonuses are set too high when considering the quarterly performance.

11.90 After the Draft Determination, we examined the quarterly performance results of Dublin Airport and adjusted the targets according to the performance and the relative importance for passengers of each measure. We also had regard to the ability of Dublin Airport to change its performance in the short-term. We decided not to implement bonuses as they were not supported by stakeholders (see paragraphs below).

Price Cap Adjustment

- 11.91 Aer Lingus supports the price cap at risk of €0.36 which it considers fair and appropriate. In general, it does not support bonuses as they may encourage inefficient operating expenditure. It asks us that if we decide to implement bonuses we should consider bonuses for passenger satisfaction targets that offset the same measure or at least a measure for the same passenger group.
- 11.92 Dublin Airport states that the proposed financial penalties for the service quality measures are punitive with a possible €0.36 at risk per passenger per year.
- 11.93 We have decided to set an annual price cap €0.36 at risk. It is 4.5% of the average price cap of €7.87 that we are setting for 2020-2024. This is the same percentage of the price cap at risk in 2009 and 2014. We note that, different from 2009 and 2014, this proportion will change through the period as the price cap changes, ranging from 0.46% in 2020 to 0.43% in 2024.

Responses to the Passenger Advisory Group

- 11.94 From November 2018 to June 2019, we held five meetings with the Passenger Advisory Group. Table 11.6 summarises our responses to the Group that have not been covered in other parts of this Determination. We classified the advice received in three groups related to the 2019 Determination, the Disability Act 2005 and the Air Passenger Rights Section of the Commission.

Table 11.6: Remaining Responses to the Passenger Advisory Group

PAG	Our Response to the Group
Comments	2019 Determination
Dublin Airport should account for passenger views related to airport design.	We will start monitoring passenger satisfaction measures that Dublin Airport uses to inform its capital investment programmes. Examples of the new measures are the satisfaction with walking distance or facilities that can only be addressed through capital investment. We will continue monitoring the satisfaction with departure gates and flight information screens. The Disability Access Certificate required for public buildings will benefit all passengers. See discussion below.
We should monitor satisfaction of passengers who choose to travel without assistance	It might not be possible to identify and survey these passengers, as they may choose not to disclose that they have a disability. We will discuss this further with the group.
PAG	DISABILITY ACT 2005 - PART 3: ACCESS TO BUILDINGS AND SERVICES AND SECTORAL PLANS⁵³
Dublin Airport should account for accessibility in airport design.	Public buildings other than heritage sites (section 25) Public bodies are required to make their public buildings accessible to people with disabilities by 2015. This will require the re-fitting of older public buildings so that they comply with Part M of the Building Regulations. A Building Control Authority may grant a Disability Access Certificate to demonstrate this compliance.
Dublin Airport should offer audio announcements, and accessible information (website)/signage/self-service processes.	Communications (section 28) Since 2005 communications by a public body to a person with a hearing or visual impairment must, as far as practicable, be provided in an accessible format, following a request. Information provided electronically must, as far as practicable, be compatible with adaptive technology. Published information, relevant to persons with intellectual disabilities, must be made available in easy to read formats. Section 38 of the Disability Act 2005 states that a person may complain in writing to the head of a public body that has failed to comply with Sections 25-29.
Dublin Airport should have accessibility criteria in procurement.	Contracted-in public services (section 27) Since 2005 public bodies will be required to ensure that goods or services purchased are accessible, unless it would not be practicable or justifiable on cost grounds or would result in an unreasonable delay. The National Disability Authority (NDA) monitors the implementation of its “Code of Practice on Accessibility of Public Services and Information Provided by Public Bodies”.
PAG	Commission’s Air Passenger Rights Team
We should ensure adequate staff training/awareness and availability of staff (including contingency plan for emergencies).	Airport and air carrier assistance is guaranteed when requested at least 48 hours before the scheduled departure time. If the assistance is requested less than 48 hours before scheduled departure time, reasonable efforts are to be made to assist but help is not guaranteed. The Air Passenger Rights team carries out inspections of airports. The team requests details of when training was last conducted, and who provides the training. The team obtains information on staffing levels, equipment, innovations and complaints handled by Dublin Airport. The Commission takes enforcement action if passengers provide evidence. In October 2019, for the first time, the team carried the team was joined by members of the Passenger Advisory Group in carrying out an inspection of Dublin Airport

Source: CAR, National Disability Authority

⁵³ <http://universaldesign.ie/What-is-Universal-Design/Policy-and-Legislation/>

Quality of Service and Capital Infrastructure

11.95 Three airlines highlighted the lack of capital infrastructure at Dublin Airport as a cause of poor passenger experience.

- Cathay Pacific highlights that there is shortage in immigration facilities on Pier 3, premium lounges, taxiways and widebody parking stands.
- Emirates indicates that there is a lack of check-in desks; boarding gates and stands for its aircraft type, passenger profile and volumes (up to 428 passengers per flight).
- Lufthansa states that there is lack of stands with airbridges and other stands are challenging for servicing aircraft during turnarounds, often leading to safety concerns.

11.96 We allowed all the capital investment programme of Dublin Airport which will increase capacity and improve the passenger experience; it includes projects to address these issues. See Section 9 for more details.

Other Submissions

11.97 The NCBI states that the population is aging and the number of people with disabilities is increasing. It also notes that if wayfinding staff are reduced, passengers who are blind and vision impaired will be forced to pay for a sighted friend or family member to travel with them.

11.98 In response to the NCBI, passengers who need additional assistance and pre-notify Dublin Airport are entitled to receive it. Dublin Airport will also make its best effort to assist those passengers who do not pre-notify their needs. The assistance is provided at no extra cost for passengers who request it. Passengers will be accompanied by trained staff providing assistance at the airport. This means that affected passengers will continue not to have to pay for another person to travel with them within the airport. We will monitor the satisfaction of this group of passengers through our new quality of services measures.

12. Other Issues

12.1 In this section we discuss a number of issues which do not naturally fit into one of the other sections.

Incentive Schemes

12.2 In the Draft Determination, we proposed to continue our current regulatory treatment of incentive schemes. The current treatment allows Dublin Airport to net off the rebates or discounts on airport charges accrued in a given year against aeronautical revenues for that year. Rebates or discounts should relate to schemes which have been consulted on with users and are published. This is in line with the 2018 recommendations of the Thessaloniki Forum of Airport Charges Regulators on how to assess non-discrimination of airport charges.

12.3 The Forum recommends that, at annual consultations, airports should justify airport charging strategies, including incentive schemes, in accordance with the relevant articles in the Airport Charges Directive (ACD):

- Issues of public or general interest (Article 3),
- a common charging system in certain circumstances (Articles 4 and 5),
- differentiation according to the cost, quality, or scope of services provided, or any other objective and transparent justification (Article 10).

12.4 The Forum recommends that it may not be necessary to consult on every element of the charging strategy at every consultation, but rather focus on elements which the airport is proposing to change, or existing elements specifically requested or questioned by users. Terms and Conditions attached to the charging strategy should form part of the consultation.

Submissions

12.5 IATA supports the treatment of incentive schemes under the price cap as long it aligns with the recommendations of the Thessaloniki Forum of Airport Charges Regulators.

12.6 Ryanair suggests that Dublin airport should demonstrate that incentives are cost neutral to users. Ryanair states that incentives should be non-discriminatory and should not distort competition in order to comply with general competition law.

12.7 Dublin Airport seeks clarity on the treatment that we propose regarding incentive schemes for the period 2020-2024.

Decision

12.8 We will continue with the current regulatory treatment of incentive schemes. The price cap applies to all airport charges liability accrued by airlines in a given year, and includes all elements of the pricing strategy, that is, list charges net of incentive scheme rebate liability accrued by Dublin Airport. As we stated in the Draft Determination, the perceived distinction between rebated incentive schemes and other aspects of a charging strategy appears to arise from the fact that one is rebated while the others are not. Regardless of this, each will affect the charges paid by airport users, as set out in the menu of charges or the scheme Terms and Conditions, as applicable.

12.9 There is significant overlap in how airports describe and implement mechanisms to vary charges, but if the ultimate outcome in terms of airport charges payable is the same, then this

is irrelevant. For example, if we were to determine that GROW rebates cannot be netted off against airport charges, Dublin Airport could simply adjust the charging strategy such that all or most of the amounts are instead deducted from the initial invoices, or change the actual menu of charges to provide for tiered levels of airport charges depending on traffic growth. Dublin Airport is entitled to structure its pricing to incentivise particular outcomes, including growth in traffic, provided that the charging strategy complies with the Airport Charges Directive (ACD). We therefore do not agree that incentive schemes which are rebated warrant any particularly different treatment relative to schemes which are not rebated or charges set out in the menu of charges.

- 12.10 We agree with IATA and Ryanair that incentive schemes, like any other aspect of the charging strategy, must be non-discriminatory in accordance with Article 3 of the ACD, although we would note that this question is more relevant to the annual charges consultation rather than this determination process. We are fully aligned with the Thessaloniki Forum paper with regards to assessing whether a charging strategy is non-discriminatory.

Under and Over Collection - K Factor

- 12.11 In the Draft Determination, we proposed to retain the K Factor to continue to allow for imperfect pricing by Dublin Airport. We proposed to improve the k factor by setting a provisional K Factor as part of the provisional price cap statement, based on outturn passenger numbers and an updated forecast for passenger numbers ahead of the year in question. This would then be adjusted based on final outturns when the final price cap is calculated in the following year. We proposed to maintain the limit on the K Factor at 5% of the price cap, except where the application of the Opex passthrough term would lead to an undercollection higher than 5% as set out in Section 6.

