



DUBLIN AIRPORT

Response to Draft Decision on the Interim Review of the 2014 Determination

30 March 2018

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Executive Summary

Accelerated PACE Projects

1. There are a number of PACE projects that have already been delivered in an efficient manner by Dublin Airport following user support. The SDG Draft Assessment has provided cost estimates for these projects (e.g. PBZ and Pier 1 Extension) that fall considerably short of efficient costs that have already been incurred. We provide additional supporting evidence to justify the respective costs of the PBZ (€21.8m) and the Pier 1 Extension (€7.6m).

Apron 5H

2. The PACE project referred to as 'Apron 5H and Taxiway Rehabilitation' is a critical anchor project that represents our primary solution to issues associated with stand allocation over the coming years. The Draft Decision has proposed a funding allowance that is €2.9m below what is required. A shortfall of this magnitude compromises our ability to progress this project and to ultimately park aircraft, which is fundamental to managing and catering for growth at the airport.

Bus Gates

3. It is not suitable to designate the Additional Bus Gates project as a deliverable in line with the exact specification set out in our Regulatory Submission on PACE. This project requires flexibility as the most suitable location for bus gates is not yet known e.g. the location proposed may be compromised by a US Preclearance expansion facility.

Apron Pavement Rate

4. We have identified two areas that SDG appear to have overlooked, specifically with respect to estimated rates for both apron pavement and electrical installation. With supporting evidence, we have identified that the former results in a funding shortfall for Dublin Airport of approximately €9 million.

Proposed workshop on cost estimates

5. There is a considerable volume of data contained within this Response to Consultation, particularly with respect to level 3 costings, which should be considered in parallel with the SDG Draft Assessment. Due to the risks associated with overlooking or misinterpreting this, we suggest that a workshop with both the Commission and SDG might be a productive way of advancing this process.

1. Introduction

- 1.1 Dublin Airport welcomes the opportunity to respond to the Commission for Aviation Regulation's ('the Commission') Consultation and Draft Decision on the Second Interim Review of the 2014 Determination in relation to a Supplementary Capital Expenditure Allowance for Dublin Airport¹.
- 1.2 Following a thorough consultation with airport users during 2017 on the Programme for Airport Campus Enhancement ('PACE'), we remain convinced that if the growth in passenger numbers is to be accommodated in the short term it is necessary to progress the full suite of projects contained in our December 2017 Regulatory Submission to the Commission². The projects within PACE have been identified following a comprehensive process of targeted solutions to address customer requirements and specific capacity deficits across the airport campus with a focus on the core aeronautical business; specifically, passenger processor facilities and airfield efficiency.
- 1.3 We therefore welcome the Commission's recognition of the importance of the 23 projects that have been identified during the PACE consultation process. Delivery of these projects will ensure that Dublin Airport has sufficient infrastructure to reach 32 million passengers per annum ('mppa') by the end of this Determination without compromising service quality.
- 1.4 It is regretful however that the Commission's provisional allowance, which is aligned with SDG's draft assessment, would result in a shortfall of approximately €16 million across the suite of PACE projects. This variance is significant enough to prevent Dublin Airport from completing the full suite of projects in line with the scope that has been consulted upon. We would therefore encourage the Commission to reassess the SDG estimates having considered the evidence based reasoning set out in this response to consultation.
- 1.5 The factors contributing to the shortfall in required funding can be summarised under the following headings:
- Project specific issues associated with SDG Level 3 Costings (see Section 5.1);
 - An overly conservative apron pavement rate, as estimated by SDG in its draft assessment (see Section 5.2);
 - An overly conservative electrical rate, as estimated by SDG in its draft assessment (see Section 5.3).
- 1.6 Therefore, we have provided supporting evidence in both the main body of this document and the Appendix which demonstrates that SDG estimates do not represent efficient costings in Dublin.
- 1.7 Dublin Airport is already hard pressed to deliver the 23 projects for €283.8m as there are many risks out of our control that could result in the eventual level of efficient spend increasing beyond this amount. An allowance that falls short of this requirement guarantees that we would not be remunerated for efficient spend incurred.

¹ Commission Paper 3/2018, published 20 February 2018 <http://bit.ly/2tWuhbg>

² Dublin Airport's Regulatory Submission to the Commission on PACE, dated 21 December 2017 <https://bit.ly/2G0t1ss>

