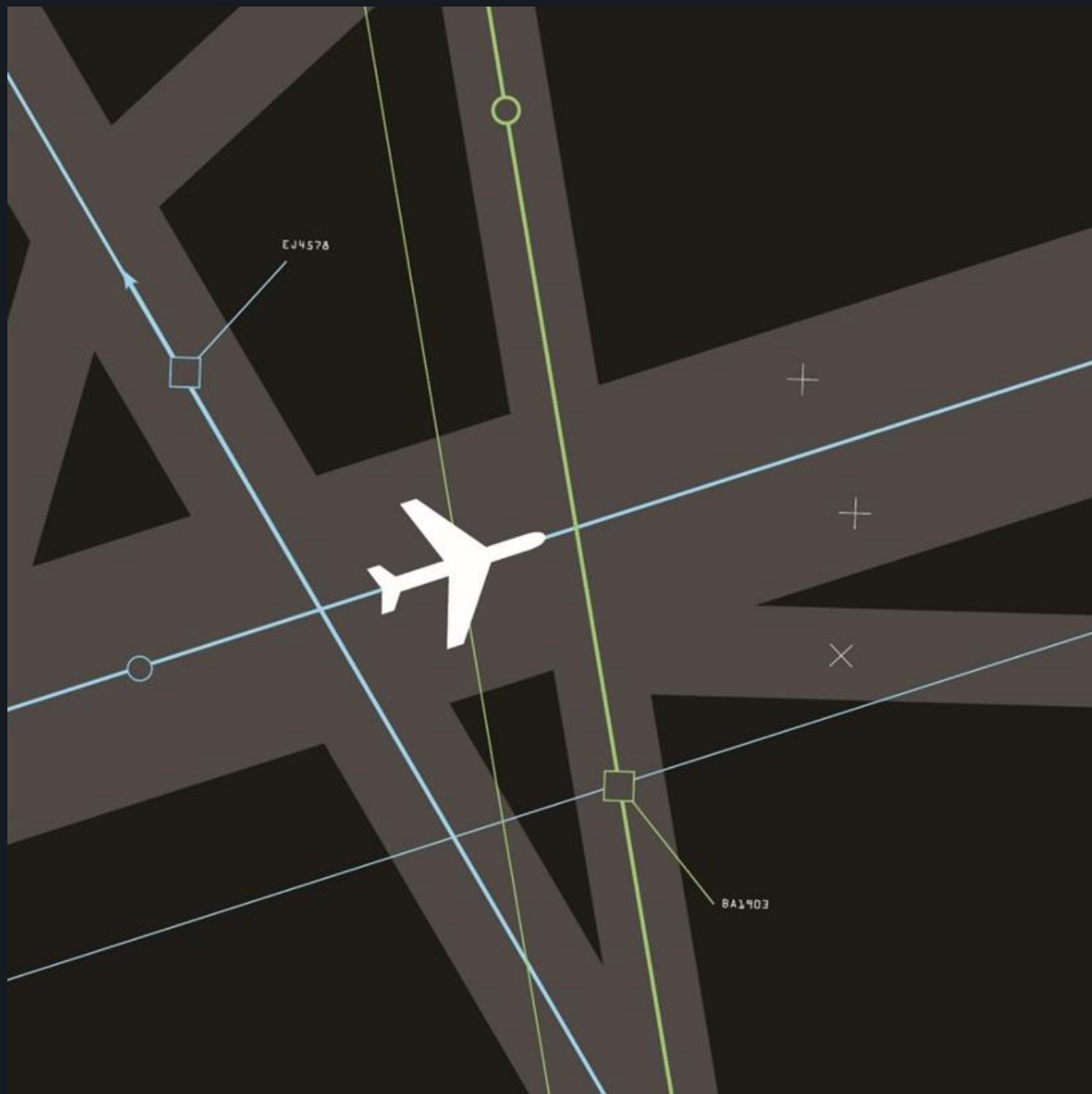


IAA ANSP 2020-2024 Operating Costs



IAA ANSP 2020-2024 Operating Costs

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Appendix A: Record of Assumptions 2020-2021

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Executive summary

Introduction

Steer was contracted by the Commission for Aviation Regulation (CAR) to provide operating cost advice and spreadsheet modelling relating to the Irish Aviation Authority (IAA) Air Navigation Service Provider’s (ANSP’s) contribution to Ireland’s Single European Sky Performance Plan for Reference Period 3 (RP3, 2020 -2024). CAR took over the role of the national regulator overseeing Ireland’s performance plan in January 2020, i.e. at the start of the RP3 period.

The study is being undertaken in the context of the significant impact of the COVID-19 pandemic. The effect of this has been to require a new Reference Period 3 (RP3) Performance Plan as the assumptions used in the original RP3 Performance Plan for Ireland are no longer appropriate.

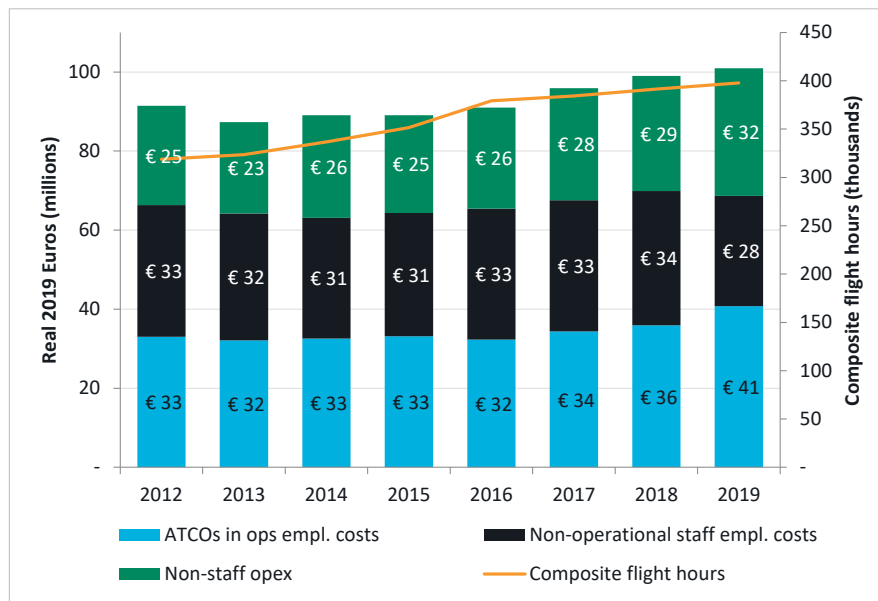
Steer was requested to undertake its analysis of IAA ANSP’s operating expenditure in a number of Phases. In the first Phase, we undertook an analysis of the ANSP’s performance during RP2 and during 2020, the first year of RP3 and also of the COVID-19 pandemic. In the second Phase, we reviewed the “cost containment” measures undertaken by the IAA ANSP during 2020 and planned for 2021. In the third Phase, we reviewed the ANSP’s Revised RP3 Business Plan issued in first draft in April 2021 and final draft in July 2021. In Phases 2 and 3, Steer produced its own alternative scenarios for the IAA ANSP operating costs.

Historical trends and benchmarking

As background to our analysis, we have considered historical trends in the IAA ANSP’s cost performance over Reference Period 1 (RP1, 2012-2014) and Reference Period 2 (RP2, 2015-2019), as well as in comparison with benchmarks.

The figure below presents the trends of the three main components of IAA ANSP’s operating costs, compared with growth in composite flight hours handled. Operating costs fell during RP1, but then increased steadily during RP2 (at a rate of 76% of the growth in composite flight hour volumes).

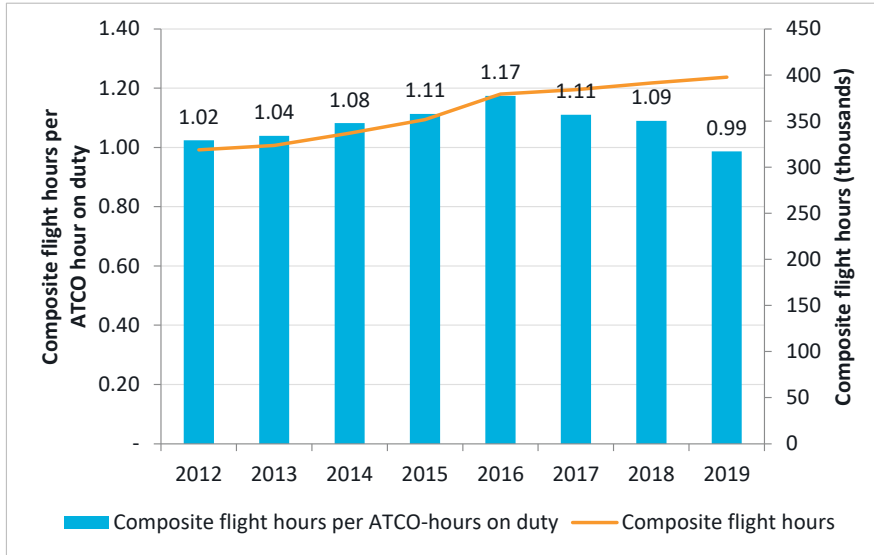
Figure 1: IAA ANSP operating costs over time, € millions (2019 prices)



Source: Steer analysis of Eurocontrol’s ATM Cost-Effectiveness (ACE) Benchmarking Reports

A key driver of the ANSP’s costs is the productivity of its operational Air Traffic Control Offices (ATCOs). This improved during RP2, before falling again after 2016, as is shown below.

Figure 2: IAA ATCO-hour productivity



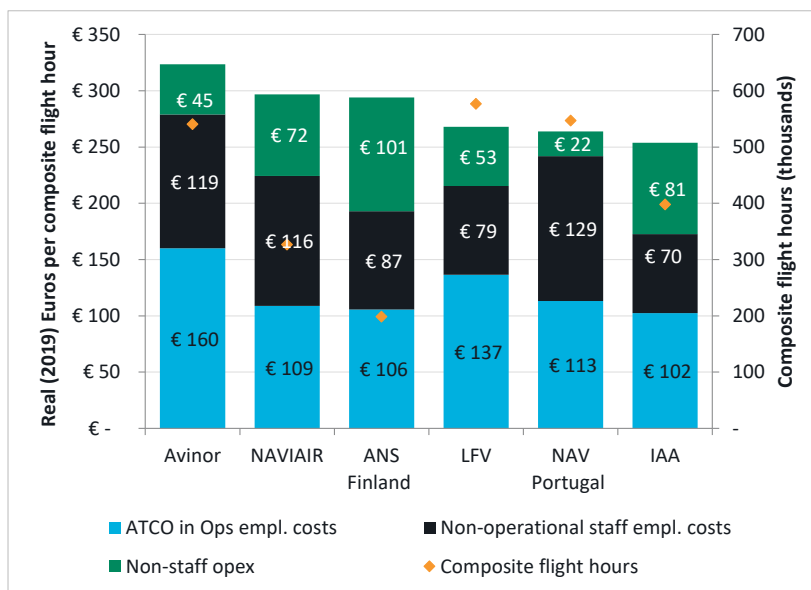
Source: Steer analysis of ACE Benchmarking Reports

We have benchmarking IAA ANSP’s operating costs against other European ANSPs from a comparator group consisting of the following ANSPs:

- Navegação Aérea (NAV) Portugal;
- Avinor (Norway);
- Luftfartsverket (LFV) Sweden;
- Air Navigation Services (ANS) Finland; and
- NAVIAIR (Denmark).

The figure below compares IAA ANSP’s operating cost per flight hour with these other ANSPs:

Figure 3: Operating costs per composite flight hour by ANSP, €/composite flight hour (2019)

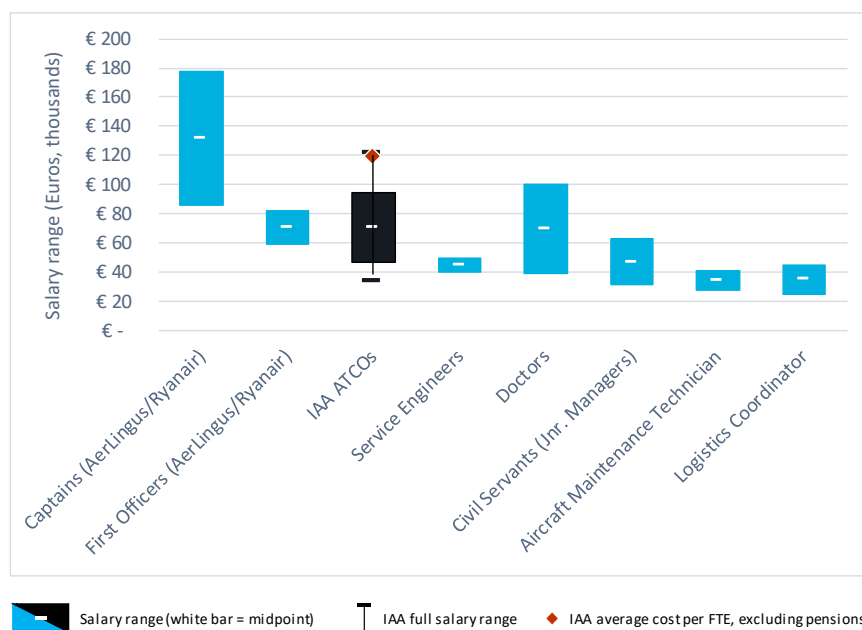


Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019).

IAA has the lowest unit costs in the comparator group at an aggregate level, and also for its operational ATCOs. However, its non-operational costs are higher than all but one other ANSP.

It is also relevant to compare IAA's staff salaries with those of comparable organisations and roles in Ireland. The figure below compares ATCO salaries against relevant jobs in the Irish labour market, indicating that ATCOs are well paid in relation to all of these except airline captains.

Figure 4: ATCO gross salary benchmarking, 2020



Source: Steer analysis of data from IAA, Forsa.ie, Glassdoor.ie and the Pilot Jobs Network. Note: IAA data is for 2019. Average cost per IAA FTE from Regulatory Accounts for 2019, excluding pension contributions.

2020-2021 Base Year

This section considers how IAA ANSP has acted to control costs during the COVID-19 pandemic and specifically over the “Base Year” period 2020-2021, following the reset of RP3 Union-wide targets and expectations of ANSP performance in the context of the pandemic.