Submissions

- 12.12 Dublin Airport supports retaining the K Factor in the price cap formula with the proposed change.
- 12.13 IATA supports the proposed option to remove the volume risk in the calculation of the K Factor.
- 12.14 Ryanair states that the K Factor calculation allows the airport to collect discounts from users at a later date and to gain from volume risk if passenger volumes increase over time.

Decision

- 12.15 In response to the submissions received, we will keep the K Factor to continue to allow for imperfect pricing by Dublin Airport and will amend its calculation to remove the volume risk. We reject the suggestion that there is a particular link between incentive rebates and the K Factor, any more than other aspects of Dublin Airport's charging strategy. Incentive rebates are addressed above. We have addressed Ryanair's comment somewhat by removing the volume element from the K Factor; the previous formulation inadvertently included a further element of volume risk as it was entirely derived from forecast passenger numbers.

Persons with Reduced Mobility (PRM) Charge

- 12.16 In the Draft Determination, we proposed:
- to continue to include revenues from PRM charges in assessing compliance with the annual price cap.
 - not to increase the price cap to allow Dublin Airport to pass on to users the accumulated

under-recovery of the PRM charge to date. This is because, in 2014, we granted Dublin Airport a cost allowance for the provision of PRM services which has been higher than the outturn cost per passenger paid by Dublin Airport.

Submissions

12.17 We received no submissions on the PRM charge.

Decision

12.18 We will continue to include revenues from PRM charges in assessing compliance with the annual price cap. We will not increase the price cap to allow Dublin Airport to pass on to users the accumulated under-recovery of the PRM charge to date as the outturn cost in the previous period is lower than the allowance set.

Peak Pricing

12.19 Our price cap proposal in the Draft Determination did not include any sub caps requiring Dublin Airport to offer differential prices (including peak prices). Dublin Airport will continue to have discretion on how it sets individual charges at annual consultations, while complying with the ACD.

Submissions

12.20 IATA and Dublin Airport agree with the proposed approach.

Decision

12.21 We will not implement sub-caps or peak pricing, as it would be a disproportionate interference for Dublin Airport at this time. Annual airport charges consultations provide a forum for users to consider and challenge the detail of the pricing proposals from Dublin Airport.

CPI Adjustment

Submission

12.22 Dublin Airport states that it has been penalised by the annual CPI adjustment to the price cap, conducted from July 2014 to October of each relevant year. Dublin Airport indicates that the index for October is lower than in the summer months, for example July, and requests that, for the next determination, we apply a CPI adjustment on an equivalent monthly basis.

Decision

12.23 A typical gap between summer and October CPI does not penalise Dublin Airport. Inputs to the price determination are converted to the prices used in that determination. So, while the adjustments from July 2014 to October of each year may have been lesser than if we had used a different month in 2014, this is counterbalanced by the fact that we had already uplifted the inputs, which are typically in annual average prices, to July 2014 prices in the 2014 Determination. The key, therefore, is to use a CPI which is a good proxy for annual inflation in advance of annual inflation being known.

12.24 Table 12.1 shows that October is a good proxy for the annual inflation, on average running slightly ahead. For this reason, we will continue to use October CPI to adjust for inflation. In any case, this Determination is in February 2019 prices, so each year we will adjust from that

point to October the year before the cap. For example, in 2023, the price cap will be adjusted for inflation or deflation between February 2019 and October 2022.

Table 12.1: October CPI is a good proxy for annual inflation

CPI	2010	2011	2012	2013	2014	2015	2016	2017	2018
Full year	95.8	98.3	99.9	100.4	100.6	100.3	100.3	100.7	101.2
October	96.4	99.1	100.3	100.4	100.6	100.4	100.1	100.7	101.6
Difference	0.6	0.8	0.4	0	0	0.1	-0.2	0	0.4

Source: CSO, 2016=100

Environment

Submissions

12.25 Jonathan Aird supports an increase of 25% per annum in airport charges because he states that Ireland has declared a climate emergency. According to Jonathan Aird, this would reduce passenger numbers and therefore not require a third runway.

Decision

12.26 In response to Jonathan Aird’s submission, in Section 3 we set out how we arrive at the price cap and in Section 13 we discuss how we comply with statutory requirements and notified Government policy.

13. Compliance with Statutory Requirements, Directions and Policy

- 13.1 In this Section, we set out how this Determination complies with our statutory requirements, previous Ministerial Directions and notified Government Policy.

Statutory Requirements

- 13.2 We have regard to the statutory objectives and factors set out in Section 33 of the 2001 Airport Aviation Act, as substituted by Section 22 (4) of the 2004 State Airports Act in 2005. Here we set out our interpretation of these objectives and factors. This interpretation is consistent with our determinations since 2005. Our statutory objectives permit us to regulate airport charges at Dublin Airport with reference to economic efficiency, which remains the driving principle as in previous determinations.

Statutory Objectives

- 13.3 In setting the maximum level of airport charges, we have three statutory objectives. Currently, we consider these objectives to have equal weighting, to be read together and in light of each other.

To facilitate the efficient and economic development and operation of Dublin Airport which meet the requirements of current and prospective users of Dublin Airport.

- 13.4 We meet this statutory objective by setting a price cap for Dublin Airport that remunerates forecast efficient operating and capital costs. In Sections 6 and 8, we provide more detail on how we set the draft allowances for operating expenditure and the cost of capital. In Section 9, we set out the allowances for capital investment projects necessary to increase the airports capacity and meet the requirements of current and prospective users.

- 13.5 We have engaged with users extensively throughout this process, both airlines and passengers, to ensure we understand their requirements. We address the needs to future users by ensuring, first, that they will have sufficient future infrastructure and capacity at the airport, and second by ensuring they are not now being committed to inefficient costs in the future.

To protect the reasonable interests of current and prospective users of Dublin Airport in relation to Dublin Airport

- 13.6 We protect the interest of current and prospective users by set a price cap that remunerates the estimated efficient costs for Dublin Airport to provide the services that users require (Section 6).

- 13.7 We have set a comprehensive set of quality of service standards (Section 11). These standards are in response to the advice from the new Passenger Advisory Group and other stakeholders. We established this group in 2018 to improve our understanding of what is important for passengers at Dublin Airport.

- 13.8 We allow for the remuneration of a significant investment in infrastructure. The Capital Investment Plan was formulated through consultation with airlines. Our assessment of the Capital Investment Programme was informed by the views of current users and our assessment of what future users would require. We also engaged with the Passenger Advisory Group on aspects of the Capital Investment Programme.

To enable daa to operate and develop Dublin Airport in a sustainable and financially

viable manner

- 13.9 The price cap enables daa to operate and develop the airport by remunerating Dublin Airport for all forecast efficient operating and capital costs.
- 13.10 We have comprehensively assessed if the price cap enables daa to operate Dublin Airport in financially viable way. We have engaged financial expertise in this area, Centrus, and its report is published alongside this Determination and is discussed in detail in Section 10. We have concluded that the price cap is sufficient to enable Dublin Airport to raise funding in order to deliver the Capital Investment Plan.
- 13.11 Some investment costs that we allow in this Determination will not be fully depreciated at the end of 2024. In this regard, we anticipate continuing with the Regulatory Asset Base approach in future determinations. To date, we have followed this approach in all our determinations in the interest of consistency and because it is considered best regulatory practice. For context, 86% of the value of the new capital investment programme corresponds to projects with asset lives longer than 15 years, and 8% to projects with asset lives of 50 years. Given the long-term nature of airport investment, we consider it important to maintain the stability in our approach across determinations periods.

Statutory Factors

- 13.12 In setting the maximum level of airport charges, we must have due regard to nine statutory factors.

The restructuring including the modified functions of Dublin Airport Authority

- 13.13 Since the last Determination, there has been no change in the structure or functions of daa which are relevant for the purpose of fulfilling our statutory function to set the maximum levels of airport charges.

The level of investment in airport facilities at Dublin Airport, in line with safety requirements and commercial operations in order to meet the needs of current and prospective users of Dublin Airport

- 13.14 We set allowances for efficient operational and capital expenditure, together with quality of service targets, which have due regard to this factor.
- 13.15 In Section 6, we made efficient allowances for operational expenditure. In setting these allowances, we have regard to the regulatory requirements of the airport in relation to the operational costs. Examples of regulatory requirements are the provision of the security search for departing passengers and assistance to passengers with disabilities or reduced mobility required by Regulation 1107/2006.
- 13.16 In Section 9, we assess the Capital Investment Programme of Dublin Airport. We allowed an efficient level of capital investment to meet the needs of current and prospective users, having regard to safety requirements and the commercial operations of the airport. Some capital projects that we allow in the asset care, security, capacity and IT groups respond to various regulatory requirements concerning, for example, building safety, airfield safety and environmental protection.
- 13.17 In Section 11, we set our quality of service standards having due regard to the regulatory requirements applicable to Dublin Airport. For example, we set targets for security queue wait times having regard to the duty of Dublin Airport to carry out a thorough security inspection

in line with regulatory requirements. Also, we set targets in relation to the assistance of passengers with disabilities or reduced mobility having regard to the requirement to comply with the quality of service standards in Regulation 1107/2006.

The level of operational income of Dublin Airport Authority from Dublin Airport, and the level of income of Dublin Airport Authority from any arrangements entered into it by it for the purposes of restructuring under the State Airports Act 2004.

13.18 In this context, operational income refers to airport charges and commercial revenues associated with the operation of Dublin Airport.

13.19 We are not aware of any income arising from arrangements daa has entered into for the purposes of restructuring under the 2004 State Airports Act.

