



# Dublin Airport Operating Expenditure Efficiency Study

Publishable Draft Report

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**Prepared for:**

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# Disclaimer

Our work is produced for the Commission for Aviation Regulation for use in association with its Review of Operating Expenditure at Dublin Airport and is not intended to be relied upon by third parties. Steer Davies Gleave accepts no liability for the use of this document other than for the purpose for which it was commissioned.

The projections contained within this document represent Steer Davies Gleave's best estimates. While they are not precise forecasts, they do represent, in our view, a reasonable expectation for the future, based on the most credible information available as of the date of this report. However, the estimates contained within this document rely on numerous assumptions and judgements and are influenced by external circumstances that can change quickly and can affect income.

Nothing in this document should be construed as stating a legal opinion and the Commission for Aviation Regulation should take legal advice where relevant.

This analysis is based on data supplied by the client/collected by third parties. This has been checked whenever possible, however Steer Davies Gleave cannot guarantee the accuracy of such data and does not take responsibility for estimates in so far as they are based on such data.

<u>Description</u>	<u>Page</u>
■ Introduction	4
■ Approach	7
■ Operating Expenditure Overview	16
■ Operating Expenditure Analysis	20
■ daa staff (general)	21
■ Security staff	27
■ Cleaning & facilities	33
■ Campus services	36
■ Retail	39
■ Airside operations	42
■ Maintenance	45
■ Information Technology	48
■ Central Functions Staff	51
■ Other central costs	54
■ Other staff costs	57
■ Car Parks	58
■ Passengers with Reduced Mobility	61
■ Rent & Rates	64
■ Utilities	65
■ Summary of Forecast	69
■ Elasticity Assumptions	75
■ Glossary of Terms	76

# Steer Davies Gleave has been appointed by the Commission for Aviation Regulation (CAR) to undertake a study on operating expenditure efficiency at Dublin Airport.

- This “publishable draft report” provides Steer Davies Gleave’s analysis of Operating Expenditure efficiency at Dublin Airport.
- The forecasts presented are for the forthcoming regulatory period, running from 2015 to 2019 inclusive, covering regulatory years 1 January - 31 December.
- The analysis is based on information provided by the Dublin Airport Authority (daa), discussions with and information provided by the airlines based at the airport, information provided by other airports, desk research and other information available to us.

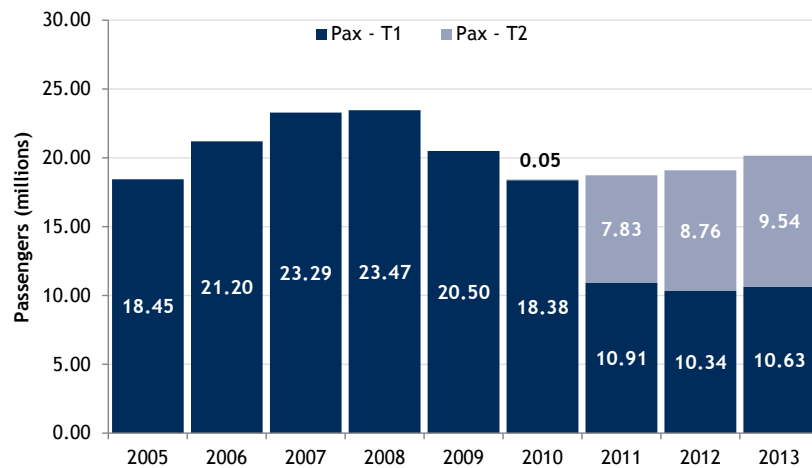


Source: [www.dublinairport.com](http://www.dublinairport.com)

## Dublin Airport is Ireland's busiest airport, handling 20.2 million passengers in 2013, an increase of 5.8% on 2012.

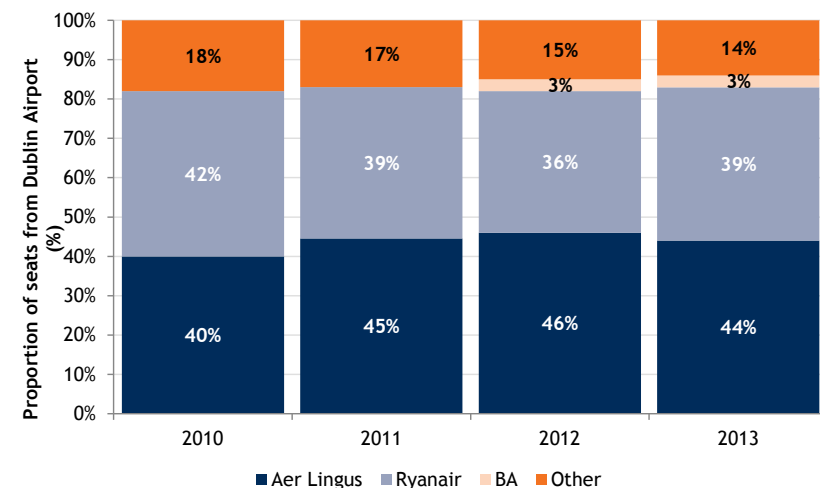
- Passenger numbers at Dublin Airport increased significantly in the early part of the last decade before giving way to falling passenger numbers from 2008 - 2010, when passenger numbers declined by -21.5%.
- Passenger numbers have grown each year since 2010 and in 2013 reached 20 million for the first time since 2009.
  - 2005 - 2013 CAGR: 1.1%
  - 2010 - 2013 CAGR: 3.0%
- Dublin Airport is the main base for Aer Lingus, the national flag carrier of Ireland, and a major base for the low cost carrier Ryanair. These two airlines account for more than 80% of passengers at the airport

Dublin Airport historical traffic



Source: daa

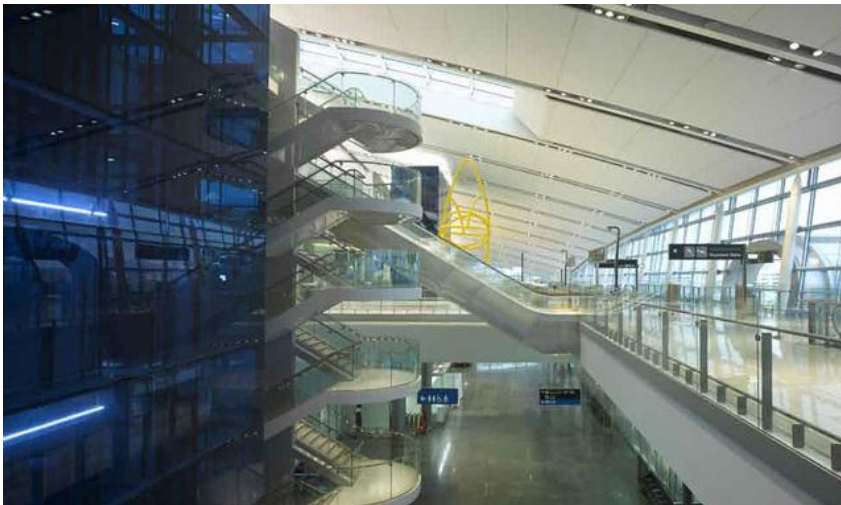
Airline market share at Dublin Airport (seats)



Source: Airport Coordination Limited (ACL) (start of winter season)

# CAR requires a 'bottom-up' efficiency assessment of daa's operating cost base.

- CAR is currently in the process of consulting with stakeholders on the price cap for the post-2014 regulatory period. This new price cap, which must be in place by the end of 2014, will apply from 1 January 2015 for a minimum of four years.
- The price cap is derived from a series of inputs known as the 'regulatory building blocks' which are calculated by CAR at the time of a price-cap determination. One of these building blocks is a forecast of the efficient future operating expenditures (opex) of daa.
- As part of its consideration of daa's operating expenditure for the next price control period, CAR requires a 'bottom-up' efficiency assessment of daa's operating cost base.
- The scope of this study covers all operating expenditure included in the RAB:
  - Staff costs
    - wages and salaries
    - non-pay costs
  - Energy
  - Maintenance & Cleaning
  - Rates
  - Marketing and related costs
  - Insurance
  - Other costs.



Source: [www.dublinairport.com](http://www.dublinairport.com)

## Approach:

Objectives

Data collected

Stakeholder consultation

Methodology

Traffic and inflation assumptions

The study objective was to develop an independent, bottom-up, operating expenditure forecast (2015-19) for Dublin Airport to contribute to the next regulatory period assessment.

■ The study aims are:

- To examine both airside and landside operational costs at the airport.
- To provide an evidence-based assessment of the efficiencies.
- To compare current daa costs by function with those of an efficient operator.
- To account for specific conditions that may exist at Dublin.
- To develop credible cost forecasts for the period 2015-19, based on an achievable evolution of current daa costs towards those of an efficient operator, allowing for anticipated future developments, traffic growth and inflation.



Source: [www.glamox.com](http://www.glamox.com)



# Data collected were comprehensive and detailed, supported by stakeholder consultations.

### I We have used a wide variety of information from a number of sources:

- Historical (2005-2013) cost data for Dublin airport (including Dublin's share of daa shared costs), as provided by daa;
- Information provided by CAR;
- Documents provided by daa in response to specific data requests from Steer Davies Gleave;
- Interviews with airport and airline management;
- Information provided by the airlines at the airport, including their views on the areas where cost savings were achievable;
- Benchmark data from other airports already available to SDG; and
- other desktop research.

### I Main areas of cost data collected include:

- Staff costs (FTEs and payroll)
  - Airfield services ;
  - Terminal security (split into T1 and T2);
  - Airport police and fire service (split into T1 and T2);
  - Maintenance;
  - Terminal Facilities and Cleaning (split into T1 and T2);
  - Airport management & support;
  - Car parks;
  - Commercial;
  - Retail; and
  - Head office.
- Non-pay costs
  - Energy costs (costs & rates of usage);
  - Rents and rates;
  - Insurance costs (broken down by category);
  - Maintenance & cleaning costs: split into maintenance equipment & materials, cleaning equipment & materials and any outsourcing costs;
  - Marketing costs; and
  - Other costs (including technology/IT, PRM costs, etc.).

Stakeholder consultation has provided an understanding of Dublin Airport's characteristics and historical trends, as well as different views on the opportunities for cost savings.

### Airport Consultation

- Discussion with Dublin Airport management has been coordinated through the Regulation and Strategy group.
- The Steer Davies Gleave project team was provided with a tour of Dublin Airport and as requested, met with senior management in the following areas:
  - Terminal Operations; Asset Maintenance; Human Resources; Campus Services; Retail Operations; IT; Commercial Operations/car parks; PRM Operations; Terminal Security; and Finance.
- daa responded to all data requests in a timely and cooperative manner.

### Airline Consultation

- The airlines operating from Dublin Airport were consulted to understand their views on
  - Historical evolution of the costs at Dublin Airport; and
  - Future efficiencies that may be achievable.
- The project team met with the Airline Operator's Committee (AOC), and separately with each of Aer Lingus and Ryanair.
- Airline views and any additional data they were able to provide has been taken into account in our analysis.

Our cost forecasts have been developed for each cost line using appropriate cost drivers. We have identified savings to move daa towards being an “efficient operator”. The savings have been classified as having higher or lower ambition.

### Approach to forecasting: base forecasts

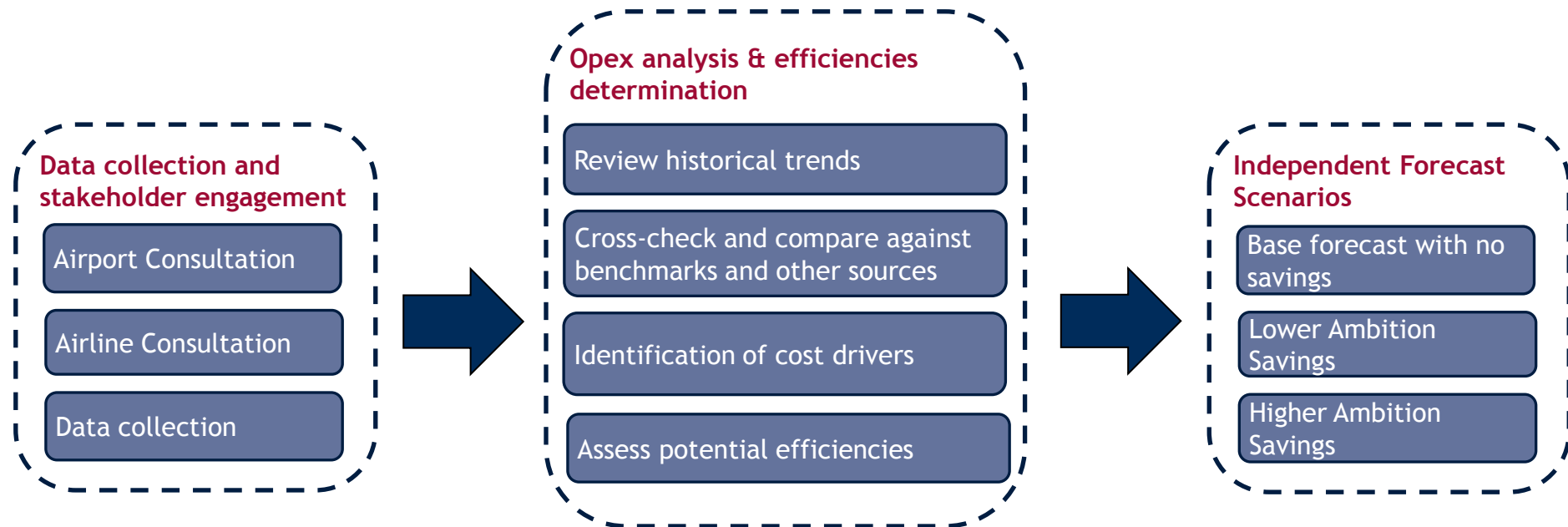
- I Our forecasts have been developed with a bottom-up approach, by identifying the relevant drivers for each cost line and by looking for realistic opportunities to generate efficiencies in the operating expenditure.
- I We have identified the relevant drivers for each cost line, for both volume and price. For staff, volume means the number of FTE and price means total cost per FTE. For some staff groups, passenger growth is an appropriate volume driver, while for others staff numbers are independent of, or grow more slowly than, traffic.
- I Staff unit cost growth reflects anticipated salary trends. Pension costs have been treated as part of overall staff unit costs, in line with the data provided by daa. No provision has been made for funding of pension deficits (out of study scope).
- I Some non-staff costs also grow as traffic increases, although the majority are largely fixed. Unit costs grow at the rate appropriate to the cost type, generally CPI. For electricity costs, daa’s proposed efficiency improvement investment capex has been assumed, as have bespoke unit costs drivers.
- I Where our cost driver assumptions differ from those of daa we have highlighted this, but not treated the difference as a “saving”.
- I No changes to quality of service levels have been assumed.
- I All forecasts have been presented in real terms (2013 prices).

### Identification of savings

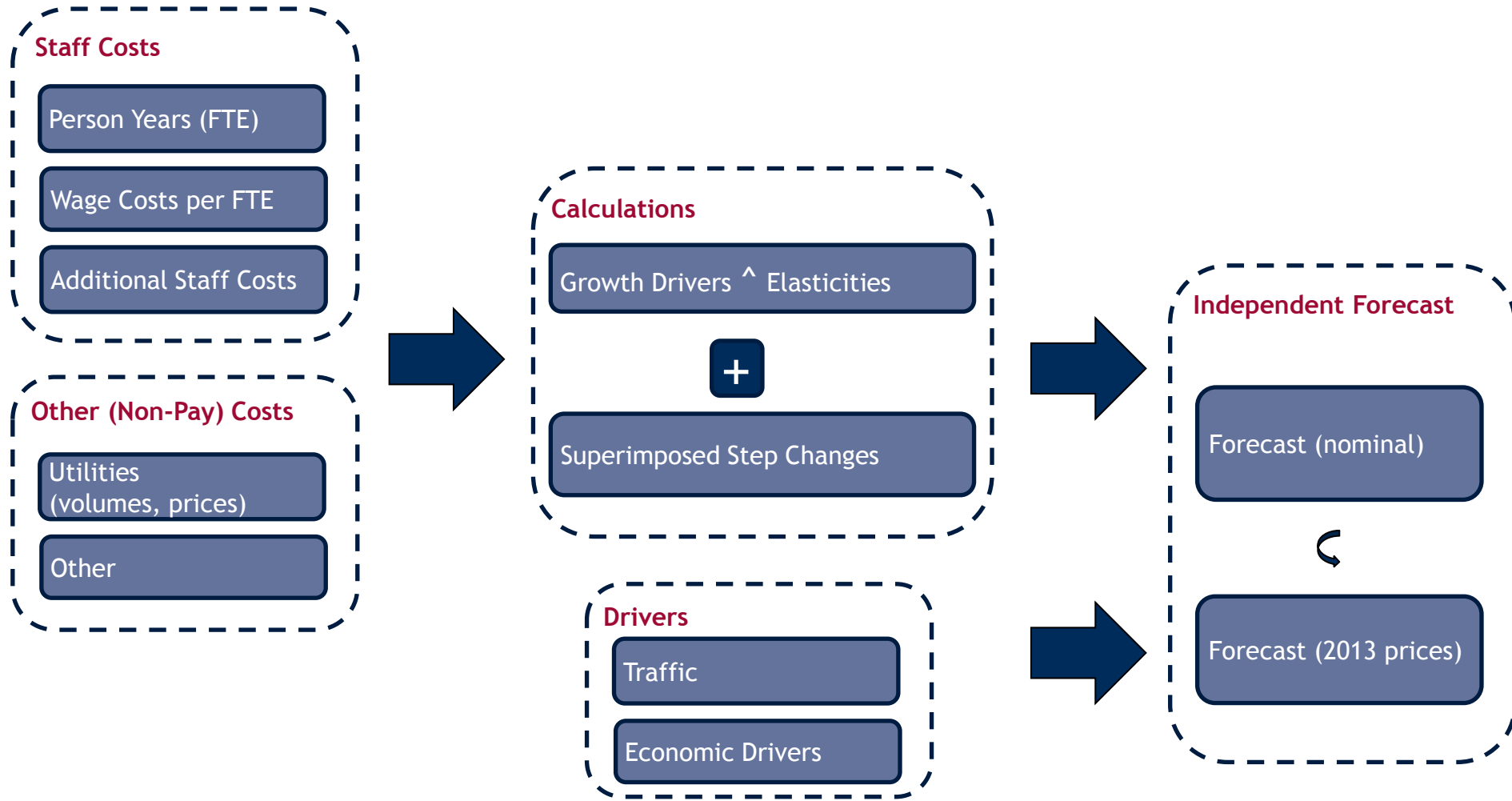
- I We have identified “savings” off our base forecasts for a number of cost lines. These savings arise from assumed management actions to deliver the airport’s services at lower cost, where we have identified that the current cost base is not consistent with that of an efficient operator. For example, reducing salary costs, where demonstrably above market rates.
- I All proposed savings are therefore set to bring costs to the level of an efficient operator (not counting transitional costs such as redundancy payments). The savings are in principle deliverable, but some would require major changes in behaviour by daa in relation to imposing redundancies and the use of outsourcing, and are subject to any legal or social policy restrictions on management actions in relation to these, as well as on Irish TUPE regulations. The level of actually achievable savings, and the timescales within which they can be delivered, should therefore be assessed in the light of these considerations, including taking formal legal advice where appropriate.
- I Recognising that in some cases there are significant hurdles to be overcome in delivering the savings, we have classified the proposed economies as:
  - “Higher ambition savings” where there are substantial obstacles to overcome (such as workforce opposition) - coloured **orange** in charts
  - “Lower ambition savings” where the obstacles are less significant - coloured **green** in charts.

Our methodology combines an understanding and analysis of historical data and stakeholders' views with our independent assessment of the potential, achievable efficiencies available for daa.

- Historical trends provide relationships between costs and their drivers, especially in relation to different levels of efficiencies achieved by T1 and T2.
- International benchmarks help to identify areas where efficiencies can be exploited.
- Our forecast is derived using a bottom-up approach which identifies drivers, growth and elasticities to each cost line before applying these to the most recent year of actual data (2013).



Our forecasting model takes base year values (2013 actuals) and applies growth inputs and step changes in line with our proposed efficiencies. Traffic and economic drivers are applied to determine the final forecast.



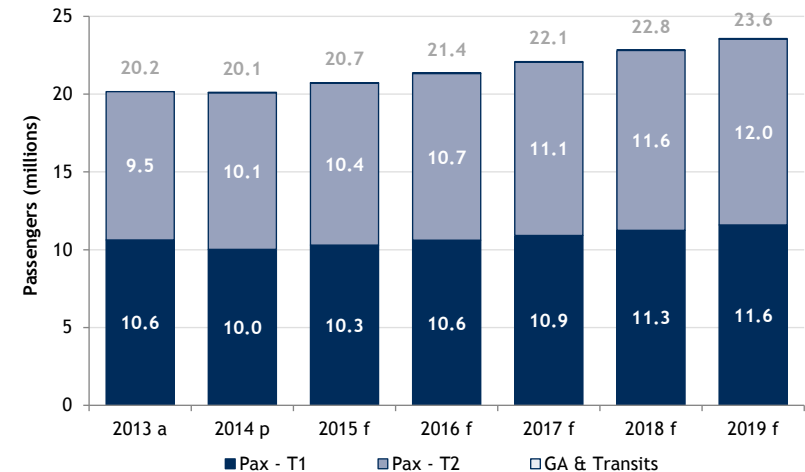
We used daa's own forecasts of Dublin Airport's passenger traffic. We used ESRI, Consensus and IMF for forecast CPI.

- Dublin Airport forecasts traffic growth at a CAGR of 3.3% per annum over 2015-19, slightly higher than the growth recorded in the period 2010-15.
- Terminal 2 passengers are expected to grow faster than Terminal 1 (3.5% vs. 3.0%), resulting in a split of 51% and 49%, respectively.

- Inflation forecasts, measured by CPI, has been taken from the ESRI Quarterly Economic Forecast (Winter 2013) for 2014, Consensus for 2015 and IMF World Economic Outlook (October 2013) for 2016-18. 2019 has been set equal to 2018.

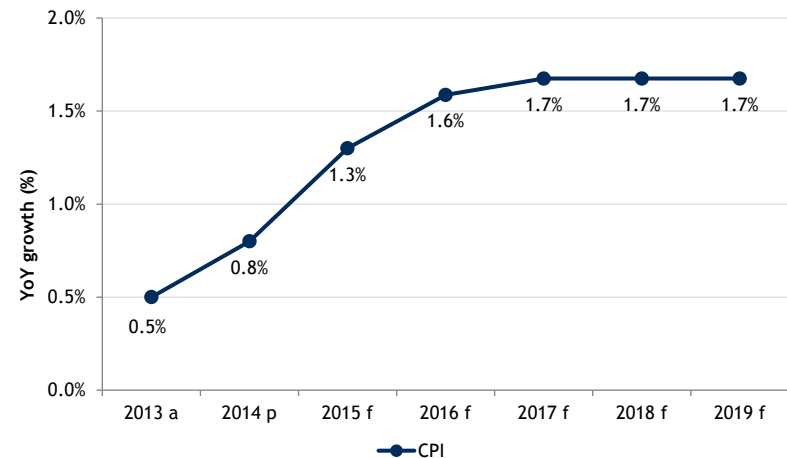
- A number of benchmark comparisons rely on UK data, for which we have used Oanda annual average exchange rates for GBP to EUR conversions. Exchange rates vary from £1 = €1.18-€1.23 depending on the year of comparison.

Dublin Airport forecast traffic



Source: daa

Inflation assumptions



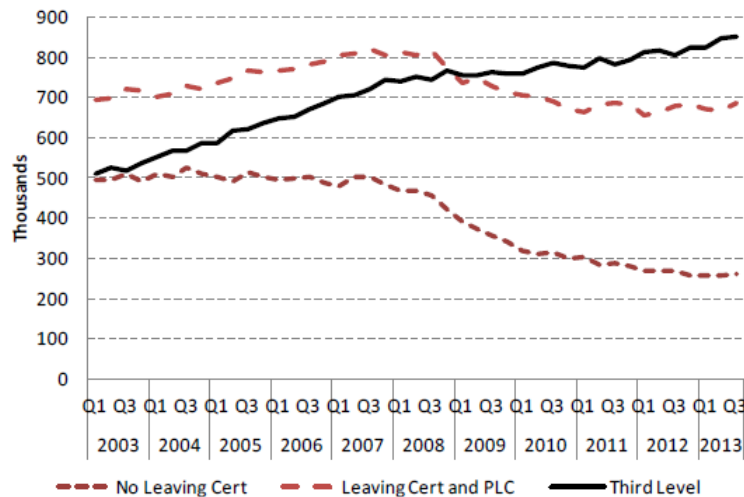
source: Central Bank of Ireland, ESRI, IMF

The economic crisis affected different parts of the labour market in different ways, with lower skilled jobs more badly affected than higher skilled roles. For this reason we have assumed faster growth in higher skilled salaries.

- Since the beginning of the economic crisis (2008), the employment for lower-skilled labour has sharply decreased, in contrast to an increase for the category with advanced educational qualification.
- The effect of this shortage of supply has impacted the average salary for specific categories. In our analysis we take this dynamic into account for the forecast assumptions.
- Natural rates of attrition for staff on pre-2009 contracts are very low. We have therefore not modelled any impact of substitution by staff on post-economic-crisis salaries, which are generally significantly lower.