The table below shows how the ANSP’s costs are expected to develop over this period in comparison with costs in 2019, with a 9.1% fall against 2019 in 2020 and 7.1% fall against 2019 in 2021.

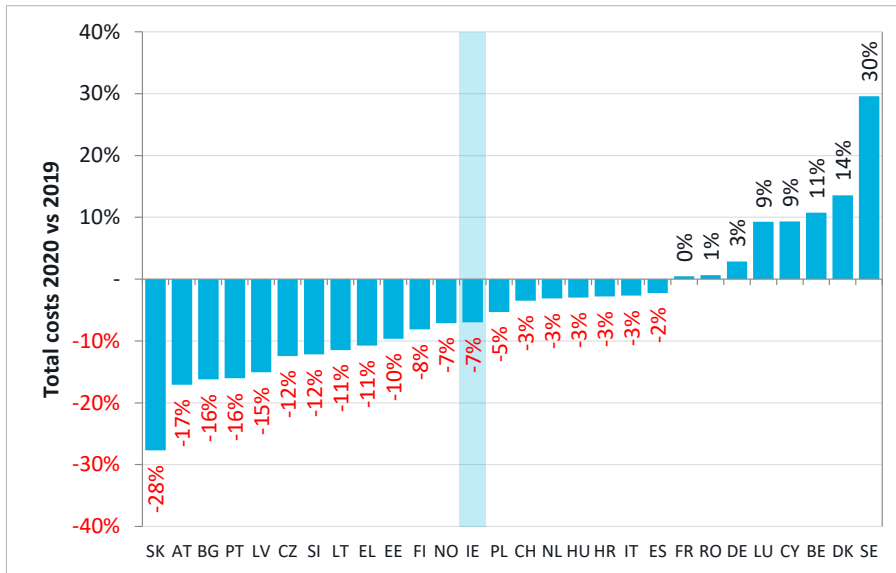
Table 1: IAA ANSP operating costs, 2019-2020 - Summary (€'000s, 2017 prices)

Item	2019	2020			Business Plan	2021	
	Actual	Actual	Change vs 2019 (€k)	Change vs 2019 (%)		Change vs 2019 (€k)	Change vs 2019 (%)
Staff costs	67,550	63,729	-3,821	-5.7%	57,909	-9,641	-14.3%
Non-Staff costs	31,694	26,448	-5,246	-16.6%	34,286	2,592	8.2%
Total ANSP	99,244	90,177	-9,067	-9.1%	92,195	-7,049	-7.1%

Source: Steer analysis of IAA ANSP’s Revised RP3 Business Plan. Staff costs include rebates from the Employment Wage Subsidy Scheme (EWSS) scheme.

Steer has reviewed the “cost containment” measures, as undertaken by the IAA ANSP during 2020 and planned for 2021, and compared these to the corresponding measures planned by other ANSPs, as provided in their respective submissions to the PRB on its cost containment measures. These cost savings submitted to the Performance Review Board (PRB) are shown, for en route operations only (i.e. excluding terminal services), in the chart below, indicating that IAA ANSP’s cost savings in 2020 were mid-range in the group.

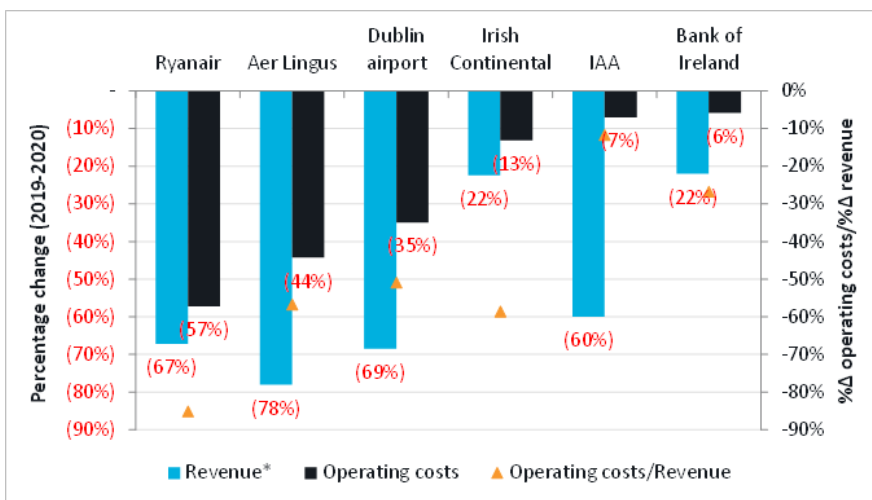
Figure 5: Change in ANSP total en-route costs, 2020 versus 2019 (real)



Source: Steer analysis of PRB data.

We also compared the savings achieved by the IAA ANSP against those of other large organisations across Ireland whose activities and revenues have been impacted strongly by the pandemic due to restrictions on their activities comparable to those imposed on IAA ANSP. The organisations reviewed were: Dublin airport, Ryanair, Aer Lingus, Irish Continental (ferries) and Bank of Ireland. The loss of revenues suffered by these organisations and the reductions in operating costs they were able to achieve, are shown in the figure below.

Figure 6: Change in revenue and operating costs by organisation, 2020 versus 2019 (nominal)



Source: Steer analysis, daa, Ryanair, IAG, Irish Continental, Bank of Ireland and IAA.

In order to assess the savings made by the ANSP, Steer has developed two scenarios for cost savings which could have been achieved during the 2020-2021 period, as follows:

- **Scenario A:** An ANSP-oriented scenario, with savings consistent with those achieved and promised by the European ANSPs over the 2020-2021 period; and
- **Scenario B:** A commercially focused scenario, with savings closer to those achieved by parts of the aviation industry working on a largely commercial basis, in particular airports and airlines.

Steer made a range of assumptions to underpin these scenarios. For staff, we assumed that IAA ANSP staff savings could have been applied over a longer period (and in Scenario B, at a deeper level) than actually imposed by the ANSP, as shown in the table below.

Table 2: Staff working week/salary reductions

	ATCOs	%	IAA		Scenario A		Scenario B	
			Costs	2020	2021	2020	2021	2020
ATCOs	€0 - €38,500	-	-	-	-	-	-	-
	€38,500 +	100%	-10% (Jul-Oct)	-10%	-10% (Jul-Dec)	-10%	-15% (Jul-Dec)	-15%
Non-ATCOs	€0 - €38,500	22%	-	-	-	-	-	-
	€38,500 – €56,930	25%	-10% (Jul-Oct)	-5%	-10% (Jul-Dec)	-10%	-15% (Jul-Dec)	-15%
	€56,930 +	53%	-10% (Jul-Oct)	-9.75%	-10% (Jul-Dec)	-10%	-15% (Jul-Dec)	-15%

Source: IAA, Steer assumptions

For non-staff costs, the assumptions in Scenario A have been developed using data from other European ANSPs submitted to the PRB, whilst those in Scenario B have been developed from other organisations in the Irish aviation industry. An overview of the assumptions is presented in Table 3 below.

Table 3: Non-staff costs reductions (annualised)

	Scenario A			Scenario B			
	2020	2021	Driver	Annualised	2020	2021	Driver
Travel	-14.7%	-7.7%	PRB	-	-69%	-51%	IAA
Training				-	-25%	-10%	IAA
Subscriptions				-90%	-45%	-68%	IAA
Utilities				-15%	-7.5%	-11.3%	DUB
Telecommunications				-15%	-7.5%	-11.3%	DUB
Operational				-15%	-7.5%	-11.3%	DUB
Administration				-20%	-9.8%	-14.7%	DUB

Source: Steer assumptions

Applying these scenarios to the IAA ANSP's 2019 actual costs and comparing to what has been projected for 2020-2021 in the RP3 Business Plan, the following results were obtained. Compared to the IAA ANSP's cost reduction of 9.1% in 2020 vs 2019, under Scenario A assumptions the ANSP could have saved 10.1% of costs vs 2019 and under Scenario B it could have saved 11.4% of costs. For 2021, the ANSP forecasts a 7.1% saving vs 2019, whereas under

Scenario A assumptions this could increase to a 13.7% saving and under Scenario B assumptions to a 19.0% saving.

Table 4: Operating costs 2020-2021, IAA actuals and scenarios

€000s, 2017 prices	Actual		IAA		Scenario A		Scenario B	
	2019	2020	2021	2020	2021	2020	2021	
Total Staff Cost incl. EWSS	67,550	63,729	57,909	62,231	56,441	61,027	53,483	
Staff cost % change vs 2019 (incl. EWSS)		-5.7%	-14.3%	-7.9%	-16.4%	-9.7%	-20.8%	
Total Non-staff Operational Cost	31,694	26,448	34,286	27,035	29,254	26,888	26,887	
Non-Staff cost % change vs 2019		-16.6%	8.2%	-14.7%	-7.7%	-15.2%	-15.2%	
Total ANSP cost (incl. EWSS)	99,244	90,177	92,195	89,266	85,695	87,915	80,370	
Total ANSP % Change vs 2019 (incl. EWSS)		-9.1%	-7.1%	-10.1%	-13.7%	-11.4%	-19.0%	

Source: Steer analysis

2022-2024 Forecast

Steer has developed an independent forecast of the IAA ANSP's operating costs over the 2022-2024 period.

Modelling approach

An operating cost model was constructed in Microsoft Excel to determine required staff numbers and associated costs together with non-staff costs for the RP3 period. Additionally, the model was extended to capture staffing requirements in 2025 and 2026 to ensure that sufficient ATCO staff commence training during RP3 to meet the anticipated requirements of the first years of RP4 (2025-2029). The model was constructed at an annual level.

Using the model, it has been possible to develop a set of inputs calibrated to produce cost forecasts for all years in RP3 (2020-2024) which exactly match the projections in the IAA ANSP's Revised RP3 Business Plan (as developed in July 2021).

Steer has also developed its own set of assumptions to be input into the model, based on its assessment of the costs reasonably borne by an efficient operator, taking into account the traffic growth projections set out in Scenario 2 of Eurocontrol's May 2021 forecast for Ireland. These assumptions are labelled Scenario C in respect of the years 2022-2024.

The assumptions for 2022-2024 can be combined with any of the assumptions used for 2020-2021, i.e. the IAA Business Plan itself, or Steer's Scenario A or Scenario B assumptions described above).

Steer's staff cost assumptions

In respect of staff numbers, Steer's the number of operational ATCOs required is modelled in a number of complementary ways:

- as a function of traffic levels and productivity levels;
- minimum staffing levels required to provide a safe level of service; and

- additional staff required in the future to assist with capex plans (such as the new runway and tower at Dublin Airport) as well as changes to regulatory compliance.

Adjustments are made to allow for staff retirement and voluntary severance. The model determines the number of staff required to handle forecast traffic. At the point where traffic recovering from the pandemic implies more operational staff are needed, the model automatically triggers training courses in time to produce these staff to cover the workload. Steer has accepted the ANSP's assumptions for the number of additional ATCOs required to support the new runway at Dublin as well as for safety and regulatory compliance.

Other staff numbers are projected based on the 2019 baseline and allowing changes based on Steer's assessment of proposed staff increases in the IAA ANSP Business Plan.

Assumptions are made on staff pay scale increases (assumed to be at the level of CPI + 1% in each of 2022, 2023 and 2024). Pensions are modelled based on the assumptions in the IAA ANSP Business Plan.

Steer's non-staff cost assumptions

Assumptions on non-staff costs have been made at a line-item level. For most cost lines, our analysis provides no rationale for costs in 2022 to rise above those incurred in 2019, when traffic was significantly greater than it will be in 2022. For these cost lines, it is therefore assumed that costs revert to 2019 levels in 2022 unless a specific reason is presented to deviate from this. This approach reflects the lack of sensitivity to traffic of non-staff costs and the relatively low levels of variation of most of the non-staff cost lines over RP2.

For specific cost lines, the 2019 level is the starting point for costs in 2022, onto which further adjustments are made. Specifically, allowance is made for the additional costs due to managing new infrastructure (maintenance cost lines), industry-specific trends (computing) and operating cost efficiencies anticipated to be generated due to capital expenditure (maintenance, computing, building repairs and computing).

Conclusions

Summary results

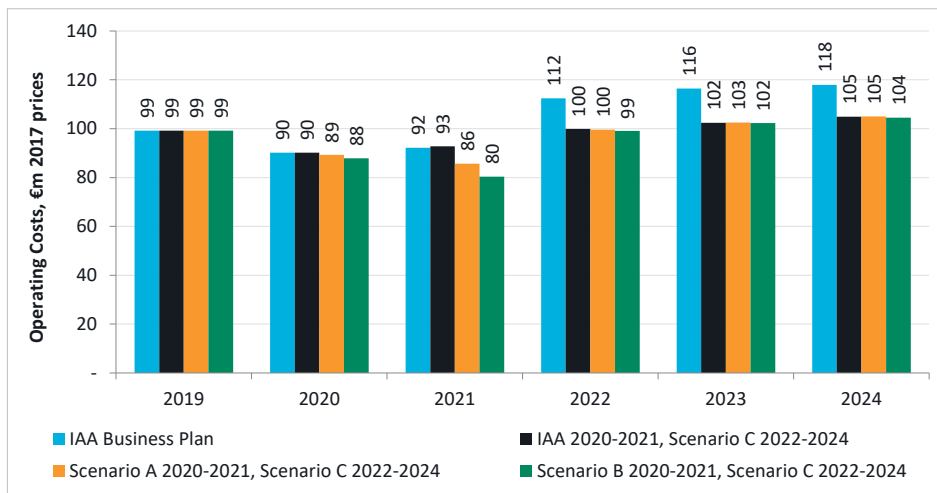
Based on the modelling approach described above and Steer's assumptions for 2022-2024 ("Scenario C"), combined with the two Steer scenarios developed for the 2020-2021 period, we have modelled the expected cost performance of the IAA ANSP over the whole RP3 period 2020-2024, in comparison to the projections in the IAA ANSP Revised RP3 Business Plan issued in July 2021.