13.20 In Section 4, we set out our approach to regulation for Dublin Airport. When setting the price cap, we continue to favour a RAB based building blocks approach with a single till. For this reason, we have included commercial revenues in our price cap calculations, such that Dublin Airport will be able to recover sufficient income from airport charges to meet efficiently incurred costs.

Costs or Liabilities for which Dublin Airport Authority is responsible

13.21 The Determination has regard to costs and liabilities of Dublin Airport in Sections 6 and 9, where we set out the allowances for operating and capital costs.

The level and quality of services offered at Dublin Airport by Dublin Airport Authority and reasonable interests of the current and prospective users of these services

13.22 In Section 11, we set out a comprehensive set of quality of service standards to incentivise Dublin Airport to offer services in line with the reasonable requirements of current and prospective users. For this purpose, we have improved our monitoring scheme for quality of service compared to that used in the 2014 Determination. These standards have regard to the advice received from the Passenger Advisory Group between November 2018 and June 2019 and other stakeholders. Our engagement with the Passenger Advisory Group is in line with the 2017 Policy Statement of Airport Charges Regulation.

Policy statement, published or on behalf of the Government or Minister of the Government and notified to the Commission by the Minister, in relation to the economic and social development of the State

13.23 In Section 13, we set out how this Determination has due regard of National Policy notified to us by the Minister for Transport, Tourism and Sport.

The cost competitiveness of airport services at Dublin Airport

13.24 We continue to read this factor in light of our statutory objective which seeks the efficient operation of Dublin Airport. We set the price cap with regard to the costs that an efficient operator at Dublin Airport would need to incur.

13.25 We set a lower price cap than currently in place, which at the same time will enable Dublin Airport to deliver its ambitious Capital Investment Programme. We arrived at a lower price cap due to a volume effect brought by the rapid growth in passenger numbers over the last period and to the efficiency effect embedded in our proposed operational and capital cost allowances.

Imposing minimum restrictions on Dublin Airport Authority consistent with the functions of the Commission

- 13.26 We continue to afford Dublin Airport large discretion in how it manages and runs the airport. We have proposed no sub caps. Subject to complying with the price cap, Dublin Airport continues to have discretion on its charging strategy, subject to requirements of the Airport Charges Directive, and its actual expenditure on the operating and capital costs.

Such national and international obligations as are relevant to the functions of the Commission and Dublin Airport Authority

- 13.27 In making this Determination, we have had due regard to Ireland’s obligations as a signatory of Convention on International Civil Aviation- “the Chicago Convention” of 1944, ICAO DO 7300/9, ninth edition, 2006.⁵⁴
- 13.28 Our decision is in compliance with Directive 2009/12/EC on airport charges. We are the Independent Supervisory Authority for the purposes of the Airport Charges Directive.⁵⁵ The Directive does not change our role in determining the price cap within which Dublin Airport can set individual Airport Charges through the annual consultation process.
- 13.29 In this Determination, we have regard to the recommendations of the Thessaloniki Forum of airport charges regulators of European Union Member States for better implementation of the Directive. We have regard to the recommendations on how to set the cost of capital, which we discuss in more detail in Section 8, and on the assessment of non-discrimination in Airport Charges which we discuss in the context of incentive schemes in Section 12.
- 13.30 Under national law, we have regard to the safety and compliance obligations of Dublin Airport. We have also had regard to the security, immigration and health and safety requirements that airports are subject to.

Ministerial Directions

- 13.31 We have not received a Ministerial policy Direction relating to the 2019 Determination.
- 13.32 In previous Determinations on airport charges we set out how we complied with Ministerial policy Directions issued under Section 10 of the Aviation Regulation Act, 2001. Set out below is how we continue to comply with those policy directions to the extent that is possible while also complying with our statutory objectives. All of the previous directions are published on our website.
- 13.33 The manner in which we have followed policy directions on investments at Dublin Airport, in previous Determinations is tied in with our “RAB-based” approach to regulation. The calculations for setting a cap on airport charges seek to allow Dublin Airport to recover investment costs over a number of years, generally across a number of Determinations. Our calculations of the Regulatory Asset Base (RAB), depreciation charges and the return on capital all have regard to decisions about investment needs made in earlier Determinations. The opening RAB in 2020 will be €1,741m. This amount of money relates to previous investments which has yet to be depreciated, and which we commit to depreciating in this and future Determinations. In addition, when assessing operating costs we have had regard to the operation of infrastructure delivered by past investments and that associated with future

⁵⁴ www.icao.int/publications/Documents/7300_cons.pdf

⁵⁵ [Regulation of the European Communities \(Dublin Airport Charges\) Regulations 2011, S.I. 116 of 2011](#)

investments.

The 16 August 2001 Ministerial Direction

- 13.34 Having regard to the contents of the 2001 Direction we came to the conclusion that for Dublin Airport this meant providing it with sufficient resources to provide for its continued infrastructure development. We stated that providing for continued infrastructure development at Dublin Airport was best met by providing Dublin Airport with a separate price cap.
- 13.35 This Determination provides Dublin Airport with a price cap that provides for continued infrastructure development at Dublin Airport and thus continues to comply with that 2001 Direction.

The 18 August 2005 Ministerial Direction

- 13.36 In analysing that 2005 Direction we concluded that its clear direction was to make a Determination that enabled Dublin Airport to add additional capacity in an efficient and timely manner. We further considered the implications for sustainability and financial viability of the capital expenditure programme for daa and satisfied ourselves that daa would be able to finance the programme.
- 13.37 We are satisfied that we continue to comply with the 2005 Direction and that this Determination will enable Dublin Airport to add additional capacity in an efficient and timely manner. Moreover, this Determination continues to make sufficient allowance to meet the financing needs during the current Determination period.

The 3 April 2007 Ministerial Direction

- 13.38 In complying with the 2007 Direction we made a Determination that provided for infrastructure capacity increases in line with growth in air services at Dublin Airport, as sought by the National Development Plan 2007-2013. We also comprehensively reconsidered the sustainability and financial viability implications of the capital expenditure programme, and in particular the impact of providing a second terminal. The Determination also considered the implications of the restructuring of the State Airports.
- 13.39 This Determination continues to provide for infrastructure capacity increases in line with growth at Dublin Airport and also considers the sustainability and financial viability implications of the ambitious capital expenditure programme, and the impact of providing a second runway.

The 27 October 2009 Ministerial Direction

- 13.40 In complying with the 2009 Direction, we believed that it was crucial that the airport offers users a suitable quality of service at a cost-effective price such that it will encourage and incentivise greater air access, greater investment and thereby contribute to the broader economic development of the State. Therefore, the Determination included a quality of service regime. It provided a price cap sufficient to enable Dublin Airport, provided it was efficient, to fund what we considered to be an appropriate level of investment to provide users with a suitable quality of service into the future and to cover the operating costs necessary to provide such a quality of service today. We were also mindful that general economic development would be hindered if access to Dublin Airport was restricted because of capacity constraints. The 2009 Determination addressed this, most specifically through its treatment of possible costs associated with adding new runway and terminal capacity, items that were separately

identified in the 2009 Direction.

- 13.41 We continue to comply with that Direction by the manner in which we have set out an appropriate quality of service regime and the making of a Determination that is sufficient to (i) facilitate the efficient and economic development of Dublin Airport and (ii) enable Dublin Airport to fund what we consider to be an appropriate level of investment to provide users with a suitable quality of service into the future and to cover the operating costs necessary to provide such a quality of service today.
- 13.42 In 2009, we were also satisfied that the Determination complied with a requirement to enable Dublin Airport to protect its financial viability while implementing government policy requiring Dublin Airport to have terminal and runway facilities suitable for offering international air links to key world markets. The Determination made allowance for Dublin Airport to recover investment costs associated with building a second terminal as well as operating costs associated with T2. In addition, it made allowance for Dublin Airport to recover investment costs associated with the provision of a new runway.
- 13.43 We continue to comply with this Direction in that we continue to provide for the recovery of investment costs associated with building the second terminal (T2), including the remuneration of T2 Box 2 provided passenger numbers exceed 33m per annum which we expect them to in 2020. We also allow costs associated with operating T2 and the remuneration of the North Runway via a number of event based triggers.
- 13.44 Part of the 2009 Direction set out the Government policy that daa operate on a commercial basis without recourse to Exchequer funding or an equity injection by the State and in that context the need to secure lender confidence and raise debt financing on a cost efficient basis. We considered that the analysis we undertook looking at Dublin Airport's financial viability was appropriate for striking a balance between protecting the interests of current and prospective users and enabling Dublin Airport to operate the airport in a sustainable and financially viable manner. We were mindful that the need for Dublin Airport to secure lender confidence and raise debt finance on a cost efficient basis needed to be considered in conjunction with our statutory objectives.
- 13.45 We continue to comply with this direction and have made a Determination that enables Dublin Airport to operate in a sustainable and financially viable manner without recourse to Exchequer funding or an equity injection and having regard to the need to secure lender confidence and raise debt finance on a cost efficient basis. We have done so whilst also having regard to our statutory objectives.