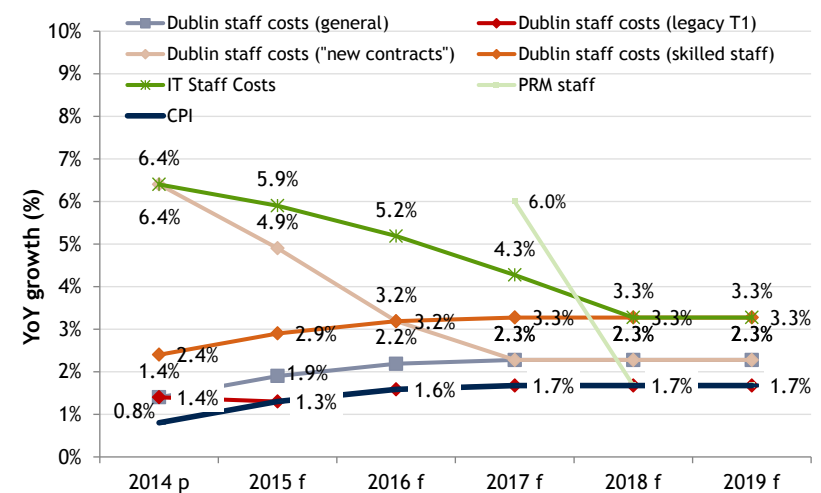
- Lower skilled job salaries have been assumed to rise at CPI + 0.6% p.a., based on the expected growth in salaries and CPI in 2014 (sources: ESRI, Consensus).
- More highly skilled salaries are assumed to rise AT 1% p.a. faster (CPI + 1.6%). IT salaries are assumed to rise 5% faster than unskilled salaries in 2014, 3% higher in 2015 and 1% faster thereafter.
- Staff on Terminal 2-specific contracts (and those on “new” contracts in Terminal 1) are assumed to have “catch-up” salary increases reflecting their current lower level of seniority (5% higher in 2014, 3% in 2015 and 1% higher in 2016).

**Employment by level of education**



Source: Quarterly Economic Commentary, Economic and Social Research Institute (Winter 2013)

**Driver assumptions**



Source: ESRI, Bank of Ireland, Steer Davies Gleave

## Operating Expenditure Overview:

Opex categories

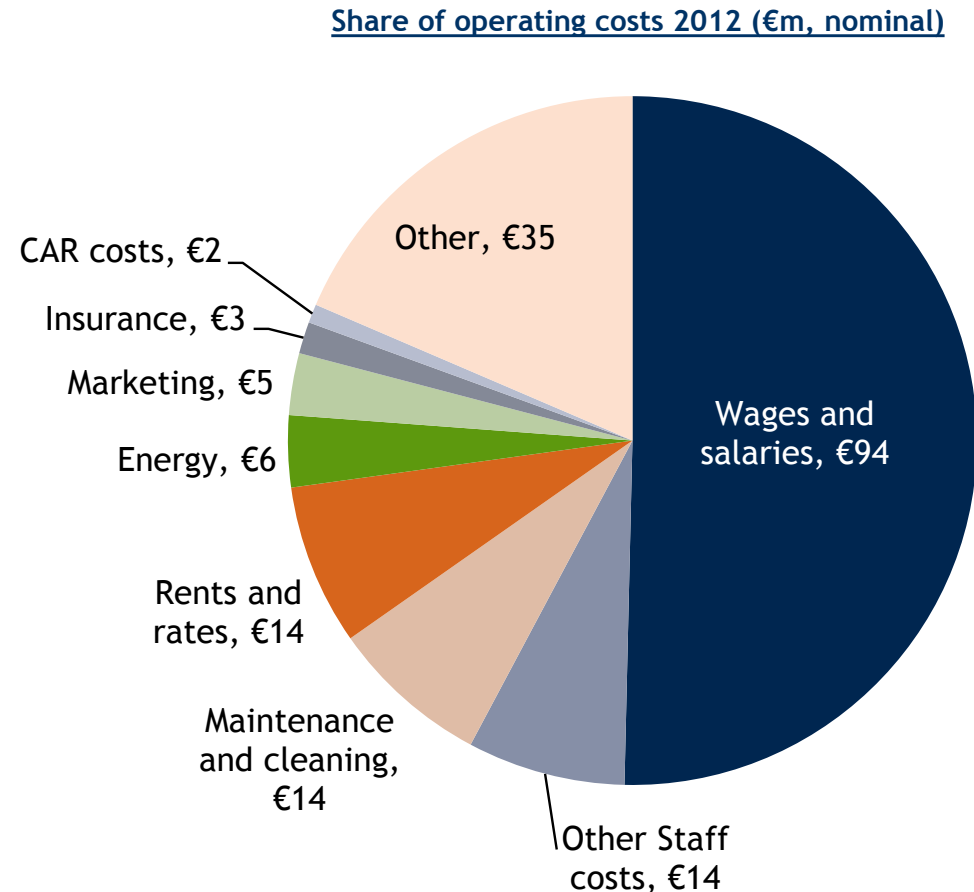
Evolution since 2005

Comparison to past CAR determination



### Staff costs at Dublin Airport represent more than 50% of operating costs (excluding retail sales COGS, depreciation and amortisation)

- 58% of the total operating costs is attributable to Staff related costs (wages & salaries, social welfare, pensions and other costs).
- The remaining 42% is Non-staff related costs, of which 40% is split between rents & rates and maintenance & cleaning.
- Cost of goods sold (COGS) in retail sales, depreciation and amortisation are excluded as they are outside the scope of this study.

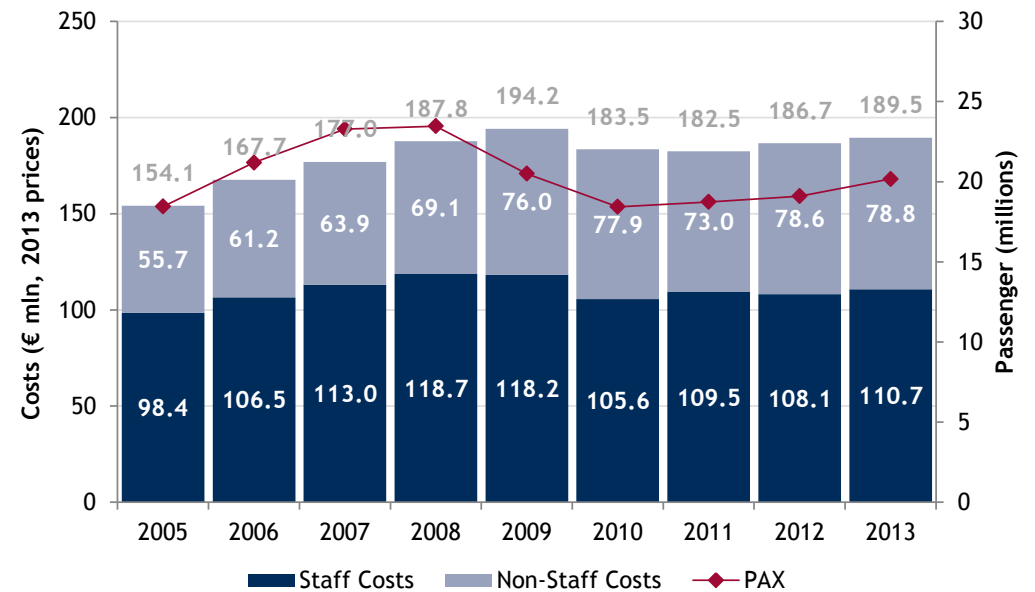


Source: Regulatory accounts 2012, Steer Davies Gleave analysis

Operating Costs at Dublin Airport increased between 2005 and 2013, despite a decline in passenger numbers and the impact of the economic crisis.

- Total Operating costs have grown at a CAGR of 2.6%, where passenger at 1.1%, between 2005 and 2013.
- The share of staff cost has fallen from 64% in 2005 to 58% in 2013.
- Some reductions in staff cost have been achieved with the opening of T2 in 2010 (-11% compared to the previous year), reflecting market conditions during the economic crisis. However this was followed by an average annual increase of 1.6% over 2011-2013.

Historical Operating Costs (€m, 2013 prices)

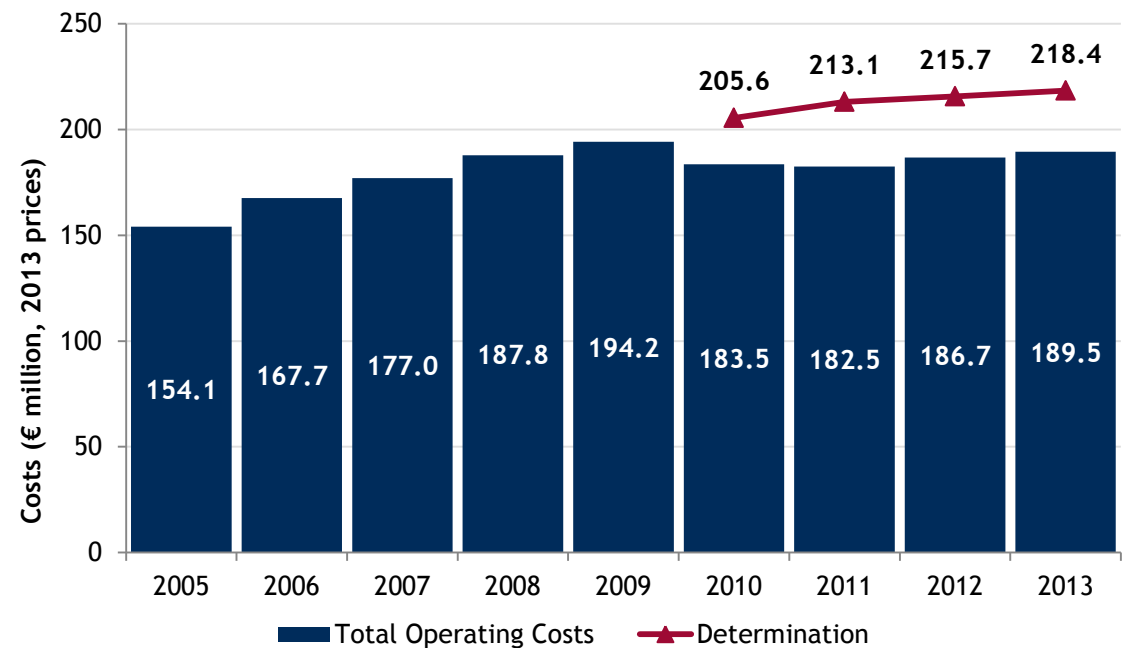


Source: daa

Dublin Airport has achieved costs below those set in CAR's 2009 determination, largely due to staff reductions and voluntary pay cuts agreed during the economic crisis.

- The determination on the maximum level of airport charges made by the Commission for Aviation Regulation in 2009 assessed the OPEX needs at Dublin Airport.
- The cumulative difference between the OPEX estimated by CAR and the outturn total costs for the current regulatory period amounts to €111 million (2010-2013), i.e. 13% lower than the estimated costs.

Historical Operating Costs and determination (€m, 2013 prices)



Source: daa, CAR

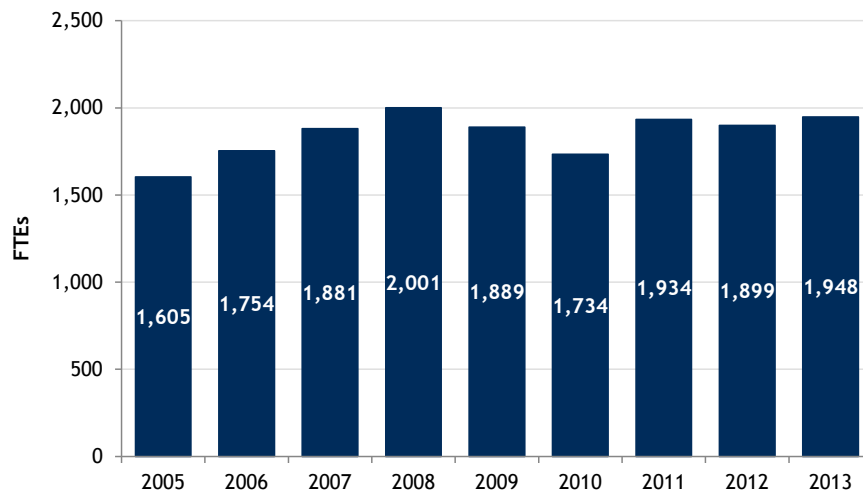
# Operating Expenditure Analysis:

daa staff (general)	21
Security staff	27
Cleaning & facilities	33
Campus services	36
Retail	39
Airside operations	42
Maintenance	45
Information Technology	48
Central Functions Staff	51
Other central costs	54
Other staff costs	57
Car Parks	58
Passengers with Reduced Mobility	61
Rent & Rates	64
Utilities	65

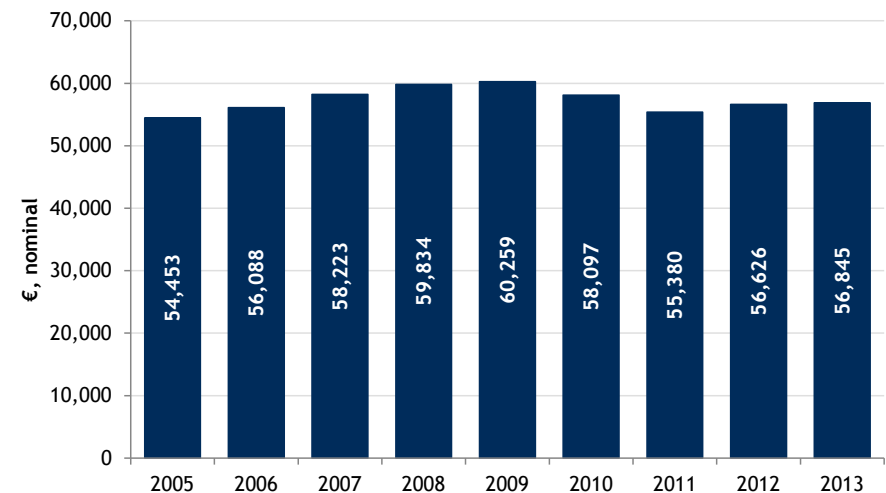
Staff numbers increased until 2008, fell back during the recession as passengers numbers declined and then rose again with the opening of Terminal 2 in 2010. Salaries fell in both nominal and real terms, reflecting agreed salary reductions.

- Staff numbers remain below the levels of 2008, despite the opening of Terminal 2, which was predicted to increase staff numbers.
- Staff salary levels fell after 2009 due to salary cuts agreed with unions following the recession and the serious financial position of the airport. In addition, daa introduced new, lower, salary rates and less favourable terms and conditions for staff recruited to work in the new Terminal 2, as well as for new staff working in the existing facilities.
- The combined effect of these was to reduce staff costs significantly below the levels anticipated in the 2009 Determination.

Staff numbers, Dublin airport (weighted FTE)



Staff cost per FTE per annum (€ nominal)

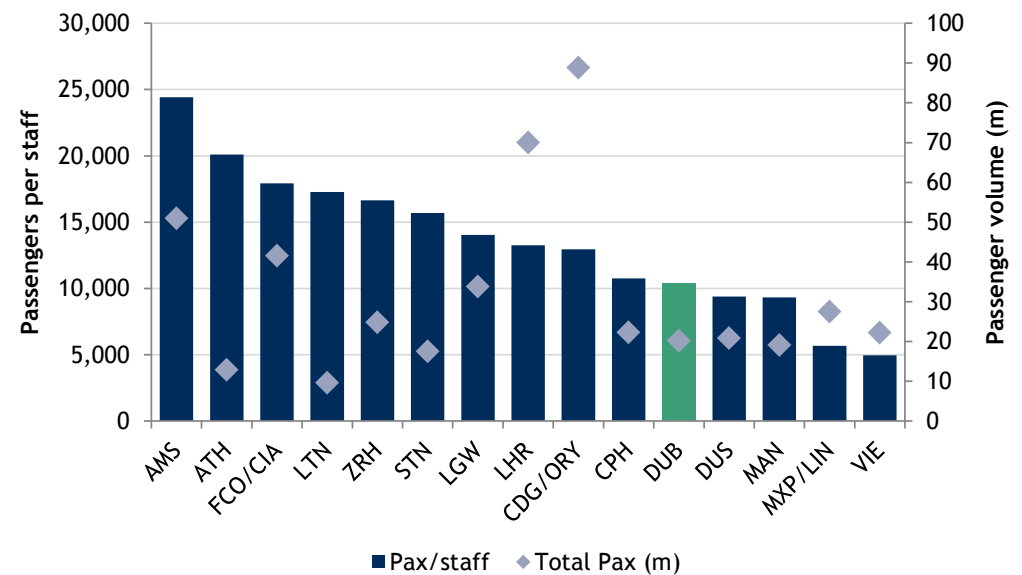


Source: daa data, Steer Davies Gleave analysis

## Dublin Airport has a relatively high number of staff for its passenger throughput when benchmarked against other European airports.

- The chart shows that Dublin Airport has a relatively high number of staff compared with its passenger throughput, achieving only 10,400 passengers per staff.
- This compares with over 24,000 at Amsterdam, over 15,000 at Stansted, Luton, Zurich, the Rome Airports and Athens, and around 13,000 or more at the Paris Airports, Heathrow and Gatwick. However Düsseldorf, Manchester, the Milan Airports and Vienna have lower throughputs per staff member.
- The fact that Dublin has two terminals, compared with only one at many other airports of a similar size, may be one cause of the relatively high staff numbers, although multi-terminal airports such as Rome Fiumicino and Gatwick do achieve significantly higher throughput per staff member. Dublin Airport does operate its own retail outlets, but even if these are excluded, the number of passengers per staff increases only to 11,700, i.e. between that of Copenhagen and the Paris airports.
- Therefore, there appears to be some scope for staff numbers to fall relative to the number of passengers. A higher level of outsourcing could help to achieve this.

Passengers per staff comparison

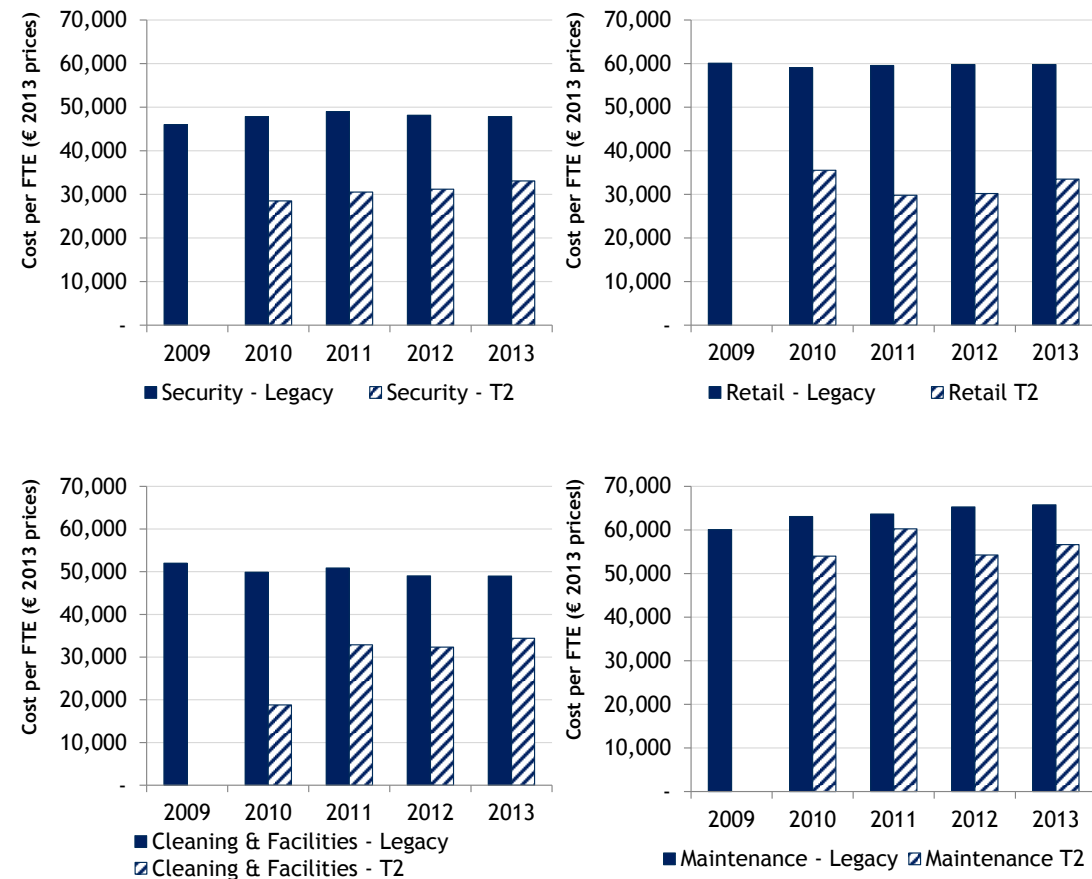


Source: Airport Annual Reports

## Staff agreements allowed for lower salary levels for new staff at market rates, but there is little chance of reaching agreement for staff on legacy contracts to reduce their own costs beyond the relatively small reduction agreed in 2009.

- daa agreements with Trade Unions at the time of the recession and the opening of Terminal 2 allowed for:
  - Reduction in the number of staff through a voluntary severance scheme
  - Salary reductions for existing staff, to be reversed when certain profit triggers were achieved
  - Staff for the Terminal 2 operation to be recruited on contracts with lower costs and fewer restrictions on working practices
  - New staff in Terminal 1 to be recruited on contracts with lower costs and fewer restrictions on working practices.
- It is highly unlikely that, with more favourable economic conditions, trade unions would agree to any further reductions in the salaries or other terms and conditions of “legacy” staff. Further, daa does not have a tradition of imposing compulsory redundancies.
- Nevertheless, the existence of far more cost-effective terms and conditions for the “new” staff groups at the airport demonstrates that the costs of “legacy” staff cannot be considered as economically efficient.
- The charts at right illustrate salary trends and cost differences between Terminal 1 and Terminal 2 staff. As recently recruited Terminal 1 staff are on “new” contracts at lower rates, the chart understates the cost differential between “legacy” and “new” salaries.

Trends in Salaries by Staff Group - Legacy and T2



Source: daa, Steer Davies Gleave Analysis

There is a contrast between staff on new contracts, whose pay is in line with local benchmarks, and those on legacy daa contracts whose average cost is 60% higher.

- Cost per staff varies very significantly between those employed on legacy daa contracts and those with contracts for Terminal 2 (employed by daa subsidiary company ASC) or newly employed Terminal 1 staff (employed by daa subsidiary company DASL, excluding those transferred from daa contracts). The top table shows average per-FTE staff costs by major manual staff groups on daa, ASC and new DASL contracts.
- Average costs per FTE for ASC/new DASL staff are only 61% of legacy daa staff in these staff groups. These ASC/New DASL per-FTE costs are in line with benchmark costs for comparable jobs in other companies in the vicinity, based on information provided to us and validated through a review of current advertised opportunities. We therefore consider that these rates are consistent with the efficient costs frontier.
- While it is difficult to obtain general benchmark salary data for non-professional jobs, as recruitment agency surveys tend to concentrate on the higher end of the market, the bottom table indicates the going rates for jobs which might be considered comparable in terms of skills and training to the manual staff categories in daa. Allowing 10.75% for employers' PRSI contributions, these salaries appear comparable with ASC/DASL costs.
- In contrast, costs for legacy daa staff are clearly much higher than comparable benchmarks and cannot be considered to represent market rates.

### Salary Comparisons - New vs Legacy Contracts

	FTEs			Cost per FTE (€ per year)		
	daa/ex-daa	ASC	New DASL	daa/ex-daa	ASC	New DASL
Retail	114	72	14	60,162	30,657	32,750
Cleaning/Facilities/ Car Park	263	164	25	53,072	32,627	22,607
Maintenance	126	50	8	64,430	54,801	66,059
Security	267	182	54	51,874	33,120	26,483
<b>TOTAL</b>	<b>770</b>	<b>468</b>	<b>100</b>	<b>55,564</b>	<b>34,900</b>	<b>29,593</b>

Source: daa, Steer Davies Gleave Analysis

### Salary Comparisons - Jobs with comparable skills

Sigmar Recruitment Salary Guide 2013	Dublin		
	1-2 years	3-5 years	5 years +
Administrators	21-23k	25-30k	30k+
Receptionists	20-23k	25-28k	28k+
Secretaries	25-27k	27-30k	30k+
Artic Driver	25-35k	n/a	n/a
Freight Clerk	25-28k	28-33k	33k+

Source: Sigmar Recruitment Guide 2013



# Outsourcing may represent the best route to reduce costs of legacy staff, though this is unlikely to be practical for all categories due to TUPE regulations. Disruption from IR disputes is likely but not an insuperable barrier.

- I It is for daa to determine how to bring its staff unit costs down to market rates. However, projections of what level of costs are reasonable must take account of the practicalities of, and likely timescales for, achieving such reductions to market rates.
- I We have assumed that since reduced costs for legacy staff are unlikely to be agreed by staff representatives, the most practical way to reduce costs for these staff groups would be through out-sourcing of the activities they undertake.
- I Outsourcing allows for competitive tender of work and hiring of staff to deliver this by third parties at market rates, which are likely to be more similar to the rates paid to the “new” staff groups employed by daa via the ASC and DASL contracts than to those on “legacy” daa contracts.
- I Assuming there are no legal impediments to its implementation, outsourcing entails **two key risks**:
  - **Industrial action** by existing staff at risk of redundancy. This must be considered likely.
  - **TUPE regulations** may require new suppliers to maintain existing terms and conditions for staff, reducing or negating the savings.
- I **Industrial action**, arising from outsourcing and associated redundancies, while likely, can be faced down, albeit incurring some costs and disruption.
- I **TUPE** is implemented through Irish Regulations and interpreted through case law. While TUPE generally applies to the transfer of an ongoing operation, Irish legal commentators\* appear to consider that TUPE would also apply to outsourcing situations in the following circumstances:
  - “If a new contractor took on the staff and /or the assets of an existing operator or part of the Contracting Authority”
  - “If the contracting authority was providing equipment assets or personnel itself as part of a contract”
  - Source: presentation by Christine Comiskey, Dep. Assistant Chief State Solicitor, [http://www.procurement.ie/sites/default/files/Christine%20Comiskey%20Transfer%20of%20Undertakings%20Protection%20of%20Employment%20%20\(TUPE\).pdf](http://www.procurement.ie/sites/default/files/Christine%20Comiskey%20Transfer%20of%20Undertakings%20Protection%20of%20Employment%20%20(TUPE).pdf)
- I It therefore appears that the risk of TUPE regulations preventing savings from outsourcing might apply where a skilled workforce was re-employed by a new contractor, but not where a contractor could bring in new staff and its own equipment to deliver the service.