- 1.8 With the next Capital Investment Programme ('CIP') likely to be a multiple of PACE in terms of funding required, a similar approach by consultants would result in Dublin Airport being underfunded for the next 5-7 years.
- 1.9 Notwithstanding the above, it is important to recognise the value of the Supplementary Capex Process that the Commission is facilitating. Had this mechanism not been available to Dublin Airport and its users, we simply would not be in a position to accommodate the sustained and unprecedented growth in passenger traffic. Ultimately the passenger experience would be significantly affected by a combination of one or more of the following: constrained growth, limited choice, a deterioration in the level of service quality and an unacceptable slip in on-time performance ('OTP').
- 1.10 The Commission has correctly noted that if Dublin Airport is to continue to grow, the infrastructure deficit needs to be addressed in the short term. It follows that an approved funding allowance that comes up short of the latest efficient estimate by Dublin Airport will not achieve the full benefits that the complete suite of PACE projects can realise.
- 1.11 This response focuses on the respective projects that have been earmarked by the Commission for receiving partial allowances and in this regard, we provide supporting evidence as to why draft estimations provided by the Commission's independent cost consultants SDG³ do not represent efficiently incurred costs in the Irish market. We also provide supporting evidence setting out how the SDG estimations would result in suboptimal changes to the scope of certain projects.
- 1.12 While we welcome the proposed amendment to the 2014 Determination with respect to removing the trigger on the Runway 10 Line-Up points project and approving it as part of this process, there are a number of reasons why it is not appropriate to designate the Additional Bus Gates project as a deliverable.
- 1.13 Looking beyond the flexibility required when advancing the Additional Bus Gates, we are otherwise satisfied with the Commission's proposed method of reconciliation regarding the suite of PACE projects.

2. Structure of this Response

- 2.1 As requested by the Commission this response contains the views of Dublin Airport in relation to the Commission's Draft Decision in addition to feedback on the Helios taxiway assessment⁴, the Draft SDG Efficiency Assessment and the proposed reporting requirements.
- 2.2 Section 3 sets out the level of consultation that the PACE projects have already been subject to. In Section 4 we opine on the Helios Taxiway Assessment followed by Section 5 which contains our position on the Draft Dublin Airport Supplementary CIP Efficiency Assessment by SDG. Section 6 contains our response to the Commission's proposed reporting requirements and in Section 7 we provide our views on the proposed treatment of deliverables and triggers by the Commission.

³ Steer Davies Gleave Draft Dublin Airport Supplementary CIP Efficiency Assessment, dated 19 February 2018 <http://bit.ly/2FF4gCK>

⁴ Helios Taxiway Assessment, dated 12 January 2018 <http://bit.ly/2Dx9F9c>

- 2.3 We have identified significant unjustified discrepancies with the SDG level 3 estimates and have detailed these in Appendix 1, which is treated as being confidential as cost estimates at this level of granularity are commercially sensitive.

3. PACE Consultation with Airport Users

- 3.1 In its 2016 Decision, the Commission prescribed the Decision Process for Consideration of a Supplementary Capex Allowance at Dublin Airport⁵, with the requirements placed upon Dublin Airport set out overleaf.

- In advance of making a submission to the Commission, Dublin Airport shall consult with users on the following:
 - The need/merit of the project;
 - Details on delivery of proposed project; and
 - Timelines for the delivery of the proposed project.
 - Details on delivery of current Capital Investment Programme 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.
- Detailed business cases and cost information must be provided to users. Costs must be worked up comprehensively to allow an assessment by users of the costs and benefits of projects.
- Where appropriate, Dublin Airport should present the costs and benefits of a number of options for addressing a need.
- Detailed timelines and milestones for projects should be consulted on.

- 3.2 Dublin Airport's consultation on the PACE projects in 2017 adhered to the process prescribed by the Commission. We commenced a review process in late 2016 to assess the levels of capacity headroom across the airport campus and undertook a review of user requirements. We engaged with airport users to understand future customer demand requirements and the supplementary infrastructure required to deliver growth requirements for the remainder of the decade. All airport users were invited to respond to several key questions pertaining to airport infrastructure and their associated requirements as customers/users.

- 3.3 A detailed Consultation paper was issued on 5 October 2017⁶, which identified a suite of 16 interrelated projects that were subsequently presented at a series of consultation meetings. It was issued to approximately 115 individuals, representing a total of 45 organisations operating at Dublin Airport.

⁵ Commission Paper 7/2016, published 9 December 2016 <http://bit.ly/2DyBuh3>

⁶ PACE Consultation Paper, dated 5 October 2017 <http://bit.ly/2FR57fu>

- 3.4 PACE focused on the core facilities required to process passengers and to park and manoeuvre aircraft across the airfield. The process identified operational processors that are currently at, or nearing, maximum capacity. Targeted capacity solutions are therefore required to alleviate capacity deficits and bottleneck issues in the airport system.
- 3.5 We listed four potential tracks for addressing and alleviating any existing or emerging capacity constraints:
- **Managed Solutions:** solutions that avoid the requirement to expand or create new infrastructure; i.e. investing in additional operating costs or technology expenditure to manage the constraint;
 - **Expand Infrastructure:** solutions which require an expansion to existing infrastructure or new infrastructure;
 - **Reduce Service Levels:** accepting a lower quality of service, as facilities would not be improved to accommodate higher volumes of activity;
 - **Constrain Demand:** an agreed acceptance not to expand infrastructure or increase capacity, which will constrain demand and limit growth.
- 3.6 Guided by feedback from airport users, we revised the list of 16 projects and added an additional 7 projects to the overall suite of projects included in the PACE submission to the Commission⁷ in December 2017.
- 3.7 It is imperative that these projects are progressed immediately so that we can begin to alleviate the capacity constraint, thereby enhancing Ireland's connectivity and maximising the contribution of the aviation sector to Ireland's economic growth and development.
- 3.8 If the efficient estimate of projected costs identified by Dublin Airport is not subsequently approved by the Commission as a result of shortcomings with the SDG approach, then Dublin Airport is unlikely to be in a position to complete key projects in line with the specified designs and scope that have been the subject of the consultations to date. Naturally, this would raise the question as to what exactly Dublin Airport needs to do to demonstrate efficient cost estimates on a prospective basis.