The 15 September 2014 Ministerial Direction

- 13.46 The Minister sought to clarify policy as regards the financially sustainable development of Dublin Airport. In that regard, he directed us to:

“ensure that the Dublin Airport Authority's financial viability is protected in order to implement Government policy on:-

- The role of Dublin Airport as an international gateway for Ireland, including as a secondary hub for air traffic flows between Europe/Asia and the US, and its strategic role in relation to air access for the tourism sector, inward investment and general economic development;
- The desirability that Dublin Airport should have the terminal and runway facilities to

promote direct international air links to key world markets, including the new high growth emerging economies, and the importance of maximising the use of that infrastructure and planning for the future in that context;

- The sustainable operation of Dublin Airport on a commercial basis without recourse to Exchequer funding or an equity injection by the State and in that context, the need to secure lender confidence and raise debt financing on a cost efficient basis.”
- 13.47 In 2014 we stated that in making a Determination, one of our objectives is “...to *enable* daa to operate Dublin Airport in a sustainable and financially viable manner” (our emphasis). It is for Dublin Airport to *ensure* it operates and develops the airport in a sustainable and financially viable manner.
- 13.48 In 2014 we were satisfied that the Determination complied with the 2014 Direction by allowing Dublin Airport a price cap sufficient to enable daa, provided it was efficient, to fund a substantial investment programme that would allow it provide users with a suitable quality of services into the future while permitting it to cover operating costs necessary to provide current users with a suitable service.
- 13.49 Mindful of our statutory obligations and having considered the 2014 Direction carefully, we are satisfied that this Determination continues to comply with that Direction. This Determination enables Dublin Airport to operate in a sustainable and financially viable manner without recourse to Exchequer funding or an equity injection and having regard to the need to secure lender confidence and raise debt finance on a cost efficient basis. The Commission has provided for the inclusion of all of Dublin Airport’s proposed capital investment programme into the regulatory asset base which is an important building block in the calculation of airport charges. The Commission gave careful consideration to the question of financeability and this is evidenced by the analyses undertaken by the Commission and its advisors that underpin this Determination. We have done so whilst also having regard to our other statutory objectives.
- 13.50 In the current Determination process, we acquired external financial advice to assist us in our assessment of financial viability of Dublin Airport in undertaking its ambitious capital programme in addition to other investments that commenced prior to the start date of this Determination. As a result of this assessment we have allowed for an increase in the annual maximum charge that Dublin Airport can apply to secure lender confidence. The financeability add on is driven by maintaining financial ratios as advised by our advisors.
- 13.51 Mindful of our other statutory objectives, we have also incorporated reverse triggers in the price setting process. If key projects in the capital investment programme are significantly delayed, a reverse trigger will apply to reduce the maximum price (subject to a cap). The underlying principle is that Dublin Airport should not retain revenue for key infrastructure projects that are not progressing broadly in line with expectations. Section 9 of the Determination sets out details about reverse triggers. Reverse triggers enable the Commission to balance the costs faced by present versus future users of the airport.
- 13.52 We are satisfied that our Determination has struck an appropriate balance between enabling daa to operate Dublin Airport in a sustainable and financially viable manner and protecting the interests of current and prospective users.
- 13.53 This Determination allows a price cap sufficient to enable Dublin Airport, provided it is efficient, to fund an ambitious investment program that will allow it to provide users with a suitable quality of service into the future while permitting it to cover operating costs necessary

today to provide current users with a suitable service.

Policy Directions

13.54 In July 2018, we were notified by the Department of Transport, Tourism and Sport to have due regard of the 2017 Policy Statement on Airport Charges Regulation and the 2015 National Aviation Policy (NAP).

2017 Policy Statement on Airport Charges Regulation

13.55 We had due regard to the proposed changes that are related to making this Determination. First, the Policy Statement proposes that we shall no longer be mandated to have specific regard to the financial viability of Dublin Airport in making a Determination. The Statement adds that this is intrinsic in the primary objective of protecting the interests of current and future users. In Section 10, we show how our price cap enables daa to operate Dublin Airport in a sustainable and financially viable manner. This is consistent with looking after the interest of current and future users.

13.56 Second, the Policy proposes an explicit reference to competition in the revised legislation. In Section 9, we allow capital projects that will increase the processing capacity of the airport, encouraging and facilitating new entrants and thus facilitating competition in the airline market and the ground handling market. This will benefit current and future users by providing for increased choice and value in airport and aviation services.

13.57 Third, the Policy proposes that we will be required to have regard to Government policy on climate change and sustainability. In Section 9, we allow projects that will enable Dublin Airport to align itself with environmental policy and reduce its direct impact on the environment through, for example, improved surface water management systems, wider use of cleaner energy and improved operational efficiency.

2015 National Aviation Policy

13.58 The 2015 National Aviation Policy is most relevant to the capital investment allowances that support the development of Dublin Airport. The Commission has provided for the inclusion of all the daa proposed capital investment programme into the regulatory asset base which is an important building block in calculating airport charges (see Section 9).

Submissions Received on Government Policy

13.59 Aer Lingus, Ibec and the Ireland Canada Business Association (ICBA) state that a goal of the 2015 National Aviation Policy is to promote Dublin Airport as an international hub.

13.60 Cork Airport recommends that, in making the Final Determination, we recognise and support the following fundamental Government policy positions and actions:

- the “important role” of Cork and other regional airports (NAP, 2015, p. 41)
- the impact of our decision on this role and the development of Cork as a “key tourism and business gateway” (NAP, 2015, p. 44)
- the impact of our decision on Cork's ability to “support the economic and social objectives of the State”

13.61 Cork Airport suggests that the Draft Determination does not have due regard to the above key aspects of Government policy because, if it remains unchanged, it will result in:

- a significant decrease in revenues and the inability of Cork to fund its ambitious capital master plan to support growth (NAP, 2015, p. 50);
- less ability for Cork to 'attract new business', to deliver on 'service and value for passengers and airlines', and 'to make a sustainable contribution' to its local economy and community (NAP, 2015, p. 39);
- Cork not being on a 'sound footing ... that allow(s) for ... at a minimum, sustainable operation ... in the short to medium term.' (NAP, 2015, p. 38)
- any review/monitoring of Cork Airport (as provided for in the NAP) concluding that the regulatory outcome in Dublin hinders Cork Airport from 'operating at an optimum level' (NAP, 2015, p. 39).

13.62 Dublin Airport states that we must have due regard to the NAP with regards to:

- the national objectives for aviation 'be facilitated by investment in new infrastructure to meet the needs of projected traffic growth'.
- the strategic importance of Dublin Airport which contributes €9.8 billion to Irish GDP (3.1% of national income in 2018).

13.63 Dublin Chamber states that our draft decision to significantly restrict the income of Dublin Airport at a key time of strategic growth is at odds with the NAP.

Response

13.64 Our Determination including decisions on capital expenditure allowances for the next regulatory period fully supports the goal of the National Aviation Policy to promote Dublin Airport as a hub and a national strategic asset.

13.65 In response to Cork Airport, one should recall that Cork airport and Shannon airport were expressly removed from the Commission's remit in relation to airport charges regulation by amendment made to the Aviation Regulation Act, 2001 by the State Airports Act, 2004. We have a legal obligation to comply with our statutory objective of facilitating the efficient and economic development of Dublin Airport, which meet the requirements of users. We must also have regard to our statutory factor related to the cost competitiveness of airport services at Dublin Airport. Under our legal mandate, as set out in the Aviation Regulation Act 2001, as amended, we cannot require that users of Dublin airport pay airport charges above the efficient level to support the development of Cork or any other regional airport.

14. Appendix 1: CIP Projects Summary

14.1 This Appendix addresses more detailed submissions in relation to specific CIP2020 projects. The table at the end summarises allowed CIP2020 Capex and the regulatory treatment of individual projects. The Draft Determination includes a detailed discussion of each of the projects which still stands unless amended below.

Asset Care- Civil, Structural, Fleet

CIP.20.01.001- Runway 10R/28L Delethalisation

14.2 IALPA recommends the removal of taxiway S3, redevelopment of S5 to Rapid Exit Taxiway (RET) standard, and the installation of drainage shores at the intersections of Runway 28L with taxiways S2 and S5.

14.3 As noted in Section 9, we could not provide different allowances for projects which have not been scoped and submitted by Dublin Airport. However, we do allow for flexibility in Capex allowances which means that Dublin Airport could seek to progress the above projects either in addition to or instead of other projects, if it so chooses.

CIP.20.01.002- Apron Rehab Programme

14.4 IALPA states that this project should comply with the 50 Million Passengers Per Annum (mppa) masterplan.

14.5 Ryanair considers that the assumption that full reconstruction will be required overstates the cost associated with this project.

14.6 Dublin Airport has developed this CIP programme as part of a common first step towards a 55 mppa airport. In the Draft Determination, we acknowledged that there is scope for this cost to adjust over the period on the basis of more detailed condition assessments, and for that reason we included the project in StageGate, which we continue to do. In advance of the detailed condition assessment, we do not consider that there is a robust way to identify where savings could be made. Ultimately the StageGate allowance is provisional.

CIP.20.01.003- Taxiway Rehab Programme

14.7 IALPA states that this project should comply with the 50 mppa masterplan.

14.8 Ryanair states that once again, the assumption that full reconstruction will be required highlights the daa 'gold plating' approach to costings, and states that the allowance should be reduced accordingly.

14.9 Dublin Airport has developed this CIP programme as part of a common first step towards a 55 mppa airport. We agree with Ryanair in relation to taxiway M2 and Steer has adjusted its costing of this project to reflect 150 mm overlay only. Given the lack of cost certainty over this project, we continue to include it in the StageGate process.

CIP.20.01.004- Apron Road Rehab Programme

14.10 Ryanair considers that the assumption regarding full reconstruction leads to excessive costs and the cost should be reduced.

14.11 Unlike the apron and taxiway rehab projects, we consider that the potential quantum of cost

variance due to the assumption that full reconstruction will be required is not sufficient to warrant including this project in StageGate. At this time there is not a robust way to identify where further savings could be made; should such savings materialise over the period, Dublin Airport can use these savings for other projects.

- 14.12 This project remains an output based Deliverable, meaning that Dublin Airport must rehab 9,750 square metres of Apron Road to retain the allowance in full.