\* See also: <http://employmentrightsireland.com/tag/tupe-regulations/>, and [http://www.williamfry.ie/publication-article/employee\\_rights\\_on\\_business\\_transfers.aspx](http://www.williamfry.ie/publication-article/employee_rights_on_business_transfers.aspx)

Very significant cost savings are deliverable from outsourcing functions currently undertaken by daa staff on legacy contracts. These are factored into our “higher ambition” forecasts only, reflecting the significant obstacles to be overcome.

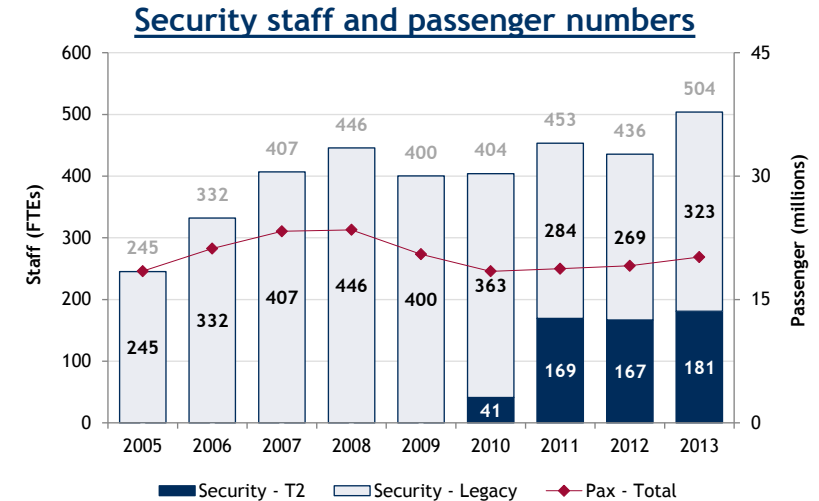
- Considering the potential savings achievable through outsourcing of certain functions currently undertaken by daa staff on “legacy” contracts, but also taking account of the risks, we have assumed that it would be possible to outsource the retail, cleaning and facilities, car park operations and security functions, but that it would not be realistic to outsource the maintenance function.
- The assumptions underlying this analysis, and the potential savings, are shown in the table below. The savings in salary costs per FTE assumed are somewhat lower than the current differential between per-FTE “new contract” and “legacy” staff, as costs for the former are rising more quickly (6% in 2013 vs. 2012, compared with only 1% for legacy staff), largely due to the faster movement through grade points for the newer staff group. We have assumed that some in-house staff are retained for supervisory and special functions in the retail, security, cleaning and facilities areas.
- Our analysis indicates that a notional saving of over €9 million p.a. is achievable through reduced unit staff costs from outsourcing, based on 2013 data. We assume this could be achieved by 2016 following a procurement process (2017 in the case of security staff).

Staff Category	"Legacy" staff FTE	"New contract" staff FTE	Salary differential (% reduction on legacy rates)	IR disruption: risk to operation	TUPE risk	Ease of outsourcing	% Legacy staff outsourced assumption	% Cost saving assumption	Notional cost saving in 2013 (€m)	Time-scale
Retail	114	85	-48%	Moderate*	Low	Moderate	90%	40%	2.5	2016
Cleaning/Facilities	234	188	-40%	Moderate*	Low	Moderate	70%	30%	2.6	2016
Car Park	29	1	-58%	Moderate*	Low	Moderate	100%	30%	0.5	2016
Maintenance	126	58	-13%	High	High	Very Difficult	0%	n/a	-	n/a
Security	267	236	-39%	High	Moderate	Difficult	90%	30%	3.7	2017

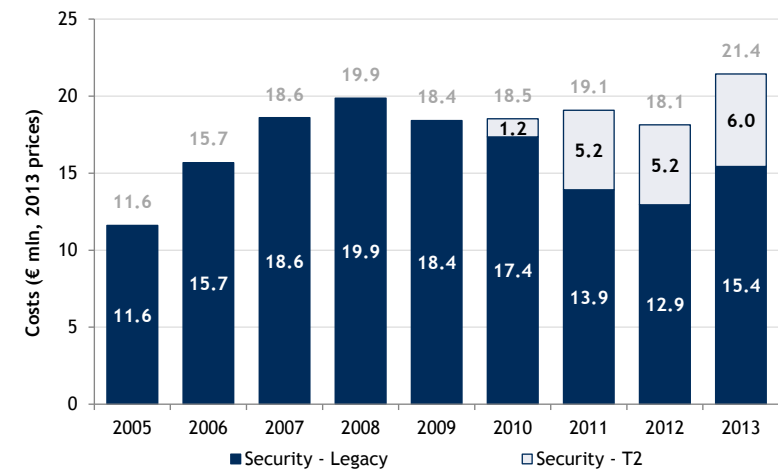
\* Risk is assumed moderate on the basis there is a risk of concerted industrial action across other staff groups. If confined to those staff groups, the risks to the operation would be low.

## Security staff costs have increased and reduced with passenger numbers, but with a detrimental effect on the number of staff per passenger and on unit costs.

- Security staff numbers increased very rapidly in the middle of the last decade until 2008. They subsequently fell back, but not as quickly as airport traffic. Since 2010, staff numbers have increased more quickly than the gradual recovery in airport traffic, at least partly reflecting the opening of Terminal 2, which split the terminal security operation.
- The number of security staff per million departing passengers has risen steadily from 27 in 2005 to 50 in 2013, indicating a reduction in the level of efficiency of passenger processing. This reflects both lower throughput rates and the two-terminal operation.
- Central search throughput has fallen from 245 per X-ray lane per hour to 180 now. Dublin failed an EU Article 15 audit in March 2012, following which an additional 50 staff recruited and lane processing rate reduced to ensure compliance.
- Security staff costs have followed a similar pattern to security staff numbers, except that security staff in Terminal 2 were hired at significantly lower salary rates, cancelling out staff pay rises, so that the increase in nominal costs has been the same as the increase in staff numbers (4.8% CAGR 2009-13).



### Security staff costs, Dublin airport (€m, 2013 prices)



Source: daa data, Steer Davies Gleave analysis

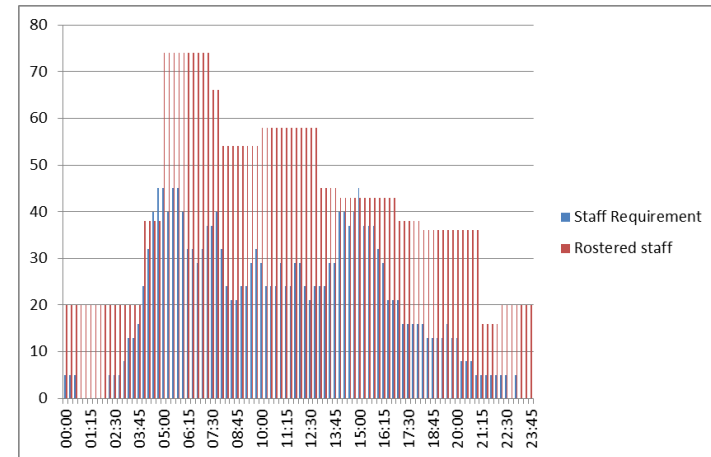
Security staff numbers appear reasonable overall in comparison with other airports. However, there are significant differences in both the efficiency of staff rosters and in unit salary costs between staff on “legacy” and “new” contracts.

- Terminal security central search at Dublin Airport appears to be comparable in terms of efficiency to available external benchmarks:
  - 4 staff are used per lane (5 staff for a single lane to allow male and female passenger search personnel), which compares favourably with many airports (in the UK a range of 3.5 to 8.5 per single lane was identified in the mid-Q5 regulatory review of Stansted Airport)
  - The rate of passenger processing is resourced for an assumed 180 passengers per lane per hour, which is in line with European airport benchmarks (and above Stansted’s 143 per hour).
- The total number of security staff in 2013 was 504 FTE, of whom approximately 70 (management estimate) were assigned to vehicle control posts. Thus there were 43 terminal security staff per million departing passengers, compared with 63 at Stansted in 2010/11, identified in the mid-Q5 review.
- daa management identified 630 security staff heads (not FTE) at Dublin vs. 997 at Copenhagen (58% more), despite CPH having only 20% more traffic than DUB.
- The rostering efficiencies for staff in Terminals 1 and 2 differ significantly:
  - Terminal 1 staff are currently rostered on 17 separate staff rosters of differing lengths, constrained by union agreements. Paid breaks are included and there are allowances for annual leave and public holidays (14.5%), computer-based training (3.7%), maternity leave (3% for female staff) and 6% (absenteeism), leading to 26% uplift on the basic roster requirement.
  - For Terminal 2 staff, breaks are unpaid and annual leave is included in the roster. There are only two staff groups, full and part time, with the latter having variable weekly hours (between 16 and 40 hours per week, at management’s discretion). The corresponding roster uplift is estimated at 20% by management.
- As noted at slide 24 above, security staff unit salary costs vary significantly. Staff on “legacy” contracts (in Terminal 1 and for airside posts) are paid substantially more than those in Terminal 2 (or on “new” contracts in Terminal 1). Average per-FTE costs in 2013 were:
  - “Legacy” contract staff - €51.9k (267 FTE)
  - “New” contract staff - €31.6k (236 FTE)

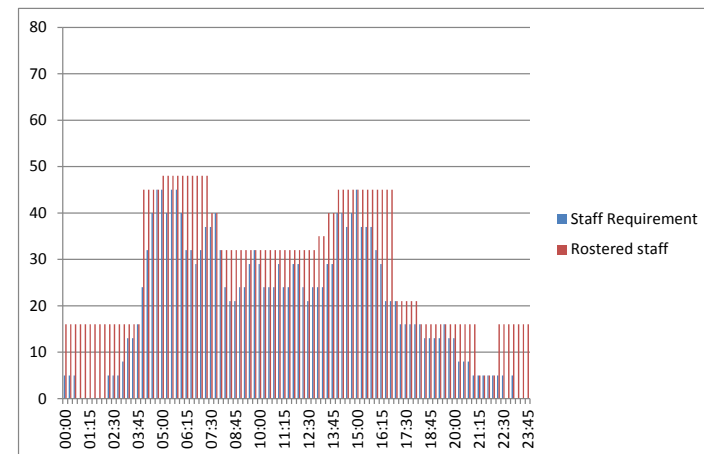
## Security Central Search workload coverage in Terminal 1 appears inefficient, reflecting current inflexible rosters.

- Existing shift patterns in Terminal 1 appear not to be efficient. Chart top right shows the staff requirement and actual shift coverage on the 95% Busy Day for T1 departures (29/6/13), based on daa supplied passenger arrivals at Security (in 15 minute intervals) and staff roster information.
- Staff requirements have been calculated based on passengers arriving at security converted to a staff requirement using daa parameters of 180 passengers per lane per hour and 4 staff per lane (5 for odd lane to allow male and female passenger search personnel).
- Rostered staff information includes 11 different shift times and the staff rostered on those shifts for the day in question.
- The shift coverage appears to be slightly too low in the early morning, but significantly higher than needed during the later morning period.
- Using the same shift times and optimising the shift coverage for the day to minimise staff hours worked produces much more efficient coverage (bottom right chart). This optimised coverage would require 30% fewer staff on the day, 86 vs 124 FTE.

Terminal 1 Central Search 95% Busy Day 2013 Actual Roster Coverage



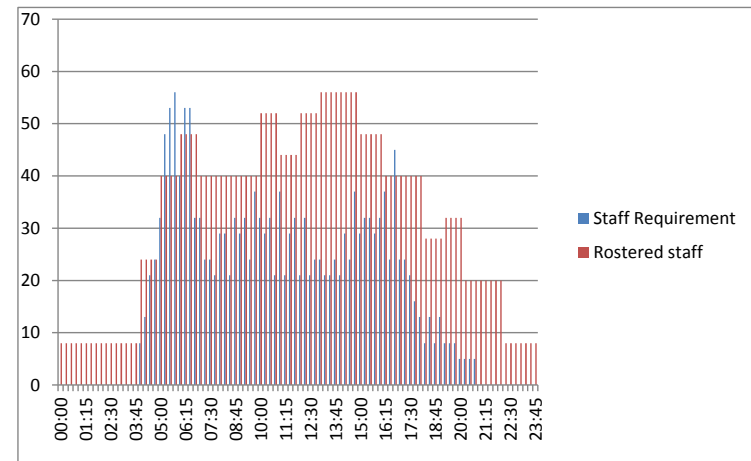
Terminal 1 Central Search 95% Busy Day 2013 Optimised Roster Coverage



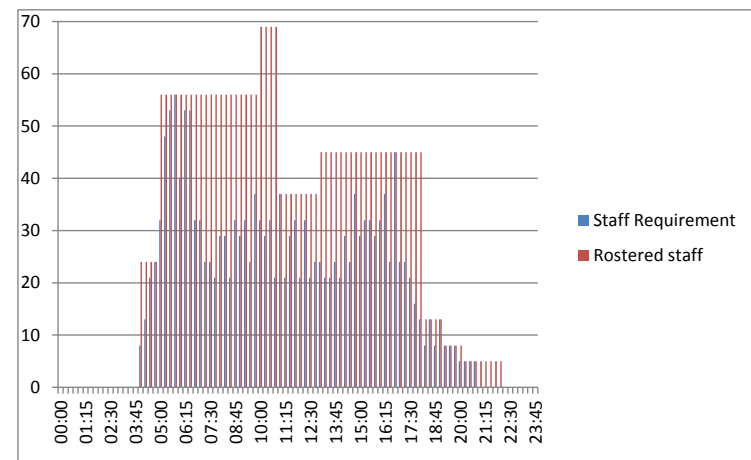
## Security Central Search roster coverage in Terminal 2 appears to be significantly less inefficient than in Terminal 1 (8% worse than optimum compared to 30% worse in Terminal 1).

- Existing shift patterns in Terminal 2 are more efficient than those in Terminal 1. Chart top right shows the staff requirement and actual shift coverage on the 95% Busy Day for T2 departures (31/5/13), based on daa supplied passenger arrivals at Security (in 15 minute intervals) and staff roster information.
- Staff requirements have been calculated based on passengers arriving at security converted to a staff requirement using daa parameters of 180 passengers per lane per hour and 4 staff per lane (5 for odd lane to allow male and female passenger search personnel).
- Rostered staff information includes 11 different shift times and the staff rostered on those shifts for the day in question.
- The shift coverage appears to be too low in the early morning, but somewhat higher than needed during the remainder of the day.
- Using the same shift times and optimising the shift coverage for the day to minimise staff hours worked produces much more efficient coverage (bottom right chart). This optimised coverage would require 8% fewer staff on the day, 88 vs 96 FTE.

Terminal 2 Central Search 95% Busy Day 2013 Actual Roster Coverage



Terminal 2 Central Search 95% Busy Day 2013 Optimised Roster Coverage



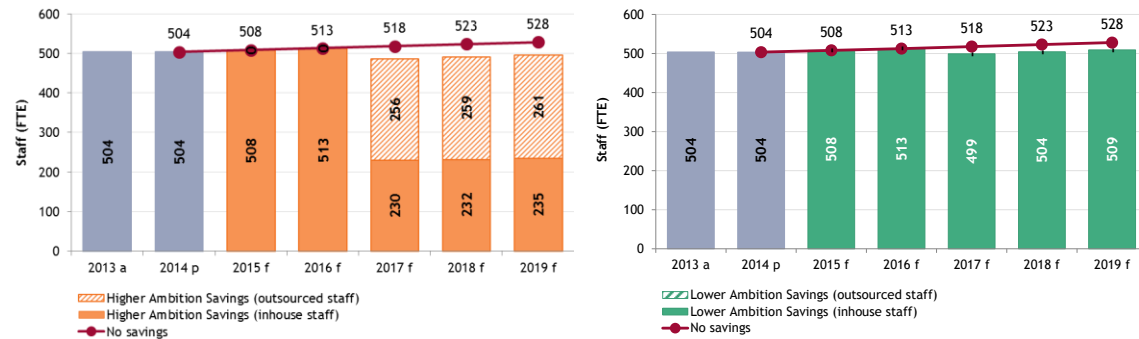
There are opportunities to increase the processing efficiency of staff on “legacy” contracts, as well as to reduce unit costs. It is assumed that this will be achieved through outsourcing the Terminal 1 and airside security operations.

- The workload coverage charts on the previous two slides indicate the lower efficiency of the roster staff allocations in Terminal 1 compared with Terminal 2, by about 20%. Since these are single days, we assume that 15% is a more general figure for central search.
- The booz & co. report commissioned by daa (January 2014) estimates that the additional roster restriction for Terminal 1 staff decreases efficiency by 10%.
- The booz & co. report proposes that more staff will be required to cover a changes to security regulation in relation to screening for liquids & gels (LAGS) and further secondary searches (8% extra by 2016). We consider that new technologies should enable the existing processing rate to be maintained.
- Based on this, we have assumed that:
  - The efficiency of central search staff on legacy contracts can be improved by 15%
  - The efficiency of other security staff (fixed posts) on legacy contracts can be improved by 10%
- We have also assumed that security staff numbers will rise with passenger numbers, with an elasticity of 0.3. This elasticity reflects the very peaked schedules in each terminal, particularly in the morning when runway capacity is constrained, as well as the high proportion of fixed posts. Growth will therefore likely occur primarily in the shoulder- and off-peak periods, thereby being more easily accommodated within the profile of existing staff coverage.
- We assume that these efficiencies will be implemented through a process of outsourcing security in T1 (and airside). The efficiency of staff in T1 who are on “new” contracts is assumed to be unaffected.
- We further assume that the unit salary costs of legacy staff will be reduced through the outsourcing process. As noted at slide 26 above, this provides the opportunity to reduce unit salary costs by 30% for 90% of legacy staff. The costs of staff in T1 who are on “new” contracts are assumed to be unaffected.
- We assume that the efficiencies will be realised in 2017, allowing time for significant staff consultation and the necessary procurement processes in this key function.

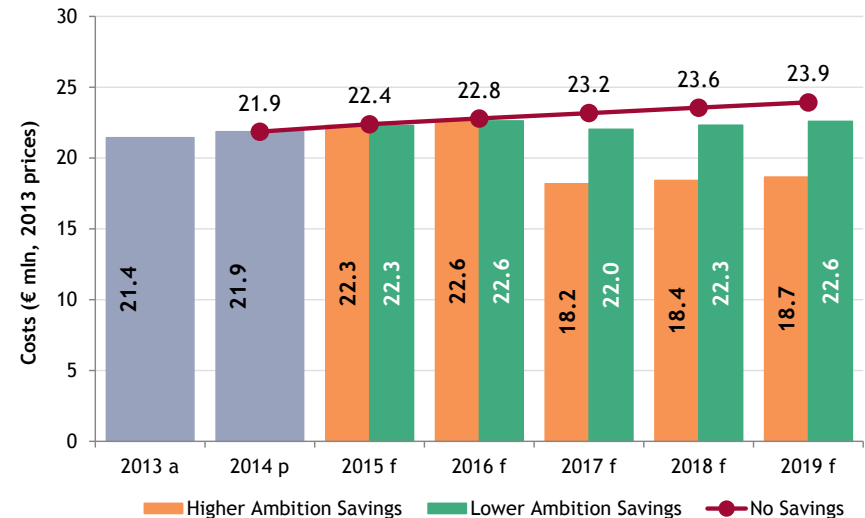
## Security outsourcing leads to very significant cost savings (€5 million p.a. from 2017). This reflects both lower unit salary costs and more efficient rosters.

- I Staff efficiencies resulting from outsourcing lead to a reduction in staff numbers in 2017 by 32, but staff numbers grow due to increasing passenger traffic.
  - Without outsourcing (“lower ambition” saving), we assume only 5% improvement in T1 fixed posts and 10% in central search, leading to a smaller reduction of 19), and also assume legacy staff salaries remain constant in real terms.
- I Staff numbers are assumed to rise to 513, before falling to 486 due to outsourcing efficiencies, then rising again to reach 496 by 2019. Of these, approximately half would be outsourced staff from 2017.
- I Staff salary unit cost savings resulting from outsourcing lead to cost savings of approximately €4 million p.a. from 2017.
- I These savings would be realised through reductions in staff costs being greater than the costs of outsourcing the corresponding activities.
- I The combination of the two effects reduces costs by €5 million p.a. from 2017. Without outsourcing, only the efficiency can be achieved, reducing costs by €1 million p.a. from 2017. In both cases there is also a slight saving from holding legacy salaries constant in real terms from 2015.

**Security staff numbers (FTE, proposed savings)**



**Security costs (€m 2013 prices, proposed savings)**





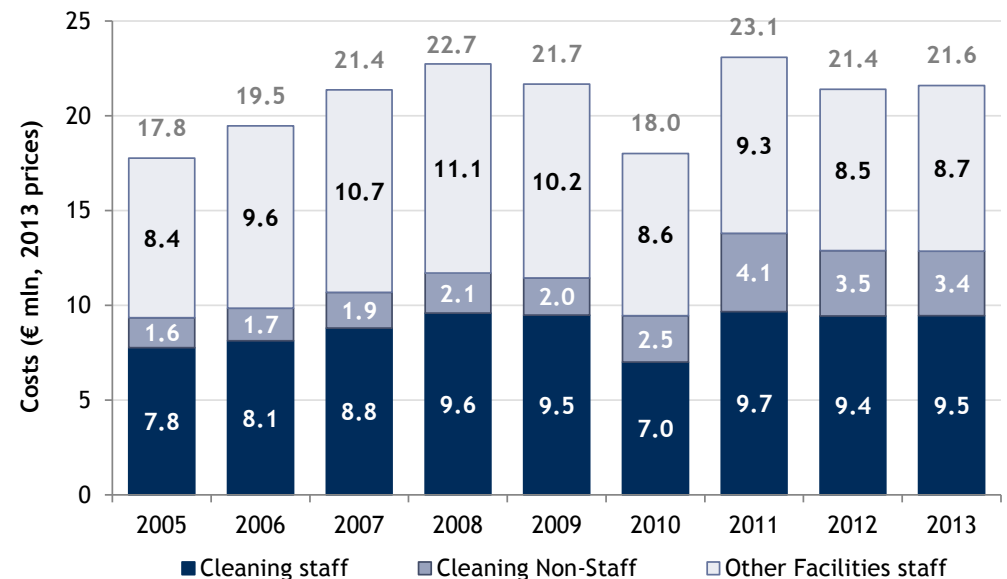
## Cleaning & facilities costs peaked in 2011 following the opening of Terminal 2.

- Cleaning & facilities costs in 2013 were €21.6 million (2013 prices).
- In 2011 (following the opening of Terminal 2 in November 2010), cleaning & facilities costs increased by +46%, but reduced in each year following. In 2013, costs were -7% lower than 2011.

Cleaning & facilities at Dublin Airport are organised as follows:

- Terminal 1: dedicated cleaning function plus separate facilities staff covering trollies, forecourt management, taxi rank tasks. Cleaning responsibilities:
  - daa: the main T1 concourse area, piers, windows and baggage sortation.
  - Outsourced: offices, back of house.
- Terminal 2: single flexible cleaning and facilities staff group trained to cover taxi rank, forecourt management, trollies, and cleaning functions. Responsibilities:
  - daa: the main passenger areas.
  - Outsourced: retail and departure lounge areas, windows.
- Other facilities tasks include airport and terminal operations and centre tasks (terminal management, customer support, queue & baggage systems management, PRM contract management).

Cleaning & facilities costs, Dublin airport (€m, 2013 prices)



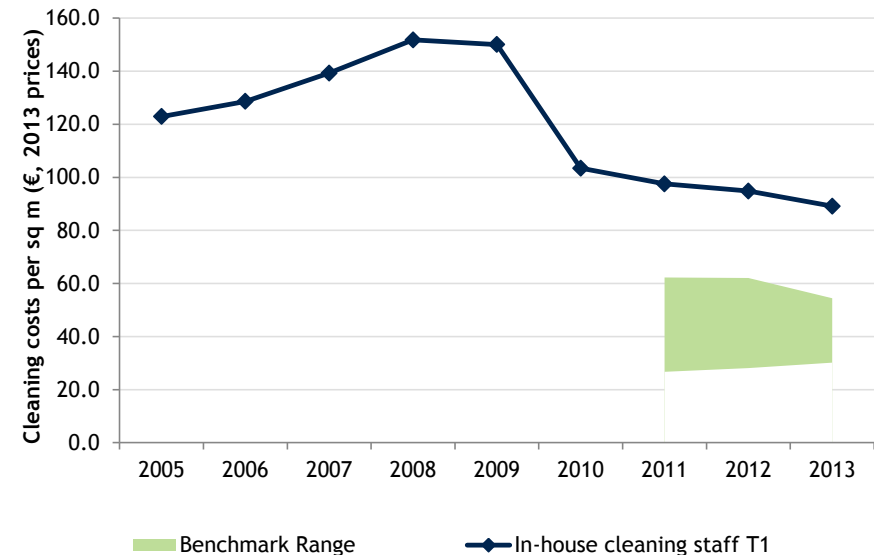
Source: daa data, Steer Davies Gleave analysis

- Shift patterns for cleaning and facilities (rosters) are not particularly variable. The airport noted that cleaning and facilities functions are not as dependent on passenger numbers as other functions, such as security.