4. Review of Helios Taxiway Assessment

- 4.1 Dublin Airport welcomes the results from Helios' assessment and simulation of the PACE airfield projects. Helios' results further validate the analysis previously completed by Dublin Airport to support the PACE projects.
- 4.2 Both approaches produced similar overall results despite some differences in terms of approach i.e. Dublin Airport modelled the overall suite of projects using a 2019 forecast schedule rather than the 2018 forecast used by Helios.
- 4.3 Helios highlighted several key benefits from the combination of airfield projects as follows:
- There is an average improvement in depart taxi out time of one minute across the day due to decreased runway delay and improved efficiency of the taxiway network

⁷ PACE Submission to the Commission, dated 21 December 2017 <http://bit.ly/2G0t1ss>

- There is a decrease in runway delay due to the availability of more options for departure queue sequencing
- Easier access to all parts of the airport
- Reduction of number of taxiway segments that accumulate delays or cause aircraft to stop
- Reduction in arrival ground delay coming from easier access to all parts of the airport – dual TWY F and widened TWY Z/B1 allow better access to Pier 4 and South Apron, while Link 6 extension allows easier access to the north of the airfield.

- 4.4 The simulations are an extension of the modelling work completed by Helios as part of the Summer 2018 Capacity Declaration process and the base model has been through a rigorous and extensive calibration and validation process with the airport, airlines and ATC.
- 4.5 We believe that testing each project against the 2018 validated model to isolate the individual impact of each project and to derive the overall impact of the suite of projects is a sound modelling approach.
- 4.6 Results from the models show an overall reduction in Departure Taxi out time during the morning peak of 00:03:11 and 00:03:14 during the afternoon peak which represent a 12.4% and 17.3% reduction in taxi-out time versus the baseline. Our modelling showed a reduction of 00:03:56 representing a 13.9% reduction in maximum rolling hour delay and a 10% reduction in average delay per operation.
- 4.7 We acknowledge that the study is based on logical assumptions through historic data and engagement with stakeholders but would nonetheless highlight that some of these assumptions may change over time or depending on the specific modelling approach undertaken.
- 4.8 We believe that further benefits can be delivered from these projects, e.g. a reduction in Departure-Departure separations could facilitate an increase in capacity of up to 39 departure movements during the peak hour, maximising capacity until the opening of the North Runway. These taxiway projects will help facilitate this growth.

5. Review of SDG Supplementary CIP Efficiency Assessment

- 5.1 Dublin Airport recognises the scope and complexity of the assessment carried out by SDG but we have nonetheless been keen to understand the differences between the draft SDG cost estimates and our own best estimates of what represent efficient costings in the Irish market.
- 5.2 In parallel, we have sought to ascertain how we could realise further cost savings of more than €16 million without materially sacrificing on the scope or design of the 23 PACE projects.
- 5.3 This response substantiates our original justification for the funding requirement by providing further clarity and additional evidence with respect to the individual projects. We also explain why the delta between the draft SDG cost estimate and our own estimate results in a counterproductive outcome by impacting on our ability to deliver the respective projects.
- 5.4 The difference between the two cost estimates can be broadly summarised under the headings below.

- Project specific issues associated with SDG Level 3 Costings (see Section 5.1 below);
 - An overly conservative apron pavement rate, as estimated by SDG (see Section 5.2 below);
 - An overly conservative electrical rate, as estimated by SDG (see Section 5.3 below).
- 5.5 We have identified significant unjustified discrepancies with the SDG level 3 estimates and have identified these in Appendix 1, which is marked confidential as it contains commercially sensitive information.
- 5.6 Similarly, we provide supporting evidence in the Appendix to demonstrate why both the SDG estimated apron pavement rate and the SDG estimated electrical rate is overly conservative. As a consequence, Dublin Airport would incur efficient costs without being sufficiently remunerated under this process.
- 5.7 Furthermore, we have addressed other PACE projects in Section 5.4 whereby the magnitude of the shortfall is relatively insignificant in the context of the PACE projects addressed in Sections 1-3 but which is still a considerable shortfall nonetheless.
- 5.8 Finally, in Section 5.5. we have demonstrated that construction markets are on two different trajectories and that this should be considered given that benchmarking at a point in time is being used to gain a better understanding of future costings that will be incurred by Dublin Airport.

