

**Draft Decision  
on the  
Second Interim Review  
of the  
2014 Determination  
in relation to a  
Supplementary Capital Expenditure Allowance for Dublin Airport**

Commission Paper 3/2018

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Commission for Aviation Regulation  
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## 1. Executive Summary

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- 1.1 This paper sets out our Draft Decision on Dublin Airport's request for an interim review of the 2014 Determination of the Maximum Level of Airport Charges at Dublin Airport in relation to supplementary capital expenditure (Supplementary Capex). Dublin Airport have consulted with users on a programme of investments aimed at increasing the capacity of the airport. These 23 projects make up its Regulatory Submission and are collectively referred to by Dublin Airport as the Programme of Airport Campus Enhancement (PACE).<sup>1</sup>
- 1.2 This Draft Decision sets out our intention to conduct an interim review of the 2014 Determination, and in doing so, amend it to provide for an additional capital allowance of €267.5m. This is our estimate of the efficient cost of completing all of the PACE projects. We propose that there will be no effect on the price cap until 2020 at the earliest.
- 1.3 The 2014 Determination set a per-passenger cap on the level of aeronautical revenue which could be charged by Dublin Airport in each of the calendar years from 2015-2019, in accordance with the Aviation Regulation Act, 2001 and the State Airports Act of 2004.<sup>2</sup> As part of the determination process, Dublin Airport submitted a Capital Investment Plan in 2014, upon which the 2015-2019 capital expenditure allowance set in the 2014 Determination was based.<sup>3</sup> While the 2014 Determination provides some flexibility with regard to how that allowance is allocated across projects, the quantum of the allowance cannot be revised with certainty other than through a statutory interim review of the determination.
- 1.4 The request for an interim review follows the Supplementary Capex Process put in place by the Commission in December 2016 (CP7/2016).<sup>4</sup> The proposed PACE projects are assessed in this paper with reference to the Supplementary Capex Process laid out in that Decision.
- 1.5 Once Substantial Grounds for a Supplementary Capex interim review have been established, there are three core elements to be decided in relation to each project: whether or not to provide an allowance for the project in principle, what the quantum of the allowance should be, and the regulatory treatment/classification of that allowance.
- 1.6 We propose to approve an efficient allowance for each PACE project. To do this, we will increase the 'Business Development' capex grouping in the 2014 Determination by €267.5 million, the efficient cost of delivering the 23 projects. Projects which are not expected to be completed within the current regulatory period have been designated as Deliverables, meaning they must ultimately be delivered to retain the allowance. Some flexibility for reallocation is generated by not making all projects deliverable. In the case of the Runway 10 Line-Up points, a further amendment to the 2014 Determination is required. This is set out in Section 5.
- 1.7 It is our intention that the allowances will be contingent on Dublin Airport meeting the reporting and delivery requirements as described in Section 3.
- 1.8 Section 3 sets out further detail on the Supplementary Capex Process. Section 4 discusses the proposed projects under the headings of passenger terminals, stands and airfield projects.

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<sup>1</sup>

<https://www.aviationreg.ie/fileupload/PACE/20180118%20DAP%20PACE%20Submission%20to%20CAR%20corrected.pdf>

Determination here: <https://www.aviationreg.ie/regulation-of-airport-charges-dublin-airport/2014-determination.576.html>

<sup>2</sup> [https://www.aviationreg.ie/fileupload/Image/PR\\_Legislation\\_Pub2\\_AviationReguAct2001.pdf](https://www.aviationreg.ie/fileupload/Image/PR_Legislation_Pub2_AviationReguAct2001.pdf)

[https://www.aviationreg.ie/fileupload/Image/PR\\_Legislation\\_Pub1\\_StateAirportsAct2004.pdf](https://www.aviationreg.ie/fileupload/Image/PR_Legislation_Pub1_StateAirportsAct2004.pdf)

<sup>3</sup> <https://www.aviationreg.ie/fileupload/2014-05-29%20DAA%20Capital%20Investment%20Proposals.pdf>

<sup>4</sup> <https://www.aviationreg.ie/fileupload/supplementary%20capex%20decision/2016-12-09%20Decision%20on%20process%20for%20supplementary%20capex%20allowances.pdf>

Section 5 discusses our proposed regulatory treatment of the project allowances.

- 1.9 This is a consultation paper through which we invite the views of interested parties. Section 6 sets out how to respond.
- 1.10 Published alongside this paper are the excel model which we have developed to estimate the potential future price cap effects of these projects, which is discussed further in Section 5, together with a chart for progress reporting which Dublin Airport must update every quarter.
- 1.11 Also published alongside are two reports we commissioned. The first, by Steer Davies Gleave (SDG), assesses the efficiency of the proposed expenditure. The second, by Helios Technologies Ltd, uses fast time simulation of the airfield to assess the benefits of the proposed airfield projects. We have previously published Dublin Airport's consultation document and regulatory submission in relation to PACE.

## 2. Notice of Making a Determination

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- 2.1 In accordance with Section 32 (7) of the 2001 Aviation Regulation Act, we hereby give notice of our intention to make an amendment to the 2014 Determination of the Maximum Level of Airport Charges at Dublin Airport.
- 2.2 Pursuant to the 2001 Act, we must allow a statutory consultation period of no less than one month from the date of publication of this notice. As we have done previously, we give notice by way of publishing this Draft Decision. The deadline for receipt of representations is **5pm, 30 March 2018**. Interested parties should note the contents of Section 6 concerning the deadline. The conditions contained therein will be strictly applied without exception. Interested parties should also note the guidelines regarding issues such as delivery of documents and confidentiality.

### 3. Supplementary Capex Process and Dublin Airport's Submission

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- 3.1 The Supplementary Capex Process was put in place in recognition of the fact that circumstances may change within a determination period. While there is some flexibility within the current capital expenditure allowances, it is clear that in certain circumstances, these flexibilities would not be sufficient. We sought to balance the need for Dublin Airport to obtain certainty over the regulatory treatment of additional capital expenditure with ensuring that the interests of current and future users are protected.
- 3.2 Dublin Airport has requested that the PACE Capital Investment Plan be the subject of a supplementary capex interim review. The rest of this section examines this proposal, with reference to the key requirements of our Supplementary Capex Process.

