

Bottom-Up Efficiency Assessment of DAA/Dublin Airport OPEX

Final Report to the

Commission for Aviation Regulation

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Indecon

JACOBS
CONSULTANCY



Report Structure

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- Scope and Terms of Reference
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- Bottom-Up OPEX Projections
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- Comparison with Top Down Benchmarking
- Overall Conclusions

Introduction

- This report represents the final outputs from Indecon-Jacobs' detailed assessment of OPEX efficiency at Dublin Airport, Terminal 1, for the Commission for Aviation Regulation ('CAR', 'the Commission')
- The consultancy team would like to acknowledge the high level of cooperation and inputs to the review received from the Commission, DAA, the airlines and other user groups and stakeholders
- This report builds on Indecon-Jacobs' preliminary outputs which inputted to the Draft Determination published by the Commission in June 2009 and also reflects consideration of the submissions received on foot of the Draft Determination

Terms of Reference and Scope

- **Indecon-Jacobs were appointed by CAR to undertake:**
 - “a ‘bottom-up’ review of DAA’s operational activities at Dublin Airport in order to assess the operational efficiency of the DAA in providing services to both passengers and airlines”
- **Required Outputs:**
 - 1st Phase (Draft Determination): preliminary emerging outputs from assessment in the form of one or both of (a) opex projections for the 2010–14 period by cost category, if available; (b) projected annual efficiency savings, expressed in percentage terms, to be targeted over the 2010–14 period
 - 2nd Phase (Final Determination): detailed conclusions from assessment, consisting of one or both of: (a) annual opex projections by cost category for 2010-14 period; (b) projected aggregate annual efficiency savings, expressed in % terms, to be targeted over the 2010-14 period
- **Scope of Assessment:**
 - It should be noted that, in terms of scope, this assessment is focused on DAA’s existing operations at Dublin Airport and therefore excludes the impact of Terminal 2

Work Programme and Outputs

Summary

- A detailed Work Programme has supported this assessment, consisting of the following elements:
 - In-depth engagement with CAR and DAA
 - » Initial discussions with CAR and review of available evidence and material supplied by the Commission
 - » Detailed interaction with CAR throughout course of assignment
 - » Detailed interaction with DAA, including site visit to Dublin Airport (see further overleaf)
 - Detailed assessment and modelling
 - Preparation/formulation of preliminary emerging outputs - a Preliminary Report by Indecon-Jacobs was completed and published alongside the Commission's Draft Determination on 18th June 2009
 - Further assessment based on detailed submissions received from DAA and other stakeholders on foot of Draft Determination (and Indecon-Jacobs inputs to same) in August 2009
 - Responses to consultation and responses from the team to stakeholder submissions and suggestions
 - Completion of Final Report

Work Programme and Outputs

Engagement with DAA

- Critically, this review has been supported by detailed engagement with DAA based on the following components/actions:
 - Formulation by Indecon-Jacobs of detailed structured Data/Information Request to DAA and issue of request to DAA by CAR in April 2009
 - Review of DAA data/information provided in response to Indecon-Jacobs request and identification of data/information gaps and issues for discussion
 - Organisation of Site Visit to DAA/Dublin Airport by Indecon-Jacobs team
 - Completion of Site Visit to DAA/Dublin Airport (19th May) – this entailed:
 - » Detailed discussions with:
 - Director, Dublin Airport
 - Director, Regulation and Strategy
 - Group Head of Financial and Business Planning
 - Group Head of Procurement
 - Director, Human Resources
 - Other Human Resources senior management
 - Process Improvement Manager
 - Schedules Control Manager
 - Passenger Operations Manager
 - Administration Manager
 - » Visual tour and inspection of relevant landside and airside passenger security and other operations
 - Formulation of follow-up Data/Information Request to DAA and issue by CAR
 - Assessment of detailed DAA submission received on foot of Draft Determination

Work Programme and Outputs

Responses to Submissions on foot of Draft Determination

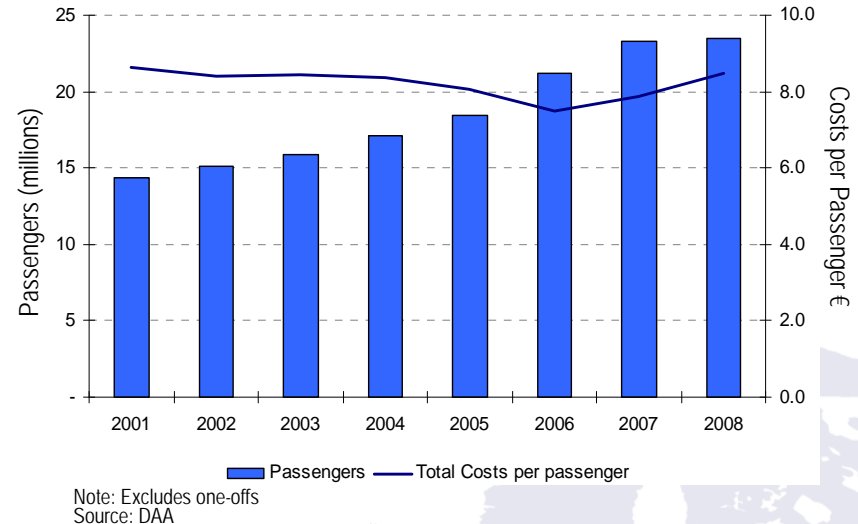
- This report reflects consideration of the submissions received on foot of the Draft Determination
- Indecon-Jacobs reviewed the following submissions which made reference to Indecon-Jacobs' inputs to the Draft Determination:
 - DAA (Parts 1 and 2)
 - Aer Lingus
 - Ryanair
 - Dublin Airport Consultation Committee
 - IATA
 - Irish Hotels Federation
 - Portmarnock Community Association
- Indecon-Jacobs examined all submissions with the objective of identifying instances where factual errors or misinterpretations, or questions of fact arise that may give rise to substantive implications for the Indecon-Jacobs assessment. Detailed responses to substantive issues raised are provided in the annex to this report

Overview of Dublin Airport OPEX Performance To-Date

Overview of Dublin Airport OPEX Performance To-Date

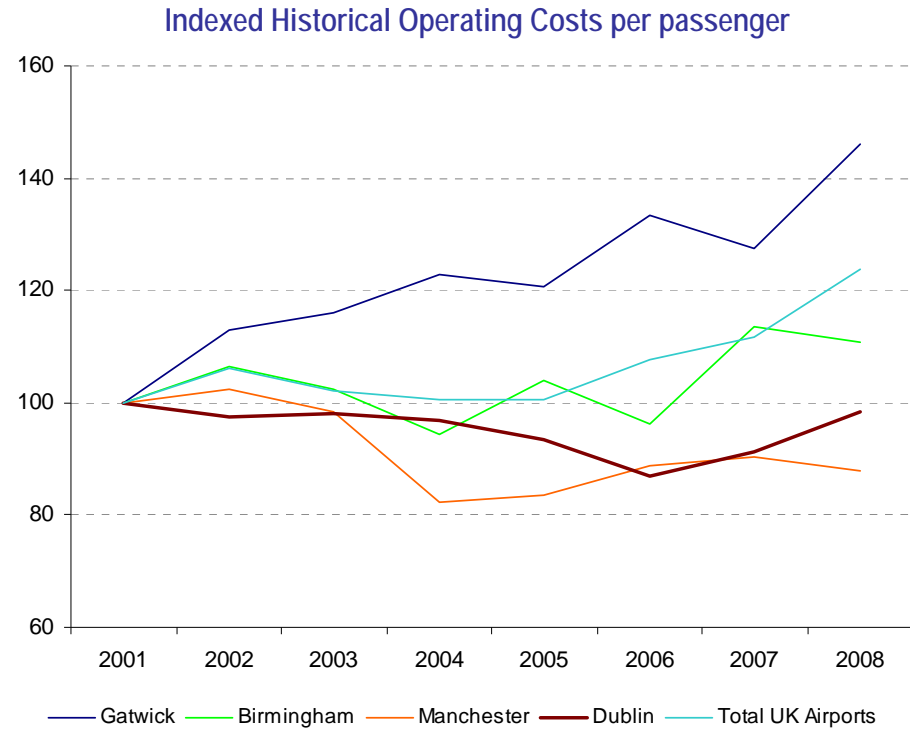
- The graph shows historic total operating cost per passenger (2001 to 2008 outturn price). Over the 8 year period, operating costs per passenger have decreased from €8.63 per passenger to €8.49 per passenger, an average annual decrease of 0.2% per year
 - From 2007 to 2008 operating costs per passenger increased from €7.88 to €8.49 per passenger (excluding one offs)
- Operating costs increased by 7.1% between 2001 and 2008, relative to a passenger growth of 7.3%. This implies an elasticity of operating costs to passenger growth of 0.97x
- Over same 8 year period, there has been limited increase to capacity at the Airport. The most significant expansion in this period followed the completion of Pier D in Nov 2007 and the opening of Area 14 in May 2007, in total adding 15,500sqm of floor space at the very end of the period
 - Prior to this, the last major capacity increments were completed by 2001 (Pier C phases 1 and 11, the extension to Terminal 1 and apron expansion)
- It should be noted that in these and subsequent comparisons staff and non staff costs include corporate staff and costs
- The information received from DAA on which the analysis has been based includes 100% of the corporate cost base
- In other analysis prepared by DAA, including the regulatory accounts, corporate costs have been allocated between Dublin and the other two airports in the group (Cork and Shannon) on various bases:
 - Some projects, activities and costs are directly attributable to Dublin
 - Other projects, activities and costs are shared between the airports in the group. These costs are split on several bases, primarily traffic
- On an allocated basis, we understand that Dublin accounts for around 90% of total corporate costs

Historical Operating costs per passenger vs. Total passengers



Comparison with UK airports

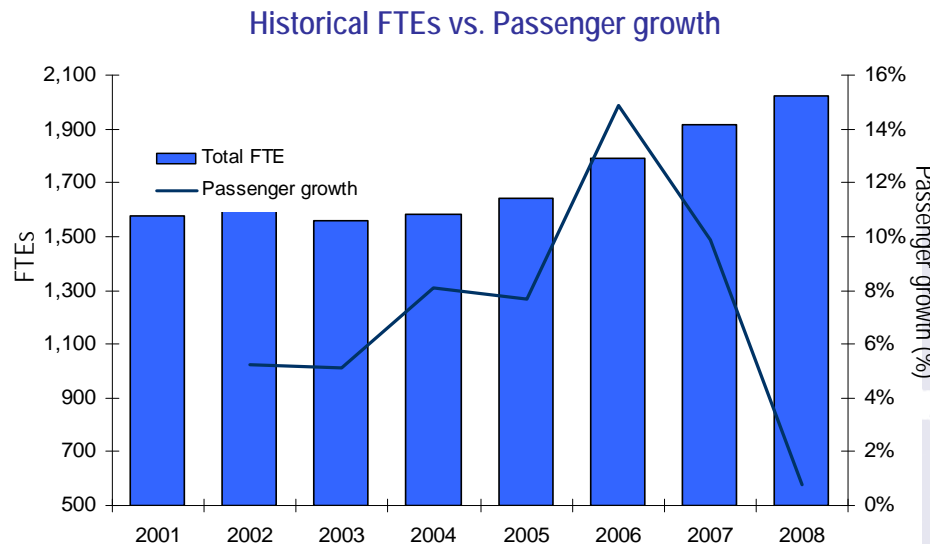
- As discussed above, relative to 7.3% passenger growth, operating costs at Dublin grew by 7.1%, or an implied elasticity of operating costs to passenger growth of 0.97x in real terms. Over the period 2001 to 2008, operating costs per passenger decreased by a CAGR of (0.2%)
- The chart sets out the trend in operating costs per passenger for Dublin over the period in comparison with total UK airports and three UK airports with broadly comparable levels of passenger throughput and operating in a similar legislative and security environment – Gatwick, Birmingham and Manchester
- On this basis Dublin appears to be in line with total UK airports. However, given that each of Gatwick, Birmingham and Manchester have added more significant increments of capacity over the period than Dublin, this may make comparison with Dublin more difficult



Source: CRI Airports Statistics, DAA

Historical FTE development

- Staff costs represent the most significant area of costs, particularly for Dublin Airport where more activities are insourced. In 2008, staff costs represented 63% of total costs
- The graph sets out historic FTE development over the period 2001 to 2008, together with passenger growth over the same period
- Over the period 2001 to 2004, FTEs were held approximately constant in the context of increasing passenger numbers
- Over the period 2004 to 2008, FTEs increased from 1,581 to 2,025 some 500 additions

