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**7<sup>th</sup> August 2009**

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## **Supporting Document I: Summary of Key Concerns**

## Supporting Assessment I: Summary of Key Concerns re the Commission’s Approach to the Building Blocks

Issue	Description
<b>General Approach</b>	
<b>The Commission refuses to engage</b>	Refusal to meet with DAA – despite numerous requests only 2 meetings in 10 months <ul style="list-style-type: none"> <li>• One in March before any submissions made</li> <li>• One in June solely related to publication of confidential information</li> </ul> No engagement on core issues e.g. commercial revenues and financeability/cost of capital
<b>Asymmetric approach</b>	Assuming upsides e.g. <ul style="list-style-type: none"> <li>• higher traffic than envisaged by either DAA or users (c700k pax more than DAA by end of period) c€10m value in aero/non-aero revenues;</li> <li>• GDP recovering to c5% annual growth (vs. IMF 2.6%)</li> </ul> No evidence of sufficient concern re downside risks e.g. setting unachievable targets re wage inflation whilst acknowledging a financeability problem if not achieved
<b>The Commission accepts thrust of DAA assumptions yet produce varying final conclusions</b>	The Commission accepts DAA’s argument that it would be inappropriate to rely exclusively on top down econometric modelling of commercial revenues, yet continues to do so anyway
<b>Service Quality</b>	
<b>Imposing a service quality term when standards are acceptable</b>	The Commission accepts that service quality standards are appropriate yet proposes to implement a service quality term in the price cap, incorporating financial penalties. This will generate a “mini industry” in administration and provoke disagreements with carriers regarding penalties for any alleged infringements.
<b>Operating Expenditure</b>	
<b>Imposing efficiencies without regard to the cost of achieving those efficiencies</b>	The Commission’s opex projections assume efficiencies are made but no allowance is made for the costs required to achieve these efficiencies (e.g. redundancy packages)
<b>Unrealistic ‘no real wage growth’ assumption</b>	The Commission’s assumption regarding no real wage growth during the five year determination period is not viable. This assumption does not reflect the reality of existing terms and conditions of much of DAA’s workforce or recognise the legal issues involved, the fundamental shift in the industrial relations climate and indeed the upfront cost that would be required to bring about the change implicit in the assumption.

<b>Proposal to phase in efficiencies over three years</b>	Cost burden associated with achieving this is ignored. The proposal is also contrary to the Commission's consultants, Indecon-Jacobs (IJ), recommendations. The phasing of the implementation of any cost efficiency targets set by the Commission should be over an achievable timeframe of six years as recommended by IJ at a minimum or preferably the DAA should be appropriately remunerated for the associated upfront costs
<b>Lack of clarity re treatment of operating costs for T2</b>	The Commission is not proposing to declare the likely impact of opex associated with T2 in the final Determination. However it has information to enable it to do so. Lack of clarity adds to the risk faced by DAA.
<b>Reliance on an incomplete opex report</b>	IJ have declared the report upon which the Commission base their efficiency targets as "preliminary" yet the Commission has placed a high level of emphasis on it to the extent that a 10% efficiency target is applied.
<b>Reliance on a flawed opex report</b>	The Indecon Jacobs report is flawed in several significant ways (e.g. consultant's adjust Dublin Airport opex for downturn in passenger numbers but make no attempt to do the same for comparator airports)
<b>Efficiency targets unsupported by evidence</b>	The top down benchmarking analysis within the IJ report confirms operating costs per passenger at Dublin Airport were the second lowest of the sample comparator airports in Europe in 2008.
<b>Setting aside consultants assumptions when result doesn't work against DAA</b>	Though IJ's analysis suggests that a multiplier of 1.6x would be more appropriate than DAA's 1.5x (implying higher staffing than in DAA's forecasts) the Commission ignores this and in the body of the report notes that efficiencies in security could be deliverable.
<b>Reliance on an opex report of limited scope</b>	Consultants claimed that report was detailed and 'bottom up' but this was impossible given the limited interaction with DAA. Instead produced a rudimentary benchmarking exercise backed up with cursory details taken in isolation from DAA's financial model and FTE breakdown.
<b>Traffic Forecasts</b>	
<b>Use of own simplistic passenger forecasts</b>	The Commission produce own passenger forecast using simplified methodology, despite availability of DAA forecasts with proven track record
<b>Use of overly optimistic forecasts</b>	The Commission's forecasts are more positive than those submitted by either DAA or the airline representative group the DACC.
<b>Distribution of risk</b>	DAA should not be expected to take the volume risk associated with reliance on a forecast which was constructed by inexperienced third parties with no first hand knowledge of the aviation industry.
<b>Commercial Revenues</b>	
<b>Lack of transparency in approach</b>	The Commission refused to provide details of how it arrived at its elasticity assumptions
<b>Inappropriateness of approach</b>	Elasticities developed on the basis of relationships between revenues and GDP/pax numbers in times of economic prosperity are unreliable for the purposes of projecting forward in a recession

<b>Inconsistent price terms</b>	Elasticities were derived using data in current (nominal) prices, however outputs assumed to be real. Outputs based on nominal drivers are nominal and therefore should be deflated to produce real figures consistent with all other building blocks
<b>Inconsistent base year and inflation</b>	The Commission use DAAs 2008 outturn as the base year for analysis and extrapolation of operating costs assuming a -1% inflation for 2009, however for Commercial revenues DAAs 2009 expected outturn, which has built in an assumed 0% inflation, was used as the base year. This results in inconsistency across activities (e.g. retail has both opex and revenue which are interdependent), and overinflated revenues
<b>Setting aside extrapolations when result doesn't work against DAA</b>	The Commission set aside the simplified extrapolation of trends in property advertising. This was the one area where such an approach is acknowledged by the Commission would have led to a reduction in the revenue targeted by DAA and where the Commission state that DAA's targets are "challenging". This an entirely asymmetric approach whereby the Commission only indicates a willingness to accept "a deviation from this relationship" to passenger growth, where this has the effect of increasing revenue targets (and thereby reducing the resulting price cap). It directly contrasts with the Commission's position related to property rental where it is simply stated that "the Commission does not accept the DAA's assertion that property-rental income is independent of passenger numbers" and further that "The Commission is not aware of any factors that suggest that property rental income should deviate from long term trends for all five years of the determination".
<b>Simplistic forecasts disguise serious flaws</b>	The Commission has employed simplistic methods to produce commercial revenue forecasts which, allows them to ignore the lost commercial revenues associated with disallowed capital projects (e.g. retail refurbishment, MSCP Hotel, etc.)
<b>Capital Expenditure: (2006-2009)</b>	
<b>Disallowances of project management/capitalised programmes</b>	The Commission has incorrectly disallowed all the capitalised costs associated with delivering a major development programme
<b>Pier D disallowance</b>	Despite comparing favourably against comparable projects (10% below average on a cost per sq. metre basis) and being mandated by Government, the Commission has disallowed €16m of Pier D spend
<b>Section 49 levies</b>	The Commission has proposed delaying remuneration pending clarification that it will be paid based on metro timetable.
<b>T2 box 2 claw back</b>	The Commission has made a point of stating that it protected DAA's T2 remuneration for lower passenger numbers now projected. However, they have not highlighted the fact that despite committing to allowing the full pre-funding costs of T2 to be remunerated, it is proposing to claw back €11.3m that DAA received for T2 Box 2 assets prior to 2010

<b>T1X treatment</b>	The Commission is proposing to disallow depreciation on T1X based on an incorrect estimate of revenue that the project generates on the assumption that it doesn't pay for itself.
<b>Depreciation</b>	
<b>Asset lives</b>	The Commission have simplistically applied a long average asset life to the projects allowed for depreciation purposes without reference to the nature of the assets (DAA estimates real life is 11 years vs. 26 used by the Commission). This effect of depressing the level of the price cap.
<b>Remuneration of T2</b>	Unitisation implies a regulatory deficit of circa €225m over the period, of which circa €50m is in 2011 alone <sup>1</sup> , in other words, of the total actual financing and depreciation expense related to T2 Box 1 of circa €295m, which will be incurred, the Commission propose to remunerate only €70m. This level of revenue profiling is not a tenable basis for remunerating a national infrastructure project built pursuant to Government policy.
<b>Complexity without value add</b>	The Commission is now applying a range of different depreciation methodologies (annuity, unitisation, straight line) – an approach that is without precedent in any other regulatory area that we are aware of, and has the effect of backloading significant levels of revenue to later determination periods (Unitisation alone accounts for in excess of €200m revenue 2010-2014 being backloaded)
<b>Capital Expenditure: (2010-2014)</b>	
<b>50% of CIP disallowed</b>	Despite DAA producing a very prudent Capital Investment Programme, the costs for which are deemed to be “reasonable” by the Commission’s consultants, the Commission has disallowed 50% of the value of projects (€198m out of €395m)
<b>Longer runway disallowed</b>	The Commission has disallowed the required longer runway on the grounds that it does not meet the needs of current users however the runway is designed to meet the needs of prospective users who currently do not use Dublin Airport due to its infrastructural deficit
<b>Disallowance of revenue generating capex projects</b>	The Commission has disallowed revenue generating projects with clear business cases, however the Commissions overall commercial revenue forecast is significantly higher than DAAs forecast without this investment
<b>Asymmetric approach to allowed costs</b>	In assessing the overall costs of DAA’s programme Booz concluded that our costs were reasonable to within 1.3%. However the Commission has only incorporated the cost reductions proposed by Booz (for the projects allowed) and has ignored any instances where Booz assessed that DAA’s cost estimates might be under the appropriate level.

<sup>1</sup> When the non remuneration of Box 2 is taken into account the deficit is in excess of €250m.

<b>Cost of Capital/financeability</b>	
<b>The Commission has proposed a cost of capital figure which is 0.4% lower than the last review in 2005.</b>	This does not reflect the substantial upheaval in financial markets over the intervening period
<b>By reducing the WACC The Commission assumes that financial markets will revert quickly to benign market conditions</b>	But economic outlook is weak and uncertain, especially in Ireland. In particular there is considerable uncertainty about how deep the recession will be and how long it will last.
<b>Inconsistent assumptions in cost of capital derivation</b>	WACC calculations implicitly calculated on basis of A rating while ratios imply an inevitable downgrade ██
<b>The Commission significantly underestimates the cost of equity</b>	The Commission does not include an Irish country risk premium to compensate investors for non-diversifiable Ireland-specific risks.
<b>The financial model used by the Commission to underpin the financial analysis in the draft determination is undermined by inaccuracies and flawed assumptions</b>	Capex related to ARI is excluded from the aggregation of group cash flows and therefore group net debt. Dublin's EBITDA for inclusion in FFO was erroneously inflated by applying the inflation for each year as opposed to cumulative inflation The cashflow only reflects Dublin's capex in real 2009 terms instead of nominal (again cumulative inflation should have been applied) There is no evidence that a Profit & Loss or Balance Sheet was calculated. Non production of such outputs results in inability to test widely used financeability measures such as profitability, return on equity, actual return on RAB, etc.
<b>Other</b>	
<b>Unnecessary change to price cap compliance rules</b>	The Commission propose to introduce asymmetric approach to price cap over/under recovery without any justification (DAA must pay lump sum rebate in the event of over recovery within 45 days of year end, but adjustment to price cap in the event of under recovery two years later and subject to an upper limit of 5%)

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7<sup>th</sup> August 2009

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## **Supporting Document II: Service Quality Metrics**

## Detailed Supporting Assessment II - Service Quality Metrics

DAA reiterates its opposition to the introduction of a service quality term in the price cap at present, for the reasons outlined in the main text. In this document DAA sets out the key points which must be addressed if the Commission is minded to continue with this scheme. Of utmost concern would be that the Commission has a clear understanding of what the proposed measures entail. Given that the Commission has indicated that *“the determination will be specified to allow for no reduction in annual price cap in the event that circumstances beyond the DAA’s control caused it to meet a target or targets”*<sup>1</sup> DAA has also indicated for each measure some of the grounds that the Commission should acknowledge as being sufficient to result in the waiving a rebate.

### Passenger facing measures

DAA is in broad agreement with the Commission's choice of the nine proposed ACI results. However, DAA is concerned with the inclusion of ‘Communications/ telecommunications /e-facilities’ as a service quality measure on two grounds.

- The provision of facilities such as internet booths, pay phones etc. are commercial activities which DAA undertake. Under the single till DAA is already incentivised to provide the optimal level of service for this area. The Commission did not include the suggestion that ‘satisfaction with business and executive lounges’ be included in a service quality scheme on the grounds that a separate charge, not included in the cap on airport charges, exists for use of the lounges. This rationale equally applies to the provision of telecommunication and internet facilities.
- This metric is of primary concern to business passengers. While business travellers are of great importance to DAA, they currently represent less than 25% of passengers. The proportion of leisure passengers who would be concerned with this measure would be much lower than those concerned with other factors such as cleanliness, staff helpfulness, etc. In particular, business passengers may only consider an airport to be satisfactory in this regard if free Wi-Fi facilities are provided. DAA considers that the requirements of the majority of passengers are better met by investment in broader measures which improve the other metrics proposed by the Commission.

For these reasons DAA believes that this term should be removed from any proposed service quality scheme, or at the very least should receive a much lower percentage weighting to reflect the subsection of passengers to which it applies.

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<sup>1</sup> Para 5.29, Pg. 21, CP3/2009



## Airline Facing Measures

### *Contact Stand Utilisation for Departing Aircraft*

#### **Definitional Issues**

As the Commission has not stated explicitly the definition or measurement of this proposed target, and, as already outlined by DAA, no SLA currently exists for it, if the Commission is to introduce such measurement it should be defined as the number of departing aircraft movements from a contact stand as a percentage of overall departing aircraft movements, based on charter and scheduled passenger movements only. On a quarterly basis this would be calculated as:

$$\frac{\begin{aligned} &(\text{no. of departing passenger scheduled aircraft movements from a contact stand per quarter}) + \\ &(\text{no. of departing passenger charter aircraft movements from a contact stand per quarter}) \end{aligned}}{\begin{aligned} &(\text{no. of departing passenger scheduled aircraft movements per quarter}) + \\ &(\text{no. of departing passenger charter aircraft movements per quarter}) \end{aligned}}$$

This definition excludes all departing movements which are 'pure' cargo, general aviation or diverted and positioning flights, on the basis that both cargo and general aviation flights rarely utilise, and indeed would not wish to utilise, contact stands.

Diverted flights are by their nature operating outside of any schedule and cannot be predicted or planned for. The priority in such cases is to accommodate the flight and to ensure that it lands safely. Such occurrences are outside of DAA's control, and when DAA is accommodating these flights, concerns regarding service quality targets should not infringe upon immediate operational and safety concerns.

Positioning flights are flights where an airline is moving an empty aircraft to another airport for operational or maintenance reasons. There is no requirement for empty aircraft to be allocated contact stands.

When all movements are included (i.e. scheduled, charter, cargo, general aviation, positioning and diversions) the 90% target proposed by the Commission is not being consistently hit at present. Given that the Commission has proposed to implement service quality targets that are aligned with the levels currently achieved at Dublin, it must lower the target to ensure that artificially-incurred penalties are not transferred to users each quarter if it is minded to apply this metric to all movements.

DAA would also note that there is no internationally agreed definition of a contact stand. This is due to differing opinions as to what constitutes an acceptable distance for passengers to walk to an aircraft. Specifically, Low Cost Carriers (LCCs) would have a much broader understanding of what constitutes a contact stand than might be accepted by airports or other airport users. In an effort to accommodate all users at Dublin Airport, DAA must reserve the right to change the definition of a contact stand on a case by case basis, within reason. Dublin Airport publishes a list of contact (with/ without air bridges) and remote stands on its website. Any changes to stand definitions will be reflected here.

#### **Exceptional Issues**

If the Commission is minded to continue with this metric, it is essential that exceptions are made for necessary maintenance works. Maintenance comprises both planned and unplanned work. Failure to maintain stands on both a preventative and a remedial basis can have serious implications for airline's ability to operate at Dublin Airport. As well as the long-term deterioration, in the immediate term debris from poorly maintained stand can cause damage to aircraft and aircraft engines. These individual incidences can result in costs in the millions of Euros to repair, depending upon the aircraft type. The Commission must not put in place a regime which discourages this essential work.

For planned work, DAA endeavours to complete this maintenance outside of operational hours. However in some cases infringement of operational hours is unavoidable. In particular long-term maintenance which can extend the life of a stand by up to 20 years necessitates multiple stand closures of between six and eight weeks each. These works are an integral part of running an airport, and have been accepted by the Commission in DAA's latest Capital Investment Programme. It would be perverse for the Commission to accept that this work needs to be done yet simultaneously to penalise DAA for going ahead with the project if targets are not met as a result of it.

In addition unplanned maintenance is regularly required. The unpredictable and varied nature of such work means that stands may need to be withdrawn for anything between three to four hours to three to four days. Once structural damage becomes apparent on a stand DAA may have no choice but to take that stand out of service immediately. This is to prevent incidences involving debris as outlined above.

Unplanned 'downtime' for a stand can also result from the malfunctioning of stand-specific equipment such as air bridges. If an air bridge is stuck out of position a stand can be unavailable for significant periods of time. Such incidences are often the result of airline or airline handler misuse and DAA should not face penalties as a consequence.

Similarly if adjacent or nearby construction work requires the closure of one or multiple contact stands, this should be excluded from the computation of the metric as, though the contact stand is in good condition, it is inaccessible. This may also apply to circumstances where maintenance of adjacent taxiways being undertaken if this results in stands being inaccessible for periods of time.

## ***Percentage of Time Incoming Elements of the Baggage Handling System Available during Hours of Operation***

### ***Definitional Issues***

If the Commission is minded to continue with this measure as a service quality term, then for the purposes of clarity DAA wishes to outline to the Commission the current definition and measurement used for the SLA regarding incoming baggage system availability. Availability is defined as the total number of hours for which all belts are available as a percentage of the total number of operational hours. On a quarterly basis this would be calculated as:

$$\frac{(\text{Total no. of operational hours per quarter}) - (\text{Recorded downtime hours of belts } \Sigma(A + B + \dots + Z))}{(\text{Total no. of operational hours per quarter})}$$

Operational hours are 07:00 to 24:00 hours. The small number of incoming flights outside of these hours are facilitated by having a few incoming belts in service. The operational window for incoming baggage systems in T2 will be defined when operations are established in the new facility.

### ***Exceptional Issues***

If the Commission is minded to continue with this measure, it is essential that the complexities of the operation and maintenance of the system are addressed when determining any penalties which might arise.

The ability of DAA to ensure maximum possible system availability is dictated by two issues:

- Maintenance-to allow maximum 'uptime' of the system itself
- Operational-to allow optimal usage of the system during that 'uptime'

Both areas are subject to forces beyond DAA's control, which should be considered grounds for waiving of quarterly penalties.

### **Maintenance**

Large and complex systems such as the incoming baggage system require regular maintenance to ensure availability is not compromised. Belts undergoing maintenance will obviously not be operational at the time, and under the circumstances outlined below, should not be incorporated in any assessment of targets.

- Planned Preventative Maintenance (PPM) comprises the bulk of work required to keep the system operational, and is scheduled where ever possible outside of operational hours. As such, it need not be factored into any calculations for waiving penalties. However, under the current system, DAA has the operational flexibility to undertake PPM during operational hours, if it does not impact upon users or operations. To allow optimal efficiency, DAA would suggest that PPM conducted within operational hours, *where it does not impact upon operations*, be excluded from any calculations.
- Occasionally specific PPM activities can only occur during operational hours for practical reasons. For example, if a specific skill set is required and external contractors are required, such work will need to be conducted during daytime hours. While DAA will

endeavour to ensure minimal disruption to operations on such occasions, the need for such work is sometimes unavoidable.

- In addition DAA undertakes more intrusive PPM on an annual, 3 and 5 year basis. This work can take between eight and twelve hours to complete per unit. As such it will always infringe upon the system's operational hours. DAA schedules such works so as to ensure minimal impact upon operations, but it does result in belts being unavailable. Such works are unavoidable, essential, and should not be incorporated into any assessment.
- Where system replacements and upgrades, or adjacent construction works require the closing down of a baggage belt or belts, these should be excluded from any calculations.
- Where misuse or abuse by third parties result in 'downtime', particularly by airlines or airline handlers. As well as being outside of DAA's control, such exclusions are essential if the Commission is to avoid creating a system which potentially incentivises such parties to intentionally disrupt, damage or destroy DAA equipment.
- Baggage systems shut down in the event of fire alarm activations, sprinkler activations, terminal evacuations, emergency stop activations, or maintenance to address pressing safety concerns. This is standard procedure and is in place to ensure the safety of DAA staff and passengers. Such downtimes should be excluded in any service quality term, as they are in the interests of health and safety and must be accommodated by DAA

## **Operational**

In situations of limited capacity, DAA schedules use the incoming belts tightly to maximise operational efficiency. A range of factors outside of DAA control can result in this schedule not being adhered to. This results in belts being fully functioning, but congested with baggage which has not been cleared on schedule. This is known as 'dieback'. DAA actively manages this by reworking the schedule in response to sudden changes; however some dieback in such circumstances is unavoidable. This task is complicated by the operational demands of users, with individual airlines and airline agents refusing to use particular facilities.

Outlined below are the main causes of 'dieback' which are beyond DAA control and should be excluded from any penalty scheme.

- Delays resulting in passengers taking longer to clear baggage belts. The longer incoming passengers take to reach the baggage hall, the more time a belt is occupied with their luggage, resulting in dieback. In recent times delays have been experienced clearing passengers through Immigration. Given a third-party state agency processes passengers through Immigration, DAA is limited in the control it has to speed up this process. DAA also has a duty to facilitate Customs officers, who actively monitor and search incoming baggage. Similar to Immigration, DAA is heavily reliant upon the operations of a third party state body to avoid 'dieback' in such instances.
- Congestion caused by a lack of loaders on the baggage hall. DAA provide the facilities and operate and maintain those facilities to ensure maximum available time for users. However DAA is dependant upon those users to provide adequate staffing levels to ensure that the schedule is kept to without delays. If an airline or airline agent does not have enough loaders to keep to schedule the resulting delays and congestion will lead to dieback.

- Congestion resulting from circumstances out of the norm. Other such circumstances include, but are not limited to:
  - Congestion due to severe weather conditions
  - Congestion in the 'recovery period' following an evacuation or security incident.
  - Congestion resulting from airline or airline agent staff industrial action

## ***Percentage of time that security passenger search time is no longer than 7 minutes***

### ***Definitional Issues***

For the purposes of clarity, DAA wishes to state explicitly how this SLA is currently measured. The formula is outlined below.

$$\frac{\text{\textit{Total no. of observations recorded which are greater than 7 minutes in sample period}}}{\text{\textit{Total no. of recorded observations in sample period}}}$$

The original SLA allowed for this measure to be calculated by both a Dublin Airport Terminal Manager and an airline's Station Manager working in tandem. To date no airlines have expressed an interest in how the data is collected, nor how the result calculated. Were financial prizes to hinge on the results of this SLA, DAA would expect a renewed interest from airlines in all aspects of this SLA.

### ***Exceptional Issues***

Were this SLA to become incorporated into a service quality term, the exceptions below should be considered grounds for a waiving of any potential quarterly penalty.

- At times Dublin Airport operates well in excess of declared capacity. This is due to certain arrival patterns of passengers. At such times DAA cannot meet SLA targets as the SLA assumes that passengers are being processed at capacity levels. As mentioned in Section 2.5.1, efforts to increase capacity for the summer season 2009 were opposed by the DACC. In Stansted Airport's scheme, CAA has decided that occasions when throughput is 10% in excess of planned levels over a period of one hour or more were circumstances deemed eligible for exclusion. This exception balances the realities of limited capacity with the need for an adequate level of customer service, and should be incorporated.
- As the Commission has mentioned, increased security regulations can impact adversely on SLA performances, and should be excluded. However equally relevant is the reinterpretation of existing regulations by the authorities. Such reinterpretations, often after tests or inspections, can swiftly reduce the processing capacity of the screening process. Increased security measures may also need to be introduced independent of regulations in the event of an increase in risk levels, locally, nationally and internationally. Such changes can occur suddenly and without warning. All such circumstances also justify exclusion.
- Exceptional circumstances resulting in severe capacity constraints, or temporary periods of throughput well in excess of declared capacity merit exclusion. Such events include but are not limited to recovery from extreme weather conditions, bomb scares, security incidences or terminal evacuations.
- Failure to meet an SLA for reasons out of DAA's control should not trigger any penalty transfers. Such events would include any occasion where throughput is in excess of declared capacity due to airline or other industrial relations issues, airline refusal to secure adequate check-in capacity, external disruption to terminal access (for example via taxi or public transport strikes), or when special events occur, and all parties would benefit from DAA accepting higher throughputs of passengers than is normally considered optimal.

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**7<sup>th</sup> August 2009**

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**Supporting Document III: Indecon Jacobs Report**

# Detailed Supporting Document III – Indecon Jacobs Report

***DAA is disappointed with the output of the analysis undertaken by Indecon-Jacobs (IJ) for the purposes of assessing the company's operating efficiency.***

The consultants have acknowledged that they held only a single visit to DAA as part of their work, which is portrayed in the draft determination as a “bottom-up analysis”. In separate correspondence with the Commission we have highlighted the disparity between this lack of interaction compared and the bottom-up review conducted on behalf of the Commission in 2005. Regrettably, but unsurprising in this context, the preliminary report contains numerous factual errors and inconsistencies as well as assessments, predicated on unclear or ambiguous basis. In coming to conclusions the consultants rely heavily on unidentified, inconsistent and out of date benchmark comparators. It is regrettable that much of our submission will need to be devoted to highlighting these deficiencies, when this could have been avoided through more extensive engagement. We would again like to reiterate our willingness to engage with the consultants with a view to assisting the next phase of their work, which is noted in their preliminary report.

## **Indecon-Jacobs report – Top Down Benchmarking**

***The top down benchmarking analysis within the Indecon-Jacobs (IJ) report confirms operating costs per passenger at Dublin Airport were the second lowest of the sample comparator airports in Europe in 2008. However, DAA challenges the conclusions drawn by IJ from this top down benchmarking analysis.***

DAA has consistently pointed out that the use of simple partial productivity benchmarks as a means of assessing efficiency is fraught with difficulty, with significant risks that if data is not comparable and if adequate account is not taken of the various business models and operating profiles of the comparator airports, any conclusions drawn may be misleading. Regrettably it appears that the analysis undertaken by IJ exhibits a number of such deficiencies.

### Total Operating Costs per passenger

The approach to top down benchmarking in the IJ report is fundamentally flawed in a number of respects. Nonetheless, DAA notes the confirmation in the IJ analysis that operating costs per passenger at Dublin Airport were the second lowest of the sample of comparator airports in Europe in 2008. Indeed the chart published indicates that the level of opex per passenger was c20-25% lower than the mean value in 2008 and up to 50% lower than certain airports. This outcome should come as no surprise to the Commission as it is consistent with previous analyses of operating costs at Dublin Airport conducted by the Commission. It is regrettable that this very favourable outcome is significantly downplayed in the report which states on page 48 that Dublin was in the mid to low end of the sample, while on page 50 total operating costs are described merely as “below average”. Examining whether a regulated entity is operating at an efficient total level of costs, regardless of the composition of these costs, is indeed an important issue for a regulator to consider. DAA believes that since IJ has decided that use of partial productivity benchmarking is an appropriate way to assess DAA's efficiency, it must then give DAA credit for the endorsement of the efficiency of Dublin Airport's cost base that emerges from such an analysis, which is the most significant outcome from the benchmarking conducted and seriously calls into question the credibility of claims that significantly greater levels of efficiency over the 2008 base are required.



The 2005 benchmarking report undertaken for the Commission in 2005 identified Copenhagen as the airport achieving by far the highest ratings for efficiency across the range of metrics and in the summary findings Dublin was compared to Copenhagen (unfavourably) as well as to sample averages (favourably). It is revealing to note from the IJ analysis therefore that, by 2008, Dublin outperformed Copenhagen by a small margin in Total Opex per Pax as well as having a higher ratio of Pax per Employee.

### Passenger per Employee analysis

The manner in which Passenger per Employee statistics are quoted in the report would lead the reader to believe that higher levels of this ratio are inherently better than lower levels (from references to “low to mid table” and being pushed “further down the league table”). It is remarkable that the juxtaposition of the two tables “Pax per Employee” and “Total Operating Costs per Pax” on the same page in the IJ report did not cause the authors to reflect that the clear evidence from their own analysis demonstrates something entirely different. It is recognised that airports have different operating models with varying degrees of insourcing or outsourcing of activities, leading to varying levels of direct and indirect employment. IJ note that Dublin has a high degree of insourcing across its operating activities. The simplistic analysis by IJ is a vivid illustration of why such benchmarking must be undertaken with caution, and should involve detailed discussions with the airports concerned.

The tables presented by IJ confirm that the three airports with the lowest ratio of Pax per Employee (Copenhagen, Prague and Dublin in order) are also the three airports with the lowest Total Operating Costs per Pax (Prague, Dublin, Copenhagen). Aside from directly contradicting the conclusions of IJ, this suggests that airports with higher degrees of insourcing, and therefore higher numbers of directly employed staff are in fact more efficient and lower cost operations.

### Staff and Non-Staff Cost Analysis

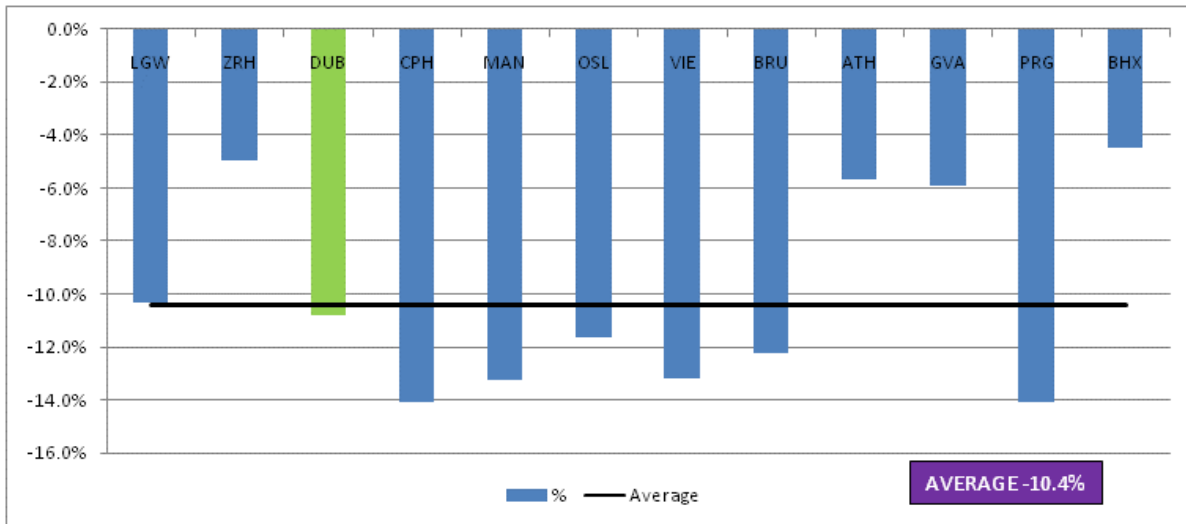
The conclusions drawn on page 40 and 50 are similarly flawed for corresponding reasons. In the first instance it is stated that DAA’s Staff Costs per Pax in 2008 were “above average” in the sample. While the precise values are not presented, this statement does not appear to be borne out by the chart which indicates the Dublin level was no higher than mid table. Again the language and presentation used is important if it seeks to justify a requirement for efficiency which is not demonstrated by the evidence.

In any event, as employee numbers per passenger would naturally be higher in an airport with a higher degree of insourcing so too would Staff Costs per Pax. The critical question to be answered is whether the mix of Staff and Non-Staff Costs yields an optimal Total Cost – as we know Dublin is second lowest in this regard. As with the FTE analysis, the positioning in the charts of Dublin’s fellow low operating cost airports, Copenhagen and Prague, illustrates the fundamental error made by IJ in drawing simplistic conclusions from these metrics.

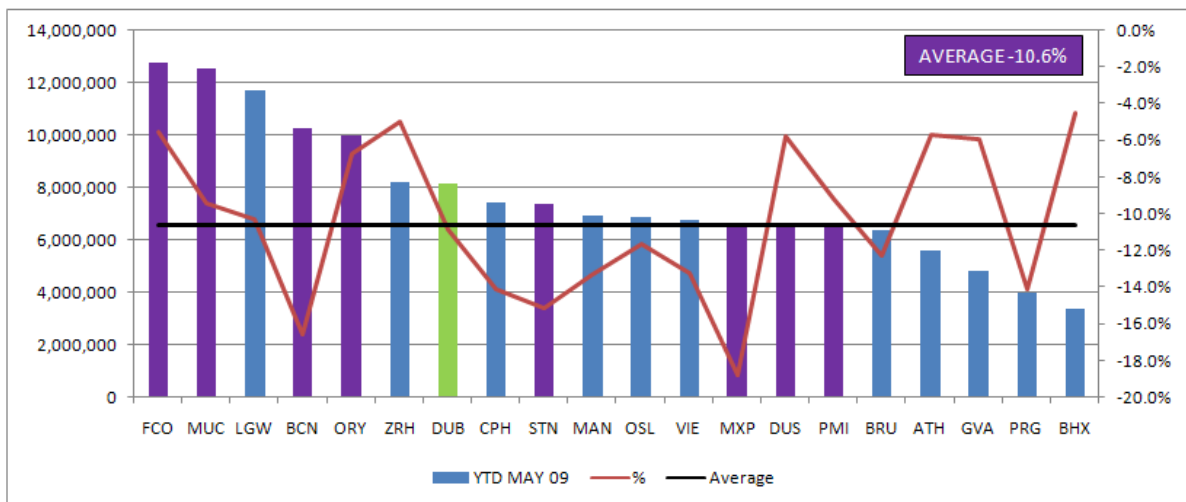
### Rolling Forward the Comparison to 2009

While the efficiency of DAA’s operating cost base in 2008 relative to peer airports has been downplayed in the analysis and elements of the cost base misrepresented to postulate greater scope for efficiency, perhaps the most fundamental flaw in the IJ approach to benchmarking relates to the inclusion of 2009 operating cost scenarios for Dublin only. IJ are aware of the decline in traffic experienced in 2009 and the resultant impact on basic metrics such as those charted. However, IJ have not sought to adjust the comparator airport metrics to any extent to reflect traffic declines in their markets. There can only be two rational explanations for such an approach:

- IJ may have completely overlooked the fact that traffic declines have seriously impacted airports across Europe, including each of the airports in the sample they have presented. The tables below demonstrate the scale of this impact both for the sample and for a wider grouping of airports than selected by IJ using most recently available traffic data. The tables illustrate that the volume declines experienced at Dublin are in line with the average for other airports for the sample selected and for the wider grouping of comparators. In a time of such unprecedented change across the market as a whole, it is a gross distortion to present 3 alternative 2009 scenarios for Dublin compared to static 2008 data for comparators and to somehow conclude that trends show Dublin's position worsening relative to its peers.



% Change in Traffic for year to date (to May 2009) for 12 airports in IJ sample



Year to date (to May 2009) traffic total and % variance vs. 2008. 1

It appears that, without explaining or justifying the position, IJ has assumed that it is possible for the peer airports to dynamically adjust their cost bases in 2009 in line with volume reductions ranging from -5% to -15%, with out any impact on the absolute values of Opex per Pax or their placement relative to others. Such a proposition would ignore the fact that Airports by their nature have high fixed cost bases and have cost drivers related to physical

<sup>1</sup> Graph includes the comparator airports in the sample used by IJ (in Blue) plus other comparable Top 20 European airports

infrastructure and capacity as well as passenger volumes. It would be completely unjustifiable to accept such a position without any supporting evidence, or indeed without it even being properly articulated.

In summary, the analysis of partial productivity indicators produced by IJ, while not properly acknowledging the fact, demonstrates that Dublin Airport has one of the most efficient cost bases among European airports. IJ seek to justify a requirement for efficiencies in certain cost elements through inappropriate comparisons and by suggesting that DAA's efficiency levels will decrease in 2009 relative to peers without providing any supporting evidence. Any conclusions drawn by the Commission on this basis would be without foundation and would be demonstrated to be flawed when the actual results of the comparator airports were published.

## **Indecon/Jacobs – Bottom-Up Analysis**

***DAA welcomes a bottom up analysis to its operating costs as a more robust manner of assessing efficiency than a simplistic review of a small number of partial productivity parameters. However, it is critical that such a bottoms-up analysis is carried out at a detailed level with sufficient interaction with the business to ensure a thorough understanding of the business, and to ensure the approach taken, and conclusions resulting, are not flawed. This has not been DAA's experience with the bottom up analysis as carried out by Indecon/Jacobs which is inherently flawed***

The Indecon/Jacobs bottom-up analysis was carried out based on the following:-

- Financial forecasts as submitted to the Commission by DAA in April 2009
- A one day site visit on 19<sup>th</sup> May 2009
- Several requests for detailed information with little or no interaction to ensure accurate understanding by IJ of the data submitted

As a result of this wholly inadequate information gathering process, it was inevitable that inaccurate statements, understanding, analysis and therefore conclusions would result. Key inconsistencies which should be addressed are as follows:

- IJ have identified four airports, for which it has used data for the purposes of analysing Dublin Airport. Under the section dealing with security there is a table which shows that data used for Airport 1 is the only one in this section which is comparable to Dublin airport as it is the only one which is using the same base year. To use various years across comparators introduces variances which rendered the data incomparable. Security itself is a prime example. The introduction of liquid restrictions in 2006 renders the data for airport 2 to 4 useless for the purposes of this analysis as there is no comparison to security requirements pre the liquids legislation and the requirements resulting from the introduction of this legislation.
- It is also unclear from the report whether the year of observation identified in the security section is the same year used across the other functions being analysed, however DAA would suggest various years may be being used. For example, taking total costs and dividing by costs per passenger will give you the passenger figure for each airport. For Airport 1 the Maintenance table reflects a figure of 35m passengers, whereas the Cleaning costs reflect 30m passengers. This suggests that data from different years is being used for the same airports across the various functions being analysed. IJ state they have normalised staff costs to reflect DAA's pay rates, however it is not clear if IJ

have allowed for inflation differences when comparing Dublin's costs in 2008 against costs of the other airports incurred in earlier years.