Steer's Scenarios A and B each show savings to the Business Plan in 2020, with more significant savings against the Business Plan in 2021. In 2022, Steer's modelling and Scenario C assumptions projects that costs will rise to a level similar to the ANSP's costs in 2019 prior to the pandemic. Steer then projects that costs will rise further in 2023 and 2024, as traffic recovers, reaching a level of 6% above 2019 (in real terms).

This compares with the IAA ANSP Business Plan projections, which show costs in 2023 at 13% above the 2019 level in real terms, reaching 19% above 2019 levels in 2024.

This is shown in the figure below.

Figure 7: Total in-scope operating cost scenario comparison against IAA ANSP Business Plan



Source: IAA, Steer operating cost model

Next steps

This analysis has been developed to enable stakeholders and CAR to have access to an independent assessment of the operating costs and key drivers of costs so that an informed analysis of an efficient level of operating costs can be established.

It is assumed that it will be reviewed by CAR, the IAA ANSP and stakeholders during the consultation period. The analysis will be updated following receipt of comments during the consultation.

1 Introduction

Background

- 1.1 Steer was contracted by the Commission for Aviation Regulation (CAR) to provide operating cost advice and spreadsheet modelling relating to the Irish Aviation Authority (IAA) Air Navigation Service Provider's (ANSP's) contribution to Ireland's Single European Sky Performance Plan for Reference Period 3 (RP3, 2020 -2024). CAR took over the role of the national regulator overseeing Ireland's performance plan in January 2020, i.e. at the start of the RP3 period.
- 1.2 The study is being undertaken in the context of the significant impact of the COVID-19 pandemic, which has drastically reduced air traffic volumes in Ireland, Europe more widely and across the world. The effect of this has been to require a new Reference Period 3 (RP3) Performance Plan as the assumptions used in the original RP3 Performance Plan for Ireland are no longer appropriate.
- 1.3 The European Union has recognised the changed circumstances through issuing Commission Implementing Regulation (EU) 2020/1627 "*on exceptional measures for the third reference period (2020-2024) of the single European sky performance and charging scheme due to the COVID-19 pandemic*". The Performance Review Body (PRB), and the European Commission (EC) have reset RP3 Union-wide targets and expectations of ANSP performance in the context of the pandemic.
- 1.4 Steer was requested to undertake its analysis of IAA ANSP's operating expenditure in a number of Phases. In the first Phase, we undertook an analysis of the ANSP's performance during RP2 and during 2020, the first year of RP3 and also of the COVID-19 pandemic.
- 1.5 In the second Phase, we reviewed the "cost containment" measures undertaken by the IAA ANSP during 2020 and planned for 2021, based on information provided by the IAA ANSP, in particular its cost containment report and financial results for 2020, as well as its submissions to the PRB on its cost containment measures for both 2020 and 2021.
- 1.6 In the third Phase, we reviewed the ANSP's Revised RP3 Business Plan, and in particular its operating expenditure forecasts for the 2022 to 2024 period (i.e. the final three years of RP3). A draft "Service Delivery in 2020-21 and Business Plan 2022-24" for the Revised RP3 Period was issued by the ANSP in April 2021, followed by a Final version in July 2021. Steer's work initially focused on the April version, subsequently updating our analysis when the July version became available.
- 1.7 In Phases 2 and 3, Steer produced its own alternative scenarios for the IAA ANSP operating costs.

Scope of study

- 1.8 The study covers the operating costs of the IAA ANSP which includes staff costs (salaries, pensions and other staff-related costs), and non-staff operating costs such as rentals,

administration and insurance. The study excludes the cost categories of Depreciation, Cost of Capital and Exceptional Items for the ANSP, which are being covered by CAR using separate analysis. The operating costs of the National Supervisory Authority (NSA) or Meteorological Provider (MET) are not covered in this report, but will be reviewed by Steer separately, with their own reports.

Discussion with key stakeholders

- 1.9 During the background phase of the project Steer held meetings with a number of key stakeholders including airspace users to understand the context of the study and any key issues they wanted to raise. The Safety Regulation Division (SRD) of IAA was also consulted.

Provision of information from IAA ANSP

- 1.10 Throughout the work, Steer has worked closely with IAA ANSP to gain the best understanding possible of its plans. This has involved a number of data requests, presentations by and meetings with IAA¹, supplementing the provision of official correspondence with CAR relating to the Revised Business Plan, Regulatory Accounts and other supporting information.

Terms of Reference

- 1.11 The scope of work focussed on in-scope Operating Costs of the ANSP (staff costs and non-staff operating costs, not including depreciation or the cost of capital), as well as the production of a supporting report and spreadsheet. The work is to develop an independent, evidenced piece of analysis to assess the appropriate level of IAA ANSP operating costs for the 2020-21 and 2022-2024 periods, taking into account efficient operator benchmarks from within and outside the ATM industry. The work is designed to be shared with CAR and industry stakeholders in order that the IAA ANSP assumptions and cost plan can be challenged and investigated further. The supporting modelling was designed to be able to be used with different traffic scenarios (given the uncertainty of COVID-19 recovery), as well as the timing of key events such as the opening of the new tower and second runway at Dublin Airport.
- 1.12 The work covered the following phases:
- Phase 1: Inception and data collection, background analysis and model specification and development;
 - Phase 2: Base year for 2020 and 2021 reviewing the evidence, and comparing to efficient operator benchmarks, as well as model population and calibration to develop Steer's view of efficient operating costs; and
 - Phase 3: Review of IAA ANSP forecast, efficient operating cost forecast for 2022-2024, as well as model population and calibration for Steer's view of efficient operating costs.

Approach to modelling

- 1.13 Steer has developed its own operating costs model on a bottom up basis which makes use of the best data available to establish the historical data and in particular 2019 actuals, and produces scenario projections for the base year 2020-2021 and forecast years of Reference Period 3 – 2022-2024 using different values of assumptions and drivers to develop the Steer

¹ References to IAA in this document should be understood as IAA ANSP, unless the context implies otherwise.

scenarios presented in this report so as to compare to the IAA ANSPs Revised RP3 Business Plan.

Purpose and structure of this report

1.14 The remainder of this report sets out:

- **Chapter 2:** Background and benchmarking;
- **Chapter 3:** 2020-21;
- **Chapter 4:** 2022-24; and
- **Chapter 5:** Conclusions and key issues.

1.15 In addition, two appendices set out our records of assumptions for each period:

- **Appendix A:** Record of Assumptions - Steer scenarios 2020-21; and
- **Appendix B:** Record of Assumptions - Steer scenario 2022-24.

2 Historical trends and benchmarking

Historical trends

Background

- 2.1 In this chapter we provide the historical trends in traffic and operating costs over the period 2012-2019, including comparisons over time and to benchmarks.

Traffic trends in RP1 and RP2

- 2.2 The table below shows the compound annual growth rates (CAGRs) of traffic across RP1 and RP2. Note that CAGRs for RP1 are estimated over the period 2012-14 (we do not have data from 2011 - the year immediately before RP1).

Table 2.1: Summary of changes in IAA traffic volume over time

Service	RP1 CAGR (2012-14)	RP2 CAGR (2014-19)	2012-19 CAGR
En-route service units	2.0%	3.4%	3.0%
Terminal service units	3.0%	6.4%	5.4%
Composite flight hours	2.8%	3.4%	3.2%

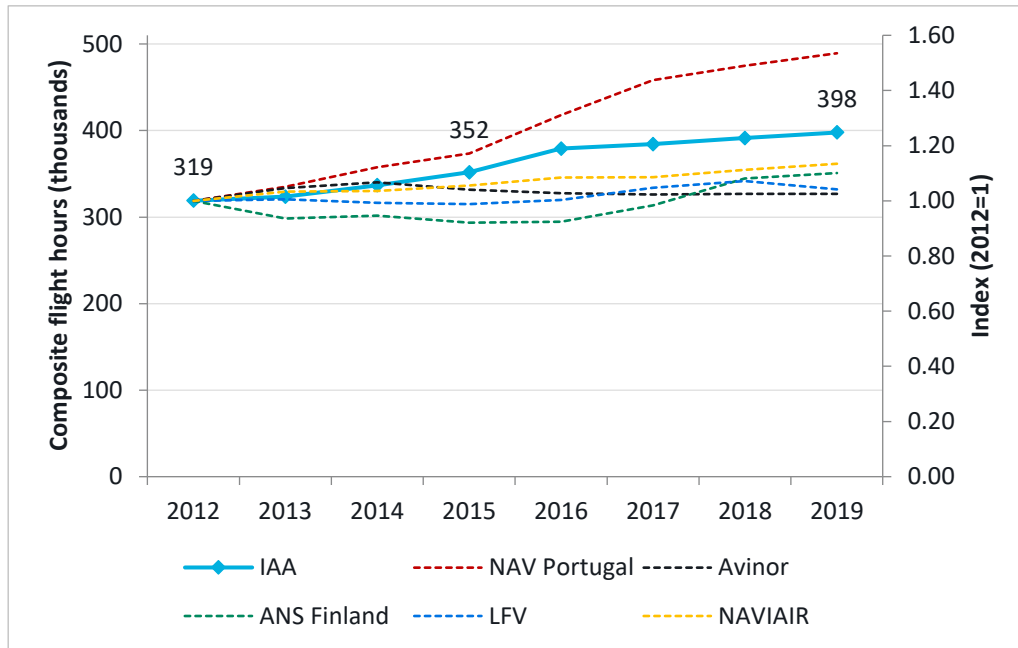
Source: Steer analysis of Eurocontrol traffic forecast and ACE Benchmarking Reports. Composite flight hours for 2019 calculated from Eurocontrol Key Operational Data spreadsheet for 2019

- 2.3 As shown above, the volume of en-route service units in Ireland grew at a compound annual growth rate (CAGR) of +3.0% between 2012 and 2019, with faster growth witnessed during RP2 in particular (CAGR of +3.4% from 2014 to 2019). Terminal traffic service unit volumes in Ireland grew faster at a CAGR of +5.4% between 2012 and 2019 (+6.4% over the RP2 period). Composite flight hours provide a measure of the overall volumes of work handling flights taking into account both en route and terminal services. The number of composite flight hours handled by IAA has increased significantly over the period 2012-2019, covering RP1 and RP2, with a CAGR of +3.2%, based on +2.8% CAGR in RP1 (2012-2014) and +3.3% CAGR in RP2 (2014-2019).
- 2.4 This performance can be compared against a set of ANSPs (the ‘comparator sample’) which are similarly positioned at the edge of European airspace and have broadly similar traffic levels relative to airspace size. The sample of ANSPs was used by the European Commission (EC) in RP1 and RP2 to compare to IAA’s performance (in RP3, the Portuguese ANSP has not been included in the PRB and EC’s comparator group, but in Steer’s assessment remains a relevant comparator). This sample includes:
- Navegação Aérea (NAV) Portugal;
 - Avinor (Norway);

- Luftfartsverket (LFV) Sweden;
- Air Navigation Services (ANS) Finland; and
- NAVIAIR (Denmark).

2.5 Of the ANSPs in the comparator sample, only NAV Portugal has experienced faster growth (+5.9% and +6.5% CAGR across RP1 and RP2 respectively). The figure below shows the growth in composite flight hours over the period 2012-19 as an index (right hand scale) and, for IAA only, in absolute terms (left hand scale).

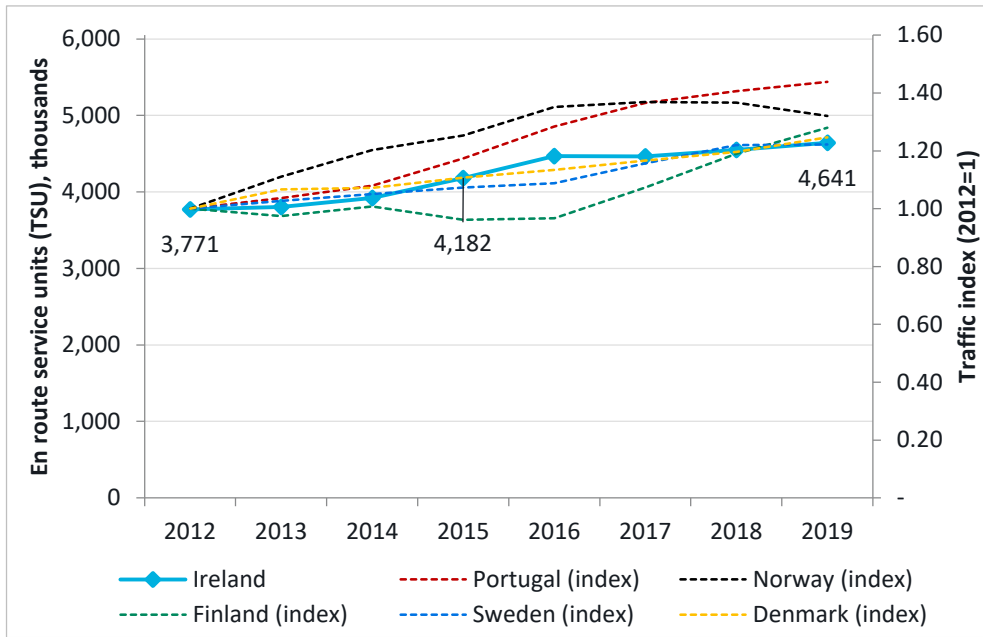
Figure 2.1: Composite flight hours by ANSP



Source: Steer analysis of ACE Benchmarking Reports.