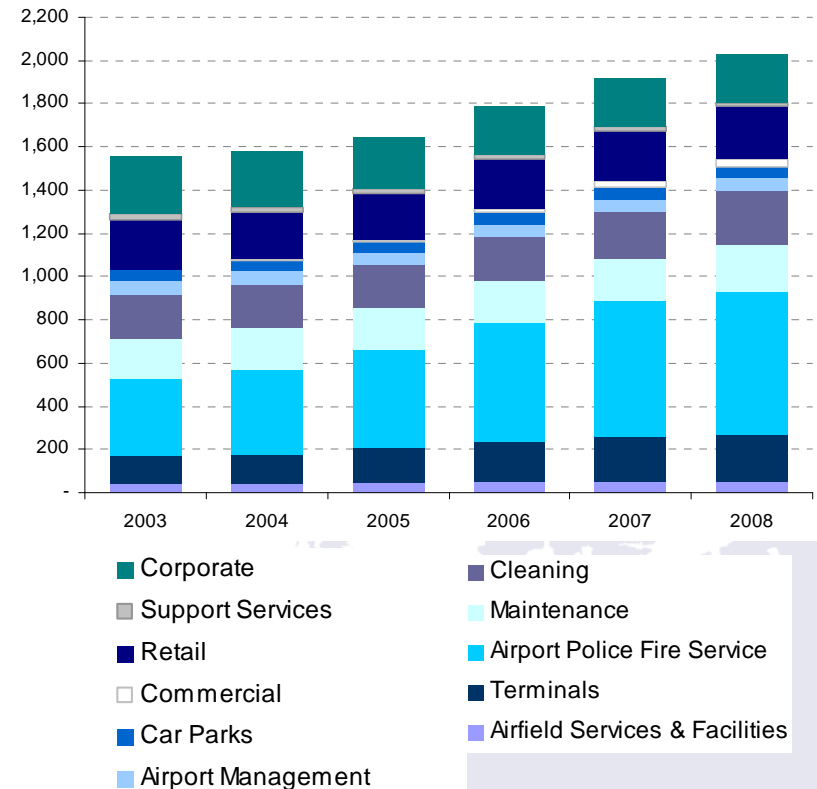


Source: DAA

Increase in Staff numbers 2004 – 2008

- There are several areas accounting for the increase in staff numbers over this period
- A significant increase in security numbers:
 - Although a complete breakdown has not been provided an increase of around 200 occurred between 2004 and 2008. This arose as a result of the increase in need for manpower arising from the banning of liquids in hand luggage from 2006, together with other increases in security standards
- Cleaning staff increased by around 53 between 2004 and 2008
 - In discussion with DAA, it appears that this increase arose as a result of passenger congestion leading to need to change the scheduling of cleaning activities
- Similarly, passenger terminal staff increased by around 82
 - This was as a result of the need to provide additional staff to deal with highly congested conditions in the terminal
- The increase in different areas is set out in the graph

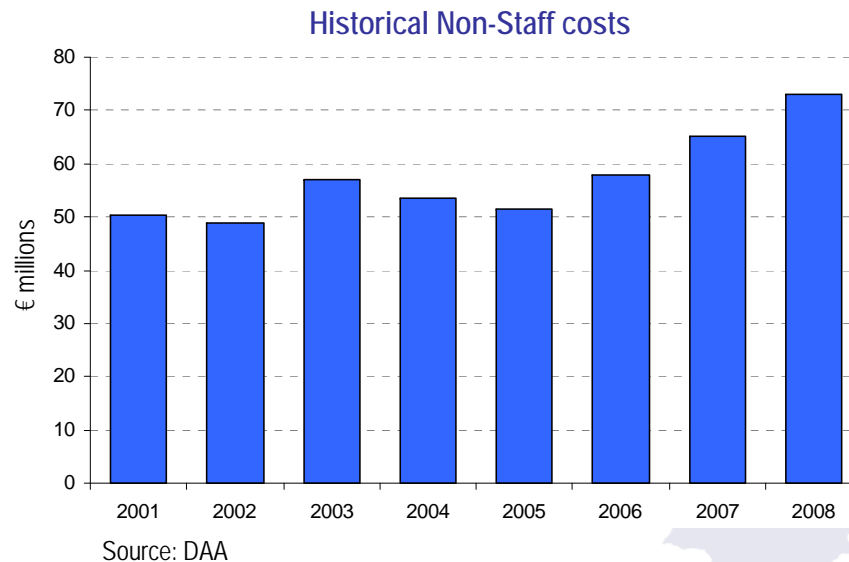
Historical FTEs by Category



Source: DAA

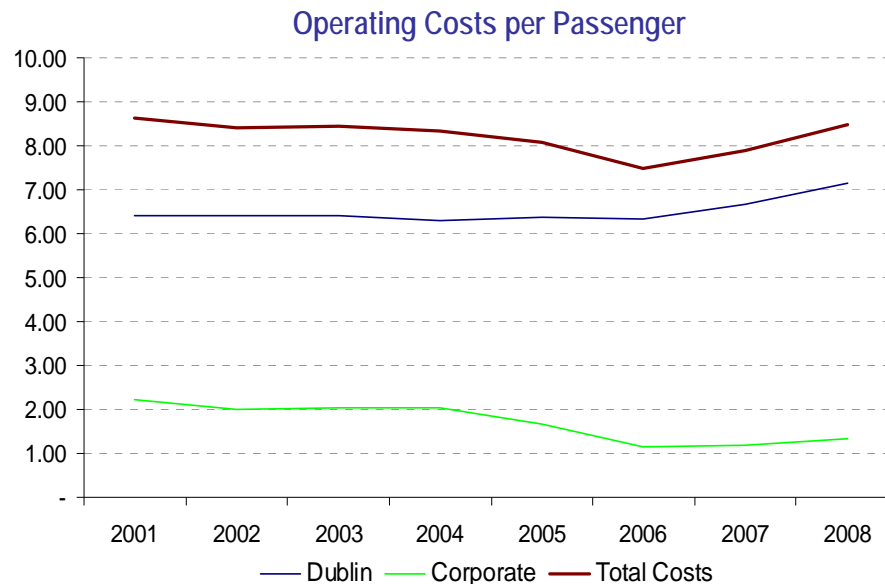
Historical non staff costs

- Over the period 2001 to 2008, non staff costs increased from €50.4m to €73.0m, or a decrease from €3.52 per passenger to €3.11 per passenger
- It might have been expected that these cost areas would be relatively static in the context of increased passenger numbers as non staff costs are related to facilities rather than throughput (but it should be noted that the DAA's costs in the recent past should be seen in the context of the larger Irish economy which included rapid wage and cost rises)
- Cost increases have arisen in:
 - Cost areas where the scope for management control is comparatively limited (energy, rates, insurance)
 - Some areas such as professional fees which may well be related to the planning of Terminal 2



Historical costs (cont.)

- It should be noted that although operating costs per passenger appear to have decreased gradually over the period 2001 to 2006, the analysis in the previous slides pertains to total operating costs, including both Dublin Airport and group/corporate costs
- When Dublin Airport costs are considered in isolation (see chart below), operating costs appear to have been kept largely flat
- Instead, the improvement appears to have been driven by the fall in operating cost per passenger at the group/corporate level
 - It should be noted that the fall in operating costs per passenger at the group/corporate level was less likely to have been driven by operational efficiency but instead could be the result of restructuring following the passage of the State Airports Act in 2004



Summary of historical results

- It is not clear that Dublin has performed as well as might be expected over the period in terms of operating cost efficiency
- Per passenger costs have fallen slightly over the period
- However, a larger fall would have been expected given the relatively low level of capacity addition at the Airport
- In any event, the fall in per passenger costs appears to have been at the corporate level rather than at the Dublin Airport level
- Limited infrastructure investments over the period has had two opposite effects:
 - Firstly from 2001 to 2005 it enabled operating expenditure to be held relatively constant as there was not a need to increase costs in proportion to additional space provided (cleaning, maintenance etc)
 - Over the period from 2005 to 2008 several areas of costs increased as a result of severe congestion in the terminal, as well as the need for enhanced security procedures

Bottom-Up OPEX Projections

Methodology of Bottom-Up Opex Projections

- Our overall approach has been to consider the efficiency of each area of the cost base of Dublin Airport, taking the base year as 2008 (an exception is 2009 for energy costs where gas was bought forward)
- We have used a mixture of assessment methodologies depending on the type of costs concerned
- Where appropriate, we have combined staff and non-staff costs for functional areas such as maintenance where there is a mixture of outsourced and in-sourced provision
- Where we feel it is appropriate based on our analysis, we have proposed an adjustment to the base year cost level, expressed as a range

Breakdown of 2008 cost areas

- For the purpose of this assessment, we have grouped the 2008 cost areas into the following categories (all categories originate from the DAA Financial Projections document):

2008 Costs	FTEs	Staff Costs (€m)	Non Staff Costs (€m)
Airport police fire service	668	36.6	
Retail (DAA & Corporate)	254	16.5	
Maintenance, Cleaning, Terminals	677	35.7	13.7
Airport management & Head Office	310	29.3	
Exogenous Costs (rent, rates, insurance and energy)	-	-	21.9
Other	116	8.1	36.6
Total	2,025	126.4	72.2

Bridge between 2008 and 2009

DAA Forecasts (including Corporate costs)	2008	% Change	2009
FTEs	2,025	*	*
Staff Costs (€m)	126.4	*	*
Non Staff Costs (€m)	73.0	*	*
Total Costs (excluding one-offs) (€m)	199.3	*	*
* Redacted for confidentiality purposes			

- The above table provides a bridge between the outturn costs for 2008 and those projected for 2009
- Total Costs in 2009 are forecast by DAA to increase from 2008 levels
- This is despite the fact that passengers are expected to decline by 10.5% in the same period
- The main area of change is in relation to staff costs

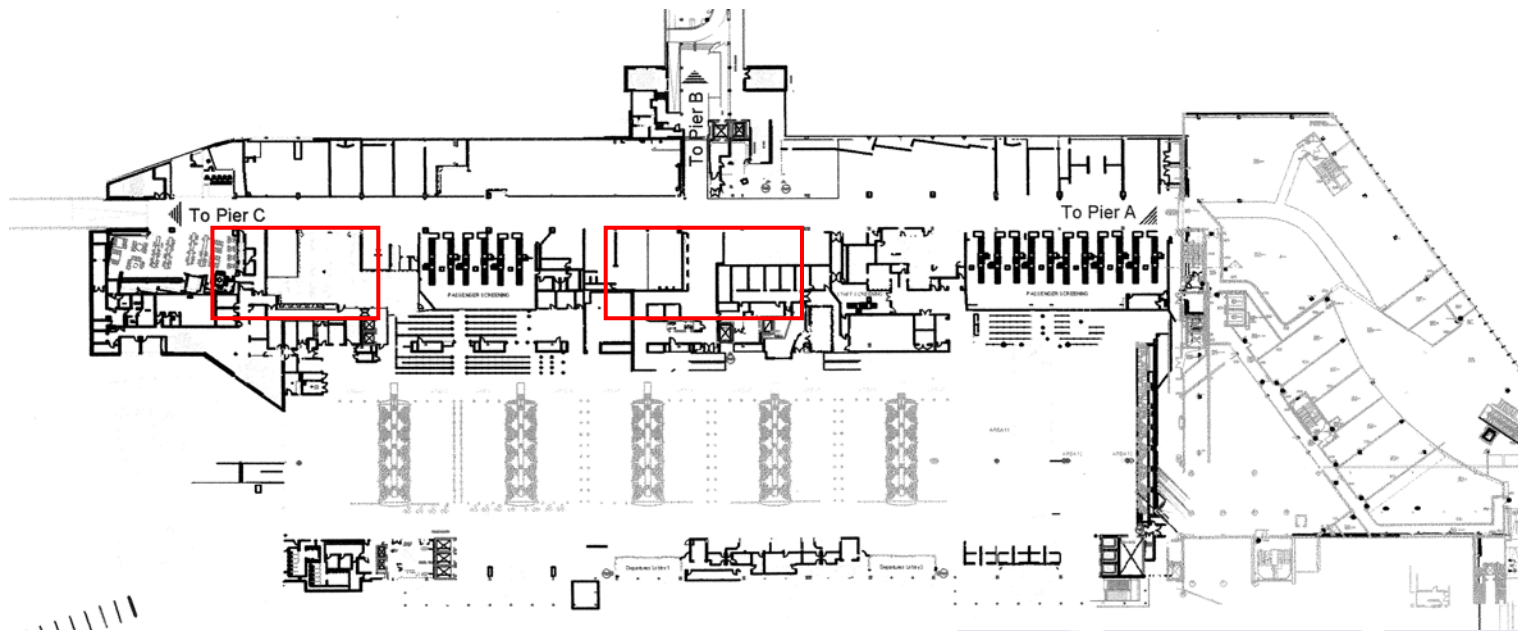
Airport Police and Fire service

- The table below breaks down and comments on each of the components of the Airport Fire and Police operational expenditure category which in 2008 accounted for 33% of total FTEs at Dublin Airport
- Security is discussed further on the following page