#### *Compliance with Required Conditions*

- 3.3 The required conditions for a supplementary capex interim review, as per CP7/2016, are as follows:
- The need for the additional capital expenditure must be driven by a significant change in circumstances from the time the prevailing determination was made.
  - The capital projects must have a clearly justified need which must be met before the next determination.
  - The project must not have been previously approved as part of the prevailing determination.
- 3.4 At the time of the 2014 Determination, passenger numbers were expected to reach 24.8 million per year by 2019. However, passenger growth has exceeded the expectations of all forecasts in 2014, with almost 30 million passengers passing through the airport in 2017. The risk of passenger numbers deviating from the forecast was assigned to Dublin Airport in the 2014 Determination; therefore the increase in passenger numbers does not in itself constitute substantial grounds for re-opening the Determination. However, Dublin Airport's 2014 Capital Investment Programme (CIP), assessed by the Commission as part of that Determination, was not intended to deliver infrastructure to handle 30 million passengers per year. A number of aspects of the airport infrastructure are becoming increasingly constrained. Additional capital investment is therefore required to maintain service levels while catering for continued growth.
- 3.5 None of the PACE projects, as now envisaged, was afforded an allowance as part of the 2014 CIP. In a small number of cases, projects with a similar output but different scope or scale were in the 2014 CIP (e.g. FEGP).
- 3.6 If the airport is to continue to grow, this infrastructure deficit needs to be addressed in the short term. Given that a significant change in circumstances has led to a clear need for supplementary investment, our Draft Decision is that the required conditions to undertake a supplementary capex interim review have been met and consequently, substantial grounds exist to review the 2014 Determination.

#### *Dublin Airport's Consultation*

- 3.7 We stated that Dublin Airport is required to consult on the following:
- The need/merit of the project.

- Details on delivery of proposed projects, and also the timeline and milestones for delivery.
- Detailed business cases and cost information. Costs must be worked up comprehensively to allow an assessment by users of the costs and benefits of projects.
- Details on delivery of the current CIP including which projects have been prioritised, added or dropped, together with a timeline for delivery of the Programme.
- Proposed projects to deliver additional capacity must be underpinned by a capacity assessment showing that existing infrastructure is being maximised. This assessment can be conducted by Dublin Airport or a third party.
- Where appropriate, Dublin Airport should present the costs and benefits of a number of options for addressing a need.

3.8 On 5 October 2017, Dublin Airport issued a consultation document.<sup>5</sup> Dublin Airport, facilitated by the Commission, consulted with airlines, ground handlers and IAA Air Traffic Control in meetings held on 25 and 26 October. It outlined a twin track approach which had been followed when assessing infrastructural constraints, namely a consultation with users in late 2016 to identify capacity requirements, followed by a detailed, airport wide capacity assessment.

3.9 The capacity assessment comprised of a current state assessment and an assessment of what is required to service Dublin Airport's forecast demand on a busy a day in Summer 2019. It highlighted that in order to service the forecast Summer 2019 demand, the following processors require capacity enhancement:

- Taxiways
- Stands
- Departure gates
- United States Preclearance
- T2 Check-in
- T1 Immigration

Each of these processors was also identified as a capacity constraint by users during the 2016 capacity consultation.

3.10 The PACE consultation document set out cost information (Level 1 and 2 costs) and a timeline for delivery of each project.

3.11 Dublin Airport provided a full update on the status of projects from the 2014 CIP and how flexibilities in the 2014 Determination have been utilised to prioritise, add and defer projects in order to better meet the changed circumstances since the 2014 Determination.

3.12 In some cases, Dublin Airport presented some options and associated costs to stakeholders. Many of the views expressed have been reflected in the final scope of a number of the proposed projects; for example, the scope of Taxiway F, Taxiways Z and B1 at the South Apron, and the specific A-VDGS units selected. In addition, based on user feedback a further 7 projects

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<sup>5</sup> <https://www.aviationreg.ie/fileupload/PACE/17-10-5%20DUB-%20PACE%20Document.pdf>

have been added between initial consultation and submission to us.

3.13 Our view, therefore, is that Dublin Airport has met the consultation requirements set out in CP7/2016.

#### *Process to be Followed by the Commission*

3.14 In CP7/2016, we stated that on receipt of a supplementary capex request, we would:

- assess the need for a project;
- consult with stakeholders as set out in legislation to potentially amend the existing determination to allow additional capex, where the consultation is limited to the supplementary capital allowance;
- assess the efficient costs of the project;
- make provision for the recovery of the efficient costs of the project as part of the next determination process.

3.15 This paper is a statutory consultation on amending the 2014 Determination to allow for supplementary capex. In it we set out our Draft Decision on the need for supplementary capex, the efficient allowances for each project as assessed by SDG and the regulatory treatment of the allowances.

#### *Reporting and Delivery Requirements*

3.16 CP7/2016 stated that, where a project is approved for a supplementary allowance, we would require Dublin Airport to report regularly on progress relative to the timeline for delivery which was consulted on. Therefore, should supplementary capital expenditure be allowed in the Final Decision, Dublin Airport will be required to update the excel based reporting chart published alongside this paper at the end of each quarter. We will publish this update quarterly, which incentivises Dublin Airport to meet timelines or explain why deviations have occurred.



## 4. Proposed Capital Investment Projects

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- 4.1 This section sets out the projects proposed in Dublin Airport’s submission to us, together with the view of the Commission on these projects. We propose to provide an allowance for each of the PACE projects. Our reasoning is set out, on a project by project basis, in this section.
- 4.2 The efficiency of the proposed expenditure has been assessed by SDG; the allowances are based on the SDG costings. Across the suite of projects, the SDG costings are €16.3m, or 5.7%, lower than Dublin Airport’s costings. These costings implement the cost efficiencies identified by SDG only. They do not include any potential efficiencies in scope identified in the report, which, in most cases, relate to intended pavement strength or pavement classification number (PCN). Dublin Airport has indicated that the scope of these projects, as set out, is necessary for Masterplan compliance.
- 4.3 The proposed taxiway projects have been modelled individually and collectively by Helios, using our airfield simulation model. The results are discussed below.
- 4.4 We have recently published a separate draft report, also carried out by Helios, assessing the capacity at Dublin Airport.<sup>6</sup> The purpose of that report is to assist us in declaring coordination parameters at Dublin. It is an assessment of the current capacity, rather than future capacity needs over the coming years. However, where relevant, we also make reference to that report in this section.
- 4.5 By making an allowance for these projects, we are facilitating the efficient and economic development and operation of Dublin Airport, which meets the requirements of current and prospective users, as set out in this section. By providing a path to remunerating these projects we are enabling Dublin Airport to operate and develop Dublin Airport in a sustainable and financially viable manner. By providing no more than an efficient allowance, as assessed by SDG, we are protecting the interests of current and prospective users. Therefore, this Draft Decision is consistent with the achievement of our statutory objectives.