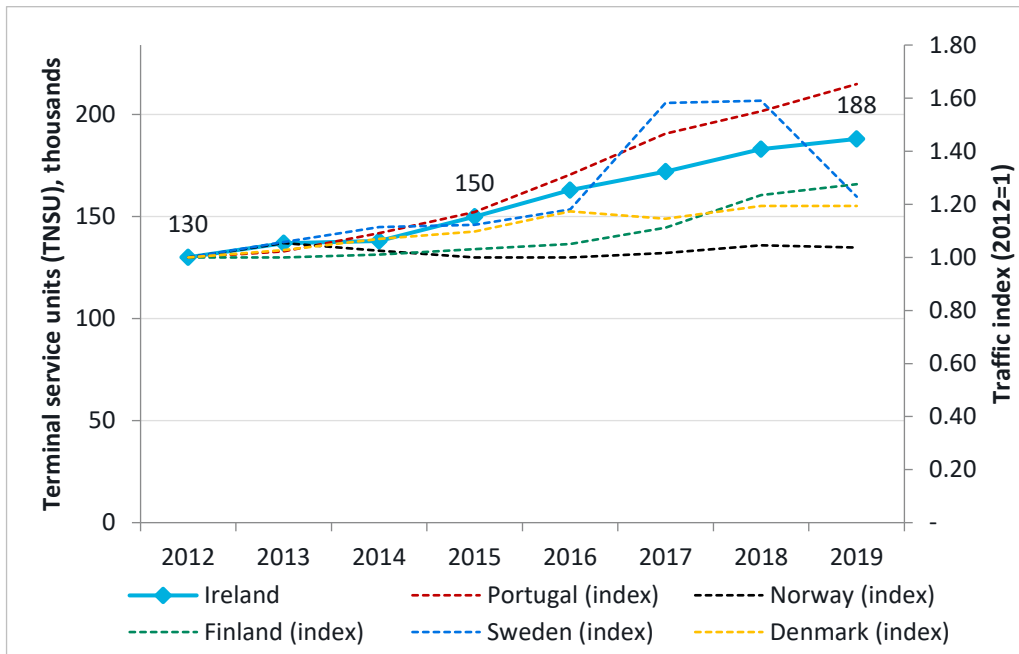
2.6 Considering the en-route (TSUs) and terminal (TNSUs) flight volumes separately, the figures below show that Ireland’s en-route traffic grew the most slowly of the comparator ANSPs (Figure 2.2) but that its terminal traffic grew relatively rapidly (Figure 2.3). The figures show the growth in the relevant service units over the period 2012-19 as an index (right hand scale) and, for IAA only, in absolute terms (left hand scale).

Figure 2.2: En-route service units in the Irish Traffic Zone 1 and comparator ANSP indices



Source: Eurocontrol Aviation Intelligence Portal.

Figure 2.3: Terminal navigation service units in the Irish Terminal Charging Zone and comparator ANSP indices



Source: Eurocontrol Aviation Intelligence Portal.

Operating costs trends during RP1 and RP2

2.7

A key driver of IAA's operating costs is traffic and the level of flights served by the ANSP, described above. Traffic has a direct effect on resource requirements both in terms of staff costs – including operational and support staff – and other non-staff costs such as workstations, office space, utilities, etc. Likewise, factors such as productivity and service

quality, as well as the regulatory burden will also have an effect on operating costs. These factors are discussed below. Other drivers of cost include the type and complexity of traffic handled by IAA. The majority (around 80%) of traffic handled by IAA are en-route overflights transiting the North Atlantic. Furthermore, Eurocontrol views Irish airspace as one of the least complex parts of European airspace – a view which has not changed since at least 2006.²

Table 2.2: Eurocontrol traffic complexity rankings, 2019

Rank	ANSP	Score	Rank	ANSP	Score
1	Skyguide	13.29	21	ROMATSA	4.48
2	MUAC	10.97	22	M-NAV	4.44
3	DFS	10.93	23	NAVIAIR	3.82
4	NATS (Continental)	10.8	24	Albcontrol	3.64
5	Skeyes	9.77	25	DCAC Cyprus	3.45
6	Slovenia Control	9.13	26	HCAA	3.40
7	ANS CR	8.96	27	NAV Portugal (Cont.)	3.34
8	Austro Control	8.76	28	LFV	3.06
9	DSNA	8.03	29	LGS	2.6
10	LVNL	7.74	30	Oro Navigacija	2.32
11	SMATSA	7.09	31	Sakaeronavigatsia	2.23
12	HungaroControl	6.91	32	EANS	2.20
13	LPS	6.89	33	Avinor (Continental)	2.00
14	Croatia Control	6.87	34	IAA	1.92
15	Grand Total	6.85	35	ANS Finland	1.72
16	ENAV	6.30	36	UkSATSE	1.42
17	DHMI	5.67	37	MATS	0.98
18	BULATSA	5.12	38	ARMATS	0.96
19	ENAIRE	5.12	39	MOLDATSA	0.63
20	PANSA	4.73			

Source: Eurocontrol.

2.8 This section considers IAA's operating cost trends during RP1 and RP2. For clarity, the discussion of operating costs in the rest of this report focuses specifically on IAA's ATM/CNS provision costs,³ henceforth referred to simply as 'operating costs,' which thereby excludes the following items from consideration in this report: depreciation, cost of capital, exceptional items, MET costs, Eurocontrol costs, payment for regulatory and supervision services, payments to the State for provision of other services, payments for delegation of ANS, and irrecoverable VAT. Operating costs specifically considers:

- ATCOs in operations employment costs;
- Non-operational staff employment costs (including non-operational ATCOs, Data Assistants, Engineers, managers and support staff); and

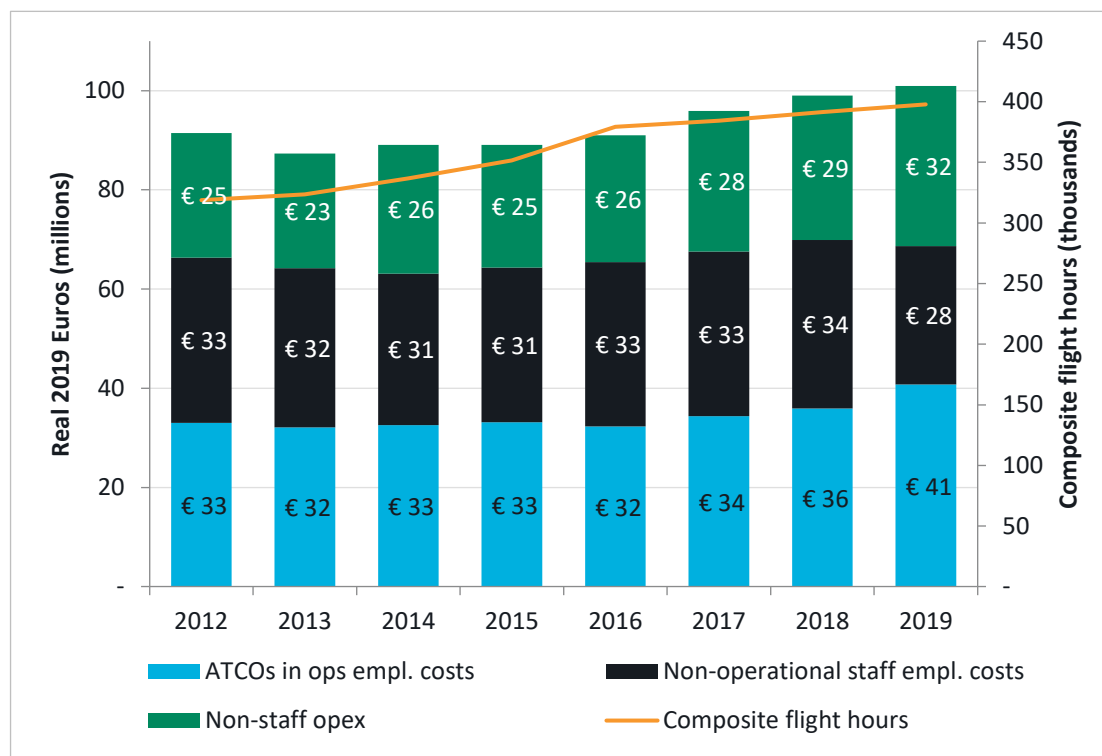
² Complexity Metrics for ANSP Benchmarking Analysis, Figure 0.1, p.ii, Eurocontrol Performance Review Commission (2006). Available from: <https://www.eurocontrol.int/sites/default/files/2019-06/2006-complexity-metrics-report.pdf>

³ Cost incurred *directly* by IAA through the provision of Air Traffic Management, Communications, Navigation and Surveillance services.

- Non-staff operating costs (rent, utilities, etc.).

2.9 The figure below presents a breakdown of the three components of IAA’s operating costs over time using ACE data.

Figure 2.4: IAA ANSP operating costs over time, € millions (2019 prices)



Source: Steer analysis of ACE Benchmarking Reports and IMF CPI data. Excludes depreciation, cost of capital and exceptional items. Includes costs only for Communications, Navigation and Surveillance (CNS) and Air Traffic Management (ATM) for en route and terminal service provision. Excludes Meteorological (MET) services and National Supervisory Authority (NSA) costs, as well as Oceanic (Shanwick) services, which are outside Single European Sky (SES) regulation.

2.10 IAA’s total operating costs⁴ grew at an average rate of +1.4% in real terms over the period 2012-19. This compares with a growth in traffic (measured as composite flight hours) of +3.2% CAGR over the same period.

2.11 Figure 2.4 shows that real operating costs fell during RP1, despite traffic rising. Focusing solely on RP2, real operating costs grew at a faster +2.5% CAGR between 2014 and 2019, while composite flight hours grew at +3.3% over the same period, indicating that operating costs increased at 76% of the rate of traffic growth. Non-operational staff costs contracted significantly (-18%) in 2019, while ATCOs in ops employment costs and non-staff operating expenditure has steadily grown since 2016 (+8.0% and +8.1% per year respectively).

⁴ Includes employment costs and non-staff operating costs; excludes depreciation, cost of capital and exceptional items.

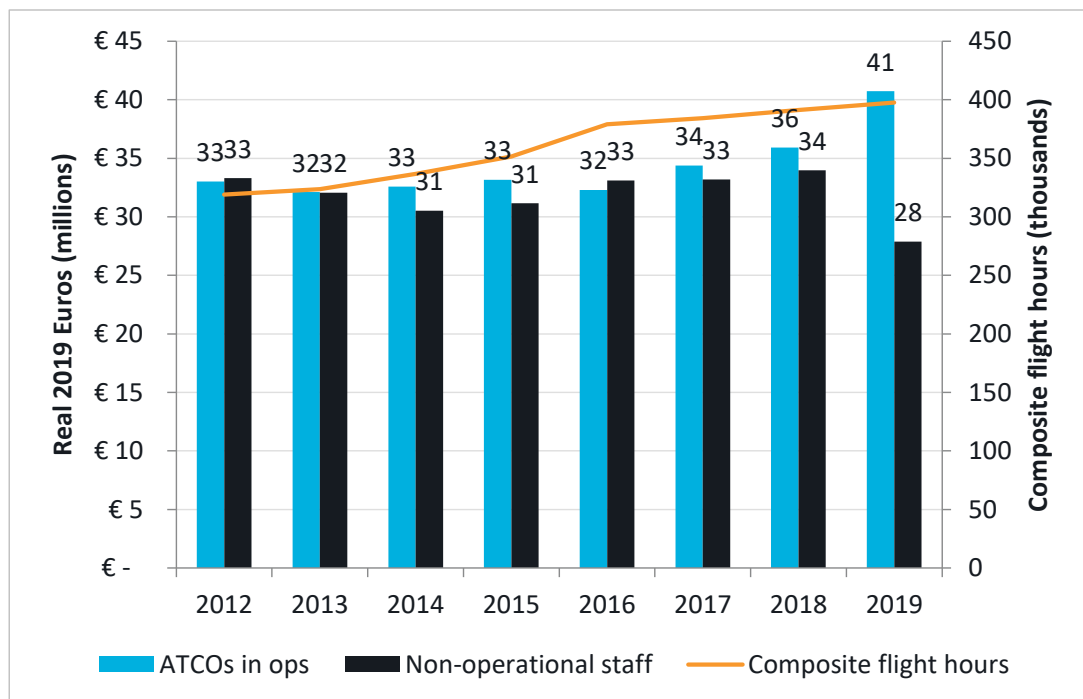
2.12 The follow sections break down total operating costs into the following constituent parts:

- Employment costs;
- ATCO in operations productivity; and
- Non-staff costs.

Employment costs

2.13 ACE data provides a split of employment costs between those costs relating to the costs of “ATCOs in OPS”, i.e. those Air Traffic Control Officers (ATCOs) working in operational roles on the one hand, and all other employment costs (ATCOs in non-operational roles and other staff) on the other hand. ATCOs in OPS employment costs represent approximately half of total employment costs.⁵ In turn, employment costs represent approximately 70% of total operating costs. The chart below shows a comparison of the trends in real employment costs, for ATCOs in OPS and for non-operational staff as well as the underlying levels of traffic.

Figure 2.5: Employment costs, € millions (2019 prices)



Source: Steer analysis of ACE Benchmarking Reports.

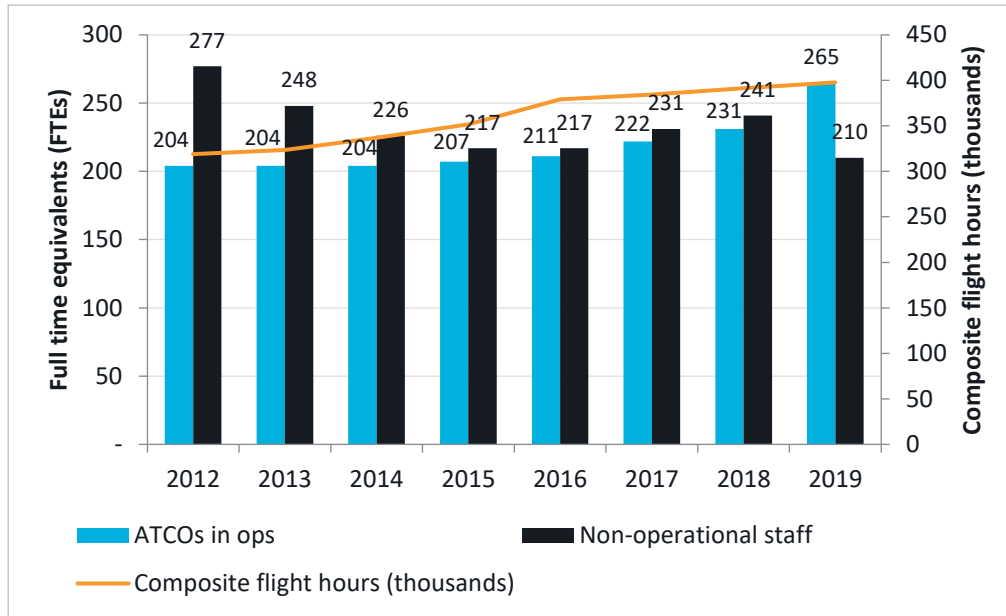
2.14 As illustrated in the figure above, real employment costs for ATCOs in ops remained stable during RP1 (2012-14), but then increased rapidly during RP2 (+4.2% per annum), resulting in an average increase of +3.4% per annum between 2012 and 2019.