5.1. Project specific issues associated with SDG estimates

T1 and T2 CUSS

- 5.9 The SDG costing of €5.5m for T1 & T2 CUSS Check-In results in a shortfall of approximately €447,000 compared to our efficient estimates. The SDG cost estimate is understated due to the unit cost SDG have used for the SSK/BDK units, as set out in Table 4.5 of the SDG report, which is significantly lower than the unit costs faced by Dublin Airport following a competitive tender process.
- 5.10 The relevant documentation showing the actual unit costs incurred is provided in the Appendix and given that there are 139 units, the impact of this oversight results in an unjustified shortfall of approximately €128,000.
- 5.11 There are a number of other key reasons that have resulted SDG's estimate being significantly lower than our own estimate. We would encourage the Commission and SDG to consider the basic model unit assessed in the context of traditional CUSS SSK/BDK compared to CUWS compatible units.
- 5.12 We would also encourage the Commission and SDG to consider several peripherals attached to the SSK, as requested by customers of Dublin Airport, including payment devices that are typically not attached), RAG light to indicate usage and an audio function for PRMs.
- 5.13 It is likely that costs associated with the above peripherals are not included in the draft SDG estimates.

Pier 1 Extension

- 5.14 The SDG costing of €6.5m for the Pier 1 Extension results in a shortfall of approximately €1.14m compared to the cost incurred by Dublin Airport to deliver this project. This discrepancy arises primarily as a result of issues associated with SDG's treatment of (1) the substructure, (2) the external cladding and (3) the roof finishes. It is a major concern that SDG has estimated efficient costs, based on benchmarking, while overlooking the actual cost incurred by Dublin Airport.
- 5.15 With respect to the costings associated with the substructure, all of the works packages were tendered using a traditional procurement strategy utilising a RIAI Contract (blue form). The subsequent rate is based on the tendered cost plus the required variations that occurred during the course of the works.
- 5.16 Combining the tendered cost of the External Wall Completions with spreading the preliminaries across the elemental costs and incorporating required variations again has resulted in Dublin Airport incurring an efficient cost that is much higher than the SDG estimate. It should be noted that the Kingspan system in use has been selected as the lowest cost system compliant with current building regulations and which also meets the Planning requirement to match the existing structure via the addition of a Rainscreen finish.
- 5.17 Regarding the cost of the roof finishes, it is important to consider the tendered cost and preliminaries are spread across the elemental costs. Combining these costs with required variations provides a cost that is significantly above the SDG estimate for the roof finishes. The IKO Built-up finish is necessary to facilitate long term safe walk-on access to dedicated Roof mounted plant required because of its location.
- 5.18 Further detail on issues associated with SDG's Level 3 costings, including issues associated with the roof frame/floor, external wall completions and floor finishes, is provided in the Appendix.

South Apron PBZ

- 5.19 The SDG costing of €21.0m for the South Apron PBZ results in a shortfall of approximately €827,000 compared to our own estimate. This discrepancy arises primarily as a result of issues associated with (1) the design team fees, (2) doors/ironmongery, (3) the floor finishes and (4) the mechanical/electrical installations.
- 5.20 Regarding the cost estimates for the electrical installation, for example, these works included significant specialist equipment such as a fire alarm and leak detection linking T2. This also included connections to standby generators, distributed antenna system linked to T2 and Private Mobile Radio Services (PMR). For this reason, the incurred cost for electrical installation on the PBZ is efficient and we should be remunerated accordingly for these costs already incurred.
- 5.21 Further detail on issues associated with SDG's Level 3 cost estimates, including doors & ironmongery, floor finishes and the mechanical installation is provided in the Appendix.

T1 and T2 Immigration

- 5.22 The SDG costing of €11.1m for the T1 and T2 Immigration results in a shortfall of

approximately €221,000 compared to our own estimate. This discrepancy arises primarily as a result of issues associated with (1) the design/management costs and (2) the higher wall specification and ceiling finishes (glass).

- 5.23 Regarding the new build extension, the SDG analysis suggests a lower rate compared to our submission. However, looking at SDG's analysis it has recommended an equivalent rate that has been discounted for previously advised cost elements which are not comparable (relocating chargers, retail, washrooms, fuel tank relocation etc.).
- 5.24 Notwithstanding the above, we are cognisant that SDG has offset this reduction in part by allowing a greater allowance for Contingency/Escalation. However, given the level of this differential, we believe that the relevant shortfall (based on issues arising from the new build extension rate) should be restored.
- 5.25 Further detail on issues associated with SDG's Level 3 cost estimates on the design and management costs is provided in the Appendix.