### Terminals/Passenger Processing

#### *Draft Decision – Passenger Processing*

- 4.6 There are five projects in Dublin Airport’s submission intended to increase the capacity of a number of passenger processors. The sum of the allowances for these projects is 9.8% less than that requested by Dublin Airport.

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<sup>6</sup>

[https://www.aviationreg.ie/fileupload/Helios%20capacity%20assessment%20workstream%20/P2410D008\\_Dublin\\_Capacity\\_Assessment\\_Final\\_Report\\_v1\\_2\(clean\).pdf](https://www.aviationreg.ie/fileupload/Helios%20capacity%20assessment%20workstream%20/P2410D008_Dublin_Capacity_Assessment_Final_Report_v1_2(clean).pdf)

**Table 4.1: Passenger processing projects**

Project	Dublin Airport costing (€m)	CAR allowance (€m)	Difference
T1 and T2 CUSS Check-in Facilities <sup>7</sup>	5.9	5.5	-7.6%
Pier 1 Extension	7.6	6.5	-15.0%
South Apron PBZ	21.8	21.0	-3.8%
T1 and T2 Immigration Facilities	11.3	11.1	-2.0%
T2 Level 15 Bus Gates	8.7	5.8	-33.9%
<b>Total</b>	<b>55.3</b>	<b>49.9</b>	<b>-9.8%</b>

Source: Dublin Airport, SDG, CAR. Percentage differences and totals may not exactly match costings in this table, as the costings are rounded to one decimal place

- 4.7 These projects are required to address capacity issues relating to specific processors within the terminal buildings, namely check-in, departure gates and immigration. These are processors which were identified by users as being capacity constrained as part of Dublin Airport's 2016 capacity consultation, at the PACE consultation meetings or both. They were also assessed as being at or near capacity through simulation modelling carried out by Dublin Airport. Based on the modelling, investment is required in the short term to allow for continued growth in passenger numbers, while maintaining service quality.

#### *Check-in Facilities – Common User Self Service (CUSS)*

- 4.8 Passengers using the Common User Self Service (CUSS) facility firstly check in, weigh bags and obtain a boarding pass at one of the self-service kiosks on the floor of the check-in hall. They then drop off bags at the self-service bag drop. CUSS provides improved efficiency in the check-in process. It also provides increased capacity through improved processing rates, without the need to provide more check-in desks which, in T2, would require a physical expansion of the check-in hall. Helios identified T2 check-in as a current capacity constraint. Although there is considerable latent physical capacity at T1 check-in, installation of CUSS in both terminals is, in our view, in the interests of users as not only is it more space efficient, it also reduces queuing and the operating costs of the check-in process. The increased processing rate of 60 passengers per hour, compared to 24 passengers per hour at a traditional desk, reduces waiting times for passengers. CUSS also leads to reduced staffing requirements and appears to have significant user support. At the time of publication of this paper, phases 1 and 2 have been completed, with phase 3, on the East side of T2, to be completed later this year.

#### *Boarding Gates*

- 4.9 The Pier 1 Extension, the Pre-Boarding Zone (PBZ) and the Bus Gates are intended to address the shortage of departure gates. The first two are now operational, while the Bus Gates were specifically requested by an airline user during the PACE consultation meetings. Pier 1 extension provides four additional gates at the end of Pier 1, allowing walk-on access to two additional Pier 1 stands. The PBZ is a satellite boarding facility containing five gates which allows walk-on access to nine code C stands on the South Apron. The Level 15 Bus Gates would provide additional bus served gates to service remote stands. They would typically be configured to simultaneously serve either four Regional Jet type aircraft, or two code C and one Regional Jet type aircraft. We note that a possible passenger route through the intended location of these Bus Gates is safeguarded under the developing Masterplan; should this be implemented, the capacity of the Level 15 Bus Gates would be reduced to 3 Regional Jet type

<sup>7</sup> This allowance accounts for the pre-existing allowance in the 2014 Determination- see chapter 5

aircraft.

### Immigration Facilities

4.10 The Immigration Facilities project is intended to provide additional capacity in the immigration process in both terminals, though with a particular focus on Terminal 1; the Terminal 1 work accounts for approximately 95% of the allowance. There are two elements; the installation of 10 e-gates in both terminals and a physical extension to the Pier 1/Pier 2 immigration hall, more than doubling the available queuing area. This is required in order to allow efficient queuing and 'feeding' of the passengers to the desks and e-gates. The project cost covers the installation works for the e-gates but not the e-gates themselves which are funded by the Irish Naturalisation and Immigration Service (INIS).

### Stands and Related Projects

4.11 There are 12 projects related to stands and the apron.

**Table 4.2: Stands and Related Projects**

Project	Dublin Airport costing (€m)	CAR Allowance (€m)	Difference
South Apron Stands Phase 1	10.5	9.5	-9.4%
Apron 5H and Taxiway Rehabilitation	52.0	49.2	-5.5%
Upgrade and Realignment of Stands 101-104	5.0	4.7	-5.0%
Hangar 1 and 2 Stands	14.3	13.6	-5.0%
West Apron Stands	2.5	2.2	-10.5%
Pier 2 Underpass	5.0	4.5	-9.5%
Pier 3 Underpass	0.2	0.2	+4.2%
West Apron Surface Access	3.0	3.0	+0.9%
Advanced Visual Docking Guidance (A-VDGS)	5.0	4.8	-3.2%
Fixed Electrical Ground Power (FEGP)	4.6	4.8	+3.4%
South Apron Stands Phase 2	37.9	37.3	-1.6%
Apron-Wide CCTV	1.1	1.0	-9.7%
<b>Total</b>	<b>141.1</b>	<b>134.8</b>	<b>-4.5%</b>

*Source: Dublin Airport, SDG, CAR. Percentage differences and totals may not exactly match costings in this table, as the costings are rounded to one decimal place*

4.12 Our Draft Decision is to provide an allowance for each of these projects. The sum of the allowances for these projects is 4.5% less than that requested by Dublin Airport.