2.15 Conversely, real employment costs for non-operational staff fell during RP1 and RP2, albeit more quickly in RP1 (-3.9% per annum) than RP2 (-1.5% per annum). The CAGR for 2012-19 was negative, at -2.2% per annum.

⁵ Including: wages, salaries and employer social security and pension contributions.

- 2.16 Overall real employment costs rose at +0.9% CAGR over the period 2012-2019, but increased faster in RP2 at +2.0% per annum. These employment cost trends can be compared with traffic growth over the period of +3.2% per annum between 2012 and 2019. Traffic grew faster in RP2 at an average rate of +3.8% per annum. By comparing the two data points, it is clear that real employment costs per traffic unit grew more slowly than traffic over the period 2012-19 – resulting in a decrease in average employment costs per flight hour.
- 2.17 The number of staff in each group, expressed in terms of ‘full time equivalents’ (FTEs), has evolved as shown in Figure 2.6.

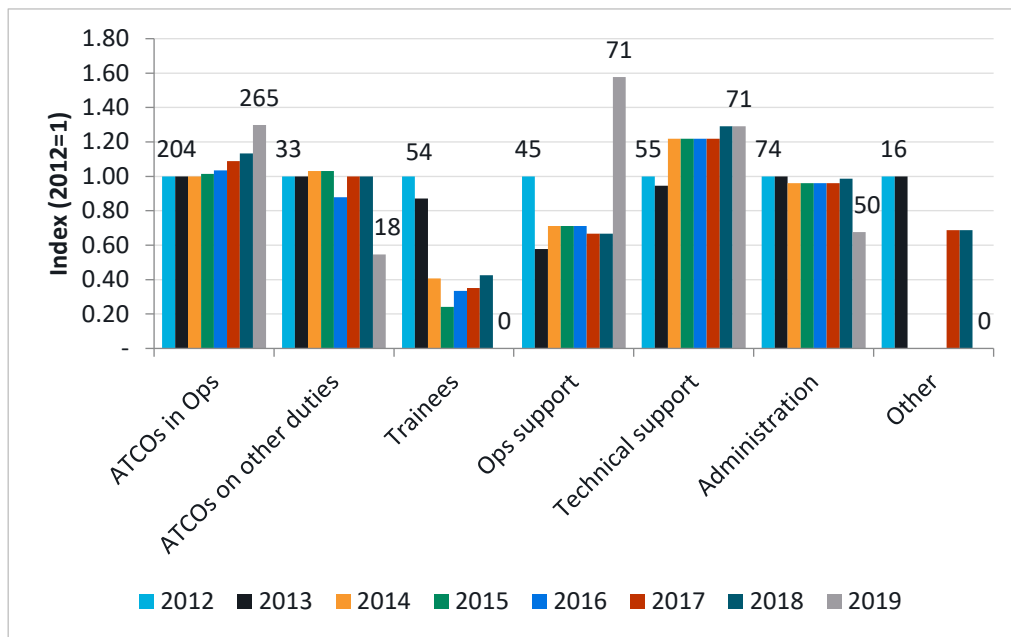
Figure 2.6: Full-time-equivalents over time, by type



Source: Steer analysis of ACE Benchmarking Reports.

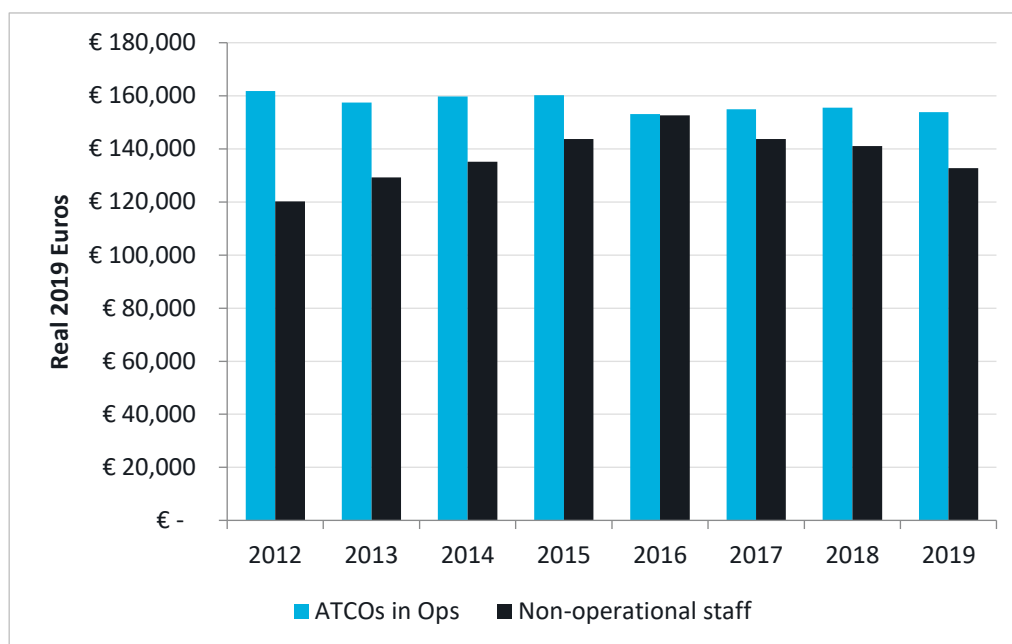
- 2.18 As illustrated above, the number of ATCOs in ops was constant during RP1 but rose during RP2 from 204 in 2014 (end of RP1) to 265 in 2019 (end of RP2), representing a CAGR of +3.8% between 2012 and 2019. Growth was faster in RP2, at an average of +5.4% per year.
- 2.19 Non-operational staff fell significantly during RP1 (from 277 in 2012 to 226 in 2014) and again in RP2, representing a CAGR of -3.9% between 2012-19 (-9.7% in RP1). There were significant reductions in headcount for all non-operational staff categories apart from technical and operations support staff, albeit the cut in trainees (from 54 to zero between 2012 and 2019) represented most (50%) of the decrease. This is illustrated in Figure 2.7 below.
- 2.20 The change in FTEs by role is presented in Figure 2.7 below.

Figure 2.7: Index of staff numbers over time, by role



Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Reports. Note: 'trainees' includes ab-initio and on-the-job trainees. Also note: IAA ANSP advised that there were 17 ATCO trainees in 2019, but that this information was not submitted to ACE.

- 2.21 As the figure above indicates, the reduction in non-operational staff across RP1 and RP2 was driven primarily by falls in the number of trainees (who represented 10% of total staff in 2012 to 0% in 2019), administration staff (15% in 2012 to 11% in 2019) and other staff (3% in 2012 to 0% in 2019). The effect of this was partially offset by growth in technical support staff (+3.7% CAGR from 2012 to 2019) and the more-than-doubling of operational support staff in 2019 (+137% on 2018 levels).
- 2.22 Employment unit costs (employment costs per employee) have developed differently for operational ATCO staff and for non-operational staff, as shown in Figure 2.8.

Figure 2.8: Average real employment unit costs by type, € (2019 prices)

Source: Steer analysis of ACE Benchmarking Reports.

- 2.23 For ATCOs in Ops, real unit costs fell over the period 2012 to 2019, with an overall CAGR between 2012 and 2019 of -0.7%. For non-operational staff, real unit costs increased until 2016, before starting to fall back, resulting in an overall CAGR between 2012 and 2019 of +1.4% p.a. Real unit costs fell faster for ATCOs in Ops (-0.8%) in RP2 than non-operational staff over the same period (-0.3%).

ATCO productivity

- 2.24 A key driver of operational staff costs (i.e. of “ATCOs in Ops”) is the level of ATCO productivity. ACE benchmarking reports provide an important measure of ATCO operational productivity, namely ATCO-hour productivity, defined as:

- Composite flight hours per ATCO-in-OPS hour worked.

- 2.25 However, ultimately, it is the monetary cost of ATCO operations which drive the charges to users, so it is also useful to consider a broader definition of ATCO productivity, namely:

- Employment cost for ATCOs-in- OPS per composite flight hour handled.

- 2.26 The relationship between these two measures can be explained as:

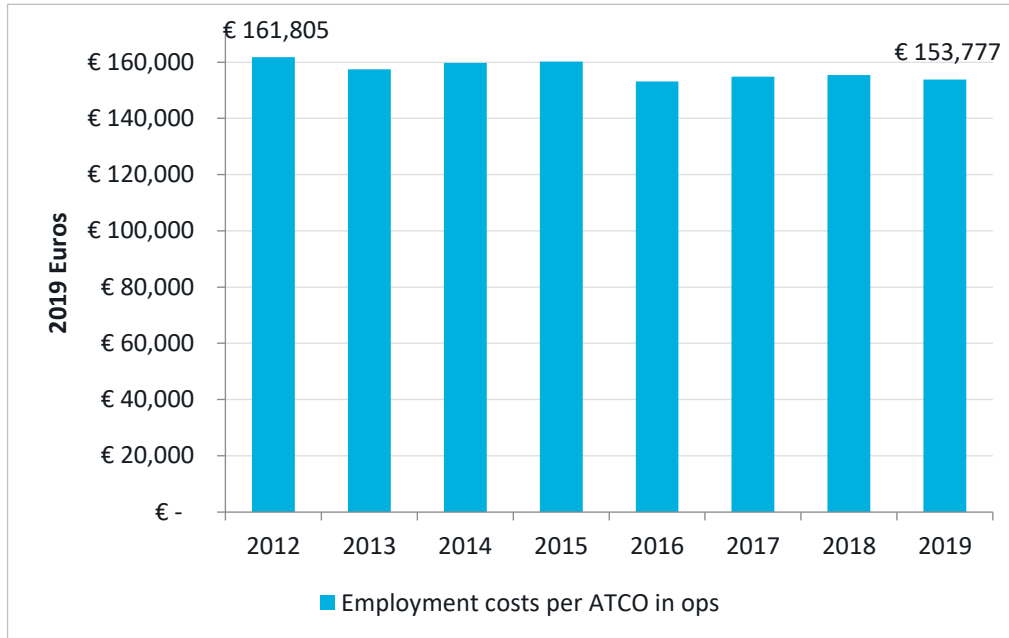
- Employment cost for ATCOs in Ops per composite flight hour =
 - Annual employment cost per ATCO in Ops; divided by
 - Operational hours worked by each ATCO in Ops; divided by
 - Composite flight hours handled by each ATCO in Ops hour worked.

- 2.27 In the subsections below, we consider historical trends each of these three factors in turn at IAA, leading to finally to the trends in the broader measure (employment cost for ATCOs-in- Ops per composite flight hour).

ATCO in Ops unit employment cost

2.28 The evolution of real ATCO in ops unit employment costs (i.e. annual employment cost per ATCO) is illustrated in the figure below.

Figure 2.9: IAA ATCO in Ops employment cost per ATCO in ops, € (2019 prices)



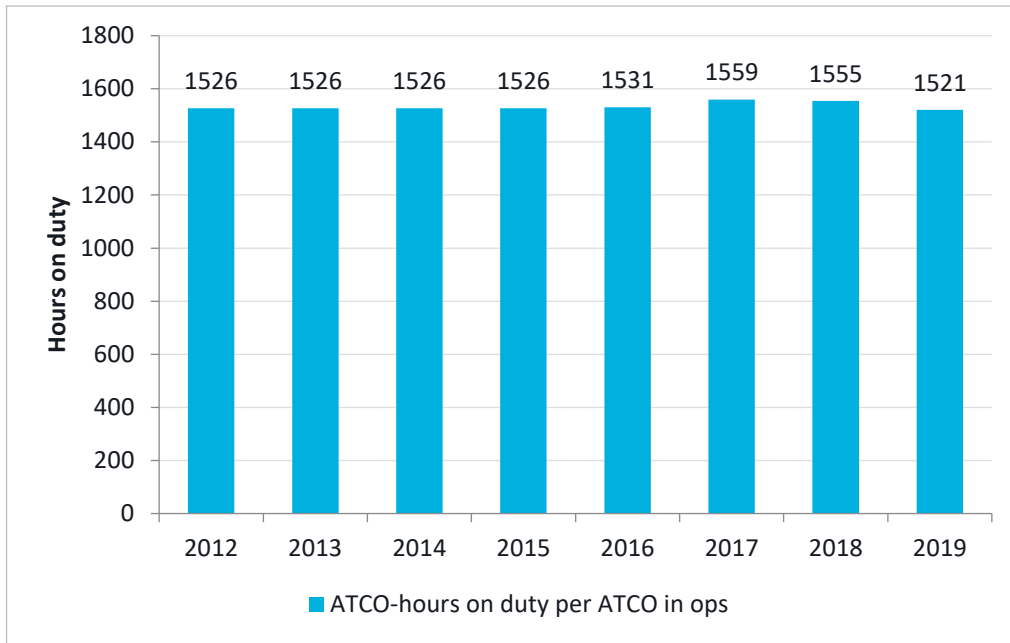
Source: Steer analysis of ACE Benchmarking Reports

2.29 As shown above, real unit employment costs per ATCO in Ops have fallen at a relatively constant rate across RP1 and RP2 in real terms (-0.6% p.a. and -0.8% p.a. respectively). It is noted that the fall across RP2 was driven by a one-off fall in 2016 (-4.4% on 2015). Overall, across 2012 to 2019, employment costs per ATCO in ops fell at a rate of -0.7% p.a.