Additional Bus Gates

- 5.26 The SDG costing of €5.8m for the Additional bus gates results in a shortfall of approximately €3m compared to our own estimate. This discrepancy arises primarily as a result of issues associated with the following:
- (1) Back painted Glass to Walls;
 - (2) mechanical and electrical installation;
 - (3) Vertical Circulation Structure;
 - (4) Steel Stairs in the VCC;
 - (5) Rain screen Cladding to VCC, and
 - (6) Protection of existing services in the vicinity of VCC & associated contingency costs.
- 5.27 With respect to the finishes in the lounge area, there is a difference in the rate for back painted glass to match high existing durability, which is low maintenance T2 finishes and used in many customer touch point areas. This finish was specified so that the proposed facility is in keeping with the look and feel of the customer touch points along the passenger journey. This product is a clear, laminated fire resistant and safety glass primarily designed to provide integrity but also offering full insulation (against all heat transfer) for a short period. Developed specifically for use in doors and screens, it provides impact safety to Class 1 and Class 2 of BS EN 12600.
- 5.28 We firmly believe our rate for the mechanical and electrical installation is correct and wish to note that the SDG rate as per Table 4.25 of its report is not reconcilable with its rate of 4.24. Moreover, these respective rates for mechanical and electrical installation are further at odds with the SDG rates used for the Pier 1 extension. For these reasons we are satisfied that our estimates represent efficient costings in the Irish market.
- 5.29 Regarding the VCC Structure and associated items, we have reviewed the VCC m³ rate and propose a reduced rate as being potentially achievable based on agreement of other adjustments, such as finessing the Frame/floor area allowance.
- 5.30 In relation to the steel stair rate, we appreciate that a bare stair cost proposed by SDG (see

Appendix) may be achievable but we wish to note that this would not include aspects such as balustrades and riser finishes which would represent a reduced specification from that proposed initially. Following on from this we are of the view that a marginally increased stairs rate (see Appendix) would be achievable but result in a reduced specification.

- 5.31 Regarding the SDG rate for rain screen cladding to vertical circulation core ('VVC'), this is not reconcilable with the table 4.24 rate (i.e. see table 4.25). This is aluminium composite material rain screen cassettes fixed to composite insulated panel system. The most recent tender received is set out in the appendix and accounts for ancillaries, flashings, cappings, trims etc. This ultimately results in a higher rate compared to the estimate from SDG.
- 5.32 With respect to the protection of existing services, the position of the VCC structure is situated over the main service run area to the apron side of the T2. In our experience the SDG estimate insufficiently reflects the cost of protecting the relevant services and we therefore stand over our original allowance. We provide further details in relation to SDG's Level 3 cost estimates in the Appendix and specifically with respect to those issues identified in paragraph 5.26.

South Apron Stands

- 5.33 The SDG costing of €9.5m for the South Apron Stands results in a shortfall of approximately €981k compared to the efficient cost that Dublin Airport has already incurred. This discrepancy arises primarily as a result of issues associated with (1) Project Management Fees, (2) Preliminaries - Enabling Works & New Equipment Parking Area, (3) Drainage Works and (4) Electrical Installations i.e. HML, AGL etc.
- 5.34 Our costings associated with project management are outturn costs incurred delivering this project, with consultancy work publicly tendered under the existing framework agreements via an OJEU process. Consequently, our submission represents actual market conditions and highlight some of the shortcomings associated with benchmarking. We would encourage the Commission and SDG to ensure that the SDG estimate include elements of internal design resources.
- 5.35 Regarding our efficient representation of preliminaries with respect to enabling works and new equipment parking area, these figures are based on competitive tendering process for the design and build of the works in which this figure was agreed.
- 5.36 On the necessary cost of drainage works, we have submitted the cost incurred which includes a non-standard requirement for diversion of an existing waterway requiring environmental consultation. We would encourage the Commission and SDG to revisit our submission on this basis.
- 5.37 Our submission on electrical installations (HML, AGL, etc.) reflects the outcome of a competitive tendering process for the design and build of the works.
- 5.38 Further detail on issues associated with SDG's Level 3 cost estimates on the issues identified in paragraph 5.33 is provided in the Appendix.

West Apron Stands

- 5.39 The SDG costing of €2.2m for the West Apron Stands results in a shortfall of approximately €262k compared to our own estimate. This discrepancy arises primarily as a result of issues associated with (1) Design and Management Cost, (2) Temporary measures and (3) Jet blast

protection.

- 5.40 Further detail on issues associated with SDG's Level 3 cost estimates are set out in the Appendix and, specifically on (1) Design and Management Cost, (2) Temporary measures and (3) Jet blast protection.

Pier 2 Underpass

- 5.41 The SDG costing of €4.5m for the Pier 2 Underpass results in a shortfall of approximately €475k compared to our own estimate. This discrepancy arises primarily as a result of issues associated with (1) Design and Management Cost and (2) Contingency and Escalation.
- 5.42 The most significant shortfalls relate to both design development costs as there is a proposed reduction in the design and management allowance from 10.74% to 7.53%. However, this does not take account of the severe engineering and construction difficulties associated with this project. This reduction is also at odds with paragraph 3.11 in the Draft SDG Assessment.
- 5.43 We have proposed the minimum technical solution arising from feasibility stage and wish to note that the cost of other credible solutions rise to approx. €7.0m. The complete exclusion of escalation is not in line with the programme and current tender price inflation indices which are now running at 6% pa and should be re-instated – this is also inconsistent with SDG approach adopted elsewhere.