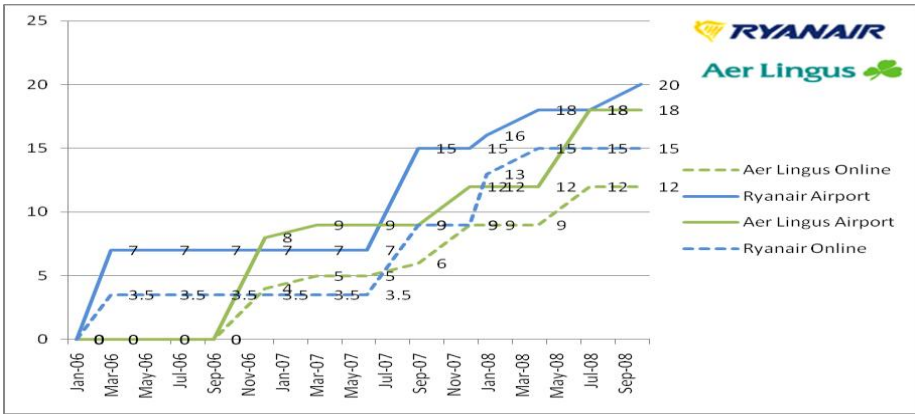
- There are also internal inconsistencies in IJ's conclusions. All of the analysis carried out by IJ is on the basis of Dublin Airports 2008 results. However no obvious analysis between 2008 and 2009 DAA forecasts was carried out to ensure any legitimate increase to costs is reflected in IJ's Optimised 2009 options. An obvious example of this is Security. IJ make several conflicting statements, "*manning is quite tight and may bring into question the ability of the airport to be able to maintain its current service standards with this level of staff*", and later "*we therefore expect the number of security FTEs 2009 to fall at the same rate as passengers*" and that "*total Dublin staffing in 2008 is not unreasonable*"<sup>2</sup>

The table below details many of the issues DAA has with the Indecon-Jacobs report. The inaccuracies, lack of understanding and gaps in IJ's analysis are reflected in the detailed analysis by function.

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<sup>2</sup> Indecon/Jacobs, "*Bottom-Up Efficiency Assessment of DAA/Dublin Airport OPEX*", pg22

IJ Reference	Issue	Response
<b>Staff Numbers (Slide 10)</b>	<ul style="list-style-type: none"> <li>• IJ claim that a complete breakdown of security numbers was not provided</li> <li>• IJ link the increase in cleaning staff to passenger congestion</li> <li>• IJ link the increase in terminal staff to a requirement to deal with terminal congestion</li> </ul>	<ul style="list-style-type: none"> <li>• DAA provided the available information in every instance in response to various requests for information from the Commission.</li> <li>• The increase in cleaning staff was also connected to the fact that 2008 was the first full year of operation of Pier D with a retained TBG.</li> <li>• Increase in terminal staff also impacted by trolley/ landside operations appropriate to increased passenger numbers. (Note it may be that IJ's comparisons between Dublin and other unidentified airports are impacted by the fact that DAA carries out landside functions such as taxi queue marshalling, gardening services etc whereas comparators may not).</li> </ul>
<b>Head Office Costs (Slide 12)</b>	<p>IJ note that the improvement in operating cost per passengers appears to be driven by a fall in costs at a corporate level. However, in a continued effort to discount DAA's focus on efficiency and cost control, it states</p> <p><i>"It should be noted that the fall in operating costs per passenger at the corporate level was less likely to be driven by operational efficiency but instead could be the result of restructuring following the passage of the State Airports Act in 2004."</i></p>	<p>No such restructuring has occurred and in fact as noted by the Commission in paragraph 2.6 of CP3/2009 <i>"the Commission is not aware of any plans to separate the three State airports"</i>. On this basis the assertion by IJ is wholly without foundation.</p>
<b>Security (slide 18)</b>	<p>IJ refer to the "ASU" function as "passenger security".</p>	<p>In response to an information request, details were provided to the Commission on 1<sup>st</sup> May that illustrated that some 20% of total ASU staff covers a number of fixed posts including Staff Screening at four locations and staff access control at one.</p>
<b>Security (slide 19)</b>	<ul style="list-style-type: none"> <li>• IJ state that the security areas have 6 &amp; 3 WTMD</li> <li>• Incorrect ASU number used</li> </ul>	<ul style="list-style-type: none"> <li>• The security areas have 6 and 4 WTMD.</li> <li>• The actual average number of ASU staff for 2008 was ■ of which ■ FTE were capitalised in relation to construction activities, therefore the correct number for the purposes of assessing DAA's level of staffing is ■■■■■ For the record, these figures included ■ Duty Managers, ■ supervisors and ■ trainers.</li> </ul>

IJ Reference	Issue	Response																																																																																										
<b>Security (slide 20)</b>	The conclusion based on IJ's simulation is that Dublin staffing in 2008 is "not unreasonable".	Given that IJ's analysis suggests that a multiplier of 1.6x would be more appropriate than DAA's ■ then the staffing should at least be considered to be "reasonable" rather than "not unreasonable", indeed it would be more appropriate to consider the staffing levels as extremely efficient.																																																																																										
<b>Security (slide 21)</b>	IJ note that "Efficiencies could be achieved if more flexible shift patterns were introduced"	DAA regularly reviews rosters to ensure that they reflect the traffic flow as closely as possible. A combination of 8, 6 and 4 hour shifts are already in place. Shifts starting every half hour would be extremely challenging to manage and would result in significantly increased administration costs. Also DAA is unaware of any airport facility operating a 2hr shift, in fact it would appear unreasonable to assume that it would be possible to employ staff to cover such shifts given that the average travel time for staff to the airport in 2008 was almost half an hour, i.e. average 1 hour round trip, or 50% of the suggested 2 hour shift. Travel time to work would not make such a shift attractive.																																																																																										
<b>Security (slide 22)</b>	"Security efficiency tended to decline after 2006"	<p>DAA notes that IJ conclude in slide 22 that staffing is "reasonable". However, it may be worth noting that, in addition to the liquids ban in 2006, there has been a marked increase in the amount of cabin baggage brought through Dublin Airport Security Screening by passengers as a result of the changes in the charging policy of key airlines based here (attached chart details the increase in baggage handling charges imposed by Aer Lingus and Ryanair since 2006). All indications are that this trend will continue into the future – Ryanair has recently suggested that all passengers should carry their hold baggage to the aircraft.</p>  <table border="1" data-bbox="958 906 1870 1321"> <caption>Baggage Handling Charges (Estimated from Chart)</caption> <thead> <tr> <th>Month</th> <th>Aer Lingus Online</th> <th>Ryanair Airport</th> <th>Aer Lingus Airport</th> <th>Ryanair Online</th> </tr> </thead> <tbody> <tr><td>Jan-06</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Mar-06</td><td>0</td><td>7</td><td>0</td><td>3.5</td></tr> <tr><td>May-06</td><td>0</td><td>7</td><td>0</td><td>3.5</td></tr> <tr><td>Jul-06</td><td>0</td><td>7</td><td>0</td><td>3.5</td></tr> <tr><td>Sep-06</td><td>0</td><td>7</td><td>0</td><td>3.5</td></tr> <tr><td>Nov-06</td><td>0</td><td>7</td><td>0</td><td>3.5</td></tr> <tr><td>Jan-07</td><td>0</td><td>7</td><td>8</td><td>3.5</td></tr> <tr><td>Mar-07</td><td>0</td><td>7</td><td>9</td><td>3.5</td></tr> <tr><td>May-07</td><td>0</td><td>7</td><td>9</td><td>3.5</td></tr> <tr><td>Jul-07</td><td>0</td><td>15</td><td>9</td><td>3.5</td></tr> <tr><td>Sep-07</td><td>0</td><td>15</td><td>9</td><td>3.5</td></tr> <tr><td>Nov-07</td><td>0</td><td>15</td><td>9</td><td>3.5</td></tr> <tr><td>Jan-08</td><td>0</td><td>16</td><td>12</td><td>9</td></tr> <tr><td>Mar-08</td><td>0</td><td>15</td><td>12</td><td>9</td></tr> <tr><td>May-08</td><td>0</td><td>18</td><td>12</td><td>9</td></tr> <tr><td>Jul-08</td><td>0</td><td>18</td><td>12</td><td>9</td></tr> <tr><td>Sep-08</td><td>0</td><td>20</td><td>12</td><td>9</td></tr> </tbody> </table>	Month	Aer Lingus Online	Ryanair Airport	Aer Lingus Airport	Ryanair Online	Jan-06	0	0	0	0	Mar-06	0	7	0	3.5	May-06	0	7	0	3.5	Jul-06	0	7	0	3.5	Sep-06	0	7	0	3.5	Nov-06	0	7	0	3.5	Jan-07	0	7	8	3.5	Mar-07	0	7	9	3.5	May-07	0	7	9	3.5	Jul-07	0	15	9	3.5	Sep-07	0	15	9	3.5	Nov-07	0	15	9	3.5	Jan-08	0	16	12	9	Mar-08	0	15	12	9	May-08	0	18	12	9	Jul-08	0	18	12	9	Sep-08	0	20	12	9
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IJ Reference	Issue	Response
<b>Security (slide 22)</b>	<ul style="list-style-type: none"> <li>• Dublin Airport’s Security Staffing is considered “reasonable” when the 2008 figure is compared to 4 other airports.</li> <li>• Reductions in staff are perceived to be possible if: <ul style="list-style-type: none"> <li>○ The service standard is relaxed</li> <li>○ The staffing requirement per WTMD was relaxed</li> <li>○ Further flexibility in rostering patterns was achieved</li> </ul> </li> <li>• We would expect the numbers of security FTEs in 2009 to fall at the same rate as passengers</li> </ul>	<ul style="list-style-type: none"> <li>• The data for three of these airports come from 2006. Liquid restrictions, which the author agrees would lead to a decline in security staffing efficiency, were only introduced in November 2006 therefore IJ are not making an appropriate comparison. In fact, given the impact of the liquids restrictions on security operations at airports DAA’s performance would undoubtedly be shown to be better than the others if the appropriate comparison was made.</li> <li>• Reductions <ul style="list-style-type: none"> <li>○ Service: We agree that this would be the case in theory; however such a move would be inconsistent with the Commission’s requirements regarding service quality and its stated intention to levy penalties on DAA if service levels fall.</li> <li>○ One man and one woman staff member per WTMD is not possible to relax without reducing throughput which would impact on service quality as noted above. See points made in relation to slide 21 above</li> </ul> </li> <li>• As some 20% of ASU staff are allocated to activities that are not passenger related and given that passenger numbers do not decline evenly over the entire operational day, week or year, the assumption that ASU FTE’s will or can fall at the same rate as passenger numbers in 2009 is flawed.</li> </ul>
<b>Retail (Slide 23)</b>	<p>IJ note that <i>“The insourced retail operation operates duty free shops in the airport together with the stores accounting and other back up”</i></p>	<p>This is incorrect. The in-sourced Direct Retail activities are the retailing activities managed and operated by DAA, where the company is responsible for the procurement, merchandising and retailing of certain categories through DAA’s own retail space. DAA manage and directly operate the duty free shops in Dublin Airport, <b>as well as</b> tax paid outlets in the piers and in the main airside retailing concourse (“The Street”), selling perfumes, skincare and cosmetic products, crystal, china and linen, knitwear and leisurewear, toys, cameras, sunglasses and travel accessories. The income model for Direct Retail is based on earning gross income on the margin between the retailing price and the cost of goods. DAA is also responsible for all of the operating costs associated with its own retail space – most notably staff costs. Therefore, based on the above, it is incorrect to state that DAA’s insourced retail operation is confined to Duty Free shops with all Duty Paid activities provided by concessionaires.</p>

IJ Reference	Issue	Response
<b>Retail (Slide 23)</b>	<p>The Indecon / Jacobs report puts forward "Airport 3" as an appropriate comparator airport.</p>	<p>There are a number of points that need to be addressed before it can be established that the comparison is in fact an appropriate one:</p> <ul style="list-style-type: none"> <li>• The use of a single comparator is not a robust basis on which to determine that a company is efficient or inefficient, particularly when there is no clarity as to the business model, operating profile, location and organisation of the airport company which may impact on the appropriateness of the comparison.</li> <li>• The report states that the comparator airport has a lower duty rate and a higher proportion of domestic traffic so it could be expected that Dublin should be performing some 5 – 10% better – it appears that this is based on the assumption that the direct operation at Dublin Airport is purely a Duty Free Operation. This is factually incorrect – just 14% of Dublin Airport's traffic in 2008 was to Duty Free destinations.</li> <li>• The opening times, traffic mix and passenger throughput patterns of the comparator airport are not disclosed. DAA operates its shops from 5am to 11pm, an average of 6,500 hours per annum. The location(s) / layout(s) of the retail outlet(s) in the comparator airport are not provided either. The majority of Dublin Airport's retail activities take place along "the street" in individual units. Whilst certain efficiencies may be available to retail outlets operating in an open plan department store fashion, this is not available to DAA given the infrastructure available within the street, due to the congestion levels and necessary staffing levels required in order to meet customer service targets and adequately protect stock from pilferage / theft.</li> <li>• The proportion of direct retailing Vs concessionaires of the comparator airport is not discussed either. The spend per passenger and the staffing levels, given that the passengers at this airport are almost 50% greater than Dublin airport, would suggest the proportion of concessionaires is significantly higher at Airport 3 than at Dublin Airport. Either that or the actual retail offering at airport 3 is significantly limited compared to Dublin. Either way it is not appropriate to compare the two airports on turnover per employee, in order to estimate the appropriate staffing level. It would be more appropriate to use some form of added value per employee calculation, on the direct retail only as certainly the turnover figure for Dublin is the total of both direct and concession, and DAA can only assume it is the same for Airport 3.</li> </ul>



IJ Reference	Issue	Response
Retail (Slide 23) cont'd		<p>Points that need to be addressed before it can be established that the comparison is in fact an appropriate one (cont'd):</p> <ul style="list-style-type: none"> <li>• It is not disclosed if the comparator airport operates its own warehousing or if this is operated by a 3rd party solutions provider. DAA operates its own bonded warehouse</li> <li>• The range of products sold by the comparator airport authority is not disclosed – it should be pointed out that broad range of products sold by DAA require appropriate staffing with specialist knowledge, particularly in the areas of electronics, liquor, perfume &amp; cosmetics which are not easily transferrable from other departments.</li> </ul>
Retail (Slide 23)	<p>One of the reasons that is put forward for the higher manpower levels than necessary <i>“could be the relative inflexibility of roster patterns to passenger throughput (illustrated in the table below)”</i>.</p>	<ul style="list-style-type: none"> <li>• DAA does not recognise the table incorporated in the slide. This table appears to have ignored the shifts which commence at 6am, 8am and 9am. In addition, no account appears to have been taken of the new rostering arrangements that have been agreed with staff representatives in respect of T1x (information which was supplied to the Commission). These improvements had been factored into the staffing forecasts provided to the Commission. In summary, therefore it is inappropriate to state that there is a <i>“relative inflexibility of roster patterns to passenger throughput”</i>.</li> </ul>
Retail (Slide 23)	<p>Indecon / Jacobs admit that it is on a <i>“limited basis”</i> that it appears that the DAA retail operation <i>“may have higher manpower levels than necessary”</i>.</p>	<ul style="list-style-type: none"> <li>• Indecon / Jacobs have used a single airport as a benchmark in order to make its comparison on the efficiency in terms of staffing of Dublin Airport. It does not disclose the location or continent in which this airport is based. The use of a single example against which to benchmark Dublin and claiming that this is an analogous operation without any detailed empirical normalisation for the types of activities at the respective airports other than generalised comparisons on turnover, staffing, duty and higher domestic traffic is wholly inappropriate. By using the generalised terms <i>“could be expected”</i>, <i>“it appears”</i> &amp; <i>“may”</i> IJ do not categorically state that DAA is in fact operating 5 – 10% less efficiently than it should be and, consequently this should not be relied upon as a basis of efficiency.</li> </ul>

IJ Reference	Issue	Response
<b>Maintenance (Slides 24/25)</b>	DAA welcomes the fact that IJ assess DAA's maintenance costs as " <i>reasonable</i> " and notes that IJ view Dublin as spending " <i>a low amount per passenger</i> " on maintenance. Despite these comments, IJ proceed to suggest that a reduction in costs of between 5 and 10% in outsourced contracts is achievable on the basis that more competitive processes could be introduced.	<ul style="list-style-type: none"> <li>It should be noted that as advised to IJ, DAA enters into competitive tendering for maintenance contracts. Maintenance contractors are challenged (during and post tendering) to develop the most cost effective and efficient models to meet the DAA requirements. However as some of our larger maintenance contracts are with 'sole suppliers' of the required service, DAA's negotiating position is often limited. Against this background, IJ's assertion re the scope for efficiencies in this area is not robust.</li> </ul>

IJ Reference	Issue	Response
<p><b>Cleaning (Slides 26/27)</b></p>	<ul style="list-style-type: none"> <li>• IJ claim that the cost of insourced resources are higher than outsourced</li> <li>• A conclusion is drawn that cleaning costs appear very high due to variance in per passenger costs and a “more extreme” variance on a per sqm basis.</li> <li>• It is claimed that FTEs can be reduced by between 25 and 50 in two ways. <ul style="list-style-type: none"> <li>○ better definition of cleaning service standards, differentiated by area</li> <li>○ improved rostering</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• IJ do not clarify how they came to this conclusion.</li> <li>• Based on IJ’s table Airport 1 has c.30m pax and c.245k sqm, Airport 3 has c.32m pax and c.274k sqm that gives an average of 8k and 8.5k sqm per million passengers respectively. Dublin airports figures on the other hand result in c.4.5k sqm per million passengers. Therefore the “more extreme” variance is primarily driven by congestion at Dublin Airport relative to these two “comparators”. What is even more interesting is that, even though the two “comparators” have both passengers and sqm’s of similar levels (they are certainly more comparable in this regard to each other than to Dublin airport), no explanation is forthcoming as to why there is such a cost per pax variance between these very similar airports. Could it be there are anomalies in the data being used by IJ, or that other costs at these airports have been overlooked in this analysis, or is it that there are other factors at work here such as airports in different countries with different conditions of employment (including different minimum wage levels), which could actually be the real explanation behind the variance in cost. It is interesting to note that IJ have not made an FTE comparison here, which might have avoided any possible wage rate anomalies.</li> <li>• DAA does not accept IJ’s rationale: <ul style="list-style-type: none"> <li>○ The first point implies deterioration in cleaning service standards, a suggestion which is unlikely to be acceptable to passengers and which is inconsistent with the Commission’s move to implement a service quality term in the price cap at a level equivalent to current levels.</li> <li>○ IJ suggests that when T2 opens more cleaning can be carried out in T1 during the day thereby reducing the costs. IJ’s efficiency exercise was meant to be carried out excluding T2, so any efficiency dependant on the opening of T2 should not be reflected in the base costs, but should only be taken into account in terms of the impact T2 may have on operating costs when the trigger is activated. In the meantime, cleaning should reflect the higher costs associated with what IJ themselves have acknowledged is “the high degree of congestion” which “will constrain working hours to some extent”.</li> </ul> </li> </ul>

IJ Reference	Issue	Response
<b>Terminals (Slide 28)</b>	<ul style="list-style-type: none"> <li>• IJ state that trolley services and Executive lounge services are not usually carried out by airport management.</li> <li>• IJ suggest that “manning is high in areas where comparison is possible with other airports”</li> <li>• IJ note DAAs explanation of congestion resulting in higher costs in this area, particularly with regard to queue management; however they only partially accept this argument.</li> <li>• “A limited cut in staff of between 10 and 15 FTEs in the Information Centre could form the basis of an optimised staffing level, bringing staffing of these areas overall into line with benchmarks”</li> </ul>	<ul style="list-style-type: none"> <li>• This is incorrect. Several airports e.g. Stockholm, Vienna, Frankfurt, Munich, Warsaw engage in these activities in the same way as Dublin.</li> <li>• There is no visibility as to who these airports are; no details as to which functions are carried out in-house, no discussion on the activities defined as “terminal” functions. It is, therefore, impossible to comment on whether comparison is in fact possible or appropriate.</li> <li>• It is worth noting that Airport 2 (also used in the cleaning comparison) has almost twice the sqm per million passengers than Dublin. To reduce congestion management costs, prior to the opening of T2, would lead to reduced service levels, in direct contradiction to the Commissions proposed service quality targets. Without queue management at a congested airport like Dublin it would be impossible to achieve the security queuing target proposed by the Commission, because not only to the customer service staff manage the queues they also inform passengers of the liquid restrictions prior to arriving at security in order to help speed up this process and keep the queues moving.</li> <li>• The FTE numbers alluded to in the information desk are inclusive of Operational Managers, Information desk staff and customer service staff operating in the terminal. The customer service FTEs as separately identified on the 5<sup>th</sup> line of the table are engaged in quality administration i.e. the Quality Mark, SLAs and customer complaints.</li> </ul>
<b>Commercial (Slide 29)</b>	<ul style="list-style-type: none"> <li>• The responsibilities listed by IJ for this Department are property management, development and strategy.</li> <li>• DAA’s staffing levels are compared with Airports 2 and 4</li> </ul>	<ul style="list-style-type: none"> <li>• In addition to the activities listed by IJ, Commercial is also responsible for: <ul style="list-style-type: none"> <li>○ Management of Commercial Concessions revenue, including Car Hire, Banking, Hotels, Coach Services and Telephony</li> <li>○ Car Parks Revenue Management including financial management</li> <li>○ Marketing of Commercial &amp; Retail operations and promotion of Airport customer services</li> <li>○ Advertising Revenue generation and management</li> <li>○ Commercial Legal Services</li> </ul> </li> <li>• The extent of the property portfolios at the comparator Airports 2 and 4 are not divulged. Differences in the scope of this activity would have important implications for the accuracy of the benchmarking analysis. In fact a review of the staffing levels at the two comparators would suggest that it is the case that there are very significant variances in the extent of the portfolios of these two airports (even before Dublin is considered), but no explanation is forthcoming for this.</li> </ul>

IJ Reference	Issue	Response
<b>Airport Management and Head Office (slide 30-32)</b>	<ul style="list-style-type: none"> <li>• <i>“Dublin’s corporate activity appears to have high levels of manning particularly in planning and finance”</i></li> <li>• <i>“Comparisons are difficult because of differences in scope and lack of clarity on exact scope of roles”</i></li> </ul>	<p>The Jacobs Indecon conclusions regarding Head Office and Dublin Airport Management FTEs contrast sharply with those of BAH from just four years ago. The reference to excess Head Office Finance staff in particular, is difficult to reconcile with BAH’s conclusions following the benchmarking of HR and Finance staff as follows: <i>“these two labour intensive parts of Head Office functions do not seem materially different from benchmarks in general commercial companies”<sup>3</sup></i>.</p> <p>Lack of clarity with regard to roles may explain why IJ claimed that finance in particular has high levels of manning. For example, the functions carried out by the DAA Shared Service Centre (which consolidates finance, transaction processing and back office costs to deliver sustainable efficiencies across the entire business) are often outsourced, as are functions carried out by DAA’s IT Section. If this is the case for Airport 2 then the FTE’s would not be reflected in Airport 2, but the cost of the service would be reflected in its non payroll costs. This could be the explanation for the significant variance in this area.</p> <p>Without visibility of Airport 2 it is impossible to comment on the table comparing this airport with the combined Dublin airport management and Head Office functions and to assess whether the scope for efficiencies assumed by IJ are accurate and/or appropriate.</p>
<b>Energy (slide 34)</b>	<i>“The current DAA projections for energy cost appear to assume unfounded price and quantity increase”</i>	<p>DAA clearly indicated that the forecast energy did not assume any quantity increase for existing facilities, that increases were reflecting expected price increases only. It is interesting to note that IJ’s analysis uses the 2009 estimate as a starting position, when for all other costs 2008 is used. Energy costs for DAA were €6.2m in 2008. The only reason for the significant drop in 2009 is as a result of DAA successfully hedging energy costs for that year. IJ were also informed that DAA did not expect to be able to hedge the costs going out into the future (although some hedging has been reflected in 2010). Based on IJ’s price increase assumption of 4% per annum, had DAA not hedged its 2008 position, IJ’s projection would in fact be closer to €8m for existing facilities, i.e. c.500k higher than DAAs projection. Therefore DAA’s energy costs are efficient. At this point it is also worth noting that the Commissions downward adjustment to energy costs is completely inappropriate, as replacement of CHP 2 does not deliver additional efficiencies in costs, it protects the efficiencies already reflected in Dublin Airports cost base. If CHP 2 is not replaced the impact would be an increase to existing energy costs when the existing asset reaches the end of its already extended life in 2011.</p>

<sup>3</sup> Dublin Airport Bottom Up Efficiency Study, BAH, May 2005, slide 112

IJ Reference	Issue	Response
<p><b>Other Costs (slide 35)</b></p>	<ul style="list-style-type: none"> <li>• IJ came to the conclusion that several of the remaining cost areas not covered in its detailed review were FTE linked</li> <li>• IJ claims that Airport 1 operates in a more complex regulatory and planning environment than Dublin Airport.</li> </ul>	<ul style="list-style-type: none"> <li>• This conclusion was arrived at without any discussion with DAA as to what the nature of these costs was. Erroneously IJ included Car Park Overheads in this generalisation. Car Park Overheads is primarily bussing, and therefore would more appropriately be linked to passenger numbers and not FTE's.</li> <li>• DAA is also surprised at the suggestion that Airport 1 operates in a more complex regulatory environment. Since the inception of airport charge regulation in 2001, there has been: <ul style="list-style-type: none"> <li>○ 2 regulatory determinations (and we are engaged in the third)</li> <li>○ 2 judicial reviews</li> <li>○ 3 appeals and associated reviews</li> <li>○ 2 interim reviews.</li> </ul> </li> </ul> <p>In addition, Dublin Airport is dealing with the implications of the States Airport Act 2004, the possible impact of separation and the T2 tender process. The company has also been through a bond issue and significant asset sales in recent years. DAA will have to refinance an existing bond during the next determination period, and a reasonable assumption based on its experience to date, is that there will be at least an Appeal process to content with in the course of the next 5 years.</p> <p>Finally, it is not, as suggested by IJ, levels of outsourcing that drives the need for external advisors, but all of the external issues a company has to deal with that primarily drives this cost.</p>
<p><b>Comparison with DAA estimates 2010-2014 (Slide 40)</b></p>		<p>DAA produced forecasts which assumed T2 coming on stream during 2010. IJ took DAA's forecasts and amended them to come up with figures IJ claim reflect DAA's forecasts excluding T2. As DAA have been unable to reconcile these figures in any way to its own forecasts, and have expected these figures should actually be higher than reflected here, this would suggest IJ's assumptions regarding its overall efficiency target is in fact higher than the claimed 10%.</p>

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7<sup>th</sup> August 2009

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## **Supporting Document IV: Opening RAB Omissions**

In its assessment of the 2006 – 2009 capital programme, the Commission has made a number of draft decisions, many of which have the effect of penalising DAA unfairly, as summarised below :

Capital Investment	Key DAA message
Project Management (Capitalised labour)	CAR has inadvertently excluded capitalised Project Management costs in its assessment of the 2006 – 09 reconciliation.
Section 49 levies	DAA liability is independent of Metro North commencement date.
Pier D final cost	All Pier D costs should be allowed into the RAB.
T2 associated projects	These projects are either not exclusively associated with T2 or are required to support the full Transformation programme, and should therefore be allowed into the RAB from the outset of the next price review period.
Omitted Projects	CAR has omitted three projects from its assessment of the reconciliation which should have been incorporated.
“Other Capacity Projects”	CAR has allowed only the original CIP value of these projects, and has not considered the outturn value.
T2 Box 2 financing charges	CAR has already committed in 2007 to allowing these financing charges.

A detailed commentary on each of these issues follows.



## Project Management Costs

CAR requested a reconciliation of original project costs for the 2006 – 2009 CIP with the final outturn costs, and DAA prepared such a summary as follows :

1. All project outturn costs were deflated to 2006 prices
2. 2007 and 2008 costs were deflated using CPI, while for work to be done in 2009, 4% inflation was used on the basis that the majority of the CIP projects were tendered and prices agreed during 2008.
3. DAA project management costs were deducted from each project outturn figure in order to allow for a valid comparison with the original CIP budgets. These costs were excluded from the CIP 04 submission in order to follow the precedent set in CIP 03, in which the levels of capex and associated project management costs were much lower. At that time the majority of such costs were expensed rather than capitalised, in line with DAA's accounting policy which has since been reviewed and revised.

In its draft assessment of this reconciliation, CAR amended DAA's analysis by inflating its comparison project costs to 2009 prices, using CPI indices of 4.0%, 4.9%, 4.1% and -1.0% for the years 2006, 07, 08 and 09 respectively. DAA disagrees with CAR's approach to inflating capital projects, as the majority of the CIP 2006 – 2009 projects were tendered in 2007 or 2008 and so will be unaffected by CAR's proposed deflationary index in 2009. This is a particular issue in relation to T2 and Associated projects as the costs were essentially tendered and committed prior to 2009 but much of the spend occurs during 2009.

In doing so it does not arrive at our outturn prices restated in 2009 prices due to the different indices used for 2009. Also, in using this figure, the capitalised project management costs, which are a valid part of the cost of project delivery, are inadvertently omitted. DAA's approach to the resourcing of Programme and Project management for the 2006 – 2009 CIP has been to maintain a core in-house sustainable team of technical and support staff, supplemented with contract / consulting staff that can be more readily scaled up or down as project volumes fluctuate throughout the duration of the programme. This flexible approach has proven highly successful as evidenced by the delivery of the 2006 – 2009 CIP on time and budget. DAA therefore intends continuing this approach into the next CIP.

In order to clarify all of the valid project costs for each project in the CIP, DAA has restated its original reconciliation (*see schedule at the back of this Detailed Assessment*) as follows :

- Original CIP submission inflated to 2009 prices using CAR's proposed indices (Column A).
- DAA project outturn costs (excluding Project Management Costs), inflated to 2009 prices using CAR's proposed indices, in order to align both calculations. (Column B).
- DAA project outturn costs inflated to 2009 prices using CAR's proposed indices, including Project management costs<sup>1</sup> in order to more accurately reflect the full cost of delivering each project in the CIP (Column C)

DAA requests that CAR amend its outturn calculations to reflect the above approach, and in doing so to allow the full project costs (contained in Column C) into the RAB as part of its assessment of the reconciliation.

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<sup>1</sup> Project Management costs for T2 and associated projects have been listed separately.

## Section 49 levies

Section 49 levies related to the T2 project of €19.5 million (2009 prices) are payable by DAA to Fingal County Council by the end of 2009. CAR has suggested that<sup>2</sup>

*“there remains some uncertainty around the timing (and delivery) of the Metro North project in the environs of the airport. It is uncertain whether the DAA will actually incur such costs prior to the end 2009”*

DAA would like to clarify as follows:

- DAA is liable for development levies under the “Planning and Development Act 2000 Supplementary Development Contribution Scheme For Metro North” (See <http://www.fingalcoco.ie/Planning/PlanningItemsOnDisplay/PlanningItemsPreviouslyonDisplay/A-KPreviouslyonDisplay/DevContributionScheme-MetroNthAirportSwords/FileDownload,19779,en.pdf>).
- As stated in paragraph 9 of the contribution scheme rules, “contributions must be paid on commencement of the development or on a phased basis agreed with Fingal County Council”. It is clear that the timing of contribution payments is not in any way linked to the start or finish date of Metro North construction.
- Delays to the start of completion of Metro North will not affect the timing of payment of construction levies. This scheme has a life of 30 years.
- Were Metro North to be cancelled (rather than delayed or postponed) then DAA would be entitled to a rebate of contributions paid under this scheme.

DAA is currently in the process of agreeing its final liability to end of 2009 with FCC, and estimates that this will be €19.4 million (outturn), or €17.2 million in 2006 prices. DAA anticipates that this payment will be discharged by end 2009.

## Pier D

DAA submitted a full explanation and justification of the final Pier D costs in Appendix D of its response to CAR’s October 2008 Issues Paper. In the Cost Benchmarking section of that Appendix, DAA demonstrates that Pier D benchmarks very favourably when its costs are compared to similar Piers at other comparable airports (€4,738 per square metre, which is 10% lower than the average of €5,242 per square metre).

DAA welcomes CAR’s recognition that the cost overruns related to the walkway element of the project were largely due to elements outside of DAA’s control. DAA also welcomes CAR’s decision to allow costs related to contact stands, retention of TBG and airport Operations driven changes into the RAB.

However, given that DAA provided a detailed breakdown and commentary which set out all of the legitimate reasons for the various categories of cost increases, it is extremely disappointing that many of these costs have been disallowed in a somewhat arbitrary manner:

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<sup>2</sup> CAR Draft Determination, paragraph 9.24

- Amendments to walkway at Pier A €1.8m: As set out in the Appendix, these changes were required in order to consolidate immigration processing for Piers A and D into one operation, thereby realising greater efficiencies. This decision seems somewhat inconsistent with CAR's decision to allow all other costs associated with the walkway construction.
- Improved building aesthetics and life cycle improvements €2.2m. The extra capital spent under both of these categories will result in lower total life costs for the assets by lowering both maintenance and replacement costs, and reducing energy requirements. DAA would have thought that any such initiatives would have been positively received by CAR.
- Value added scope increases €2.5m. For the most part these changes were outside the control of DAA, and so as with the additional costs associated with the walkway, should be allowed in full. The change to FIDS screen technology from CRT, for example, was a necessary result of a rapid change in standard screen technology which took place during the period when the project was delayed. The provision of new temporary corridors to the TBG are included in this category and have been disallowed, despite the fact that the €0.5 million cost associated with the modification of construction schedules in order to retain the facility have been allowed by CAR.
- Design Development €5.6m. DAA has always argued for an adequate project contingency for the Pier D, and so agrees with CAR (para 9.17 of the Draft Determination) that Design Development costs

“..should therefore have been [either] captured directly in the contingency allowance set a the time of project costing ..”

A contingency budget was always deemed necessary for a project that at the time was the largest undertaken by the company (in value terms), involved both airside and landside construction sites and the provision of major underground services. DAA further argued that the use of a design development budget is normal in most construction projects, particularly those with a fast-track programme whereby final design of many items is still being carried out while the early phases of actual construction have commenced.

In conclusion, DAA has delivered the Pier D project to an extremely challenging programme as directed in the Government's Aviation Action Plan, to a cost which benchmarks favourably with international comparable assets. Therefore, DAA not unreasonably expects to be fully remunerated for the asset.

## **T2 Associated Projects**

CAR has classified 17 projects as “T2 Associated Projects” (as set out in table A3.7 of the Draft Determination). With the exception of CIP 7.027 Customs and Border Protection, the implications for DAA from this classification are :

- Remuneration will not commence until the T2 trigger is reached
- By deferring the reconciliation of proposed and actual spend until the fourth determination, there exists a lack of clarity regarding CAR's treatment of over or under spends until 2014 – which is inappropriate for projects that have all been completed or largely completed in 2009.

As highlighted in our submission to CAR during the 2007 Interim Review :

*“ the projects included in the T2 Associated Projects grouping are either not associated with T2 or are required to support the full development programme. For example, some projects relate to the provision of utilities and services, which support airside and T1 enhancements, in addition to T2 and the piers.”*

Furthermore, and as noted in the Section of the main DAA response entitled “CAR approach to depreciation”, DAA made a similar case to the Appeals Panel in 2008. The Panel specifically provided that, to the extent that the Commission uses a unitised method of depreciation “it should ensure that the adoption of such an approach does in fact deliver the profile expected by the Commission”. The Panel also provided that the unitised approach “should be confined to projects which are clearly T2 associated projects”.

Since that time, many of the projects in question have been delivered or else they are scheduled to be delivered by the end of 2009 and as such it is not equitable to delay their inclusion in the RAB past that date.