	FTEs	Comments
Fire service	*	Usually limited scope for rationalisation and determined by runway system. Comparator Airport 1 has 82 FTEs, Comparator Airport 2 has 70 FTES. The current level of staffing in this area is considered reasonable
Police	*	For Dublin the airport police force performs both perimeter security and other functions. Believed to be reasonable
Security	*	Given that perimeter security is provided by the police, the function of the 'Security' department is passenger security only. This staffing covers ASU's (security officers) together with supervisory staff. The staffing level is discussed on the following page
TOTAL	668	
* Data redacted for confidentiality reasons		

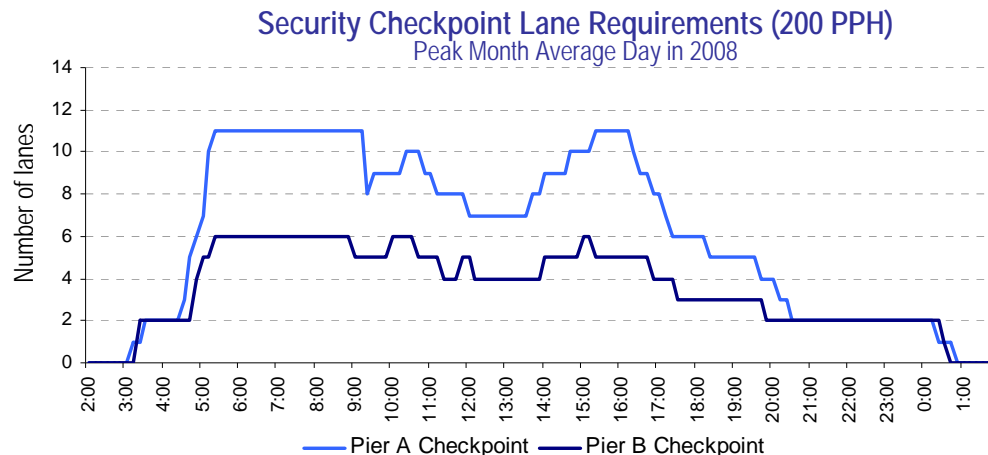
Security

- Passenger security is operated by DAA staff
- Terminal 1 has two areas for security processing, consisting of 6 and 3 walk through metal detectors (WTMD) respectively
- DAA assess the planning capacity of the security processing areas at 510 per WTMD. In discussions with DAA management, it was stated that an average capacity was closer to 400 per WTMD



Security (cont.)

- In order to assess the efficiency of this level of staffing, we have simulated the pattern of lane openings required to serve departing passenger demand at varying throughputs per single lane. At 200 per single lane (e.g., x-ray unit) per hour (e.g. 400 per WTMD) and using 2008 average schedules the pattern of lane openings is set out in the chart below
- Assuming a 39hr working week, the analysis suggested that the annual base FTE requirement was 300
- Multipliers must then be used to take into account holidays, sickness and training
 - Our analysis suggests that a multiplier of 1.6x would be appropriate
 - However, to reach the Dublin FTE figure for 2008 requires the use of a lower multiplier
 - We consider this figure to be on the low side. This suggests that the 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



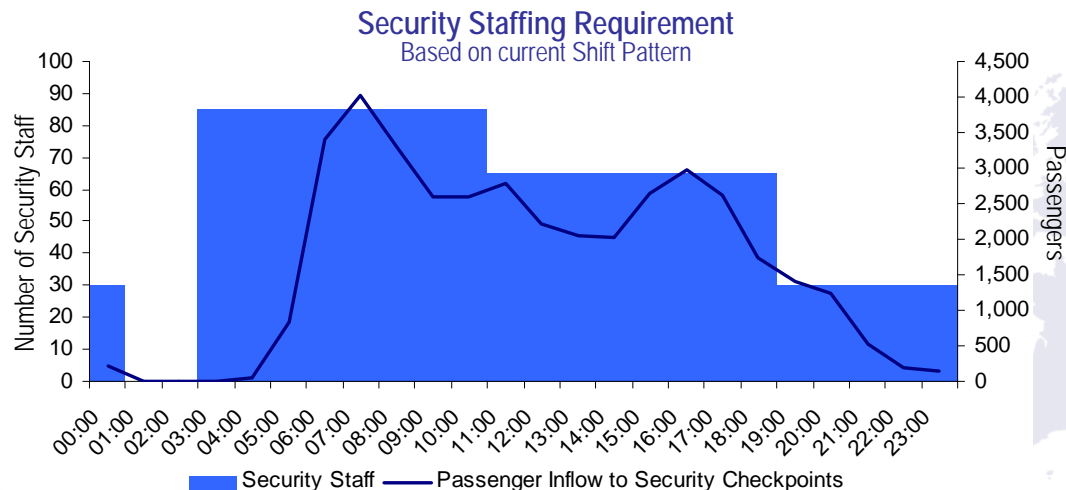
Multiplier	ASU FTEs*
*	*
1.6	*

* Figures have been redacted for confidentiality purposes

- This analysis is indicative only and does not take into account for example the exact detail of the Dublin shift patterns
- However, it indicatively confirms that the total Dublin staffing in 2008 is not unreasonable

Security (cont.)

- We have carried out sensitivities on this analysis:
 - The impact of a centralised checkpoint was observed: Keeping everything else equal (e.g. service standards), centralising the two checkpoints does not appear to yield any significant benefits. This combined with the shift pattern of 6, 8 and 8 hour shifts, the total scheduled staff hours for the day does not change. However, some optimisation could be achieved in supervising staff numbers
 - We also understand from discussions with DAA management that such a centralisation within Terminal 1 would be costly from a capex perspective and, given the layout of the terminal, difficult to implement
 - We also observed the impact of relaxing the existing rostering assumptions. Efficiencies could be achieved if more flexible shift patterns were introduced, for example a combination of 8, 6, 4 and 2 hour shifts, able to commence every half-hour. However, from discussions with DAA management we were advised that in their opinion such a change to shift patterns would not be acceptable from a union perspective
- Our overall conclusion from our operational simulation is that the current manning of security is broadly reasonable



Security (cont.)

- An alternative approach to assessing the appropriateness of the staffing level is to benchmark against other airports. The table illustrates Dublin's security staffing per million passengers vs. other airports
- In general terms, security staffing efficiency tended to decline after 2006 when increased security standards were implemented (ban on liquids in hand luggage)
- In this context, Dublin's staffing efficiency for security is reasonable

Comparator	Staff per Million Passengers	Year of Observation
Dublin	*	2008
Airport 1**	31	2008
Airport 2	22	2006
Airport 3	18	2006
Airport 4	48	2006

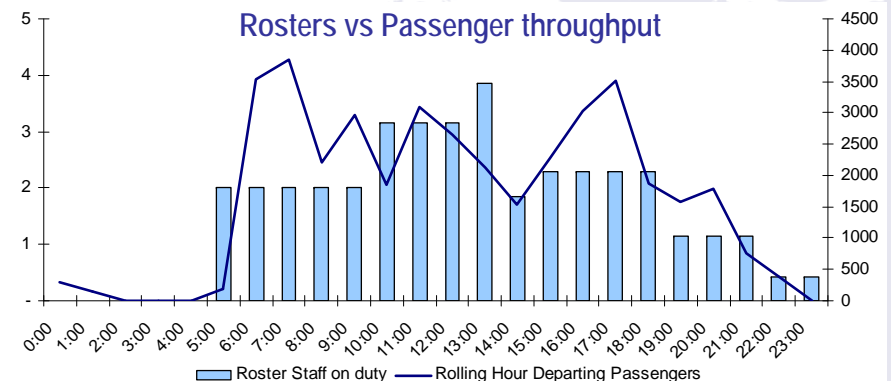
* Dublin 2008 numbers have been redacted confidentiality purposes

** Names allocated to each of the comparator airports remain consistent throughout the presentation. Please note that as data on all areas is not always available for each of the comparator airports, only airports for which we have the relevant data have been used in each section

- Our conclusion, is that on both bases, Dublin's security staffing appears reasonable. This is partly due to the constraints of the infrastructure provision
- Further reductions in staffing would be permissible if:
 - The service standard was relaxed
 - The staffing requirement per WTMD was relaxed
 - Further flexibility was obtained by DAA in rostering patterns
- **On the basis of the current operational and regulatory conditions, we adopt the Dublin staffing per passenger assumption for our optimised base year – we therefore expect the number of security FTEs 2009 to fall at the same rate as passengers**

Retail

- Most airports outsource retail activities to a concessionaire who runs the retail operation and provides the airport with a margin sales
- DAA insources its retail operation. The primary reason for this is that DAA (Aer Rianta) is a longstanding concessionaire in overseas markets. On this basis it is able to share favourable procurement margins and expertise beyond its Dublin business
- The insourced retail operation operates duty free shops in the Airport together with the stores, accounting and other backup. Non duty free shops are provided by concessionaires
- DAA employs 241 FTEs in the retail operation, together with 13 corporate staff
 - As discussed there are few analogous airports to compare this level of staffing. However at Airport 3, an insourced retail operation employs 182 FTEs. At Airport 3, total passengers are 33mppa against 23mppa at Dublin. Airport 3's retail operation earns a turnover of €83m against €110m at Dublin. On a sales/employee basis the two airports are in line. However, Airport 3 has lower duty rate, and a higher proportion of domestic traffic so it could be expected that Dublin should be performing some 5 – 10% better
- On this (limited) basis it appears that the DAA retail operation may have higher manpower levels than necessary
 - One reason for relative higher-manning could be the relative inflexibility of roster patterns to passenger throughput (illustrated in the table below)
- **Our view is that a reduction of between 5% and 10% of staff should be possible whilst retaining turnover, to bring sales revenue/staff in line with an expected level based on an analogous operation. Our optimised base case is based on staffing of between 214 and 226 FTEs**



Maintenance

- As with most airports, maintenance at Dublin is carried out by a mixture of in-house employees and outsourced contracts. At Dublin, maintenance is contracted out for activities such as painting, and equipment maintenance
- The table below contrasts the maintenance costs (insourced and outsourced) for Dublin and two comparable airports
- In this analysis, Dublin pay rates have been used for the other airports to normalise for pay differentials
- Dublin spends a low amount per passenger. This is probably mostly a reflection of the congested nature of the Terminal 1 infrastructure (e.g. less infrastructure to maintain per passenger). However, congestion has a downside in that maintenance activities become more difficult (and expensive to schedule)
 - We also believe that the downturn in the commercial sector will likely put downward pressure on outsourced/maintenance contracts
- An alternative measure (although again potentially distorted by differential policies) is maintenance as a percentage of fixed assets. On this basis Dublin's maintenance costs would appear reasonable

	Dublin	Airport 1	Airport 4
FTEs	*	212	138
Staff Costs (based on Dublin rate) (€m)	*	12.7	8.3
Outsourced costs (€m)	*	23.1	47.1
Total normalised costs (€m)	*	35.8	55.4
Cost per passenger (€)	*	1.01	2.99
As a % of fixed assets	*	2.1%	3.6%

* Dublin numbers have been redacted for confidentiality reasons

Maintenance (cont.)