CIP.20.01.006- Southern Perimeter Maintenance Road Upgrade

- 14.13 Ryanair considers that the assumption regarding full reconstruction leads to excessive costs and the cost should be reduced. It also is supportive of the Steer suggestion in relation to improved drainage.

- 14.14 As we referenced in the Draft Determination, assumptions regarding the road surface rehab element of this project have been based on visual inspections rather than assuming a requirement for full reconstruction. There is flexibility within this grouping for Dublin Airport to consider drainage based improvements should it choose to do so (for example, savings made relative to the cost allowance for CIP.20.01.004).

CIP.20.01.008- Runway Approach Lighting Mast Improvement Programme

- 14.15 Ryanair questions the need for replacing the masts for approach lights to Runway 16 and Runway 34 and suggests that the IAA may not have explicitly requested their immediate replacement with frangible masts. It suggests that any non-critical works be delayed until the North Runway is operational and the need to retain the crosswind runway has been reassessed.

- 14.16 Our position as per this Determination, set out in Section 9, is that the current airport crosswind capability must be retained in order to retain remuneration for the North Runway. This condition was originally set in the 2014 Determination. Therefore, the crosswind runway must be retained until at least 2024, with any potential reassessment being subsequent to that, unless this condition were to be amended through an Interim Review. The current masts no longer meet EASA standards as they are not frangible. We continue to allow for this project in order to allow Dublin Airport to align itself with these safety standards in the forthcoming regulatory period, in relation to this operational asset.

CIP.20.01.009- Aerodrome Ground Lighting

- 14.17 Ryanair questions the need to replace the fittings associated with runway 16/34 on the basis that there will be a minimal operational requirement for this runway once the North Runway is operational.

- 14.18 Similar to CIP.20.01.008, we continue to allow for the replacement of the Runway 16 approach light fittings to allow Dublin Airport to align itself with EASA standards in the forthcoming regulatory period, in relation to this operational asset. As stated in the Draft Determination, this allowance is partly Deliverable; Dublin Airport must deliver certified compliant light fittings for the Runway 16 approach lighting.

CIP.20.01.010- ALCMS Improvement Programme

- 14.19 IALPA requests consideration and implementation of 'Follow-the-Green' technology.

- 14.20 This project future proofs the Airfield Lighting Control Management System for 'Follow the

Green' technology rather than providing for it currently. Ultimately should Dublin Airport seek to progress this in the forthcoming regulatory period, it could seek to use Capex flexibility to do so.

CIP.20.01.012- AGL Substation T

- 14.21 IALPA considers that funding relating to piers 2 & 3 is unwise until a revised pier layout is set out.
- 14.22 Dublin Airport intends to maintain and incrementally develop these piers. Clearly the capacity provided by these piers is needed; we cannot provide an allowance for more fundamental redesign unless such a project is presented to us by Dublin Airport. Therefore, we have decided to continue to allow for projects associated with these piers as their maintenance and development is required to meet traffic demand.

CIP.20.01.018- Campus Buildings Critical Maintenance

- 14.23 Ryanair questions the need for any costs associated with the maintenance of South Apron buildings given demolitions due to Pier 5.
- 14.24 This is a broad allowance which is intended to provide some flexibility for Dublin Airport to address building maintenance requirements over the period. While Dublin Airport does reference South Apron buildings as potentially requiring maintenance, we have previously reviewed the costings and can confirm that the large majority relates to other areas, with a smaller portion which is non-specific. We therefore continue to allow for this project as costed by Steer.

CIP.20.01.020- T1 Façade, Roof, Spirals

- 14.25 IALPA suggests that removing the spirals would allow for T1 expansion and integration, and also an Automated People Mover (APM) for access to the western campus.
- 14.26 Ryanair states that further information is required to understand the cost of this project, which, it states, compares to over 25% of the Manchester Airport Group entire 2018 maintenance expenditure across 3 airports. It considers that it should be possible for these costs to substantially reduce.
- 14.27 We have been provided with optioneering reports which show how Dublin Airport considered removing the spirals, ultimately deciding not to progress this on the basis of cost. The cost of maintaining the spirals is a small part of this allowance in order to prevent potentially hazardous degradation such as spalling. Removing the spirals entirely, as suggested by IALPA, should be reconsidered in future periods.
- 14.28 Ahead of the Draft Determination, we assessed the need for the various elements of this project, while Steer assessed the costs. There are several aspects to this project with different complications, such as the condition and location of the fins and asbestos in the louvres. The project also includes works to the '8-Bay' roof in T1. We are therefore confident that this project, as costed by Steer, is a necessary and efficient approach to maintaining T1 and continue to allow for it.
- 14.29 We accepted Dublin Airport's suggestion that a more targeted approach for including projects in StageGate is necessary. We therefore exclude this project from StageGate, instead making it a Deliverable.

CIP.20.01.024- Skybridge Rehab

- 14.30 Ryanair considers it 'simply extraordinary' that this asset requires rehab to maintain its structural integrity after 12 years, when such a structure would be expected to have a design life of 30-40 years.
- 14.31 In the Draft Determination, we flagged that elements of this asset had failed prematurely. We also noted that the contractor in question had since ceased trading. Clearly this is a sub-optimal outcome both for Dublin Airport and for airport users. However, as a regulated entity, Dublin Airport cannot be expected to commit to this expenditure without associated remuneration. In order to prevent further and more costly degradation, we continue to allow for this project

CIP.20.01.065- Airport Heavy Fleet

- 14.32 Ryanair questions why two foam fire tenders are being replaced before the end of their asset lives, an issue we flagged in the Draft Determination but did not adjust the costing accordingly.
- 14.33 On reflection, we agree with Ryanair that replacing these two vehicles in the current regulatory period is not justified. We have therefore reduced the allowance for this project by the associated amount (€2m), relative to the Steer costing. Should Dublin Airport wish to replace them anyway, it can do so using flexibility within this grouping.

CIP.20.01.071- Electric Charger Network Facilities

- 14.34 Ryanair considers that this project has been misclassified as a capacity project, when it should be considered as a revenue project. It further states that we should include an associated commercial revenue uplift.
- 14.35 Ahead of the Draft Determination, Dublin Airport advised that, as of yet, no business case had been developed for this project; in fact there was no detailed information available in relation to any aspect of this project. For that reason, we included the project in StageGate. However we consider Ryanair's suggestion to be a superior approach, so have decided to no longer include the project in StageGate, but instead add a corresponding commercial revenue uplift. In the absence of a business case we have assumed that this project will break even over its 10 year asset life (in terms of Net Present Value), which translates to €0.2m annually. As the project is expected to be delivered right across the period, the uplift commences from Quarter 3 2022.

CIP.20.01.074- AVDGS

- 14.36 IALPA supports this project albeit with the prospect of relocating the units following review of the stand layout on the eastern campus.
- 14.37 We continue to allow for this project and would assess any project associated with relocating the units if and when such a project was presented to us.

CIP.20.01.099- RW 16/34 Lighting for Low Visibility Procedures

- 14.38 IALPA opposes this project on the grounds that Runway 16/34 is an operational runway, suggesting diverting the funding to a new Low Visibility Procedures (LVP) taxiway W.
- 14.39 Ryanair questions the value of this project, given that there are 2-3 days in the year when LVP conditions are observed and that PACE provides for parallel dual F taxiways, while Dublin

Airport's long term plan includes a parallel taxiway W to the west of the crosswind runway. In its appendix, Ryanair suggests that this project should enter the StageGate process.

14.40 Runway 16/34 functions as a key taxiway during Runway 10 or Runway 28 operations and will continue to do so when the North Runway becomes operational. While LVP conditions occur on 1% of days, we consider the operational impact on these days is sufficient to justify this project in the interests of airport users.

14.41 In the Draft Determination, we made this project an outcome-based deliverable, meaning that Dublin Airport must deliver Runway 16/34 as an LVP taxiway. In response to IALPA's comment, we have decided to adjust the Deliverability element such that Dublin Airport must deliver either Runway 16/34 as an LVP taxiway, or alternatively an LVP taxiway W. It should be noted that taxiway W would be substantially more costly; this means that Dublin Airport would likely need to either reallocate a substantial portion of funding or alternatively hold an interim consultation on increasing the group allowance. We do not consider this project to be appropriate for the StageGate process as we have sought to ensure that the process is targeted towards larger scale projects.

Asset Care- Mechanical & Electrical

CIP.20.02.004- Passenger Boarding Bridges & FEGP

14.42 IALPA suggests allowing for the maintenance of existing airbridges but not new airbridges on piers 2 or 3.

14.43 Dublin Airport intends to maintain and incrementally develop these piers. The capacity provided by these piers is needed; we cannot provide an allowance for more fundamental redesign unless such a project is presented to us by Dublin Airport. Therefore, we have decided to continue to allow for necessary projects associated with these piers as their maintenance and development is required to meet traffic demand. As we stated in the Draft Determination, this project is partly Deliverable; in order to retain the full allowance Dublin Airport must deliver an additional dual airbridge on Pier 3.

CIP.20.02.008- Terminal Buildings HVAC Upgrade

14.44 IALPA does not support elements associated with piers 2 or 3, pending redevelopment of these piers.

14.45 Dublin Airport intends to maintain and incrementally develop these piers. The capacity provided by these piers is needed; we cannot provide an allowance for more fundamental redesign unless such a project is presented to us by Dublin Airport. Therefore, we have decided to continue to allow for projects associated with these piers as their maintenance and development is required to meet traffic demand.