The following table reiterates the detail to support these arguments. We are asking CAR in its final determination to include all of these projects in the opening RAB for the next period:

Project	Outturn value €m	Rationale for project	Completion date
CIP 8.010 Programme Fees	18.4	Programme fees are not T2 specific, but in fact relate to the management of the entire 2006 – 2009 Capital Programme. This entire budget will be spent by end 2009: there is no roll forward to 2010.	End 2009
CIP 2.006 Car Hire	26.3	A requirement for an enlarged, consolidated car hire facility existed independently of T2. This is evidenced by the fact that a significant proportion of the existing car hire facilities were temporary in nature, reflecting the long standing understanding that the relocation of Car Hire to Eastlands has been in the Dublin Airport Masterplan for the last 10 years. While T2 commencement served as the trigger to commence the works, many of the car hire companies were not located on the footprint of T2 but in other locations around the airport.	Oct 07 – Feb 08
CIP9.013 & CIP9.014 & CIP9.015 Surface Water Projects	██████	<p>These investments were made to comply with the Water Framework Directive (2000.06/EC), transposed into Irish law. Specifically, the project drivers were as follows :</p> <ul style="list-style-type: none"> <li>• The requirement to attenuate and treat all water run-off from the airfield for both new developments and all legacy developments as defined in the FCC’s Local Area Plan.</li> <li>• The requirement to achieve new volumetric run-off and quality standards for all landside</li> </ul>	<p>Phase 1 Jun 2008</p> <p>Phase 2 Mar 2009 (9.013 and 9.014)</p> <p>Early 2010 (9.015)</p>

		<p>developments.</p> <ul style="list-style-type: none"> <li>The bulk of the work relates to the airfield development programme.</li> </ul> <p>These provisions are over and above any existing provisions within the Terminal 2 project and associated cost plan.</p>	
CIP 9.004 Electrical distribution system enhancements HV	■■■■	This project involved increasing electrical capacity from 10 mVA to 20 mVA. While the T2 development partly contributed to the need for increased capacity, growth in airport activity, the requirement for a resilient network and new airfield projects also needed the increased capacity.	Feb – Jul 2009
CIP 9.005 Electrical distribution system enhancements MV	■■■■	This project involved the general upgrading of the distribution system to complement 9.004 above.	Dec 2009
CIP 9.007 Potable Water storage and service pipe upgrade	5.4	<p>A new location was required for an appropriately sized system for the totality of campus requirements, driven primarily as an enabling project to facilitate development of the entire campus over the long term, consistent with the masterplan..</p> <p>The principal output from this project was a new reservoir providing 3 days' storage of potable water. While the driver was partly the increased demand from T2, the principle driver was the increasing passenger numbers demanding more water via catering and other facilities, independent of the addition of T2.</p>	Oct 08
CIP 9.008 Potable Water Distribution System enhancements	1.4	See above – this project is linked to CIP 9.007.	Oct 08
CIP 3.005 Bus Park entrance and exit road	2.7	This project provided a short term facility for bus parking due to insufficient capacity to carry out such operations on the existing departures road. These works are completely independent of T2.	Feb 2007
CIP 3.009 Internal Campus Roads, plus CIP 9.003 Utilities Diversions excl T2	■■■■	These projects were combined at the project delivery stage into a new CIP 7.323. Project was driven primarily from increased passenger numbers and the need to cater for the extra vehicular traffic that this increase generated. This increased demand is irrespective of the construction of T2 per se.	
CIP 9.006 Gas	1.6	The requirement for this project was based on a	Dec 2009

Distribution System		<p>number of key factors;</p> <ul style="list-style-type: none"> <li>• The existing system was at full capacity, which prohibited any further additions following Pier D.</li> <li>• The existing network did not have adequate resilience, and was dependent on a single spur from the ring main.</li> </ul> <p>In summary this investment is connected to all capital projects within the CIP, including key projects post 2009 and thus should not be linked explicitly to Terminal 2.</p>	
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We also note that CAR intends delaying its consideration of variances between the CIP budget and outturn costs until 2014. This too is a fundamentally unfair approach for the same reasons as outlined above – DAA urges CAR to amend its approach in the Final Determination and to assess variations in these projects at the same time as considering the overall reconciliation of the 2006 – 2009 Capital Investment Programme.

## T2 Box 2 financing charges

The proposed clawing back from the opening RAB, of the return on T2 box two assets earned by DAA prior to 2010 is not justified and is contrary to the Commission’s position in the Interim Review Final Decision (CP6/2007). If the Commission reneges on its original intention it creates ambiguity regarding the treatment of financing costs for investment and increases DAA’s regulatory risk.

In the Interim Review Final Decision (CP6/2007) published in July 2007, the Commission stated that it was allowing for full pre-funding of capital expenditure for T2. In the case of T2 box 2, CAR noted just one exceptional circumstance where DAA would not receive these financing costs

*“nor will the DAA receive financing costs for box two after 2018 should demand not have exceeded 33mppa”.*<sup>3</sup>

However, in Section 9.31 of the Draft Decision the Commission proposes netting a sum of €11.3m from the opening RAB equal to the return (with interest, in 2009 prices) on T2 Box 2 assets earned by DAA prior to 2010.<sup>4</sup>

Changes by the Commission to the way a particular asset is included in the RAB, in effect breaks the regulatory contract. The implementation of claw-backs of revenue earned in previous periods adds to the overall risk and uncertainty faced by the regulated company, thereby increasing the required cost of capital. Such a move by the Commission would also

<sup>3</sup> CP6/2007 Interim Review Final Decision p.g. 40

<sup>4</sup> In doing so the Commission notes the views expressed by the 2008 Appeal Panel.

be contrary to the express views of the 2005 Aviation Appeal Panel which noted in paragraph 6.4.5 as follows:

*“It is also a key principle of the standard CPI - X approach that price or charge caps, once determined, are ‘pre-determined’ for the relevant period, meaning that, although the charges may be adjusted (e.g. to reflect inflation) they will be adjusted in ways that cannot be materially influenced by either the regulator or the regulated undertaking”.*

The Panel pointed out that clawback violates this key principle, as its economic effect is equivalent to a retrospective, discretionary adjustment of charges that were meant to be predetermined.

It should be noted that the Commission proposals to penalise DAA by clawing back the financing costs allowed for T2 are also inconsistent with previous decisions not to recompense DAA for lost earnings when amending actions following a referral from an Appeal Panel. For example, following the 2005 Appeal Panel decision CAR reinstated the stranded portion of Pier C but did not restore lost earnings to DAA.

CAR must be seen to act fairly and not opportunistically. In this context, the Commission should not amend its decision to allow the financing costs for T2 box 2. If the Commission proceeds to change its view on this, any changes should take effect for the forthcoming periods only - CAR should not make an *ex post* adjustment to claw-back revenue that the company received in the period since 2006.

## **Omitted Projects**

CAR has excluded the following projects from its reconciliation (and thus from the RAB) without disclosing its rationale :

- TFL €6.7m. This facility was required in order to facilitate the construction of Pier D. The airlines have since strongly requested that the facility be retained at least until Pier E is operational. Furthermore, in its assessment of Pier D costs, CAR has allowed the €0.5 million cost associated with the modification of construction schedules in order to retain the TBG.
- Pier D fit out €1.5 m. This investment was required to fit out Pier D ramp accommodation, which resulted in a higher rental and therefore a stronger commercial return
- Engine Testing €0.3m Preliminary design / feasibility study fees required in order to be ready to delivery the project once the demand trigger is reached.

DAA requests that CAR include these projects in the opening RAB in 2010.

## **Other Capacity Projects**

CAR has only allowed the projects listed in Table A3.3 of its draft determination at their original CIP value and not at final outturn cost, which results in a net deduction of €3.3m. This approach is entirely inconsistent with CAR’s approach elsewhere as follows :

- All other workstreams have been correctly allowed at outturn value

- CAR's stated approaches in Draft Determination sections A1.16 and "Scenario 2" of Annex 1 support its reasons for using outturn rather than original budget costs :

*"..if the investment is overbudget as a result of changes in user requirements over time, then the commission would propose that such costs enter the RAB ...The commission would expect supporting evidence from the DAA demonstrating that users were aware that the changes would result in higher costs and that the generality of users supported the changed specification"*

In the case of CIP 7.025 Central Immigration Piers A and D, the outturn cost includes a second phase which will deliver an extended passenger queuing area and an additional vertical circulation area. Phase 1 of the Central Immigration project involved the consolidation of the existing Pier A and planned Pier D GNIB facilities into a single facility which was needed in time for Pier D opening in October 2007. A decision was made to defer phase 2 because separate planning permission was required for the additional works, a process which represented a potential delay to the overall Pier D project. Once Pier D was completed, this separate planning permission was applied for and was received in October 2008. The extended queuing area is required because at peak times significant demands on the existing area results in passenger dieback into the existing vertical circulation routes from Pier D and into the ground floor area of the OCTB, resulting in congestion and creating obstructions to outbound passengers using those gates as well as potentially hazardous congestion adjacent to the "down" escalators. The new extended passenger queuing area will greatly enhance the passenger experience by resolving these peak queuing issues and delivering an area capable of providing adequate capacity to prevent any dieback or queuing related issues outside of the primary GNIB area.

In the case of project CIP 6.037 Runway 10 /28 stopway bars, this was not a capacity driven project but rather a safety driven one. DAA has undertaken similar works as part of other airfield projects, and these have been allowed by CAR. However, these stop bar works were delivered as a separate project due to their scale, and DAA is being penalised due to CAR's classification. This project should be contained in the airfield workstream and if CAR had so done then the cost increase would have been absorbed in the overall workstream variance. Instead this project has been isolated in an inconsistent manner and the cost increase disallowed.



## Restated reconciliation of CIP 2006 – 2009.

CIP No	Name	Column A	Column B	Column C
		Original CIP inflated to 09 prices using CAR methodology €m	DAA Outturn Costs excluding PM costs inflated to 09 prices using CAR methodology €m	DAA Outturn Costs inflated to 09 prices using CAR methodology €m
CIP1.001	Additional works Harristown Car Park	0.36	-	-
CIP1.002	Car Parking Equipment	3.23	3.24	3.24
CIP1.003	Convert Site Compound to staff Car Park	0.18	0.65	0.76
CIP1.006	MSCP Short-term Car-Parking; 1500 spaces	29.68		
CIP1.007	Passenger Links (Atrium)	1.07	1.30	1.41
CIP1.008	MSCP Upgrade Phase 1	0.84	0.76	0.76
CIP1.009	Upgde Eastlands To Planning Compliance	0.15	0.00	0.00
CIP1.010	Staff Car park Relocations	1.21	0.00	0.00
CIP1.011	Upgde Eastlands To Permanent Status	5.22	4.76	4.86
CIP1.012	3000 Additional Spaces Harristown Ph 1	2.51	4.11	4.11
CIP1.013	2500 Additional Spaces Harristown Ph 2	2.57	2.27	2.38
CIP16.020	Blast Fence	0.00	0.22	0.22
CIP2.006	Car Hire Facilities Eastlands (was Dardistown)	13.05	25.95	26.27
CIP2.007	Office accommodation	1.08	0.86	0.97
CIP2.010	3F West End Cloghran House Re-Fit	0.11	0.22	0.22
CIP2.011	South Apron Village	0.00	4.00	4.00
CIP3.005	Bus Park_ Entrance & Exit Road	2.40	2.59	2.70
CIP3.009	Internal Campus Roads - Excluding Western Access	0.00		
CIP3.012	New Taxi Holding Area	0.11	0.32	0.32
CIP3.014	Remaining Perimeter Fence	0.78	0.43	0.43
CIP3.015	External Roads	1.34	1.30	1.30
CIP3.022	Upgrade Castlemoate House Phase 1	0.25	0.22	0.22
CIP3.028	Waste Recycling Units	0.59	0.00	0.00
CIP3.032	Temporary Passenger Waiting Area	0.54	0.00	0.00
CIP4.003	Baggage Reclaim Carousels	1.30	1.08	1.08
CIP4.006	Escalator 6	0.22	0.22	0.22
CIP4.007	New Chiller BOI Departures Flr.	0.22	0.11	0.11
CIP4.008	Rapid Intervention Fire Teander (R.I.F.T.)	0.51	0.54	0.54
CIP4.010	Refurbishment A Complex Lifts	0.40	0.32	0.43
CIP4.011	Refurbish & Replace PT 14 & 15 Lifts	0.43	0.43	0.43
CIP4.013	Repl Air-Handling Syst Pier B	2.57	0.32	0.43
CIP4.015	Replacement 2 Lifts PT17_PT18	0.13	0.11	0.11
CIP4.016	Replacement of Standby Generator at Main Terminal	0.81	0.00	0.00
CIP4.019	Pier D - Tennant Fit out Projects	0.00	1.41	1.51
CIP4.020	t1 Life Safety Improvements	0.00	3.03	3.14
CIP4.021	TBG Upgrade	0.00	0.54	0.54
CIP5.001	Landside Restaurant	1.91	1.62	1.62
CIP5.002	CCTV Commercial	0.04	0.00	0.00
CIP5.005	Landlord provision to Book Stores	0.14	0.11	0.11
CIP5.008	Pier A Breakroom	0.02	0.00	0.00
CIP5.009	Pier A New Bar	0.05	0.00	0.00
CIP5.012	Pier B Travel Value Refurbishment	1.72	1.62	1.73
CIP5.013	Retail Refurbishments	4.37	6.38	6.70
CIP5.015	Holiday Shop Revamp	0.12	0.11	0.11
CIP5.017	Vehicles Warehouse Centre	0.02	0.00	0.00
CIP5.018	Street Intersection	1.65	1.51	1.51
CIP5.025	Perfumery Revamp	0.35	0.32	0.32
CIP5.034	Retail - local projects	0.74	0.65	0.65
CIP5.035	Mezz Catering Dublin	0.11	0.00	0.00
CIP5.036	External Retail Delivery Facility - Excludes sortation e	5.41	0.00	0.00
CIP6.004	Airfield Equipment Upgrade	0.30	0.22	0.32
CIP6.005	Airfield Lighting Control System	0.80	0.76	0.86
CIP6.006	Apron Recon Nth Side Pier A	4.44	4.65	4.97
CIP6.009	Engine Run up Area	0.00	0.22	0.32
CIP6.012	Air Monitoring System	0.41	0.22	0.22
CIP6.014	Ground Power Pier B	0.90		

CIP6.017	Overlay runway 10/28	0.59	0.32	0.32
CIP6.018	Parallel Runway Fees	8.04	4.86	5.41
CIP6.025	Repl Centreline Lights 10/28	0.43	0.00	0.00
CIP6.026	South Apron Infill Phase 5B	5.87	10.70	11.24
CIP6.028	Refurbishment Taxiway H2	1.62	1.41	1.41
CIP6.029	Taxiway Centreline Lighting	1.70	0.00	0.00
CIP6.030	Taxiway P2 bypass for Phase 6 - MIKE 2	7.89	11.24	11.46
CIP6.032	Upgrade Approach Lights R_W 34	0.00	0.00	0.00
CIP6.033	Water Monitoring Equipment	0.26	0.54	0.54
CIP6.035	Aircraft Stands Phase 6C 6A 6B	55.42	35.68	36.65
CIP6.037	Runway 10/28 Stopbars	1.81		
CIP6.038	Central Apron Infill Phase 5 D	0.01	0.00	0.00
CIP6.039	North Apron Infill Phase 5 E	14.59	17.30	17.95
CIP6.040	Met Relocation	0.48	0.32	0.32
CIP6.041	MV Alteration	3.32	3.14	3.24
CIP6.042	Overlay Taxiway B4/B5/B6	5.00		
CIP6.043	Remedial works and diversion to support 6.035	6.59	0.00	0.00
CIP6.044	Cargo - Longterm solution	0.00	1.08	1.19
CIP6.045	Cargo - Shortterm Solutions	0.61	0.00	0.00
CIP6.047	Apron 5G	8.65	0.32	0.32
CIP6.050	Apron Taxiway 6 Overlay	0.00	0.00	0.00
CIP7.001	Airbridge #2	0.72	0.22	0.22
CIP7.002	T1X	59.22	54.70	57.08
CIP7.012	Pier D	122.32	124.33	126.49
CIP7.020	Temporary Forward Lounge	7.07	6.49	6.70
CIP7.023	Executive Jet Terminal - West	0.54	0.00	0.00
CIP7.025	Central Immigration Pier A & D	7.78	7.24	7.24
CIP7.028	Pier D Extension	6.49	2.49	2.70
CIP7.030	T2 & CBP	688.36		
CIP7.034	Area 14	16.22	16.65	16.76
CIP7.035	T2 Pier B Connectivity	0.00	0.00	0.54
CIP7.323	Campus Roads / Utilities	15.78		
CIP7.325	CHP Upgrade	0.00	1.73	1.73
CIP8.001	Operations & AITT	62.46	55.89	55.89
CIP8.010	Consultancy Fees	13.83	17.62	18.38
CIP8.011	Consultancy Fees - 1 - 250k	0.00	0.22	0.22
CIP8.012	Consultancy Fees - 2 - 350k	0.00	0.32	0.32
CIP8.013	Section 48 & 49 Contributions	0.00	19.14	19.46
CIP8.014	Masterplanning	0.00		
CIP9.001	Utilities Consultancy Services	1.08	0.11	0.65
CIP9.003	Internal Campus Roads Utilities	0.00		
CIP9.004	HV System Enhancements (38kV and 110kV)	11.14		
CIP9.005	MV Distribution System Enhancements (10kV)	7.46		
CIP9.006	Gas Distribution System Enhancement	2.05	1.62	1.62
CIP9.007	Potable Water Storage & Service Pipe Upgrade	4.54	5.30	5.41
CIP9.008	Potable Water & Fire Hydrant Distribution System	4.54	1.41	1.41
CIP9.009	Non-potable Water Storage	1.62	0.00	0.00
CIP9.010	Fire Hydrant Distribution System	1.62	0.00	0.00
CIP9.011	Sprinklers Distribution System	1.62	0.00	0.00
CIP9.012	Foul Water Drainage System Enhancements	4.32	0.76	0.76
CIP9.013	Surface Water Drainage System Enhancements	0.00	0.00	0.00
CIP9.014	(Airside) Surface Water Attenuation System	2.59	9.08	9.41
CIP9.015	Surface Water Quantity Attenuation System	5.19		
CIP9.016	Voice & Data Comms Corridors	2.92		
CIP9.017	Fuel Hydrant System	0.00	0.43	0.54
CIP9.018	Boiler House Replacement / District Heating	2.16	5.08	5.30
CIP9.019	Cuckoo Culvert	0.00	0.22	0.22
churchl	Church Lands	0.00	0.86	0.86
commoff	Tennent Office Refurbs	0.00	1.51	1.51
GNIB	GNIB Improvements	0.00	3.24	3.35
	T2 & Associated Project Management Costs			9.08
<b>Grand Total</b>		<b>1,273.91</b>	<b>1,296.98</b>	<b>1,323.47</b>

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**7<sup>th</sup> August 2009**

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**Supporting Document V:**

**2010-2014 Capital Expenditure Exclusions**

We have provided a detailed response below to areas where we disagree with the Commission's draft determination on Post 2009 Capex: these are areas that, if left unchanged, will have the greatest negative impact on the long term development of the airport, and consequently on current and prospective users.

## **CIP 8.200 Programme Management**

DAA project value : €30.0 million

CAR draft value : €4.5 million

This budget is intended to provide for both programme and project management for the next CIP:

- Programme management can be defined as the process of managing the multiple interdependent projects contained in the CIP (delivered by means of a Programme Office), whereas
- Project management is concerned with the planning, organising, design and management of key resources to bring about the successful delivery of the individual projects.

CAR appear to have considered only the provision and level of investment in programme management, and not recognised the associated cost of project management. Booz, in its assessment of this CIP budget also did not recognise project management cost and incorrectly assumed it was included in the individual project costs. In fact, the individual project cost estimates in the CIP 2010 - 2014 do not include for DAA project management costs and so it is essential for project delivery purposes that such costs are included in CIP budget 8.200 in the final determination.

As outlined in the previous *Detailed Assessment – Opening RAB 2010*, DAA's approach to the resourcing of Programme and Project management has been to maintain a core in-house sustainable team of technical and support staff, supplemented with contract / consulting staff that can be more readily scaled up or down as project volumes fluctuate throughout the duration of the programme. This flexible approach has proven highly successful as evidenced by the delivery of the 2006 – 2009 CIP on time and budget. DAA therefore intends continuing this approach into the next CIP.

In order to clearly explain and justify the requirement for project management in the next CIP, we have provided an analysis consistent with Booz's preferred approach of an analysis based on the required number of staff rather than project values. Such an approach for Tranche 1 and 2 projects is set out below:

	Staff Category	FTE <sup>1</sup> average per annum	Average Cost per FTE [€]	Total cost 2010- 2014 [€]
1	Programme Management	██████████	██████████	██████████
2	Project Management	██████████	██████████	██████████
	T2 management			
	Airport Operations / IT / Retail	██████████		
	Other Project Management	██████████		
3	Support Admin Technicians Airport Planning	██████████		
	Total	47		€25,000k

1. Programme Management

As outlined above, the Commission appears to have interpreted the entire CIP 8.200 budget as relating to Programme Management only. DAA is in agreement with the Booz and Commission assumption that the typical cost per technical person is €150k, but the above analysis uses the actual FTE costs incurred in delivering the 2006 – 2009 programme. Programme management delivers the following costs, inter alia :

- Drives compliance with programme procedures to manage ongoing capital spend at Dublin Airport
- Integrates cost and schedule issues through project control procedures and the provision of performance metrics
- Provides procurement strategy to ensure value for money from the market place.

2. Project Management.

- T2 Management : A team of █ FTE equivalent staff will be required (comprising a mix of long-term DAA technical staff and contract / consultancy staff) for the final delivery of T2. This team will be wound down throughout 2010.
- Airport Operations, Corporate IT and Retail Refurbishments: These 3 line items in the CIP actually translate into numerous lower value discrete projects, all of which require project management. Airport Operations alone will likely involve over 50 separate projects. For this reason, the value to management ratio is much lower than for the larger CIP projects.
- Other project management: This relates to the project management resources required to deliver the bulk of the main CIP projects. In assessing the appropriate level of resource required, it is not as simple as assuming one FTE per project or a certain value of capital spend per FTE, as many of these projects are multi-disciplinary in nature, and so may require input from several project managers (e.g. airfield projects typically require civil and electrical input, building projects require civil, structural, mechanical, electrical and architectural input, and so on). DAA's

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<sup>1</sup> Full Time Equivalent

estimate of ■ FTEs per annum will be kept under review throughout the life of the next CIP and adjusted as appropriate to match the level of projects being delivered.

3. Support Staff. There is a requirement for ■ FTEs per annum, providing a range of support services to the programme office as follows :
  - Administration staff to support the programme office.
  - Technicians: these comprise a small team of AutoCAD technicians and land surveyors. It is much more cost effective to maintain these resources in-house rather than paying a premium for outside consultants.
  - Airport Planning: this function comprises expertise in airport planning, dealing with Fingal County Council's queries and requests plus other statutory planning and regulatory bodies.

We have included also €5 million to cover extra programme and project management resources for the trigger projects should they come on stream during the life of the next CIP.

## CIP 6.051 North Runway Construction Works

DAA project value : €305 million (subject to runway-specific triggers)

CAR draft value : €255 million (subject to trigger of 23.5 m passengers per annum)

In its draft determination CAR has “*allowed €255m, equal to the amount the DAA proposed for a 3,110m runway.*” However, it is DAA’s belief that a runway of circa 3,600 metres length is essential for the development of the Irish economy and to facilitate additional services and increased competition at Dublin Airport, Ireland’s gateway to the world. The provision of a longer runway would be consistent with delivering one of CAR’s regulatory objectives – to meet the requirements of *prospective* users of Dublin Airport.

### **A longer runway is part of the key infrastructure needed to drive Ireland’s future economic growth**

The entire Irish economy stands to benefit from the incremental investment in a longer second Runway due to the trade and tourism benefits that would accrue. In order to realise these benefits, Dublin Airport requires direct long haul connectivity to the three emerging trading blocks of significance to Ireland, i.e. the Far East (Singapore, Kuala Lumpur, Hong Kong and Bangkok), South Africa and South America.

The three areas of economic activity that will ultimately drive Ireland’s future GDP are :

1. **Export-led commerce.** It is widely accepted that Ireland’s economic recovery will be export-led, and the Asian economies are growing more strongly than others and are achieving a higher proportion of world trade. A recent IBEC report<sup>2</sup> entitled “*Opening Doors to Asia*” has made four key recommendations in order to advance the Government’s Asia Strategy<sup>3</sup>, one of which is that

*“ new direct flights to the region are required”*

Forfas has last month (July) published a report on Ireland’s Strategic Policy Requirements for Enterprise Development<sup>4</sup> which highlights the importance of access to markets of the emerging economies :

*“ Ireland’s international connectivity (sea and air) will also need to be reviewed and revised as the global challenges heighten, while world trade continues to grow with emerging economies and the need for international mobility for business increases....In an increasingly globalised economy, national and international connectivity, coupled with effective internal connectivity, is critically important for access to markets, efficiency in supply chain management, labour mobility and in mitigating the impact of Ireland’s peripheral location.”*

2. **Foreign Direct Investment.** Currently the FDI sector accounts for 135,000 jobs in Ireland, €2.8 billion in Corporate Tax receipts and €14.9 billion in direct expenditure in the economy<sup>5</sup>. In addition to these direct effects, FDI has a multiplier effect throughout

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<sup>2</sup> IBEC, Opening Doors to Asia, 19 February 2007.

<sup>3</sup> The Government has established a high level group to develop the country’s Asia Strategy, comprising Industry and Public Sector organisations under the auspicious of the Department of Enterprise, Trade and Employment.

<sup>4</sup> Forfas, Sharing our future: Ireland 2025 – Strategic Policy Requirements for Enterprise Development, 13 July 2009.

<sup>5</sup> Source : IDA submission to Department of Transport on Strategy Statement 2008 - 2010

the economy, creating demand for high skills, advancing management and business processes and guiding beneficial national developments in education, science, telecommunications and other infrastructure. Over the last 10 – 15 years, the nature of FDI has changed from low wage / low cost to higher value, and so Ireland is now competing for premium mobile investments against the most advanced countries in the world. Furthermore, there is an emerging trend of inward investment to Ireland from Far Eastern firms. A key element in Ireland's ability to secure such investments is its transport infrastructure, specifically the capacity for direct air links to this key region.

3. **Tourism.** Tourism Ireland has recently undergone a process of identifying Ireland *Best Prospects* for developing new markets for inbound tourism, by reviewing 19 New and Developing Markets outside Europe and North America<sup>6</sup>. The countries identified as Best Prospects as a result of this process are :

- Level 1: China and India
- Level 2: Japan and South Africa
- Level 3: The Gulf Countries
- Level 4: Other Asia and Latin America.

Most of these destinations will require a runway up to 3,600 for optimum direct access. Tourism Ireland has stated that:

*“Direct access is critically important when selling a holiday destination...”*

### **A longer runway will open up Dublin Airport to new routes and services, thereby increasing competition**

Incumbent airlines are often loath to support the capital investment required to increase capacity, as to do so would bring extra competition, a consideration of particular relevance to runway capacity at Dublin Airport. However, allowing the short-term objectives of incumbent airlines to dictate the future development of Dublin Airport may restrict the introduction of new routes and services and ultimately reduce competition. This would clearly run counter to the interests of the business and tourism sectors and the wider travelling public.

Interest among long haul airlines to operate new services into Dublin in the future has been confirmed as part of the Scott Wilson consultation process carried out in 2007. These airlines were questioned about the runway requirements that they deemed necessary in order to operate long-haul routes into Dublin from the Far East. Among the airlines that informed us that their requirements regarding runway length ranged from 3,444m to 4,000m were:

- Malaysia Airlines
- Singapore Airlines
- Thai Airlines
- Cathay Pacific

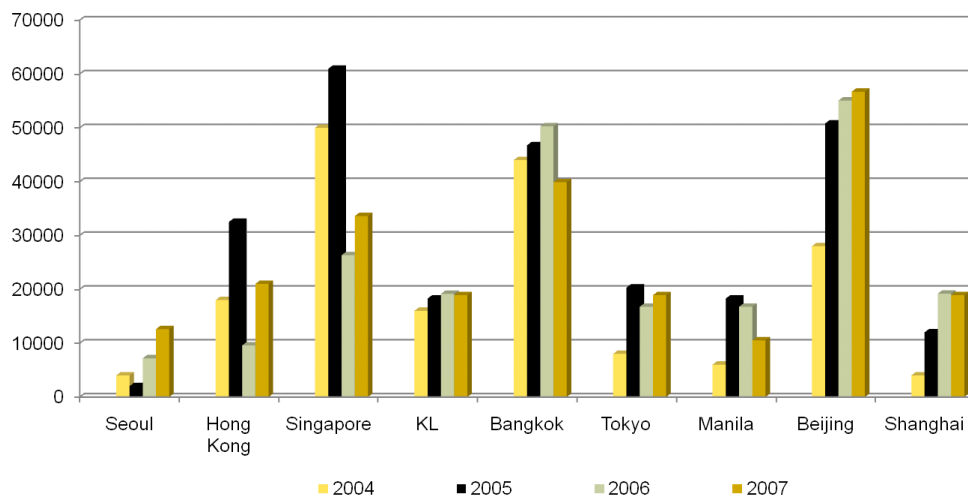
CAR has implied that it does not intend to allow funding for a longer parallel runway, on the grounds that it does not meet current user requirements. By definition, overseas airlines who want a longer runway in order to serve destinations outside the range of the existing runway are not current users, as Dublin Airport cannot accommodate them at viable payloads with its present facilities.

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<sup>6</sup> Tourism Ireland : *New and Developing Markets Review, Looking to our future 2007*

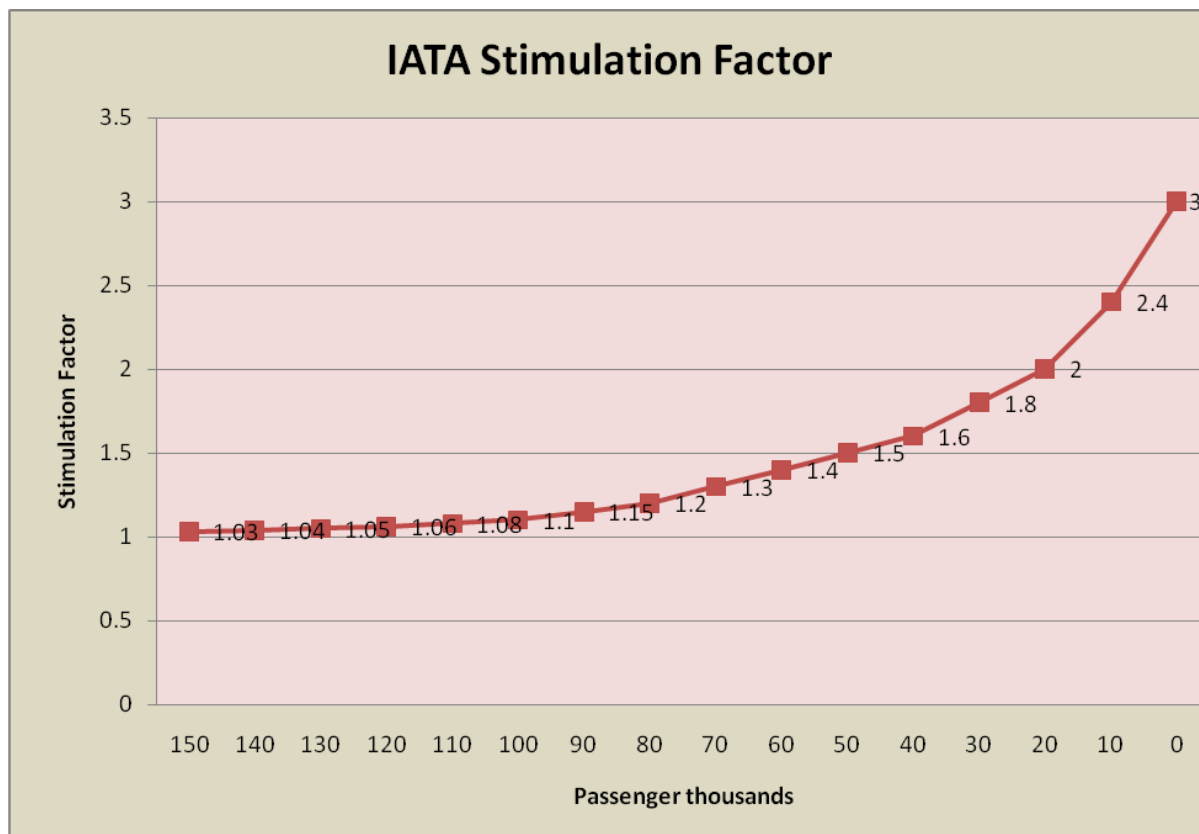


A key building block in the justification of any new direct long haul route is the level of existing indirect traffic. Dublin Airport already has relatively high level (50,000 passengers and over) of indirect traffic to Singapore, Beijing and Bangkok. Such indirect passenger levels are seen as a leading indicator of the viability of direct services to these destinations.



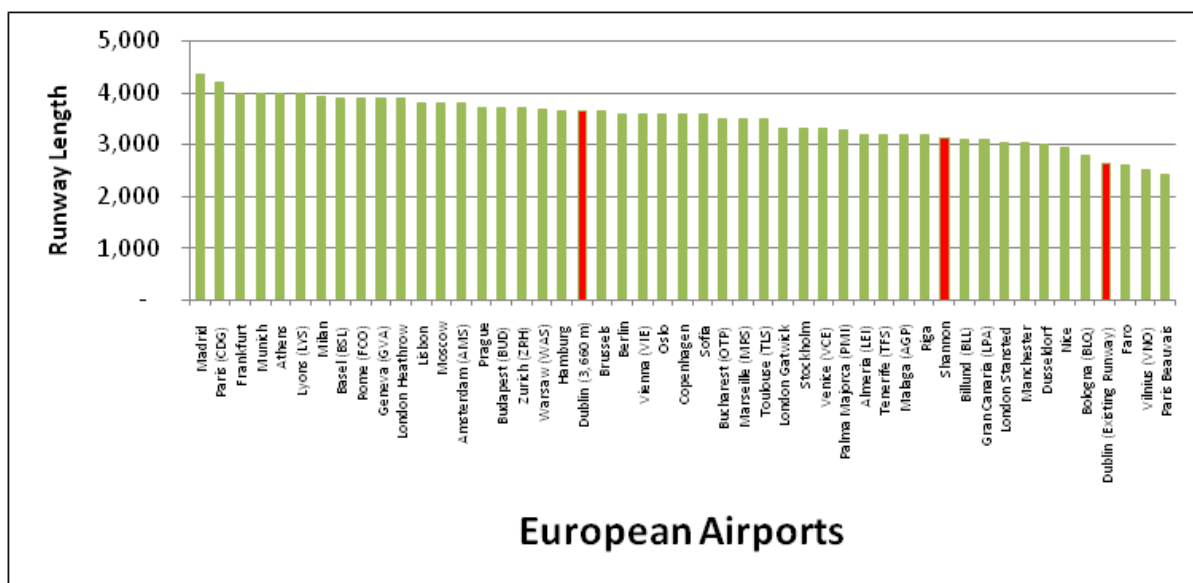
Source : DAA market research

According to the IATA Stimulation Curve (below), a multiplier effect will significantly increase the expected year 1 (and subsequent years') traffic once a direct route is introduced. For example, the circa 55,000 indirect passenger journeys between Dublin and Beijing would be expected to increase by 1.45 to circa 80,000 passengers in year 1 of a direct route.



Source : IATA

Furthermore, Dublin Airport needs to be able to compete on equal terms with its competitor European airports for direct routes to all key long haul destinations. A runway of 3,660 metres would still only place Dublin at a mid point in terms of ranking by runway length, as shown below.



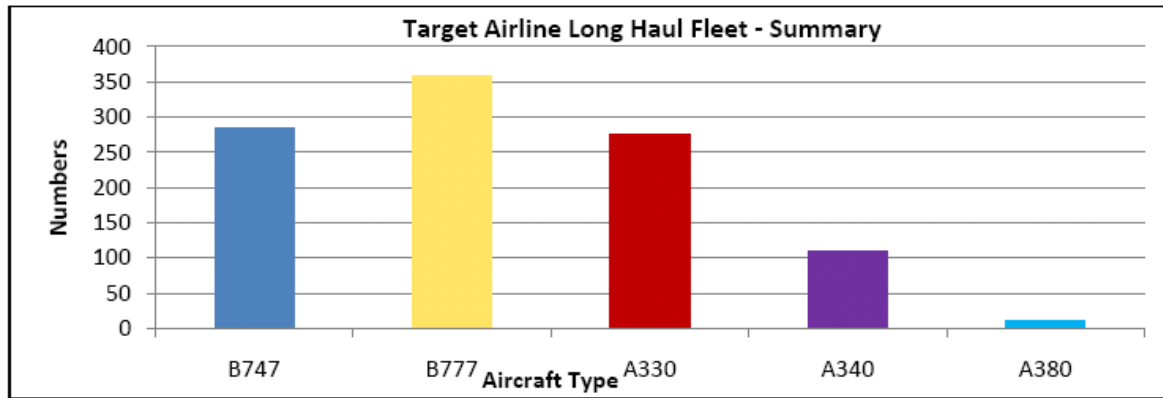
### Technical justification for a longer Runway

As referred to in the above sections, a runway of circa 3,600 metres length is required in order for airlines to profitably serve many of the long haul destinations of relevance to the future development of the Irish economy. A 3,110 metre runway will restrict direct connectivity to key trading destinations for different aircraft types by preventing such long haul aircraft from operating at Maximum Take Off Weight (MTOW)<sup>7</sup> thus restricting their flying range.

The long haul aircraft most commonly used by Far Eastern, South African and South American airlines are as indicated below<sup>8</sup> :

<sup>7</sup> MTOW is the weight that accommodates maximum payload and thus facilitates the most economic operation for the maximum range.

<sup>8</sup> DAA analysis based on world airline fleet records, March 2009



The chart below indicates the extent to which a selection of the most common long haul aircraft would be restricted in reaching the primary trading blocks of interest with a runway length of 3,110 metres. It is much more likely that long haul airlines will be attracted to establish a direct service into Dublin if they can operate at maximum payload as such a configuration is obviously more profitable and sustainable.

North Runway 10L-28R – Aircraft Ranges from 3,110m & 3,660m Runway



Legend  
 Critical Aircraft Family - A340-600, B777-300ER, B747-400ER, B747-400, B777-200ER – Cluster of Ranges off a 3,110m Runway  
 Critical Aircraft Family - B777-300ER, A340-600, B747-400, B777-200ER, B747-400ER – Cluster of Ranges off a 3,660m Runway

The above analysis (presented as banded ranges) is based on “best case, great circle distances<sup>9</sup>” from Dublin, which do not account for air traffic restrictions, airline operating procedures, political / security restrictions and unforeseen weather-related route diversions. All of these factors will further serve to either reduce the operational ranges that airlines can plan for at MTOW, or reduce the take off weight due to insufficient runway length.