- We have conducted a brief review of maintenance contracts (largest by value)
- The maintenance contracts we have examined tend to be on the basis of fixed price schedules and with 3/5/7 year terms. In the course of discussions with DAA, it was stated that changes in contractors through competition (e.g. an existing maintenance contractor being replaced by a new one through a tender process) had occurred in the recent past. Management stated that the scope for this was however limited by the comparatively limited pool of appropriately qualified contractors in the Dublin area
- However based on our review of the maintenance contracts, we believe there is scope for both more competitive processes and the redrawing of maintenance contracts to move towards arrangements where contractors are incentivised to find more effective ways of carrying out contractual tasks
- **On this basis, we have assumed that costs can be optimised through a reduction in costs of between 5% and 10% of total outsourced maintenance costs. This reduction takes into account our previous experience in involvement in renegotiation of maintenance contracts**

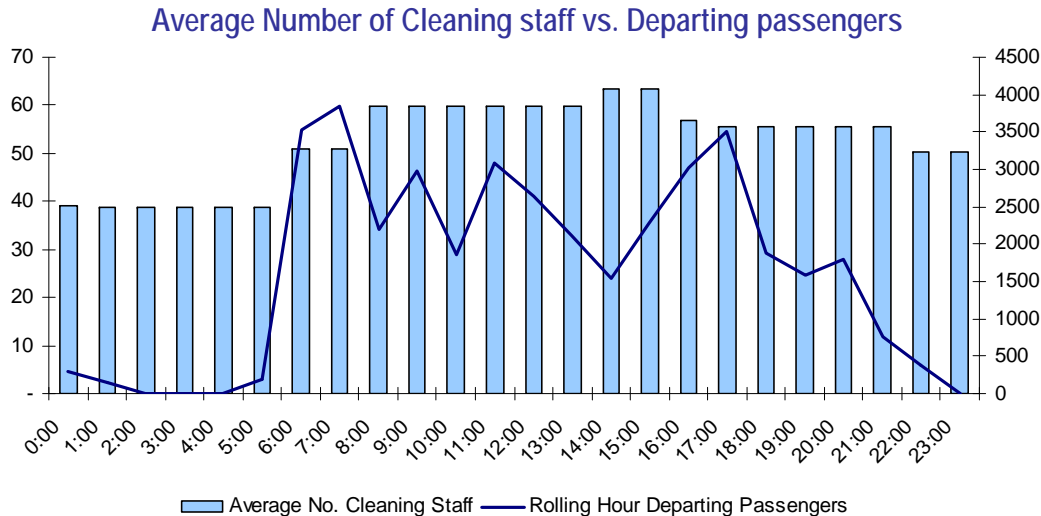
Cleaning

- DAA carries out cleaning at Dublin Airport mainly using in-house staff
- The mezzanine (food court) area is cleaned by an outsourced company
- Comparison of cleaning costs at Dublin versus comparator airports indicate that Dublin's costs in this area appear very high. This is particular evident when one compares costs on a per square metre basis
- There appear to be several reasons for this level of cleaning costs (in Dublin):
 - Service standards suitable for different areas of the airport property (or indeed service standards at all) are not defined
 - The roster pattern for cleaning includes a high degree of overnight working (see chart on next slide). This will increase costs. Clearly, the high degree of congestion will constrain working hours to some extent. Once terminal 2 is open, the changed passenger profile of Terminal 1 is likely to facilitate rostering of more cleaning during daytime, which may benefit costs
 - The costs of insourced resources are much higher than outsourced ones. This is evident from the comparative costs of the outsourced contract

Comparator Airport	Total Costs €m	Costs/pax €	Costs/Sq metre
Dublin*	*	*	*
Airport 1	7.0	0.23	28.6
Airport 3	14.5	0.45	52.9

* Dublin figures have been redacted for confidentiality purposes. Our analysis is based on a published floorspace for Dublin airport of 105,000 sqm. Our own calculations of the floorspace on the basis of plans indicate a lower area. If the lower floorspace figure were used, comparative unit cleaning costs at Dublin Airport would be higher

Cleaning (cont.)



- We believe there is significant scope to reduce cleaning costs through:
 - Improved rostering
 - Better definition of cleaning service standards, differentiated by area
- On an optimised basis we propose a reduction of between 25 and 50 FTEs in order to achieve a significant move (10 – 20% of the way) towards best practice. In the financial model, we show this as a reduction in FTEs. In practice though, to some extent this saving may be obtained through increasing the proportion of space either cleaned by an outsourced provider, or by concessionaires or other agencies

Terminals

- Terminal staff include several functions that are not usually carried out by airport managements. Trolley services and Executive lounges are usually outsourced or carried out by third parties such as ground handlers
- The analysis below compares manning in the areas where comparison is possible with other airports
- On this basis, it appears that manning is high in the areas for which direct comparisons are possible
- In discussions with DAA, one explanation that was provided was that the higher number was the result of passenger congestion, with queue management likely to impose higher costs
- Whilst partially accepting this argument, we believe that a relatively limited cut in staff of between 10 and 15 FTEs in the Information Centre could form the basis of an optimised staffing level, bringing the staffing of these areas overall into line with benchmarks**

	Dublin Airport	Comparator Airport 1	Comparator Airport 2
Duty landside	*		
Protocol	*		
Info centre	*		
Terminal service office	*		
Customer service	*		
Landside service	*		
Sub total	*	105	85
Trolley services	*		
Executive lounges	*		
Total	*	105	85
* Figures for Dublin Airport have been redacted for confidentiality reasons			

Commercial

- The commercial department at DAA is responsible for property management, development and strategy
- Our assessment indicates that current manning levels are high in this area
- As a comparison:
 - Airport 4 has a department of 10 FTEs covering these areas
 - Airport 2 has 32 FTEs but the department also covers airline marketing
- We believe that reductions of between 5 and 12 FTEs would be achievable for this department (e.g. to bring Dublin closer in line with comparator airport 2)

Airport management and Head Office

- Dublin Airport has a management and support function covering areas such as management, environment, IT&T, health and safety and local finance
- Head Office provides corporate services, HR, strategy and regulation communications and business support
- In some cases Head Office provides both a 'local' and 'corporate' function – for example HR where there is no Dublin Airport Management function
- In the information we have been provided with, 100% of the corporate function is included in the cost base for review. In the regulatory accounts and other presentations a lower proportion is included (approx. 90%)
- We believe the total staff complement in 'management' may offer scope to achieve some efficiencies
- The table overleaf sets out a comparison between Airport 2's corporate management staff complement and Dublin's (both local management and Head Office). The analysis below compares manning in the areas where comparison is possible
 - We accept that these levels may be impacted by the current development of Terminal 2

Airport management and Head Office (cont.)

Airport 2		DAA - Head Office		Dublin Airport Management	
Planning					
Capital project managers	1	Director Infrastructure Development	*	Airport development	*
Engineering Admin./Capital Projects	7			Environment	*
Operational Planning	2			Operations planning	*
Planning & Environment	9			Contingency planning	*
Total	19		*		*
External Relations					
External relations	4	Director Corporate Affairs	*	Communications	*
Marketing commercial	7			Marketing	*
Total	11		*		*
Finance					
Administration	6	Group procurement	*	Business data	*
Purchasing/Stores	8	Group contracts	*	It & T	*
IT	10	IT	*	Finance	*
Finance	16	Finance	*		
Internal Audit	2	SSC	*		
		Internal audit	*		
Total	42		*		*
HR					
Personnel/Occupational Health	14	HR	*	Health & Safety	*
Health & Safety	3				
Total	17		*		*
Legal					
Total	3		*		*
Senior Management					
Senior Management	16	Corporate services	*	General Management	*
Chairman	1	Operations	*	Transport Admin	*
Executive Secretaries	3	Strategy and regulation	*		
Total	20		*		*
		Nursery	*		
Total	112		*		*

* Dublin data redacted from this report for confidentiality reasons

Airport management and Head Office (cont.)

- Comparisons are difficult because of differences in scope and lack of clarity on exact scope of roles
- However, the comparison does indicate areas where Dublin's corporate activity appears to have high levels of manning, particularly in 'planning' and 'finance'
- There are several reasons for the high staff component:
 - Temporary inflation of staff numbers while the Terminal 2 process is underway. Management stated that the tender process associated with Terminal 2 absorbed a considerable amount of time of staff, including those dedicated to operating the existing business
 - Requirements on DAA to carry out several functions, including the staff nursery that would not normally be part of a Head Office scope (not provided at Airport 2)
 - The high underlying level of non management staff
 - A certain element of overlap between Dublin Airport management and Head Office, partially resulting from a lack of clarity in the separation between the function of each entity
- However, it is not believed that these differences fully explain what appears to be a very significant staff complement
- Reductions can therefore be expected through:
 - The winding down of the Terminal 2 tendering process
 - A reduction of underlying FTEs
 - Restructuring of the Head Office function to be in line with comparable airport Head Office functions
- **Our assessment is that a reduction of between 30 and 70 FTEs should be feasible**
 - With a reduction of 70, the 'airport management and head office' complement would still be nearly twice the complement of Comparator Airport 2 and in our opinion more than adequate
 - We have included a reduction of between 30 and 70 FTEs in our financial projections, but a case could be made that it could be difficult to achieve these levels of staff reduction, and a more limited reduction of 20-60 might be more achievable

Exogenous Costs – Rent and Rates, Insurance and Energy Costs

- Rent and Rates and Insurance are assumed to be exogenous and beyond the control of the DAA
- Energy 'prices' are in general exogenous and beyond DAA's control, but energy 'quantity' and efficiency may be within DAA's control
 - However, as it was beyond the terms of reference, a detailed assessment of energy efficiency at the airport was not within scope
- DAA face significant incentives to minimize energy costs/maximize energy efficiency as their opex price control fixes allowed costs for these areas (and so residual savings are kept by the airport)
- We have based our forecasts on forward curve information for gas using Intercontinental Exchange (ICE, formerly IPE) contracts for UK NBP gas. These contracts are monthly, quarterly, and seasonal contracts, for delivery from 1-18months (monthly) and out to 2014 (seasonal). Additional details and assessment of DAA's energy forecasts can be found in the annexed document which includes responses to DAA's submission on foot of the Draft Determination (and Indecon-Jacobs' preliminary outputs)

Energy (contd.)

- Energy costs have showed significant volatility due to volatility of energy commodity prices and the introduction of hedging by forward purchases of gas (previous estimates had some confusion about whether hedging savings/costs should be properly carried forward and whether quantity change was assumed—Indecon’s forecasts contain no assumptions about future hedging and hold quantity fixed)
- It should be noted that because DAA’s gas costs for 2009 were purchased forward, then with assumed zero quantity change the costs for 2009 should be largely fixed and thus are an appropriate starting point
- Indecon/Jacobs undertook a forecast of gas prices, based on forward curve information available in October 2009
- The method was to take the average rate of price growth over the forward curve out as far as possible. Some smoothing and adjustment for risk premium, storage and convenience yield was included
- This method largely matched the DAA method in terms of price increases (which we understand was based mostly on managerial reckoning)

(€000's Nominal)	2009	2010	2011	2012	2013	2014
DAA Forecast						
Energy Costs at Existing facilities	4,495	5,689	6,435	6,771	7,118	7,478
<i>Price – Inflation</i>		27%	13%	5%	5%	5%
Indecon Forecast						
Energy cost (Indecon forecast derived from forward curve information available in October 2009)	4,495	5,600	6,227	6,497	6,757	7,027
<i>% price change</i>		25%	11%	4%	4%	4%

Other costs

- The table sets out the remaining cost areas:

DAA 2008 (€m)	FTEs	Staff Costs	Non Staff Costs
Car Parking	*	*	*
Airfield Services	*	*	-
Support Services	*	*	-
Fees and professional services	-	-	*
IT non staff costs	-	-	*
Marketing and promotional	-	-	*
Overheads	-	-	*
Other	-	-	*
Total	*	*	*

* Dublin data redacted from this report for confidentiality reasons

- Several of these areas (Employee Related Overheads, Telephone Print and Stationery, Other Overheads, Travel & Subsistence, Car Park Overheads) are directly related to the scale of the underlying FTE count. Assuming that these cost areas are proportional with staff, the total costs in these areas would decrease on a 1-for-1 basis with FTE numbers between 2008 and 2009
- Marketing and promotional costs largely consist of joint advertising and marketing activities with airlines to promote new routes. The quantum of this is relatively small. No change is proposed
- Professional fees: the quantum of this line is significant. We understand that a significant contributor to the current level of costs is the current CAR review, together with the Terminal 2 tender process. Both of these work streams should reduce over time
- Given the high degree of insourcing, we would expect the need for external advisors to be relatively low. At Airport 1, working in a highly complex regulatory and planning environment and undergoing a regulatory review, professional fees in 2008 were €2.1 million (which is substantially less than the 2008 level in Dublin Airport)
- We therefore propose a cut to professional fees of between €1m and €2m on 2008 levels, to approach the underlying level of costs at Airport 1**

Summary of results - 2009

- The following table sets out DAA's budgeted 2009 operating costs and the two Optimised FY 2009 scenarios
- The optimised 2009 forecasts incorporate the following adjustments:
 - First, specific adjustments have been made where we believe inefficiencies exist (see slides above). One case incorporates a conservative level of cuts and the other a more ambitious level of cuts
 - Elasticities to passenger growth have been introduced in areas such as security. (Note DAA's passenger forecast has been used)
 - Finally, elasticities to FTE growth have been introduced, allowing for a fall in costs alongside the optimisation of FTE levels

2009 Costs (€m)	DAA 2009	Optimised 2009 (conservative case)	Optimised 2009 (ambitious case)
FTEs	*	1,857	1,808
Airport police fire service (including security)	*	35.6	35.6
Retail (DAA & Corporate)	*	13.9	13.2
Maintenance	*	24.0	24.0
Cleaning	*	15.0	13.6
Terminals	*	11.7	11.4
Commercial	*	3.1	2.4
Airport management & Head Office	*	21.8	21.8
Exogenous Costs (rent, rates, insurance and energy)	*	22.1	22.1
Other	*	42.9	41.8
Total	*	190.2	185.9