Apron 5H & Taxiway Rehabilitation

- 5.44 Apron 5H and the Taxiway Rehab is a critical anchor project that represents our primary solution to allocating stands. A shortfall in the required funding for this project compromises our ability to park aircraft, which is one of the most significant issues that the airport is faced with.
- 5.45 The SDG costing of €49.2m for the Apron 5H & Taxiway Rehabilitation results in a shortfall of approximately €2.9m compared to our own estimate. This shortfall arises primarily as a result of issues associated with the construction of Apron pavement with the associated escalation and contingency allowance also a key factor. This issue is addressed in Section 5.2 and in more detail in the Appendix.
- 5.46 In addition, we are seeking an allowance for storm water attenuation. Our rate also reflects the cost of providing for contaminated drainage, both of which SDG do not appear to have reflected in its costings. This issue is addressed in Section 5.3 and in more detail in the Appendix.
- 5.47 Both points above have a material impact on the draft estimate for contingency associated with this project.
- 5.48 Having reviewed the scope efficiency options identified by SDG and specifically, to reduce the PCN and the overlaying the existing taxiway pavement, we remain convinced that the existing apron pavement (as referenced in the PACE Report) identified is not suitable for overlaying and can be discounted on the following basis:
- A significant amount of the existing PQC concrete has been laid directly onto the clay subgrade. This pavement was constructed circa 1940's and has an average PCN of 50 with less than 2 years residual life. Overlaying can be discounted as there is no existing

subbase and it would not be possible to increase the pavement levels via overlaying due to the threshold constraints of the existing hangar doors and associated apron slopes.

- Other areas have a maximum pavement thickness of 295mm PQC and 160mm lean concrete and have an average PCN of 70 with a residual life of between 2 and 9 years. These pavement thicknesses are not sufficient to support the projected traffic forecast for the North Apron. The option of overlaying is constrained by the existing threshold levels of the hangar doors i.e. from hangar 1 to hangar 6, ruling out the option of increasing pavement thickness via overlaying.

PACE Projects impacted by treatment of apron pavement and electrical installation rates

5.49 The following 9 projects (paragraphs 5.50-5.59) have funding shortfalls that can be largely attributable to the issues identified above with Apron 5H regarding underestimated taxiway pavement and, to a lesser extent, electrical rates. Details are also provided in Section 5.2 and 5.3 below.

Hangars 1 and 2

5.50 The SDG costing of €13.6m for the Hangar 1 and 2 Stands results in a shortfall of approximately €537k compared to our own estimate.

Upgrade & Realignment of Stands 101-104

5.51 The SDG costing of €4.7m for the Upgrade & Realignment of Stands 101-104 results in a shortfall of approximately €248k compared to our own estimate.

South Apron Stands Phase 2

5.52 The SDG costing of €37.3m for the South Apron Stands Phase 2 results in a shortfall of approximately €621k compared to our own estimate. This discrepancy arises primarily as a result of issues associated with (1) design and management Cost, (2) new apron pavement and (3) the associated contingency.

5.53 Regarding design and management costs, as we envisage efficiencies due to the location of the project and its proximity to other projects which will be ongoing at the same time, we have opted to use 12% for the design and management costs in this case. SDG has however reduced this 11% in its draft report which is contradictory to its own guidelines set out in paragraph 3.11 in which the recognised benchmark is 15%.

Link 3 Extension Taxiway

5.54 The SDG costing of €4.7m for the Link 3 Extension Taxiway results in a shortfall of approximately €253k compared to our own estimate.

Link 6 Extension Taxiway

5.55 The SDG costing of €5.6m for the Link 6 Extension Taxiway results in a shortfall of

approximately €252k compared to our own estimate.

Realignment of Taxiway A

5.56 The SDG costing of €5.3m for the Realignment of Taxiway A results in a shortfall of approximately €291k compared to our own estimate.

Dual Taxiway F

5.57 The SDG costing of €37.3m for the Dual Taxiway F results in a shortfall of approximately €2.2m compared to our own estimate.

South Apron Taxiway Widening

5.58 The SDG costing of €13.7m for the South Apron Taxiway Widening results in a shortfall of approximately €928k compared to our own estimate.

Runway 10 Line-Up Points

5.59 The SDG costing of €16.2m for the Runway 10 Line-Up Points results in a shortfall of approximately €612k compared to our own estimate. This discrepancy arises primarily as a result of issues associated with (1) the new taxiway pavement estimate and (2) the associated escalation and contingency allowances.

5.2. SDG's estimated apron pavement rate

5.60 We have examined the difference in apron pavement rates between SDG (€277/sqm) and Dublin Airport (€311/sqm) under the following headings to demonstrate why the rate of €311/sqm is appropriate;

- The Dublin market for pavement quality concrete (PQC) contractors.
- A comparative analysis for our apron pavement rate against the 'as constructed' Apron 5G rate (14 Code C stands commenced in 2014).
- Detailed breakdown for the apron pavement rate.
- Benchmark analysis from external quantity surveyors.