<sup>9</sup> The **great-circle distance** is the shortest distance between any two points on the surface of a sphere

Furthermore, The Federal Aviation Administration (FAA) recommend<sup>10</sup> that in planning a runway for use on long haul routes, the distance should be set to cater for the maximum take off weight for the required aircraft :

*“When designing runways to operate long haul, the runway length should accommodate aircraft at MTOW.. and should be designed to accommodate the most demanding aircraft regularly using it without causing operational weight restrictions”*

### **Funding the Longer Runway**

CAR has allowed €255 million equal to the amount DAA propose for a 3,110 metre runway, and then suggested that DAA seek to recover the *associated incremental costs from the parties that stand to benefit*. This approach could deter interest from potential new entrants to the market and ignores the fact that all users (business, tourism and airlines) would benefit from increased capacity and connectivity. Passengers will benefit most from new direct services from Dublin.

Should DAA decide to proceed to build the longer runway at its own risk then it should be deemed “a party that stands to benefit”. CAR should provide an incentive for DAA ‘s initiative by confirming that, should the company adopt that course of action, it will be allowed to retain any resultant aeronautical and commercial revenues outside the regulatory till.

### **Conclusions**

- A longer runway is key to the development of Ireland’s economy, driven by exports to and investment from Asian markets in particular, as well as the growth of long haul tourism.
- A longer runway will open up Dublin Airport to new services and routes to key regions, thereby increasing competition and choice for all passengers. Significant levels of indirect passenger traffic to these key regions already exists (particularly to Singapore, Bangkok and Beijing), and this serves as a leading indicator of the viability of increased competition.

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<sup>10</sup> FAA : 150/5325-4B - Runway Length Requirements for Airport Design

## CIP 6.019 North Runway House Buy-Out

DAA project value: € ■ million, of which €8 million requested in the 2010 – 2014 period.

CAR draft value: €25.4 million (subject to trigger of 23.5 m passengers per annum)

DAA require an €8 million budget (25% of total) in the next CIP in order to commence house purchases during the 2010 – 2014 period, irrespective of whether the Runway trigger is reached in that period. A further € ■million will be required to complete the House Buy-Out once the North Runway project commences.

CAR has allowed €25.4 million for the House Buy-Out scheme, but has made these costs conditional on the North Runway project proceeding. DAA would like to comment as follows:

- The €25.4m allowed is insufficient to cater for the full house buy-out scheme. The difference of ■comprises the following;
  - CAR has only allowed 39 houses to be included in the scheme: in fact 45 houses are affected by a runway of 3,660 metres.
  - CAR has adopted Booz's suggested value of houses, which is 15% less than their estimate of the average asking price in the area and lower than the DAA estimated value. The Booz estimate is unsafe as it is based on houses currently on the market and does not take into account additional costs associated with setting up and running a voluntary house buy-out scheme (legal fees, moving costs etc). By contrast, the house values proposed by DAA are based on a preliminary evaluation by Estate Agents on over 40% of the qualifying houses.
- House prices are arguably at or close to the low point in the property cycle so the ultimate average house price paid to homeowners could well be higher.
- Given that planning permission has been granted for a new North Runway, the qualifying properties are already affected and so it unfair to the property owners to defer the purchase of such properties indefinitely (or until the trigger is reached). Should property owners wish to sell their houses under the voluntary house buy-out scheme for any number of valid reasons between now and the date that the trigger is reached, they will not be able to do so until DAA is in a position to purchase them.

## CIP 6.017 Overlay Runway 10/28

DAA project value : €23.0 million

CAR draft value : €7.0 million

DAA presented the requirement to invest in the main Runway 10 - 28 at the second CAR hosted consultation meeting on 8 April 2009. Two feasible options as summarised in the table below were presented and debated. DAA recommended "Option 3" which involves a full 180 mm overlay at a cost of €23 million. The airlines expressed a preference for Option 1, a lower cost option, and CAR has endorsed this preference in its draft determination.

Option	Description	Construction period [weeks]	Cost [€m]	Life of asset	Passenger charge impact €
1	25 mm thin wearing course Lighting upgrade Discrete slab repairs	26 weeks	€7 m	6 – 8 years	€0.06
3	Full 180 mm marshall asphalt overlay. Lighting upgrade Discrete slab repairs	52 weeks	€23 m	20 years	€0.10

DAA reluctantly accepts CAR's determination on this project, while highlighting again the main drawbacks of Option 1 as being :

- The lower cost option will only extend the runway life by 6 – 8 years, after which time the full 180 mm €23m overlay will need to be carried out.
- The removal and reinstatement of the runway AGL system will ultimately need to be carried out twice .
- The difference in impact on the price cap between the two options is minimal at €0.04 per passenger.
- The only benefit of carrying out Option 1 is on the basis that the new runway will be constructed and operational within the 8 year period so that the full overlay to the existing runway can be carried out with a longer working window and reduced low visibility conditions thereby enabling a reduced full overlay cost.
- The €7m cost estimate is provisional and dependent on the outcome of an updated detailed Runway Pavement Evaluation Survey (in progress) which will definitively indicate the extent of damage to the runway's structural slabs. Preliminary results from this survey indicate that the number of damaged slabs is more extensive than was indicated in the 2007 study, which formed the basis of the cost estimate.

## **CIP 6.054 Taxiway CL lights and associated stop bars**

DAA project value : €6.3 million

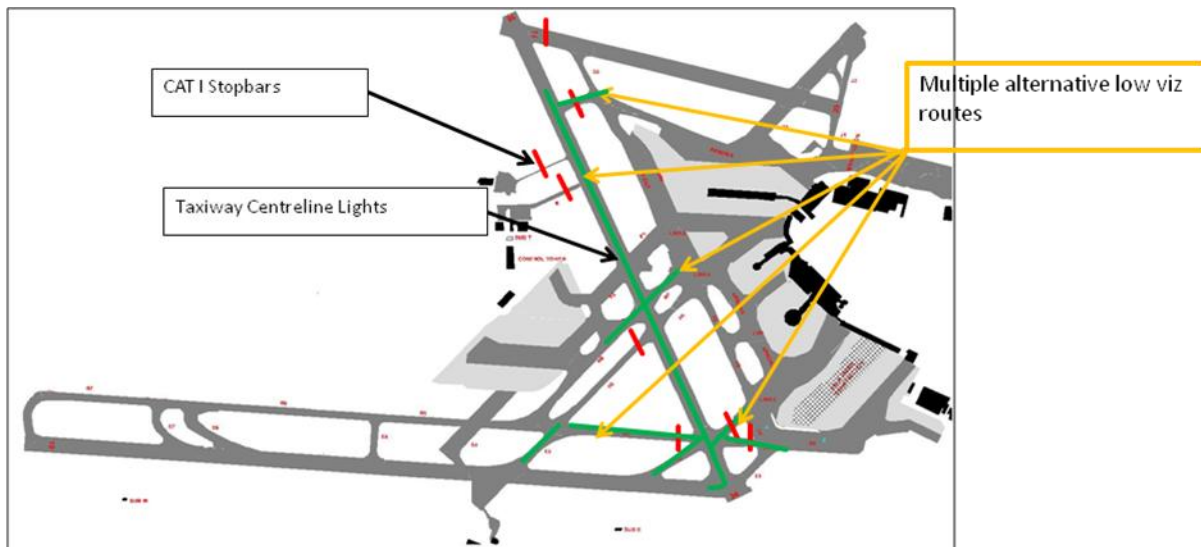
CAR draft value : € nil

DAA had intended presenting this project at the final consultation meeting with users on 29 May, but the meeting was called to a close before this could happen. This is a relatively complex project which would have benefitted from a face to face presentation and discussion, but is essential to the safe and efficient operation of the airfield. The project involves the retrofitting of new centreline lights and associated stop bars to Runway 16-34 in order to facilitate its safe use as a standard taxiing route to and from the main Runway 10-28 in certain low visibility conditions.

The installation of Stopbar systems is common practice in airports equivalent to Dublin's size and complexity. The non-approval of this project will deny the installation of internationally recognised lighting systems that have proven to mitigate chances of a tragic event due to a runway incursion. The non-provision of taxiway centreline lighting on Runway 16 - 34 would require the curtailment of this Runway as a standard taxi-route during the hours of darkness and would reduce routing options for ATC during peak periods as it would not be in compliance with ICAO Annex 14.

### **Project Justification**

- The proposed taxiway centreline lights make the practice of taxiing during hours of darkness compliant with ICAO Annex 14.
- Currently in conditions of low visibility there is only a single taxiway route to/from Runway 10-28, and this causes airfield congestion at these times. The proposed taxiway centreline lights will address this issue and provide an alternative taxiing route in low visibility conditions.
- CAT I stopbars fitted to Runway 16-34 will enhance runway safety and help to reduce runway incursions.
- As part of the 2006 to 2009 CIP Runway 10-28 will be fitted with CAT I stopbars. This will therefore result in a potentially unsafe inconsistency in terms of runway protection between Runway 10-28 and Runway 16-34. It is therefore imperative that Runway 16-34 is fitted with CAT I stopbars.
- Details of this project are as indicated in the graphic below.



## Cost Justification

The Booz assessment of project cost, at €1.4 million, is erroneous in a number of ways as follows :

1. Benchmark Projects: The use of the SWK cost plan for similar AGL installation on the new Runway at Dublin Airport is not a valid comparison, because this cost would relate to installing lights at the same time that the new runway was being built and much greater economies of scale would be available on a complete new runway project. By contrast this project involves the retrofitting of light fittings to existing operational runway and taxiway pavements.

The Isle of Man runway and taxiways project is also not a valid benchmark, as the AGL element at the Isle of Man would be much simpler due to its size and classification<sup>11</sup> and thus there would be a fewer inset taxi lights and stop bars required. Also the AGL installation at the Isle of Man was included in the overall contract<sup>12</sup> so better economies of scale would have accrued: all the prelims costs, project management, design costs and so on would have been shared with the entire project.

2. Cost per light fitting assessment: Booz's estimate of €1,600 – €2,300 total cost per light fitting is incorrect. The actual average cost for per light fitting for this project is €5,700 (see Schedule 1). This figure covers supply of equipment, CCR<sup>13</sup>, cable, substation fit out and electrical installation costs excluding civil works (e.g. coring, ducting, manholes) design and management costs. DAA's cost estimate is project specific. Estimated quantities are set against fixed rates under the DAA term supply contracts for CCR's, primary cable, AGL fittings all obtained by competitive tender. Adjusted installation rates from similar previous DAA contracts also obtained by competitive tender are also used in the cost estimate.
3. Stop Bar Costs: The stop bar costs included in the cost sheet submitted to CAR on 1 May included purchase of equipment, installation costs and prelim costs, and this may have caused confusion for Booz during their assessment. For clarity we have included in Schedule 1 a restated cost sheet, separating the stop bar cost (€505k) from the

<sup>11</sup> IOM ICAO Code 3 –DUB- ICAO Code 4

<sup>12</sup> Stg £40m+

<sup>13</sup> Constant Current Regulator



prelim costs, installation and centre line lighting costs (€419k). We have also provided a detailed technical cost build up for the Stop Bars.

4. Cabling Costs: Booz have queried the length of primary cable included in our cost estimate. A detailed cost build up for the cabling is also provided in Schedule 1. Each lighting segment has to be hard wired and the overall cable quantity is 276km. This cable quantity is based on a full preliminary design utilising available duct runs.

## **Conclusions**

- This project will facilitate improved airfield safety and efficiency.
- Due to time limitations at the final consultation meeting, the opportunity to discuss the benefits of this project in detail was curtailed.
- The project cost of €6.3 million is entirely justifiable and verifiable, and further information to prove this has been provided in this document. The Booz estimates are inaccurate as indicated above.

## CIP 6.053 Engine Testing Facility

DAA project value: €13.8 million

CAR draft value: €9.5 million ( to be triggered with North Runway construction)

CAR has adopted the Booz cost assessment for this project at €9.5 million. A comparison of the Booz cost assessment with DAA's estimated costs (restated to correspond with the same elements of the project) is set out below:

Element	Booz estimated cost €000s	DAA cost (restated to match incl. prelims) €000s	Variance €000s
Blast deflectors incl foundations	5,600	4,600	-1,000
Refurbishment to existing apron	800	1,800	1,000
New Taxiway	1,400	4,300	2,900
AGL and flood lighting	150	125	-25
Wash down facility	500	575	75
Sub-total	8,450	11,400	2,950
Fees	160	556	396
Contingency	890	1,710	820
Other costs	0	100	100
TOTAL	9,500	13,800 (rounded)	4,300 (rounded)

The main variances are explained as follows:

- Refurbishment to existing apron: Booz has indicated a range of €70 - €135 per square metre, but this would only be sufficient to allow a thin layer on top of the existing pavement in order to adjust the levels. However, DAA has included, on the basis of constructability requirements that the existing pavement will have to be removed and reinstated to revised levels to suit the layout of the engine testing facility. The rate used will also cover the services (including ducting and drainage) that will be required. DAA has carried out extensive pavement reconstruction works and is therefore confident that a rate of €219 per square metre (excluding prelims) is correct based on experience from recent projects.
- New Taxiway: A new taxiway of circa 13,600 square metres including all necessary pavement fillets to allow aircraft to be towed to/from the facility is required, as indicated on the drawing contained in Schedule 2. This requirement was indicated in the original CIP project summary. Booz has accepted in its report that "*If a taxiway is required, it will cost more*". We can confirm from rates adjusted from recent similar projects that a taxiway of circa 13,600m<sup>2</sup> will cost approximately €4.3m (inc prelims).

- Fees: Booz has deducted the value associated with the specialist equipment (sound proof enclosure). However, the cost of the enclosure includes scopes of work that will actually not be designed by the enclosure designer, such as foundations, etc. An extra allowance on fees will be required to cover these elements of design and the procurement process, contract administration, construction supervision, handover, etc, associated with them. There will also be a requirement for overall supervision and coordination of the specialist structure design to the rest of the works.
- Project Contingency: Booz has allowed a contingency figure of just over 10% for this project, however, experience at Dublin and other airports shows that this level is insufficient for a project being carried out in the middle of a live airfield, with the inherent high risks associated with low visibility procedures and operational delays. A contingency of 15% (approx €1.7m) should be allowed on this basis.

We are asking CAR to allow the full €13.8 million project cost in its final determination, in order to facilitate construction of the complete scope of work as outlined.

## **CIP 6.052 Central Apron Reconstruction**

DAA project value : €15.0 million

CAR draft value : €13.8 million

CAR has adopted the Booz cost assessment for this project at €13.8 million. Within this assessment, Booz has included a cost of €100k for the AGL (Pier A to Pier D) when in fact our detailed cost estimate indicates that this work will cost €930k plus prelims and contingency (see Schedule 3 for detailed cost breakdown and related drawings). This will therefore increase this estimate to the original €15m including fees and contingency.

## **CIP 6.055 B7 Taxiway Overlay**

DAA project value: €3.0 million

CAR draft value: €2.8 million

CAR has adopted the Booz cost assessment for this project at €2.8 million. Within this assessment, Booz incorrectly estimated the area required to be overlaid was 15,000m<sup>2</sup> and state that this has not been verified. The drawing attached in Schedule 4 confirms the area as 18,800m<sup>2</sup> and CAR should allow the full project value of €3m as requested by DAA.

## **CIP 6.053 Engine Testing Fees Only**

DAA project value: €0.4million

CAR draft value: €0.16million

- Fees: Booz has deducted the value associated with the specialist equipment (sound proof enclosure). However, fees will be required to cover, the detail design, planning and EIS preparation. As the sound proof enclosure will be a significant part of the design and the planning application these costs should not be removed. The allowable cost of € 0.16m is insufficient to progress the detail design, planning application and EIS.
- The construction cost will also be significantly higher based on the analysis in CIP 6.053 above, and as fees are based on a percentage of project value the budget allowed by CAR will be insufficient.

Based on the above, the full € 0.4m should be allowed in order for this project to be designed and planning approved.

## **CIP 7.032 T1 Passenger Processing Enhancements**

DAA project value: €16.0 million

CAR draft value: €0 million

DAA revised project value: circa €4 million

This investment is required in order to streamline passenger screening operations in one identifiable area. More importantly, by maximising passenger footfall along The Street, this new configuration will protect existing Retail revenue and provide opportunities for additional Retail revenue. DAA welcomes Booz's endorsement of our cost estimates, but is disappointed that the project has been completely disallowed by the Commission.

The Commission appears to have been swayed to disallow this investment by the airlines' objections. These objections were principally based on concerns about the cost of the project and possible increased passenger transit times through the airport terminal.

### **DAA alternative scheme**

Since the publication of the Commission's draft determination, DAA has been developing a revised and significantly reduced project scope. While this work is still being finalised, the new scheme will retain the following core elements from the original plan:

- A consolidated passenger screening area located at South end of Terminal 1 departures floor, and
- A dedicated and increased queuing area for the passenger screening facility

The following outputs from the original scheme will be omitted in order to achieve significant cost savings:

- Area 13 retail space of 550 m<sup>2</sup>
- Reduction in the number of check-in islands and associated baggage handling alterations
- Dedicated SSK zone and associated electrical and communications supply

- Extension and full refurbishment of existing departures level toilets
- Dedicated glazed passenger route post check-in from exit point at Area 14 through to check-in area 1 to new security queuing area

### Passenger Transit Times

One of the reasons that the airlines were opposed to the original scheme was that it would significantly increase the passenger walking time from check-in to boarding gate. However, the following data indicates that the increased passenger walking distances and times are not significant, particularly when balanced against the benefits in terms of increased foot fall along The Street and consequent retail spend.

Worst case walking distances from search areas to Pier D (neck):

- Current Security search areas average to Pier D: 561m
- New proposed security Search area to Pier D: 662m

The additional worst case walking distance of 101 metres would equate to an approx average walking time of 1 minute.

### Business Case

- The revised capital expenditure is estimated at circa €4.0m
- In calculating the NPV of the project, it is prudently assumed that the life of the project is 10 years
- Consolidating security screening into the proposed passenger screening point would deliver significant financial benefits:
  - extra revenue opportunities from new concessionaire space and also extra spend in the Direct Retail outlets on 'The Street'; and
  - protection of existing revenue on 'The Street' by maintaining a viable footfall
- Revised additional and protected Retail revenues over the 10 years will exceed [REDACTED]
- The IRR for this project is c.18% and the NPV is estimated as circa [REDACTED]

### Conclusions

- A revised simplified scheme is still being developed which is expected to deliver, for a much reduced capital cost (circa €4 million), a significant retail revenue uplift delivering a positive NPV of [REDACTED].
- The airlines' fears related to increased passenger transit times have been shown to be unfounded.

## CIP 7.035 Pier B Connectivity

DAA project value : €11.0 million

CAR draft value : CAR will review as part of T2 assessment

Since the early development of the Terminal 2 project, there has always existed a requirement to provide passenger connectivity between Pier B and Terminal 2. While the airline assignment to T2 will be such that a significant proportion of passenger transfers will be on an intra-terminal basis, there will be an operational requirement to provide for airside transfers between the two terminals. All stakeholders are in agreement that such a requirement exists – what is open to debate is the nature of the solution and the allocation of the cost.

### Justification of the investment

The justification for the Pier B connectivity project has been provided as part of the original CIP submission. In summary, design transfer passenger flows of 5% of the T2 peak hour rate have been assumed. Additionally, during peak periods Pier B will be used for flights serving passengers from T2 as well as T1, and both departure and arrival routes will be required to and from T2 while maintaining the existing T1 operations.

### DAA estimated project cost

Extensive value engineering has been incorporated into the final solution in order to minimise the capital costs. The following cost-saving changes have been made during design development:

- Reduced width of link bridge from 4.5m to 2.4 m
- Reduced architectural specification (including simplification of cross section to a rectangular box shape, removal of glazing from Vertical Circulation Core, reduction of glass from link bridge, reduction in specification of external fabric and internal finishes).
- Reduced mechanical and electrical specification
- Simplified structural design.
- Reduction in number and specification of lifts and escalators.

Despite the above measures, CAR's consultants have concluded that DAA's cost estimate of €11,000k "*is higher than what would be expected*", and have suggested a lower cost of €9,200k. DAA would like to comment as follows:

- The rates included in the estimate reflect the nature (smaller project), location (airside site) and complexity of the project (working in a live airside environment)
- A significant amount of existing services will need to be diverted and this work does not appear to have been included in the Booz estimates.
- The new structure will need to be tied into existing buildings at various points and the cost of this does not appear to have been included in the Booz estimates.
- DAA's cost estimate is not prepared on a benchmark basis but on initial design information which has been measured and costed using appropriate rates. Benchmark exercise undertaken by Booz is by its nature more "crude" as it is based on benchmark ranges, which would not have taken account of the unique nature of this project.
- The new structure is based on a unusually high wall to floor ratio (there is significantly high proportion of envelope required in the project) which skews upwards the per square metre cost.

- The main passenger “tube” is elevated at a height of 6.7m, thus requiring a higher ratio of structural steel per square metre than average.

### **User Consultation**

This project was originally formally presented to User airlines at a DACC meeting on 1 August 2008, and again at a subsequent DACC meeting on 22 April 2009. As stated above, Users accept the requirement for the connectivity exists, however, they argue that costs were assumed to have been included in T2. DAA has provided CAR with the detailed T2 cost plan which shows clearly that this cost was not in fact included. If users want to have this project included as part of the delivery of the T2 facility, the costs must be remunerated.

Should this project ultimately not receive approval from CAR, then the alternative is for airlines to provide the required connectivity by means of airside bus transfers. Such an arrangement would have wider operational implications (including turn-around times) for the affected airlines, in addition to cost.

### **Conclusions**

- There has always been a requirement for airside connectivity between Terminals 1 and 2
- User airlines accept that the requirement exists, but erroneously assumed that the project costs were included in the original T2 cost estimate.
- DAA has developed an acceptable solution at the lowest possible cost.
- The alternative to this solution is for airlines to accept that they will have to bus passengers between T2 and Pier B.

## **CIP 7.036 T1 Life Safety Systems Upgrade**

DAA project value: €5.0 million (2010 – 2014 period; €8 million total value)

CAR draft value: €2.4 million

This critical safety project spans two regulatory periods - €3m spend in the 2006 – 2009 period and €5m spend in the 2010 – 2014 period. CAR has allowed the first tranche as part of its determination related to the opening RAB, but is proposing to only allow €2.4 million of the second tranche in its “Post 2009 Capex” determination. This reduced allowance appears to be based on an incorrect Booz assessment. The following points address the misunderstandings in the Booz assessment:

- The floor area to be addressed: Booz has incorrectly assumed the floor area to be addressed as 16,000 m<sup>2</sup>, when in fact the actual floor area is 106,000 m<sup>2</sup>. CAR was provided with floor plans of all affected areas on 1 May as part DAA’s response to a request for information: Schedule 5 contains an additional drawing which indicates more clearly the correct floor areas and locations relevant to this project.
- Fire Compartmentalisation works. Booz has estimated the cost of the Fire Compartmentalisation works at €500k when in fact they will cost €1.5 m as follows :

Projections	€m
Upgrade Existing Fire Compartmentalisation	€718,000
Upgrade Fire Separation of Piers	€95,000
Provide additional Vertical and Horizontal Compartmentalisation to deliver new Fire Strategy	€706,000
<b>Total</b>	<b>€1,519,000</b>

Compartmentalisation works will comprise the following:

- Upgrade compartment walls and floors to achieve 60 minutes fire resistance in accordance with the design specification
  - Provide new fire doors on magnetic hold open devices, in key areas to prevent the spread of fire and smoke
  - Fire stopping openings in existing compartment walls and floors
  - Fire stopping all service shafts, both horizontally and vertically
  - Construct new internal fire compartment walls, achieving 60 minutes fire resistance, to prevent the spread of fire and smoke.
- The overall rates per square metre for fire alarm and emergency lighting systems are in fact at the lowest end of the Booz assessment, at €30 and €15 respectively. This has been achieved by means of value engineering, particularly the reuse of existing cabling, software and hardware, and by combining the fire alarm and lighting elements to achieve economies of scale.

Projections	€m	Comment
Compartmentalisation works	1.5	
Fire System	3.2	106,000 m <sup>2</sup> at €30 /m <sup>2</sup>
Lighting System	1.6	106,000 m <sup>2</sup> at €15 /m <sup>2</sup>
Sub-total building works	6.3	
Preliminaries	0.8	
Contingency	0.3	5% of project costs
Fees	0.6	10%
<b>TOTAL</b>	<b>8.0</b>	

In conclusion, the Booz assessment has underestimated the floor area to be included in this project by 85%, and under the fire compartmentalisation by 66%. CAR must correct these estimates and allow the full cost of the project into the RAB, as it is a critical safety driven project.



## CIP 2.018 Cargo Distribution Centre and CIP 2.017 Hangar Maintenance

CIP 2.018 Cargo Distribution	CIP 2.017 Hangar Maintenance
DAA project value : €14.3 million CAR draft value : €13.1 million	DAA project value : €4.2 million CAR draft value : € nil

These projects both concern the maintenance and refurbishment of a series of Hangars and related buildings located on the North Apron. Most of these buildings were until recently rented to SR Technics who provided a number of Maintenance Repair and Overall (MRO) services<sup>14</sup> as well as pursuing their core business of aircraft maintenance. SRT indicated their withdrawal from the Irish market in early 2009 and DAA has taken possession of the hangars which they had leased in order to replace the airport-critical services as well as to secure, where possible, alternative tenants for the Hangars and related buildings. At the time of the CIP submission in late February, these plans were at an early stage of development and since that time the best rental scenarios for the Hangars has become much clearer. As a result, DAA's capital requirements for both projects has changed significantly as outlined below.

### Capital Requirements as outlined in CIP document

At the time of the CIP submission, the following capex requirements were outlined :

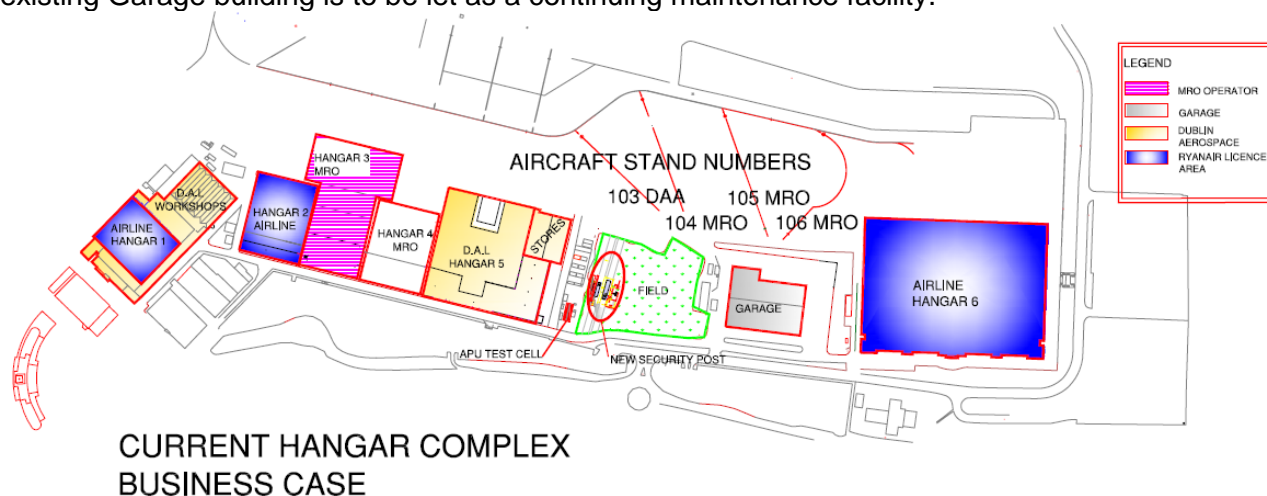
- CIP 2.018 Cargo Distribution Centre : This CIP budget related to two separate projects :
  - Transit Shed and Cargo Apron – the refurbishment of Hangar 4 in order to convert its use to a new location for Cargo processing, and the construction of 24,000 m2 of new apron for the provision of 4 new aircraft stands. The long term requirement for this project remains unchanged.
  - Cargo Distribution Centre – The extensive refurbishment of Hangar 5 into a fit for purpose Cargo Processing Warehouse with the aim of renting to a third party Cargo Processing Operator.
- CIP 2.017 Hangar Maintenance – Capital required for the maintenance and repair of Hangars 1, 2, 3 and 6 (all vacated by SRT) in advance of securing new tenants and generating replacement rental income.

### Revised Capital Requirements

CIP 2.018 Cargo Distribution Centre: As outlined above, the requirements for the Transit Shed and Cargo Apron remain unchanged. However, since the CIP submission, a new MRO operator has been identified to occupy Hangar 5. The availability of a secure tenant and the critical nature of the services, coupled with sustainable long term employment has led DAA to pursue this option for Hangar 5 rather than the Cargo Distribution Centre. As a result, the building can be made ready for rental for capex of €2.3m rather than €6.0m as originally envisaged. This cost needs to be transferred to the Hangar Maintenance budget as listed below.

<sup>14</sup> Including provision of aircraft hangarage, line maintenance, maintenance of airfield operations vehicles (including airplane tugs), aircraft de-icing etc.

CIP 2.017 Hangar Maintenance : Since the submission of the CIP, DAA has made significant progress in securing new tenants for the Hangar buildings. In summary 4 of the 5 available Hangars are either let or in advanced negotiations with interested parties. Furthermore the existing Garage building is to be let as a continuing maintenance facility.



The total rental that will be earned from these properties is circa €3.3m per annum. However, the securing of tenants and associated rental income is in all cases dependent on DAA investing capex in the buildings first, as tenants have the reasonable precondition of receiving the property in a fit-for-purpose state. The Condition Reports on the buildings have found them to be in a very poor state of repair and significant work will be required in order to make them water tight – principally the replacement of roofs, cladding and glazing. The capital required is higher than the €4.2m originally envisaged at the time of the CIP submission as summarised below.

**Summary Status of Hangar buildings tenancies**

Property	Letting status	Capex required per hangar
Hangar 1	Let	€0.2m
Hangar 1 workshops	Advanced negotiations	€1.0m
Hangar 2	Contract to Let	€2.1m
Hangar 3	Expressions of Interest	€0.3m
Hangar 5	Advanced negotiations	€2.3m
Garage	Advanced negotiations	€0.7m
Hangar 6	Advanced negotiations	€0.7m
Utilities and shared services		€2.9 m
<b>Total</b>		<b>€10.2m</b>

Security Post: It is DAA’s intention to construct a new security post similar to existing Security Post 4 to control all movements around the North Apron Hangar complex. The Booz assessment assumed a figure of €100k for these works in the absence of an appropriate level of detail. In fact this facility will cost €1.0 million as will comprise the following key outputs:



	DAA Original Submission	CAR Draft Determination	DAA revised requirements
CIP 2.017 Hangar Maintenance	€4.2m	0	€10.2m
CIP 2.018 Cargo Distribution	€6.0m	€6.0m	€0
CIP 2.018 Transit Shed & associated Apron	€7.3m	€7.1m	€7.3m
CIP 2.018 Security Post	€1m	€0.1m	€1.0m
Total	<b>€18.5m</b>	<b>€13.2m</b>	<b>€18.5m</b>

## CIP 9.024 Fuel Farm

DAA project value : €28.8 million

CAR draft value : €17.9 million

While DAA welcomes CAR's approval of the "core project of upgrading the storage tanks and associated works" which was "supported by users", its decision to disallow the proposed airside "into-plane" facility on the basis that it "does not appear to meet the reasonable requirements of current users" renders the project inoperable.

### Shortcomings of CAR draft determination

New Fuel Loading facilities<sup>15</sup> must be included in the core project in order for the replacement storage tanks to dispense fuel – if these facilities are not provided airside as part of the into-plane facility then they must instead be provided on the Fuel Farm site. The existing Fuel Loading facilities must be replaced as they are located on the footprint of the proposed larger fuel storage tanks, and in any event are reaching the end of their useful life. It is therefore not possible to replace and upgrade the storage tanks without installing new Fuel Loading facilities. The optimum solution would have been to locate this equipment airside in order to realise the tankering efficiencies outlined by DAA, but at the very least CAR's final determination must include its installation on the fuel farm site.

DAA made this clear in our submission dated 15 May in a "supplemental note re CIP 9.024" as follows :

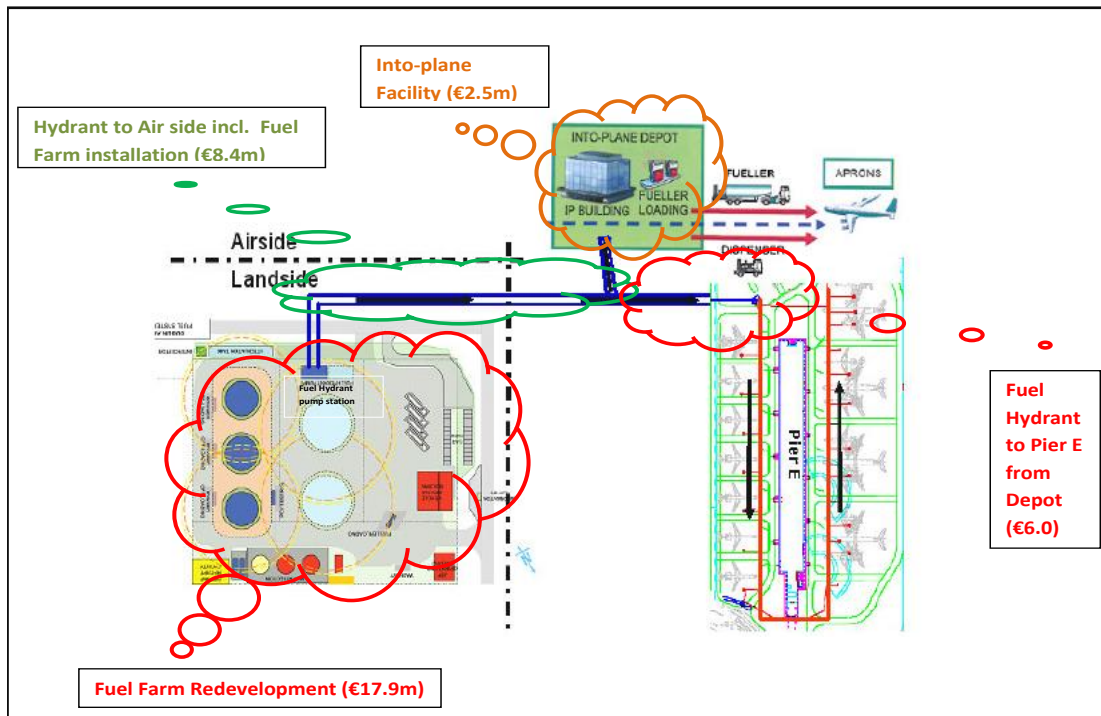
*"Notwithstanding its view that the project proposed in the CIP remains the optimum approach to this project, DAA has reviewed the implications of omitting the into-plane element of the project following feedback from users at the meeting on 6 May. It should be noted that in order to provide an integrated fuel facility the loading racks and associated costs will have to be reallocated from Option 3 as presented. The cost of certain into plane [fuel loading] unit costs (civil engineering works plus fueller loading stands) amounting to €2.5m would have to be included in the fuel farm development. The cost of the fuel farm redevelopment element of the project would therefore increase from €17.9m to €20.4m"*

A further consequence of disallowing the airside into-plane facility is that the cost of the Hydrant project to Pier E must increase by €8.4 million in order to fund the installation of that

<sup>15</sup> Fuel Loading facilities include loading racks and local low-pressure pumping equipment, as well as electronic fuel metering and billing systems, discharge controls, etc

element of the hydrant pumping system from the Fuel Farm to the airside boundary, as indicated by the green “cloud” bubble on the graphic below, otherwise there will be no ability to provide fuel airside:

**Graphical Map of Development**



**Amendments required to CAR’s draft determination.**

In order for DAA to be able to proceed with the core project without the airside into-plane facility, and eventually with a viable Fuel Hydrant trigger project as proposed by CAR, the following amendments must be made in the final determination:

1. The allowance approved for the fuel farm must be increased by €2.5m to include the new Fuel Loading facility located on the Fuel Farm.
2. The value of the Fuel Hydrant trigger project must be increased by €8.4 million in order to create a complete hydrant system from the Fuel Farm to Pier E.

The total cost of the combined Fuel Farm and Fuel Hydrant projects remains unchanged, as summarised below :

<b>DAA Original Proposal</b>	<b>€m</b>	<b>DAA revised proposal (following CAR draft determination)</b>	<b>€m</b>
Fuel Storage tanks upgrade Airside into-plane facility	28.8	Fuel Storage tanks upgrade Landside Fuel Loading facility	20.4
Hydrant to Pier E from airside IP location	6.0	Hydrant to Pier E from Fuel Farm	14.4
<b>TOTAL</b>	<b>34.8</b>		<b>34.8</b>

However, the project delivery as proposed by CAR will result in a sub-optimal solution as the Fuel Loading facility will remain landside, thereby permanently missing out on the fuelling efficiencies that would have been obtained from an airside location.

## CIP 5.013 Retail Refurbishments

DAA project value : €16.8 million

CAR draft value : €8.8 million

DAA has proposed an investment in Retail Refurbishments of €16.8 million for the 2010-2014 period, which equates to €3.4 million per annum, or less than 2% of Gross Sales. CAR's consultants have recommended a similar but slightly lower figure of €14.6 million. However, CAR's draft determination allows just €8.8 million, on basis that it

*"...believes that a more modest sum is appropriate"*

### Shortcomings of CAR draft determination

DAA believes that CAR's draft decision has the following shortcomings:

- DAA's commercial retail revenues contained in its financial model are based on an assumed capital expenditure of €16.8 million over 5 years to maintain the offering as set out in our CIP submission. CAR has disallowed 48% of this capital while assuming all of the revenues – this treatment is asymmetric and inappropriate.
- There is no apparent basis for or justification of CAR's conclusion to approve only 52% of DAA's refurbishment budget. Even its implication that €8.8 million is "*..consistent with allowances made in the previous regulatory period for a recurring investment need at the airport*" is incorrect : the sum of the 2006 – 2009 CIP allowance was €10.6 million in 2006 prices, or €11.1 million in 2009 prices<sup>16</sup>. Furthermore, there will be a much larger retail area in the next regulatory period due to the addition of T1X, Terminal 2 and to some extent Piers D and E.
- CAR has discounted the conclusion of its own consultants who recommended a €14.6 million retail capital spend.