### Stands

4.13 The capacity assessment carried out by Dublin Airport, as described in Section 3, identified a requirement for an additional 21 Narrow Body Equivalent (NBE) stands in order to service a forecast Summer 2019 schedule. This number includes an industry standard level of contingency stands, at approximately 10% of the overall number. It also factors in the impending loss of 13 parking-only contingency stands at Aircraft Park Charlie (APC), due to the North Runway, in late 2019. It does not include any loss of stands as a result of the Taxiway F project (see paragraph 4.36). Aside from the capacity assessment, insufficient stands was highlighted as an issue by a number of respondents to Dublin Airport's consultation. The Helios

report noted that stand capacity is currently at its limit during the morning peak.

- 4.14 It is clear that further stand capacity is required if the airport is to continue to grow, particularly if the number of based aircraft is to continue to grow. Table 4.3 summarises the six projects intended to provide additional stands.

**Table 4.3: Cost per New Stand**

Project	Gain in NBE stands	Cost per new stand (SDG, €m)	Note	Operational Date
South Apron Stands Phase 1	4	2.4		In operation
Upgrade and Realignment of Stands 101-104	0	N/A	Converts 6 Stands to full Code C, includes 2 Wide Body Stands	Q2 2018
West Apron Stands	2	1.1	Converts 2 Code C stands and 1 restricted Code C stand to 1 Code E, 2 Code D, and 1 Code C	Q1 2019
Hangar 1 and 2 Stands	3	4.8		Q4 2019
Apron 5H and Taxiway Rehabilitation	12	4.1	3 Wide Body stands	Q2 2020
South Apron Stands Phase 2	5	7.5		Q1 2022
<b>Total</b>	<b>26</b>	<b>4.3</b>		

Source: Dublin Airport, SDG, CAR

- 4.15 Overall these projects would lead to a gain of 26 NBE stands. South Apron Stands Phase 2 is due for completion in early 2022; the other projects provide 21 stands, which is the same number of additional stands which Dublin Airport states is required to service the forecast Summer 2019 stand demand. In advance of the completion of Apron 5H for Summer 2020, contingency stands will continue to be available at APC during Summer 2019.
- 4.16 We sought clarification from Dublin Airport on the intended dimensions of the PACE stands and were advised as follows:
- The Code C stands on Apron 5H will accommodate all Code C wingspans, i.e. up to 36 metres. The Code E stands on Apron 5H will accommodate all Code E wingspans, but are constrained in length to 67 metres.
  - The Code C stands on 101-104, Hangar 1/2 Stands and South Apron Stands Phase 2 are intended to accommodate all Code C wingspans, however this is subject to detailed design. The Code E stands on 101-104 will accommodate all Code E wingspans, but are constrained in length to 67 metres.
  - The West Apron project output will be one fully unconstrained Code C, one Code D and one Code E Multiple Apron Ramp System (MARS) Configuration stand (full Code E and potential Code F), as well as a restricted Code D stand facilitating a maximum wingspan of 41 metres.

- 4.17 The asset life of Stands 101-104 is relatively low, at 15 years. This is due to the age of the pavement. These stands, and also the Hangar 1 and 2 stands, will be limited to tow on/ tow off of empty Code C aircraft and fully loaded Regional Jet Type Aircraft in advance of the rehabilitation of the north apron. This rehabilitation is intended to take place as part of the 5H project. Furthermore, once the north apron has been rehabilitated, the pavement at Stands 101-104 can support fully loaded narrow body aircraft, but wide body aircraft for tow-on/tow-off only.
- 4.18 South Apron Stands Phase 2 is a complex project resulting in a higher cost per stand compared to other projects. Our Draft Decision is to provide an allowance for this project. It is in the interests of users for the following reasons:
- It has received strong support from Aer Lingus, in order to enable Aer Lingus' growth plans at Dublin Airport. Such growth, if realised, would benefit all users in the form of reduced airport charges. Passengers benefit from increased connectivity.
  - There is little scope for satisfying any additional stand demand beyond the Summer 2019 forecast, were it to materialise either by Summer 2019 or early in the next regulatory period.
  - Further South Apron stands would provide better geographical balance across the airport.

#### *Apron Projects*

- 4.19 The PACE contains 6 other apron/stand related projects. These projects are designed to maximise the efficient use of existing or prospective stands.
- 4.20 The underpasses for Piers 2 and 3 will lead to shorter and more consistent travel times from bus gates to remote stands on the Triangle, Apron 5G and the proposed stands to the North of Pier 1. Currently, buses travelling from south of Pier 3 must drive around Piers 2 and 3. This can bring them into close proximity with taxiing aircraft to which they are required to give way, which is also a potential safety issue.
- 4.21 West Apron Surface Access is designed to provide a Runway 16/34 crossing point for vehicle traffic when Runway 16/34 is not in use as an active runway. This would improve the accessibility of the West Apron, with a journey time of 4 minutes from the East Apron. The current journey is 8 minutes via the North Perimeter Road; this is expected to increase to 25 minutes from 2019, due to the North Runway. It is intended as an interim solution (hence a 10 year asset life), until a more efficient solution for opening up the West Apron can be developed.
- 4.22 Advanced Visual Docking Guidance System (A-VDGS) was requested by airline users as part of the consultation process. Dublin Airport is seeking to install these units on parking stands on each pier, as well the Triangle, Apron 5G and South Apron Phase 1. As well as laser assisted docking guidance, A-VDGS provides real time operational data to pilots, which, combined with the introduction of A-CDM, should result in improved operational efficiency.
- 4.23 In response to user requests, Dublin Airport is proposing to install Fixed Electrical Ground Power (FEGP) at 15 Pier 1 stands and 8 Pier 3 stands. FEGP is already available at all Pier 4 stands, as well as stands 316 and 318L on Pier 3. Relative to a diesel Ground Power Unit (GPU) or an aircraft Auxiliary Power Unit (APU), FEGP produces more efficient, reliable and environmentally friendly power while also improving local air quality. Less use of GPUs also reduces traffic on the apron.
- 4.24 Dublin Airport proposes to install CCTV at each stand on Piers 1, 2, 3, and 4, as well as South

Apron Stands Phase 1 and the Triangle. This project is intended to enhance safety and security, while also providing oversight of apron operations. It was suggested by users during the consultation process.