Details of this analysis are included in Appendix 1

5.3. SDG's estimated electrical rate

5.61 There is also a delta attributable to SDG's treatment of electrical installation compared to our own submitted costs across multiple projects. We have provided a detailed breakdown on the projects where the electrical installation rate reduction applies.

5.4. Other PACE Projects

- 5.62 Regarding other projects that have been earmarked for approval, we welcome the Commission's recognition of the importance of these projects, which are key to the development of the campus for reasons that have been well documented to date. With respect to the two projects specified in paragraph 5.63, we have decided not to dispute the SDG estimates due to both the relative proximity of both estimates and the margin of error associated with these on a prospective basis.
- 5.63 We do however wish to note that while the respective differences between our estimations and SDG's may appear innocuous, SDG's approach results in a material shortfall of approximately €227,000.
- Advanced Visual Docking Guidance System: shortfall of €121,000
 - Apron Wide CCTV: shortfall of €106,000
- 5.64 To put this cumulative shortfall into perspective, it exceeds the estimated total funding requirement for the Pier 3 underpass. We would encourage the Commission to reconsider the estimates provided in our December submission and associated justification in order to ensure that Dublin Airport is remunerated for efficient spend incurred on projects that airport users require and support.

5.5. Dublin & London construction industries on different trajectories

- 5.65 In estimating the costs for Dublin Airport, SDG has "predominantly used benchmarks from similar projects at South-East England airports, [which] are considered to be of similar size and complexity as Dublin Airport, especially Gatwick Airport." The International Construction Market Survey 2017⁸, published by Turner & Townsend, presents data analysed on the construction industries in more than forty international markets.
- 5.66 It can be seen from the figure below that Dublin is the only European city, and one of three international cities analysed, in the red with the future market outlook indicating "warmer" conditions on the horizon. This figure also illustrates that current tendering conditions have been identified as being "hot" in both Dublin and London, but that the prognosis for future market conditions is for conditions to get "hotter" in Dublin with no change expected in London.
- 5.67 This shows that the construction industries in both Dublin and South-East England are on different trajectories, and we believe that the Commission should consider this when providing respective allowances that are based on SDG's assessment from a point in time.

⁸ <http://www.turnerandt Townsend.com/media/2412/international-construction-market-survey-2017-final.pdf>

Figure A: Global Cost Performance Analysis – Current Tendering Conditions

| Location | Current tendering conditions | Future market outlook | Location | Current tendering conditions | Future market outlook |
|------------------|------------------------------|-----------------------|----------------------|------------------------------|-----------------------|
| Africa | | | ● Warsaw | Warm | △ |
| ● Dar es Salaam | Hot | △ | ● Istanbul | Warm | — |
| ● Nairobi | Warm | — | ● Munich | Warm | — |
| ● Kigali | Lukewarm | △ | ● Paris | Warm | — |
| ● Johannesburg | Lukewarm | — | ● UK Central | Warm | — |
| ● Kampala | Lukewarm | — | ● UK South | Warm | — |
| Asia | | | ● Zurich | Warm | — |
| ● Tokyo | Hot | — | ● Northern Ireland | Lukewarm | △ |
| ● Kuala Lumpur | Warm | — | ● Scotland | Lukewarm | — |
| ● Hong Kong | Warm | △ | ● Moscow | Cold | △ |
| ● Beijing | Lukewarm | △ | Middle East | | |
| ● Bangalore | Lukewarm | — | ● UAE | Lukewarm | — |
| ● Singapore | Lukewarm | ▽ | ● Doha | Cold | — |
| ● Seoul | Cold | △ | ● Muscat | Cold | ▽ |
| Australia | | | North America | | |
| ● Sydney | Warm | △ | ● Seattle | Overheating | — |
| ● Melbourne | Warm | — | ● New York City | Hot | — |
| ● Brisbane | Lukewarm | — | ● San Francisco | Hot | — |
| ● Perth | Cold | — | ● Toronto | Warm | — |
| Europe | | | ● Houston | Lukewarm | — |
| ● Dublin | Hot | △ | South America | | |
| ● Amsterdam | Hot | — | ● Bogota | Overheating | △ |
| ● London | Hot | — | ● Buenos Aires | Warm | △ |
| ● Madrid | Warm | △ | ● Santiago | Lukewarm | ▽ |
| ● UK North | Warm | △ | ● São Paulo | Cold | — |

Source: Turner & Townsend International Construction Market Survey 2017

6. Reporting Requirements

- 6.1 The Commission set out reporting and delivery requirements in its Draft Decision, whereby Dublin Airport would report regularly on the progress of PACE projects relative to the timeline for delivery that was consulted on.
- 6.2 As project managers at Dublin Airport routinely track projects and monitor progress, we do not have any issue with a requirement to update the excel based reporting chart (published alongside the Draft Decision) at the end of each quarter nor do we have any issue with the Commission’s intention to publish this update quarterly.
- 6.3 We believe that there are already sufficient incentives in place to deliver the PACE projects, driven by unprecedented passenger growth, but we are nonetheless satisfied to participate in this initiative by the Commission and to provide an explanation for any deviations that occur.