Hours on duty per ATCO

2.30 The figure below shows the evolution of annual hours on duty per ATCO in Ops over time.

Figure 2.10: IAA ANSP annual hours on duty per ATCO in ops



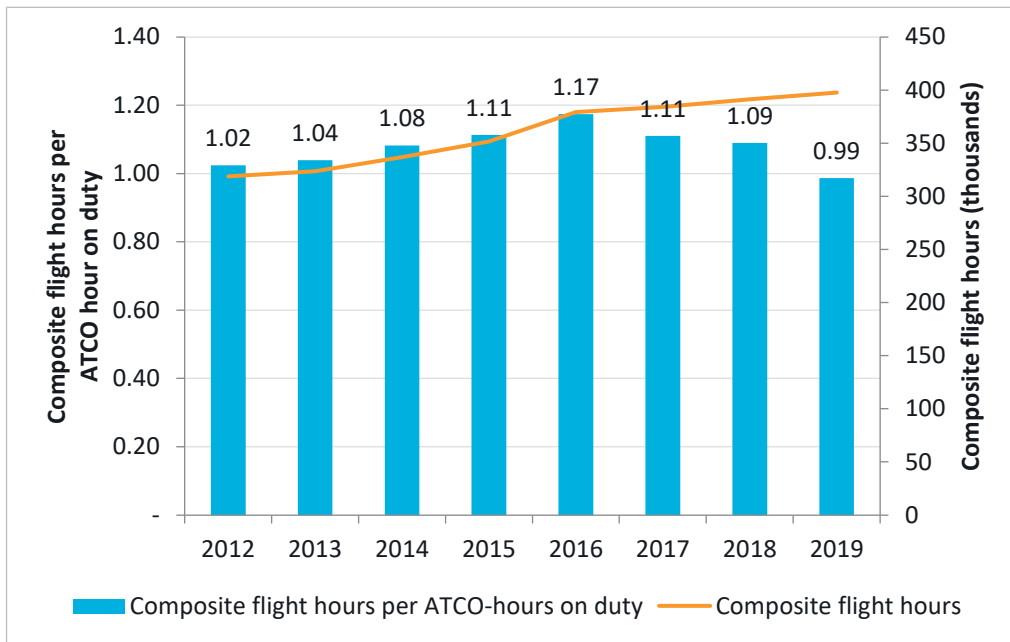
Source: Steer analysis of ACE Benchmarking Reports

2.31 The figure above clearly shows that ATCO-hours on duty per ATCO in ops have remained flat across the period (+0.0% p.a. in RP1 and -0.1% p.a. in RP2).

ATCO-hour productivity

2.32 The change in ATCO-hour productivity (i.e. composite flight hours handled per ATCO-in-Ops hour worked) over time is presented in Figure 2.11 below.

Figure 2.11: IAA ANSP ATCO-hour productivity

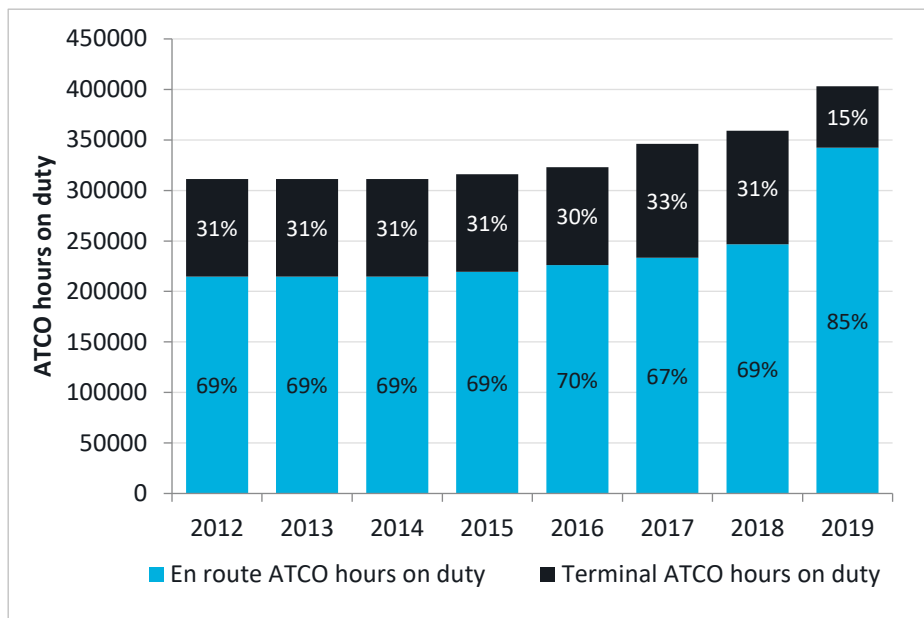


Source: Steer analysis of ACE Benchmarking Reports

2.33 As shown in the figure above, ATCO-hour productivity grew rapidly in RP1 (+2.8% p.a.). This trend reversed in RP2 (contracting by -1.8% p.a.). This was driven by two sharp contractions in ATCO-hour productivity – first in 2017 (-5.4% compared to 2016) and again in 2019 (-10.4% compared to 2018). Overall, from 2012 to 2019, ATCO-hour productivity decreased at a compound annual rate of -0.5%. In contrast, traffic grew at a CAGR of +3.2% over the same period.

2.34 We can analyse ATCO-hourly productivity in greater detail at the en-route and terminal level to identify whether these productivity trends are driven by a specific service type. For context, the relative weight of en-route to terminal ATCO-hour productivity on overall ATCO productivity can be determined by weighting each measure of productivity by the split of ATCO hours on duty between en-route and terminal services. The figure below illustrates the split of en-route to terminal ATCO hours on duty. Note that there was a step change in the allocation between en-route and terminal in 2019 which distorts the trends shown in the analysis below⁶.

Figure 2.12: Split of IAA ANSP ATCO in ops hours between en-route and terminal services



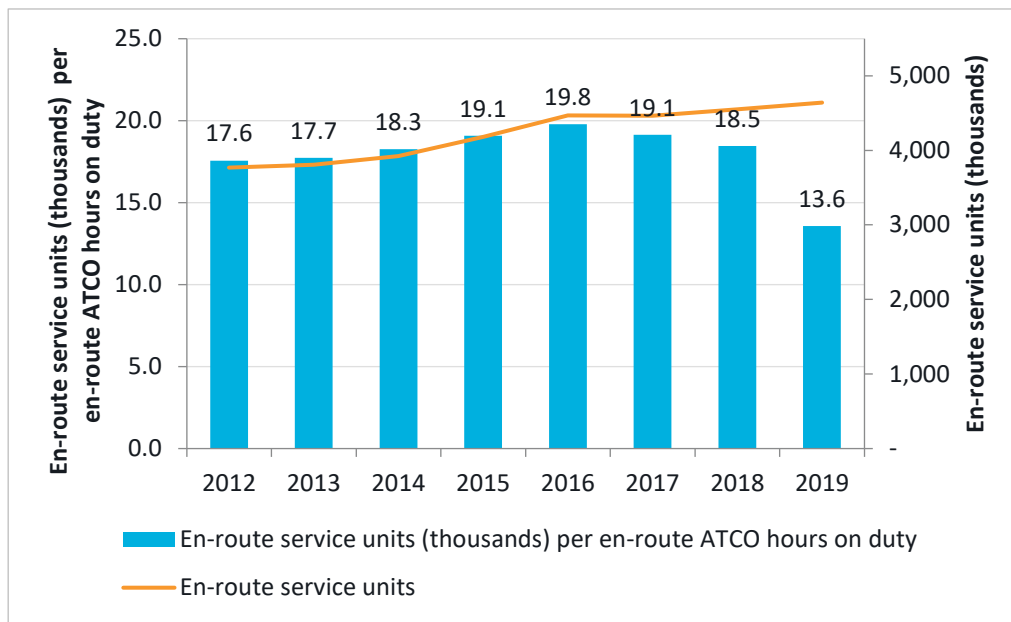
Source: Steer analysis of ACE Benchmarking Reports

2.35 As shown above, the majority (more than two-thirds) of IAA ANSP-ATCO’s operational workload is committed to en-route, a distribution which remained consistent over time until 2019. There appears to have been a significant redistribution of ATCO on-duty hours in 2019 from terminal to en-route – the cause of which is not known.

2.36 Figure 2.13 illustrates productivity trends in terms of ATCO-hour productivity for en-route traffic; Figure 2.14 does the same for terminal traffic.

⁶ The 2019 allocation appears to be consistent between the split of en route and terminal costs in the IAA ANSP RP3 Business Plan, and also consistent with the flights terminating in Ireland, so it appears that the pre-2019 allocations may be misleading. Note that the change of basis of the allocation between en route and terminal hours may also have distorted the pre-2019 ATCO-hour productivity values in Figure 2.11.

Figure 2.13: IAA ANSP en-route ATCO-hour productivity



Source: Steer analysis of ACE Benchmarking Reports, Eurocontrol

2.37 As shown above, en-route service units per en-route ATCO hours on duty increased rapidly in RP1 (+2.0% CAGR). In RP2, en route productivity rose initially but fell back after 2016, reaching a level in 2018 (18.5) similar to that at the end of RP1 (18.3 in 2014). The fall in 2019 appears to reflect the change of the basis of calculating the split between en route and terminal ATCO hours in 2019 (illustrated in Figure 2.12).

2.38 The figure below shows changes in terminal service unit ATCO-hour productivity over time.

Figure 2.14: IAA ANSP terminal ATCO productivity – terminal service units per thousand terminal ATCO hours on duty



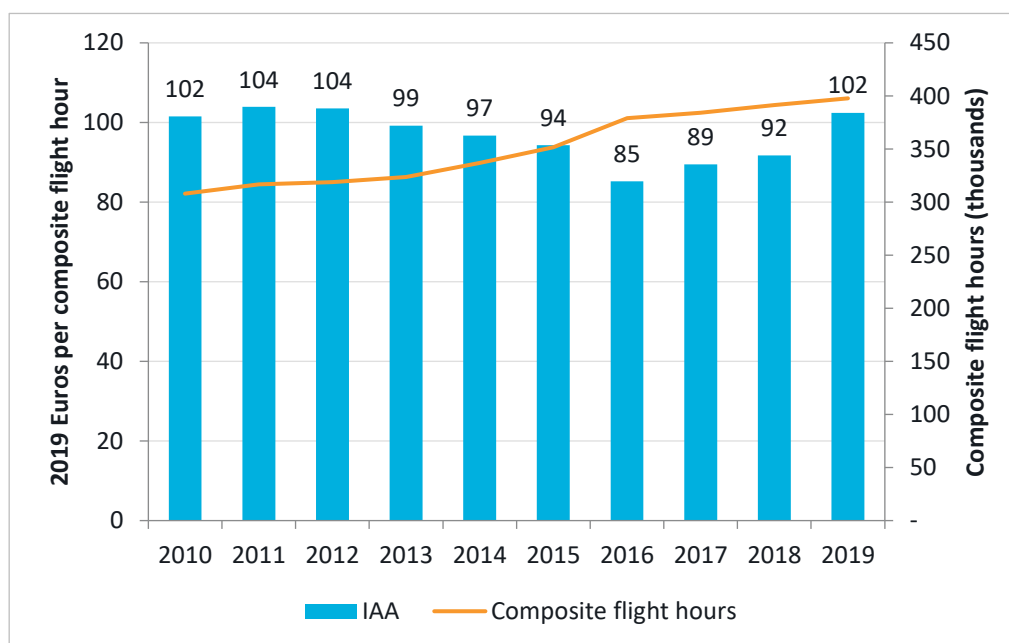
Source: Steer analysis of ACE Benchmarking Reports, Eurocontrol

2.39 As shown above, terminal ATCO-hour productivity grew steadily from 2012 to 2016, before falling back in 2017 and starting to rise again in 2018. The step change in productivity shown in 2019 reflects the change of the basis of calculating the split between en route and terminal ATCO hours in 2019 (illustrated in Figure 2.12).

Employment cost for ATCOs in Ops per composite flight hour

2.40 As noted at paragraph 2.26 above, the broadest measure of ATCO productivity in monetary terms is the employment cost for ATCOs in Ops per composite flight hour, which depends on each of the three factors shown in the charts above (annual ATCO cost, annual hours worked and ATCO-hour productivity). The trend of this broad measure between 2012 and 2019 is shown in the chart below.

Figure 2.15: IAA ANSP ATCO in Ops employment costs per composite flight hour



Steer analysis of EUROCONTROL'S ACE Benchmarking Reports and IMF CPI data.

2.41 As the figure above illustrates, ATCO productivity (ATCO in Ops employment costs per composite flight hour) improved (decreased) across RP1 (-3.4% CAGR) and deteriorated (increased) in RP2 (+1.1% CAGR). Overall, between 2012 and 2019, ATCO productivity remained relatively constant (-0.2% CAGR).

2.42 The table below summarises how each of the three factors combine to produce the trends shown in Figure 2.15.

Table 2.3: IAA ANSP ATCO productivity drivers

Cost driver	Effect on (d)	RP1 CAGR	RP2 CAGR	2012-19 CAGR
a ATCO in Ops unit employment costs	+	-0.6%	-0.8%	-0.7%
b Hours on duty per ATCO in Ops	-	0.0%	-0.1%	0.0%
c ATCO-hour productivity	-	2.8%	-1.8%	-0.5%

Cost driver	Effect on (d)	RP1 CAGR	RP2 CAGR	2012-19 CAGR
d ATCO in Ops employment cost per composite flight hour ⁷	= a-b-c	-3.3%	1.2%	-0.1%

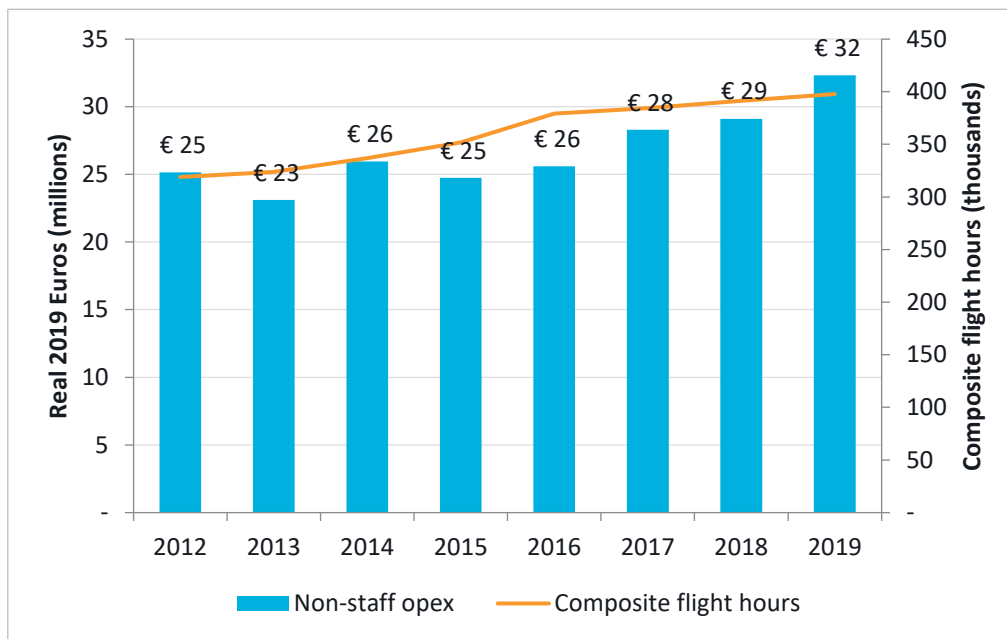
Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Reports. Values may not sum due to rounding.