- 4.25 It should be noted that A-VDGS, FEGP and CCTV are not included in the scope of the new stand projects proposed as part of this investment plan, except for South Apron stands Phase 1 which includes A-VDGS and CCTV. Nor is CCTV to be installed at Apron 5G. However, the supporting infrastructure is included at all PACE stands, such that these elements could be added in the future. Dublin Airport has stated that it is prioritising the introduction of such equipment on the most frequently used stands.

## Airfield Projects

- 4.26 Dublin Airport's submission includes 6 taxiway/airfield projects, which are detailed in Table 4.4. The sum of the allowances for these projects is 5.3% less than that requested by Dublin Airport.

**Table 4.4: Airfield Projects**

Project	Dublin Airport costing (€m)	SDG costing (€m)	Difference
Link 3 Taxiway	5.0	4.7	-5.1%
Realignment of Taxiway A	5.6	5.3	-5.2%
Dual Taxiway F (dual code E)	39.5	37.3	-5.6%
Link 6 Extension Taxiway	5.8	5.6	-4.3%
South Apron Taxiway Widening (Dual code E)	14.7	13.7	-6.3%
Runway 10 Line-Up Points	16.8	16.2	-3.6%
<b>Total</b>	<b>87.4</b>	<b>82.8</b>	<b>-5.3%</b>

Source: Dublin Airport, SDG, CAR

## Draft Decision

- 4.27 We propose to give a capital allowance to all taxiway and airfield projects. The general aim of these projects is to improve the efficiency of the taxiway system and reduce or remove restrictions and complicated junctions, thereby reducing delay and enhancing safety on the ground.
- 4.28 A number of respondents to Dublin Airport's 2016 consultation highlighted the taxiway network as a capacity constraint. As part of the PACE consultation, Dublin Airport assessed the combined effect of the first four projects using its airfield simulation model. This analysis excluded the Runway 10 Line-Up Points and South Apron Taxiway Widening, which were added to the PACE subsequently.
- 4.29 We have used our fast time simulation model of the airport to assess the efficiency benefits of each of these projects; for detailed results see the report from Helios which is published alongside this paper. Table 4.5 presents results relating to the key metrics. Note that for the Runway 10 Line-Up Points, operations in Runway 10 direction have been modelled.

**Table 4.5: Results – Airfield Simulation Modelling (RW 28 Direction)**

	Link 6	Link 3	Parallel F	Realign A	Combined*
<b>Departure Taxi Out Time</b>					
Peak change:	-00:03:48	-00:03:21	-00:03:01	-00:03:05	-00:03:14
Average change:	-00:00:46	-00:00:33	-00:00:28	-00:00:31	-00:00:52
<b>Runway Delay</b>					
Peak change:	-00:03:37	-00:03:19	-00:02:13	-00:02:56	-00:03:07
Average change:	-00:00:27	-00:00:22	-00:00:16	-00:00:34	-00:00:39
<b>Taxi Out Time without Runway Delay</b>					
Peak change:	-00:01:05	-00:00:55	-00:01:02	-00:00:52	-00:01:19
Average change:	-00:00:19	-00:00:10	-00:00:12	-00:00:02	-00:00:09
<b>Arrival Taxi in Time</b>					
Peak change:	-00:01:34	-00:01:31	-00:02:28	-00:01:31	-00:02:11
Average change:	-00:00:22	-00:00:01	-00:00:35	-00:00:12	-00:00:40
<b>Arrival Ground Delay</b>					
Peak change:	-00:01:25	-00:01:33	-00:02:00	-00:01:23	-00:01:43
Average change:	-00:00:16	-00:00:01	-00:00:25	-00:00:05	-00:00:30

\*Including B1/Z widening

Source: Helios

- 4.30 Five of the projects deliver simulated reductions in taxi out times for departures and taxi in times for arrivals. As can be seen in the case of each project, the reduction for departing aircraft is caused by a decrease in both Runway Delay and 'Other' delay; the latter metric essentially measures the ability of the taxiway network to deliver aircraft to the runway queue. These identified efficiencies can either be enjoyed as reduced delay experienced by passengers, or an increase in capacity while keeping delay constant. Either way, the benefits are in the interest of current and future users of the airport.
- 4.31 We have modelled the projects individually and combined. Given the significant improvement in the metrics from the individual projects, the improvement when the projects are simulated together is not as large as might be expected. One reason for this is that a detailed analysis has not been conducted to establish the most efficient set of operational rules when all projects are operational together.
- 4.32 One project, South Apron Taxiway (B1/Z) widening, does not deliver simulated reductions in delay across the airfield but does result in localised improvements in traffic flow, as well as safety improvements, which is also in the interest of current and prospective users.
- 4.33 These projects will lead to more efficient movement of aircraft on the airfield, thereby facilitating the efficient and economic development of the airport. This efficiency can be realised as reduced delay or increased capacity, either clearly in the interest of both current

and future users of the airport. These projects also deliver a number of safety enhancements which is also in the interests of the users of the airport. We discuss the individual projects below.

#### *Link 3 Taxiway*

- 4.34 This project extends the Link 3 taxiway to Runway 16/34 providing new route options on the airfield, in particular from piers 3 and 4. It will allow a reduction in the number of movements using more complex junctions thus improving overall safety while reducing delay and congestion. In the airfield model, this project reduces the simulated peak taxi out time by 3.5 minutes and reduces the peak taxi in time by 1.5 minutes. Across the day, the average reduction is 33 seconds in taxi out time and negligible with regard to taxi in time.