## Terminal 1 unit cleaning costs are significantly higher than those in Terminal 2.

- I Cleaning costs per square metre in Terminal 2 and for the outsourced cleaning contract are in line with publicly available sources. Costs per square metre in Terminal 1, however, are significantly higher than T2 (terminal areas applied to benchmark are reflective of the areas cleaned).
- I T2 cleaning staff undertake both facilities and cleaning tasks, and the benchmark range includes airports that have a combined cleaning and facility function (i.e. if precise tasks were factored in for T1 the comparison would be even more unfavourable).
- I The outsourced cleaning cost per square metre includes both staff and materials costs and is the lowest unit costs of the three areas. In 2013, the Cleaning Contract and Materials cost was lower than that of T2.
  - Cleaning standards, and hence costs, may differ for different parts of the airport (back of house would not require as high a standard as front of house, for example). However we note that in T2, the outsourced supplier cleans passenger retail areas as well as back of house (which includes offices) so the standard required would not be different from other front of house areas.
- I Our analysis of the relationship between daa costs and passenger growth indicates that cleaning and facilities costs are not strongly linked to passenger growth. This aligns with the daa's view as well as our experience at other airports.

Cleaning costs vs benchmark range (€m, 2013 prices)



Source: daa data, publicly available airport benchmark data (UK CAA published reports), Steer Davies Gleave analysis

Cleaning & facilities cost per FTE (€000, 2013 prices)

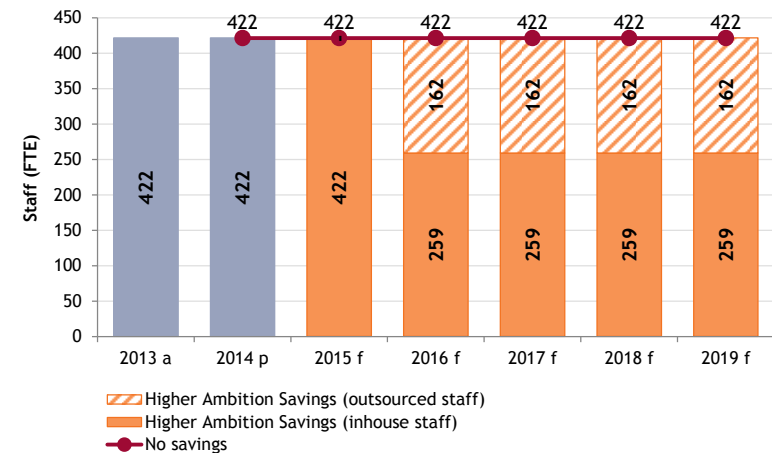


Source: daa data, Steer Davies Gleave analysis

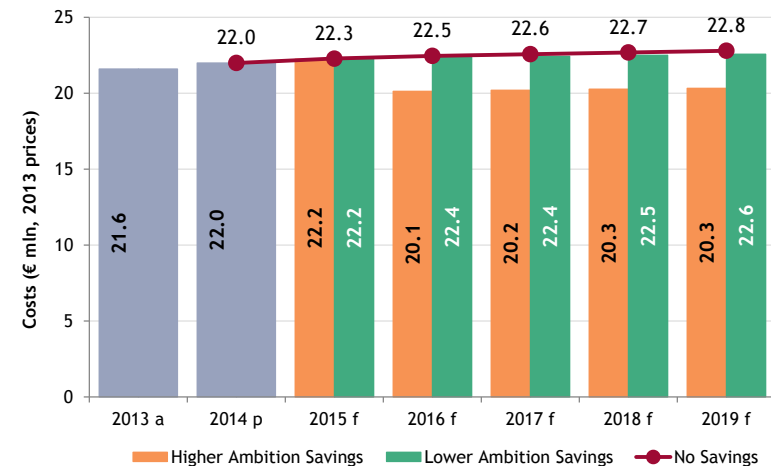
## Outsourcing the Terminal 1 facilities and cleaning functions leads to significant cost savings.

- I We propose that the higher unit rate T1 cleaning and facilities staff are outsourced in 2016.
- I Staff salary unit cost savings resulting from outsourcing lead to cost savings of approximately €2.4 million p.a. from 2016.
  - We consider this to be a “higher ambition” saving.
  - As a “lower ambition” saving, we consider it reasonable for salaries of legacy staff to remain constant in real terms.
- I There is no elasticity to passenger growth so staff numbers are not forecast to increase as passenger volume grows over the period.
- I No changes to T2 cleaning/facilities staff or airport and terminal operations are proposed that result in any cost savings. We note that daa may restructure the Airport Control Centre over the next regulatory period which may result in efficiencies in airport and terminal operations staff, but this has not been modelled.
- I Price drivers:
  - Outsourced T1 costs: staff cost driver
  - T2 and other facilities costs: Dublin staff costs (new contracts).

Facilities & cleaning staff numbers (FTE, proposed savings)



Facilities & cleaning costs forecast (€m, 2013 prices, proposed savings)

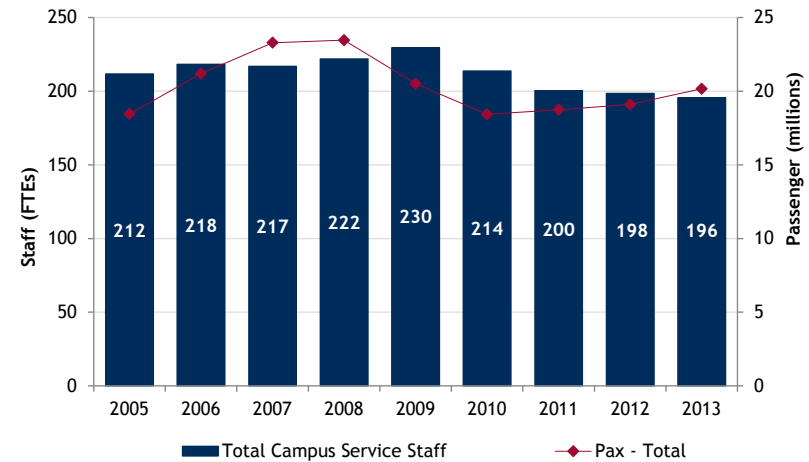


Source (both charts): daa data, Steer Davies Gleave analysis

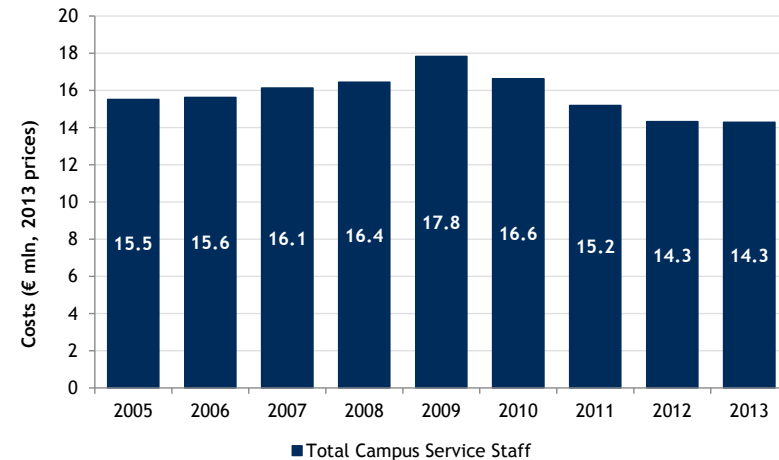
## Campus service staff costs have benefitted from four years of continuous efficiency improvements.

- Campus service staff provide airport police and fire services and airport central administration services (store and VIP areas, fire safety, work permits).
- Costs in 2013 were €14.3 million, and comprise primarily Police and Fire staff, with a small team of Support Services staff. The total costs in the current regulatory period to date (2010-2013) are €59.3 million (2013 prices).
- Campus service costs have decreased from a high of €17.8 million in 2009 to €14.3 million in 2013, a CAGR of -5.4%.
- Airport police perform the same function as the Garda Síochána, but within the boundary of Dublin Airport. They have the power to stop, search and detain people and provide immediate first response to any airport issues.
- daa has undertaken a Task and Resource Analysis (TRA) for fire and rescue services (Dublin Airport is a category 9 airport). The TRA has been undertaken in recent years only, and determines the resource requirements for the worst possible scenario outcomes, based on events over the past 5 years.
- No additional staff were recruited following the opening of Terminal 2 at the end of 2010.

**Campus service staff and passenger numbers**



**Campus service staff costs, Dublin airport (€m, 2013 prices)**

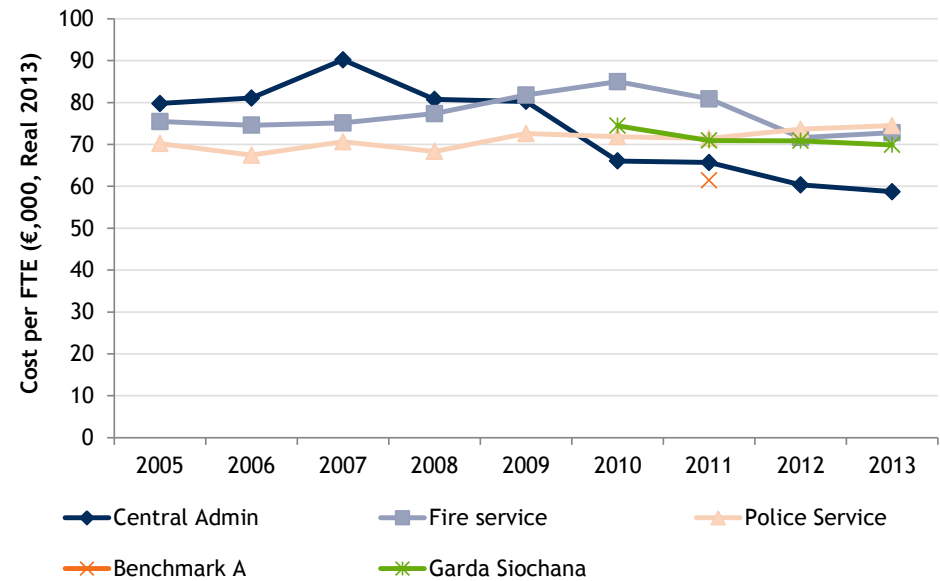


Source (both): daa data, Steer Davies Gleave analysis

## Police and fire costs per FTE at Dublin Airport are equivalent to Garda Siochana averages.

- In 2012 and 2013 police and fire service cost per FTE at Dublin Airport was very similar to Garda Siochana estimated cost per FTE (average weekly earnings based on data from the Central Statistical Office and pension assumptions from the Garda Representative Association).
- We note that Central Admin costs have decreased over the period (-7.5% CAGR over 2009-2013). This is in part due to a particularly high attrition rate due to staff members taking voluntary severance in 2008 and 2010.
- Police costs per square metre at Dublin Airport compare well with other airports in our experience.
- daa told us that new EASA security requirements are not expected to impact on staff numbers as they are compliant with ICAO Annex 14.
- We were also informed by daa that the EU Article 15 Inspection at the end of 2011 resulted in some deficiencies identified which may result in additional police and fire FTEs, but that this was not certain. We have not therefore included this requirement in our forecast.

**Campus Services cost per FTE (€m, 2013 prices)**



Source: daa data, Central Statistical Office, Garda Representative Association, Steer Davies Gleave analysis

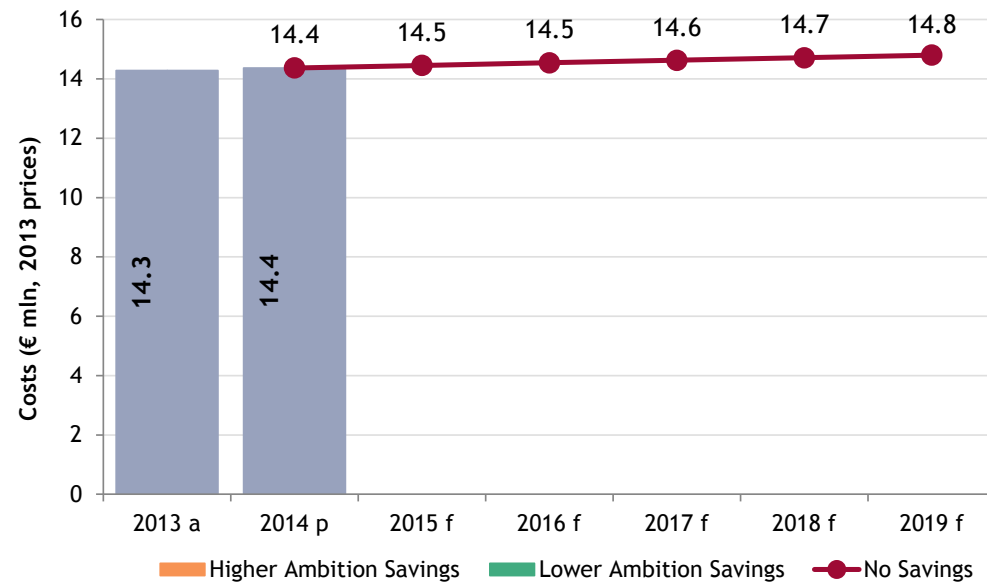
**Campus Services attrition rates (2008 - 2013)**

	Avg Attrition p.a.	Rate/FTE
Central Admin	1.76	13%
Fire service	2.00	2%
Police Service	2.83	3%

## Campus Services costs are forecast to increase in line with assumed general staff salary increases at Dublin Airport.

- Police unit cost per FTE was in line with Garda Siochana benchmarks and other airports.
- No direct benchmark for fire unit costs per FTE however these were in line with police unit costs at the airport, as well as Garda Siochana.
- Central Admin staff costs have seen a significant decrease (-7.5% CAGR over 2009-2013) and we do not consider further step-efficiencies are required.
- Our forecast therefore is that Campus Services costs increase in line with general staff salary increases at the airport.
- No clear /consistent relationship between passenger numbers and staff numbers was found, so no elasticity to passenger growth has been applied.

**Campus Services forecast (€m, 2013 prices)**



Source: daa data, Steer Davies Gleave analysis

## Retail staff costs have declined over the current regulatory period to date, despite the opening of Terminal 2 and associated retail outlets.

- Retail staff costs in 2013 were €10.9 million (2013 prices).
- Average costs per annum have decreased from highs of €15.1 million in 2009 to €10.9 million in 2013, a CAGR of -7.9%, despite the opening of Terminal 2. This is primarily due to a significant reduction (-87 FTE or -45%) in the number of Retail staff in Terminal 1 between 2009 and 2013. Terminal 2 retail staff were hired at significantly lower rates than the legacy Terminal 1 staff (-40% on average in 2013). Rostering for T2 staff is also more flexible and efficient than T1.
- daa's retail operation is divided into two streams:
  - Direct: sales of traditional duty free goods (primarily alcohol, tobacco, perfume, cosmetics and confectionary) managed by Aer Rianta International (ARI), a subsidiary of daa. For Dublin Airport retail operations ARI report into daa.
  - Concession: sales of other goods, such as clothing and electrical goods, are outsourced to specialist retailers for a fee. daa staff manage the concession relationships and opex costs relating to concessioned retail areas (e.g. cleaning are recharged).
- The Retail Logistics team manage Masterlink (which runs the warehouse, an outsourced function), as well as order processing and supplier relationships. Staff numbers in this area have significantly decreased over the past regulatory period, due to 25 FTE taking voluntary severance.



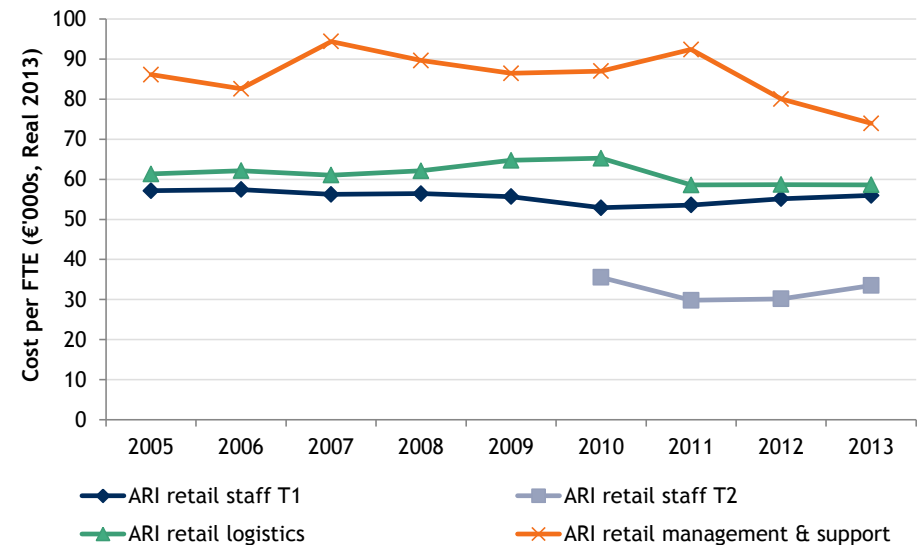
Source: daa data, Steer Davies Gleave analysis.

Note: Retail-legacy staff category includes T1, logistics and retail management and support staff.

## Retail staff in Terminal 2 are more efficient than Terminal 1 retail staff in terms of FTEs per transaction, while Terminal 1 staff cost per FTE is 60-70% higher.

- I Retail staff costs per FTE for Terminal 1 and logistics staff have remained approximately constant over the period. Management and support staff cost per FTE has decreased, for the most part this occurred after 2011 (-10.5% CAGR); we understand this is linked to the voluntary salary reductions daa staff took rather than voluntary severance, as there were not a high number of staff taking this option in this area.
- I Terminal 1 retail cost per FTE is 60-70% higher than Terminal 2 retail staff. Retail logistics staff cost per FTE is approximately equivalent to Terminal 1 retail staff.
- I The average number of transactions per passenger in 2013 was approximately the same in both terminals. T2 has fewer tills than T1 (22 vs 38) and they are open for less time (13 hours/day vs 16)
- I The retail operation in Terminal 1 is less efficient than in Terminal 2.
  - After making a minor adjustment to control for passenger numbers, in 2013 T2 staff performed 25% more transactions per FTE than T1
- I daa informed us that T2 retail staff are on more flexible rostering than T1. T2 retail staff full time hours is 40 hours per week; for T1 staff this is 38.5 hours per week (the majority of staff are full time staff). Terminal 2 staff have open rosters and a minimum shift length of 4 hours.

**Retail staff cost per FTE, Dublin airport (€m, 2013 prices)**



Source: daa data, Steer Davies Gleave analysis

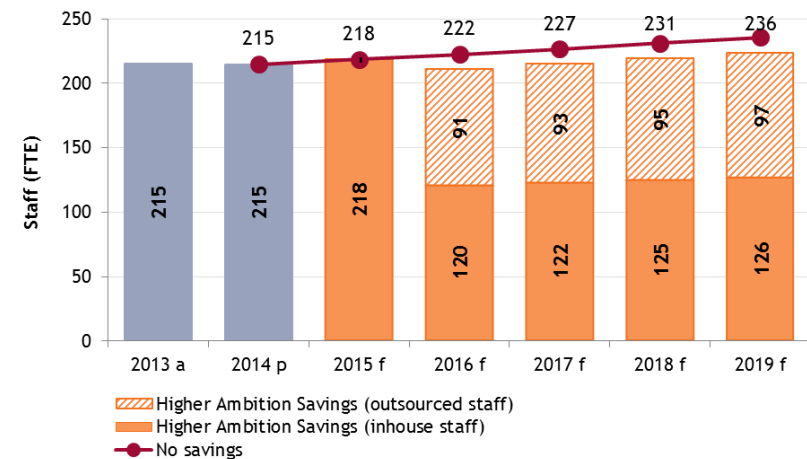
- I In 2011 and 2012, Retail management costs (including management and logistics staff) were 4.2% of the total “direct retailing and retail/catering concessions” revenue as published in the Regulatory Accounts. This is higher than the 1.4% to 3.6% benchmark range that was made available to us in confidence.



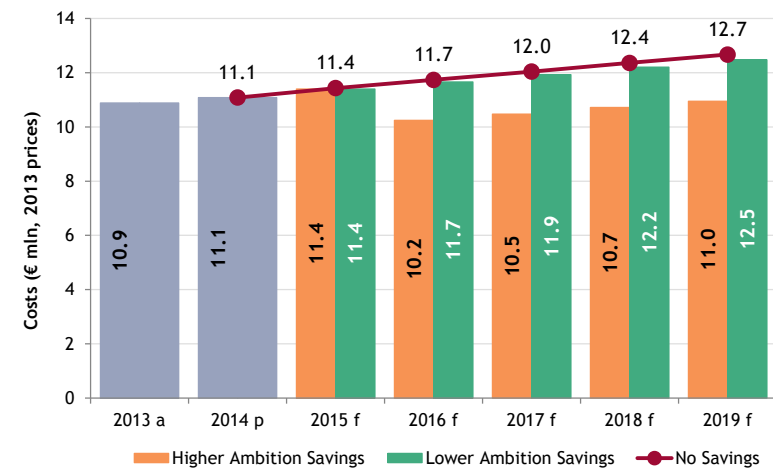
## Efficiencies in retail staff costs are available by increasing throughput rates in Terminal 1, as well as by reducing the unit rate of the more expensive Terminal 1 retail staff.

- Significant savings can be achieved both by improving processing efficiency in Terminal 1 to a level closer to that in Terminal 2 and by bringing salary cost per FTE in T1 down to T2 levels. This can be achieved by outsourcing the T1 function.
- Recognising that the different layout of T1 may account for some of the throughput differential to T2, we consider that it would be reasonable for T1 efficiency (measured in transactions per FTE) to move halfway towards the T2 2013 levels. This results in a reduction of 11 FTEs in T1 in 2016. We assume this reduction is made by 2016, following a procurement exercise.
- Retail activity is directly related to the number of passengers coming through the airport; we have therefore applied an elasticity of 0.7 to terminal-based retail staff numbers in relation to passenger growth. No elasticity is applied to management and logistics staff numbers.
- Most retail staff salaries are forecast to grow at the general staff salary increase. However the higher Terminal 2 staff cost driver is applied for T2 retail staff, and the skilled staff salary driver applied to retail management and support staff.
- Whilst management costs as a percentage of retail revenue are slightly higher than available benchmarks, we do not consider that savings are feasible as the in-house ARI operation at Dublin Airport would result in some economies of scale not being available to daa.
- Our proposals result in an efficiency saving of approximately €1.4 million per annum from 2016 onwards. We consider this to be a “higher ambition” saving. A “lower ambition” saving would be for salaries to be held constant in real terms for legacy staff.

Retail staff numbers (FTE, proposed savings)



Retail staff cost forecast, (€m, 2013 prices, proposed savings)

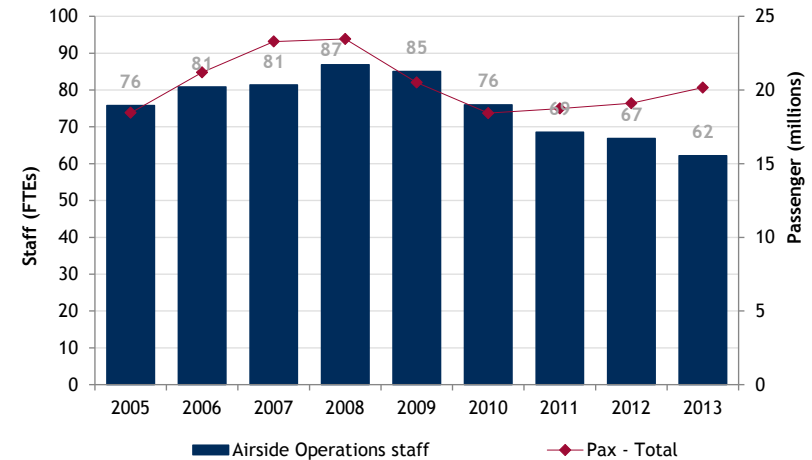


Source: daa data, Steer Davies Gleave analysis

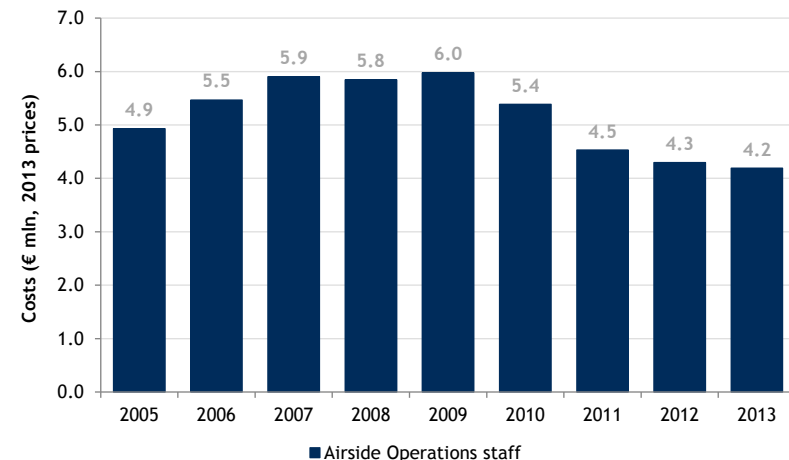
Airside operation staff numbers have decreased significantly since 2009, primarily due to a high voluntary severance uptake.

- Airside operations costs in 2013 were €4.2 million (2013 prices)
- Between 2009-2013, costs have decreased at an average annual rate of -8.5% to a low of €4.2 million in 2013 (2013 prices). This reduction is primarily driven by a significant number (25 total) of staff taking voluntary severance.
- Airside operation staff tasks include: Stand and gate allocation, airside management unit, airside safety, airside services and facilities management and outdoor cleaning
- daa noted that the majority of Airside operations staff are 'legacy' staff and that (voluntary severance excepted) there is little movement in this area, as many tasks are specialist.