* Dublin data redacted from this report for confidentiality reasons

- Overall we estimate optimised costs to be between 9.2% and 11.3% lower than DAA's 2009 budget. The principle areas of savings are achieved in the area of security, corporate, commercial, retail and cleaning staff costs
- Of this fall, approx. 5.8% of the savings achieved in the conservative case and 7.8% in the more ambitious case are driven by specific cuts to target existing inefficiencies, 1.7% in both cases is driven by the fall in passengers and the remaining 1.7% - 1.8% is driven by the resulting fall in FTEs (e.g. in areas such as employee related overheads)

2010–14, Comparison with DAA estimates

- We have used a three step approach in order to project costs forward from 2009. Our approach is mindful of the limitations of making immediate changes to staff and non staff costs in the context of an environment in which labour flexibility is highly constrained

1. DAA Forecasts

In order to make a comparison between our estimates and DAA's cost projections, it is necessary to first adjust the forecasts provided by DAA to omit Terminal 2. To achieve this, the following approach was taken:

1. Take DAA total forecasts (including both Terminal 1 and 2) and use DAA's inflation forecast to convert from nominal to real
2. Terminal 2 costs where identifiable were subtracted
3. Further adjustments made to FTE or cost lines where efficiencies in the underlying base were dependent on the existence of Terminal 2. This included adjustments to:
 - Terminal, Airport Police Fire Service and Cleaning staff
 - CAR costs (had been split between the two terminals)

2. Jacobs Optimised Forecasts

The optimised 2009 FTE and non staff cost scenarios outlined on slide 36 were then projected forwards to 2014 using selected elasticities and cost drivers. These are detailed on the following slide

- NB: It should be noted that for the purposes of this analysis we have simplified the wages assumptions in the forecast. Two wage brackets are assumed based on average 2008 wages and these are then forecast forwards at a 3% real wage annual increase
- The overall 3% real wage increase broadly equates to what is used in the DAA cost projection. We would note that this assumption may be considered to be a high estimate and that the projection would be materially lower with, say, a 1% real increase assumption

2010–14, Drivers assumed in the Jacobs Forecast

- The table sets out the drivers we have used in our projections. The drivers are based on our experience of operating cost trends at other airports

Cost category	Driver
Passenger Driven	
Security Staff	100% elasticity to passenger growth
Terminal Staff	60% elasticity to passenger growth
Retail Staff	30% elasticity to passenger growth
Aviation customer support	95% elasticity to passenger growth
Capacity Driven	
Cleaning	No capacity increases assumed from 2009
Maintenance	"
Car Park	"
Commercial	"
Driven by staff numbers	
Overheads	100% elasticity to growth in Total FTEs
Car Park Direct Overheads	100% elasticity to growth in Car Park FTEs

2010–14, Phasing of Optimisation

3. Phasing in the difference

Rather than implementing all the savings identified in slide 36 in 2009, these changes could be phased in over a six year period. Under this approach, we still reach the same 2014 values as presented under the two optimised cases described on the previous slide, but the path to this optimised point is more gradual

The following approach was used to phase the costs:

- 2014 costs under the DAA forecast and Optimised forecasts (as described on slide 37) were compared and the difference noted
 - The difference in FTEs and non staff costs was then phased in equal stages over the six year period (2009-2014) and deducted from the DAA forecast
- This phasing results in an average annual reduction in staff numbers of between 1.1% and 0.7%. This is believed to be well within the range of natural attrition rates at the airport and therefore is a level of reduction that minimises the need for staff redundancy
 - Staff attrition rates for airports are typically around 4% - 6%. The attrition rate for Portuguese Airports (ANA) over the period 2005-2007 was 5.3%. However, a higher attrition rate is required than the net loss of posts, as recruitment as well as redeployment is required in some areas
 - Similarly where it is suggested that contractual arrangements should be altered, the phasing allows for the fact that some contracts are for multi-year periods

Comparison with DAA estimates 2010–14 (cont.)

Cumulative difference to DAA (€m real)	2009	2010	2011	2012	2013	2014
Passengers (millions) (DAA projection)	21.0	21.0	21.1	21.6	22.2	23.1
DAA Forecast (excl. T2)						
FTE	*	*	*	*	*	*
Staff Costs	*	*	*	*	*	*
Non Staff Costs	*	*	*	*	*	*
Total Costs	*	*	*	*	*	*
Indecon/Jacobs Optimised Case (Conservative)						
FTEs	(14)	(28)	(42)	(56)	(69)	(83)
Staff Costs (€m)	(1.3)	(5.0)	(7.5)	(10.6)	(13.7)	(17.4)
Non Staff Costs (€m)	(1.0)	(1.9)	(2.9)	(3.9)	(4.8)	(5.8)
Total Costs (€m)	(2.3)	(7.0)	(10.4)	(14.4)	(18.6)	(23.2)
Indecon/Jacobs Optimised Case (Ambitious)						
FTEs	(22)	(44)	(67)	(89)	(111)	(133)
Staff Costs (€m)	(1.8)	(6.1)	(9.2)	(12.9)	(16.7)	(21.0)
Non Staff Costs (€m)	(1.2)	(2.3)	(3.5)	(4.7)	(5.8)	(7.0)
Total Costs (€m)	(3.0)	(8.5)	(12.7)	(17.5)	(22.5)	(28.0)
* Projections redacted for confidentiality reasons						

Issues and Rationale re Projections



Issues and Rationale re Projections

- The slides above summarise the methodology used to arrive at the optimised 2009 cost base and the cost projection
- The methodology takes the form of a line by line review of each cost item. An optimised level of costs has been proposed on the basis of analysis by Jacobs, information provided by DAA and experience from comparable airports
- The phasing of the cost optimisation has taken into account current labour inflexibilities at DAA, and has sought to approximate to natural staff attrition rates (and the multi year nature of some contracts)
- The optimisation and projections have been expressed as a range
- Further outsourcing would potentially lead to further reductions in areas such as cleaning, maintenance and retail
- There are several issues associated with the projections:
 - The cost savings have been postulated on the basis of the information we have received and the analysis we have conducted. We have not within the context of the project conducted a detailed operational audit of the airport
 - As set out in the terms of reference, the cost projections are set out on the basis of Terminal 1 only. Terminal 2 potential costs and synergies with Terminal 2 operations are disregarded
 - Based on comments by DAA management and historic data on attrition rates, we assume that the phasing of the cost efficiencies do not trigger redundancy payments. However, this assumption may not be valid based on existing and future labour agreements at DAA. It should also be noted that there is a risk that natural attrition may not always occur in the same areas where reductions are required
 - The projections assume the current mixture of outsourced and insourced activities

Comparison with Top Down Benchmarking



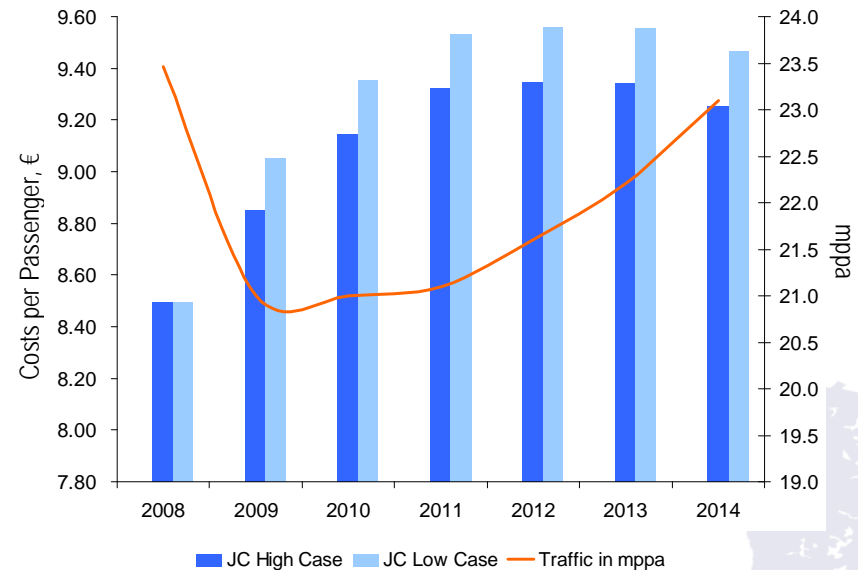
Top Down Benchmarking – Scenario Comparison

- Top down benchmarking against a group of peer European airports has been carried out in order to provide a cross-check of the results of the detailed bottom-up work already described (we note that the bottom-up results are still the primary basis for our determination of the efficient costs)
- The analysis includes three different scenarios:
 - The historic results for 2008 and the regulator's expectations for the review period
 - "Conservative Optimised Case"
 - "Ambitious Optimised Case"
- Traffic is constant for all scenarios
- Number of employees and operating costs differ between scenarios after 2008
- As discussed in the previous sections, both optimised cases assume significant changes to the Airport's organisation
- The optimisation plans do not change the Airport's operating capacity but facilitate increased operating efficiency
- The results of both optimised 2009 scenarios have been compared to the Airport's actual performance in 2008 and several peer airports
- The following terminology has been used in figures and tables:
 - "DUB2009 Amb" refers to the more ambitious optimised 2009 scenario
 - "DUB2009 Cons" refers to the more conservative optimised 2009 scenario
 - "DUB2008" refers to the reported results of Dublin Airport in 2008

Scenario Comparison – Total Cost per Passenger and Traffic Volume

- Same traffic scenario for all three cases
 - Traffic recovery by 2014
- All three scenarios indicate compound annual growth rates of more than 1%
 - DAA's forecast implies cost increases above inflation
 - The two scenarios assume a higher operating efficiency than the DAA case
- The compound annual growth rate of the "Conservative Optimised Case" is 0.4% lower than for the "Ambitious Optimised Case"
 - This equates to a difference of €0.21 per passenger in total costs in 2014 between the two cases

Total Costs per Pax Scenarios and Traffic at DUB
(Indecon/Jacobs data)

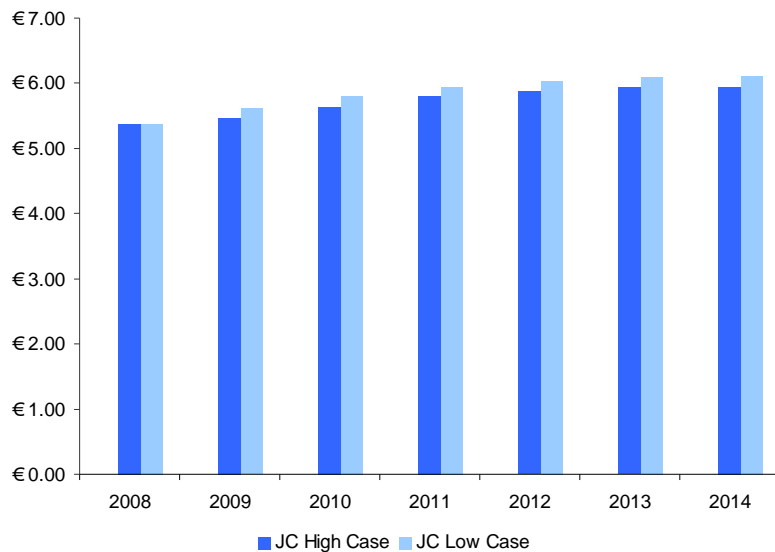


Costs per passenger (€real)	2008	2009	2010	2011	2012	2013	2014	CAGR 2008-14
DAA Case	8.49	*	*	*	*	*	*	*
"Ambitious Optimised Case"	8.49	8.85	9.15	9.32	9.34	9.34	9.25	1.4%
"Conservative Optimised Case"	8.49	9.06	9.35	9.53	9.56	9.55	9.46	1.8%
Traffic (mppa) (DAA projection)	23.5	21.0	21.0	21.1	21.6	22.2	23.1	(0.3%)
* Projections redacted for confidentiality purposes								

Scenario Comparison – Staff and Non-Staff Costs per Pax

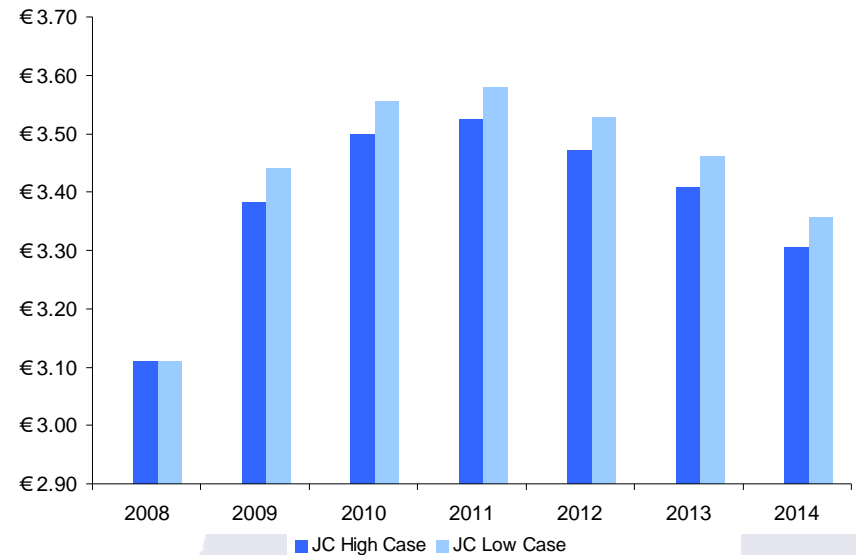
- Staff costs account for approximately two thirds of total operating costs in all three scenarios
- The staff costs CAGR is above that for total costs, indicating that staff costs are growing more quickly than non-staff costs