### Further justification of DAA proposed investment

DAA has outlined the justification for the capital investment contained in the Retail Refurbishment budget in the original CIP submission, the subsequent presentation to the consultation meeting held on 22 April and follow-up information submissions. The key points of justification for this investment are:

- All parties are in agreement that a greater proportion of concessionaire space will lower the average per square metre cost of refurbishments in the future. However, during the life of the next CIP, large areas of the retail offering are being reconfigured completely to optimise the overall layout (see Schedule 6), and this work pushes up the cost in the 2010- 2014 period on a once-off basis.

As mentioned above, DAA's projected retail revenues are based on an assumed €16.8 million capital refurbishment budget. Should this investment be significantly reduced then the revenues will also need to be revised downwards.

- Retail refurbishments cycles of 5 years are an absolute necessity in order to maintain revenue. Historically, the refurbishment cycle was much longer at Dublin Airport (e.g. 12 years for the old Pier B duty free shop), but have shortened due to the following factors :

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<sup>16</sup> Using CAR's proposed CPI figures as referenced in paragraph 9.2 of its Draft Determination.

- The average number of trips taken per annum per passenger now exceeds 5: refreshing the retail offering is key to protecting retail revenue.
  - Airport shoppers are now much more discerning and aware of downtown and international retail trends, and so outlets must be kept up to date to maintain sales performance.
  - DAA outlets are open on average 6,200 hours per annum, almost twice as long as the average downtown figure of 3,120 hours per annum, and significantly longer also than major shopping centres such as Dundrum (4,100 hours per annum) or Liffey Valley (3,600 hours per annum). The significantly longer opening hours means more “wear and tear” and obviously drive the need for more frequent refurbishments in order to keep the retail offer at an acceptable level.
  - DAA’s key suppliers, especially in the Perfumery and Cosmetics, Liquor and Confectionary categories demand that the fit-out and appearance of the Direct Retail shops are maintained to the highest standards – slippage in such standards would lead to the damaging of supply relationships impacting on the availability of key products and brands with resultant significant loss of sales.
- The average cost of refurbishment per square metre is appropriate at €2,470. Airport fit-out costs are typically higher than the high street rates which form the basis of Booz’s estimates (average €1,800 per square metre) for the following reasons :
    - Due to much longer trading hours, all retail refurbishment work must be carried out during the premium night time hours (unlike high streets and shopping centres which can take advantage of shorter Saturday and Sunday opening hours, and also work in early mornings).
    - The travelling public are passing close by refurbishment work, even at night time, as the flow of passengers through the terminals and piers continues 24 X 7. This close proximity makes the works more expensive.
    - Airport retail works require a Class 0 fire rating, which increases the refurbishment costs compared to standard retail environments.
  - BAA’s benchmark figures for retail refurbishments are in the range €1,900 - €5,700 per square metre, an average of €3,800. This represents a 54% premium over DAA’s average. Similarly, ARI’s benchmark cost for retail refurbishments over the past two years, taken across a range of European and North American airports, averages €2,800 per square metre. In light of these comparisons, CAR’s proposed allowance of €1,088 per square metre<sup>17</sup> would seem to lack justification.

## Conclusions

- DAA’s proposed investment of €16.8 million on Retail Refurbishments is essential to achieving the retail revenues contained in the financial model.
- A five year refurbishment cycle is now the industry norm – the longer opening hours at DAA’s retail outlets make the case for observing this practice even more compelling.
- The DAA average cost per square metre for Refurbishments is entirely justifiable for an airport environment, and benchmarks well against other airports.

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<sup>17</sup> CAR has proposed €8.8 million total spend. Deducting fees at 8% and contingency at 10% (Booz levels) leads to a construction spend of €7.4m, which translates to €1,088 per square metre for the 6,800 square metre programme.



## CIP 1.006 Multi Storey Car Park

DAA project value : €40.5 million

CAR draft value : €0 million

Despite CAR's view that it is "*keen to allow the DAA discretion to undertake investments that the DAA believes present a commercial opportunity*", the Draft determination does not allow the capital costs of this project into the RAB.

CAR's approach to this project would lead DAA to believe that there is a basic lack of understanding of the financial case and the overall benefits to passengers and users. This project has a sound business rationale with conservative revenue stream estimates.

CAR appears to have ignored the fact that without this new MSCP, the customer experience for T2 passengers will be extremely poor with long distances to walk to access the existing car parks.

Commercial projects of this nature are essential to Dublin Airport's development, delivering services and facilities funded by external investors and ensuring long term revenue for the Airport.

### **The project delivers excellent returns to the airport.**

At the CAR hosted consultation meeting of 22 April, DAA presented a clear business case for the project that meets the required hurdle rates and delivers the additional services of a terminal linked Hotel utilising external investment.

The base case IRR (nominal, after tax) of 13.1% uses more conservative income per space assumptions than those currently being achieved by DAA on campus. The reduction in revenue as a consequence of not proceeding with this project is summarised below :

2010	2011	2012	2013	2014

Over the life of the next CIP the net cost to users of this project is zero : the 14 cent increase in passenger charges is offset by an equal contribution to the single till. Thereafter, the project will contribute substantial revenues, thereby reducing airport charges.

### **Additional Project benefits:**

The MSCP & Hotel project delivers an improved link from the T2 development to the Ground transportation system allowing our passengers to avail of all forms of transport including the future Metro Box, taxi, Bus and short and long term car parking.

- The projects delivers car hire facilities and a large meet and greet area where both passengers and their families can benefit from the services of a modern hotel complex.
- The project delivers a 4-star hotel and conference facilities to our Business customer.
- The development was conceived and designed in line with the Fingal County Council Local Area Plan and is a key element of the DAA master plan for terminal linked facilities.
- The Additional Car parking numbers (back to 2004 levels of c.4000) will ensure the DAA ability to delivers spaces at a reduced parking rate and ensure the passengers will benefit from short term flexible parking.

DAA request that this project is included in the final determination

## CIP 2.014, 2.015 and 2.016 Accommodation Projects

The following property-related CIP budgets totalling €10.5 million were contained in DAA's CIP submission:

	DAA CIP €m	CAR Draft Determination €m
2.014 DAA Office Accommodation	2.5	0
2.015 DAA Tenant Accommodation	5.0	0
2.016 Airside Ramp Accommodation	3.0	3.0
TOTAL	10.5	3.0

CAR has allowed only €3.0 million of the required €10.5 million capital expenditure on accommodation projects on the basis that

*“The proposed spend did not seem consistent with the concerns of users that in the current economic environment the DAA should focus on keeping capex to a minimum”*

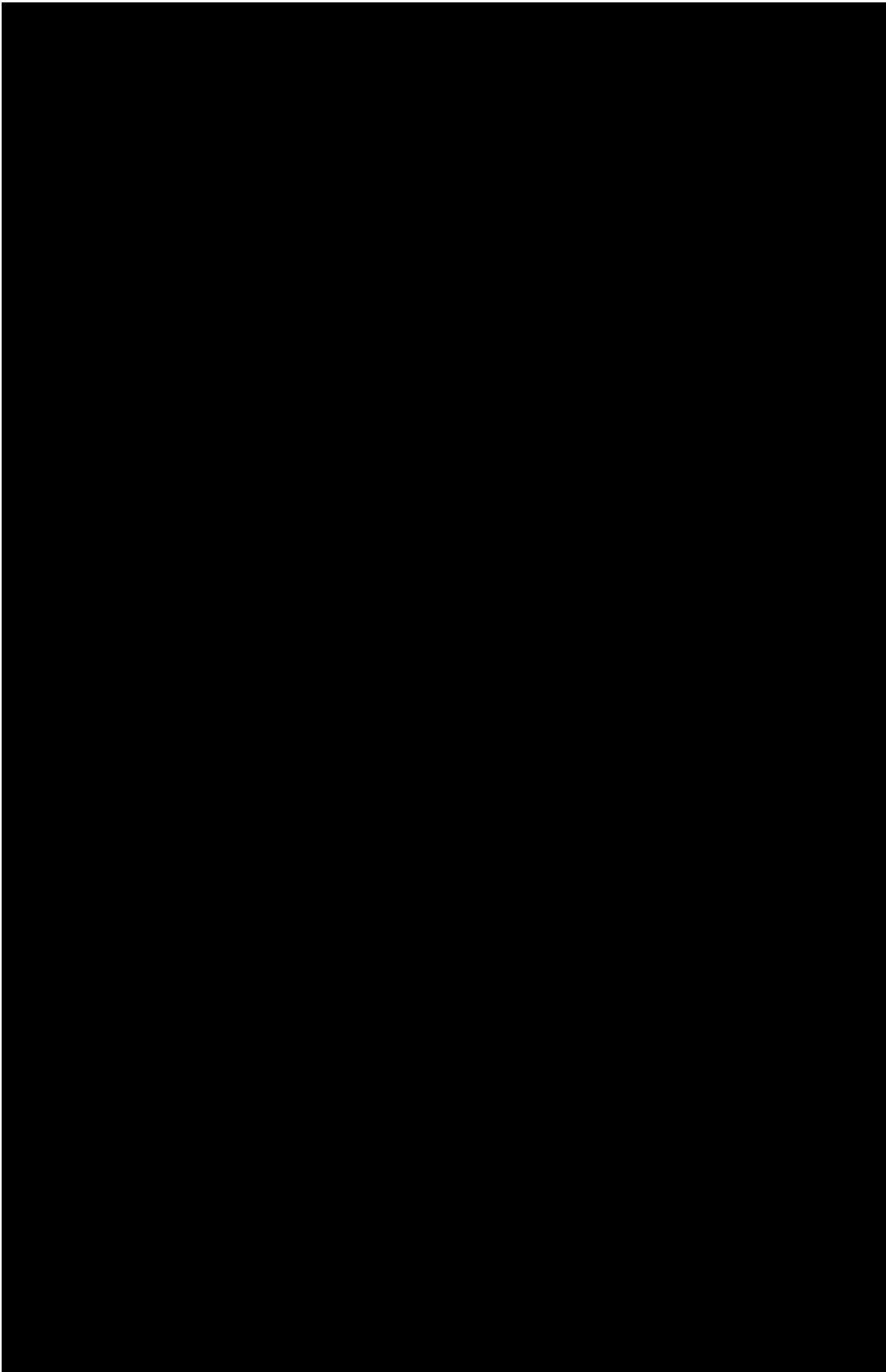
In DAA's view this represents a “false economy” and is the wrong approach for the following reasons :

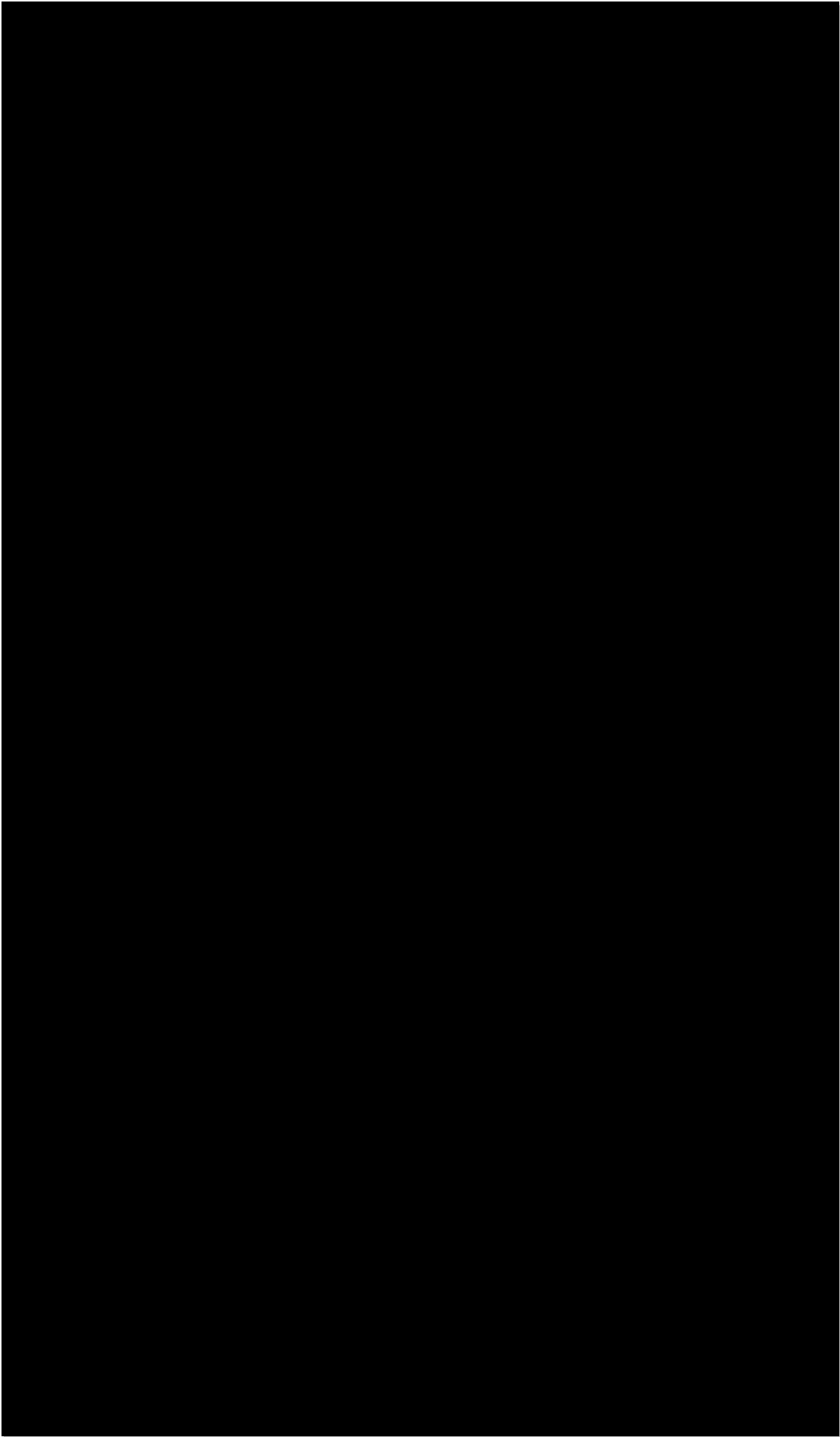
- Rental income is a vital component of DAA's single till revenues which subsidise landing charges.
- DAA's property estate comprises significant ageing stock of a diverse nature. 40% of properties containing lettable space predate 1980.
- DAA's total lettable estate is circa 116,000 square metres<sup>18</sup>. We are seeking only €10.5 million in capex over 5 years, which at an average refurbishment cost of €1,000 per square metre, would only translate into 10,000 m<sup>2</sup> of refurbished space, or only 9% of the estate. Even at that rate of refurbishment it would take over 60 years to refurbish the entire estate – a timescale that is obviously not acceptable.
- In the current economic environment, rents are under constant downward pressure, and tenants are often seeking to reduce the amount of space that they are paying for. These factors mean that a higher level of refurbishments is needed, as more new tenants are required in order to replace those departing the airport or downsizing.
- Due in part to the downturn and also as a result of the building boom, airport tenants have a much wider choice of quality accommodation outside the airport and so it is even more important that DAA invests in its stock in order to remain competitive and maintain its current rental income.

DAA urges CAR to reconsider its draft decision and to allow the full €10.5 million into the RAB so that property income can be maintained.

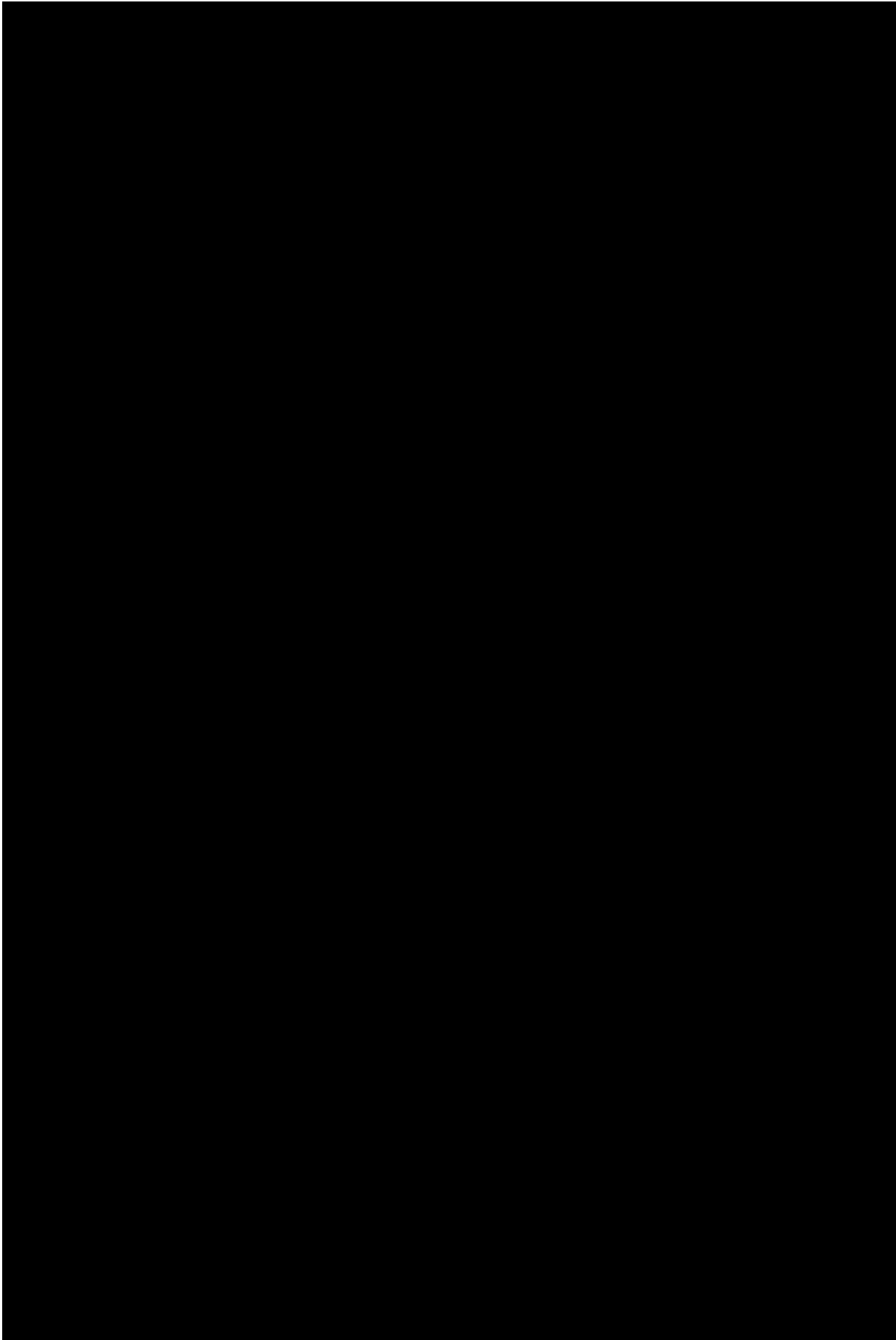
<sup>18</sup> Excluding the Hangers and related buildings referred to in CIP 2.017 and 2.018

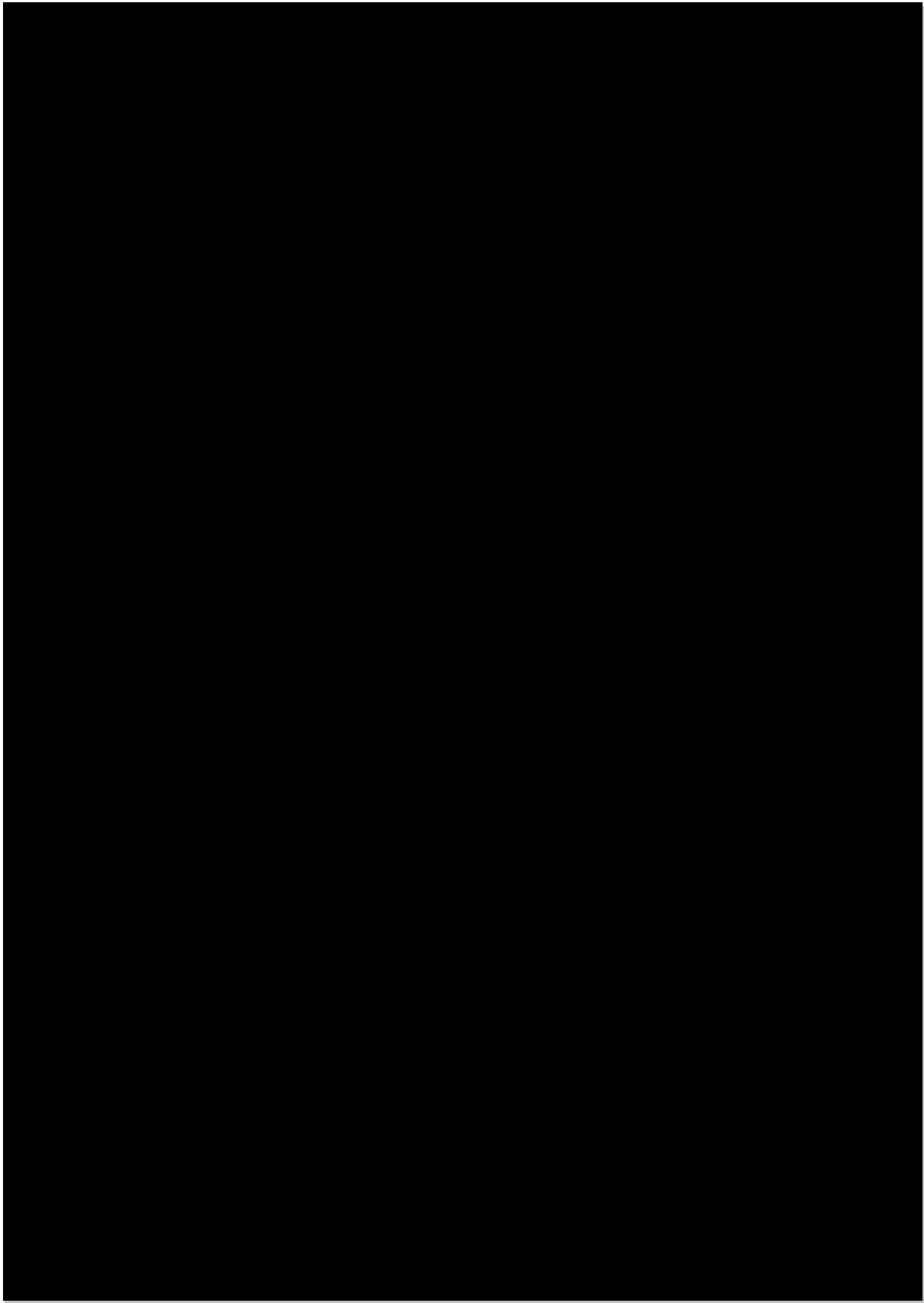
**Schedule 1 : CIP 6.054 – Stop Bars Restated cost**

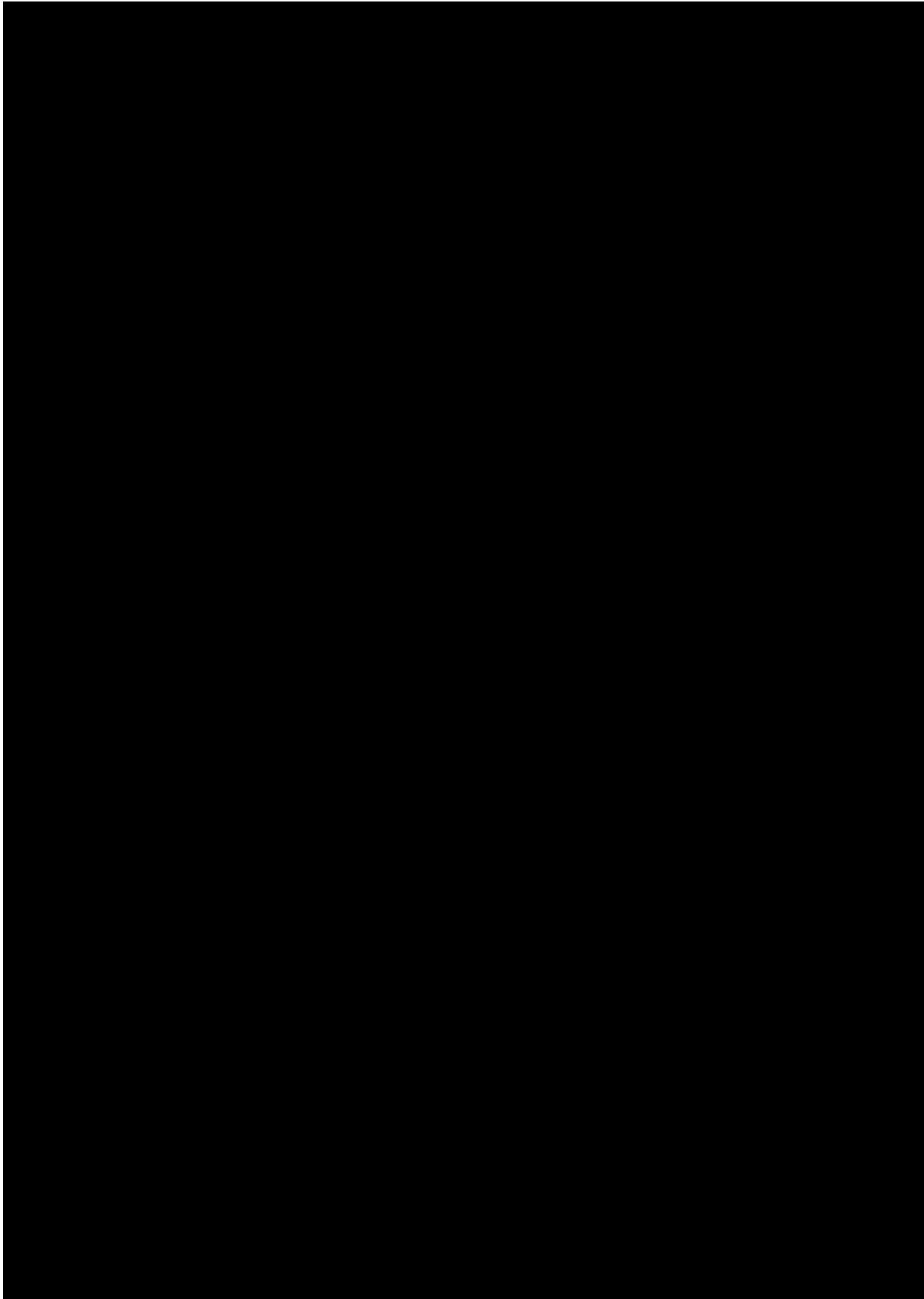






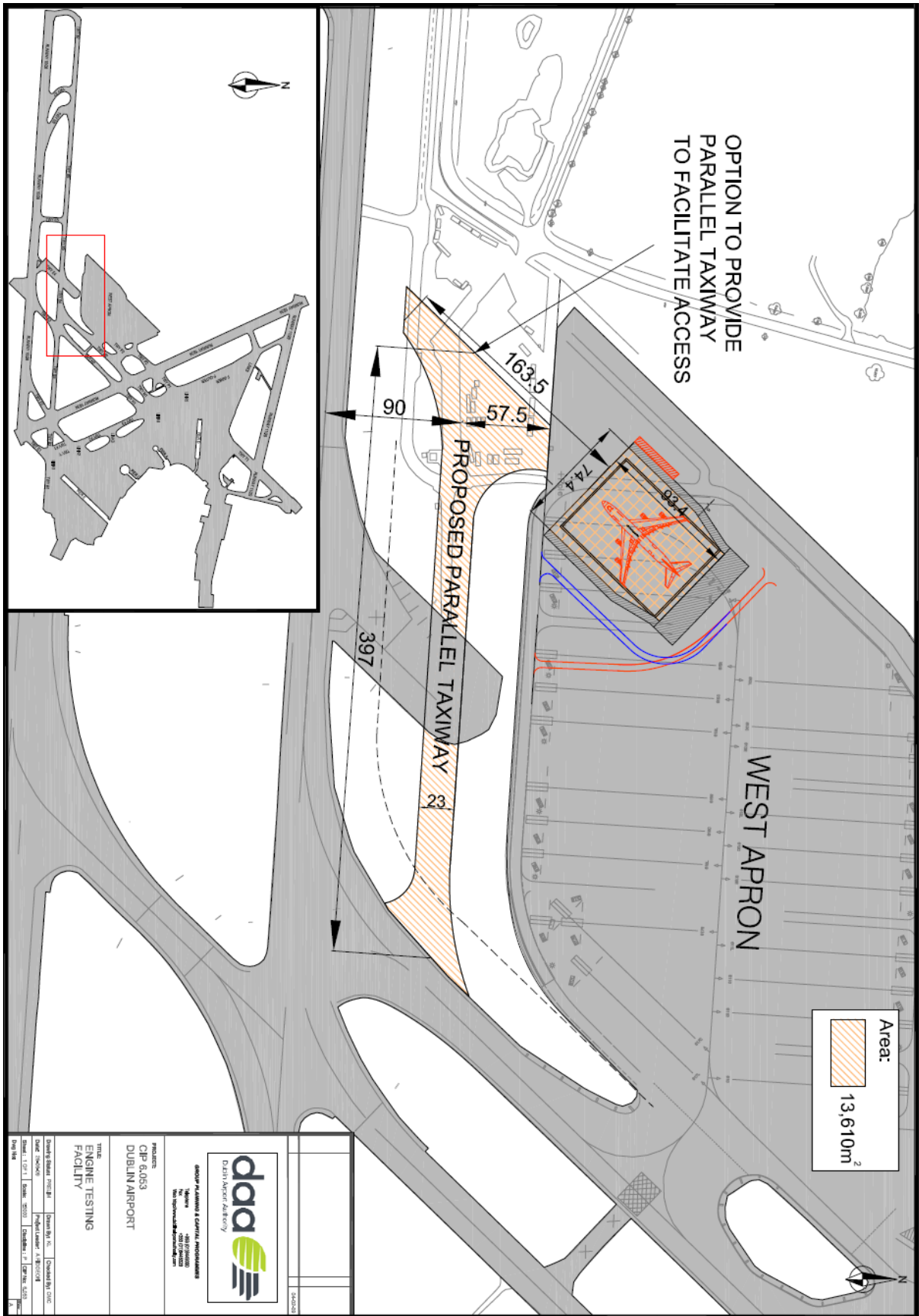




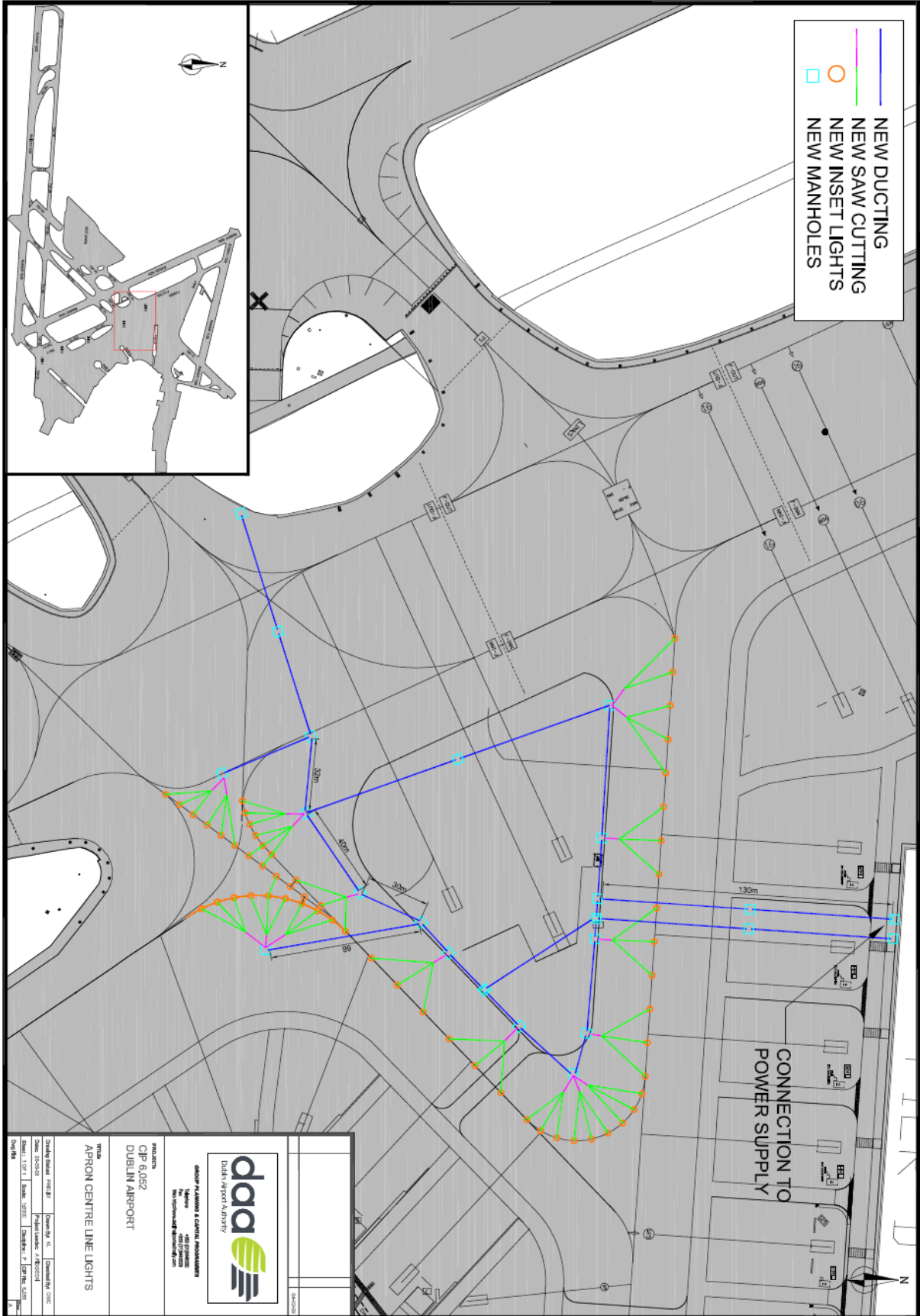




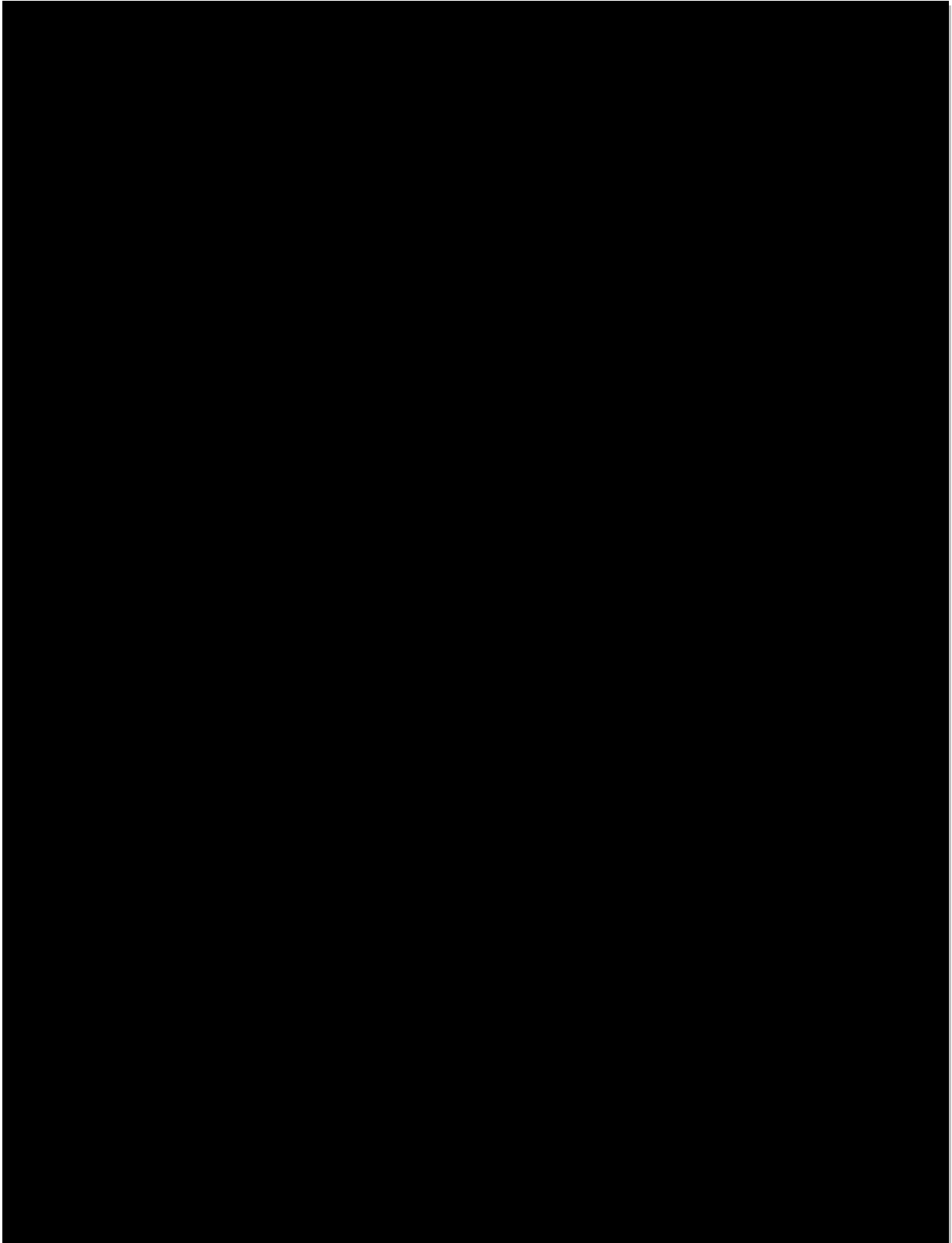
Schedule 2 : CIP 6.053 – Engine Testing Facility