#### *Realignment of Taxiway A*

- 4.35 The realignment of Taxiway A is designed to deliver efficiency and safety benefits, in particular by allowing the simultaneous use of Taxiway A and Taxiway B2 while potentially reducing congestion in the “hot spot”.<sup>8</sup> In addition to the safety improvements, it also reduces delay in our simulations of the airfield by 3 minutes 5 seconds for peak taxi out times (31 seconds on average across the day) and 1.5 minutes for peak taxi in times (12 seconds on average across the day).

#### *Dual Taxiway F (Dual Code E)*

- 4.36 The Dual Taxiway F project extends the dual F taxiway between Links 2 and 4, resulting in a dual code E taxiway from Link 6 to Link 2. This project is designed to deliver a number of operational benefits, including additional space for queuing, opportunity for departure sequencing, resilience, improved towing and improved access to the forthcoming North Runway. Simulation modelling of this project shows a reduction in peak taxi out time of 3 minutes and the peak reduction in taxi in time of 2.5 minutes. Across the day, the average reduction is 28 seconds in taxi out time and 35 seconds in taxi in time. This project is estimated by Dublin Airport to cost €39.5m or €37.3m according to SDG. It could result in the loss of up to 2 Narrow Body stands (1 on the triangle and 1 on Pier 2) and 2 Wide Body stands (1 each on Piers 1 and 2). Dublin Airport has stressed that this is a ‘worst case scenario’ and that the project is still subject to detailed design at which time it will seek to minimise any loss of stands. Considering the average cost of providing a new NBE stand in the PACE package is €4.3m, however, this could add to the opportunity cost of the project.

#### *Link 6 Extension Taxiway*

- 4.37 This project extends the Link 6 taxiway to Runway 16/34. When Runway 16/34 is being used as a taxiway to access Runway 10/28, this project will provide a new access route from Pier 1 and from 5G, reducing the number of movements in more complex areas of the taxiway system. This project will also provide new routes to/from the proposed stand projects 5H, 101-104 and Hangar 1 and 2. Our airfield modelling of this project shows a reduction of 3 minutes 48 seconds in peak taxi out time and 1.5 minutes in peak taxi in time. Across the day, the average reduction is 46 seconds in taxi out and 22 seconds in taxi in. While this project is in the north of the airfield, our analysis shows the simulated improvements in delays are spread across the airfield.

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<sup>8</sup> Defined as ‘a location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary.’



### *South Apron Taxiway Widening (Dual code E - Widening of Taxiways B1 and Z)*

- 4.38 This project increases the width of Taxiway B1 and Taxiway Z allowing unrestricted concurrent movement of Code E aircraft to and from the south apron. There are currently a number of restrictions on the use of taxiways B1 and Z; this project would enhance safety on the ground by reducing the complexity of the area. It would also ensure that any future developments in the south apron area could be used efficiently. Our simulations of this project show that the number of aircraft stopping on these segments reduces with unrestricted code E taxiways, thereby indicating an improved flow. This project will have a local impact on efficiencies around Pier 4 and to and from the South Apron: See the heatmaps on pages 43 and 44 in the Helios Assessment. However, across the airfield as a whole the simulated impact is negligible.

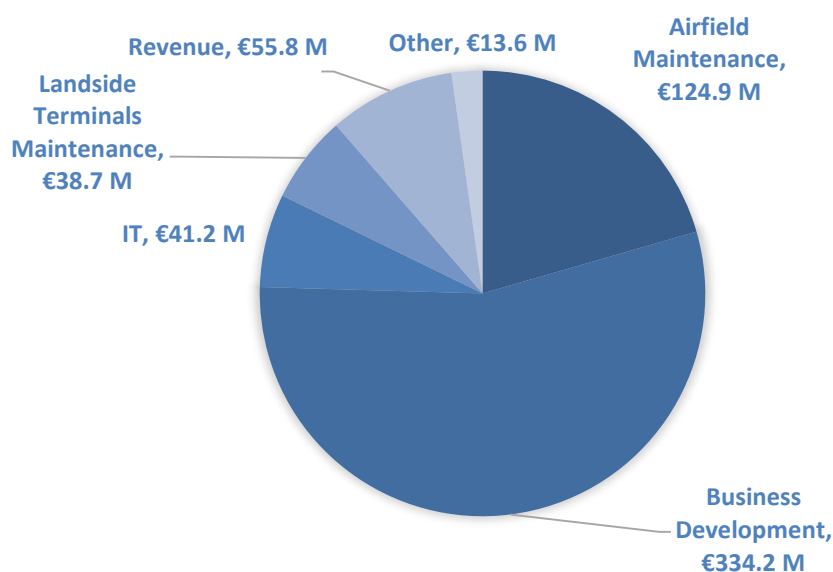
### *Runway 10 Line-Up Points*

- 4.39 This project is designed to allow the sequencing of queuing aircraft from the queue to the runway. It will provide an additional line-up point and a code E taxiway bypass to the north from Taxiway B7. When using Runway 10 for departures, our modelling shows a peak taxi out time reduction of 4 minutes 18 seconds relative to the current airfield. When other PACE taxiway projects are included, we see a reduction of 4 minutes 4 seconds relative to an airfield with the other PACE taxiways in place, but no line-up points.

## 5. Regulatory Treatment

- 5.1 This section sets out our proposed regulatory treatment of the PACE projects. The Supplementary Capex Process is an interim review of the prevailing determination. Thus, this draft decision proposes to amend the 2014 Determination to allow for these projects.
- 5.2 The 2014 Determination contains six capex groups, which in total comprise the 2015-2019 non-triggered capex allowance. While the quantum of money in each grouping is built up based on individual project allowances, generally there is flexibility to re-allocate these allowances to other projects which would fall within that same group. The exception is an allowance for a project designated as a deliverable; such an allowance is clawed back if the specific project to which the allowance is attached has not been delivered.
- 5.3 Separately, the 2014 Determination set out a number of trigger projects. Remuneration for these projects was not included in the 2015-2019 capex allowance, but rather made contingent on the occurrence of a specific event, or events, within the regulatory period. Such an event is typically either project completion or an occurrence which demonstrates that the project in question is needed.
- 5.4 One of the six groupings is Business Development, for which €66.7m was allowed in 2014. Our Draft Decision is to increase the allowance for this grouping by €267.5m, which is our estimate of the efficient cost of delivering all 23 of the PACE projects. This will increase the Business Development allowance from €66.7m to €334.2m. All other groupings remain unchanged from the 2014 Determination.