Staff Costs per Pax Scenarios and Traffic at DUB
(Indecon/Jacobs Data*)



* Dublin numbers have been removed for confidentiality purposes

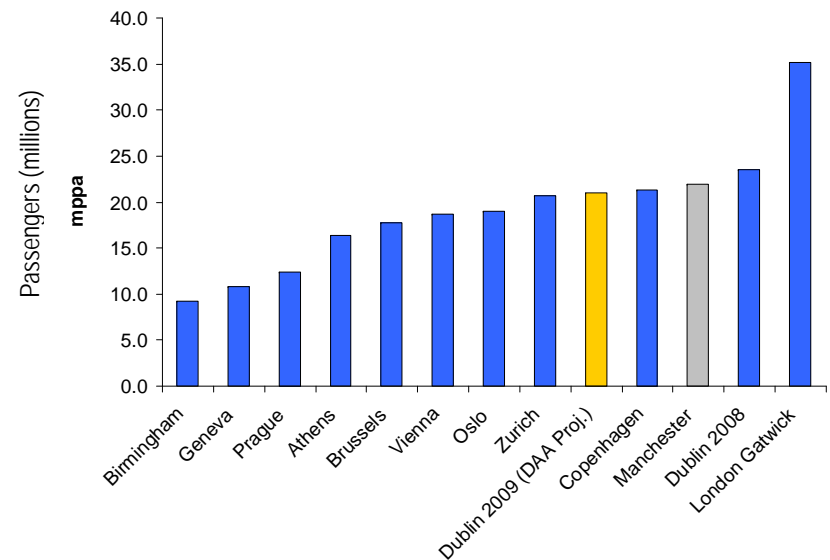
Non-Staff Costs per Pax Scenarios and Traffic at DUB
(Indecon/Jacobs Data*)



Comparison with other Airports – Methodology

- Airport performance benchmarking needs to be based on a comparison of results taking account of core airport activities only (runway operations and terminal operations) to ensure like with like comparisons
- Non-core activities include ground handling, operation (including staffing) of car parks, own retail facilities, hotels, air traffic control operations
- For this comparison,
 - We excluded car parking, retail and cleaning activities
 - Cleaning staff costs were not subtracted but rather reallocated to non-staff costs, to represent outsourcing as practised at benchmark airports
- Dublin has been benchmarked against European peer airports with comparable passenger numbers
- The traffic at Dublin Airport is forecast to decline to 21mppa in 2009

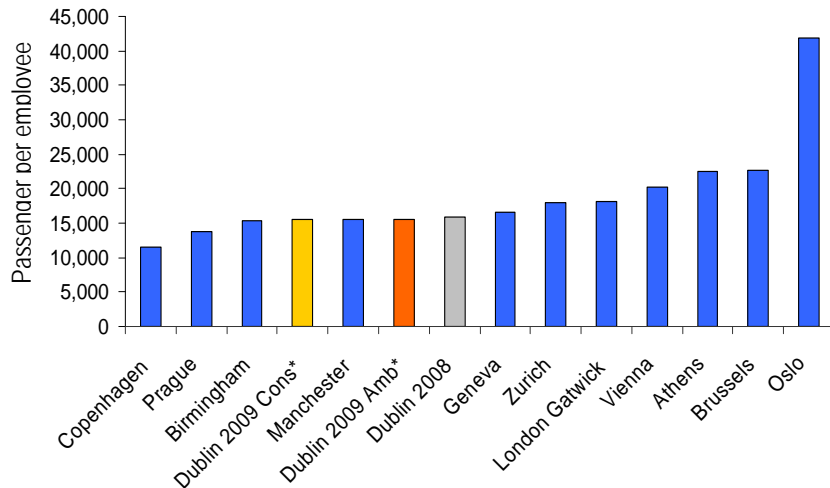
Total Passengers in millions at Sample Airport
(Indecon/Jacobs Data*)



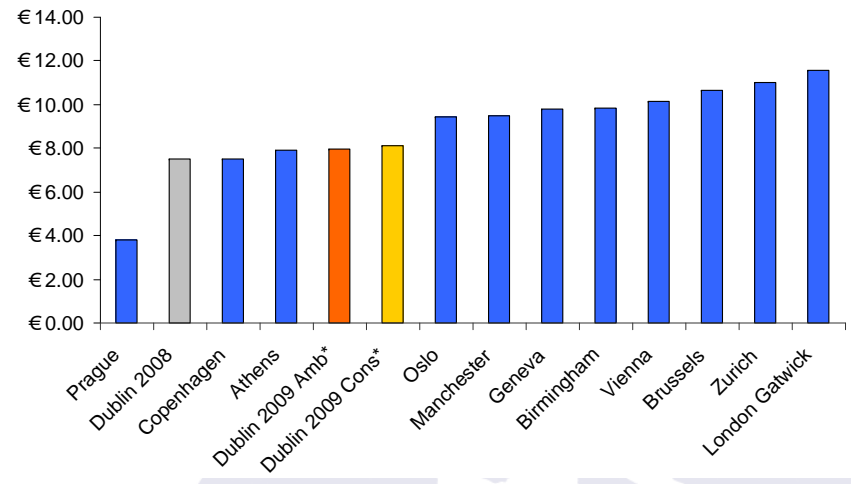
Comparison with other Airports – Pax/Employee and Total Operating Costs/Pax

- In 2008 Dublin Airport was positioned in the mid to low end in a sample of European peer airports for passengers per employee and operating costs per passenger
- 2009 projections from DAA would push Dublin Airport further down the league table, increasing operating costs per passenger and reducing employee efficiency
- Both of the optimised scenarios presented in the previous section aim to improve Dublin's forecast performance in 2009 relative to its peers, bringing the Airport back towards its 2008 position

Pax per Employee
(Indecon/Jacobs Data*)



Total Operating Costs per Pax
(Indecon/Jacobs Data*)

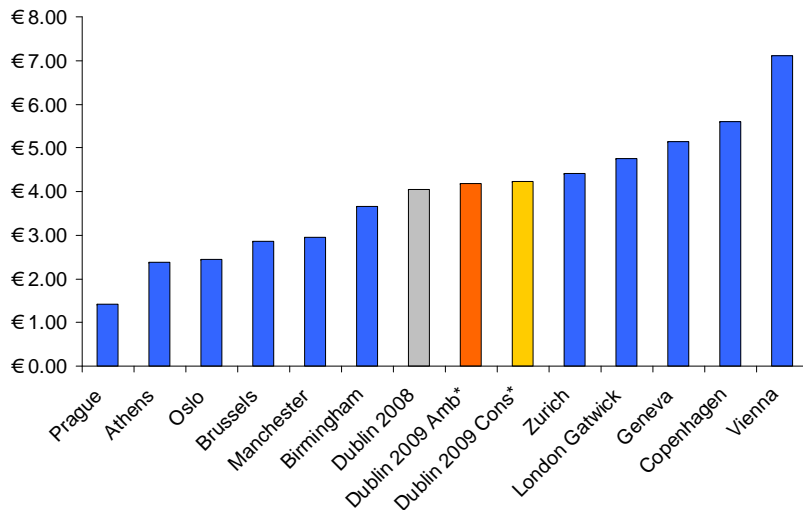


* DAA Dublin 2009 forecast has been removed for confidentiality purposes

Comparison with other Airports – Staff and Non-Staff Costs per Pax

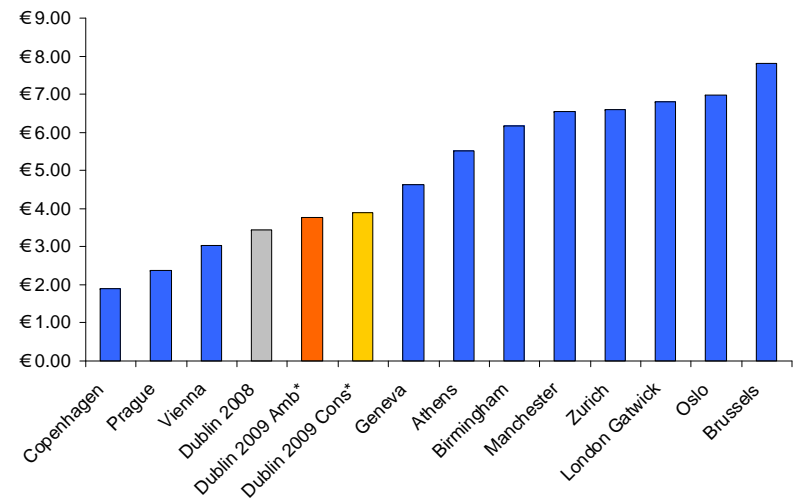
- In 2008, Dublin Airport was placed in the middle of the same sample of European Airports for levels of staff costs per and towards the low end for non-staff costs per passenger
- DAA's 2009 forecasts would worsen Dublin Airport's position relative to its peers*
- As shown in the charts below, the two optimised scenarios for 2009 operating costs intend to restore Dublin Airport back towards its 2008 position

Staff Costs per Pax
(Indecon/Jacobs Data*)



* DAA Dublin 2009 forecast has been removed for confidentiality purposes

Non-Staff Costs per Pax
(Indecon/Jacobs Data*)



* DAA Dublin 2009 forecast has been removed for confidentiality purposes

Summary of top-down benchmarking results

- The top-down benchmarking analysis indicates that in 2008:
 - Passengers per employee at Dublin Airport were below average in the benchmark sample of airports
 - Correspondingly, staff costs per passenger were above average
 - Non-staff costs were below average in the sample
 - Total operating costs were also below average
- Our bottom-up analysis identifies a number of areas (retail, cleaning, terminals, commercial, Head Office) where we believe that staff numbers and, correspondingly, staff costs could be reduced
- Conversely, our bottom-up analysis identifies only outsourced maintenance and professional fees as areas where non-staff cost reductions could be achieved
- The two approaches are therefore broadly consistent in suggesting that staff levels and costs could be reduced, but that the scope for non-staff cost reductions is relatively limited

Overall Conclusions



Overall Conclusions

- Historical opex costs at DAA, Dublin Airport have shown a rapid increase as passengers also grew rapidly
 - In part evidence of inefficiency due to lack of investment and congestion
- Dublin Airport could achieve modest efficiency improvements
- By achieving optimised cost levels, levels at Dublin Airport/Terminal 1 could be improved by about 9 -11.3% from DAA's current 2009 forecast
 - Savings can be achieved through the targeting of specific areas of inefficiency and allowing greater flexibility to changes in passenger numbers
 - The principle savings could be achieved in the areas of security, corporate, commercial, retail and cleaning staff costs
- **Overall, for the forecast period 2010-2014 we estimate that between 10-12% savings could be achieved relative to the DAA forecast**
 - But some of these savings would require flexibility from the labour unions
- Top-Down benchmarking in general confirms these conclusions
 - Dublin Airport is above average in staff costs and slightly below average in non staff costs
- Additional details regarding responses from Indecon/Jacobs to questions and concerns of DAA and stakeholders can be found in the annex note

Annex

See attached document setting out detailed responses to submissions provided by DAA and other stakeholders on foot of Draft Determination

Bottom-Up Efficiency Assessment of DAA/Dublin Airport OPEX

**Response to Submissions on Draft
Determination**

Submitted to

Commission for Aviation Regulation

By

**Indecon International Economic
Consultants and Jacobs Consultancy**

Indecon

**JACOBS
CONSULTANCY**

November 2009

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1 Introduction and Background

1.1 Introduction and Background

In June 2009, Indecon-Jacobs ('I-J') issued to the Commission for Aviation ('CAR') regulation a report entitled "Bottom-Up Efficiency Assessment of DAA/Dublin Airport OPEX". This report inputted to the CAR's Draft Determination on Maximum Levels of Airport Charges at Dublin Airport ('Draft Determination'), which was formally published by the CAR on 18th June 2009.