2.43 Overall, as Table 2.3 above indicates, across the entire period from 2012 to 2019, there has been limited change in ATCO productivity over the period with improvements in RP1 reversed in RP.

Non-staff operating costs

2.44 Non-staff costs make up the remaining approximately 30% share of total operating costs – the evolution of which is shown in the figure below.

Figure 2.16: IAA ANSP Non-staff operating costs, € (2019 prices)



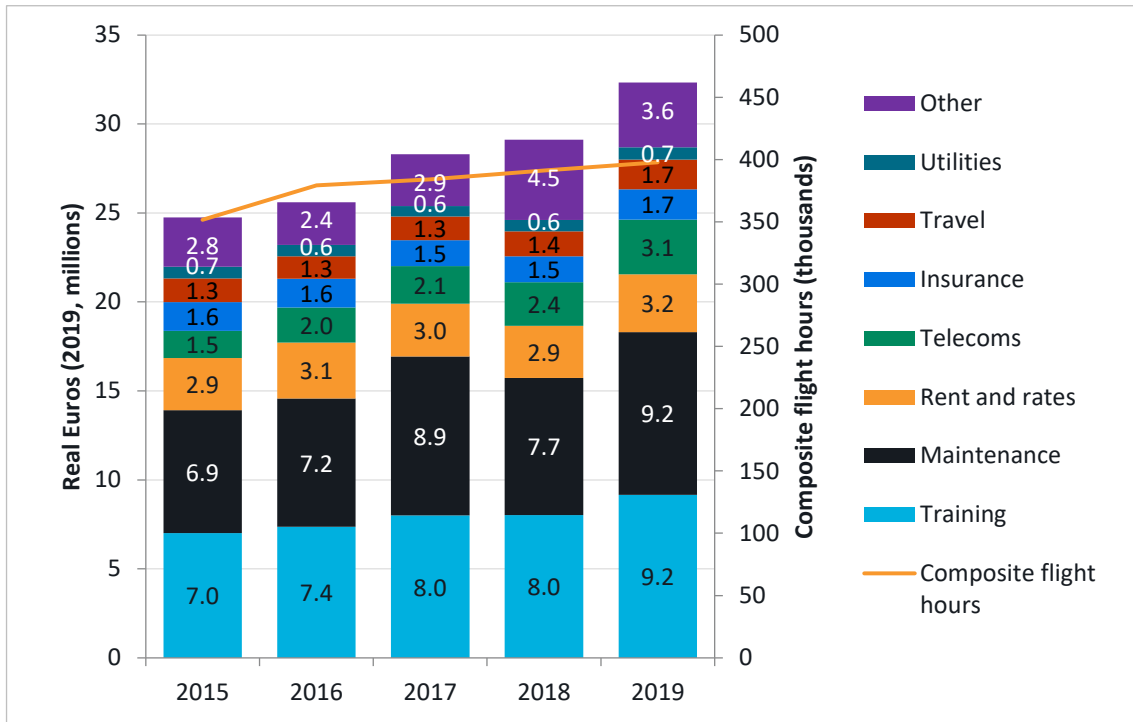
Source: Steer analysis of ACE Benchmarking Reports. 2019 cost data from CRCO submission, flight hours from Eurocontrol 2019 Key Operational Data. Note: excludes depreciation, cost of capital and exceptional items.

2.45 Non-staff operating costs have grown significantly across both reference periods, growing +1.6% (CAGR) in RP1 (2012-2014) and +4.5% (CAGR) in RP2 (2014-2019). Overall, between 2012 and 2019, non-staff operating costs grew at a compound annual growth rate of +3.7%. This can be compared to growth in traffic (composite flight hours) over the same period of +3.2% CAGR, indicating that non-staff operating costs grew faster than traffic over this period.

⁷ %Δ ATCO in Ops employment cost per composite flight hour = %Δ ATCO in OPS unit cost [average salary, employer pension contributions, etc.] - %Δ annual hours in OPS worked per year - %Δ ATCO-hour productivity [composite flight hours per ATCO-hours on duty]

2.46 Although ACE data does not provide a further breakdown of the operating expenditure categories, this is available from IAA ANSP’s management accounts data provided to Steer. Considering only the en route and terminal-related costs, this is broadly comparable with the ACE data, although it does not reconcile exactly. Nevertheless, it provides a good indication of the breakdown by cost category.

Figure 2.17: Breakdown of IAA ANSP non-staff operating costs, € (2019 prices)



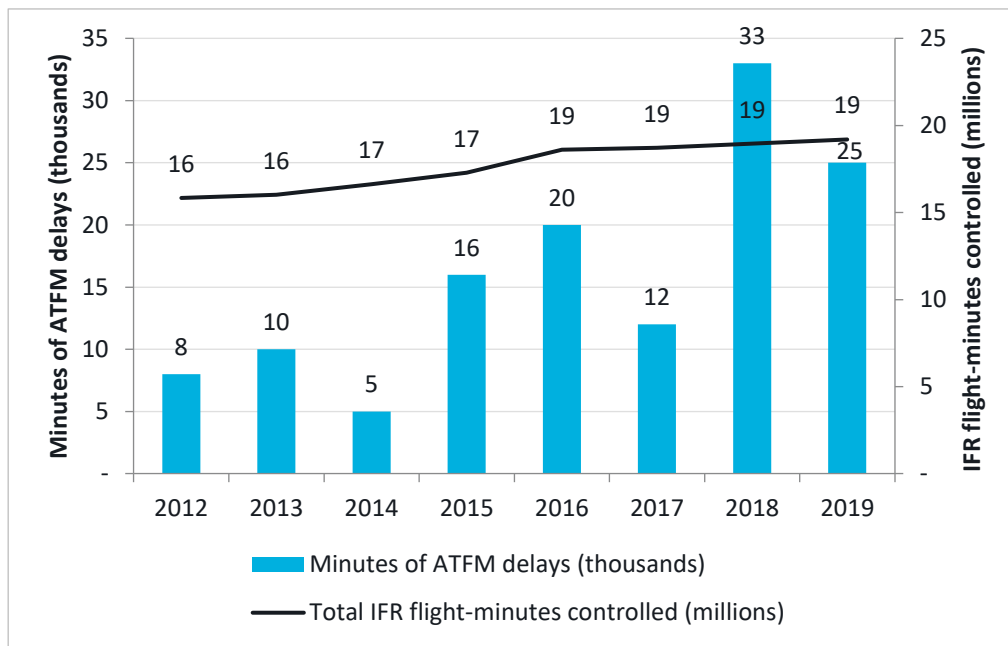
Source: Steer analysis of IAA Profit and Loss (P&L) accounts. Note: maintenance includes: maintenance and spares, computer maintenance and building repairs.

2.47 As shown above, training and maintenance make up over half of total non-staff costs – each representing 28% of total non-staff operating costs on average over 2015 to 2019. Although most cost categories, including training and maintenance, have increased in absolute terms between 2015 and 2019, all categories’ shares of total non-staff operating costs have remained approximately constant (+/- 3%).

Service quality

2.48 Performance is measured by the SES Performance scheme across the Safety, Environment, Capacity and Cost effectiveness Performance areas. For the Capacity Performance Area we use delay data to analyse trends in service quality over time – presented in the figure below.

Figure 2.18: Irish ATFM delay, 2012-2019



Source: Steer analysis of ACE Benchmarking Reports

2.49 The above demonstrates that – although ATFM delay minutes have increased across the period (by a compounding average annual rate of +17.7%) – in absolute terms, however, delay minutes remain a very small fraction of total flight minutes controlled. Annual delay minutes reached a high in 2018 which represented only 0.1% of total IFR flight-minutes controlled.

Benchmarking

2.50 This section considers IAA ANSP's operating costs in two contexts. Firstly, the ANSP's unit costs and productivity levels are compared against the corresponding values for a comparator set of ANSPs. Secondly, the ANSP's staff costs are compared against equivalent labour costs in the Irish labour market, while recognising the challenges this raises due to the relatively unique role undertaken by the ANSP within the country.

Operating costs and productivity ANSP comparisons

2.51 This section compares operating cost data across ANSPs using 2019 data from Eurocontrol's ATM Cost Effectiveness 2019 Report. As noted above (paragraph 2.4), we have used a comparator sample consisting of:

- Navegação Aérea (NAV) Portugal;
- Avinor (Norway);
- Luftfartsverket (LFV) Sweden;
- Air Navigation Services (ANS) Finland; and
- NAVIAIR (Denmark).

2.52 These were selected due to their similar position to Ireland on the edge of Europe and broadly similar traffic levels relative to airspace size. They were also chosen by the PRB in its benchmark exercises in RP2 and RP1 respectively.

2.53 This section adopts the same structure as was used in the previous section on historical trends, assessing the same costs and variables in the same order. However, rather than assessing changes within IAA over time, this chapter assesses differences between IAA and other ANSPs for the latest year for which we have a full set of comparable data (2019). The benchmarking analysis uses data predominantly from the Eurocontrol's 2019 ACE report.

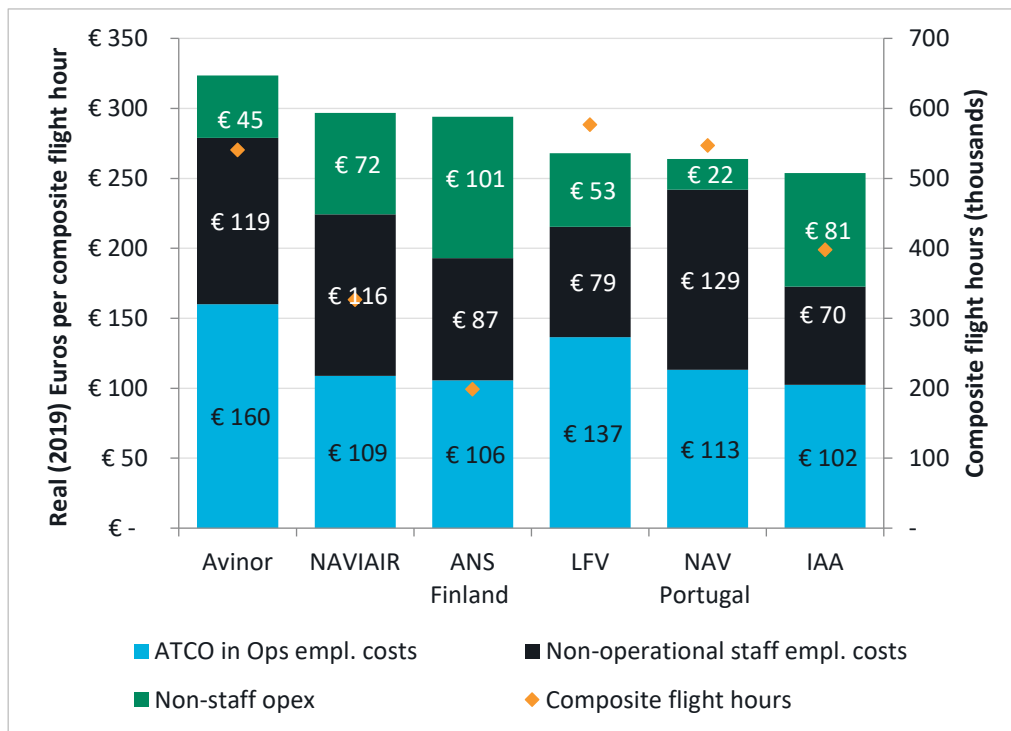
Total operating costs comparison

2.54 The key components of operating costs assessed in this report are the same as used in the previous section, namely:

- ATCOs in operations employment costs;
- Non-operational staff employment costs (including non-operational ATCOs, Data Assistants, Engineers, managers and support staff); and
- Non-staff operating costs (rent, utilities, etc.).

2.55 The figure below presents a breakdown of these three components across ANSPs within the comparator sample. Costs are presented in terms of Euros per composite flight hour to control for differences in the size of ANSPs across the sample.

Figure 2.19: Operating costs per composite flight hour by ANSP, €/composite flight hour (2019)



Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019).

2.56 As shown above, IAA has the lowest total operating cost per composite flight hour of any ANSP in the sample. This is driven by both the lowest ATCO in Ops employment costs and non-operational staff employment costs. Non-staff operating expenditure is the second highest of the comparators, however, although this is more than offset by lower employment costs.