CIP.20.02.010- Pier 3 Life Extension Works

14.46 IALPA suggests a new hammerhead pier, as suggested by CEPA/Oxford Economics to replace Pier 3.⁵⁶

14.47 Dublin Airport intends to maintain and incrementally develop these piers. The capacity provided by these piers is needed; we cannot provide an allowance for more fundamental redesign unless such a project is presented to us by Dublin Airport. Therefore, we have decided

⁵⁶ assets.gov.ie/22659/d2cbb36779534741adde4be4f0943a7d.pdf

to continue to allow for projects associated with these piers as their maintenance and development is required to meet traffic demand.

Capacity

CIP.20.03.006- T1 Kerbs

- 14.48 IALPA states that funding should be predicated on receiving planning permission.
- 14.49 Ryanair does not support this project as it believes it not to be required in the current period.
- 14.50 We consider that the level of flexibility we have provided within the Capex allowances to be appropriate. As with other projects, this flexibility is intended to allow for elements of scope change within projects. Should it not be possible or desirable to proceed with this project at all, due to planning permission or other issues, Dublin Airport can use the associated allowance for other capacity projects, and if it does not then the allowance will be clawed back in the next Determination.
- 14.51 As we set out in the Draft Determination, the evidence provided by Dublin Airport led us to conclude that in the absence of this project, there would be insufficient kerb capacity to allow for the 40 mppa schedule. We therefore continue to allow for it as it is in the interests of airport users.

CIP.20.03.012- T1 Central Search Relocation to Mezzanine

- 14.52 Ryanair agrees with the need to move T1 Central Search, however it considers that the Helios modelling indicates overdesign and consequently the scale of the project needs to be reviewed.
- 14.53 The Helios modelling indicated that the queue time peaks at 5 minutes, i.e. at the margin between overdesign and optimal, with 40 million passengers per annum. However, this depends on the Images Per Passenger (IPP) achieved; at the time of the Draft Determination, we expected throughput in line with IPP of 1.2, driven largely by the increased lane length together with EDS C3 scanners provided for under the security projects. Subsequently, based on performance at some other airports, Dublin Airport considers that this may be overly ambitious, with an IPP of 1.4-1.5 being more realistic. Dublin Airport has suggested that this project is therefore underscoped and has sought an increase in the allowance to provide an additional lane.
- 14.54 Helios has simulated T1 Central Search with an IPP of 1.5 and the impact is substantial. However, there remains doubt over the IPP which can be achieved, and it would not be appropriate for us to increase the allowance at this time given this uncertainty. We have therefore decided to continue to allow for this project and the other interlinked T1 projects (Check-In and Departures Lounge) as scoped in Dublin Airport's CIP submission. The StageGate process is an ideal mechanism for these projects to be considered further as more data from other airports becomes available, together with more up-to-date traffic forecasts.

CIP.20.03.013- T1 Departures Lounge

- 14.55 Ryanair considers that this project is identified as being overscoped, and if it were considered a commercial project, there is no business case for it. It suggests that this project be omitted, and any minor works required for relocation of Central Search be included in that project.
- 14.56 In the Draft Determination, we pointed out that the evidence suggested this project was not

required from a capacity perspective. Equally we pointed out that this project is interdependent with CIP.20.03.012 and CIP.20.03.011 (T1 Check-In), while it can be expected that with increased passenger traffic, increased retail facilities will be required to maintain historic passenger elasticities. As part of the StageGate process, there is the opportunity to reduce the scope of this project, potentially allocating more allowed revenues towards an additional lane at T1 Central Search if that is deemed necessary. Consequently we continue to allow for this project, and do not apply a specific uplift in our commercial revenue forecasts.

CIP.20.03.015- T1 Baggage Reclaim

- 14.57 Ryanair states that Helios' modelling indicates overdesign.
- 14.58 Helios modelling indicates overall space per passenger only is at 'overdesign'- however this is largely a function of the current size rather than due to this project. This project reconfigures the existing hall, providing increased belt lengths and belt frontage. As stated in the Draft Determination, we have reviewed evidence from Dublin Airport that clearly identified a shortfall in capacity in this processor to service the 40 mppa schedule. We have accepted Dublin Airport's suggestion that the number of projects entering StageGate should be more targeted; consequently we have decided not to include this project in StageGate but rather provide a flexible allowance.

CIP.20.03.016- T1 Rapid Exit Arrivals

- 14.59 IALPA considers that this project unnecessarily duplicates customs and meet and greet areas.
- 14.60 Ryanair supports this project.
- 14.61 This project allows arriving passengers to exit without passing through the baggage hall, reducing walking times and increasing space per passenger in the baggage hall. It was added to the CIP2020 programme following airline support. We therefore continue to allow for it.

CIP.20.03.018- T1 Immigration Hall

- 14.62 Ryanair states that the Helios analysis identifies that this project is overscoped. It is concerned at the flexible nature of the allowance, as Dublin Airport could re-scope the project and reallocate the remainder of the allowance. It suggests either reducing the scope or including the project in StageGate.
- 14.63 We do not agree with this interpretation of the Helios analysis; in fact the queue time becomes suboptimal during the late arrivals peak. There are only minor works to the T1 Immigration Hall in CIP2020; the more substantial project to increase the area of the hall has already been allowed for under PACE. We continue to provide a flexible allowance for this project.

CIP.20.03.020- T2 Central Search Area Expansion

- 14.64 Ryanair considers that the Helios analysis identifies that this project is overscoped. It is concerned at the flexible nature of the allowance, as Dublin Airport could re-scope the project and reallocate the remainder of the allowance. It suggests either reducing the scope or including the project in StageGate.
- 14.65 We do not agree with this interpretation of the Helios analysis; we consider that the analysis suggests this processor is ideally sized to deliver the 40 mppa schedule. We continue to provide a flexible allowance for this project.

CIP.20.03.028- T2 Early Bag Store and Transfer Lines

- 14.66 IALPA states that additional Unit Load Device (ULD) storage units should be considered as an interim measure to replace this project, which ultimately will not be required if the IALPA west apron satellite pier were to be developed.
- 14.67 IATA considers this project to be critical to avoiding bottlenecks as US Preclearance traffic increases.
- 14.68 Ryanair states that further justification in relation to this project is required through the StageGate process.
- 14.69 As stated above, we need to consider Dublin Airport's investment programme as presented to us in the context of whether a need for this project has been demonstrated. As set out in the Draft Determination, we have reviewed evidence from Dublin Airport which clearly demonstrates the need for this project to address what would otherwise be a shortfall in Make Up Positions (MUPs) to service the 40 mppa schedule, in particular given the expected growth in traffic to the USA. We agree with IATA on the criticality of this project to avoid die-back in the baggage system and continue to allow for it. This project will enter the StageGate process.

CIP.20.03.029- Pier 5

- 14.70 IALPA states that this project implies a cost of €96.3m per Widebody stand and is inconsistent with the previously planned T2 phase 2. It states that these stands may not be able to accommodate Emirates Boeing 777-9.
- 14.71 Emirates and Aer Lingus re-state their strong support for this project, with Emirates particularly highlighting the vertical gate segregation which allows for full CBP/Non-CBP flexibility, as an important positive feature.
- 14.72 As set out in the Draft Determination, our understanding is that the widebody stands at Pier 5 are intended to accommodate all Code E aircraft. The South Apron projects remain subject to detailed design. The StageGate process is intended to allow for issues such as the finalised stand dimensions to continue to be considered. It will be important that Emirates and other users make their requirements known to Dublin Airport, as part of that process. We continue to allow for this project as it is justified by a clearly defined demand requirement and has substantial support from airport users.

CIP.20.03.030- US Preclearance

- 14.73 IALPA states that scattered US CBP passengers being bussed from a central facility may be incompatible with US authorities security requirements. It also states that a Widebody Preclearance facility should instead be located at a west apron pier 5 as proposed by IALPA.
- 14.74 We need to consider Dublin Airport's investment programme as presented to us in the context of whether a need for this project has been demonstrated. As we set out in the Draft Determination, the need for all elements of this project has been clearly demonstrated, with Helios' simulation indicating that the core TSA processor is appropriately sized to deliver the 40 mppa schedule.

CIP.20.03.031- South Apron Expansion

- 14.75 IALPA suggests that this allowance should be diverted to a west apron pier 5 as proposed by IALPA.

- 14.76 We could not provide an allowance for an alternative project not presented to us for assessment such as the IALPA pier 5. This project facilitates capacity expansion to meet a need which we have verified. We therefore continue to allow for this project.

CIP.20.03.033A- Enablement of Pier 3 for US Precleared Passengers

- 14.77 IALPA states that this project is incompatible with hub competition and complicates the limited space in Pier 3, and consequently funding should be diverted to a west apron pier 5 as proposed by IALPA.
- 14.78 We could not provide an allowance for an alternative project not presented to us for assessment such as the IALPA pier 5. This project facilitates capacity expansion to meet a need for increased US Preclearance enabled stands. We therefore continue to allow for this project.

CIP.20.03.034- Pier 3 Immigration

- 14.79 IALPA states that this project is incompatible with hub competition and consequently funding should be diverted to a west apron pier 5 as proposed by IALPA.
- 14.80 Ryanair considers that the Helios analysis identifies this project as overscoped. It is concerned at the flexible nature of the allowance, as Dublin Airport could re-scope the project and reallocate the remainder of the allowance. It suggests either reducing the scope or including the project in StageGate.
- 14.81 We could not provide an allowance for an alternative project not presented to us for assessment such as the IALPA pier 5. This project facilitates capacity expansion to meet an identified need in this Pier.
- 14.82 We do not agree with Ryanair's interpretation of the Helios analysis; if anything the analysis suggests that the project may be underscoped as the queue time peaks at 20 minutes with the 40 mppa schedule. We continue to provide a flexible allowance for this project.