On foot of the Draft Determination, submissions were presented to the CAR by the following stakeholders/organisations:

1. Dublin Airport Authority (Parts 1 and 2)
2. Aer Lingus
3. Ryanair (Parts 1 and 2)
4. British Midland International
5. Dublin Airport Consultation Committee
6. European Investment Bank
7. Chambers Ireland
8. Dublin Chambers of Commerce
9. Fingal Dublin Chamber
10. IBEC
11. Forfás
12. Fáilte Ireland
13. IATA
14. ITIC
15. ITOA
16. IDA Ireland
17. Irish Exporters Association
18. SIPTU
19. Irish Hotels Federation
20. Portmarnock Community Association
21. Goodbody
22. Angela Lawton

1.2 Indecon-Jacobs Review of Submissions

I-J have reviewed the entirety of the submissions received by the CAR and have identified the following submissions as making reference to the I-J Bottom-Up Efficiency Assessment of DAA/Dublin Airport OPEX:

- DAA (Parts 1 and 2)
- Aer Lingus
- Ryanair
- Dublin Airport Consultation Committee
- IATA
- Irish Hotels Federation
- Portmarnock Community Association

1.3 Overall Comments on Submissions

Having digested the relevant sections of the above submissions, I-J would make the following overall comments/observations:

1. I-J have examined all submissions with the objective of identifying instances where factual errors or misinterpretations, or questions of fact arise that may give rise to substantive implications for the Indecon-Jacobs assessment. Detailed responses to substantive issues raised are provided in Section 2 of this document.
2. **Overall, Indecon-Jacobs are comfortable that there are no substantive issues that give rise to the need to revisit the analysis or alter the conclusions deriving from the assessment presented in the Draft Determination.**
3. In relation to the methodology applied by Indecon-Jacobs and, in particular, the approach to engagement between I-J and the relevant stakeholders, I-J are very comfortable that the overall methodological approach applied was rigorous and that the level of engagement was comprehensive and adequate to meet the requirements of the assessment. We set out in the next section a summary description of the approach applied to stakeholder engagement.

2 Responses to Specific Issues Raised in Submissions

2.1 Approach to Engagement with Stakeholders

- ❑ Critically, this review has been supported by detailed engagement with DAA based on following components/actions:
 - Formulation by Indecon-Jacobs of detailed structured Data/Information Request to DAA and issue of request to DAA by CAR in April 2009
 - Review of DAA data/information provided in response to Indecon-Jacobs request and identification of data/information gaps and issues for discussion
 - Organisation of Site Visit to DAA/Dublin Airport by Indecon-Jacobs team
 - Completion of Site Visit to DAA/Dublin Airport (19th May) – this entailed:
 - » Detailed discussions with:
 - Director, Dublin Airport
 - Director, Regulation and Strategy
 - Group Head of Financial and Business Planning
 - Group Head of Procurement
 - Director, Human Resources
 - Other Human Resources senior management
 - Process Improvement Manager
 - Schedules Control Manager
 - Passenger Operations Manager
 - Administration Manager
 - » Visual tour and inspection of relevant landside and airside passenger security and other operations
 - Formulation of follow-up Data/Information Request to DAA and issue by CAR
 - Assessment of DAA submission received on foot of Draft Determination

2.2 Detailed Responses to Specific Issues

1. A discussion on the methodological approach to the bottom-up (and top-down) analysis, in particular the choice and use of comparator airports

Detailed information on the cost of airport operations is often not available publicly. Instead, information is often only publicly available at an aggregated level e.g. Staff costs are usually reported only at aggregate level and not broken down by staff function or work area.

In the 'Top down Benchmarking' section of the Indecon Jacobs report, we were able to provide a wide range of airport comparators as this part of the report is simply analysing data at an aggregated level (e.g. total operating costs, total staff costs) and this information is widely available from public sources. In using this data we have used data normalisation to remove the financial and staffing effects of non-core activities so as to ensure that comparisons are made on a like-with-like basis.

However, for the individual operating cost lines, we utilised more detailed information on operating cost items that we have collected from previous work relating to European Airports. As in most cases this information was provided to us on a commercial-in-confidence basis we were unable to disclose the names of the airports.

For each operating cost item, we selected the airports from our database that provided the best comparison (be this in terms of similar airport size, similar operating environment etc.). This approach means that for some cost items we are able to provide a larger number of bottom-up comparators than for others. For example, we were unable to provide a wider range of comparators for retail operating costs as there are very few examples of airports which in-source retail activities.

Below, we provide an overview of the comparator airports:

	Location	Passenger Throughput (per annum)
Airport 1	Europe	Approx. 32 to 37 million
Airport 2	Europe	Approx. 7 to 12 million
Airport 3	Europe	Approx. 37 to 42 million
Airport 4	Europe	Approx. 16 to 21 million
Airport 5	Europe	Approx. 19 to 24 million

2. How to reconcile potentially conflicting findings from the top-down and bottom-up results

The two are not mutually exclusive. It should again be stressed that Top down benchmarking is focused at the aggregate level, for example total operating costs, whereas the bottom up analysis is looking at individual cost components. It is possible for an Airport to have comparatively low total operating costs but to have relatively high costs in some individual cost areas.

As an example, on slide 12 we observe that whilst Total operating costs per passenger decreased gradually over the period 2001 to 2006, this appears to have been driven by a fall in operating cost per passenger at the corporate level rather than at Dublin Airport. By looking at total operating costs, the largely flat operating costs per passenger at Dublin Airport have been concealed.

3. The assumptions that have been made about attrition rates, and how these assumptions affect judgements about the range of proposed efficiencies could be achieved through natural wastage

We have provided two different approaches to potential operating cost savings.

First, we assumed a one off reduction to staff and non staff costs provided for each individual cost item, providing an optimised 2009 scenario.

Second, recognising that it may be difficult to implement these changes in one stage, we have provided a forecast for 2009-2014 in which the cost savings we identified are phased equally over the period. The method for reaching these forecasts is outlined on slides 37-39. Once phased, our proposed savings suggest an average annual reduction in staff numbers of between 1.1% and 0.7% which is believed to be within the range of natural attrition rates at the Airport (see slide 41 in main report).

4. The extent to which a change in the relative levels of in-sourcing and outsourcing might affect the conclusions about the scope for efficiency savingsRetail

The retail operation at Dublin is insourced. This situation is now very unusual within Europe and virtually unknown elsewhere in the world, with outsourcing to concessionaires being the norm. One of the few other remaining large insourced operations (at the Rome airports) was to have been put out to tender in 2008, and this tender was only withdrawn as a result of the expected effects on offers of the traffic downturn in the second half of the year, which were exacerbated at the time by uncertainties as to the future of the principal airline operator.

During our meeting with DAA, we were told that the insourced operation was retained primarily as an advertisement for Aer Rianta International's retail operations at various other airports around the world. ARI remains active in marketing its services in this area and recently announced that it had been chosen (with a local partner) as the selected bidder for the main duty-free concession in the new terminal at Delhi International Airport which opens in 2010. We were also told that a study had been carried out which demonstrated a clear financial advantage in retaining the operation in-house.

A copy of this study was requested, and we have seen a copy of a report produced by Booz Allen Hamilton which refers to the relatively high proportion of overall revenue at Dublin produced from non-aeronautical sources. While this is true as a stand-alone statement, it is influenced by the fact that aeronautical revenues are constrained by the regulatory price cap, and also by the fact that non-aeronautical revenues are reported gross, without the cost of goods or associated staff costs being deducted. This does not demonstrate *per se* that Dublin is financially better off by insourcing the retail operation than it would be if the operation were outsourced.

Clearly the retail operation involves a significant number of staff (241 in 2008, or 13.4% of total headcount), and their associated costs, as well as a significant level of cost of goods. For the purposes of our top-down benchmarking the data relating to Dublin were normalised so as to simulate the net revenues which would flow from a retail concessionaire if the operation were outsourced. If, as DAA asserts, there is an overall financial logic in retaining the operation in-house then there is not a clear need to consider the option of outsourcing. However, we have not been provided with any clear evidence that this is the case.

Cleaning

On slides 26-27 of our report we observe that insourced cleaning costs at Dublin Airport are higher than outsourced costs and that our proposed savings could be achieved through greater use of outsourced providers. To further illustrate our argument we can compare the DAA's cleaning costs with those of the Knights contract for the Mezzanine area.

1. Knights Contract

We estimate that the Mezzanine covers an area of approximately 9,000m². The value of the Knights contract for the Mezzanine area is €342,692.28 per annum (including labour and materials), implying a cost of €38/per sq m.

2. DAA costs

Insourced cleaning costs at Dublin Airport in 2008 came to €13.4 million (it is noted that a small portion of this is attributable to waste disposal). Assuming an airport size of 105,000m², this implies a cost of €133.6/per sq m, more than three times the cost of the outsourced Knights contract.

Slide Reference in I-J Report	Issue	Response
Head Office Costs Slide 12		Our statement that efficiencies at the Corporate level were possibly “the result of restructuring following the passage of the State Airports Act in 2004” was provided only as a possible explanation as to why efficiencies might have been achieved at the Corporate level. This does not change our overall argument that historical operating cost efficiencies appear to have been achieved predominantly at the Corporate level rather than at Dublin Airport.
Security Slide 18	20% ASU staff cover fixed posts Some ASUs dealing with T2 site	The data provided by DAA in the file ‘Response to Q6 re Security Comb’ shows approx. 25 staff are required for staff screening and access control, much less than the 20% referred to in the DAA’s response. No information has been provided to explain which staff are included in the 20% figure referred to by the DAA. However, we would expect that given the overall decline in passenger and staff numbers in 2009 that it would not be justifiable to keep so called ‘fixed posts’ completely fixed, with some reductions likely to be necessary. In the material provided by DAA there was no reference to ASUs being used to secure the T2 construction site.
Security Slide 19	Number of WTMD Average ASU FTEs in 2008	Correction noted. This was a mistake in the write up. However, this does not impact our analysis of manning requirements which was based on the pass through levels through the security checkpoint lanes. This detailed analysis took into the account number of x-ray units, flight schedules, existing service standards etc. This number was reached from the presentation provided by DAA during the site visit which states that Total Average FTEs for Airport Police and ASU FTEs was 555 of which 88 were Airport Police. It is also supported by an additional file provided by DAA titled “Dap BU Detail 2008 – Organisational Chart Order”. This number is only used in commenting on the efficiency of security costs in 2008 and was used alongside our detailed simulations of manning requirements at Dublin Airport based on flight schedules and the existing infrastructure.

Slide Reference in I-J Report	Issue	Response
<p>Retail Slide 23</p>	<p>Definition of insourced retail</p>	<p>The use of the term duty free shops is meant as a generic term to describe Airport shopping. For presentation purposes we have not listed all the various products sold by DAA, such as knitwear and sunglasses. This has no impact on our assessment of retail operations at the Airport.</p>
<p>Cleaning Slides 26/27</p>	<p>Definition of service standards</p> <p>Reduced cleaning costs following the opening of T2</p>	<p>DAA asserts that we are suggesting the deterioration in cleaning standards at the airport. However, we are unaware that any service standard is currently in place at the Airport. Our observation is simply that efficiencies could be made if DAA established different service standards for different areas (for example areas of high passenger use would be cleaned to a different standard than in those parts of the terminal which are used less).</p> <p>In our report, we justify the proposed reduction on costs through better definition of security standards and rostering improvements (see slide 27). We do <u>not</u> state that our proposed savings are due to reduced congestion following the opening of T2. This is a separate observation made on slide 26 to help explain the current situation in T1, an explanation that the DAA has also supported. Our proposed efficiencies are based on the current situation although additional improvements could indeed be expected once the opening of T2 reduces congestion in T1. We have not quantified or included these additional savings as this was outside of our terms of reference.</p>
<p>Terminals Slide 28</p>	<p>Commercial FTEs</p>	<p>13.5 FTEs of the 37 Commercial FTEs we refer to were involved in marketing (specifically Commercial Insights and Strategy, Branding and Advertising). However, this still leaves 23 staff responsible for property management and development which is considerably higher than other comparable airports. Our recommendation that all these areas could be covered by a department of between 25 to 32 staff remains.</p>

Slide Reference in I-J Report	Issue	Response
<p>Comparison with DAA estimates Slide 40</p>	<p>Excluding T2</p>	<p>In the report, we clearly state our methodology for reaching the forecast operating costs excluding T2. This was as follows:</p> <ol style="list-style-type: none"> 1. Take DAA total forecasts (including both Terminal 1 and 2); 2. Terminal 2 costs as provided by the DAA were subtracted; 3. Convert from nominal to real using the DAA's inflation forecast; 4. Further adjustments made to FTE or cost lines where efficiencies in the underlying base were dependent on the existence of Terminal 2. <p>The only changes to the DAA's forecasts are made in Step 4 and these adjustments were based on efficiencies identified in the DAA's commentary "Dublin Airport Operating Costs - Forecasts 2010-14". Since our terms of reference asked us to look at operating costs in T1 the efficiencies assumed by the DAA following the opening of T2 could not be included in our base forecast.</p>

2.2.1 Energy Costs

DAA had questioned Indecon-Jacobs' prediction of energy costs and there was some apparent confusion on the understanding of what the figures sent by DAA represented. Further, recent energy price movements led to sudden rises in future expected energy prices, so the prices that might have prevailed in summer 2009 would no longer be representative.