**Airside operation staff (FTEs)**



**Airside operation staff, Dublin airport (€m, 2013 prices)**

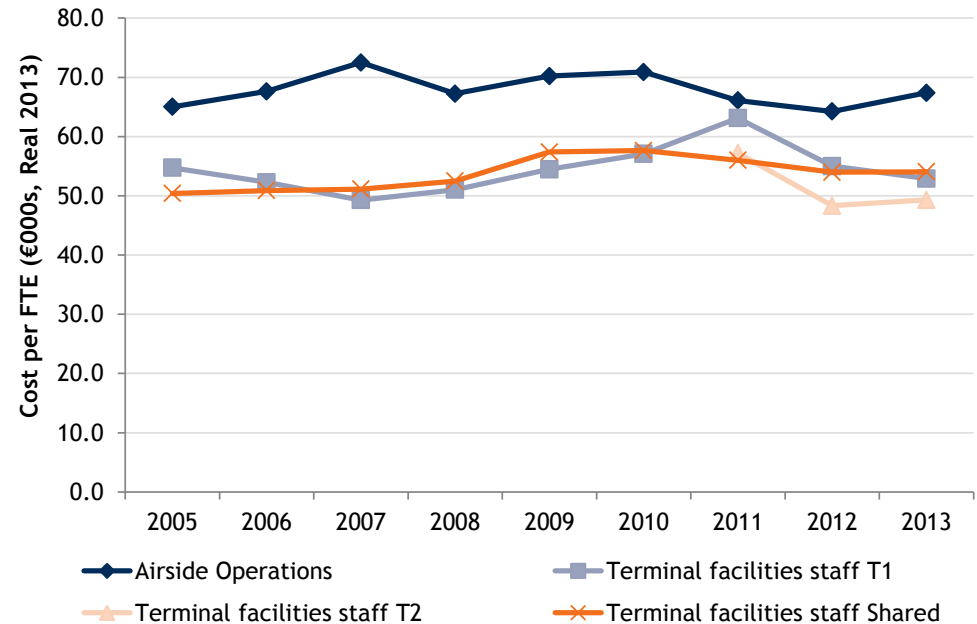


Source: daa data, Steer Davies Gleave analysis

The average cost per FTE for airside operation staff in 2013 is approximately 30% higher than the average of other facilities functions across the airport.

- I We have compared the average cost per FTE against the other facilities staff at Dublin Airport.
  - Airside operation staff undertake tasks including stand and gate allocation, airside management unit, airside safety, airside services and facilities management and outdoor cleaning.
  - Facilities staff undertake trolley collection, forecourt management, taxi rank tasks (T1 facilities) as well as the more highly skilled airport and terminal operations and centre tasks (terminal management, customer support, queue & baggage systems management, PRM contract management) (T2 and shared facilities staff groups)
  - Airside operations staff cost per FTE is 29% higher in 2013 than average facilities cost per FTE
  
- I The average cost per FTE for airside operations staff reduced slightly in the early part of the regulatory period. However 2013 saw cost per FTE increase by +4.9%.
  
- I On a unit cost basis, the average cost of airside operations staff per passenger has steadily decreased since 2009 and 2010 highs, and in 2013 was -29% lower than the 2009 unit cost (with approximately equivalent passenger numbers)

**Airside Ops vs Facilities staff cost per FTE, (€m, 2013 prices)**

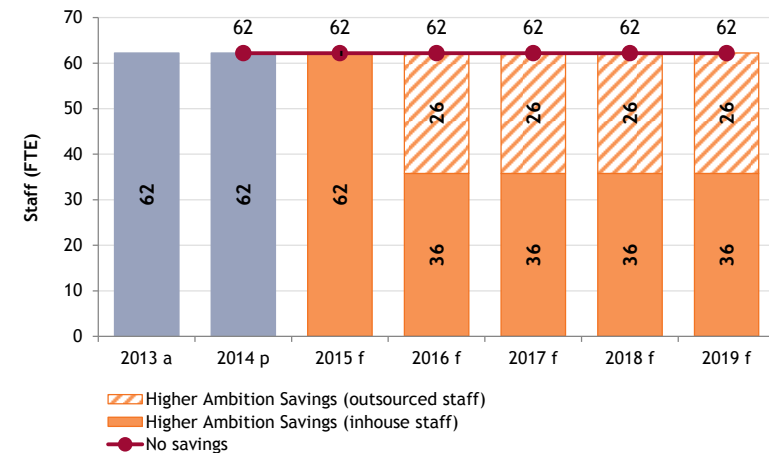


Source: daa data, Steer Davies Gleave analysis

Some airside operations roles are equivalent to facilities and cleaning and could be outsourced, leading to savings of €0.5 million per annum.

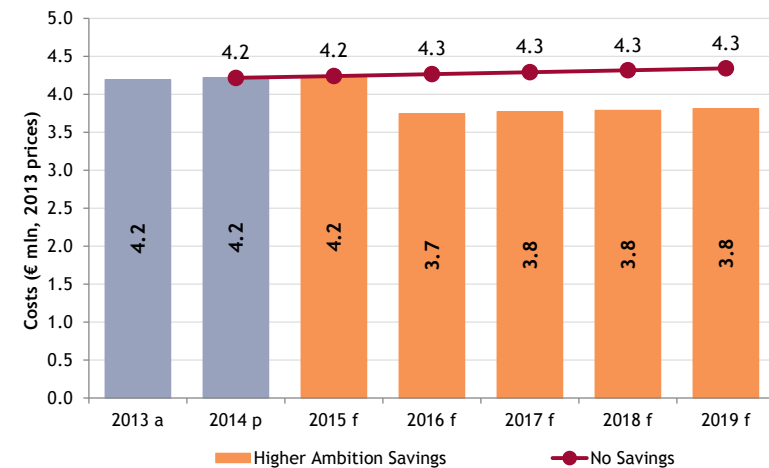
- I We note that there are 28 Facilities and Cleaning roles in Airside Ops undertaking Airside and landside cleaning, debris, snow & ice tasks
  - Source: booz & co Opex Efficiency Review, Dublin Airport, January 2014.
  
- I We consider that the skill level required for these roles is similar to that for other facilities tasks that we propose to outsource (trolley collection, forecourt management, see Cleaning and Facilities slides) and that these staff members (adjusted for the mix of legacy and new contract staff in the airside operations staff group) could therefore have their unit cost reduced to that of Terminal 2 Cleaning and Facilities staff members.
  
- I This results in an average saving of approximately €0.6 million per annum.
  - We consider this to be a “higher ambition” saving.
  
- I Airside operations staff salaries are expected to grow in line with the general staff salary driver.
  
- I No elasticity to passenger growth is applied.

**Airside Operations staff cost forecast (FTE)**



Source: daa data, Steer Davies Gleave analysis

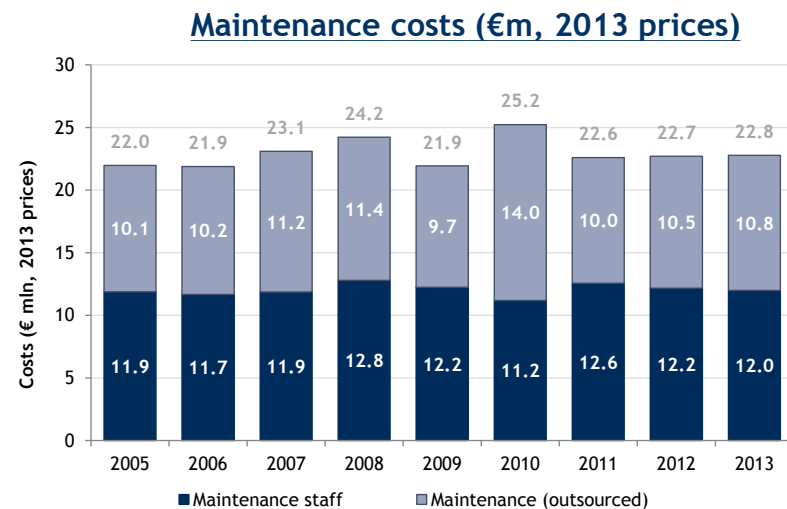
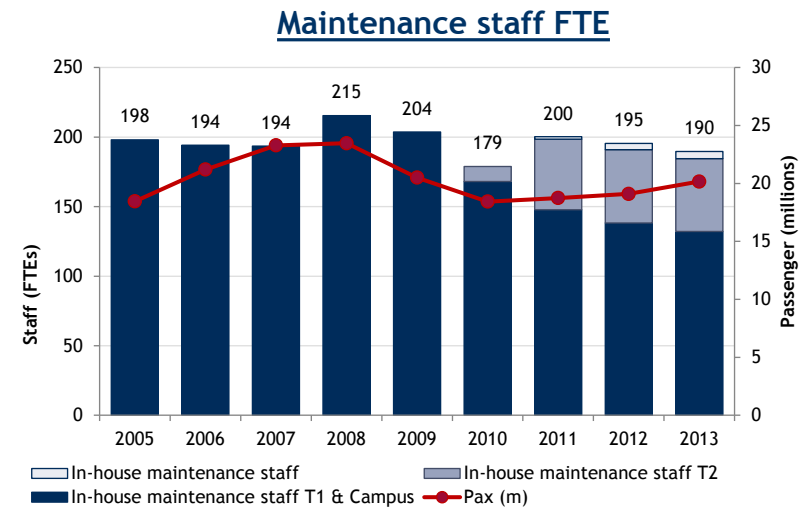
**Airside Operations staff cost forecast (€m, 2013 prices)**



Source: daa data, Steer Davies Gleave analysis

## Maintenance costs have remained roughly constant in real terms since 2005.

- Maintenance costs rose between 2006 and 2008 as passenger traffic increased, but fell back as a result of savings made in the Cost Recovery Programme in 2009. Costs rose again with the opening of Terminal 2 in 2010, but then fell back again the following year. In real terms maintenance costs have been close to constant since 2011.
- Maintenance costs are divided roughly equally between staff and external suppliers - at other airports the outsourced element is typically larger.
- Staff numbers have followed a similar pattern to overall costs, except that numbers have fallen each year since 2011. Staff in Terminal 2 have been recruited on lower salary rates than “legacy” staff, although the difference in rates is not as great as for other staff groups.
- The evolution of staff numbers and overall maintenance costs unsurprisingly shows little correlation with passengers numbers. The new Terminal 2 facility does not appear to have pushed costs upwards (except in the first year), which may reflect the high quality of the new assets. Over time, T2 maintenance spend can be expected to increase.

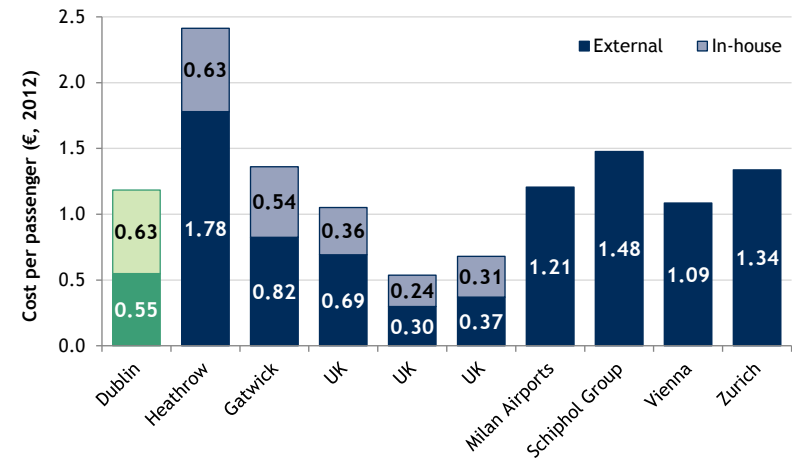


Source: daa data, Steer Davies Gleave analysis

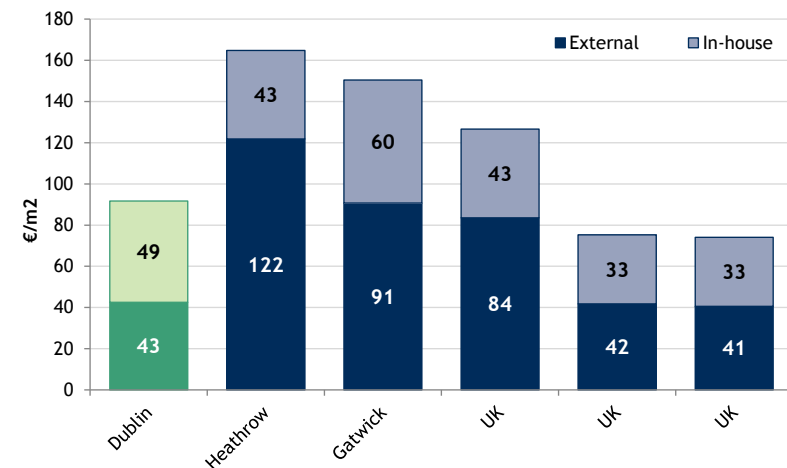
## Dublin's maintenance costs appear to be intermediate compared with international comparators.

- Maintenance costs are generally driven by the quantum and quality of an airport's physical assets, for which the area of terminals is a reasonable proxy. However, costs per passenger are more easily obtained and based on robust numbers, so are also worth reviewing. Published airport accounts only include external maintenance costs, with in-house maintenance costs hidden in overall staff costs.
- In terms of the sophistication of its infrastructure, Dublin with two terminals connected by a walkway and with two runways is intermediate between some of the comparators, some being single terminal and others multiple with people-mover connections, and with varying numbers of runways.
- Based on this, the charts show that Dublin's unit maintenance costs appear reasonable compared with larger international comparators, on both a per-passenger and per-terminal area basis. The unit costs are similar to, or slightly higher than the undisclosed UK airports.

Maintenance costs per passenger



Maintenance costs per terminal area comparison

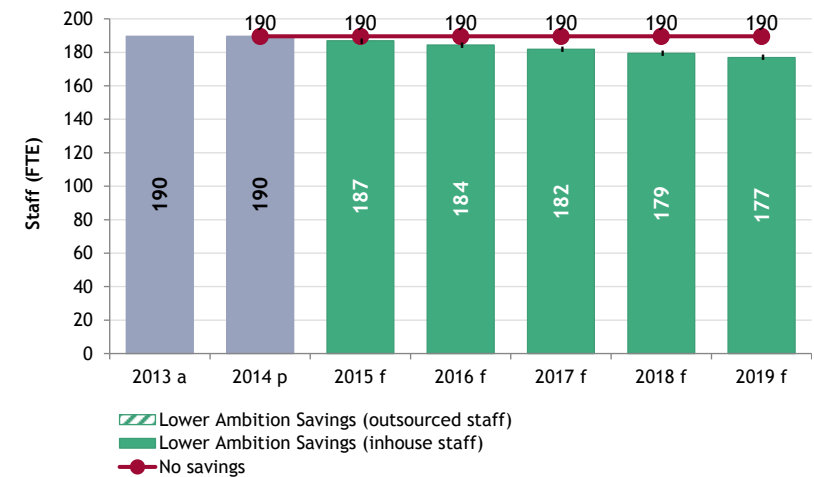


Source: daa data, UK CAA published reports, airport accounts, Steer Davies Gleave analysis

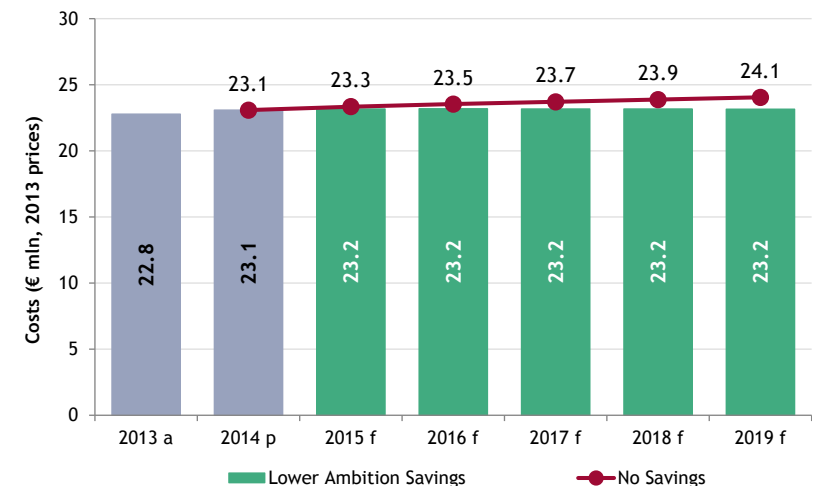
Greater workflow efficiency can be realised only gradually through attrition of staff, leading to overall savings of 3.7% (€0.9 million) by 2019.

- Discussions with daa management indicate that the current programme to introduce lean workflow methodology should improve productivity by 10-15%.
- The unit costs of Terminal 1 staff are at a 15% premium on those on “new” contracts, although there is upward pressure on skilled salaries and this differential is declining.
- Unlike some other work areas, the opportunity to outsource the maintenance activity is weak, due to likely TUPE implications.
- About 24% of Terminal 1 maintenance staff are over 50, so we assume that 10% of these staff will leave through natural wastage in the next few years.
- With the productivity improvements, it should be possible to avoid replacing these staff. We have assumed a reduction of 2% of T1 staff per year.
- Terminal 1 Staff salaries are assumed to increase at 1.4% in 2014 rising to 2.3% p.a. from 2017 (in nominal terms). Terminal 2 salaries are assumed to have additional increases on top of these of 5% in 2014, 3% in 2015 and 1% in 2016, reflecting lower levels of seniority in this staff group and wage pressures (leading to a “catch-up” of wage rates).

**Maintenance staff numbers (FTE, proposed savings vs. no action)**



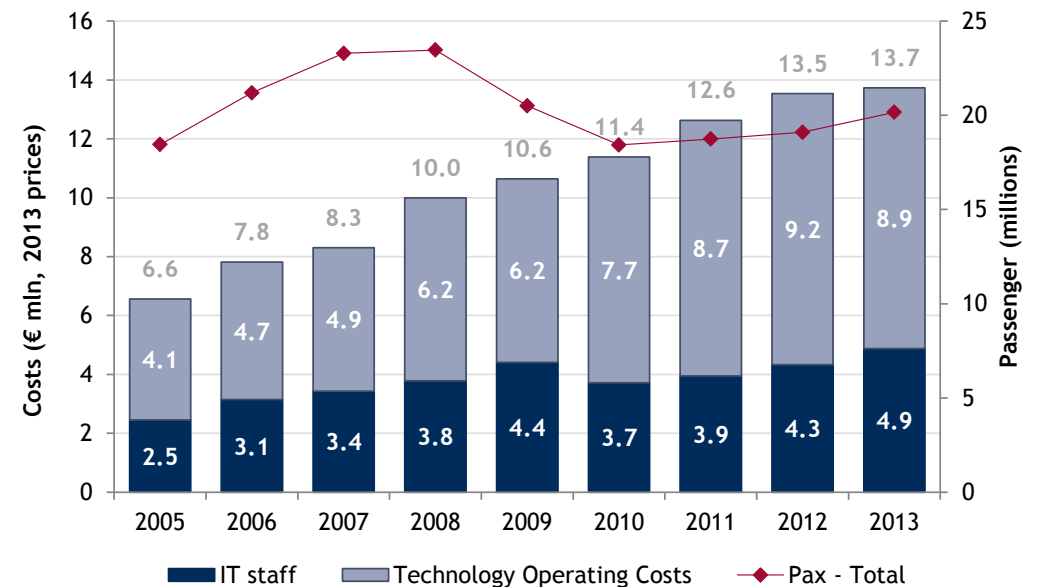
**Maintenance costs (€m 2013 prices, proposed savings vs. no action)**



## IT & technology operating costs have grown rapidly in recent years.

- IT staff and technology operating costs together have increased very rapidly in recent years, with a CAGR of 10% p.a. in real terms between 2005 and 2010, to reach €13.7 million in 2013.
- The increase in IT costs appears not to be connected with the number of passengers at the airport, with IT costs per passenger rising from €0.36 in 2005 to €0.66 in 2013.
- According to daa management, the entry of Terminal 2 into service in 2010 led to an increase in operating costs of between €1.8 and €2.0 million p.a., due to the new systems which were introduced.
- [✂].

IT & technology, Dublin airport (€m, 2013 prices)



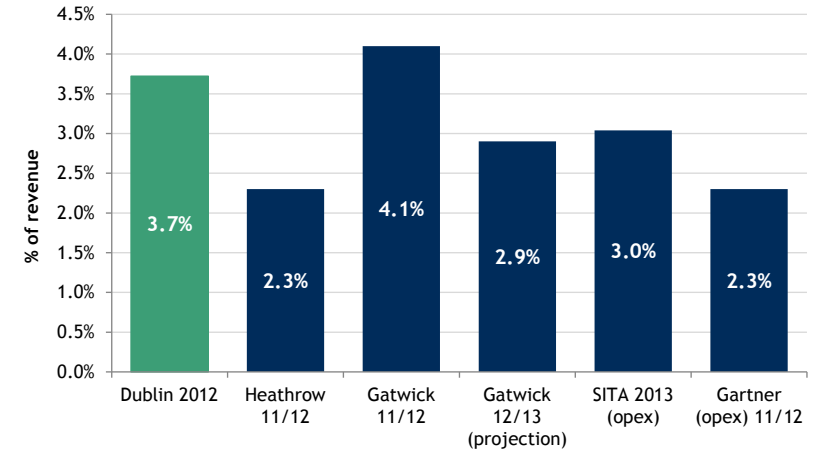
Source: daa data, Steer Davies Gleave analysis



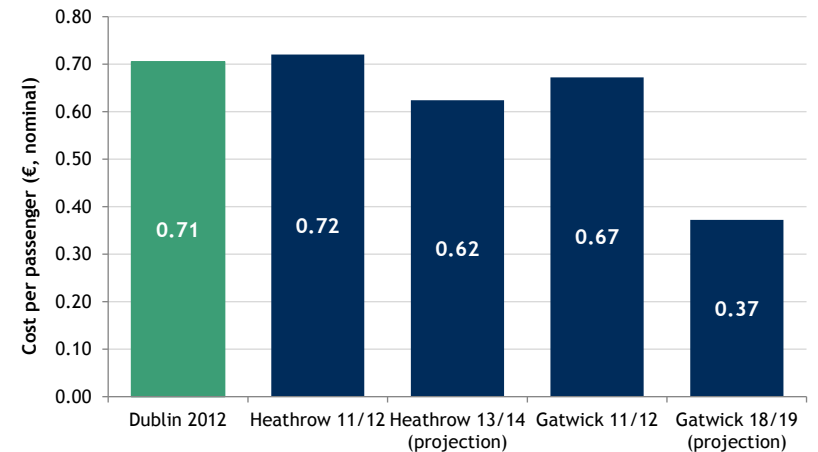
## IT & technology operating costs at Dublin appear high compared with benchmarks.

- Benchmarks for airport IT operating costs are available from SITA as well as the UK CAA's consultant's studies on Heathrow and Gatwick Airport, which also quotes a wider industry benchmark from Gartner. Because the focus here is on opex, not capex, the opex element of the SITA benchmark (IT spend as percentage of revenue) was used, and an adjustment made to the Gartner benchmark). We also looked at IT operating costs per passenger at Dublin and the equivalent current and the airports' respective future projections at LHR and LGW.
- Dublin's IT operating costs (IT staff and Technology Operating Costs) appear to be somewhat higher than benchmarks in relation to revenue, especially given that Dublin's revenue includes direct retail revenues.
- In terms of IT operating costs per passenger, Dublin performs similarly to Heathrow and Gatwick, but both the latter were anticipating significant reductions in this metric (for LHR from 0.72 to 0.62 by 2013/14, -7% CAGR; for LGW from 0.67 to 0.37 by 2018/19, -8% CAGR).

**IT Operating Costs as Percentage of Revenue**



**IT Operating Costs Per Passenger**



<http://www.caa.co.uk/docs/78/Helios%20-%20Central%20Support%20Cost%20Report%20-%20Heathrow%20-%20Redacted%20for%20public.pdf>

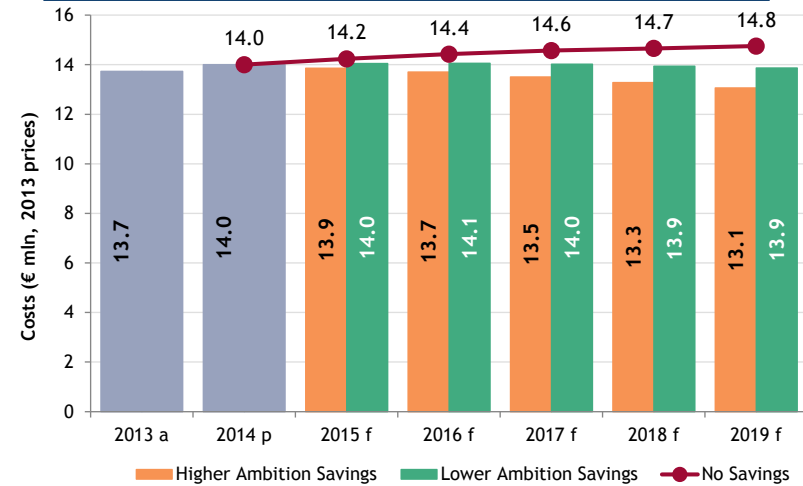
<http://www.caa.co.uk/docs/78/Helios%20-%20Central%20Support%20Cost%20Report%20-%20Gatwick%20-%20Redacted%20for%20public.pdf>

Source: daa data, UK CAA Published Reports, Steer Davies Gleave analysis

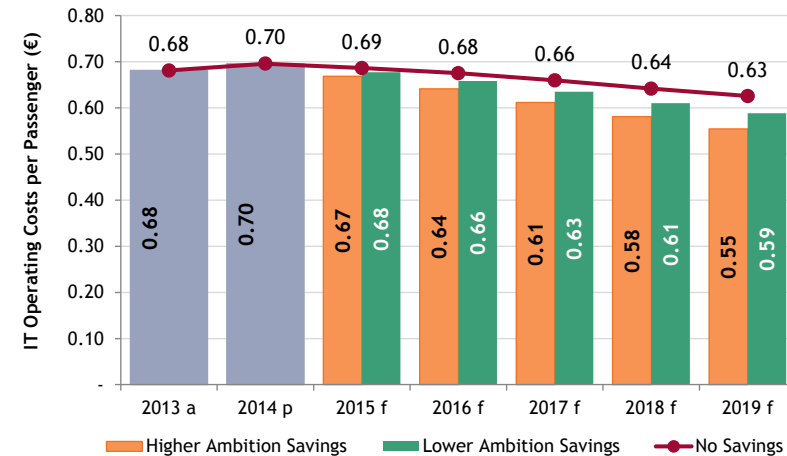
## IT & technology costs savings through more competitive procurement lead to savings of €1.7 million by 2019 (11%), despite strongly rising salary costs. IT operating costs per passenger fall to levels within benchmark range.