CIP.20.03.036- Pier 1 Extension & Apron 5H PBZ

- 14.83 IALPA states that Apron 5H conflicts with the taxiway system to Runway 28R, while increased operations on the north apron will add pressure to T1 Immigration and restrict movement to hangars.
- 14.84 Ryanair supports this project; it also considers that Module 2 of the Pier 1 extension should also be included.
- 14.85 This project does not include Apron 5H itself, which was already allowed for under PACE. Rather it adds a Pre Boarding Zone to this apron. The simulation modelling we have carried out did not identify any particular issues on the north apron triple lane taxiway, between Aprons 5G and 5H, or T1 Immigration once the CIP2020 and PACE projects are in place. Module 2 was not proposed to us for consideration. We continue to allow for this project.

CIP.20.03.043A- T1 Piers- New Airbridges

- 14.86 IALPA considers that investment in piers 2 or 3 is nugatory and that funding should be diverted to a west apron pier 5 as proposed by IALPA.
- 14.87 Dublin Airport intends to maintain and incrementally develop these piers. The capacity provided by these piers is needed; we cannot provide an allowance for more fundamental redesign unless such a project is presented to us by Dublin Airport. Therefore, we have decided

to continue to allow for projects associated with these piers as their maintenance and development is required to meet traffic demand.

CIP.20.03.049- De-icing pad at Runway 10R

- 14.88 IALPA states that this project serves no practical purpose. It supports more centralised de-icing.
- 14.89 Ryanair supports this project.
- 14.90 This project serves an important practical purpose in particular circumstances, namely easterly operations during snow/ice conditions. It has received support from airport users. We continue to allow for this project.

CIP.20.03.051B- West Apron Underpass

- 14.91 Aer Lingus believes the underpass should not be located at Pier 3 due to both the impact on operations during construction and the location in the midst of South Apron hub infrastructure. It believes that the Pier 3 option is not optimal due to these factors and also the higher cost relative to other options.
- 14.92 IALPA, FedEx and CityJet support this project. IALPA does state that the Pier 3 exit location requires redesign to allow for redevelopment of Pier 3.
- 14.93 IATA is supportive of opening up the western campus through an underpass but considers that further engagement with airlines in relation to the appropriate location is required.
- 14.94 Ryanair does not support the West Apron Underpass on the basis that provision at this stage would be premature in advance of 'live' passenger operations from stands on the West Apron.
- 14.95 We have not been persuaded to adjust our treatment of this project relative to the Draft Determination. As we set out in the Draft Determination, the evidence we have reviewed indicates the need for reliable and efficient access to the West Apron with the 40 mppa schedule. This project is a necessary first phase in opening up the western campus for passenger operations. There is circularity in Ryanair's point; reliable and efficient access to the western campus is a prerequisite for 'live' passenger operations.
- 14.96 Based on the evidence we reviewed, we considered the Pier 3 location to be optimal, and that remains the case. We therefore continue to allow for the project scoped to that location. As this project will enter StageGate, there is the opportunity to continue to consider other options regarding the location.

CIP.20.03.052- Surface Water Environmental Compliance

- 14.97 IALPA states that a centralised de-icing facility could negate the requirement for this project.
- 14.98 Ryanair is unclear why this is considered a capacity project and states that the requirement for this project needs to be justified through the StageGate process.
- 14.99 We consider that the need for this project has been justified in line with Dublin Airport's drainage masterplan. As stated in the Draft Determination, the ongoing remuneration of this project is contingent on maintaining compliance with any Trade Effluent Discharge Licences (TEDL) or other regulatory requirements. Dublin Airport did not propose a centralised de-icing facility as part of the CIP programme. As this project will enter StageGate, ultimately whether it is also classified as a capacity project or not is irrelevant to the overall outcome.

CIP.20.03.054- Apron 5M

- 14.100 IALPA states that dual code E taxiway centreline separation should be at least 330 meters to allow for insertion of a satellite pier.
- 14.101 Ryanair opposes Apron 5M at this time. It states that provision of these additional stands is premature, with reference to the ratio of stands to passengers achieved at Gatwick and Luton, and that this project should not be allowed into the RAB until the need is proven. Drawing on this analysis, it suggests that no more than 138 NBE stands should be needed to service the 40 mppa schedule, which equates to 131 NBEs to service 37.8 mppa which was our Draft Determination passenger forecast for 2024.
- 14.102 As is the case with other CIP2020, Apron 5M is consistent with Dublin Airport's 55 mppa masterplanning options, provided that the pavement is scoped to allow for widebody aircraft. It remains subject to detailed design.
- 14.103 As part of its capacity assessment, Dublin Airport identified a requirement for 154 stands to service the 40 mppa schedule, including a standard 10% contingency. This was supported by the Helios' work, which identified peak stand demand of 145. We therefore consider that this project is necessary to address what would otherwise be a shortfall in stand capacity to service 40 mppa. Direct comparisons of passengers per stand with other airports suffer from different levels of restrictions within a raw NBE count, as well as different traffic profiles. It is not clear why Ryanair chose those two airports.
- 14.104 In its Draft Report, Steer identified that the pavement depth as scoped by Dublin Airport was insufficient for widebody aircraft, which Dublin Airport acknowledged, and subsequently submitted a revised costing. Given that proceeding with 5M as originally scoped by Dublin Airport, Steer has carried out its costing based on the revised costing. We include this amount as the initial allowance.

CIP.20.03.071- Hydrant Enablement- Piers 2 & 3

- 14.105 IALPA considers this to be nugatory expenditure on these piers and considers that the funding should be diverted to a fuel line to serve a holding tank on the western campus.
- 14.106 As stated above, Dublin Airport intends to maintain and incrementally develop these piers. The capacity provided by these piers is needed and we cannot provide an allowance for more fundamental redesign unless such a project is presented to us by Dublin Airport. Therefore, we have decided to continue to allow for projects associated with these piers as their maintenance and development is required to meet traffic demand.

CIP.20.03.072- T2 and Pier 4 Transfer Facilities

- 14.107 Ryanair considers that this project, which was added following the initial results of Helios' terminal building simulations, should be omitted on the basis that the profile of arriving traffic in the 40 mppa schedule is overly peaky and consequently the need for this project is questionable.
- 14.108 As stated in Section 9, our view is that the profile of the 40 mppa schedule is reasonable for the purposes of assessing the sizing of the CIP projects. Helios' initial results showed a dramatic level of capacity underprovision at these processors which would have required a far smoother traffic profile to be resolved. On that basis we continue to allow for this project.

IT

CIP.20.05.011- Security Technology Innovation (Biometrics and FOD detection)

14.109 IALPA suggests waiting until these systems are proven through installation at other peer airports.

14.110 We consider these systems to be in the interests of airport users. We agree that developments in relation to this technology are fast-moving; Dublin Airport has full flexibility across the IT projects grouping to hold off on investing in these systems if it so chooses.

CIP.20.05.020- Innovation Fund

14.111 IALPA states that specific funding should support a drone detection system compliant with EASA regulations.

14.112 A drone detection system is one of the candidate projects referenced by Dublin Airport in relation to this allowance.

Security

CIP.20.06.014- Screening & Logistics Centre

14.113 As stated in Section 9, we have decided to split this project into two time-dependant deliverables, Phase 1 and Phase 2, both with a delivery date of the end of 2022. Therefore, if Phase 1 is completed by the end of 2022, Dublin Airport has certainty over the ongoing remuneration of the portion of costs associated with Phase 1. If Phase 2 is completed by the end of 2022, Dublin Airport has certainty over the ongoing remuneration of the full allowance.

CIP.20.07.031/CIP.20.07.031- HBS3 in T1 and T2

14.114 Following on from the Draft Determination, Dublin Airport has provided a revised cost estimate of €200m for these projects. We therefore include the revised cost as the initial allowance for these projects, which now enter StageGate.

Other

CIP.20.07.004- Metro Coordination

14.115 IALPA supports the view that this should not be considered a CIP project. It states that Dublin Airport should engage with the NTA to future proof Terminus status on the western campus.

14.116 Joseph Ryan expresses surprise that there is no Capex allowance associated with Metro-Link in the Draft Determination.

14.117 We consider projects as they are presented to us, and no genuine Capex request was presented to us in relation to Metro-Link. We still consider that the proposal for this small allowance is not a capital project, however we now instead provide an associated incremental Opex allowance for Dublin Airport to coordinate with the Metro-Link project.