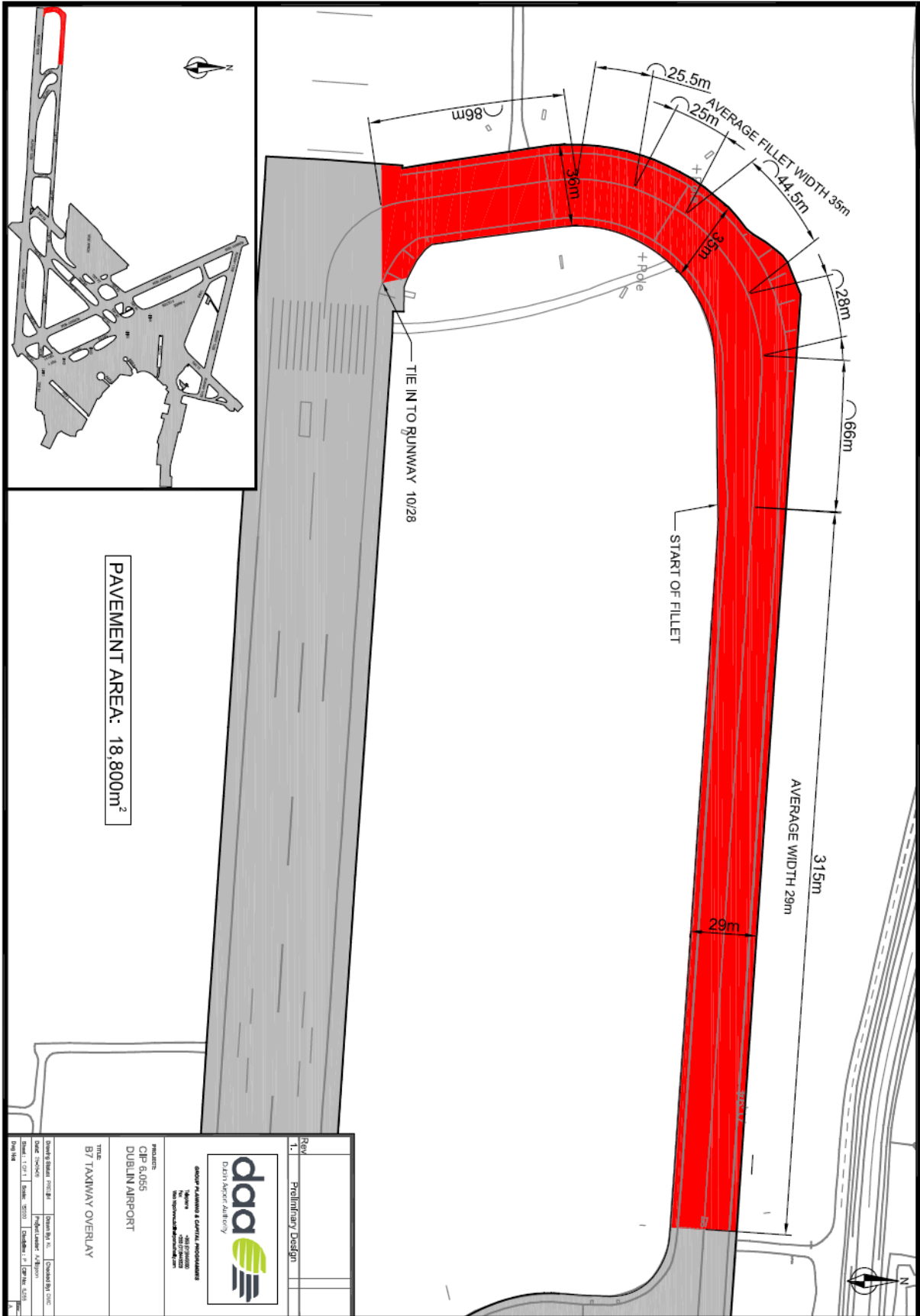
Schedule 3 : CIP 6.052 – Central Apron Reconstruction



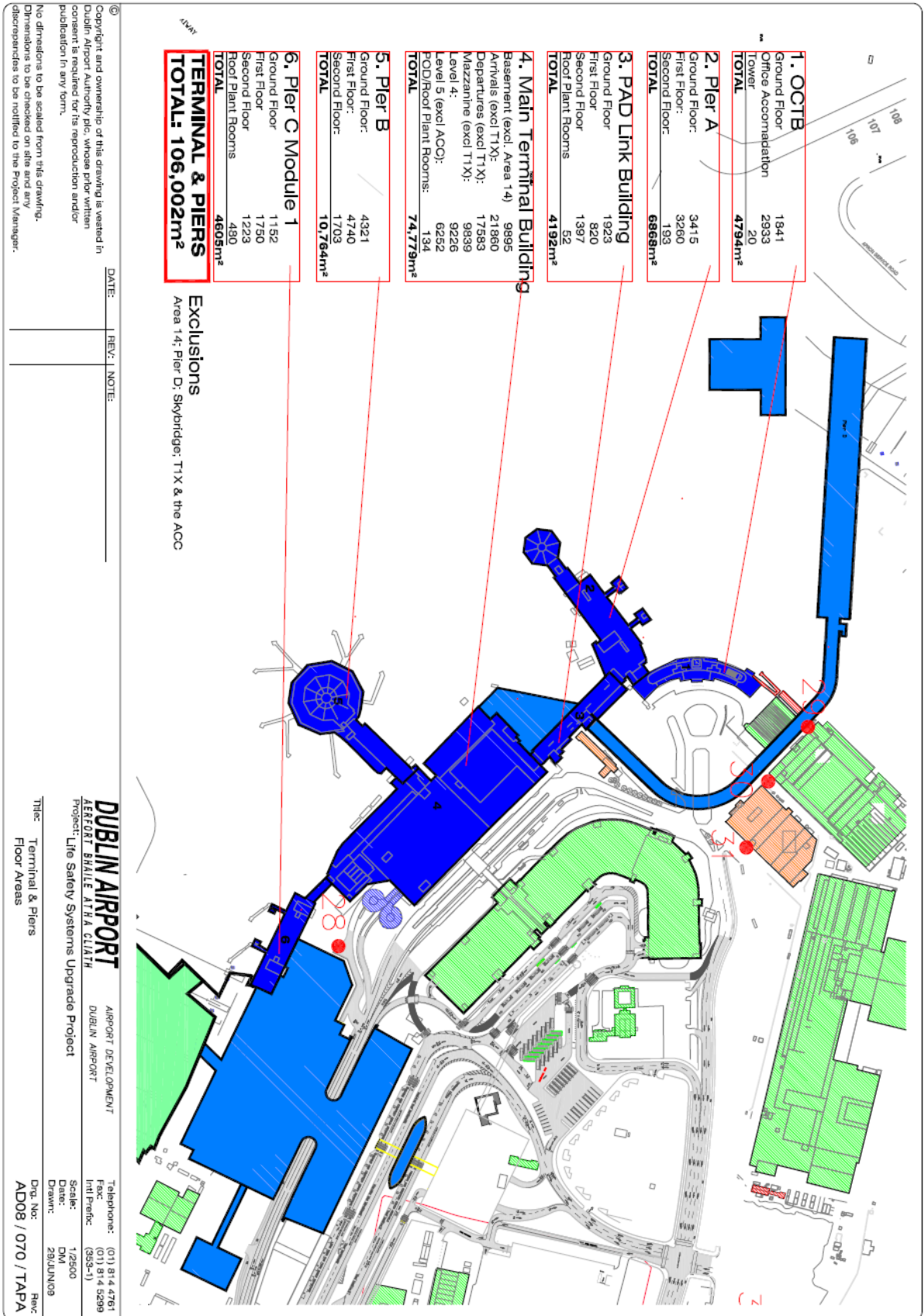
**Schedule 3 : CIP 6.052 – Central Apron Reconstruction**



Schedule 4 : CIP 6.055 – B7 Taxiway Overlay



# Schedule 5: CIP 7.036 – T1 Life Safety Systems Floor Layout





Schedule 6 : CIP 5.013 Retail Refurbishments

### The Street : layout 2009

THE STREET - 2009



### The Street : Proposed Layout 2010 - 2014



August 2009

**Commission for Aviation  
Regulation's Draft Determination  
of the Cost of Capital for Dublin  
Airport Authority: A Review**

**NERA**

Economic Consulting

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## Executive Summary

Dublin Airport Authority (DAA) has commissioned NERA to review the cost of capital assumptions incorporated in the Commission for Aviation Regulation's (CAR) Draft Determination (DD) on the maximum level of airport charges for Dublin Airport to be applied at the next price control review commencing in 2010.<sup>1</sup> NERA's review of the DD follows on from a March 2009 report NERA prepared on DAA's cost of capital (hereafter referred to as "the March 2009 report" or "the previous report").<sup>2</sup>

In the DD CAR propose a real pre-tax cost of capital of 7.0%, 0.4 percentage points lower than the cost of capital from the last price review in 2005 and considerably below NERA's March 2009 recommendation for DAA of 8.0-9.4%. Table 1 shows the break-down of CAR's DD alongside CAR's 2005 Final Determination and NERA's recent recommendation.

**Table 1**  
**CAR's Draft Cost of Capital (%)**

	CAR Final Determination 2005	CAR Draft Determination 2009	DAA / NERA 2009 (Assuming single A Credit Rating)
Gearing	46	50	50
Real Risk-free Rate	2.6	2.5	2.8 – 4.1
Equity Risk Premium	6.0	5.0	6.0
Asset Beta	0.61	0.61	0.6 – 0.7
Real post-tax Cost of Equity*	9.2	8.7	10.0 – 12.5
Real Cost of Debt	3.7	4.1	4.6
<b>WACC (real, pre-tax)</b>	<b>7.4</b>	<b>7.0</b>	<b>8.0 – 9.4</b>
<b>WACC (real, post-tax)*</b>	<b>6.5</b>	<b>6.1</b>	<b>7.0 – 8.2</b>

Source: *Maximum Level of Airport Charges for Dublin Airport Draft Determination, 18 June 2009*;  
Note: (\*) based on NERA calculation. CAR use a corporate tax rate of 12.5% for 2005 and 2009.

Table 1 highlights the key differences between CAR's DD and NERA's position:

1. Equity risk premium – CAR proposes a reduction from 6% at the last review, consistent with NERA's view, to 5% at this review despite substantial upheaval in financial markets over the intervening period;
2. Risk-free rate – CAR's DD RFR of 2.5% is similar to its 2005 position but, unlike NERA, CAR inappropriately fails to include an Irish country risk premium to compensate investors for undiversifiable Ireland-specific risks;
3. Cost of debt – CAR's recommendation of 4.1% is too low to be consistent with the investment grade credit rating it has assumed elsewhere in the DD.

<sup>1</sup> The draft decision is available at <http://www.aviationreg.ie/fileupload/Draft%20Determination%202010-2014%20redacted%20>.

<sup>2</sup> NERA (2009): [The Cost of Capital for Dublin Airport – A Report for Dublin Airport Authority](#).

Two other aspects of CAR's DD are particularly concerning:

4. CAR bases its financial viability assessment upon enabling DAA to maintain an investment grade credit rating in preference to a single A rating, which potentially inhibits DAA's access to capital during periods of market turmoil and leads to a higher cost of debt though this is not reflected in CAR's subsequent assessment, and;
5. CAR has based its estimates of the cost of capital on long run time series data and placed little weight on current evidence, which implicitly assumes that conditions will recover by the start of 2010 and that post-recovery conditions will resemble long-run historic averages contrary to all economic commentary.

In this report we focus upon critiquing these five aspects of CAR's DD. We do not estimate the cost of capital in this report.

### **Current data cannot be ignored**

The economic outlook is very uncertain, especially in Ireland. In particular, there is considerable uncertainty about how deep the recession will be and how long it will last. The central forecasts of the OECD and IMF show that GDP growth in Ireland will be negative through 2009 and 2010 and only weakly positive in 2011.<sup>3</sup> These forecasts are marked by wider confidence intervals than is usual with greater-than-usual weight on downside risks. Looking further ahead market commentators expect that post-recovery conditions will converge to a "new normal" characterized by higher risk premiums in both debt and equity markets.

It is clear that there is a substantial risk that macroeconomic conditions will not recover by the start of the next price control period in 2010. Further, post-recovery conditions will share much in common with current conditions and most likely will not resemble pre-crisis conditions. Taken together CAR cannot simply disregard current market evidence in its Final Determination, but must instead seek to incorporate both current and long-run time-series data into its assessment.

### **The Equity Risk Premium has increased, not decreased, since 2005**

In its 2009 DD the CAR has used an ERP of 5%, which is 1 percentage point lower than its allowance in its 2005 determination. As the basis for its ERP estimate the CAR relies primarily upon *historical* evidence on equity returns from the Credit Suisse Global Investment Returns Sourcebook 2009. Using long-term historic data to estimate the ERP implies that past expectations are an unbiased estimate of future expectations. This assumption, however, is not appropriate at the current time since the world's financial markets are currently experiencing acute stress, which has led to a large contraction in the capital available to support investment and a significant increase in risk premiums.

There is a wide range of evidence that shows the current ERP is higher than long run historical levels. This includes:

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<sup>3</sup> See IMF Country Report 09/195 (May 2009) Ireland: 2009 Article IV Consultation-Staff Report, p. 33; OECD Economic Outlook: Ireland (June 2009)

- Forward-looking evidence from Dividend Growth Models that shows the ERP increasing consistent with declining share prices and increased perceptions of risk;
- Data from call options on the implied market volatility of the Eurostoxx 50 shows expected volatility has increased and is anticipated to remain elevated for at least the next 24 months (the longest horizon available);
- Evidence that debt spreads adjusted for liquidity premia and default risk show the ERP has increased;
- Statements from the European Central Bank that unequivocally note the increase in the ERP, and;
- Recent regulatory precedent from the UK which indicates that the arithmetic mean of historic returns data should be used to estimate the ERP and that an increase in the ERP is more justified than a decrease.

Against this background, CAR's decision on the ERP fails to properly reflect the level of volatility in the market, is out of line with recent regulatory precedent and is inappropriate. We recommend that the CAR reconsider its assessment of the ERP taking into account the updated and expanded evidence we present in this report.

### **CAR fails to include a Country Risk Premium for Ireland**

CAR's risk-free rate is based solely on German government bond yields. It does not, therefore, recognize the difference in risk of investing in Ireland compared to Germany.

The additional risk of investing in Ireland should be incorporated into the risk-free rate, via an Irish country risk premium, because investors cannot fully diversify their exposure to Ireland-specific risks. This is because national equity markets are increasingly correlated as markets globalize, yet markets remain partially segmented because (among other factors) investors prefer to invest domestically rather than internationally. In particular, the increase in correlation means that diversifying the risk of one country requires taking on greater exposure to other countries, but this does not occur in practice because of home bias and other market segmentation. In recognition of this principle academics and practitioners including Damodaran (2002), Pereiro (2002), Ogier et al (2004), Koller et al (2005), and Pettit (2007) have advocated the inclusion of country risk premiums.

In this report we provide updated estimates of the Irish risk premium based on a comparison of Irish and German government bonds and CDS data. Market evidence shows a sovereign risk premium for Ireland in the range of 1.4-1.5%.

CAR should review its assessment in light of the additional theoretical explanation and updated evidence we provide.

### **CAR's Cost of Debt is too low**

CAR concluded on a real pre-tax cost of debt of 4.1% in its Draft Determination, slightly above the mid-point of its 3.5-4.5% range, but below the 4.6% NERA recommended. CAR do not explicitly state what credit rating their cost of debt estimate is associated with, however, to be internally consistent with their financial viability assessment the cost of debt

should be based on an investment grade credit rating. CAR's cost of debt is too low, however, to be consistent with a BBB rating.

In this report we cite evidence from DAA's financial advisors that shows the nominal cost of a bond issue by DAA at a BBB rating would be about 8.8% compared to about 6.8% at a single A rating. Evidence from other sources corroborates the substantial increase in the cost of debt associated with shifting from an A to a BBB rating. We also note that the CAR's conclusion – regardless of the credit rating assumed - is based on a methodology which inappropriately does not make allowance for transaction or pre-funding costs, and makes use of the UK Civil Aviation Authority's March 2009 Stansted decision which is outdated and (as Stansted is not a separately quoted airport) is not subject to any meaningful market test.

We also update our estimate of the cost of debt for DAA. Our updated estimates indicate that DAA's cost of debt is around 4.7% at an A rating, but 5.1% at a BBB rating taking into account the cost of DAA's existing debt and its refinancing and new debt requirements. Both these estimates of the cost of debt are considerably higher than CAR's.

We conclude that CAR's allowed cost of debt is too low at a BBB rating and encourage the CAR to revisit its estimate of the cost of debt incorporating the methodological changes we recommend and the updated evidence we present.

### **CAR's Financial Viability Test**

CAR regards an investment credit rating grade – rather than the single A rating we argued for in our March 2009 report - as sufficient to enable DAA to finance Dublin Airport. However, we remain of the view that the CAR should act to enable DAA to maintain a single A credit rating, which is required to provide DAA headroom in the event of a plausible downside scenario that might entail a credit rating downgrade: targeting an A rating allows some headroom for DAA to access the debt markets at reasonable costs under a downside scenario that leads to a downgrade to A-. However a downgrade into BBB territory might inhibit DAA's ability to raise capital as the events of late 2008 demonstrated. In this report we present updated and additional evidence that a BBB rated DAA is likely to be unable to access bond and bank debt markets as required.

In this report we also stress the need for CAR to subject its financial viability tests to plausible downside scenarios. In this report we highlight the possible impact of low or negative inflation upon DAA's financial ratios, particularly gearing and interest coverage, and DAA's credit rating. We encourage CAR to stress test its forecasts under plausible downside scenarios since DAA needs to be financially strong not only on central projections, but also in the event of unanticipated but plausible downside shocks.

## 1. Introduction

Dublin Airport Authority (DAA) has commissioned NERA to review the Commission for Aviation Regulation's (CAR) Draft Determination (DD) on the maximum level of airport charges for Dublin Airport to be applied in setting allowed revenues at the next price control review in 2010,<sup>4</sup> specifically its cost of capital assessment.

This report is structured as follows:

- Section 2 illustrates that the CAR was incorrect to ignore the impact of the credit crisis on the cost of capital given the weak and uncertain economic outlook;
- Section 3 critiques the CAR's estimate of the equity risk premium (ERP);
- Section 4 shows the deficiencies resulting from the CAR's failure to include an Irish country risk premium;
- Section 5 reviews the inconsistencies endemic in CAR's estimate of the cost of debt, and;
- Section 6 reviews the CAR's financeability test.

The Appendices provide various supporting material.

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<sup>4</sup> The draft decision is available at [http://www.aviationreg.ie/fileupload/Draft%20Determination%202010-2014%20redacted%](http://www.aviationreg.ie/fileupload/Draft%20Determination%202010-2014%20redacted%20).

## 2. High Level Critique of CAR's Cost of Capital

In its Draft Determination (DD), the CAR proposes a real pre-tax cost of capital (WACC) of 7.0%, 0.4 percentage points lower than the cost of capital from the last price review in 2005. The proposed pre-tax WACC is considerably below NERA's recommendation for DAA of 8.0-9.4%.<sup>5</sup> Table 2.1 shows the CAR's Draft Determination alongside its 2005 Final Determination and NERA's 2009 recommendation.

**Table 2.1**  
**CAR's Draft WACC 2009 Compared to NERA Recommendation (%)**

	CAR Final Determination 2005	CAR Draft Determination 2009	DAA / NERA 2009 (Assuming single A Credit Rating)
Gearing	46	50	50
Real Risk-free Rate	2.6	2.5	2.8 – 4.1
Equity Risk Premium	6.0	5.0	6.0
Asset Beta	0.61	0.61	0.6 – 0.7
Real post-tax Cost of Equity*	9.2	8.7	10.0 – 12.5
Real Cost of Debt	3.7	4.1	4.6
<b>WACC (real, pre-tax)</b>	<b>7.4</b>	<b>7.0</b>	<b>8.0 – 9.4</b>
<b>WACC (real, post-tax)*</b>	<b>6.5</b>	<b>6.1</b>	<b>7.0 – 8.2</b>

Source: *Maximum Level of Airport Charges for Dublin Airport Draft Determination*, 18 June 2009;  
Note: (\*) based on NERA calculation. CAR use a corporate tax rate of 12.5% for 2005 and 2009.

At a high level, a reduction in the WACC seems implausible given the financial crisis, which has led to a significant and non-transitory increase in market volatility and increased risk perception. This has implications for the costs of both debt and equity such that it seems more likely that investors would expect an increase in the allowed regulatory rate of return and not a decrease as suggested by the CAR.

Though CAR has not stated its assumptions, its decision to reduce the WACC implies that it considers that financial markets will revert quickly to the benign market conditions observed over the last price control period. This would also imply that CAR would have to assume that:

- The economy and financial markets will recover by the beginning of the next price control period (i.e. within 5 months), and;
- Post-recovery financial market conditions will resemble historic average conditions.

<sup>5</sup> NERA (2009): *The Cost of Capital for Dublin Airport – A Report for Dublin Airport Authority*.

## 2.1. The Economic Outlook

### *The Economic Outlook is Weak and Uncertain ...*

The economic outlook is very uncertain especially about how deep the recession will be and how long it will last. Current forecasts of GDP growth are marked by wider confidence intervals than is usual, often placing greater weight on downside risk. Further, the dispersion of forecasts from different sources is greater than usual.

Our analysis of the economic outlook shows a wide range of GDP forecasts undertaken by independent and reputable organisations. For instance, forecasters such as the Economic and Social Research Institute (ESRI) expect under a central case scenario that the economic recovery will begin in 2011-2012 and forecast Irish GDP growth averaging 4.8-5.6% over 2010-15.<sup>6</sup> By contrast, the OECD's and IMF's central forecasts show that GDP growth in Ireland will be negative through 2009 and 2010 and only weakly positive in 2011.<sup>7</sup> Furthermore, forecasters emphasise that there is a great deal of uncertainty around their central projections.<sup>8</sup>

### *... which Increases the ERP ...*

There is a substantial body of research examining the relationship between the business cycle and the ERP. For example, we note:

- Lettau, Ludvigson and Wachter (2007) found that declining macroeconomic volatility explains a large portion of the fall in US ERP in the 1990s.<sup>9</sup>
- Kizys and Spencer (2008) examined long-term evidence from the UK using a GARCH model and find that macroeconomic volatility (primarily in output growth, but also in inflation) is associated with a higher ERP.<sup>10</sup>

This body of research shows there is a clear link between macroeconomic uncertainty and growth volatility on the one hand and the ERP and risk-premia on the other. For this reason alone the weak and uncertain economic outlook has led to an increase in the ERP and the CAR's reduction in the ERP is therefore unjustified.

### *... and leads to Financial Market Volatility ...*

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<sup>6</sup> ESRI (May 2009), Recovery Scenarios for Ireland, Research Series #7, p. 30, p. 37

<sup>7</sup> See IMF Country Report 09/195 (May 2009) Ireland: 2009 Article IV Consultation-Staff Report, p. 33; OECD Economic Outlook: Ireland (June 2009)

<sup>8</sup> IMF (April 2009) World Economic Outlook: Crisis and Recovery; ESRI (May 2009), Recovery Scenarios for Ireland, Research Series #7, p. 40;

<sup>9</sup> Lettau, M., Ludvigson S. C., and J. A. Wachter (2007). "The Declining Equity Premium: What Role Does Macroeconomic Risk Play?" *Review of Financial Studies* 21(4), pp. 1653-87

<sup>10</sup> Kizys, R. and Spencer, P. (2008) "Assessing the Relation between Equity Risk Premium and Macroeconomic Volatilities in the UK", *Quantitative and Qualitative Analysis in the Social Sciences* 2(1), pp. 50-77



The weakness of current macroeconomic conditions and uncertainty about the timing and pace of the recovery means that financial market volatility will remain elevated and could increase further. In particular, we note:

- A recent working paper from the Bank of International Settlements observes that financial volatility is associated with weak economic conditions through its relationships with GDP volatility, uncertainty over economic conditions and risk aversion (all of which increase during downturns).<sup>11</sup>
- The countercyclical nature of financial market volatility is well known in the academic literature, including *inter alia* Hamilton and Lin (1996)<sup>12</sup>, Campbell et al (2001)<sup>13</sup>, and Andreou et al (2000).<sup>14</sup>

There is a clear theoretical link between weak and uncertain economic conditions – like current conditions – and financial market volatility.

### ***... which also Increases the ERP***

The increase in financial market volatility (caused by weak and uncertain economic conditions) leads to an increase in the ERP since the theoretical relationship between risk and return informs us that investors will demand a greater premium when they expect volatility to be higher. There is significant conceptual and empirical support for this relationship between expected financial market volatility and equity risk premium: among others, we note the recent findings of Brandt and Kang (2004)<sup>15</sup>, Guo and Whitelaw (2006)<sup>16</sup>, Banerjee, Doran and Peterson (2007)<sup>17</sup> and Graham and Harvey (2008).<sup>18</sup>

### ***Conclusion***

Our analysis has shown that the economic outlook is weak and highly uncertain and that recovery is not anticipated until 2011 or later. There is a theoretical link between weak and uncertain economic conditions and the ERP both directly and indirectly via financial market volatility. This means that not only has the ERP increased currently but that it is likely to

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<sup>11</sup> Bank of International Settlements (2006) “The recent behaviour of financial market volatility”, *BIS Paper No. 29*, p.

<sup>12</sup> Hamilton, J D and G Lin (1996): “Stock market volatility and the business cycle”, *Journal of Applied Econometrics*, vol 11, pp 573-93.

<sup>13</sup> Campbell, J Y, M Lettau, B G Malkiel and Y Xu (2001): “Have individual stocks become more volatile? An empirical exploration of idiosyncratic risk”, *Journal of Finance*, 56 (1), pp 1-43.

<sup>14</sup> Andreou E, D R Osborn and M Sensier (2000): “A comparison of the statistical properties of financial variables in the USA, UK and Germany over the business cycle”, *The Manchester School*, 68 (4), pp 396-418.

<sup>15</sup> Brandt., M., and Q. Kang. (2004). “On the Relationship Between the Conditional Mean and Volatility of Stock Returns: A Latent VAR Approach”, *Journal of Financial Economics* 72, pp.217-257

<sup>16</sup> Guo, H. and R. Whitelaw (2006). “Uncovering the risk-return relationship in the stock market”, *Journal of Finance* 61, pp. 1433-63.

<sup>17</sup> Banerjee, P., J. Doran, J. and D. Peterson (2007). “Implied volatility and future portfolio returns”, *Journal of Banking & Finance*, 31(10), pp.3183-99

<sup>18</sup> Graham, J. and Harvey, C.R. (2008) “The Equity Risk Premium in 2008: Evidence from the Global CFO Outlook Survey”, SSRN Working Paper

remain elevated if economic conditions do not recover until 2011 or beyond. The current increase in the ERP cannot be ignored by the CAR on the grounds that it will have unwound by the beginning of the upcoming price control period. Rather, the CAR needs to factor the increase in the ERP into its assessment of the cost of equity and the WACC as a whole.

## 2.2. Post-Recovery Conditions

A considerable amount of recent market commentary has focused on what is often termed “the new normal”, used as short-hand to refer to post-recovery macroeconomic and financial market conditions as distinct from pre-crisis conditions. In this section we present some of this recent commentary.

Citigroup CEO Vikram Pandit recently discussed the new normal in a speech at the National Summit in June 2009, stating that current capital market conditions were probably closer to the “new normal” than the conditions that prevailed five years ago:

*“I’m not so sure we go back to the world we were in. ... I know the slack’s going to get picked up by the capital markets – and there are some encouraging signs of that happening ... but we also have to acknowledge that we’re going to have to think restructuring businesses, restructuring industries, to reflect a world where you have cost of capital, where you do have less credit available (and) the cost of credit is higher.”<sup>19</sup>*

Mohamed El-Erian, CEO of PIMCO (which runs the Total Return Fund, the world’s largest bond fund) expressed similar sentiments in PIMCO’s May 2009 Secular Outlook (entitled “A New Normal”):

*“Markets will revert to a mean, but it will not look anything like that of recent years. Relative to where it is coming from, the financial system will be de-levered, de-globalized, and re-regulated. Global growth will be lower and unemployment higher, notwithstanding the continued rotation of dynamism away from industrial countries and toward emerging economies. Price formation in many markets will be influenced by the legacy and, in some cases, continuation of direct government involvement. ... For a financial industry known for its famously short memory (and related infrastructures and behavior), this will feel like a new normal. Adaptations will be needed as the configuration of risks and returns shift, government debt balloons, and capital structures potentially migrate toward a simplified structure consisting just of equity and senior debt instruments.”<sup>20</sup>*

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<sup>19</sup> “Citi CEO: markets recovering but won’t be the same”, Reuters, 15 June 2009  
<<http://www.reuters.com/article/rbssFinancialServicesAndRealEstateNews/idUSN1523054620090615>>, accessed 18 June 2009

<sup>20</sup> Mohamed El-Erian, “Secular Outlook: A New Normal”, May 2009,  
<<http://www.pimco.com/LeftNav/PIMCO+Spotlight/2009/Secular+Outlook+May+2009+El-Erian.htm>>, accessed 18 June 2009

El-Erian also stated that “*the equity risk premium will now reflect a permanently higher threat of subordination*” and that “*premiums across risk factors and markets will reflect in a seemingly permanent fashion the bout of disruptions to the sanctity of contracts and the capital structure, as well to the autonomy of key economic institutions.*”

Commentary in the financial press has mirrored these statements. Among these, we cite two recent articles from the Financial Times:

- “*What can we say about the next expansion? Forecasts are inevitably speculative but some factors seem to be taking shape. ... either through regulation or impaired balance sheets, it seems unlikely that leverage will be so high in the next expansion, which suggests an increase in the real cost of capital. This will be further exacerbated by higher risk premiums - the Great Moderation has been rudely interrupted and financial markets will once again be concerned about risk.*”<sup>21</sup>
- “*... regardless of the pattern of GDP in 2009-10, how can markets realistically price the large uncertainties surrounding the global economy in the medium term? ... probabilities are as far as we can go, for we have no reliable templates, and that alone argues for sustainably higher risk premiums. We do know, though, that a higher cost of capital and weaker trend growth, not least because of demographic change, are baked in the cake.*”<sup>22</sup>

We conclude from this commentary that there is good reason to believe that post-recovery credit conditions will not resemble those that prevailed over the mid-2000s. In this context, CAR’s assessment of DAA’s cost of capital implies that it has made assumptions that are totally out of step with the “new normal”.

### **Conclusion**

The fundamental shift in investor appetite for risk going forward should be reflected in, in particular, a higher ERP and a higher cost of debt. An alternative interpretation of this market commentary is that greater weight should be given to current market conditions and less weight to historical averages than would otherwise be the case (if, for example, market conditions were expected to revert to historical averages).

### **2.3. Conclusion**

In its Draft Determination (DD), the CAR propose a real pre-tax cost of capital (WACC) of 7.0%, 0.4 percentage points lower than the cost of capital from the last price review in 2005. The reduction in the WACC is largely attributable to a decrease in the ERP assumed by the CAR (from 6% to 5%). Though CAR has not provided specific reasoning for its conclusions, if it is assuming that

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<sup>21</sup> Andrew Jones, “Managing fluctuations”, *The Financial Times*, 22 January 2009

<sup>22</sup> George Magnus, “Reasons why bear market rally will stall and reverse”, *The Financial Times*, 21 May 2009

- economic and financial conditions will return to 'normal' by the start of the upcoming price control period such that no weight needs to be attached to credit-crisis-affected current data; and
- post-recovery economic conditions will resemble pre-crisis conditions;

we believe that these assumptions would be ill-judged given the evidence presented above. Our analysis shows:

- The economic outlook is weak and uncertain, but recovery is not anticipated until 2011 at the earliest – well into the next price control period;
- Weak and uncertain economic conditions increase the ERP directly;
- Weak and uncertain economic conditions lead to higher financial market volatility, which in turn leads to a higher ERP, and;
- Market commentators expect post-recovery conditions to converge to a 'new normal' with a higher ERP and cost of debt.

All of these factors need to be taken into account by the CAR, such that a higher ERP and cost of debt should be included within the CAR's Final Determination. In particular, we note that the investment climate has changed dramatically since 2005 such that an increase in the DAA's WACC, rather than a reduction, should be expected.

### 3. CAR's Equity Risk Premium Estimate

The CAR has determined an ERP of 5%, which represents a 1 percentage point reduction compared to its 2005 decision of 6%. In our March 2009 Report, we present evidence that the ERP is 6%.

The CAR relies primarily upon evidence from the Credit Suisse Global Investment Returns Sourcebook 2009 (which is an update of the Dimson, Marsh and Staunton (2008) data we relied upon in our report). The CAR cross-checks this estimate using regulatory precedent from Ireland and the UK. At a high level we note:

- The CAR is overly reliant upon returns data from CSGIRS and overlook the authors' statement that the "short term risk premium exceeds the long-run average";<sup>23</sup>
- The CAR's reduction of the ERP is inconsistent with the increased uncertainty around the macroeconomic outlook which manifests itself in heightened market volatility and increased risk aversion of investors. The higher risk aversion means investors require significantly higher risk premia to commit funds to investments.

#### 3.1. Expected Market Volatility

There is theoretical and empirical evidence of a positive relationship between expected financial market volatility and the ERP: among others, Brandt and Kang (2004)<sup>24</sup>, Guo and Whitelaw (2006),<sup>25</sup> and Banerjee, Doran and Peterson (2007)<sup>26</sup> show that increased market volatility leads to higher risk aversion and a higher ERP.

Figure 3.1 presents the implied volatility of the Eurostoxx 50 index derived from call-options, with different maturities. Note the longest maturity available for implied volatility of the Eurostoxx 50 is 2 years.

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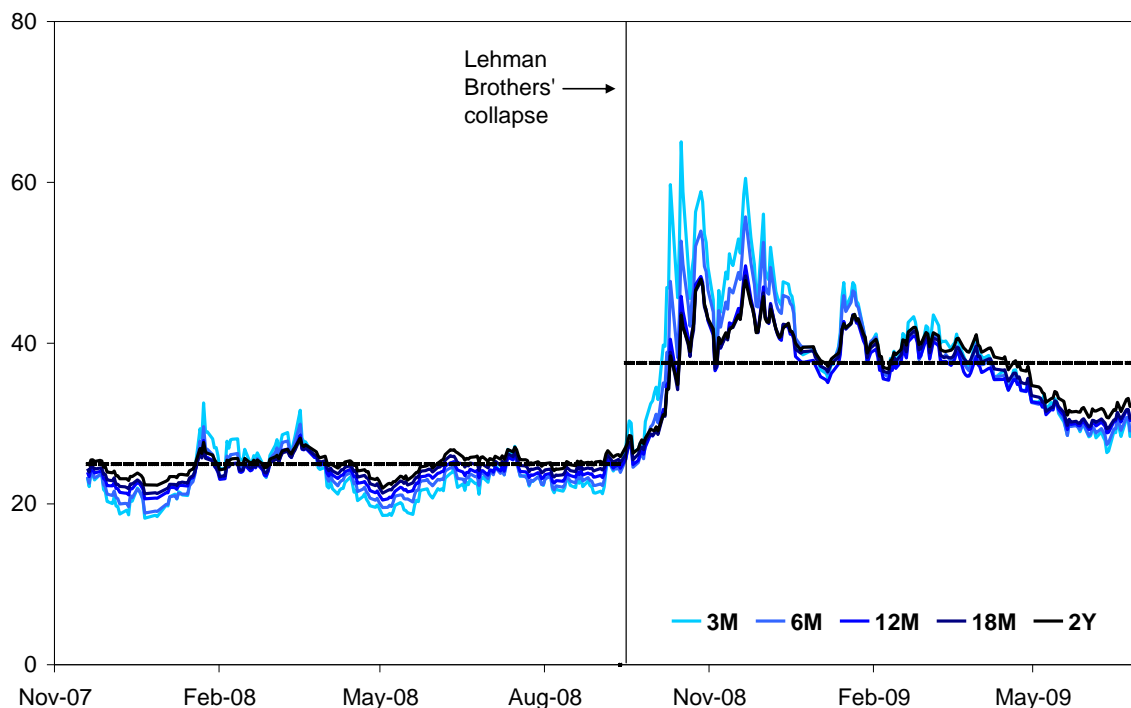
<sup>23</sup> See Credit Suisse Global Investment Returns Yearbook (2009), p12.

<sup>24</sup> Brandt., M., and Q. Kang. (2004). "On the Relationship Between the Conditional Mean and Volatility of Stock Returns: A Latent VAR Approach", *Journal of Financial Economics* 72, pp.217-257

<sup>25</sup> Guo, H. and R. Whitelaw (2006). "Uncovering the risk-return relationship in the stock market", *Journal of Finance* 61, pp. 1433-63.