- The IT jobs market is strong and we expect that IT salaries will continue to rise significantly faster than typical rates in other sectors. We have assumed nominal-terms increases of 6% in 2014 declining gradually to 3% in 2018 (thereafter at 3%). We have assumed IT staff FTE remain unchanged.
- However benchmark analysis indicates that Dublin's IT costs are higher than is achieved at other airports, indicating an opportunity for cost reduction.
- The expansion in the airport in recent years, with Terminal 2 coming on stream has significantly increased costs, but the opportunity now exists to rationalise systems and squeeze costs out, as daa has already achieved in some areas. This would primarily be through competitive tendering for suppliers.
- We have assumed that technology operating costs will fall by 5% p.a. CAGR from 2015, before inflation, based on improved procurement. This is slower than the rate of reduction forecast for LHR and LGW (7 to 8% p.a.). Our lower ambition forecast assumes 2.5% p.a. reduction.
- IT operating costs are €1.7 million lower by 2019 than without these savings (lower ambition, €0.9 million). IT operating costs per passenger fall to €0.56 (lower ambition, €0.59, no savings €0.63), within benchmark expectations.

IT Operating Costs €m 2013 prices, proposed savings



IT Operating Costs Per Passenger (€ 2013 prices)

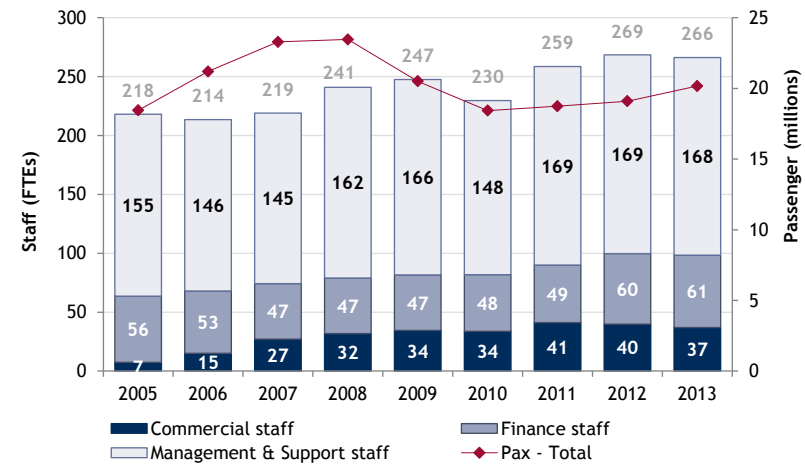


Source: daa data, Steer Davies Gleave analysis

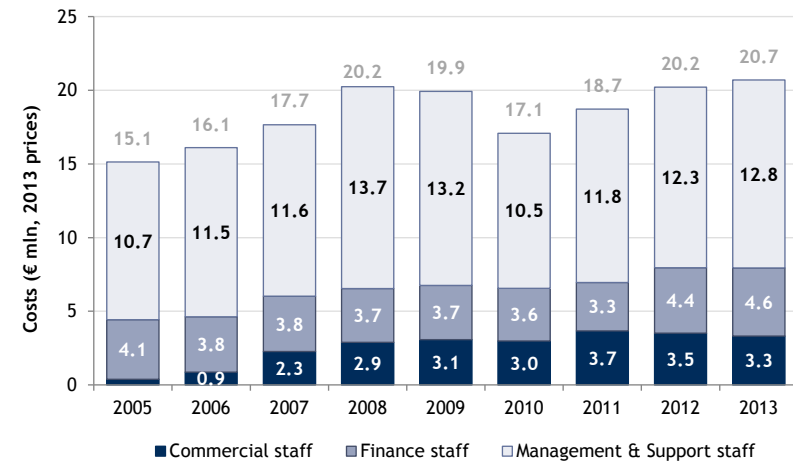
## Management & support staff costs have increased significantly since 2010.

- Central functions staff include Management & support staff, Finance Staff and Commercial Staff. The data analysed relate to Dublin airport only (the shares for Shannon and Cork airports having been removed).
- Central functions staff have generally risen throughout the period since 2005, apart from a reduction in 2010 and a slight fall in 2013.
- The number of central functions staff per million passenger rose from 11.8 in 2005 to 13.2 in 2013, while, the costs of central functions staff per passenger rose from €0.81 in 2005 to €1.02 in 2013.
- This increase is driven by the growth in all three staff categories. The increase in the Commercial function may be consistent with associated revenue generation.

**Central Functions Staff, Dublin airport (FTE)**



**Central Functions Staff Costs, Dublin airport (€m 2013)**



Source: daa data, Steer Davies Gleave analysis

Central staff numbers at Dublin Airport (including Finance, IT, HR, Communications, Strategy and Airport Management) appear very high in comparison with the corresponding numbers at Gatwick.

While benchmarks for the central functions are not generally available from published sources, the analysis undertaken by the UK CAA's consultants in the regulatory review of Heathrow and Gatwick does provide some comparators. We consider Gatwick to be an appropriate benchmark, since it is a European two-terminal airport subject to a similar regime to that applied to Dublin, albeit in a different jurisdiction. We have also included Heathrow for information.

In the published report for Gatwick, only summarised central function staff numbers are provided. These include the following categories: Finance, Legal, Communications, Strategy & Regulation, HR, IT and Airport Management. For Heathrow, the data also include Development, Tech. Standards, Regulation, Board/Exec, covering a wider range of activities.

To get comparability, we have therefore excluded Commercial staff at Dublin, but added back IT staff, so that the following are included: Finance, Communications, Strategy & Regulation, Procurement, B2B, Other Support, HR, IT and Airport Management. We have removed a proportion of daa staff related to Cork Airport (approximately 12% in 2012), based on data provided by daa.

### Dublin vs. Gatwick Central Staff Comparison

	Central Staff (incl IT, excl Comm)	Proportion of total staff	Central Staff / million pax
Dublin 2012	265	13.9%	13.9
Gatwick 2012/13	133	5.4%	3.9
Heathrow 2012/13	845	17%	12.0

Source: daa data, UK CAA Published Reports, Steer Davies Gleave analysis

The table indicates that Dublin appears to have a much higher number of central functional staff than Gatwick (about twice as many staff, and more than three times as many on a per passenger basis). Compared with Heathrow the numbers are more similar, but as noted the numbers for Heathrow include important additional functions such as development and technical standards, so the true comparable number would be significantly lower.

Based on this comparison, Dublin appears to have an excessive level of staff in its central functions.

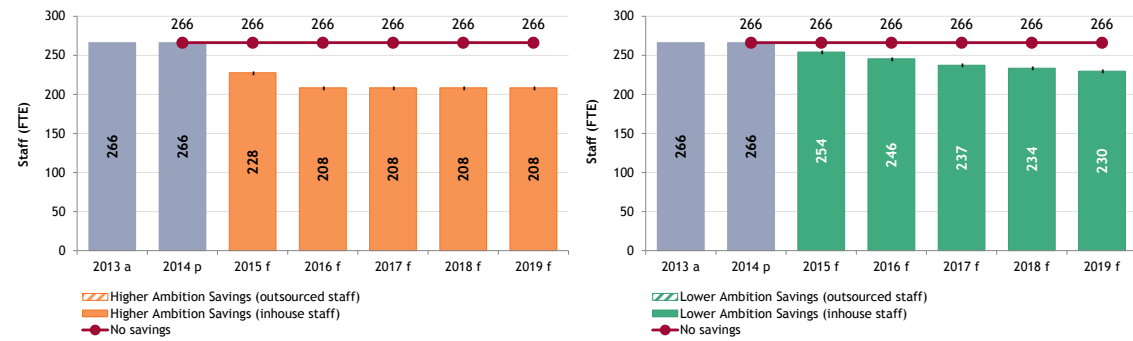
Very significant reductions in the level of management are achievable. Savings rise from €3.0 million in 2015 to €4.8 million in 2019 (lesser ambition savings - from €1.0 million to €3.0 million).

Given the very high level of central function staff compared to Gatwick, as well as its continued growth since 2005, we consider that staff numbers in these functions can be reduced as follows:

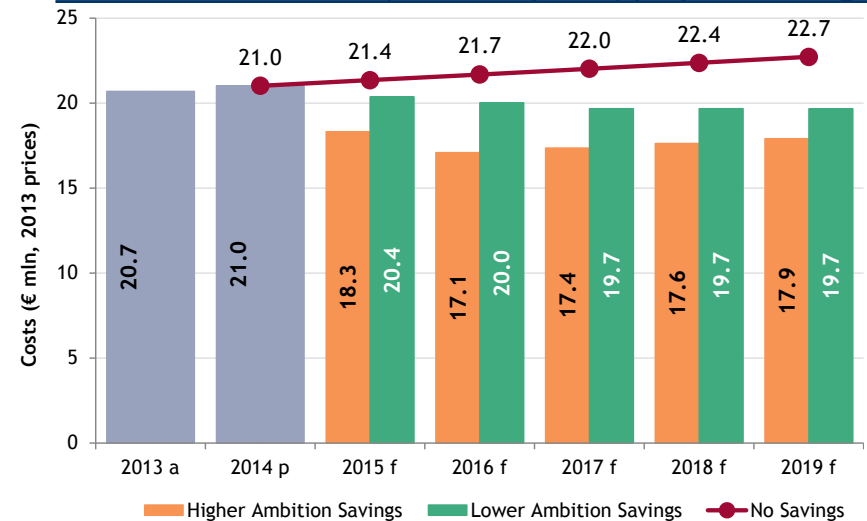
- Commercial staff: reduce to 2010 numbers (34) in 2015 (from 37 in 2013)
- Finance staff: reduce to 2010 numbers (48) in 2015 (from 61 in 2013). Lesser ambition: achieve this over three years.
- Management and Support staff: reduce by 25% to 126 by 2016 (from 168 in 2013). Lesser ambition: reduce to 2010 numbers (148) by 2019.

We have assumed that salary levels will increase at 1% point p.a. higher than general salary levels at the airport, due to pressures in the higher skilled labour market.

Central Functions Staff (FTE, proposed savings)



Central Functions Staff (€ m 2013 prices, proposed savings)

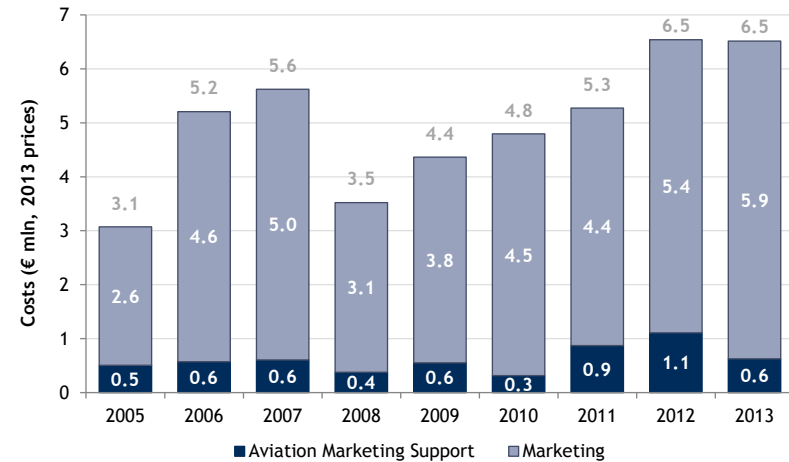


Source: daa data, Steer Davies Gleave analysis

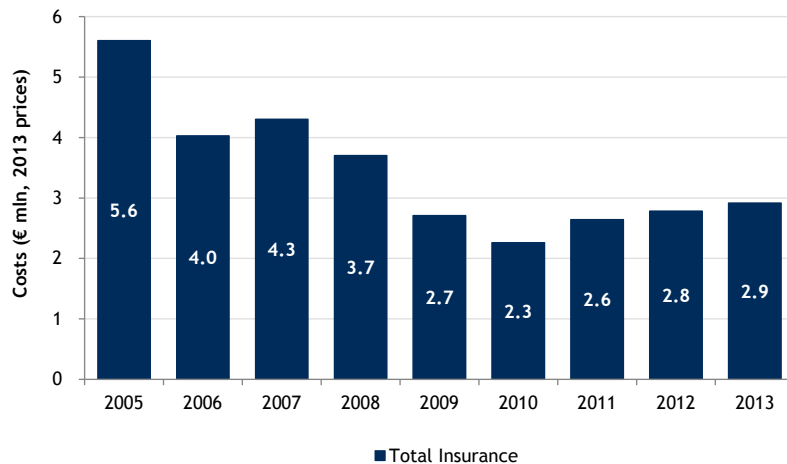
## Marketing costs have risen rapidly in recent years, while insurance and consultancy costs have remained stable since 2010.

- Marketing costs at Dublin have risen rapidly since 2008, with the majority of this related to consumer-facing marketing rather than support for airline route development (aviation marketing support), reaching €6.5 million in 2013.
- Insurance costs have remained reasonably stable since 2010, rising only slowly to just under €3 million in 2013.
- Consultancy costs spiked in 2009 (possibly relating to Terminal 2 opening, staff contract issues and the previous CAR determination), subsequently reverting to historical levels of around €6 million p.a.

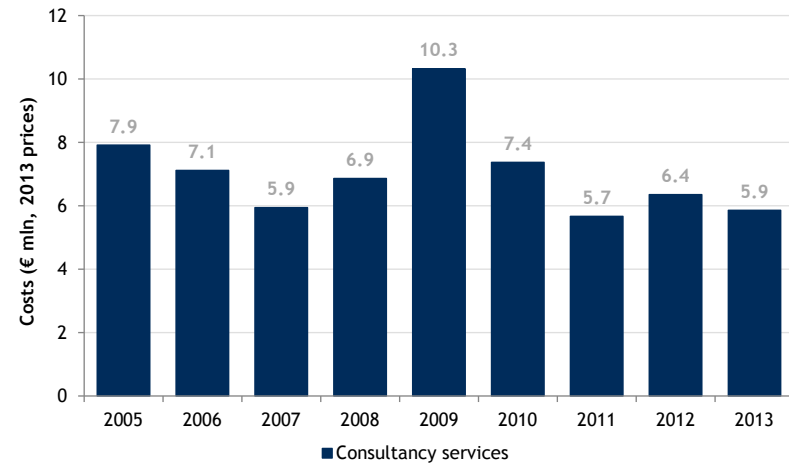
**Marketing Costs, Dublin airport (€m 2013)**



**Insurance Costs, Dublin airport (€m 2013)**



**Consultancy Costs, Dublin airport (€m 2013)**



Source: daa data, Steer Davies Gleave analysis

Insurance and Consultancy costs at Dublin appear to be within benchmark levels. Marketing spend may be on the high side given the lack of competing airports in its catchment.

- Benchmarks for insurance and consultancy spend are available from the analysis undertaken by the UK CAA's consultants in the regulatory review of Heathrow and Gatwick.
- Insurance costs, measured on a per passenger basis at Dublin, appear to be in line with those at Gatwick and significantly below those at Heathrow airport. We therefore consider them to be reasonable.
- Consultancy costs at Dublin are below those at Heathrow airport on a per passenger basis (figures for Gatwick were not available). We therefore consider them to be reasonable.
- Similar benchmarks for marketing spend were not available, but in the ICD Global Airports Survey 2013-14, average marketing spend per airport was US\$4.7 million (€3.4 million), approximately half of that in Dublin in 2013. While Dublin may well be above average size in the sample, the lack of significant competing airports in its natural catchment area tends to argue for a lower rather than a higher spend.

### Insurance Costs Comparison

	Insurance Costs (€m)	Insurance Costs / pax (€)
Dublin 2012	2.8	0.15
Gatwick 2012/13	6.0	0.18
Heathrow 2012/13	19.6	0.28

### Consultancy Costs Comparison

	Consultancy Costs (€m)	Insurance Costs / pax (€)
Dublin 2012	6.3	0.33
Gatwick 2012/13	n/a	n/a
Heathrow 2012/13	29.4	0.42

<http://www.caa.co.uk/docs/78/Helios%20-%20Central%20Support%20Cost%20Report%20-%20Heathrow%20-%20Redacted%20for%20public.pdf>

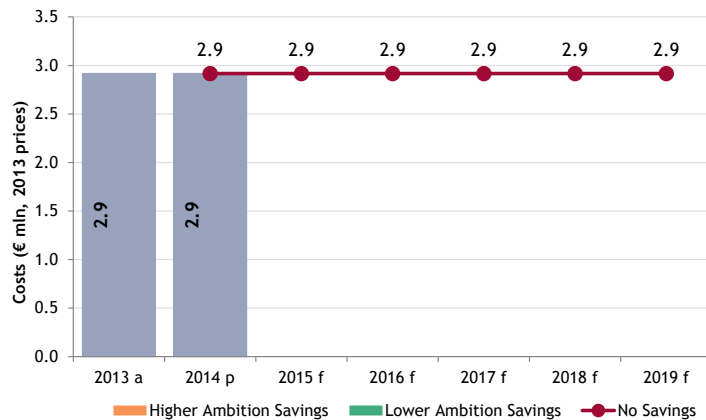
<http://www.caa.co.uk/docs/78/Helios%20-%20Central%20Support%20Cost%20Report%20-%20Gatwick%20-%20Redacted%20for%20public.pdf>

Source: daa data, Steer Davies Gleave analysis

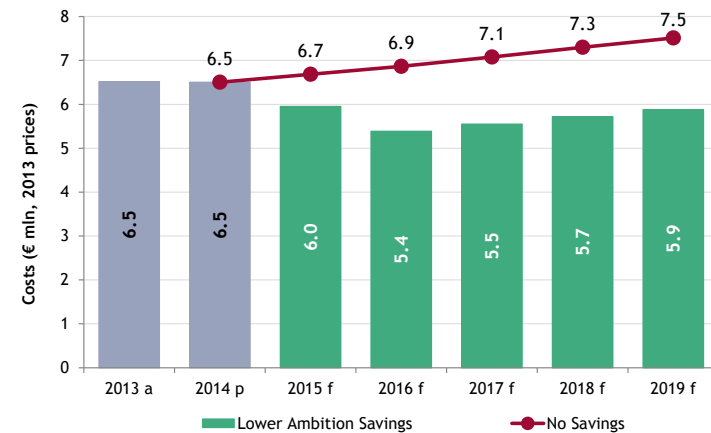
## Marketing costs could be reduced by €1.5 million p.a. by 2016.

- We assume that insurance and consultancy spend at Dublin should remain constant in real terms.
- Given the rapid increase in consumer-focused marketing spend, an indication that spend may be on the high side of benchmarks, as well as the natural monopoly status of the airport in its catchment area (indicating a reduced need for marketing spend), we consider that marketing costs could be reduced to the 2010 level of €5 million p.a., then rising with passenger volumes.
- All three costs rise with CPI inflation.

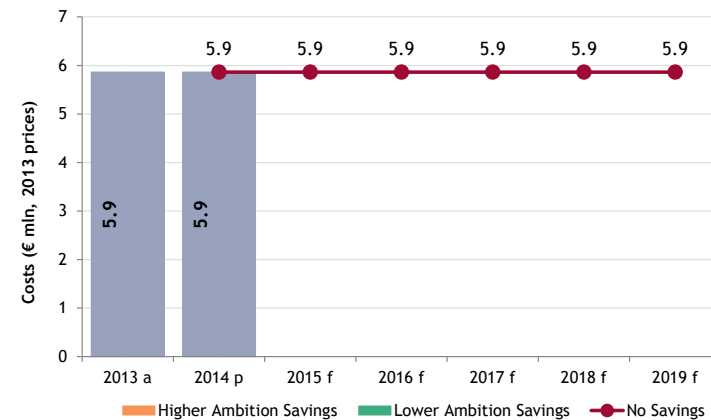
**Insurance Costs, Dublin airport (€m 2013)**



**Marketing Costs, Dublin airport (€m 2013)**



**Consultancy Costs, Dublin airport (€m 2013)**



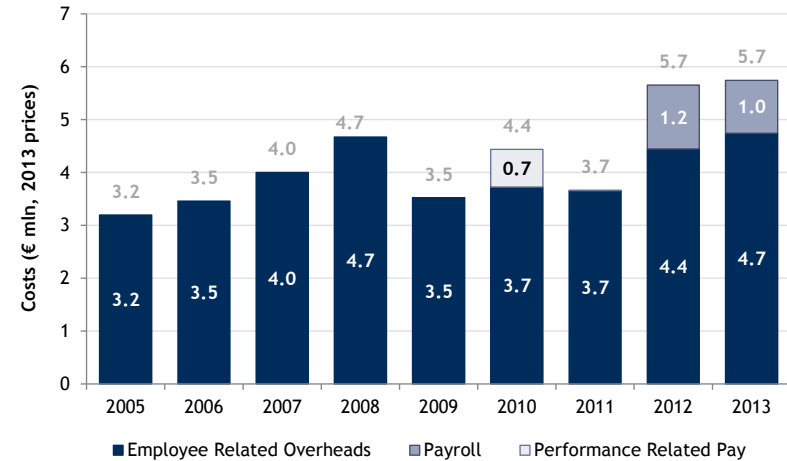
Source: daa data, Steer Davies Gleave analysis



Other staff costs are adjusted downwards reflecting proposed savings from outsourcing of daa staff functions.

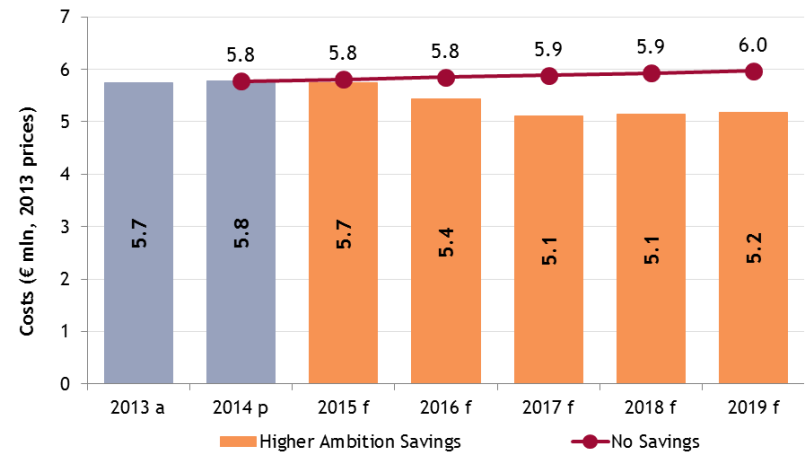
- Other staff costs in 2013 were €5.7 million.
- Other staff costs comprise primarily of employee related overheads (€4.7 million in 2013). Payroll costs were €1.0 million in 2013. Staff bonuses were paid in 2010 only.
- Our forecast for Other Staff costs has been adjusted to reflect the impact of changes in FTE numbers as a result of other proposals. Salary growth assumed is as for general airport staff.
  - no other efficiencies are proposed in this area.

**Other staff costs, Dublin airport (€m, 2013 prices)**



Source: daa data, Steer Davies Gleave analysis

**Other staff cost forecast (€m, 2013 prices)**

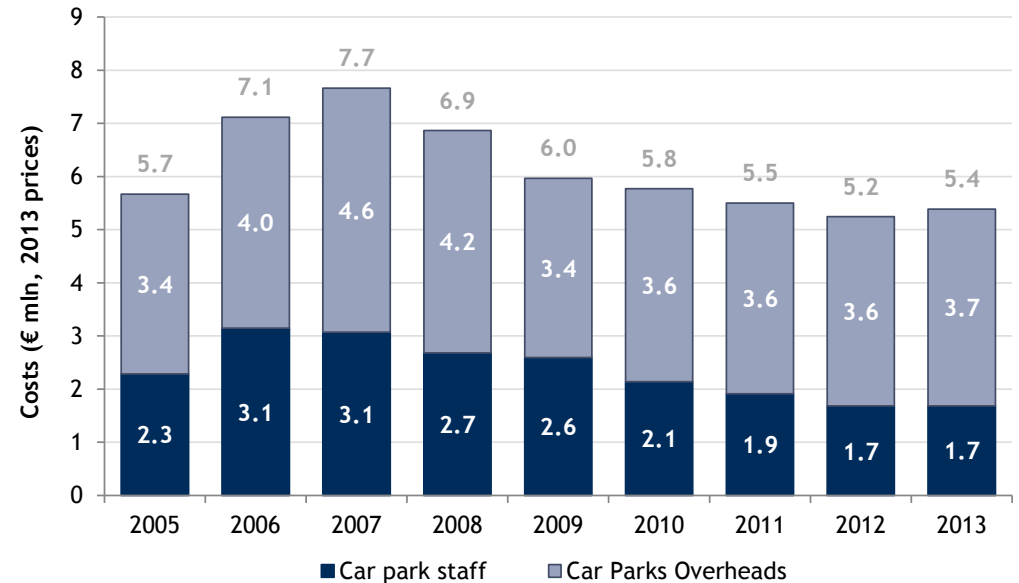


Source: daa data, Steer Davies Gleave analysis

## Car parks costs have decreased since 2009 primarily driven by reductions in car park staff numbers.

- Car parks costs consist of both non-staff costs (primarily the shuttle service between car parks and the airport terminals) and car parks staff costs. In 2013, car parks total costs were €5.4 million.
- daa owns and operates the car parks on the airport site.
- The car park shuttle service contract is tendered on a 5 years basis and is currently being re-tendered.
- Other non-staff car park costs include the CCTV contract, covering CCTC and audio for security support.
- Car park staff handling all parking queries (online, telephone and on-site) and direct cars on-site. This group comprises primarily of legacy daa employees. Since 2009, the number of FTEs has decreased from 41 to 30 (-7.4% CAGR), with the total staff costs also decreasing, at -10.2% CAGR.