**Chart 5.1: 2014-2019 Revised Allowance by Grouping**



- 5.5 The future price cap effects of these projects are not yet known; they will depend on factors to be assessed in future determinations such as the cost of capital, passenger forecasts and outturn expenditure. We therefore encourage respondents to make use of the interactive model accompanying this paper, which allows for the estimation of price cap effects under a range of different scenarios. There will be no effect on price until 2020 at the earliest.

### *PACE- Completed Projects*

- 5.6 The PACE contains several projects which have been completed, several which are expected to be completed by the end of 2019 (i.e. the end of the current regulatory period) and some

which are expected to be completed early in the next regulatory period.

- 5.7 The completed projects are the Pier 1 Extension, the PBZ and South Apron Stands Phase 1. Although the categorisation is therefore inconsequential, we propose to provide flexible allowances for these projects.

#### *Projects Due for Completion by 2019*

- 5.8 The projects expected to be fully completed within this regulatory period are CUSS, T1 and T2 Immigration Facilities, Stands 101-104, Hangar 1 and 2 Stands, West Apron Stands, West Apron Access, Pier 2 and 3 underpasses, FEGP, CCTV and the Link 6 Taxiway. Of these, our intention is to designate only FEGP as a deliverable, thereby allowing flexibility for Dublin Airport to reassign the other allowances among these projects or other Business Development projects, in the interests of users.
- 5.9 Remuneration will not commence until 2020, in line with the Supplementary Capex Process. This part of the allowance will be reconciled as part of the 2019 Determination and the appropriate amount will enter the 2020 Regulatory Asset Base for remuneration, in line with the rest of the 2014 capital allowance. Also, in line with the existing 2014 capital allowance, this part will fall away at the end of 2019 if not spent. When reconciling expenditure to allowances, forecasts will be used for expenditure in the second half of 2019.

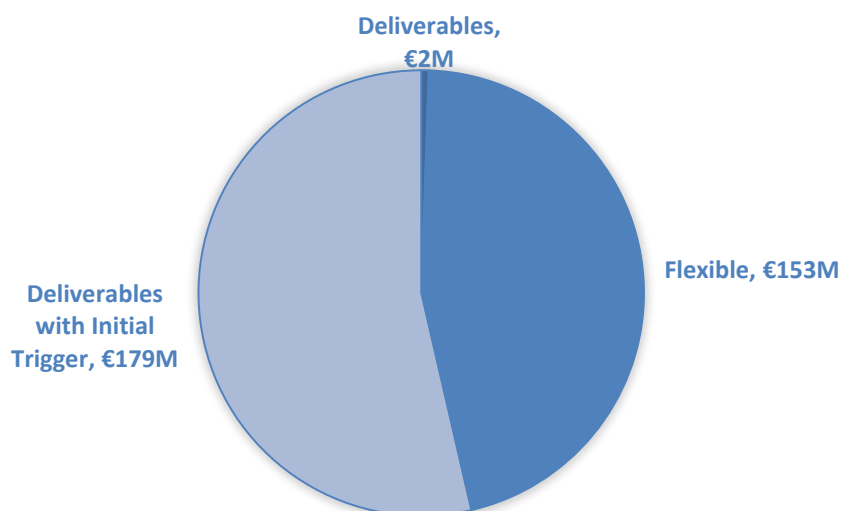
#### *Projects Due for Completion after 2019*

- 5.10 The Bus Gates, Apron 5H, South Apron Stands Phase 2, A-VDGS and all of the airfield projects with the exception of the aforementioned Link 6 Taxiway are due for completion after 2019. For these projects, we propose a tailored approach which combines some elements of a trigger project and some elements of a deliverable. There will be an initial trigger to be met for each project, namely the commencement of construction.<sup>9</sup> Provided that construction has commenced within the current regulatory period, the trigger has been met and these project allowances will carry forward into the 2019 Determination capital expenditure allowance.
- 5.11 Provision will be made in the 2019 Determination for remuneration of projects which have been triggered. They will be classified as deliverables and their treatment will be aligned with the treatment of any other Business Development type deliverables afforded an allowance in the 2019 Determination.
- 5.12 These projects will also be added to the 2014 Determination as deliverables. This ensures that any projects delivered ahead of schedule, within the current regulatory period, will instead enter the 2020 RAB.

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<sup>9</sup> Commencement of construction is satisfied with evidence of completion of tendering for contractors and commencement of works (which could be off-site preparatory works).

**Chart 5.2: Amended Business Development Grouping of €334.2M**



### *Reconciliation*

- 5.13 As part of the 2019 Determination, the supplemented Business Development grouping 2015-2019 will be reconciled in the same way as the other five groupings; that is, no distinction will be made between PACE project allowances and those from the 2014 CIP. The group allowance is revised down for any deliverables which have not been delivered. Outturn capex spent by Dublin Airport on projects falling within each grouping will be compared to the revised group allowance, with the lower of the two numbers entering the RAB.
- 5.14 Projects which are due for completion post 2019 are all deliverables, and will be treated in a way which is consistent with any other deliverables set out in the 2019 Determination. As the Masterplan process is currently ongoing, in 2019 Dublin Airport will be expected to show how projects with allowances carrying forward into the next period are not inconsistent with the Masterplan.
- 5.15 Asset lives are detailed in the Appendix. When projects enter the RAB for remuneration, these asset lives will be used to set the depreciation profiles. In line with the 2014 Determination, annuities will be used.