Previously DAA submitted the following comments:

DAA Comment: 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 DAA's 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.

At the time of making its submission, DAA's energy price forecasts seemed not to be consistent with current and historical forward curve information or with historical price information. Despite DAA's claim that they were not assuming quantity increases, their own model and assumptions of stated price increases seemed to imply quantity increases (when the total cost rise was divided by the stated price rises). In any case, DAA's response that they had made gains by buying forward for 2009 seemed implausible.

Furthermore, DAA's claim that taking 2009 as the basis for the current costs is inconsistent is not correct. Given that DAA has bought forward energy commodity and is claiming efficient energy quantity and no changes in quantity, then DAA's total energy costs for 2009 should be fixed (since the effect of buying forward is to lock in the price). Therefore, it is logical, given the information from DAA, that 2009 should form the starting point for energy costs (but not other costs, which are not subject to forward purchases).

Indecon subsequently contacted DAA directly and received new and more detailed figures on energy price forecasts. The quantity increases (previously assumed by Indecon) were confirmed to be incorrect and so Indecon updated our previous forecasts based on taking 2009 as the starting point.

However, there were a number of discrepancies between the updated figures provided by DAA and its previous figures, including:

- » Apparently, a different rate of price growth was assumed for charge-back to terminal users than was assumed for the overall energy price growth (i.e., prices rose more slowly on the charge-back than on the bottom-line figures);
- » There was no methodology provided to support the proposed 12% price rise from 2008 to 2009 above and beyond the record price levels of 2008;
- » The bottom line price forecast was inconsistent with the existing price level data on spot prices that were already available in the market place; and
- » The so-called 'gains from hedging' which DAA claimed it did not carry forward, actually were carried forward year-on-year to 2014. The result of this was to bring the bottom line DAA forecast much more in-line with actual energy prices. The validity of this is based more on the fact that a large portion of spot price reductions typically flow into forward prices, and so essentially what this is saying is that future expected prices should be reflective of past spot price reductions which occurred in 2008.

DAA claimed it benefitted significantly through forward purchase of 2009 energy costs (which we assume are mostly gas and electricity—electricity prices being mostly linked to UK gas prices).

Spot gas prices increased rapidly in 2007 to 2008. DAA confirmed via verbal discussion that it had not hedged gas price for this period but began buying forward subsequently.

It is useful to recall the energy price forecasts for DAA, which are set out below.

	year		2007	2008	2009	2010	2011	2012	2013	2014
Energy Costs	[€000's Real]		3,442	6,211	4,495	5,661	6,309	6,435	6,564	6,695
		% change		80.5%	-27.6%	25.9%	11.4%	2.0%	2.0%	2.0%

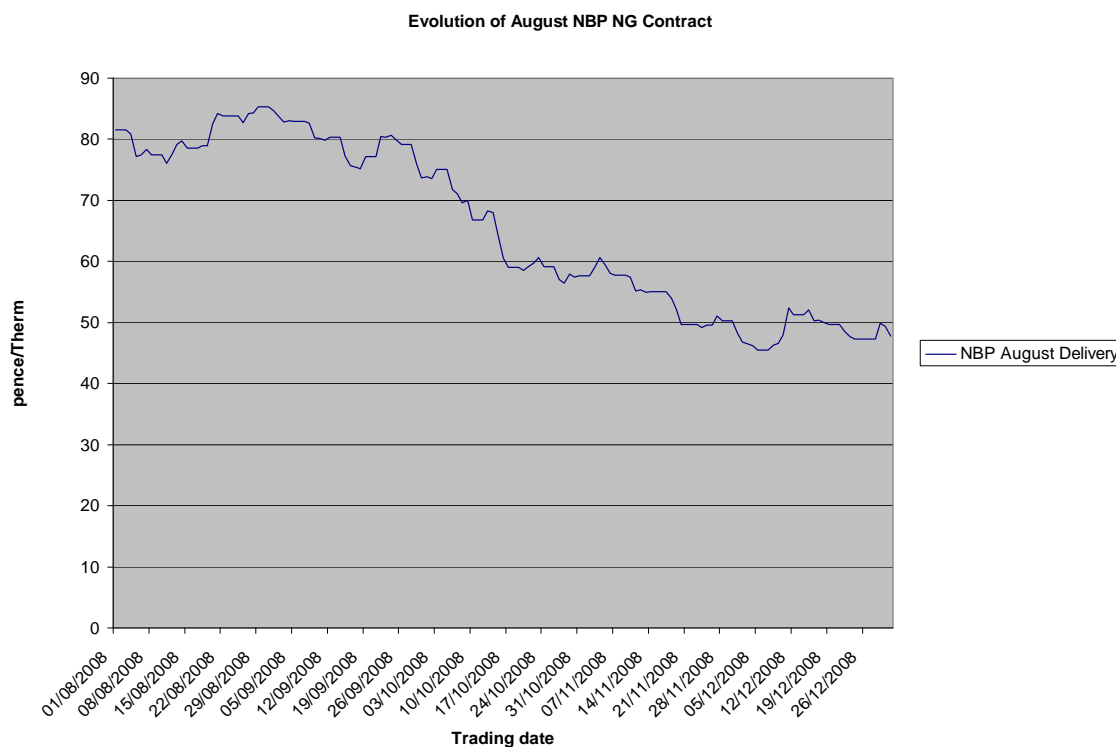
Eurostat produce data on average prices to medium sized industry in the Euro 15 for historical data. The % change is the relevant data:

		2004	2005	2006	2007	2008
Eurostat	Euro 15 avg prices	5.55	6.27	8.25	8.91	9.3346
Average gas prices to medium sized industry	% change		13.0%	31.6%	8.0%	4.8%

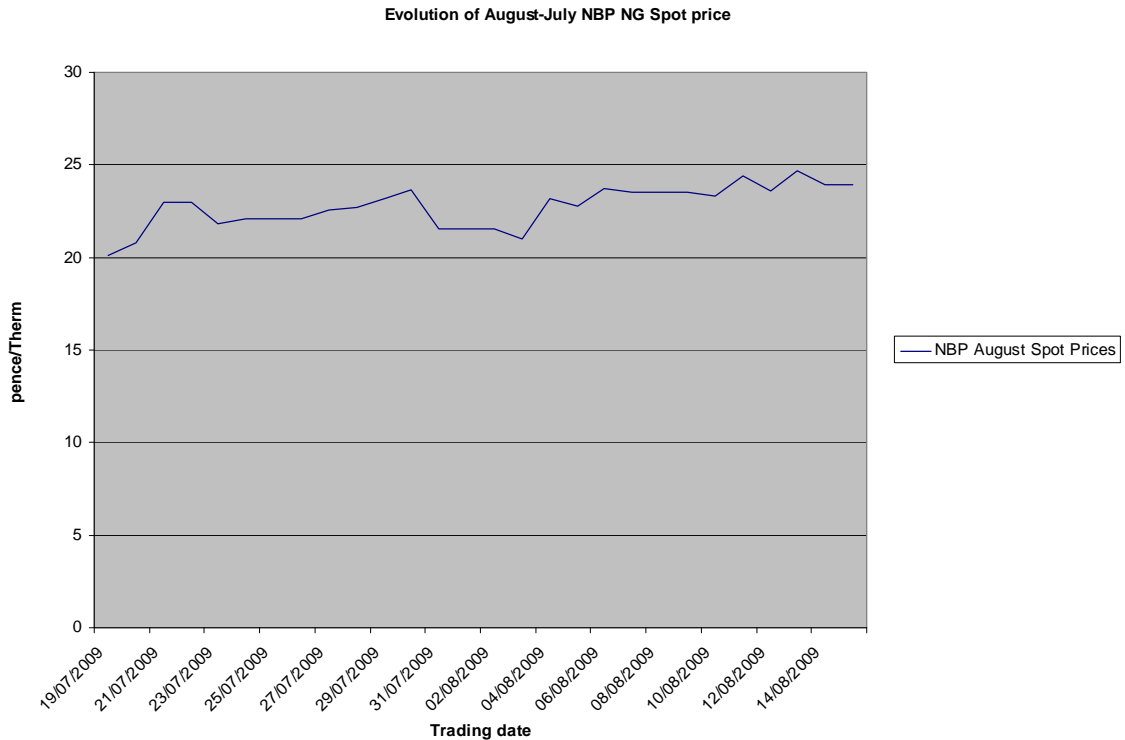
Evidence on Irish industrial prices is had from another Eurostat table.

Eurostat	Period	2007S02	2008S01	2008S02	2009S01
Average gas prices to medium sized industry	Ireland	12.57	12.44	15.15	14.4
	% change		-1.0%	21.8%	-5.0%

The chart below shows prices for delivery in summer 2009 from 2008, the time when DAA would typically have bought next year's gas and made their forecasts.



In contrast, spot prices have been substantially lower for August (see below).



While DAA's price increases for 2007 to 2008 are well above the Eurostat data, it should be noted that some of the above would be reflective of purchasers who had hedged gas price risk by entering into fixed price contracts with suppliers. DAA's price rises were very high, but consistent with the maximum rises in commodity prices. DAA should nonetheless consider a more detailed and sophisticated buying strategy in the future, as the Eurostat prices seem to indicate that DAA did worse than the average for Irish Industrial consumers. However, we have not used this as a means to reduce the forecast energy costs as our forecasts are reflective of existing commodity prices.

DAA's claim that they did better by "hedging" in 2009 is perhaps a misuse of nomenclature. Their assumed 'gain' was vis-à-vis an assumed 12% increase in prices, when in fact, prices fell between 2008 and 2009 to between one-third and one-quarter of their previous levels. In fact, DAA bought forward when prices fell dramatically, and so probably did worse than had they simply bought spot. At the same time, between summer 2009 and October 2009 spot prices on the ICE for UK NBP gas nearly doubled and the forward curve has shifted up substantially and has also likely steepened.

The new energy price forecasts from I-J are based on the following methodology.

As a preliminary, UK NBP gas prices were assumed to drive DAAs total energy prices. UK gas spot prices drive Irish gas prices. Since DAA has the option of using CHP to generate electricity, it should do "no worse" than gas prices (if gas prices rise more quickly, they can purchase in a higher proportion of electricity).

First, daily closing price data from ICE futures and OTC forward contracts were obtained from Bloomberg.

Contracts were generic contracts for delivery in the future for:

- Monthly contracts for delivery in each month of 2009
- Quarterly contracts for delivery in each quarter between Q1 2009 to Q4 2011
- Seasonal (six month) contract for delivery in each season from S1 2009 to S1 2014 (no S2 available).

We then took the average of the daily closes over the previous month (October 2009) for each contract.

The average prices from the last month were then used to construct the forward curve; Monthly contract prices were used for 2009; Quarterly for 2010, and Seasonal thereafter. For S2 2014 the same price was used.

The implied annual average price growth rate was then estimated based on the forward curve constructed. In other words, if spot prices today were at say 30 pence per therm, and the average contract price next year was at 33 pence per therm, then we would estimate an expected 10% increase in gas prices. Some smoothing and judgment was applied. This is needed due to illiquidity (and also common practice). For example, the far-out (2014) forward curve implied price reductions vis-à-vis the previous season, but this was likely an artefact of a lack of trading in these contracts. Therefore, we held the long run rate of price growth at 4%.

Finally, an adjustment to the forward curve price increases was made based on:

- The nominal risk free rate taken to be the rate on Irish Government 10-year bonds (480 basis points).
- An assumed net of convenience yield/storage cost of 2%. (this as not applied further out on the curve, as we stated that these projections were held constant at 4%).

The rationale is that the forward curve, as representative of future expected prices, can depend typically on the standard cash-and-carry intertemporal no-arbitrage conditions. The standard cash and carry arbitrage scenario is that if the futures price is high relative to today's spot price, a speculator could borrow at the risk-free rate, purchase the commodity spot today, store it, and simultaneously enter into a long futures¹ position to sell the commodity in the future at the futures price, deliver the commodity at the futures date, discharge the loan and earn a risk-free profit. Thus, absent any other considerations, the futures price should be above the spot price today by the risk free rate plus storage costs (since the speculator would be out-of-pocket of these costs, and only if the futures price were high net of these costs would they earn a profit; convenience yield would work the other way, i.e., a benefit to the speculator for owning the commodity; we've assumed the net of these is 2%).

The results of Indecon's updated projections are reflected in the main report (see Page 36).

¹ We ignore the difference between forwards and futures at this point.