Car parks, Dublin airport (€m, 2013 prices)

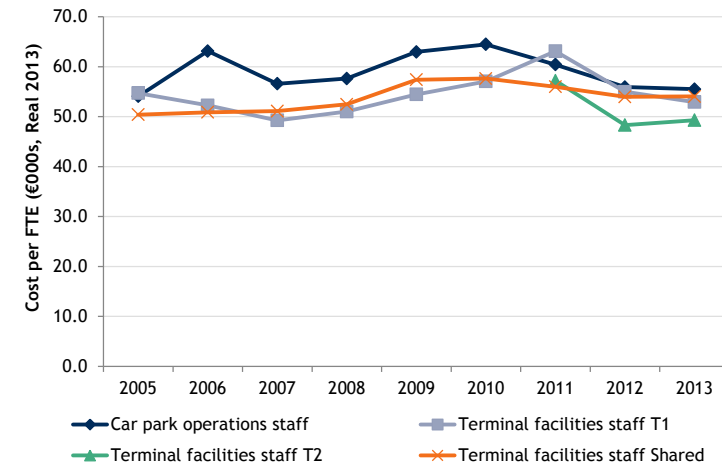


Source: daa data, Steer Davies Gleave analysis

Car park staff are primarily comprised of legacy daa staff, who have a high unit cost that is in line with other facilities staff.

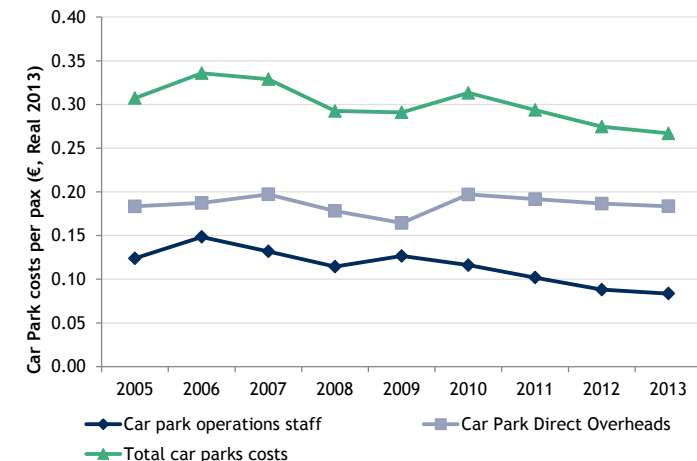
- Over 2009-2013, the number of car park FTEs decreased at -7.4% p.a. on average, however the car park cost per FTE decreased at a slower rate, at -3.1% CAGR.
- When compared against Dublin Airport facilities staff (who we consider undertake a similar tasks covering a similar skill-range), car park costs per FTE are in line with all groups.
- Car park costs per passenger have shown a steady improvement since 2009, in line with the cost reductions following the reduction in FTEs over the same period.
- Analysis does not reveal a clear relationship between car park operations and passenger numbers.

Cost per FTE, Dublin airport (€m, 2013 prices)



Source: daa data, Steer Davies Gleave analysis

Car park costs per passenger, Dublin airport (€m, 2013 prices)

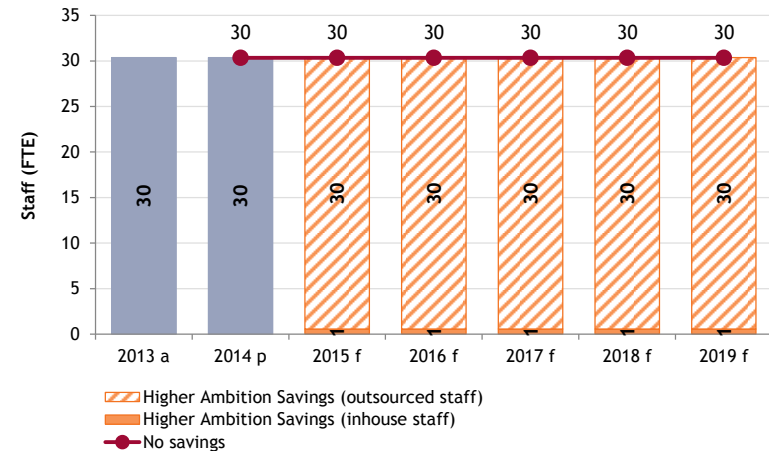


Source: daa data, Steer Davies Gleave analysis

Outsourcing would allow a reduction in unit staff cost of approximately 30%, resulting in savings of approximately €0.5 million per annum.

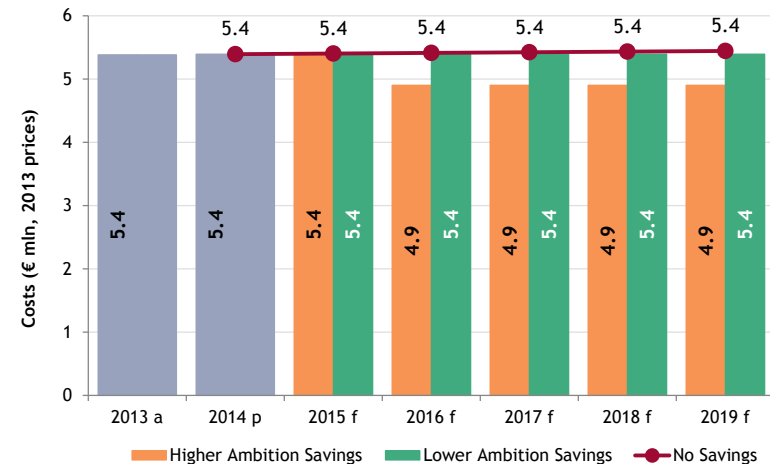
- I Savings can be achieved by reducing salary cost per FTE for the car park staff on legacy daa/dasl contracts by 30%, as outlined on slide 26. This can be achieved through outsourcing the car park staff function.
  - A “lower ambition” saving would be for salaries to be held constant in real terms for legacy staff (which has a minimal impact).
  
- I This would result in an annual saving of approximately €0.5 million.
  
- I Staff costs are otherwise increased each year using the staff cost driver.
  
- I There is no assumed elasticity between staff numbers and passenger numbers.

Car park staff numbers (FTEs, 2013 prices), proposed savings



Source: daa data, Steer Davies Gleave analysis

Car park cost forecast (€m, 2013 prices), proposed savings

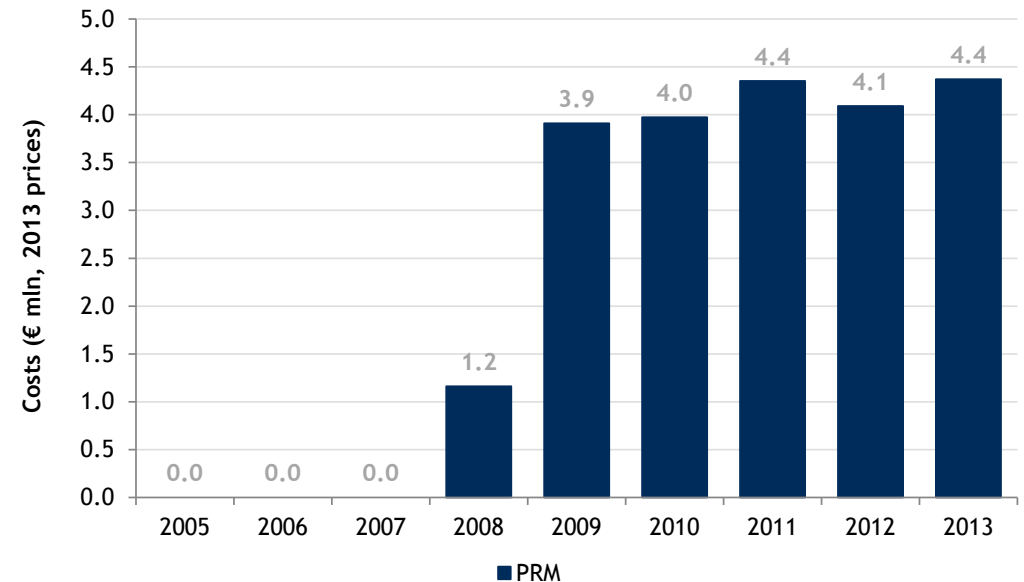


Source: daa data, Steer Davies Gleave analysis

### PRM services at Dublin Airport are outsourced to OCS at an annual cost of approximately €4.4 million.

- Provision of assistance to Passengers of Reduced Mobility (PRM) at Dublin airport is outsourced. The current service provider is OCS, and costs in 2013 were €4.4 million.
- PRM costs are classified as an Other Regulated Charge, and in principle charges to the airlines are set so as to recover 100% of the airport's costs, although there is a risk, if the charges are not correctly aligned to the airport's contract with the service provider, of over- or under-recovery. In consequence, the airport is required to provide detailed cost information to the airlines, who are heavily involved in the negotiation and agreement of PRM costs.
- The 3 year PRM contract was awarded in 2013 under an OJEU process (with a 2 year optional extension). The airlines are involved in the supplier choice decision, and airlines were involved in the award process (i.e. in terms of the level of service required).
- To date, costs have been under-recovered as usage has been higher than expected. daa work with airlines to improve pre-notification levels (which are currently at approximately 75-80%) and usage trends.
- The contract costs are driven off a per PRM passenger rate. There is a flat fee per PRM passenger with volume bands. The contract is not linked to CPI.

PRM, Dublin airport (€m, 2013 prices)

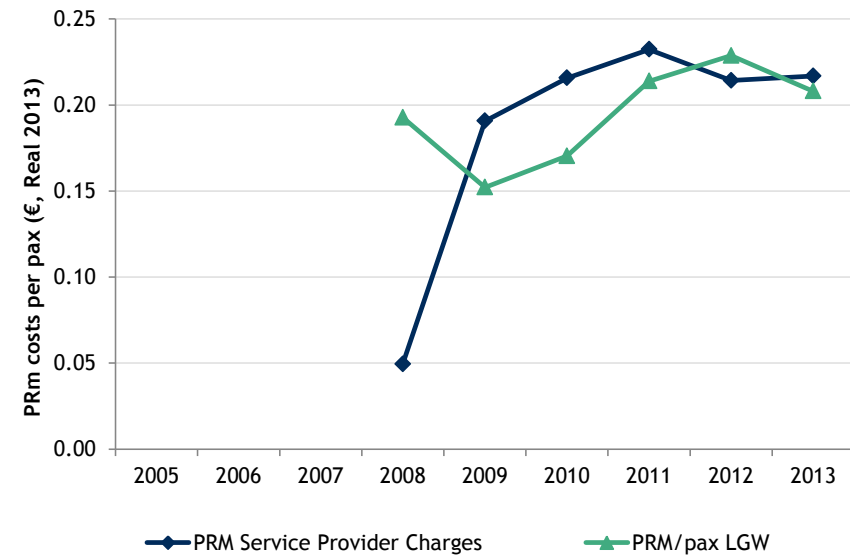


Source: daa data, Steer Davies Gleave analysis

PRM cost per passenger is in line with benchmarks. PRM uptake is expected to continue to increase during the next regulatory period.

- daa has seen a significant uptake in PRMs in recent years, particularly since Terminal 2 opened (which has a longer walk to some gates than Terminal 1). T2 also has a large number of passengers from the USA, where there is a high usage.
- The airport disability user group (including the age action group) has informed daa to expect continued growth in PRM uptake in future years due to the aging population.
- PRM costs per passenger are in line with those at Gatwick Airport, and our experience.
- Current PRM uptake has grown from 0.7% of total passengers in 2010 to 0.9% in 2013. This is low compared to other airports, where uptake rates are closer to 2%-3%.

PRM costs per passenger comparison (total pax, €m, 2013 prices)

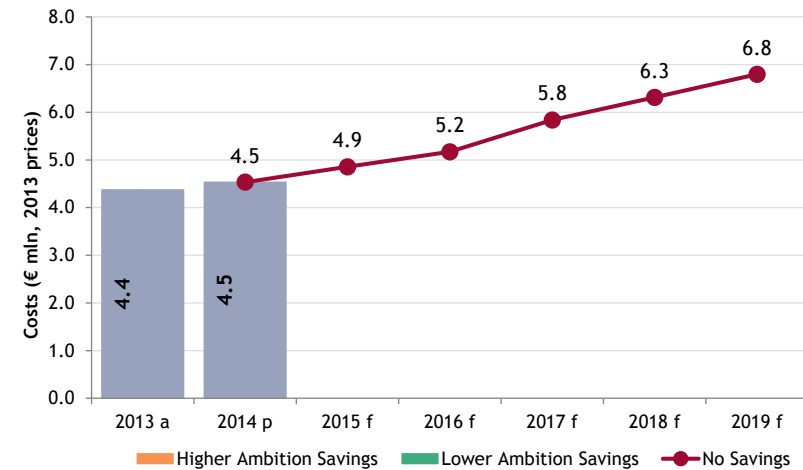


Source: daa data, UK CAA published reports, Steer Davies Gleave analysis

## Our PRM forecast is driven by both passenger growth and increased PRM uptake rates.

- I We do not propose any efficiencies in the PRM cost area; costs are in line with benchmarks and we note that airlines are particularly involved in the design and award of the PRM contract, so have high cost scrutiny.
- I Our PRM forecast for Dublin Airport reflects forecast passenger growth and our expectation that uptake levels will continue to increase (by 0.05 percentage points per year), in line with our understanding of the popularity of this service and the advice provided by the Dublin Airport disability and age action user group.
- I Forecast PRM cost is then based on unit rate volume bands in the current PRM contract multiplied by the forecast number of PRMs per year.
- I We note that the current contract is not CPI driven, so cost per use has zero nominal growth until 2017, when the contract is due for re-tendering. A 'catch up' uplift is included in 2017 to reflect interim CPI growth, and growth is set at CPI for 2018 and 2019.

**PRM costs forecast, Dublin airport (€m, 2013 prices)**



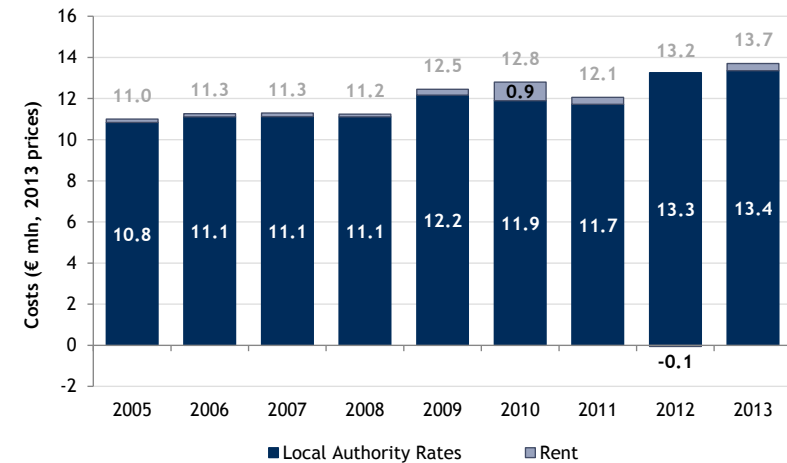
Source: daa data, Steer Davies Gleave analysis

## Rent & rates costs are expected to remain constant in real terms.

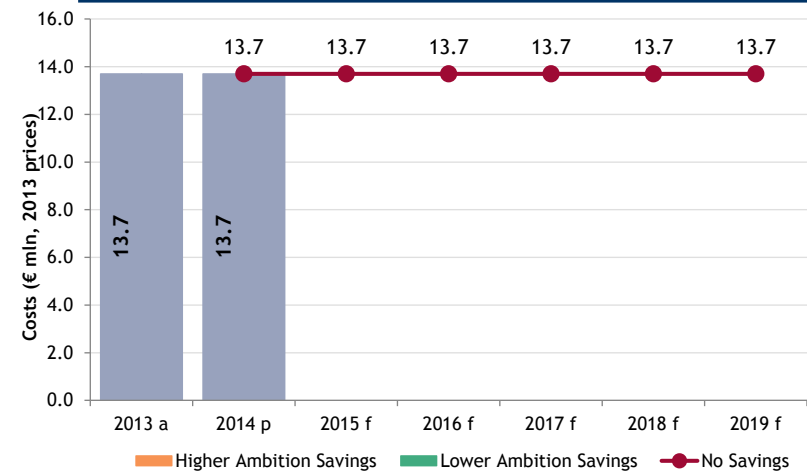
- Rent & rates are dominated by rates costs. Rates are charged on a “cumulo” basis, with the whole airport being treated as a single entity for rating purposes.
- The airport as a whole was revalued for rating purposes in 2011, including Terminal 2.
- No further revaluation is expected during the next regulatory period.
- Fingal County Council announced its Annual Rate on Valuation (ARV) for commercial rates for 2014 at 14.4%\*, which is unchanged from the previous year’s value (based on booz & co report for daa, Jan. 2014).
- We do not consider that there is a significant opportunity for commercial rates to be reduced through actions undertaken by daa. Rates are expected to rise at CPI.

\* <http://www.fingalcoco.ie/business-and-economy/business-charges/commercial-rates/>

**Rent & rates, Dublin airport (€m, 2013 prices)**



**Rent & rates forecast, Dublin airport (€m, 2013 prices)**



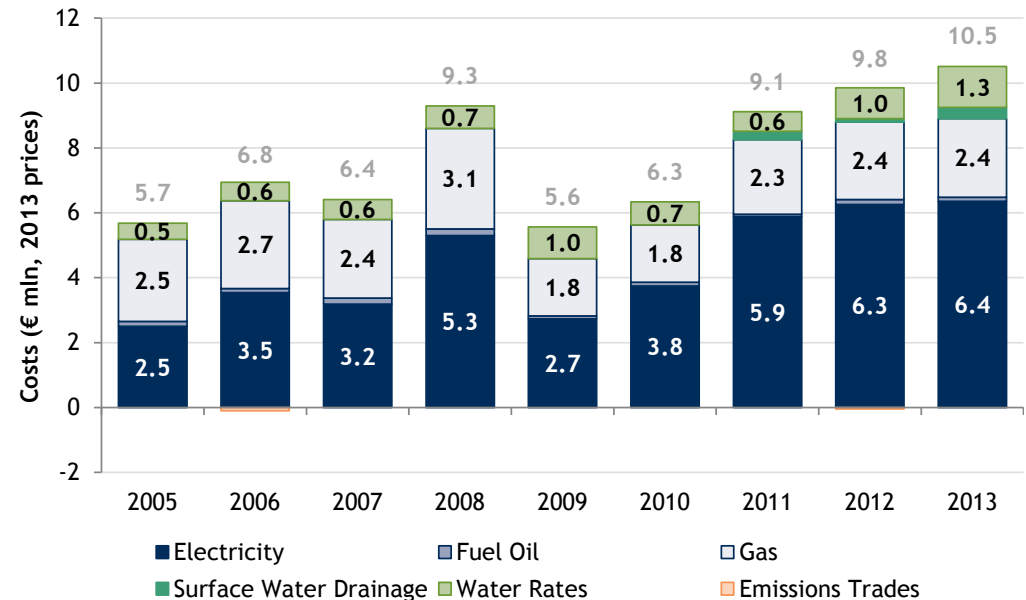
Source: daa data, Steer Davies Gleave analysis



## Utilities costs have nearly doubled since 2009, due primarily to Terminal 2 opening, but also due to increasing unit prices.

- In 2013, utilities costs amounted to €10.5 million (2013 prices). €2.1 million (2013 prices) of these costs have been recovered/recharged to non-daa users on site (see Utilities recovery slide for further information).
- Utilities costs at Dublin airport comprise the following:
  - Electricity, Fuel Oil, Gas, Surface Water Drainage, Water Rate and Emissions trades
- Utilities costs have increased significantly following the opening of Terminal 2, nearly doubling between 2009-2013. The bulk of this increase has been driven by electricity costs increasing by 133%. This was driven by a +69% increase in consumption and a +38% increase in unit price (see next slide)
- There are three Combined Heat and Power (CHP) generators at Dublin Airport. CHPs are gas fired engines connected to a generate, and generate electricity. Waste heat off the engines is used to heat the airport. The CHPs are primarily operated in winter as the heating output is not required during the summer months.
- Water costs have also increased significantly from mid-2012, when the local authority corrected an error in its charging mechanism for the airport. This adjustment resulted in water rates increasing by 120%. daa note that passenger numbers are a significant driver of water consumption, mainly in relation to bathroom activity but also catering.
- The surface water discharge budget for a non-exceptional year is approximately €200,000 however this would increase significantly in a significant snow event.

Utilities costs, Dublin airport (€m, 2013 prices)



Source: daa data, Steer Davies Gleave analysis

- daa informed us that they have been targeting a consumption reduction of -2% annually for the past 4 years. They consider the ‘quick wins’ available them have been taken and are now investigating capital investments (e.g. low energy lighting) to enable these reductions to continue.

## Electricity charges paid by Dublin Airport are in line with Irish benchmarks. Gas charges are marginally higher than benchmarks.

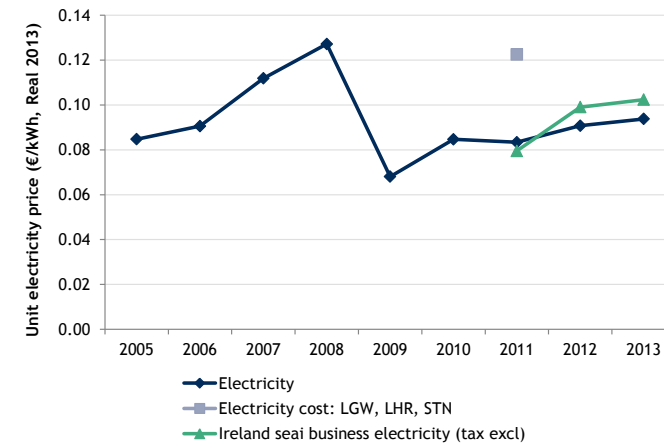
- seai publishes electricity and gas prices in Ireland biannually, along with those in other EU states, as published by Eurostat. Looking at unit prices (excluding tax) in 2011 and 2012 for the UK and Ireland, the daa's statement that prices are higher in Ireland is confirmed (between 1%-3% for business electricity and 7%-12% for business gas). It is also confirmed that prices fluctuate between periods (see table below)

	2012	2013
<b>Business Electricity (% change yoy)</b>		
Ireland	25%	3%
UK	19%	1%
<b>Business Gas (% change yoy)</b>		
Ireland	16%	10%
UK	21%	5%

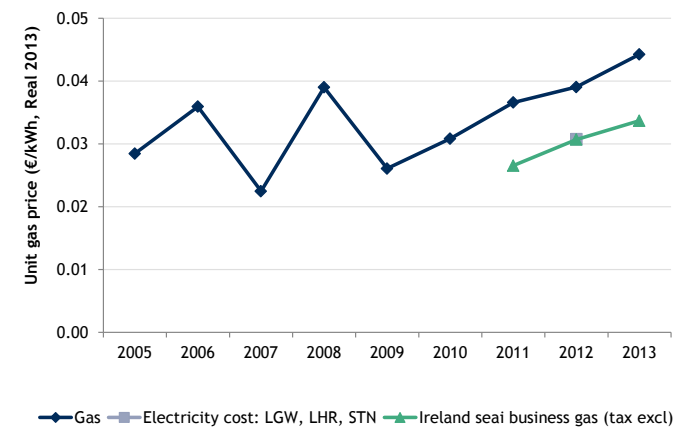
Source: seai

- We have benchmarked unit electricity and gas costs against publicly available UK airport benchmarks as well as business prices as published by the Sustainable Energy Authority of Ireland (seai)
  - Dublin Airport's unit electricity price is in line with the published seai values over 2011-2013, and about a third lower than the London airports benchmark
  - Dublin Airport's unit gas price is approximately 25% higher than published seai values over 2011-2013, with a similar difference seen when compared to the London airports benchmark

**Electricity unit cost vs benchmarks, (€m, 2013 prices)**



**Gas unit cost vs benchmarks (€m, 2013 prices)**

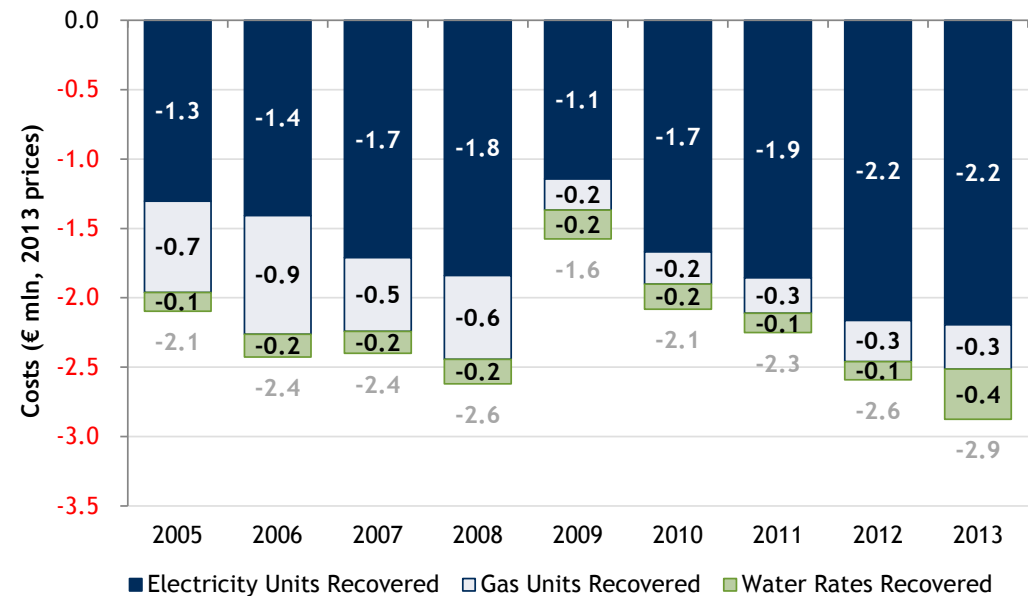


Source: daa data, Steer Davies Gleave analysis

Utilities recovery includes those utilities costs recovered from other users on the Dublin Airport site.