<sup>26</sup> Banerjee, P., J. Doran, J. and D. Peterson (2007). "Implied volatility and future portfolio returns", *Journal of Banking & Finance*, 31(10), pp.3183-99

**Figure 3.1**  
**Option Implied Volatility of the Euro Stoxx 50 (%)**



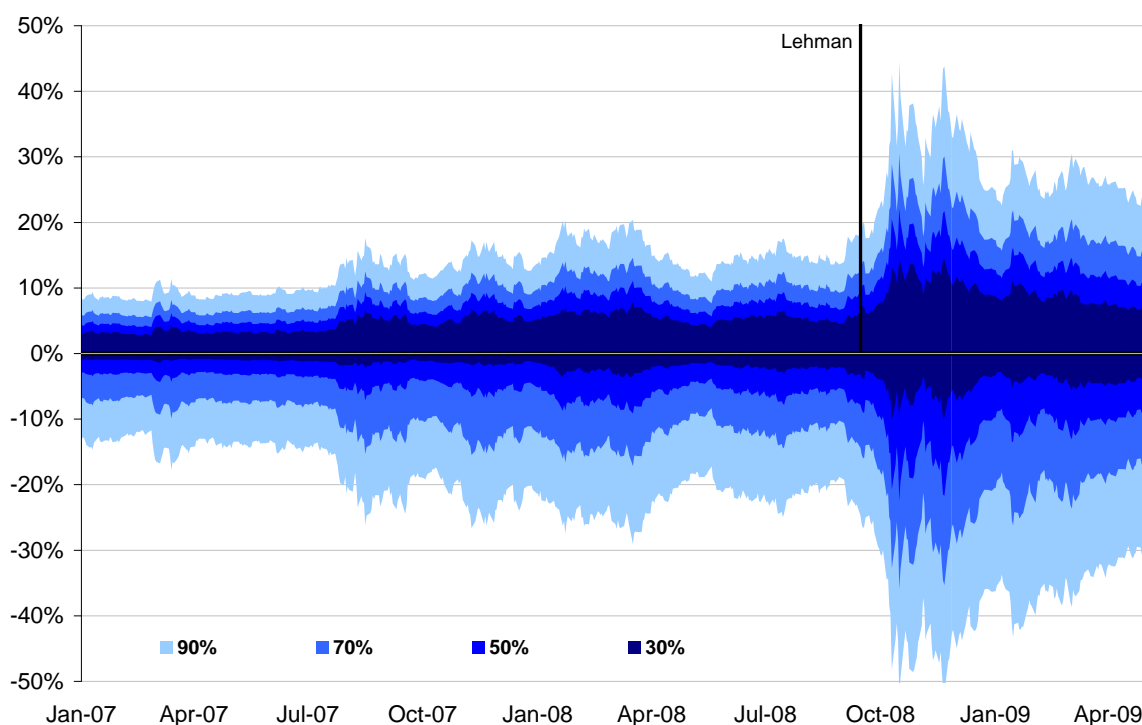
Source: NERA analysis of Bloomberg data until the end of June 2009.

Implied volatility has increased sharply over horizons out to two years-ahead (the longest available horizon). For example, the dashed lines indicate that implied volatility rose by over 10 percentage points from 25% to 38% in the wake of Lehman Brothers' collapse. This suggests that the ERP increased sharply at that time and has since remained elevated above historical-average levels. At the end of June two-year ahead implied volatility was around 31%, well above its pre-Lehmans' average of 25%. Although this level is not as high as it was about six months ago implied volatility remains well above historic averages. In addition to historical comparisons it should be noted that option-implied volatility is inherently forward looking. The continued elevated level of implied volatility indicates, therefore, that the market expects the increase in the ERP to continue over at least the next 24 months. This means that the ERP is expected to remain high until well into the next price control period and possibly beyond. The CAR needs to take this into account in setting its ERP allowance.

The option-implied volatility data presented above reflects the average market expectation of volatility. Evidence about the distribution of expectations provides useful insights into the uncertainty investors currently feel about the likely future performance of equity markets. Such data is not, however, available for the Eurozone (to our knowledge). As a proxy we rely on evidence from the Bank of England which publishes daily summary statistics on option-implied probability density functions for the FTSE 100. We use the dispersion of

expectations around the central (mean) forecast to demonstrate the degree of uncertainty and its skewness towards positive or negative outcomes.<sup>27</sup>

**Figure 3.2**  
**Uncertainty around Forward Expectations in the FTSE 100**



Source: NERA analysis of Bank of England data

Notes: Time series based on demeaned percentiles of BoE's option-implied probability density functions (based on three-month constant-maturity FTSE 100 options), normalised by the mean option-implied outcome

The shaded areas in Figure 3.2 represent confidence intervals of 30%, 50%, 70% and 90% (from darkest to lightest) around the option-implied mean expectation for the FTSE 100. For example, in early May 2007, the data suggest that investors expected (with 90% confidence) the FTSE 100 in three months to lie no higher than 10% above their mean forecast and no lower than 15% below their mean forecast.

We observe a dramatic rise in these confidence intervals following the collapse of Lehman in mid-September 2008. In October, implied 90% confidence intervals ranged over 90% around the mean compared to the 20-25% ranges that marked pre-crisis expectations. Crucially, although the relative dispersion of expectations has fallen since peaks last autumn, these data

<sup>27</sup> The Bank of England's forward expectations are constructed assuming risk neutrality, whereas option prices are likely to incorporate a premium to compensate risk-averse investors. Assuming risk neutrality therefore understates expected levels of the FTSE 100 relative to "true" risk-averse expected levels. We therefore focus on dispersion relative to the mean rather than absolute levels. See "Notes on the Bank of England Option Implied Probability Density Functions", Bank of England.

indicate that uncertainty remains well above historic levels and are more heavily skewed towards negative outcomes than has been the norm.

Overall, the evidence shows that uncertainty has increased significantly in equity markets since the beginning of the current downturn, particularly since the collapse of Lehman, and that volatility of Eurozone equity markets is expected to remain elevated compared to 2007 for at least another 24 months. This increase in option-implied stock market volatility is associated with perceptions of increased risk, and therefore an increase in the ERP. Our analysis suggests that the ERP will stay well above long-run averages for at least the coming 24 months.

### 3.2. Evidence from CDS Indices

In this section we provide further evidence that risk premiums in capital markets have increased significantly in recent months. We provide market evidence on the required premium of bearing bankruptcy risk. We show that bankruptcy risk and investors required return for bearing this risk has increased significantly in recent months. To this end, we draw on premiums of credit default swap (CDS) indices, which are derivative instruments to hedge credit risk on a group of entities, to show how investors required premiums for bearing bankruptcy risk has changed since the collapse of Lehman in September 2008.<sup>28</sup>

Although changes in CDS premiums reflect changes in the cost of insuring the debt of a company against bankruptcy, it is a close proxy for changes in the required risk premium for equity holders, since equity holders also bear bankruptcy risk for which they require adequate compensation.<sup>29</sup> In fact, given that equity holders' claim on the company's cash flows is subordinated to bondholders' claim, equity holders are exposed to higher bankruptcy risk and hence require higher compensation. Therefore, changes in CDS premiums are likely to be an underestimate of changes in risk premium demanded by equity holders.

Figure 3.3 shows CDS premiums of the iTraxx Europe index, which reflects the aggregate required premium for bearing bankruptcy risk of 125 investment grade rated companies, for both five-year and ten-year maturities.

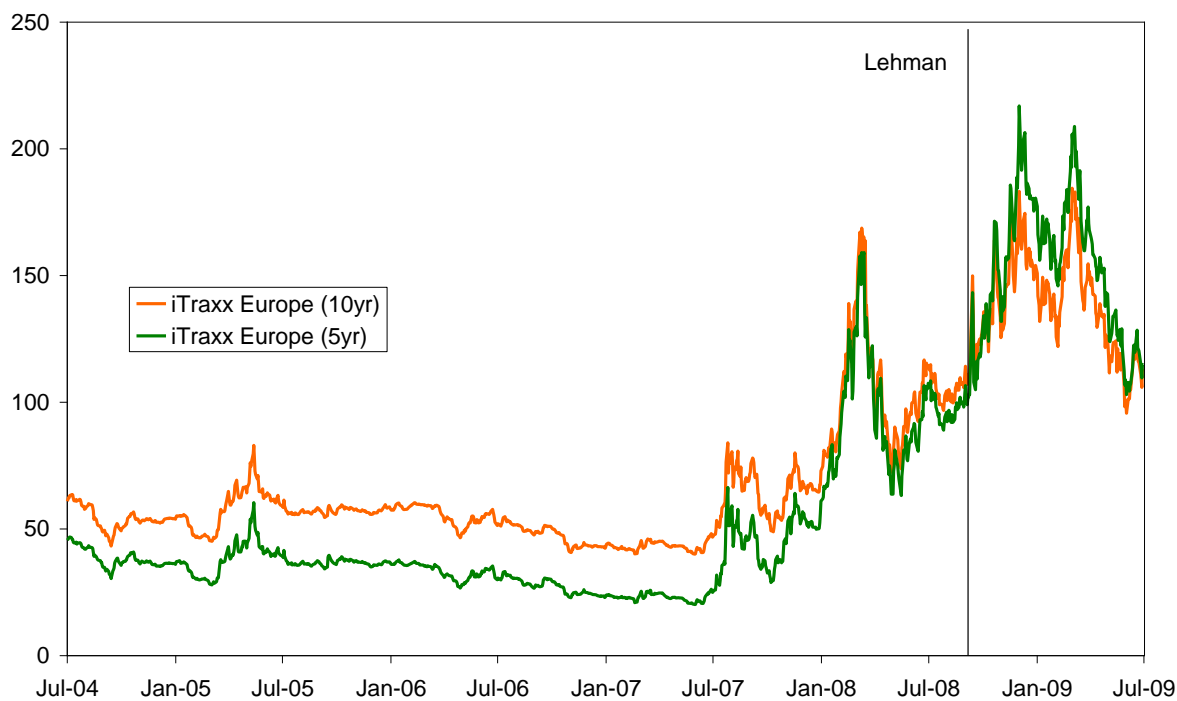
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<sup>28</sup> CDS indices constitute a benchmark for the cost to debtholders of protecting their investments against default. We present data from the iTraxx Europe CDS index, which covers the 125 most actively-traded investment-grade European entities (rebalanced every six months), as well as iTraxx sectoral CDS indices. Standard contracts on the index are quoted in terms of insuring €10 million of debt for five or ten years (each company accounts for an equal proportion, 0.8%, of exposure). A 100bps level for a five-year index therefore corresponds to a €100,000 annual premium to insure €10 million of debt against default over five years. We interpret increases in these indices as indicative of investor expectations of the generic risk of default.

<sup>29</sup> CDS premiums include a premium for counterparty risk (i.e. the risk that the transacting counterparty may not be able to meet its obligations), which may vary over time. Although there is reason to believe that this has increased, particularly following the collapse of AIG and Lehman Brothers in 2008, we assume for the purposes of this analysis that the increase is immaterial relative to the premium for default risk.



**Figure 3.3**  
**iTraxx CDS Indices: Europe (bps)**



Source: Bloomberg data until the end of June 2009.

Comparing the average level of these indices pre- and post-Lehman shows that the required premiums for bearing bankruptcy has increased by 125% (for ten-year maturity) and 250% (for five-year maturity). Although levels have fallen in 2009, we note that current levels (as of mid-June 2009) remain twice as high as average historic levels since 2004 (the earliest date CDS index data is available).

Our analysis shows that during periods of low market volatility, the required premium to bear bankruptcy risk has increased from around 25-50 basis points to around 100-200 basis points in recent months. This piece of market evidence strongly suggests that the premium for holding equities, which bears even higher bankruptcy risk than reflected in CDS premiums, has increased by at least 50-175 basis points. If we were to also include non-investment grade entities in our analysis the increase in the required premium would be even higher.

Our analysis clearly shows that there has been a fundamental re-pricing of risk in the market. Were CAR to continue to ignore this evidence it is likely to severely underestimate the cost of capital for DAA over the forthcoming regulatory period.

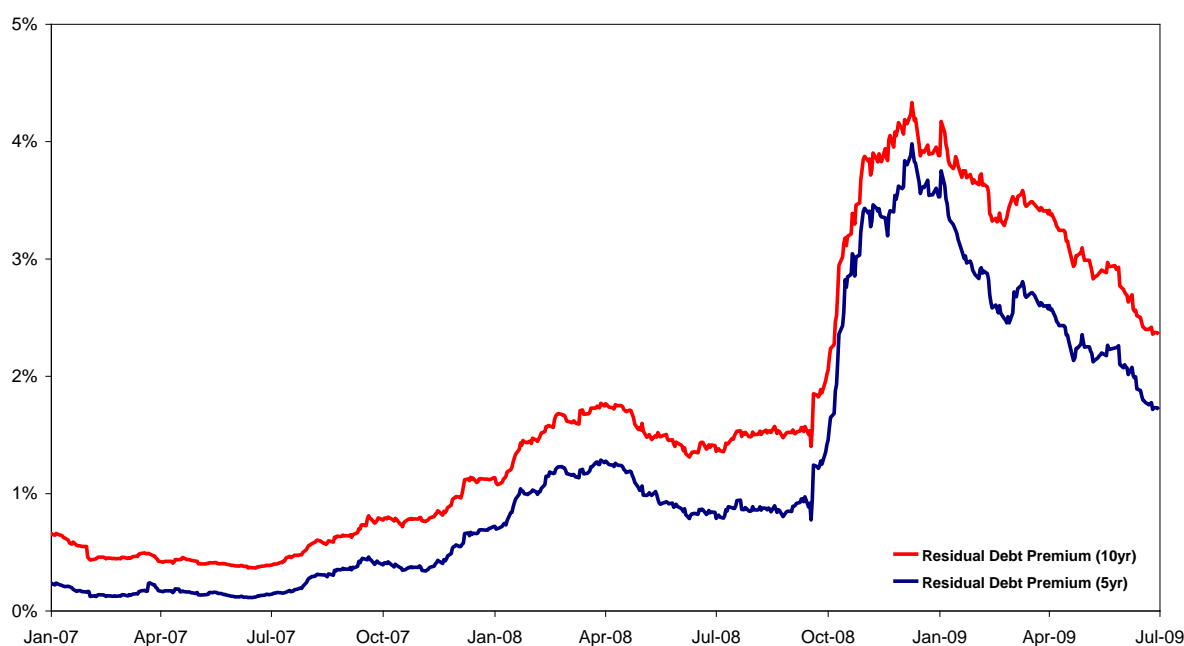
### 3.3. Other Evidence

#### *Debt Premiums Derived from a Decomposition of Debt Spreads*

In the UK the CC and CAA have estimated debt premiums using a methodology that decomposes the spread on corporate bonds into liquidity, default and risk premiums. This

methodology can be used to isolate the risk premium associated with particular credit ratings.<sup>30</sup> Since equity is riskier than debt the risk premium associated with BBB rated debt provides a lower bound on the ERP. Movements in the debt risk premium can also be used to infer movements in the ERP. To this end we note that the debt risk premium based on five-year bonds shows an increase from 90bps in September 2008 to around 170bps at the end of June 2009. Ten-year bonds show a slightly less dramatic increase from about 150 bps to 240bps over the same period. We also note that the five- and ten-year debt risk premiums approached 400bps in late 2008 and while some of this increase has been unwound subsequently the debt risk premium remains considerably above long-term averages. The increases in the debt risk premium suggest an increase in the ERP in late 2008 and that this increase has persisted.

**Figure 3.4**  
**Debt Risk Premium on Five & Ten-Year BBB-Rated Corporate Bonds**  
**(January 2007 - June 2009)**



Source: NERA analysis of Bloomberg and Moody's data up until 30 June 2009.

### *Evidence from Central Banks*

Recent European Central Bank (ECB) monthly bulletins have made references to “a continued increase in the cost of equity”<sup>31</sup>, “heightened equity risk premia”<sup>32</sup>, and “equity risk premia across major equity markets [that] seem to have increased”<sup>33</sup>. These statements

<sup>30</sup> More details on the method employed are presented in Appendix B.

<sup>31</sup> European Central Bank Monthly Bulletin, April 2009, p27.

<sup>32</sup> European Central Bank Monthly Bulletin, March 2009, p38.

<sup>33</sup> European Central Bank Monthly Bulletin, December 2008, p44.

appear to unequivocally indicate that the ECB believes the ERP has increased in recent months. Likewise the Bank of England (BoE) suggested in January 2008 that the ERP was then roughly 1.5% greater than its long-run average.<sup>34</sup>

### ***Recent Regulatory Precedent***

Ofwat, the regulator of English and Welsh water companies, recently published its Draft Determination (23 July 2009).<sup>35</sup> In this decision Ofwat allowed an ERP of 5.4%, consistent with the arithmetic average of historic returns that NERA had argued for.<sup>36</sup> We note that if CAR adopted the same methodology this would imply an ERP of 6.1% for the Eurozone based on Dimson, Marsh and Staunton data. This is the figure NERA argued for in its March 2009 report on behalf of DAA. Aside from points of methodology it is important to note that:

- The ERP used by Ofwat in the DD of 5.4% represents an increase in the ERP from its previous 2004 ERP decision of less than 5% rather than a decrease like CAR proposes;
- Ofwat's DD is also in stark contrast to the Competition Commission's ERP recommendation of 3.0-5.0% in the Stansted case and suggests that the particular CC decision is not necessarily a good precedent for CAR to follow, and;
- Ofwat's DD ERP recommendation is the highest by any regulator in UK history (to our knowledge) in contrast to CAR's ERP which is towards the low end of Irish regulatory precedent.

### **3.4. Conclusion**

In this section we have shown that the CAR's decision to reduce the ERP from 6% in 2005 to 5% in its DD is inconsistent with the change in market conditions over the intervening period. This conclusion has been supported by a range of evidence including:

- Statements by the Dimson, Marsh and Staunton – the authors of the primary piece of evidence cited by the CAR – that the “short term risk premium exceeds the long-run average”;
- Evidence that expected market volatility for the Eurostoxx 50 has increased and is expected to remain elevated for at least the next 24 months (the longest horizon available);
- Evidence that CDS premiums on investment grade and sub-investment grade bonds have diverged meaning that the relative compensation required for bearing the additional risk of equity has increased;
- Evidence that debt spreads adjusted for liquidity premia and default risk show the ERP has increased;

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<sup>34</sup> Bank of England Quarterly Bulletin, Q1 2008, p. 8

<sup>35</sup> See Ofwat (2009) “Future water and sewerage charges 2010-15: Draft determinations”.

<sup>36</sup> See NERA (2009) “Cost of capital for PR09”, Report for Water UK, p44.

- Statements from the ECB that unequivocally note the increase in the ERP, and;
- Recent regulatory precedent which indicates that the arithmetic mean of historic returns data should be used to estimate the ERP and that an increase in the ERP is more justified than a decrease.

We recommend that the CAR reconsider its assessment of the ERP taking into account the updated and expanded evidence presented in this report.

## 4. CAR's Exclusion of an Irish Risk Premium

The CAR set a real risk-free rate of 2.5% based on Eurozone AAA rated government bonds. The CAR did not recognise a sovereign credit risk premium for the additional risk of investing in lower rated Ireland.<sup>37, 38</sup> In failing to allow for a country risk premium the CAR underestimates the allowed cost of capital for DAA.

In this section we present:

- Evidence that shows an Irish country risk premium is justified by academic and practitioner opinion in light of the downgrade of Ireland's credit rating (Section 4.1), and;
- Updated estimates of the Irish country risk premium based on government bond and CDS data (Section 4.2).

As a matter of process, we also note that a full explanation of the rationale for the inclusion of an Irish risk Premium was included in our earlier 2009 report on the cost of capital for DAA. The CAR did not provide any explanation for not including this in its WACC calculation, despite noting in the DD that countries like Ireland and Belgium may be subject to greater risk as a result of their banking sectors.

### 4.1. Rationale for an Irish Country Risk Premium

There is theoretical support in the corporate finance literature (in both the academic and practitioner literature) for the use of a country risk premium. For example, in the academic literature, we note that Damodoran (2002) supports the use of a country risk premium, stating:

*“We believe that while the barriers to trading across markets have dropped, investors still have a home bias in their portfolios and that markets remain partially segmented. While globally diversified investors are playing an increasing role in the pricing of equities around the world, the resulting increase in correlation across markets has resulted in a portion of country risk being nondiversifiable or market risk.”<sup>39</sup>*

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<sup>37</sup> We also note that the use of long-term historic data by CAR is reasonable. However, we note that at the previous review the CAR's consultants used data over the period from 1988 onward.

<sup>38</sup> The CAR used outturn inflation as a proxy for expected inflation which it acknowledged is the appropriate approach. The CAR states “to estimate the real returns, the Commission has made use of the Fisher equation. This equation links the nominal rate of return to the real rate of interest plus an expected inflation component”: see CAR (2009) “Maximum Levels of Airport Charges at Dublin Airport: Draft Determination”, p68, 18 June. As a result, the availability of several measures of expected inflation means the use of outturn inflation is inappropriate. In particular, we note that the ECB has published the results of a quarterly survey since 1999, while (albeit imperfect) market data based on Eurozone inflation swaps or nominal and inflation-protected government bonds are also available. We also note that the CAR specifically utilise the ECB's target inflation rate of 2.0% to estimate inflation expectations as an input to the derivation of a real cost of debt. Although we do not support the CAR's methodology for the cost of debt we note that its use of two different approaches is inconsistent.

<sup>39</sup> A. Damodaran (2002) *Investment Valuation (2<sup>nd</sup> ed)*, John Wiley and Sons, p. 164. See also A. Damodaran (2003) Country risk and company exposure: theory and practice, *Journal of Applied Finance* 13(2).

Damodaran (2002) states that the difference between the yields on a 'risky' government's bonds and the yields on a 'riskless' government's bonds understates country risk. This is because it does not include the relative risk of the 'risky' country's equity market.

Likewise, in the practitioner literature, we note Pereiro (2002)<sup>40</sup>, Ogier et al (2004)<sup>41</sup>, Koller et al (2005)<sup>42</sup>, and Pettit (2007)<sup>43</sup>, among others, recommend the inclusion of a country risk premium in a cost of capital assessment, most commonly by adding a premium to the global risk-free rate to reflect local risk.

This academic and practitioner support combined with current market data (discussed below) strongly indicates that an Irish country risk premium should be included within the Irish risk-free rate currently. For the purposes of the upcoming price control period it is important to note that the recent increase in Irish country risk is unlikely to be transitory. In this regard we note that each of the three main rating agencies have recently downgraded Ireland and maintain a negative watch for further downgrades. The negative outlook and current AA/Aa1/AA+ rating strongly suggest that Ireland will not recover to a AAA rating in the near future. Reinforcing this point we note that the rating agencies cited Ireland's very weak economic prospects and large fiscal deficit, which are not anticipated to be rectified in the near term.

## 4.2. Updated Estimates of the Irish Country Risk Premium

In our previous report we noted that there had historically been little difference between the yields on Irish and German government bonds since the introduction of the common currency. We also noted that the difference between yields had increased sharply in recent months as markets began to appraise Ireland as more risky than Germany i.e. the higher yield on Irish government bonds reflected the market's belief that the Irish government was somewhat more likely to default on its debt obligations than the German government. We noted that this was in response to S&P and Fitch placing Ireland on negative credit watch.

To estimate the size of the premium we considered yields on German and Irish government bonds at both five and fifteen years-to-maturity and CDS premiums on German and Irish government debt. We estimated a premium of 80-130 bps based on average differences between German and Irish data over the preceding three to six months. It was appropriate to rely on this period instead of spot rates to ensure our estimates were not unduly volatile. Further, the country risk premium must be estimated over the short-term to ensure it is accurately measured: use of an overly long historic period produces an estimate of the country risk premium below its true level.

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<sup>40</sup> L. Pereiro (2002) *Valuation of companies in emerging markets: a practical approach*, John Wiley and Sons.

<sup>41</sup> T. Ogier, J. Rugman and L. Spicer (2004) *The Real Cost of Capital: A Business Field Guide to Better Financial Decisions*, FT Prentice Hall.

<sup>42</sup> T. Koller, M. Goedhart, D. Wessels and T. Copeland (2005) *Valuation: Measuring and Managing the Value of Companies*, John Wiley and Sons.

<sup>43</sup> J. Pettit (2007), *Strategic corporate finance: applications in valuation and capital structure*, John Wiley and Sons.

In Table 4.1 we present updated data about the Irish country risk premium using data up until the end of June 2009. This updated evidence suggests an Irish country risk premium of around 140-150 bps.

**Table 4.1**  
**Irish Risk Premium Estimates**

	Government CDS			Government Bonds: 5 Year Maturity			Government Bonds: 15 Year Maturity		
	Irish (bps)	German (bps)	Differen ce (bps)	Irish (bps)	German (bps)	Differen ce (bps)	Irish (bps)	German (bps)	Differen ce (bps)
1 month	166	20	145	417	279	139	597	444	153
3 months	165	22	143	414	261	153	576	432	144
6 months	185	32	154	433	250	183	575	418	157
1 year	117	22	95	423	313	110	534	436	98
2 years				421	358	63	497	444	53
5 years				373	347	26	438	422	17
10 years				402	386	16	476	470	6

Source: NERA analysis of Bloomberg and Bundesbank data up to the end of June 2009.

We note that our estimate of an Irish country risk premium of 140-150 bps is much smaller than some other published estimates. For example, Table 4.2 summarises estimates of the Irish country risk premium from the Economic and Social Research Institute. These estimates are as high as 3% (or 300 bps) for 2009 and remain high over the entire upcoming price control period.

**Table 4.2**  
**Independent Estimates of the Irish Risk Premium (%)**

2007	2008	2009	2010	2011	2012	2013	2014	2015
0.0	0.5	3.0	2.0	1.5	1.25	1.0	1.0	0.75

Source: Bergin, Conefrey, Fitzgerald and Kearney (2009) "Recovery Scenarios for Ireland", The Economic and Social Research Institute Research Series, Number 7, May, Table 2, p16.

### 4.3. Conclusion

The CAR did not include an Irish country risk premium in its cost of capital estimate. However, an Irish country risk premium is justified because investors cannot fully diversify their exposure to country-specific risks. This is because national equity markets are increasingly correlated as markets globalize, but markets remain partially segmented in part due to home bias in investors preferences i.e. investors prefer to invest domestically rather than internationally all else equal. In particular, the increase in correlation means that diversifying the risk of one country requires taking on greater exposure to other countries, but this does not occur in practice because of home bias and other market segmentation.

For the purposes of the upcoming price control period it is important to note that the recent increase in Irish country risk is unlikely to be transitory: each of the three main rating agencies have recently downgraded Ireland and maintain a negative watch for further downgrades. The negative outlook and current AA/Aa1/AA+ rating strongly suggest that

Ireland will not recover a AAA rating in the near future. Reinforcing this point we note that the rating agencies cited Ireland's very weak economic prospects and large fiscal deficit, which are not anticipated to be rectified in the near term.

To estimate the Irish country risk premium we follow practitioners such as Pereiro (2002), Ogier et al (2004), Koller et al (2005), and Pettit (2007) who add a premium to the global risk-free rate to reflect local risk.

The difference between German and Irish government bond yields and CDS premiums provide a good proxy of the risk premium. Recent market data shows a country risk premium for Ireland of 1.4-1.5 percentage points. We recommend that CAR includes this premium within the cost of capital for DAA.



## 5. CAR's Cost of Debt Estimate

The CAR concluded on a real pre-tax cost of debt of 4.1%, slightly above the mid-point of its 3.5-4.5% range. The CAR reasoned that:

- Yields on ten-year maturity market-wide corporate bond indexes were 4.2% and 6.4% for AAA and BBB ratings, respectively;
- The coupons on DAA's outstanding bonds were 6.15% and 6.59%;
- The long-term average rate of inflation would be 2% based on the ECB's inflation target;
- The real yield on corporate bonds was, therefore, 2.2-4.4% and the real coupons on DAA's bonds were 4.1-4.6%.

The CAR also compared its range of 3.5-4.5% to the UK Civil Aviation Authority's range of 3.6-3.9% for Stansted airport in March 2009. The CAR did not provide reasons for its choice of a point estimate within its range. We also note that the CAR did not include an allowance for the cost of raising new debt nor costs associated with pre-funding of debt.

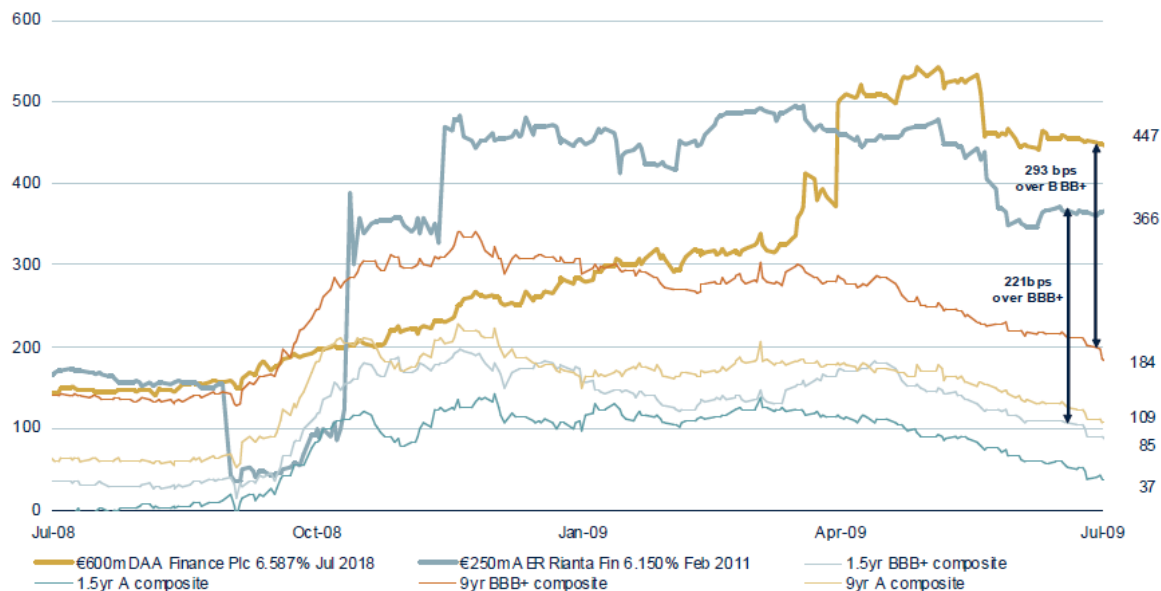
CAR does not explicitly state what credit rating its cost of debt estimate is associated with. We note, however, that to be internally consistent with its financial viability assessment the cost of debt should be based on an investment grade credit rating. As discussed in Section 6 as in our March 2009 report we continue to regard a single A credit rating as appropriate. However, if CAR persists with performing the financial viability test on an investment grade credit rating then the cost of debt should also be based on that rating. Therefore, in this section we:

1. Estimate DAA's cost of debt at both an A and BBB rating;
2. Highlight the difference in the cost of debt at a single A or BBB rating, and;
3. Address some methodological flaws in CAR's approach.

### 5.1. DAA-Specific Evidence

Figure 5.1 below compares spreads on DAA's existing bonds to spreads on market-wide benchmark-bond indexes for both A and BBB+ ratings (like those referred to by CAR in the DD). The chart shows that the spreads on DAA's existing bonds are far higher than those on A rated bonds in general. Indeed, the data illustrates that DAA's spreads are currently trading at a 221-293bps premium to BBB+ indices, despite being currently rated A-.

**Figure 5.1**  
**Comparison of DAA Spreads to Market A and BBB+ Rated Benchmarks**



Source: DAA's financial advisors.

The fact that the bonds trade at a substantial premium to BBB+ rated bonds in general clearly shows that the high spreads on DAA's bonds are not attributable solely to the likely downgrade of DAA to BBB in the near future. Rather, the clear inference is that DAA's bond yields are heavily affected by the cyclical nature of DAA's business and its exposure to the Irish economy, which is expected to be heavily affected by the credit crisis. In other words, bond investors are already pricing an Irish and aviation premium into DAA's yields.

It is imperative, therefore, that CAR have regard to DAA-specific evidence about the cost of debt rather than market wide indexes. This would represent a change from CAR's DD approach, but is essential to ensure that the cost of debt for DAA reflects the costs that DAA is likely to incur. Reflecting the importance of DAA-specific data we present below evidence on the cost of new bonds and bank loans for DAA from DAA's financial advisors.

### ***The Cost of New Bonds***

Figure 5.2 below sets out DAA's financial advisors' estimate of DAA's cost of new debt, based on prevailing market conditions, for both a BBB and a single A profile. The chart compares these figures to the CAR's allowed cost of debt in the Draft Determination and to the yield on DAA's existing 2018 bond. The chart focuses on a seven-year maturity as this is the likely maximum tenor that DAA will be able to obtain at a BBB rating. The comparison to DAA's existing bond, which has nine years-to-maturity is, therefore, slightly misleading, but does make it very obvious that DAA's outstanding debt is trading at a level well above where it would be expected to trade if DAA held a stable single A credit rating. This is consistent with the expectation that DAA will be downgraded to BBB in the near future.

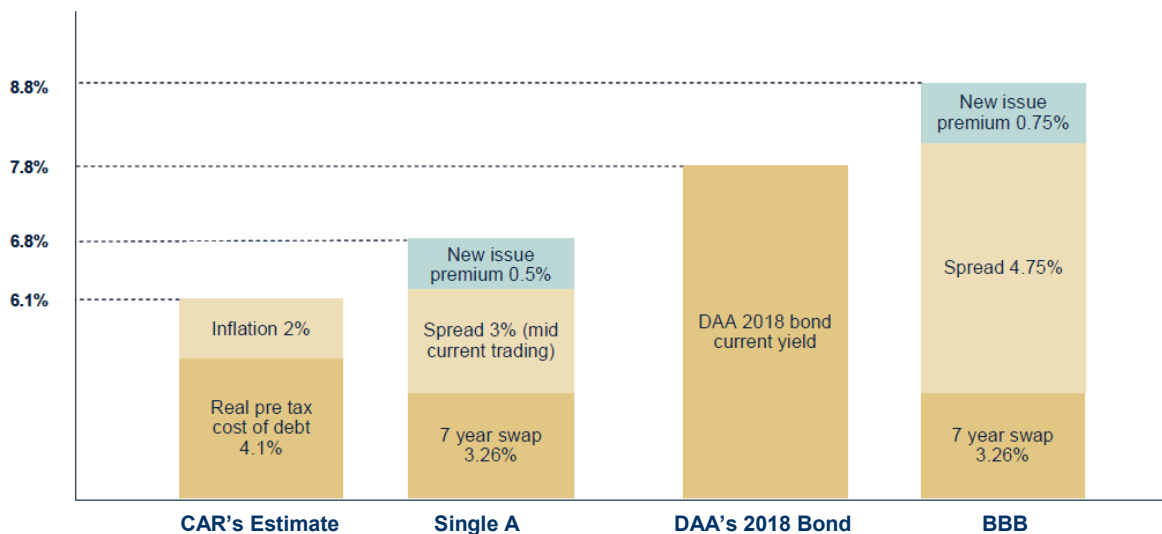
Figure 5.2 also demonstrates two key differences in the cost of debt at an A or BBB rating:

1. The spread payable would be 475 bps at a BBB rating instead of 300 bps at an A rating i.e. 175 bps higher, and;
2. The new issue premium would be about 75 bps at a BBB rating instead of 50 bps at an A rating i.e. 25 bps higher.

Overall, DAA's financial advisors estimate that the cost of new bond debt at a BBB rating would be 200 bps higher than at an A rating.

Figure 5.2 also shows that DAA's financial advisors consider it likely that the cost of new debt for DAA would be far in excess of CAR's allowed cost of debt, even at a single A credit rating. The CAR's cost of debt is around 6.1% in nominal terms, while DAA would likely raise debt at about 6.8% if it was rated solid single A. This cost rises to around 8.8% at a BBB rating. Since CAR do not allow a cost of debt of 8.8% in the calculation of its allowed return, its overall WACC assessment is internally inconsistent.

**Figure 5.2**  
**The Cost of New Bonds for DAA**



Source: DAA's financial advisors.

### **Cost of New Bank Loans**

DAA's financial advisors have provided NERA with indicative pricing for new bank loans for both a notionally stable A rated DAA and a BBB rated DAA. This indicative pricing is summarized in Table 5. 1. The evidence shows that the margin on a new bank loan for DAA would be around 325-350 bps at a BBB rating, but only 175-200 bps at a stable A rating. That is, the margin on new bank loans would be about 150 bps greater for a BBB rated DAA.

**Table 5. 1**  
**Indicative Bank Loan Pricing for DAA**

<b>Rating</b>	<b>Margin on Bank Loan (bps)</b>
Stable A	175-200
BBB	325-350
<b>Additional Cost at BBB</b>	<b>150</b>

*Source: NERA analysis of data supplied by DAA's financial advisors on 13<sup>th</sup> July 2009. Margins on bank loans are over LIBOR on a 3-year term.*

## **5.2. Wider Market Evidence**

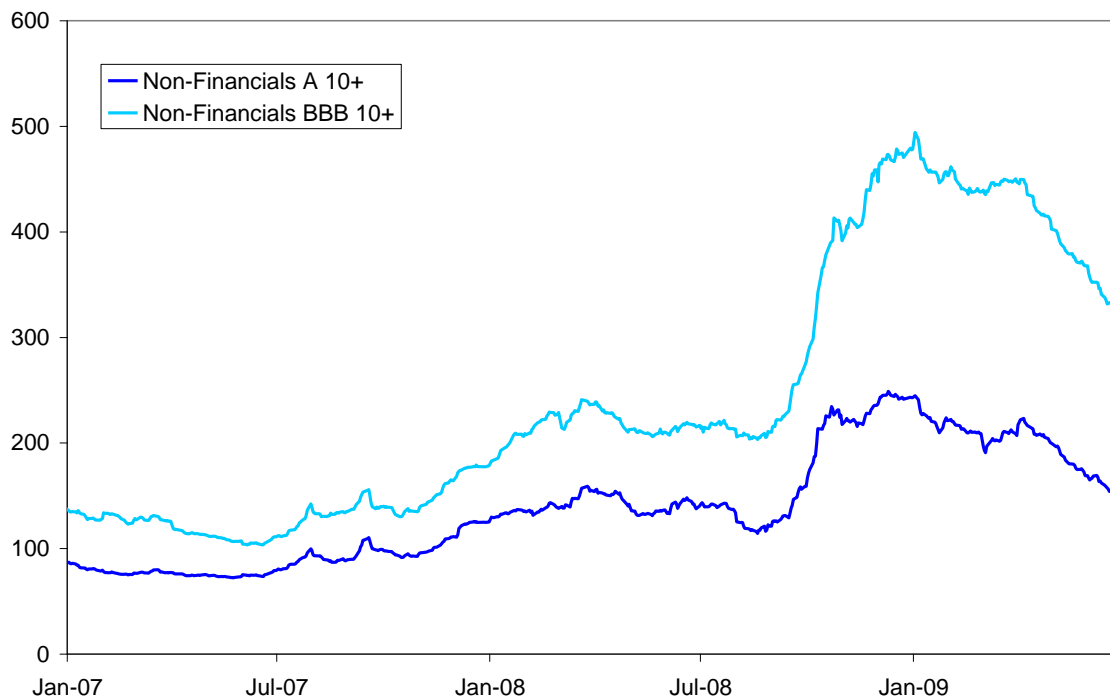
Noting CAR's preference for market wide data in the DD we also consider a range of wider market data as a cross-check on the DAA-specific evidence.