### *Project Specific Regulatory Issues*

- 5.16 The CUSS system is an airport installation, in the same way as CUPPS (Common User Passenger Processing System) or CUTE, and consequently any access or usage fee must be approved by the Commission. In the event that Dublin Airport seeks to charge a fee for the use of CUSS, we would ensure that there is no double counting between such a fee and any capex allowance made for CUSS. No application for any CUSS fee has been received to date. An allowance of €1m was provided in the 2014 Determination; this has been subtracted from the cost of the project to give a supplementary allowance of €5.9m.
- 5.17 In the 2014 Determination, an allowance of €1.5m was provided for FEGP; Dublin Airport had sought to install it on Pier 1 only, which was future proofed for the installation of FEGP when it was constructed in 2007. Making use of capex flexibility as passenger numbers increased ahead of forecasts, FEGP on Pier 1 was one of the projects Dublin Airport chose to defer in favour of other higher priority projects such as stand/gate projects, as well as the realignment of Taxiway Z to allow dual Code C South Apron entry/exit. The PACE now proposes to install FEGP on Piers 1 and 3; the scope of the project is therefore different to that allowed for in the

2014 Determination. As noted above, we intend to designate FEGP as a deliverable. With strong support from users, clear benefits and having previously provided an allowance for part of this project, our view is that Dublin Airport must now deliver this project or lose the allowance.

- 5.18 The A-VDGS project will receive €4.65m through the EU SESAR program. Furthermore, the 2014 Determination contained an allowance of €0.75m related to A-VDGS. This has been taken account of when setting the allowance.
- 5.19 The 2014 Determination included a trigger to remunerate the provision of additional line-up points on Runways 28 and 10 when the 'declared peak capacity in the busy hour reaches 37 departures'. This has not yet triggered. The proposed Runway 10 Line-up points in the PACE is similar to part of the 2014 Determination project. The Line-Up Points for Runway 28 proposed in 2014 are no longer considered an efficient option, particularly given that Runway 28R (i.e. the North Runway in 28 direction) is expected to be the main departure runway from 2021, rather than the current Runway 28. Therefore, in addition to our proposal to make an allowance for the Runway 10 line-up points above, it is our intention to amend the 2014 Determination removing the trigger for line up points, thus ensuring the same project is not being remunerated twice and that no provision is made for Runway 28 line-up points.

## 6. Responding to the Draft Decision

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- 6.1 We would like to hear the views of interested parties about the proposals in this Draft Decision. Respondents are asked to support any views expressed in submissions with relevant evidence where possible.
- 6.2 As well as the proposals in this paper, we welcome feedback on the SDG assessment, the Helios taxiway assessment or the proposed reporting and delivery chart.
- 6.3 Responses should be titled “Response to Draft Decision on the Interim Review of the 2014 Determination” and sent:
- By email to: [Info@aviationreg.ie](mailto:Info@aviationreg.ie) (preferable); or
  - By post to: 3rd Floor, Alexandra House, Earlsfort Terrace, Dublin 2, D02 W773
- 6.4 The closing date for receipt of submissions is **5pm, 30 March 2018**. The time of receipt of representations, whether in electronic form or otherwise, shall be the time when we actually receive the representations at or in our offices. Submissions received after the deadline will be deemed not to have been received and we will not consider them. If we receive a portion of a representation prior to the deadline, and the remainder after the deadline, we will only consider the portion received prior to the deadline.
- 6.5 We may correspond with interested parties who make submissions, seeking clarification or explanation of their submissions. Such correspondence will not be an invitation to make further submissions.
- 6.6 Respondents should be aware that we are subject to the provisions of the Freedom of Information legislation. Ordinarily we place all submissions received on our website. We may include the information contained in submissions in reports and elsewhere as required. If a submission contains confidential material, it should be clearly marked as confidential and a redacted version suitable for publication should also be provided.
- 6.7 We do not ordinarily edit submissions. Any party making a submission has sole responsibility for its contents and indemnifies us in relation to any loss or damage of whatever nature and howsoever arising suffered by us as a result of publishing or disseminating the information contained within the submission.
- 6.8 While we endeavour to ensure that information on our website is up to date and accurate, we accept no responsibility in relation to the accuracy or completeness of our website and expressly exclude any warranty or representations as to its accuracy or completeness.

**Appendix: Decision Summary Table**

SCP Ref	Project	Allowance (€m)	Deliverable ?	Asset life (yrs)	Scheduled completion
17.1.001	T1 and T2 CUSS Check-in	5.5		5	Q2 2018
17.1.002	Pier 1 Extension	6.5		40	Complete
17.1.003	South Apron PBZ	21.0		20	Complete
17.1.004	T1 and T2 Immigration Facilities	11.1		15*	Q3 2019
17.1.005	T2 Level 15 Bus Gates	5.8	Yes	30	Q4 2020
17.2.001	South Apron Stands Phase 1	9.5		40	Complete
17.2.002	Apron 5H and Taxiway Rehabilitation	49.2	Yes	40	Q2 2020
17.2.003	Upgrade and Realignment of Stands 101-104	4.7		15	Q2 2018
17.2.004	Hangar 1 and 2 Stands	13.6		30	Q4 2019
17.2.005	West Apron Stands	2.2		40	Q1 2019
17.2.006	Pier 2 Underpass	4.5		15	Q3 2019
17.2.007	Pier 3 Underpass	0.2		5	Q1 2018
17.2.008	West Apron Surface Access	3.0		10	Q2 2019
17.2.009	Advanced Visual Docking Guidance System (A-VDGS)	4.8	Yes	10	Q3 2020
17.2.010	Fixed Electrical Ground Power (FEGP)	4.8	Yes	15	Q4 2019
17.2.011	South Apron Stands Phase 2	37.3	Yes	40	Q1 2022
17.2.012	Apron Wide CCTV	1.0		7	Q2 2019
17.3.001	Link 3 Extension Taxiway	4.7	Yes	30	Q1 2021
17.3.002	Realignment of Taxiway A	5.3	Yes	30	Q1 2021
17.3.003	Dual Taxiway F	37.3	Yes	30	Q1 2021
17.3.004	Link 6 Extension Taxiway	5.6		30	Q1 2019
17.3.005	South Apron Taxiway Widening (Dual Code E)	13.7	Yes	30	Q2 2021
17.3.006	Runway 10 Line-Up Points	16.2	Yes	30	Q3 2021
	<b>Total</b>	<b>267.5</b>			

\* 15 for the T1 hall extension, 10 years for the e-gate installation works