- Dublin Airport holds a permit (Section 37) that allows the airport to distribute electricity and recharge for this distribution.
- In its recovery of utilities costs, daa levies a 15% administrative charge on top of the electricity rates for non-daa users on-site.
- Our forecast (see following slide) for utilities recovery costs assumes the same recovery rates as seen in 2013 are carried forwards throughout 2015-2019, applying the same consumption efficiencies, price and elasticity drivers as have been applied to the airport's utilities costs.

Utilities costs recovered, Dublin airport (€m, 2013 prices)

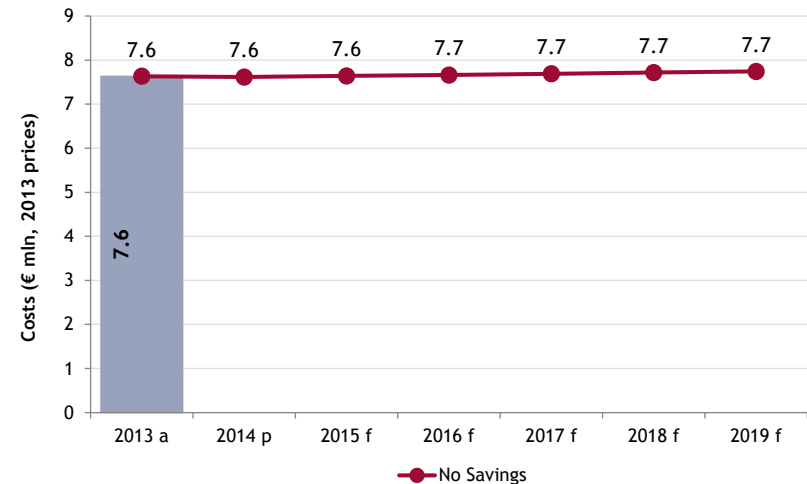


Source: daa data, Steer Davies Gleave analysis

## Our forecast for Dublin Airport’s utilities costs (net of recoveries) proposes unit price increases that are in line with seai forecasts.

- According to seai, “the most significant factor affecting energy prices in Ireland is change in global oil prices which have shown dramatic fluctuations in recent years. This has particular effect in Ireland due to our high dependence on oil. In addition there is the knock-on impact that oil prices have on other energy prices, in particular natural gas and as a consequence electricity prices.”
- daa have made confidential utility cost forecasts based on advice from their energy consultants.
- seai forecast unit energy prices for Ireland are shown in the table on the bottom right of this slide. These are real term increases and are in line with UK energy price forecasts over the same period (UK DECC, see UK CAA published reports on LHR and LGW).
- Steer Davies Gleave forecast: We have applied the seai forecast real terms unit price increases plus a small buffer (rounded up to nearest %) to the relevant Dublin Airport unit energy prices. Water grows with CPI (the new Irish Water Authority has not yet set its regulated prices)
- Elasticities of all utilities to passenger growth is low, at 0.1, with the exception of water, which has been set to 0.5.
- Consumption efficiencies: We note that daa plan to continue reductions in energy consumption on like for like basis by -2% p.a.
  - This efficiency improvement has been included in both daa and Steer Davies Gleave forecast scenarios, although we note that the additional capex investment required to facilitate efficiencies should be included in the determination for this to be realised.
  - We do not consider that efficiencies beyond this to be deliverable.

**Utilities cost forecast (net of recoveries), Dublin airport (€m, 2013 prices)**



Source: daa data, Steer Davies Gleave analysis

**Energy price forecasts, Ireland (Real 2009)**

	CAGR: 2011-2020	CAGR: 2015-2020
Coal (tonne)	1.0%	1.6%
Oil (barrel)	0.4%	0.4%
Gas (Mbtu- GCV)	2.0%	1.8%

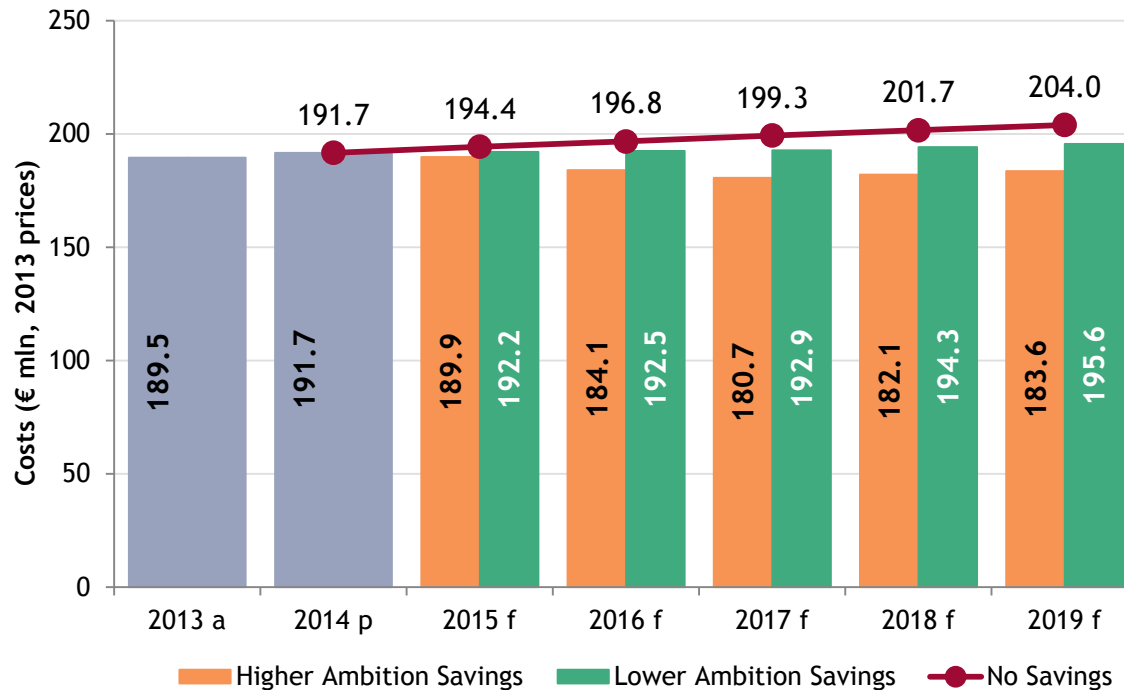
Source: seai, Steer Davies Gleave analysis (CAGRs based on Real 2009 prices)

# Summary of Forecast

## OPEX ANALYSIS: Forecast: Total Operating Expenditure

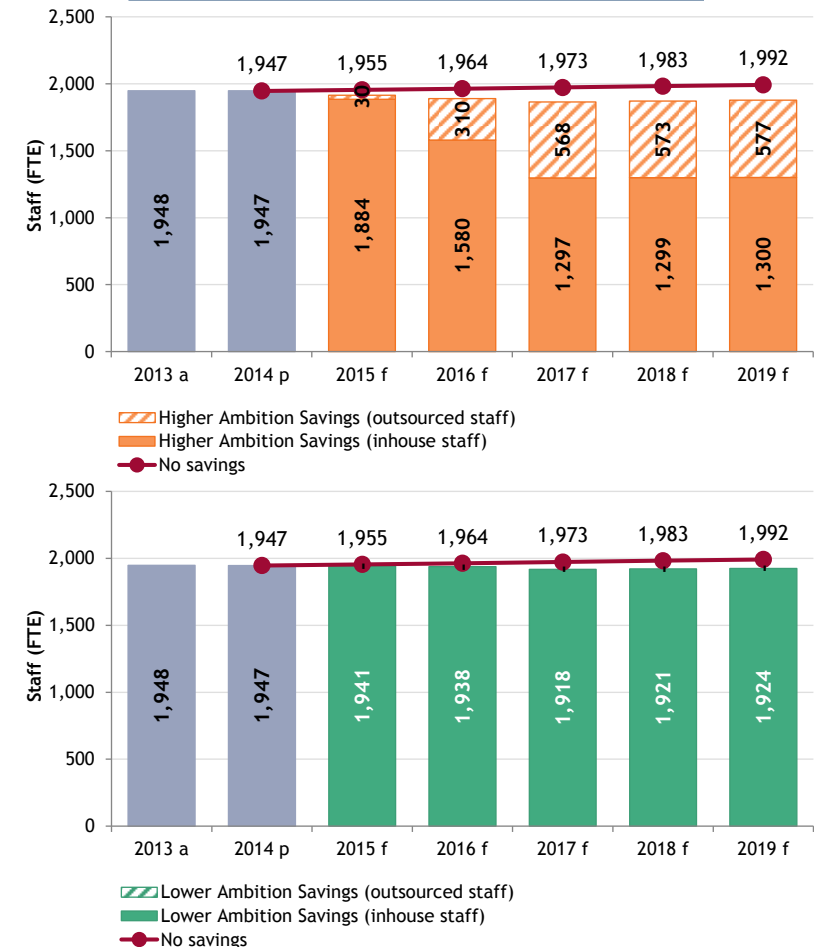
Operating Costs increase to €204 million by 2019 in our base forecast (2013 prices). With lower ambition savings, costs would rise to only €196 million, with a staff reduction of 68 FTE. Under the higher ambition scenario costs would fall to €184 million, with a reduction of 115 FTE (with a further 577 FTE outsourced).

Forecast Operating Expenditure, Dublin airport (€m, 2013 prices)



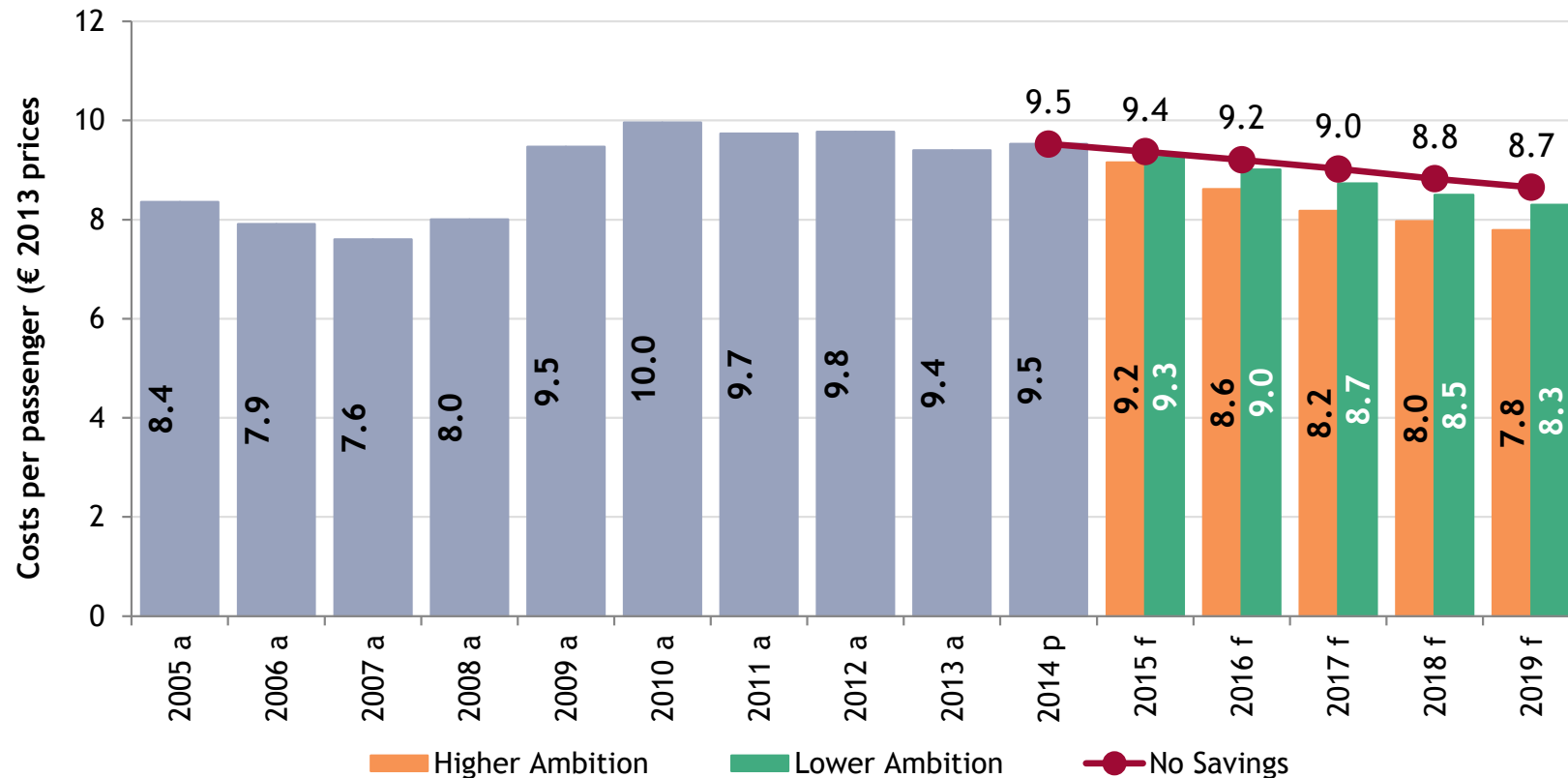
Source: daa data, Steer Davies Gleave analysis

Forecast staff numbers, Dublin Airport



Real operating costs per passenger are assumed to fall each year to 2019 driven by increasing passenger volumes and management savings. In the higher ambition case, it falls to €7.8/pax (2013 prices), slightly above the 2007 value. With lower ambition savings it reaches €8.3/pax and without management savings €8.7/pax.

Forecast Operating Expenditure Per Passenger, Dublin airport (€, 2013 prices)



Source: daa data, Steer Davies Gleave analysis

The summary table shows NPVs of costs over the five years 2015-19. This indicates that the Higher Ambition Savings would reduce costs by 7.4% compared with the Base Forecast. The Lower Ambition Savings would reduce costs by 2.8%.

	NPV of Costs 2015-19, €m 2013 prices			Savings, €m 2013 prices		Percentage Savings	
	No Savings	Lower Ambition Savings	Higher Ambition Savings	Lower Ambition Savings	Higher Ambition Savings	Lower Ambition Savings	Higher Ambition Savings
Security staff	94.8	91.7	82.8	3.1	12.0	3.2%	12.6%
Central Function staff	90.2	81.6	72.4	8.5	17.7	9.5%	19.6%
Other staff costs	24.1	23.9	21.9	0.2	2.2	0.8%	9.3%
Campus Services staff	59.9	59.9	59.9	0.0	0.0	0.0%	0.0%
Airside Operations staff	17.6	17.6	15.9	0.0	1.7	0.0%	9.5%
IT & technology	59.5	57.4	55.4	2.1	4.1	3.6%	6.9%
Facilities & cleaning	92.5	91.9	84.8	0.5	7.6	0.6%	8.3%
Car Parks	22.2	22.1	20.6	0.1	1.7	0.5%	7.5%
Retail	49.2	48.8	44.1	0.4	5.1	0.9%	10.4%
Maintenance	97.1	95.0	95.0	2.1	2.1	2.1%	2.1%
Capital Projects	6.4	6.4	6.4	0.0	0.0	0.0%	0.0%
Utilities	31.5	31.5	31.5	0.0	0.0	0.0%	0.0%
Rent & Rates	56.2	56.2	56.2	0.0	0.0	0.0%	0.0%
Marketing and related costs	29.0	23.4	23.4	5.6	5.6	19.3%	19.3%
Consultancy services	24.0	24.0	24.0	0.0	0.0	0.0%	0.0%
Insurance	12.0	12.0	12.0	0.0	0.0	0.0%	0.0%
Other	26.0	26.0	25.8	0.0	0.2	0.1%	0.8%
PRM	23.5	23.5	23.5	0.0	0.0	0.0%	0.0%
<b>TOTAL</b>	<b>815.6</b>	<b>792.9</b>	<b>755.6</b>	<b>22.7</b>	<b>60.0</b>	<b>2.8%</b>	<b>7.4%</b>

Source: daa data, Steer Davies Gleave analysis, NPV real discount rate assumption: 7% p.a. (based on cost of capital in the 2009 Determination)



Operating Costs increase to €204 million by 2019 in our base forecast (2013 prices). With lower ambition savings, costs would rise to only €196 million. Under the higher ambition scenario costs would fall to €184 million.

	2013	2014	Base Forecast - No Savings (€m, 2013 prices)					Low Ambition Savings Forecast (€m, 2013 prices)					High Ambition Savings Forecast (€m, 2013 prices)				
			2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Security staff	21.4	21.9	22.4	22.8	23.2	23.6	23.9	22.3	22.6	22.0	22.3	22.6	22.3	22.6	18.2	18.4	18.7
Central Function staff	20.7	21.0	21.4	21.7	22.0	22.4	22.7	20.4	20.0	19.7	19.7	19.7	18.3	17.1	17.4	17.6	17.9
Other staff costs	5.7	5.8	5.8	5.8	5.9	5.9	6.0	5.8	5.8	5.8	5.9	5.9	5.7	5.4	5.1	5.1	5.2
Campus Services staff	14.3	14.4	14.5	14.5	14.6	14.7	14.8	14.5	14.5	14.6	14.7	14.8	14.5	14.5	14.6	14.7	14.8
Airside Operations staff	4.2	4.2	4.2	4.3	4.3	4.3	4.3	4.2	4.3	4.3	4.3	4.3	4.2	3.7	3.8	3.8	3.8
IT & technology	13.7	14.0	14.2	14.4	14.6	14.7	14.8	14.0	14.1	14.0	13.9	13.9	13.9	13.7	13.5	13.3	13.1
Facilities & cleaning	21.6	22.0	22.3	22.5	22.6	22.7	22.8	22.2	22.4	22.4	22.5	22.6	22.2	20.1	20.2	20.3	20.3
Car Parks	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	4.9	4.9	4.9	4.9
Retail	10.9	11.1	11.4	11.7	12.0	12.4	12.7	11.4	11.7	11.9	12.2	12.5	11.4	10.2	10.5	10.7	11.0
Maintenance	22.8	23.1	23.3	23.5	23.7	23.9	24.1	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
Capital Projects	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.6	1.6	1.6
Utilities	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.6	7.7	7.7	7.7	7.7	7.6	7.7	7.7	7.7	7.7
Rent & Rates	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
Marketing / related costs	6.5	6.5	6.7	6.9	7.1	7.3	7.5	6.0	5.4	5.5	5.7	5.9	6.0	5.4	5.5	5.7	5.9
Consultancy services	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Insurance	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Other	6.3	6.3	6.3	6.3	6.3	6.4	6.4	6.3	6.3	6.3	6.4	6.4	6.3	6.3	6.3	6.3	6.3
PRM	4.4	4.5	4.9	5.2	5.8	6.3	6.8	4.9	5.2	5.8	6.3	6.8	4.9	5.2	5.8	6.3	6.8
<b>TOTAL</b>	<b>189.5</b>	<b>191.7</b>	<b>194.4</b>	<b>196.8</b>	<b>199.3</b>	<b>201.7</b>	<b>204.0</b>	<b>192.2</b>	<b>192.5</b>	<b>192.9</b>	<b>194.3</b>	<b>195.6</b>	<b>189.9</b>	<b>184.1</b>	<b>180.7</b>	<b>182.1</b>	<b>183.6</b>

Source: daa data, Steer Davies Gleave analysis

## OPEX ANALYSIS: Forecast: Detailed cost line forecasts

Real operating costs per passenger are assumed to fall each year to 2019 driven by increasing passenger volumes and management savings. In the higher ambition case, it falls to €7.8/pax (2013 prices), slightly above the 2007 value. With lower ambition savings it reaches €8.3/pax and without management savings €8.7/pax.

	2013	2014	Base Forecast - No Savings (€m, 2013 prices)					Low Ambition Savings Forecast (€m, 2013 prices)					High Ambition Savings Forecast (€m, 2013 prices)				
			2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Security staff	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.1	1.1	0.8	0.8	0.8
Central Function staff	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.9	0.8	0.8	0.8	0.8
Other staff costs	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Campus Services staff	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.7	0.6	0.6
Airside Operations staff	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
IT & technology	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6
Facilities & cleaning	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.1	0.9	0.9	0.9	0.9
Car Parks	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2
Retail	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Maintenance	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0
Capital Projects	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Utilities	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3
Rent & Rates	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6
Marketing / related costs	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2
Consultancy services	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2
Insurance	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
PRM	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3
<b>TOTAL</b>	<b>9.40</b>	<b>9.53</b>	<b>9.37</b>	<b>9.21</b>	<b>9.02</b>	<b>8.83</b>	<b>8.65</b>	<b>9.26</b>	<b>9.01</b>	<b>8.73</b>	<b>8.50</b>	<b>8.30</b>	<b>9.15</b>	<b>8.62</b>	<b>8.18</b>	<b>7.97</b>	<b>7.79</b>

Source: daa data, Steer Davies Gleave analysis

The table below summarises the elasticities applied to each of the operating cost areas to determine the Steer Davies Gleave forecasts.

Area	Elasticity
Security staff numbers (central search + fixed post)	0.3 to passenger numbers
Retail staff (terminal-based)	0.7 to passenger numbers
PRM costs	1.0 to passenger numbers
Electricity, fuel, gas, costs	0.1 to passenger numbers
Water costs	0.5 to passenger numbers
Employee related overheads Telephone, print and stationery costs	0.3 to staff numbers
Travel and subsistence	1.0 to staff numbers
Marketing and promotional costs	1.0 to passenger numbers
Bank and credit card charges Foreign exchange costs	0.3 to passenger numbers

No elasticity to passenger numbers was determined for the following areas:

- Cleaning and facilities staff
- Campus Services Staff
- Airside operations staff
- Maintenance staff
- IT staff & non-staff costs
- Central Functions staff
- Car parks staff
- Other central costs
- Other staff costs
- Rent & Rates

# Glossary of Terms

- AOC: Airline Operator’s Committee at Dublin Airport.
- ARI: Aer Rianta International, a subsidiary of daa.
- CAR: Commission for Aviation Regulation.
- CAGR: Compound Annual Growth Rate.
- CPI: Consumer Prices Index.
- COGS: cost of goods sold.
- daa: Dublin Airport Authority. Principal activities include the operation and management of Dublin and Cork airports and global airport retailing through subsidiary Aer Rianta International (ARI).
- DUB: IATA code for Dublin Airport.
- EASA: European Aviation Safety Agency
- ESRI: The Economic and Social Research Institute, Ireland. Source of economic forecasts.
- FTE: Full Time Equivalent staff.
- Garda Siochana: Ireland’s national police service.
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organization.
- IT: Information Technology.
- OCS: current provider for cleaning and PRM services at Dublin Airport.
- PRM: Passengers with Reduced Mobility.
- SDG: Steer Davies Gleave.
- Staff contract types: There are three employing companies at for daa at Dublin Airport:
  - daa: legacy staff contracts at Dublin Airport’s. These staff are members of the Irish Airlines superannuation fund (a defined benefits scheme).
  - ASC: a company established to employ Terminal 2 staff on different terms and conditions from legacy daa staff. ASC staff are not members of the daa defined benefits pension scheme.
  - DASL: a company set up in 2010 to employ staff (other than in Terminal 2) on different terms and conditions from legacy daa staff. DASL includes “new DASL” staff as well as some former daa staff, who have transferred to the new company (“DASL ex-daa”). DASL staff are not members of the daa defined benefits pension scheme.
  - ASC and new DASL employees (but not including DASL ex-daa employees) have similar conditions of employment and are referred to in the report text as “new” contracts.
- T1: Dublin Airport Terminal 1. Opened 1972.
- T2: Dublin Airport Terminal 2. Opened 2010.
- TUPE: Transfer of Undertakings (Protection of Employment). European Directive 2001/23/EC and EC (Protection of Employees on Transfer of Undertakings) Regulations 2003, which form part of Irish labour law.

Source: 1: daa.ie

# Control Sheet

Project/Proposal Name:	Dublin Airport Opex Efficiency Study
Document Title:	Publishable Draft Report
Client Contract/Project Number:	
SDG Project/Proposal Number:	22648001

## ISSUE HISTORY

Publishable Draft Report	Date: 25 April 2014	Details:
Publishable Draft Report	Date: 7 May 2014	With redactions following receipt of daa comments

## REVIEW

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## DISTRIBUTION

Clients:	Commission for Aviation Regulation
Steer Davies Gleave:	Project Team