15. Appendix 2: Capital Allowances 2020-2024 Summary

CIP.20	Project	Allowance €m	Asset Life	Reconciliation *
Appendix A- Asset Care- Civil, Structural, Fleet				
01.001	Southern Runway 10/28 Delethalisation	2.2	20	F
01.002	Apron Rehabilitation	40.2	20	S
01.003	Airfield Taxiway Rehabilitation	16.4	20	S
01.004	Apron Road Rehabilitation	4.4	20	D
01.006	Airfield Southern Perimeter Road Upgrade	4.3	15	F
01.008	Runway Approach Lighting Mast Improvement	11.1	20	D
01.009	Aerodrome Ground Lighting (AGL) Improvement	4.7	15	D
01.010	Airfield Lighting Control Management System Improvement	4.9	10	D
01.012	AGL Substation T Development	3.7	30	D
01.015	High Mast Lighting Improvement	0.7	15	F
01.016	Airfield Maintenance Base Improvement	4.4	20	F
01.018	Campus Buildings Critical Maintenance	1.5	15	F
01.020	Terminal 1 Façade, Roof & Spirals	25.2	20	D
01.022	Terminal 1 Storm Water Drainage System	1.1	15	F
01.023	Piers & Terminals Critical Maintenance	1.7	15	F
01.024	Skybridge Rehabilitation	1.2	20	D
01.034	Campus Roads Critical Maintenance	6.5	15	D
01.039	Airport Roads Critical Maintenance	5.0	15	D
01.046	Staff Car Parks Critical Maintenance	1.0	15	F
01.049	Public Carpark Critical Maintenance	2.4	15	F
01.056	Campus Facilities & Landside Snow Base Upgrade	2.8	20	F
01.065	Airport Heavy Fleet & Equipment Replacement	9.0	7	F
01.069	Airport Light Vehicle Fleet Replacements & Augmentation	2.4	5	F
01.071	Electric Charger Network Facilities	1.6	10	F
01.074	Advance Visual Docking Guidance System	5.4	10	D
01.087	AGL Fibre Optic Communication Network Improvement	2.0	20	D
01.099	RWY 16/34 Lighting for Low Visibility Procedures (LVP)	5.5	10	D
07.013	Airfield Redesignation	1.5	15	F
07.032	ULD Storage	5	15	F
Appendix B- Asset Care- Mechanical and Electrical				
02.001	Medium Voltage (MV) Electrical Network	6.3	20	D
02.002	Second MV Connection Point	1.0	5	S
02.004	Passenger Boarding Bridges (Maintenance & Pier 3 Enhancement) & FEGP	17.2	15	D
02.005	Lift Upgrade Programme- Terminal & Multi-Storey	6.2	20	F

CIP.20	Project	Allowance €m	Asset Life	Reconciliation *
02.006	Airport Water & Foul Sewer Upgrade	4.9	25	F
02.007	Life Safety Systems (LSS) Upgrade	10.1	10	D
02.008	Terminal Buildings- HVAC Upgrade	17.8	20	F
02.009	Campus Buildings: Mechanical, Electrical & LSS Upgrade	9.4	15	F
02.010	Pier 3 Life Extension Works- Mechanical, Electrical & Foul Drainage	14.0	15	D
02.013	Small Energy Projects	5.4	15	F
07.030	Large Energy Project- Photovoltaic Farm	8.5	25	D
Appendix C- Capacity				
03.004	Gate Post 9 Expansion (West Lands)	8.5	20	F
03.006	Terminal 1 Kerbs	13.6	15	F
03.011A	Terminal 1 Check-In (Partial Shoreline)	26.0	10	S
03.012	Terminal 1 Central Search- Relocation to Mezzanine Level	31.5	15	S
03.013	Terminal 1 Departure Lounge (IDL) Reorientation & Rehabilitation	32.9	15	S
03.015	Terminal 1 Baggage Reclaim Upgrade & Alterations	19.0	15	F
03.016	Terminal 1- Rapid Exit Arrivals	1.9	10	F
03.017	Terminal 1 Shuttle, bus lounges & injection points	1.9	15	F
03.018	Terminal 1- Immigration Hall	1.8	15	F
03.020	Terminal 2 Check-In Area Optimisation	13.2	15	F
03.021	Terminal 2 Central Search Area Expansion	4.6	15	F
03.028	Terminal 2 Early bag store & transfer lines	27.9	10	S
03.029	New Pier 5 (T2 and CBP Enabled) ***	298.7	28**	S
03.030	Expansion of US Pre-Clearance Facilities ***	55.1	25	S
03.031	South Apron Expansion (Remote Stands, Taxiway and Apron) ***	71.3	34**	S
03.033A	Enablement of Pier 3 for Precleared US bound passengers	7.6	15	F
03.034	Pier 3 Immigration (Upgrade & Expansion)	4.7	6	F
03.036	North Apron Development- Pier 1 Extension (Module 1) & Apron 5H PBZ	163.5	32**	S
03.043A	Terminal 1 Piers- New Airbridges (6NBE/3WB)	23.3	20	S
03.049	De-icing pad at Runway 10R	5.0	20	F
03.051B	West Apron Vehicle Underpass- Pier 3 Option	169.0	50	S
03.052	Surface Water Environmental Compliance	51.6	20	S
03.054	New Remote Apron 5M- 17 NBEs	82.5	32**	S
03.057	Airside GSE Charging Facilities (Ground Handlers)	4.9	10	F
03.071	Hydrant Enablement- Pier 2 & 3	23.7	20	F
03.072	Transfer Immigration Booths – Pier 4 and T2	0.6	10	F

CIP.20	Project	Allowance €m	Asset Life	Reconciliation *
Appendix D- Commercial Revenues				
04.001	Car Parking Management System (Maintenance & upgrade)	3.1	10	F
04.002	Car Hire Consolidation Centre	13.6	20	D
04.003	New Food & Beverage Fit-out (T1X)	1.3	20	F
04.004	Digital Advertising Infrastructure	2.2	5	F
04.005	Long Term Car Parking- Eastland's	9.4	20	F
04.006	Terminal 1 Multi-Storey Car Park Block B	17.4	25	F
04.007	Terminal 2 Multi-Storey Car Park	14.9	25	F
04.009	Staff Car Park	5.8	20	F
04.016	Platinum Services Upgrade Works	2.1	10	F
04.017	Airline Lounges- Expansion, Upgrade & New	11.4	12	F
04.018	Fast Track Improvements	1.7	7	F
04.021	West Apron- Accommodation & Welfare Facilities	4.5	25	F
04.023	Food & Beverage Provision & Fit-out- Post CBP	1.8	20	F
04.025	Commercial Property Refurbishment	6.0	7	F
04.030	New Kitchen in Terminal 2	2.3	20	F
07.010	Office Consolidation & Refurbishment (primarily Level 4 & 5, Terminal 1)	11.6	25	F
08.001	Retail Refurbishments, Upgrades and New Developments	8.0	5	F
08.002	Retail Marketing & Media Installation	1.5	5	F
Appendix E- IT				
05.001	Airfield Optimization	5.6	5	F
05.002	Digital Passenger Experience	1.8	5	F
05.003	Integrations and Data	5.1	5	F
05.004	Baggage Systems	1.3	5	F
05.005	Business Efficiency	6.2	5	F
05.006	Commercial Systems	2.3	5	F
05.007	Reliability, Safety, Security & Compliance	8.2	5	F
05.008	Operational Devices (Support & Maintenance)	1.8	5	F
05.009	Network Components- Lifecycle & Growth	6.8	5	F
05.010	Passenger Processing (excl. Security Screening)	11.0	5	F
05.011	Security Technology Innovation (Biometrics & FOD Detection)	5.0	5	F
05.012	Servers and Storage- Lifecycle & Growth	5.6	5	F
05.014	User Devices (Desktops, Mobile, Telephone, Radio)	3.7	5	F
05.015	New Data Centre Hosting Location	4.0	15	F
05.016	Microsoft Enterprise	6.0	3	F
05.020	Innovation Fund	4.0	5	F

CIP.20	Project	Allowance €m	Asset Life	Reconciliation *
Appendix F- Security				
06.001	Cabin Baggage X-Ray Replacement & EDS Upgrade	16.8	7	F
06.007	Full Body Scanners	1.8	7	F
06.009	ATRS- Additional Lane in Terminal 1	0.5	7	F
06.014	Screening and Logistics Centre	13.3	15	D
06.015	Intrusion Detection Systems for Dublin Airport Boundaries	4.0	7	F
06.016	Surface Road Blockers & Temporary Mobile Barriers	1.0	7	F
06.022	Redevelopment of Training Facility (ASTO)	1.2	15	F
06.025	Detection: Explosive Detection Dogs (EDD) and Mobile X Ray Unit	0.2	6	F
06.030	VCP Automation to Enable Remote Screening	0.7	7	F
06.031	Autopass- T1 Replacement & T2 Install	1.8	7	F
06.036	TSA- X-Ray & FBSS Replacement	0.4	7	F
06.041	Security Screening Equipment- End of Life	4.5	7	F
06.042	ATRS- Central Search Areas (T1 and T2)	11.0	7	F
06.044	Replacement of T1 Controllers for Access Control System	0.5	7	F
07.031/ 07.033	HBS3- T1 and T2	200.0	15	S
Appendix G- Other				
07.001	Programme Management	4.9	5	F
07.002	Minor Projects	12.5	7	F
07.014	Terminal Operations Improvement Projects	4.5	5	F

* 'F' is Flexible, 'D' is Deliverable, 'S' is StageGate. Note that some projects marked as Deliverable have particular output or time based conditions- for details see the text in this appendix.

** Asset Life changed from the Draft Determination

***Ongoing remuneration conditional on delivering PACE project for dual code E taxiways Z/B1

16. Appendix 3: Respondents to the Draft Determination

The following thirty eight parties responded to the Draft Determination.

- ACI Europe
- Aer Lingus
- American Airlines
- Cathay Pacific
- Chambers Ireland
- CityJet
- Cork Airport
- Delta Airlines
- DHL
- Donal Lamont
- Dublin Airport
- Dublin Chamber
- Emirates
- Failte Ireland
- Fedex
- Fingal Dublin Chamber
- Hainan Airlines
- IALPA
- IATA
- Ibec
- Ireland Canada Business Association
- Irish Congress of Trade Unions
- Irish Exporters Association
- Irish Tourism Industry Confederation
- Jimmy Guerin
- Jonathan Aird
- Joseph Ryan
- Lufthansa
- Michael McGrath T.D. Cork South Central
- National Council for the Blind Ireland
- Norwegian Airlines
- Qatar Airways
- Ryanair
- TAP
- Tourism Ireland
- United Airlines
- UPS
- West Jet