7. Regulatory Treatment: reconciliation, deliverables, flexibility and remuneration

- 7.1 The Commission has proposed that there will be no effect on the price cap until 2020 at the earliest, which is consistent with its 2016 Decision on the Decision Process for Consideration of a Supplementary Capex Allowance at Dublin Airport. This treatment requires Dublin Airport to pre-fund significant investment. Based on CAR's draft decision, and assuming projects are complete within the expected timelines, Dublin Airport would estimate approximately €93m would enter the Regulated Asset Base (RAB) in the year 2020 and the remaining spend, once triggered, would form part of the 2020 to 2024 Capital Investment Plan (CIP) allowances. As these projects will have commenced construction pre - 2020 and will have estimated completion dates, Dublin Airport requests clarity regarding the timing and rationale for when the allowances will enter the RAB. Dublin Airport would expect project allowances to enter the RAB over the remaining construction period and not be spread over the expected five-year price period to avoid further delays in remuneration for pre-funded expenditure.
- 7.2 We support the Commission's intention to increase the Business Development capex grouping in the 2014 Determination in line with an efficient allowance for each of the 23 PACE projects.
- 7.3 By and large, we agree with the Commission's intention to designate certain PACE projects as deliverables and agree with the Commission's acknowledgement that an element of flexibility should be retained by not making all projects deliverables. However, for reasons set out below, we are convinced that it is not appropriate to designate the Additional Bus Gates as being a deliverable.
- 7.4 Of the ten projects earmarked as deliverables, we would encourage the Commission to reconsider the treatment of one of these, namely the Additional Bus Gates.
- 7.5 It is not appropriate to designate the Additional Bus Gates as a deliverable because this project is insufficiently advanced from the perspective of the developing masterplan and there is scope for the location to differ. For example, it would appear that the optimum means of expanding the US Preclearance facility would compromise our ability to deliver the Additional Bus Gates as submitted in PACE.
- 7.6 Arising from the unquestionable need for these bus gates, the Commission should recognise the short-term complexity associated with this project and afford Dublin Airport with necessary flexibility. The Bus Gates project was added to our December 2017 PACE Submission on foot of user feedback to the PACE consultation in October 2017 and is undoubtedly required, but the proposed solution may not represent the optimal location. This is an issue we are continuing to explore and for this reason would request that this project is not specified as being a deliverable.
- 7.7 Should Dublin Airport decide to proceed with the Additional Bus Gates in an alternative location, for example, it is plausible that the bus gates would not be delivered as per page 63 of our December Regulatory Submission. We will ultimately proceed in an efficient and sustainable manner but if the project continues to be mandated as a deliverable, this could leave us in a position where we are not remunerated for efficient spend on a project that is required and has the support of users. Alternatively, it could delay or prevent the delivery of bus gates.

- 7.8 Regarding the PACE projects expected to commence during this Regulatory Determination but which will not complete until post-2019, we are satisfied with the Commission's proposals of a combined trigger/deliverable approach, with the exception of the aforementioned Bus Gates project. There is a potential issue that could arise on timelines, however, as the Commission intends to make provisions in the 2019 Determination for the remuneration of projects which have been triggered. According to the Draft Decision, 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. This potential issue lies with the scope for a project to trigger by end-2019 but after the 2019 Determination has been finalised, currently expected in September. We would welcome clarity from the Commission regarding projects that trigger in October, November or December 2019 and the process for these projects entering the 2020 RAB, should this scenario materialise.
- 7.9 We welcome the Commission's intention to amend the trigger in the 2014 Determination on Runway 10 Line-Up points and to approve this project as part of this process, as a deliverable with completion anticipated in the latter half of 2021.

8. Concluding Remarks

- 8.1. While we support large parts of the Commission's Draft Decision, we are convinced that the provisional cost allowance, as derived by SDG, has been underestimated and should be reviewed following additional information presented in Section 5 and Appendix 1. In particular we would encourage both the Commission and SDG to reconsider the draft cost estimates based on:
- a) PACE projects that have already been completed by Dublin Airport following user support and the associated costs that have been efficiently incurred (i.e. services have been procured in a competitive market), as set out in paragraphs 5.14-5.21 and 5.33-5.38 above.
 - b) A significant and unjustified shortfall of almost €3m for Apron 5H and taxiway rehabilitation, as set out in paragraphs 5.44-5.48 above.
 - c) The difference in the Dublin apron pavement and electrical installation rate, and the SDG rate as set out in paragraphs 5.60 and 5.61 above.
- 8.2. While it is relatively straightforward to dispute costings in the abstract, we firmly believe that the risks associated with the provision of an allowance that is solely based on a conservative single estimate can have a disproportionate bearing on the magnitude of the benefits that the PACE projects could otherwise realise.
- 8.3. We are available to attend a workshop with both the Commission and SDG to discuss the anomalies that we have identified above and in Appendix.