### ***Secondary Market Spreads***

Figure 5.3 presents evidence on spreads on non-financial corporate bonds with more than ten years-to-maturity. Spreads on A rated bonds were around 150 bps at the end of June while spreads on BBB rated bonds were about 330 bps. This suggests the cost of BBB rated bonds is around 180 bps higher than the cost of A rated bonds, which is broadly consistent of our analysis of recent bond issues presented above.

We note that spreads have decreased somewhat since the beginning of the year: on the 1<sup>st</sup> of January the spread on A rated bonds was about 240 bps and the spread on BBB rated bonds was around 490 bps. However, while the spreads have decreased they remain well above long-term averages. Further, the gap between A and BBB rated spreads remains considerable, suggesting the cost of debt at a BBB rating is markedly higher.

**Figure 5.3**  
**Secondary Market Spreads**



Source: IBOXX data up until 30<sup>th</sup> June.

### **Recent Bond Issues**

Table 5.2 summarises spreads on recent bond issues by credit rating. The average spread-to-mid-swaps on A rated bonds is around 180 bps, but about 340 bps on BBB rated bonds. The table clearly demonstrates that BBB issuers pay a premium to single A issuers, on average of around 160bps (i.e. 340 bps minus 180 bps). This premium however, can be much higher than this as some BBB rated bonds have been issued with a spread of 585 bps while the corresponding figure for A rated issuers is 295 bps.

**Table 5.2**  
**Recent Bond Issues by Credit Rating**

<b>Bonds</b>	<b>Spread (bps)</b>	
	<b>Range</b>	<b>Average</b>
All	82 - 585	237
'A' Rated Only	82 - 295	178
'BBB' Rated Only	153 - 585	342

Source: NERA analysis of Bloomberg data. Note: any bonds with split ratings across A and BBB bands (or equivalent) have been excluded from these calculations i.e. only 'pure' A and 'pure' BBB bonds included within each category. Spreads are calculated to mid-swaps on date of issue. The bonds underlying this analysis are listed in Appendix A.

## ***Conclusion***

Market-wide evidence on recent bond issues and spreads in the secondary market indicate that the cost of new bond debt at a BBB rating would be about 160-180 bps greater than at an A rating. This is broadly consistent with the 200 bps difference identified by DAA's financial advisors. It is clear that the cost of debt at a BBB rating is substantially higher than at an A rating. If CAR persists with a financeability test at investment grade it must substantially increase its cost of debt assessment to avoid internal inconsistency in its assessment of the cost of capital for DAA.

### **5.3. CAR's Methodology**

Apart from CAR's inappropriate assessment of market evidence there are a number of other methodological flaws in its approach. In this section we review two major areas of concern:

1. the failure to include an allowance for transaction and pre-funding costs, and;
2. the use of the UK Civil Aviation Authority's decision for Stansted airport as a comparator.

#### ***Transaction and Pre-Funding Costs***

In our previous report we argued that the cost of debt should include an allowance for transaction and pre-funding costs to compensate DAA for:

- the efficiently incurred costs of raising debt such as bank, legal, trustee and agent fees, and;
- the efficiently incurred costs of raising finance prior to its use to ensure the availability of funds in sufficient quantities, maintain prudent levels of liquidity and to reduce the fixed costs associated with debt raising.

We also noted that the inclusion of an allowance for transaction costs is consistent with regulatory practice both in the UK and Australia. Since our previous report we note that the regulator of English and Welsh water companies, Ofwat, has recently recognised the importance of allowing *both* transaction and pre-funding costs in its Draft Determination.<sup>44</sup>

Table 5.3 reprises our analysis of transaction and pre-funding costs from our previous report. We calculate that pre-funding and transaction costs for DAA amount to 28 bps historically and 120 bps prospectively. The CAR should include these allowances to ensure the DAA is fully compensated for the cost of debt finance.

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<sup>44</sup> See Ofwat (2009) "Future water and sewerage charges 2010-15: Draft determinations", p108.

**Table 5.3**  
**Transaction and Pre-Funding Costs (bps p.a.)**

	Historic	Forward Looking
Transaction costs	9	14
Pre-funding costs	19	106
<b>Total</b>	<b>28</b>	<b>120</b>

Source: NERA analysis.

### *The Stansted Decision as a Benchmark for the Cost of Debt*

The CAR compared its 3.5-4.5% range to the 3.6-3.9% range used in the Stansted Airport case by the UK Competition Commission in October 2008. Regardless of the high level merits of a comparison between the CAR's DD and the Stansted decision there are a number of technical differences which render the comparison invalid. In particular, the CAR's use of the UK CAA's cost of debt range for Stansted airport is inappropriate since:

- the cost of debt in the UK and Eurozone are not the same since the capital markets of these two economies are not perfectly integrated;
- the cost of debt has almost certainly increased since the Stansted decision, and;
- the 3.6-3.9% range cited by the CAR was the UK Competition Commission's recommendation for the cost of new and floating rate debt in September 2008<sup>45</sup> – a figure which the CAA assessed had actually increased by March 2009.<sup>46</sup>

Overall, the Stansted decision is not an appropriate benchmark for the CAR's DD for several reasons, but most particularly because the Stansted decision is out of date and, as a non quoted company, was not subject to any meaningful market test.

## **5.4. Updated Estimate of the Cost of Debt**

Recognising the principles we identified above and incorporating the new data presented we have updated our estimate of the cost of debt for DAA. Table 5.4 summarises our estimates at both an A and a BBB rating. We note that because the evidence we have surveyed in this report focuses on the current cost of debt, rather than the overall cost of debt, we have only used DAA's financial advisors' advice to inform the current cost of debt. Our estimates continue to reflect our assessment of DAA's existing debt costs from our March 2009 report.

Our updated estimates indicate that DAA's cost of debt is around 4.7% at an A rating, but 5.1% at a BBB rating. The 40 bps difference may be understated because for both ratings we rely on an estimate of the cost of DAA's existing debt that is based on a single A credit rating.

<sup>45</sup> See UK Competition Commission (23 October 2008) "Stansted Airport Ltd: Q5 price control review", Appendix L, para 47.

<sup>46</sup> See UK Civil Aviation Authority (13 March 2009) "Economic Regulation of Stansted Airport 2009-2014: CAA Decision", para 3.134, p65. The CAA state that inflation expectations had decreased by 50-100 bps and nominal yields had increased by 16 bps. The net effect of these changes is about a 66-116 bps increase in the real cost of new debt.

We also note that these estimates of the cost of debt are considerably higher than CAR's regardless of the credit rating assumed.

**Table 5.4**  
**Updated Estimates of the Real Cost of Debt**

	A rating	BBB rating
<b>Forward-looking Cost of Debt</b>		
Real Cost of Debt (pre-tax) <sup>1</sup>	4.8%	6.8%
Pre-Funding & Transaction Costs <sup>2</sup>	1.2%	1.2%
All-in Real Cost of Debt (pre-tax)	6.0%	8.0%
<b>Historic Cost of Debt</b>		
Real Cost of Debt (pre-tax) <sup>2, 3</sup>	4.1%	4.1%
Pre-Funding & Transaction Costs <sup>2</sup>	0.3%	0.3%
All-in Real Cost of Debt (pre-tax)	4.3%	4.3%
Weight on Current Cost of Debt <sup>2</sup>	20.0%	20.0%
<b>Overall Cost of Debt</b>	<b>4.7%</b>	<b>5.1%</b>

*Source: NERA analysis. Notes: (1) Based on DAA's financial advisors' estimates of the nominal cost of debt for DAA less CAR's 2% inflation expectations; (2) From NERA's March 2009 report; (3) Based on DAA's existing debt costs which are based on a single A credit rating – these costs have not been adjusted for a BBB rating in this exercise.*

## 5.5. Conclusion

The CAR concluded on a real pre-tax cost of debt of 4.1% in its Draft Determination, slightly above the mid-point of its 3.5-4.5% range. CAR do not explicitly state what credit rating their cost of debt estimate is associated with. This lack of transparency about such an important area is not the norm for regulators e.g. the Ofwat test is stated to be "a minimum of a strong BBB+ rating".<sup>47</sup> We note, however, that to be internally consistent with their financial viability assessment the cost of debt should be based on an investment grade credit rating. In this section we have:

1. Estimated DAA's cost of debt at both an A and BBB rating;
2. Highlighted the difference in the cost of debt at a single A or BBB rating, and;
3. Addressed some methodological flaws in CAR's approach.

The analysis presented in this section has shown:

- DAA's cost of new debt should be determined by reference to DAA-specific data since it is substantially different from market-wide data sources;
- DAA's financial advisors indicate the nominal cost of a bond issue by DAA at a BBB rating would be about 8.8% compared to about 6.8% at a single A rating;

<sup>47</sup> Ofwat (2009) "Future water and sewerage charges 2010-15: Draft determinations", p.114.



- DAA's financial advisors indicate that margins on bank loans obtained by DAA would be around 150 bps higher at a BBB rating than an A rating;
- Evidence from broader market sources corroborate the substantial increase in the cost of debt from A to BBB ratings;
- that the CAR's conclusion – regardless of the credit rating assumed - is based on a methodology which inappropriately does not make allowance for transaction or pre-funding costs, and makes use of the UK Civil Aviation Authority's March 2009 Stansted decision which is outdated and as a non quoted company, was not subject to any meaningful market test.

Recognising the principles we identified above and incorporating the new data presented we have updated our estimate of the cost of debt for DAA. Our updated estimates indicate that DAA's cost of debt is around 4.7% at an A rating, but 5.1% at a BBB rating taking into account the cost of DAA's existing debt and its refinancing and new debt requirements. We note that these estimates and the difference between them are likely to be understated because for both ratings we rely on an estimate of the cost of DAA's existing debt that is based on a single A credit rating. Nevertheless, both these estimates of the cost of debt are considerably higher than CAR's.

We conclude that CAR's allowed cost of debt is too low at a BBB rating and encourage the CAR to revisit its estimate of the cost of debt incorporating the methodological changes we recommend and the updated evidence we have presented.

## 6. CAR's Financial Viability Test

The CAR state:<sup>48</sup>

*“The Commission seeks to enable the DAA to maintain an investment grade for its debt for the purposes of operating Dublin airport in a financially viable manner. It is satisfied that an investment grade credit rating is sufficient to allow the DAA adequate access to funds. As stated in previous determinations, this does not imply that the Commission must act in such a way as to ensure the DAA receives a single A (or equivalent) credit rating.”*

This statement makes clear that the CAR regards an investment grade – rather than single A - credit rating as sufficient to enable DAA to finance Dublin Airport.

However, we remain of the view that the CAR should act to enable DAA to (return to if necessary and) maintain a single A credit rating. A single A credit rating is required to provide DAA headroom in the event of a plausible downside scenario that might entail a credit rating downgrade: targeting an A rating allows some headroom for DAA to access the debt markets at reasonable costs under a downside scenario that leads to a downgrade to A-. However a downgrade into BBB territory might inhibit DAA's ability to raise capital as the events of 2008 Q4 demonstrated. The cost of debt is also likely to be lower at an A rating than at a BBB rating. These arguments were made at length in NERA's March 2009 report.

If, notwithstanding the above arguments, the CAR persists with its assumption of a BBB rating then its cost of debt should reflect this assumption. In Section 5 we showed that the CAR's cost of debt is not consistent with either a single A or BBB rating and presented evidence about what an appropriate single A and BBB rated cost of debt would be for DAA.

Regardless of the credit rating assumed CAR's assessment of financial viability should ensure that DAA's financial projections satisfy the financial ratio thresholds CAR has proposed as a minimum. In this section we review whether DAA satisfies the test thresholds that CAR has specified. We also stress the need for CAR to stress test its financial projections under plausible downside scenarios including a deflationary episode.

This section is structured as follows:

- Reinforcing our previous report's conclusion that an A rating would be more appropriate we also present updated and additional evidence that a BBB rated DAA is likely to be unable to access bond and bank debt markets in the quantum required (Section 6.1).
- We also note that even on the CAR's own projections DAA does not satisfy the credit ratio tests prescribed by the CAR (Section 6.2).
- We illustrate the weak and uncertain outlook for inflation and explore the possible implications for DAA's credit rating and CAR's financial viability tests (Section 6.3).

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<sup>48</sup> See para 10.2.

## 6.1. Access to Debt

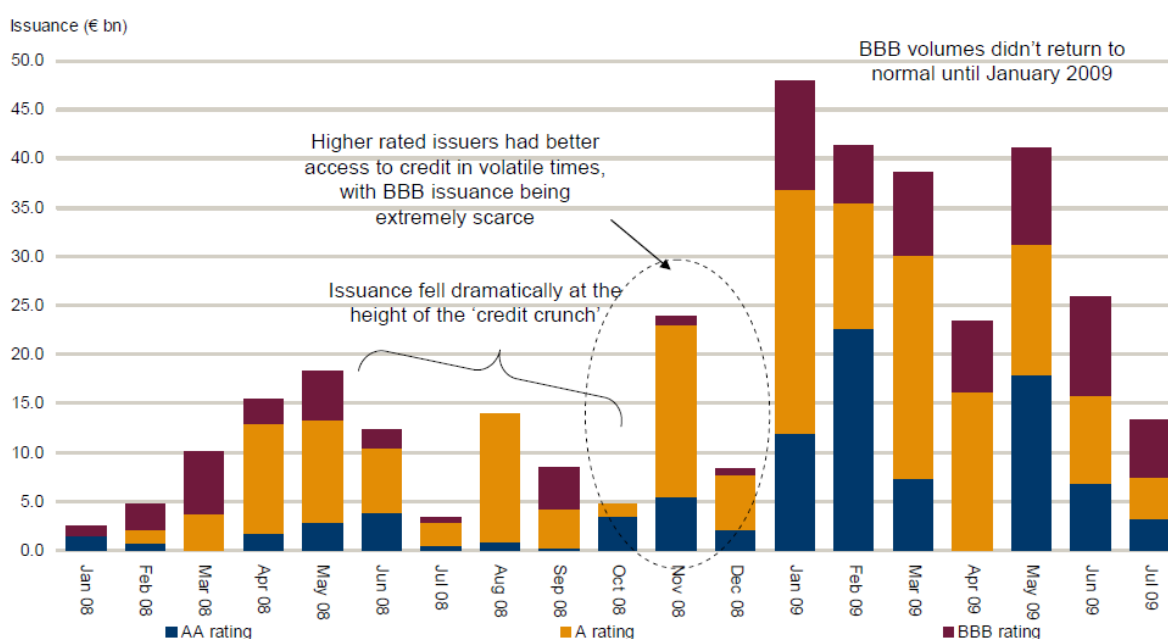
The CAR's assumption of an investment grade credit rating should take the following points into consideration:

- There is a much higher risk that access to debt will not be possible at all times at an investment grade rating compared to an A rating;
- A BBB rated DAA would be unable to issue debt in the necessary quantum at the CAR's assumed cost of debt, and;
- A BBB rated DAA is likely to be only able to issue debt at shorter tenors to that of an A rated DAA and greater frequency of issue will naturally result in increased transaction costs.

In support of our first claim we note that recent history bears witness to the difficulty of accessing bond markets at BBB ratings during times of financial turmoil: throughout late 2008 issuance at BBB ratings was very restricted, as we showed in our previous report for DAA. Reinforcing this conclusion Figure 6.1 shows BBB issuance virtually ceased throughout the second half of 2008 and did not return to normal until months after the period of heightened volatility.

The possibility of renewed financial turmoil in the future cannot be denied and, indeed, it seems prudently reasonable to assume that the probability of renewed turmoil is presently higher than at previous price reviews. Therefore, the CAR's assumption of an investment grade credit rating increases the likelihood that DAA will be unable to access bond markets at times in future.

**Figure 6.1**  
**Impact of Credit Crunch on BBB Issuance**



Source: one of DAA's relationship banks.

The second and third claims are based on advice from one of DAA's relationship banks. Specifically we note that one of DAA's relationship banks indicated that a BBB rated Irish company will be unable to raise debt in the necessary quantum and assumed pricing in the allowed cost of debt. Further, DAA's financial advisors indicated that banks (including multilateral lending banks) and bond markets are likely to demand security for any financing at a BBB (or lower) rating. However, DAA is, in accordance with rules determined by the Department of Finance, restricted in its ability to offer security to lenders over its assets. DAA's ability to issue debt at BBB ratings is likely to be curtailed as a result.

It should also be noted that the credit insured bond market remains very difficult. The credit ratings of monoline insurance companies have not been restored to AAA, which effectively removes the attractiveness of credit wrapping for bond issuers. We further note that only a handful of index-linked bonds - a market where credit wrapping was particularly prevalent in recent years - have been issued by corporations so far in 2009.

## 6.2. Financial Ratios

CAR assesses whether DAA's financial performance over the next review period will satisfy a 15% FFO-Debt ratio threshold. We note however:

- CAR appear to be satisfied with this ratio in the context of their own operating assumptions which assume significant cost savings and timely and profit neutral delivery of T2. However, DAA's own models and assumptions will ultimately form the basis of S&P's review for ratings purposes.
- Table 10.1 of the Draft Determination indicates an average FFO-Debt ratio of 16% over 2010-2014 and a ratio of 26% in 2014. This means that the ratio is below 15% in some of the years even on CAR's own projections.

These inconsistencies within the CAR's assessment of financial viability suggest that this issue needs to be re-visited and that an uplift to the cost of capital may be required to ensure that DAA is able to satisfy the ratio thresholds CAR has proposed.

## 6.3. Impact of Low or Negative Inflation

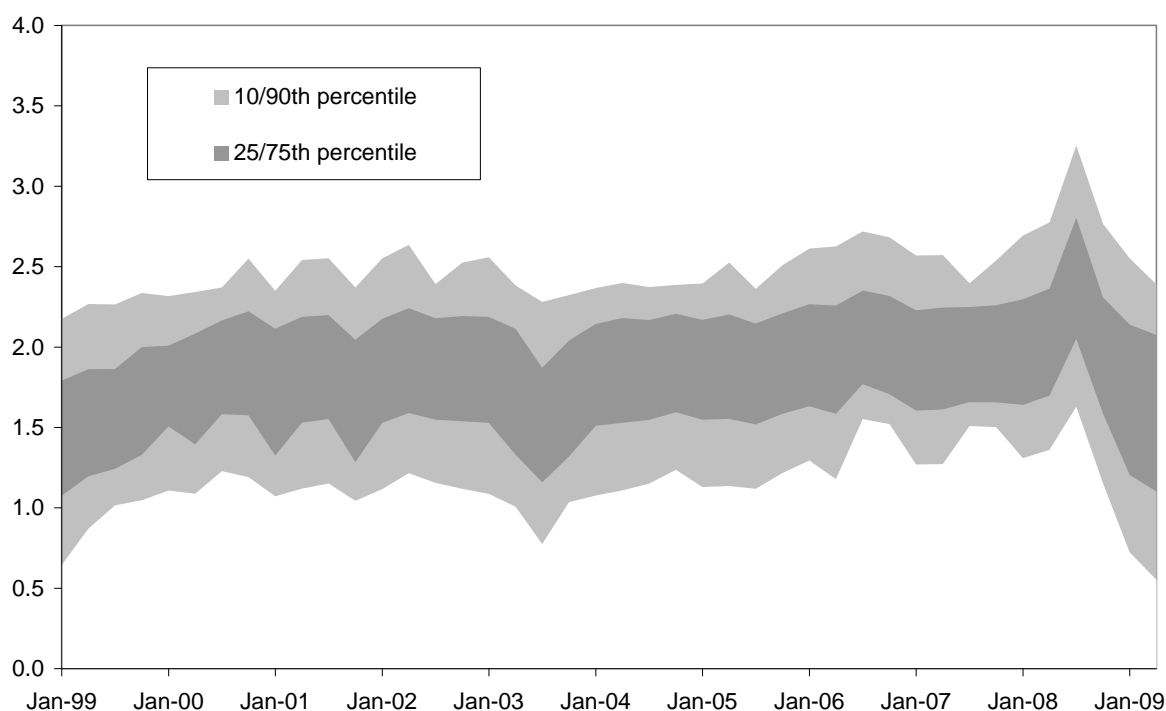
As discussed above it is important that CAR's price determination allows some headroom for the company to deal with plausible downside risks. In the current economic circumstances it is critical that this stress testing especially consider the potential impact of deflation upon DAA's financial ratios and the implications for its credit rating.

We briefly look at inflation risks below, noting that this is only one of the many risks that will need to be considered in CAR's stress testing.

Figure 6.2 shows the 25/75<sup>th</sup> and 10/90<sup>th</sup> percentile ranges of expected inflation for one-year ahead since 1999, based on data sourced from the European Central Bank's Quarterly Survey of Professional Forecasters. It is clear that recent months have seen the most significant swings in inflation expectations since the inception of the Survey in 1999 and that the range of inflation forecasts is also currently at its widest level. It is clear that uncertainty about inflation is higher than at any time over the past decade.

We note that the ECB's QSPF's forecasts are for Eurozone HICP, but that Irish CPI is the relevant inflation index here since DAA's Regulated Asset Base is linked to it. However, to our knowledge no similar survey evidence is available for Ireland specifically. Notwithstanding this we anticipate such survey evidence for Ireland would be characterised by even greater uncertainty given that Ireland's economic outlook currently appears bleaker than the Eurozone's.

**Figure 6.2**  
**One-Year-Ahead Eurozone Inflation Expectations**



Source: NERA analysis of ECB Quarterly Survey of Professional Forecasters' data.

This uncertainty raises the real prospect of low inflation or even deflation over at least the short-term if not beyond. This has implications for DAA's credit rating via its impact upon financial ratios including:

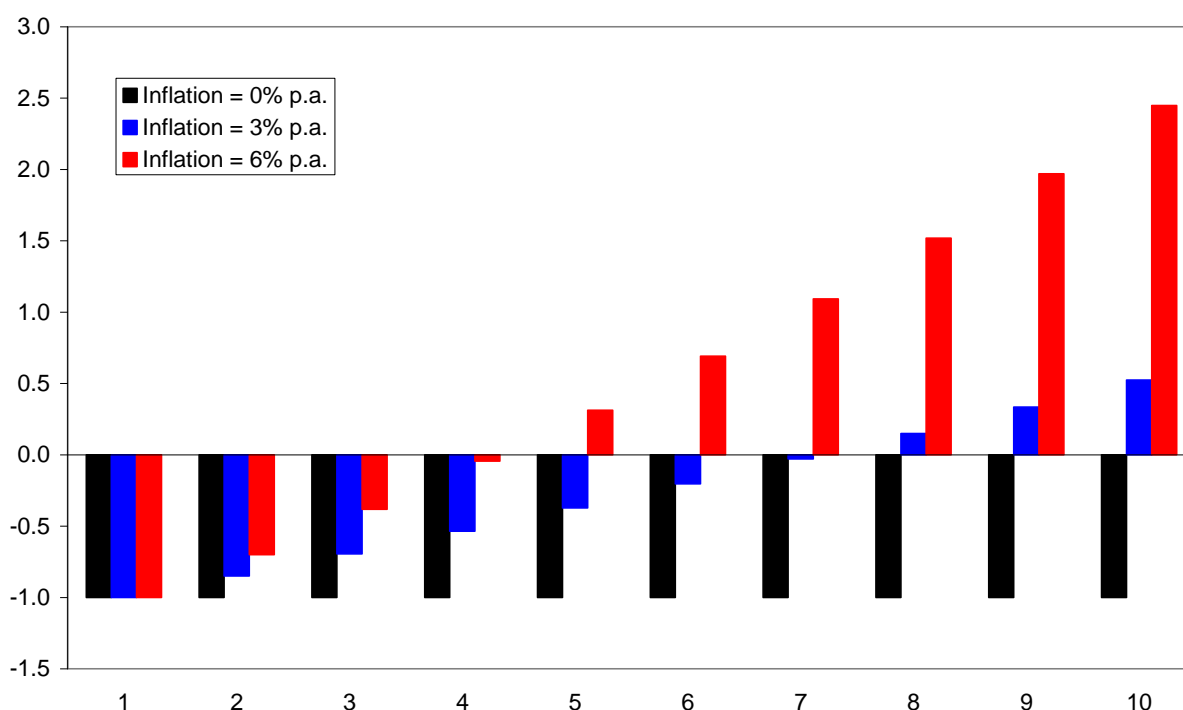
1. An increase in gearing resulting from a decrease in the inflation-linked RAB, and;
2. A decrease in interest coverage ratios via a decrease in allowed revenues which are linked to the RAB.

The impact on gearing arises since most debt is nominally funded while the RCV is linked to inflation: deflation would decrease the RCV but leave debt unchanged meaning gearing increases.

The impact on interest coverage ratios is less straight forward and we illustrate this issue using a simple example as set out in Figure 6.3. In this example, regulated returns are based on a real return on an inflation-linked RCV. The investment is 100% nominal-debt funded with constant interest payments. As shown, in the early years of the asset's life, the

company's allowed revenues are less than its nominal debt costs. However, in the later years of the asset's life, the company's revenues exceed its financing costs provided cumulative inflation is sufficiently high. Importantly, if inflation is always zero then the investment never becomes cash-flow positive and interest coverage ratios never improve. Obviously the example presented here is a simplification, but it illustrates the impact that persistent deflation may have on interest coverage ratios.

**Figure 6.3**  
**Net Cash Flow of Investments: Various Inflation Scenarios**



Source: NERA analysis; Note: Investment = 100; Economic Life = 10 yrs; Nominal interest costs = 6% and real cost of capital is 5%.

The negative impact that low or negative inflation could have on both gearing and interest coverage ratios would eventually feed through to credit rating downgrades and higher costs of debt.

It is important that CAR stress test DAA's financial viability under various scenarios including deflation. Our analysis of the outlook for inflation shows that such a scenario is a genuine possibility over the coming price control period and CAR needs to take this into account.

## 6.4. Conclusion

In this section we have reiterated our view that CAR should enable DAA to achieve and maintain a single A credit rating, rather than an investment grade credit rating. This is because single A credit ratings increase the probability that DAA will be able to access capital markets in the event of a plausible downside scenario. By contrast, a downgrade into BBB territory is very likely to impair DAA's ability to access debt markets as the events of

2008 Q4 demonstrated. We have presented updated and additional evidence that a BBB rated DAA will be unlikely to be in a position to access bond and bank debt markets in the quantum and tenor required.

We have also emphasised the importance of CAR carrying out stress tests within its financial viability assessment. In particular, it is critical that CAR ensure DAA will be able to satisfy the test thresholds in the event of unanticipated, but plausible, downside scenarios. In this vein we have demonstrated the potential impact of a genuinely plausible deflationary episode on DAA's gearing and interest coverage ratios.

Our analysis of CAR's financial viability tests has shown that even on CAR's own assessment DAA does not satisfy the thresholds that CAR has specified. Therefore the WACC needs to be increased to ensure that DAA meets the ratio thresholds that CAR has specified.

We encourage CAR to revisit its financial viability assessment taking into account the considerations we have highlighted in this report.

## Appendix A. Debt Premium Decomposition

The UK Competition Commission used a debt spread decomposition methodology to calculate debt betas in its most recent price review of BAA's airports.<sup>49</sup> We employ the same methodology, but with the goal of isolating the default risk premium since this provides an indication of the minimum value for the ERP. Specifically, we decompose the cost of debt into four components as Figure A.1 shows.

**Figure A.1**  
**Conceptual Decomposition of Debt Spread and Empirical Proxies**

	Cost of Debt	Yields on Eurozone BBB-rated corporate bonds (Bloomberg)
—	Liquidity Premium	Debt spreads on Eurozone AAA bank bonds (over bunds) (Bloomberg)
—	Default Premium	European BBB corporate default/recovery probabilities (Moody's)
—	Nominal Risk-Free Rate	Yield on government gilts of equal maturity (Bloomberg)
<hr/>		
=	Debt Risk Premium	This is the component we are attempting to estimate. NB: $DRP = (\beta_d \cdot MRP)$

Each of the components can be interpreted as follows:

- *the liquidity premium (LP)*: the premium demanded by investors in exchange for holding assets that are illiquid relative to government bonds;
- *the default premium (DP)*: the premium demanded by investors in exchange for bearing the asset-specific risk of default (this can be further decomposed into  $p_d \cdot (1 - r_r)$ , the probability of default for the asset multiplied by the complement of the rate of recovery for the asset, given a normalised unit principal); and
- *the default risk premium (DRP)*: the premium demanded by investors in exchange for bearing the systematic element of default risk (this can be further decomposed as  $\beta_d \cdot MRP$ , the debt beta associated with an asset multiplied by the market risk premium).

<sup>49</sup> See Appendix F of the CC's 2007 report on price controls for Heathrow and Gatwick and Appendix L of the CC's 2007 report on price controls for Stansted. In terms of empirical methodology, we follow an approach more similar to that used in the latter report, in which the CC relied on AAA corporate bonds for the liquidity premium and on Moody's default and recovery rate publications for the default premium.



### ***Default Rate Methodology***

Each year, Moody's published a report on corporate default and recovery rates, both globally and for Europe only. The best proxy for the probability of default for a BBB-rated bond comes from Moody's tables showing issuer-weighted historical average default rates by rating category over various investment horizons (ranging from 1 to 10 or 20 years, depending on the report). For example, over a five-year period, a portfolio of Baa2-rated issuers defaulted at a 1.85% average rate (using data from 1983 to 2008).<sup>50</sup> This corresponds to an annualised expected default rate of 0.37%.

We then discount this appropriately for the probability that a creditor fails to recover his principal in the case of default; these figures are found in Moody's tables on average senior unsecured bond recovery rates, which are based on the ratio of 30-day post-default market price to par value.<sup>51</sup> For example, for a company that has been rated Baa for four or fewer years before default, the mean senior unsecured bond recovery rate is 44.09%. We average over all horizons (i.e. companies with a given rating from fewer than 1, 2, 3, 4, and 5 years prior to default); in this case, we arrive at an average of 43.724%. As this does not vary significantly over time, we fix the recovery rate at 45% for simplicity.<sup>52</sup>

The nature of the data means that we can model default rates as changing (at most) on an annual basis; we have done so, on the basis that the relevant figure published by Moody's in one year (e.g. in March 2008) is set as the probability of default until the next issue is released by Moody's the next year (e.g. in May 2009).

**Table A.1**  
**European Baa-Rated Annualised Expected Default Probabilities**

<b>Moody's Publication Date</b>	<b>Pre-Recovery Default Rate (5 yr)</b>	<b>Pre-Recovery Default Rate (10 yr)</b>	<b>Recovery Rate</b>	<b>Post-Recovery Default Rate (5 yr)</b>	<b>Post-Recovery Default Rate (10 yr)</b>
09/07/2002	0	0.18	0.45	0	0.0990
13/05/2003	0.46	0.18	0.45	0.2530	0.0990
29/03/2004	0.46	0.18	0.45	0.2530	0.0990
15/02/2005	0.48	0.18	0.45	0.2640	0.0990
27/03/2006	0.4640	0.18	0.45	0.2552	0.0990
22/03/2007	0.3484	0.1969	0.45	0.1916	0.1083
24/03/2008	0.2824	0.1594	0.45	0.1553	0.0877
05/05/2009	0.2612	0.1951	0.45	0.1437	0.1073

*Source: NERA analysis of Moody's European Corporate Default and Recovery Rate Publications, 2002-2009.*

<sup>50</sup> Moody's Corporate Default and Recovery Rates, 1920-2008, Exhibit 27

<sup>51</sup> Moody's Corporate Default and Recovery Rates, 1920-2008, Exhibit 41

<sup>52</sup> The CC also assumed a 45% recovery rate in its Stansted report calculation. Note also that the European average recovery rate from 1985 to 2008 is 45.9% (see Moody's European Corporate Default and Recovery Rates, 1985-2008, Exhibit 17).

For a five-year horizon analysis, European data are available as early 2002, so we use rates as reported below in Table A.1. However, because ten-year horizon data are only available from 2007 to 2009 for Europe (0.1969%, 0.1594%, and 0.1951% annualised expected rates of default for Baa debt, respectively), and these do not appear comparable to corresponding global data for which we have longer time series (0.4365%, 0.4070% and 0.4319%), we fix this at 0.18% for years prior to 2006.

### ***Interpretation of Results***

Depending on the strength of the assumptions we make about debt beta, we can make inferences about the levels of and/or changes in the MRP based on the debt risk premium.<sup>53</sup> We note that this exercise requires us to assume that debt beta is strictly positive, which is an idea we would not accept. Aside from this issue we note that there are some imperfections in the data that we use in our decomposition which makes interpreting the results meaningfully *in terms of magnitude* of movements difficult. In particular, we note:

- Some part of any change may be due to changes in the expected default premium. However, the annual periodicity of the default rate data from Moody's does not allow us to investigate this further. Additionally, the data itself is backward-looking and based on an extended historical period, both of which make it less responsive to current events.
- The yield on AAA bonds, which we use to proxy for the liquidity premium, may also include some compensation for investor perceptions of default risk and hence capture (at least partially) a changing default premium.

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<sup>53</sup> If the debt beta is known, we can calculate levels of the MRP. If the debt beta is unknown but constant, we can draw inferences regarding changes in the MRP as a consequence of the linearity of the residual in debt beta. If the debt beta is unknown and changing over time, we cannot draw any conclusions about the MRP from the residual debt premium.

## Appendix B. Recent Bond Issues

Table B.1 shows A and BBB rated bond issues over the three months to the end of June.

**Table B.1**  
**Recent Bond Issues**

Issuer	Moody's Rating	S&P Rating	Amount €m	Issue Date	Tenor (years)	Coupon Yield
CARREFOUR SA	A3	A	250	29/06	8	4.68%
LVMH MOET-HENNESSY	NR	A-	150	29/06	8	4.78%
COMPAGNIE DE ST GOBAIN	Baa1	BBB+	200	29/06	8	6.00%
VEOLIA ENVIRONNEMENT	A3	BBB+	250	29/06	8	5.70%
EDP FINANCE BV	A3	A-	1000	25/06	7	4.76%
KELAG-KAERTNER ELEKTR.	NR	A	250	23/06	5	4.50%
ANHEUSER-BUSCH INBEV SA	Baa2	BBB+	250	22/06	6	5.78%
OMV AG	A3	NR	250	22/06	7	5.24%
LVMH MOET-HENNESSY	NR	A-	250	15/06	6	4.50%
SOLVAY S.A.	A2	A	500	12/06	6	4.91%
MCDONALD'S CORP	A3	A	300	10/06	7	4.28%
SUEZ ENVIRONNEMENT	A3	NR	250	08/06	8	5.20%
IBERDROLA FINANZAS SAU	A3	A-	125	04/06	10	5.50%
AIR LIQUIDE SA	NR	A	400	03/06	6	4.38%
DEUTSCHE TELEKOM INT FIN	Baa1	BBB+	500	02/06	5	4.39%
TPSA EUROFINANCE FRANCE	A3	BBB+	500	22/05	5	6.00%
MAN SE	A3	A-	1000	20/05	4	5.39%
COMPAGNIE DE ST GOBAIN	Baa1	BBB+	750	20/05	4	6.00%
VOLVO TREASURY AB	Baa1	BBB+	500	19/05	3	7.90%
VATTENFALL TREASURY AB	A2	A-	1350	19/05	5	4.25%
LVMH MOET-HENNESSY	NR	A-	1000	12/05	5	4.39%
ATLANTIA SPA	A3	A-	1500	06/05	7	5.63%
DONG ENERGY A/S	Baa1	BBB+	500	06/05	5	4.88%
DONG ENERGY A/S	Baa1	BBB+	500	06/05	10	6.50%
ACCOR SA	NR	BBB	600	05/05	4	6.50%
PORTUGAL TELECOM INT FIN	Baa2	BBB	1000	30/04	4	6.00%
MICHELIN LUXEMBOURG SCS	Baa2	BBB	750	24/04	5	8.63%
VEOLIA ENVIRONNEMENT	A3	BBB+	1250	24/04	5	5.25%
VEOLIA ENVIRONNEMENT	A3	BBB+	750	24/04	10	6.75%
ELIA SYSTEM OP SA/NV	NR	A-	500	22/04	4	4.50%
ELIA SYSTEM OP SA/NV	NR	A-	500	22/04	7	5.63%
ALLIANDER FINANCE BV	A2	A	500	20/04	3	4.00%
ALLIANDER FINANCE BV	A2	A	750	20/04	7	5.50%
VERBUND INTERNATIONAL FI	A1	A	500	17/04	6	4.75%
GROUPE AUCHAN SA	NR	A	500	15/04	6	4.75%
GROUPE AUCHAN SA	NR	A	500	15/04	10	6.00%
<b>Range</b>			<b>125 - 1500</b>		<b>3 - 10</b>	<b>4% - 8.63%</b>
<b>Average</b>			<b>573</b>		<b>6</b>	<b>5.38%</b>

Source: NERA analysis of Bloomberg data. Note: Ratings are at the time of issue. Bonds selected are rated A or BBB (or equivalent), issued by non-financial corporations, fixed coupon, bullet repayment, not index-linked, not subordinated, non-fungible, do not feature coupon step-ups in the event of rating

Appendix B **Error! Use the Home tab to apply 見出し 1 to the text that you want to appear here.**

*downgrade, not a private placement, not puttable and not callable issued between 1<sup>st</sup> April 2009 and 30<sup>th</sup> June 2009.*

# NERA

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