2.57 The subsections below break down total operating costs into its constituent parts:

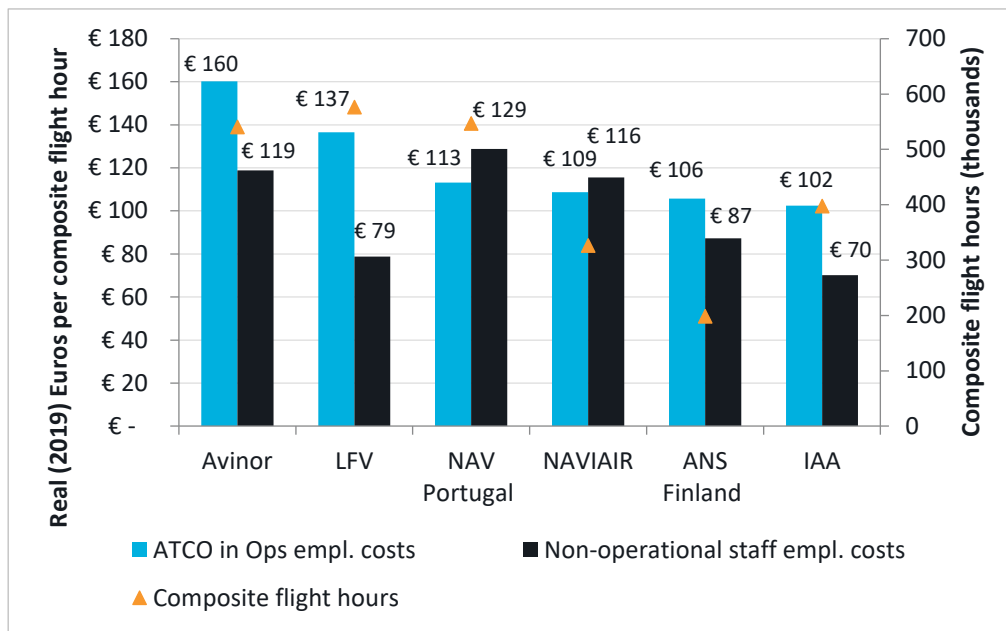
- Employment costs;
- ATCO in OPS productivity;
- Non-staff costs; and
- Service quality performance.

Employment costs

2.58 ACE data provides a split of employment costs between those costs relating to the costs of “ATCOs in Ops”, i.e. those Air Traffic Control Officers (ATCOs) working in operational roles on the one hand, and all other employment costs (ATCOs in non-operational roles and other staff) on the other hand. Employment costs include wages, salaries and employer social security and pension contributions.

2.59 This split is illustrated across ANSPs in Figure 2.20 below.

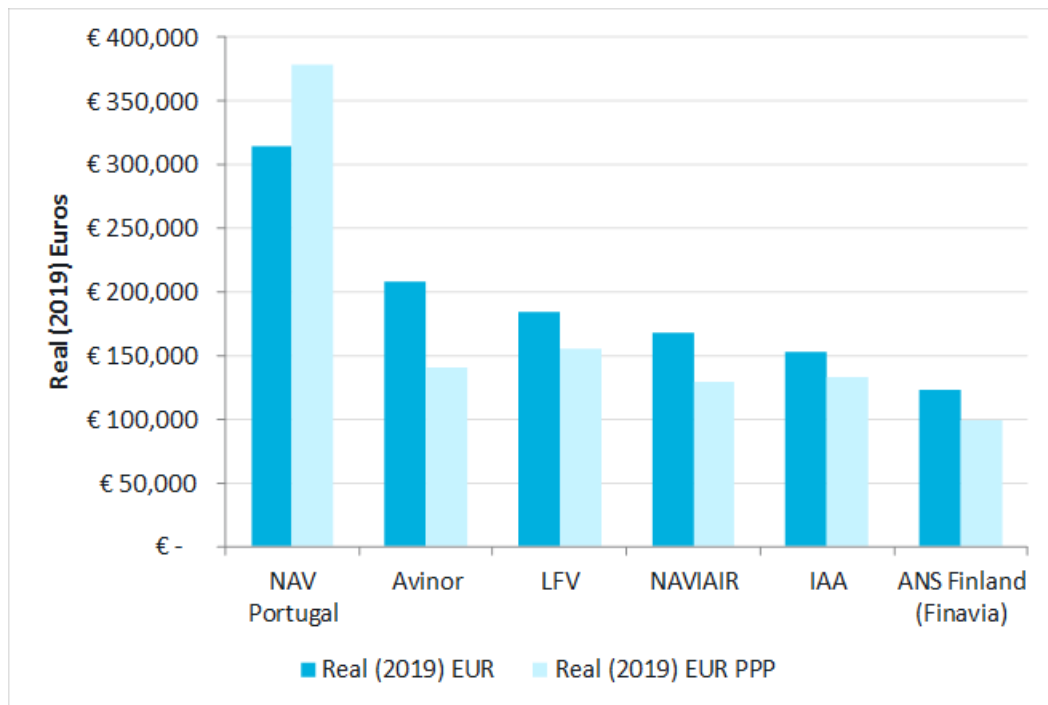
Figure 2.20: Employment costs by ANSP, €/composite flight hour (2019)



Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019).

- 2.60 The figure above shows that IAA has the lowest ATCO in Ops and non-operational staff employment costs per composite flight hour in the sample of ANSPs considered. For ATCO in Ops, IAA's cost per composite flight hours of €102 compares with a comparator range of €106 to €160, while for non-operational staff the IAA figure of €70 compares to a comparator range of €79 to €129.
- 2.61 The picture changes slightly when you consider employment costs on an average unit basis. This is because of differences between the number of employees between ANSPs, which will in turn be driven by differences in the number of composite flight hours handled by each ATCO in Ops across ANSPs. The average cost per employee is shown for ATCOs in Ops in Figure 2.21 and for non-operational staff in Figure 2.22 below. As is standard in ACE reporting, costs are shown in both currency and "Purchasing Power Parity" (PPP) units, the latter to take account of the local standard of living.

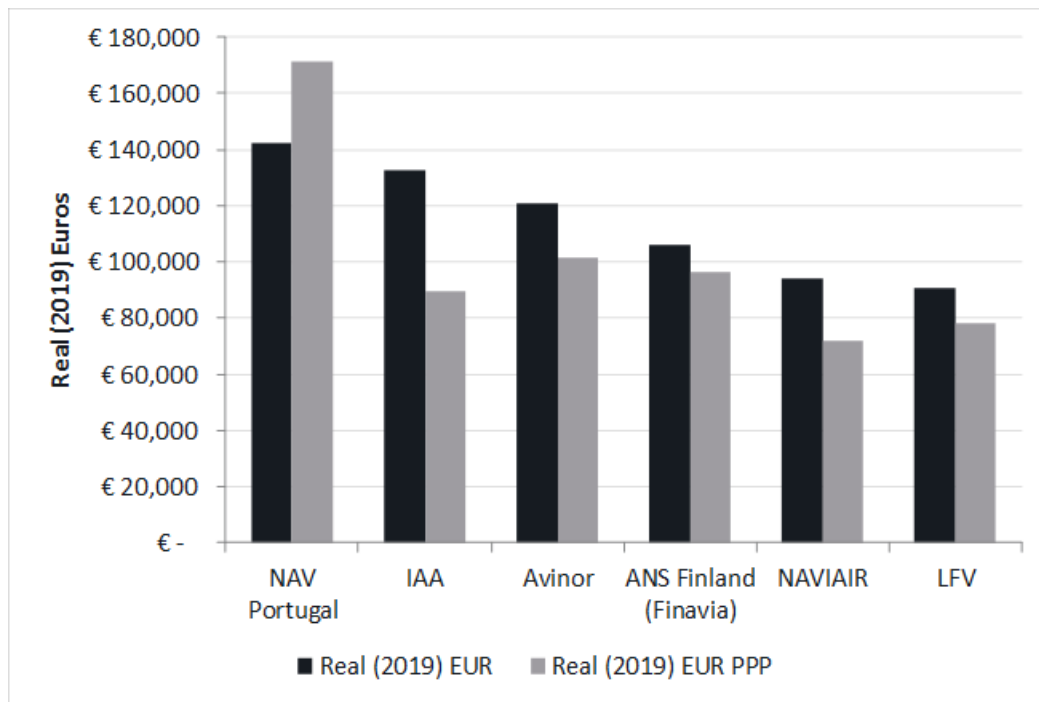
Figure 2.21: Average ATCO in Ops employment unit costs by ANSP, € and €PPP (2019)



Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019).

- 2.62 As shown above, IAA's ATCOs in Ops cost more in real terms per employee than ANS Finland (+24%), but cost less than those of the other comparators. The cost relativity with ANS Finland grows to +33%, when we control for changes in purchasing power between Finland and Ireland, while PPP costs at IAA ANSP are similar to those at NAVIAIR (Denmark, +2%) and Avinor (Norway, -6%). We understand that NAV Portugal's ATCO in Ops unit employment cost is relatively high because this likely reflects an over-reliance on overtime resulting from a moratorium on recruitment.
- 2.63 The same analysis is considered for non-operational staff employment unit costs in Figure 2.22.

Figure 2.22: Average non-operational staff employment unit costs by ANSP, € and €PPP (2019)



Source: Steer analysis of ACE Benchmarking Report (2019).

2.64 In contrast to ATCO in Ops unit costs, IAA ANSP’s unit employment costs for non-operational staff are the second highest in the sample, below NAV Portugal. Non-operational staff unit employment costs at IAA ANSP are between 10% and 46% lower than the other ANSPs in the comparator group. Considering costs in PPP terms, IAA ANSP’s non-operational staff unit costs are mid-range, lower than costs at NAV Portugal (-48%), Avinor (Norway, -12%) and ANS Finland (-7%), but higher than costs at LFV (Sweden, +14%) and NAVIAIR (Denmark, +24%).

ATCO productivity

2.65 As described in the previous section, a key driver of operational staff costs (i.e. of “ATCOs in Ops”) is the level of ATCO productivity. It is useful to consider not only ATCO-hour productivity (defined as: composite flight hours per ATCO-in Ops hour worked) but also a broader measure of productivity, namely employment cost for ATCOs in Ops per composite flight hour. As described in more detail on p.12 above, this latter productivity measure is explained as:

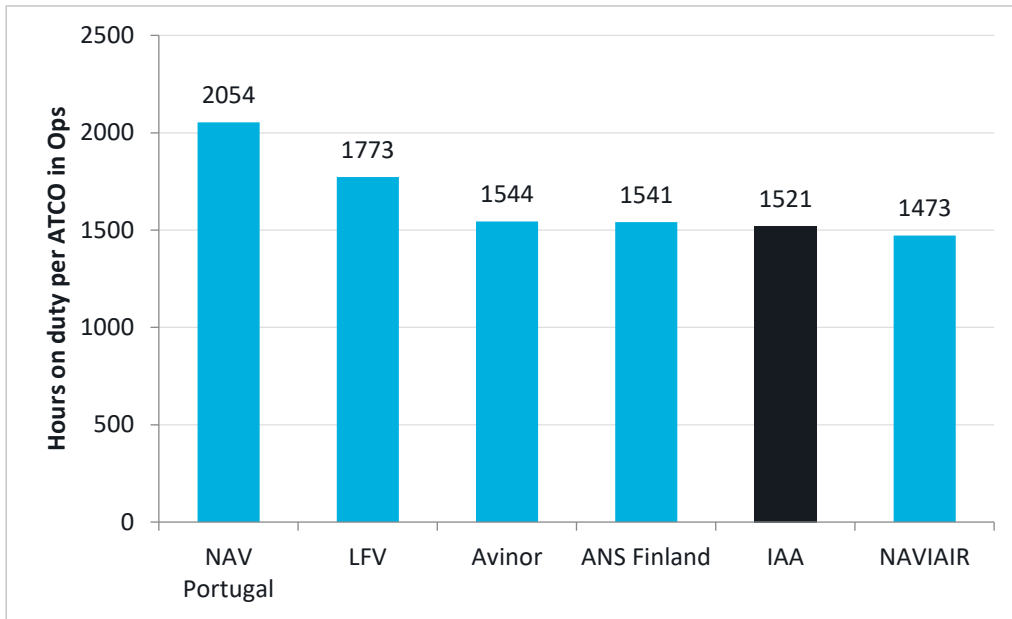
- Employment cost for ATCOs in Ops per composite flight hour =
 - Annual employment cost per ATCO in Ops; divided by
 - Operational hours worked by each ATCO in Ops; divided by
 - Composite flight hours handled by each ATCO in Ops hour worked.

2.66 In the subsections below, we consider differences across the sample ANSPs in each of these three factors. We then summarise how differences in each factor influences differences in this broader productivity measure (employment cost for ATCOs-in-Ops per composite flight hour).

Hours on duty per ATCO

2.67 Differences in annual hours on duty per ATCO in ops are presented in Figure 2.23.

Figure 2.23: Annual hours on duty per ATCO in Ops



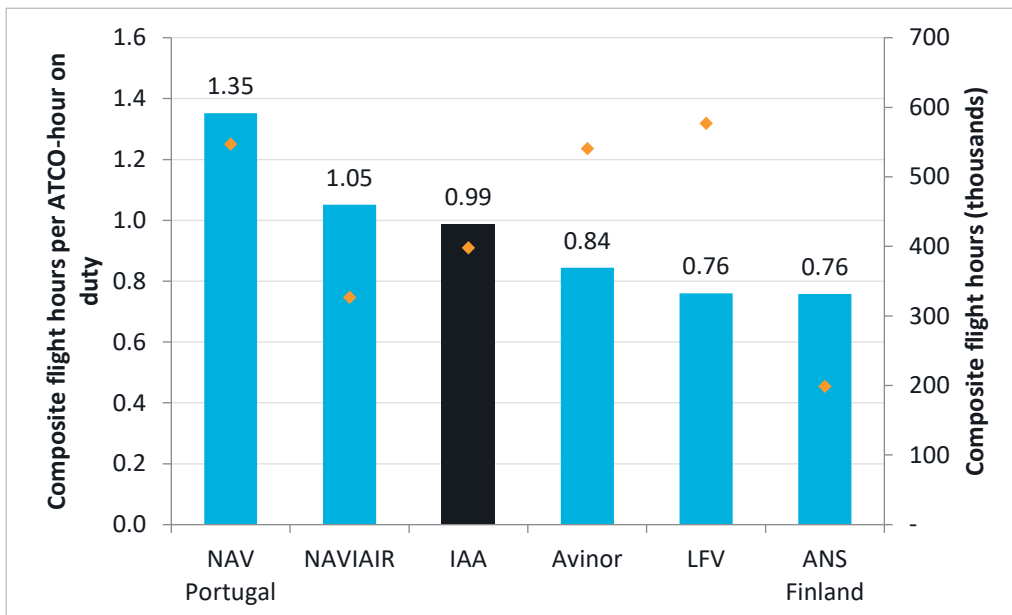
Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019)

2.68 From the above, it is clear that IAA's ATCOs on duty hours are relatively typically for comparable ANSPs, although ATCOs at NAV Portugal and Sweden's LFV spend more time on operational duty - 35% longer than IAA ATCOs in Ops in the case of the former.

ATCO-hour productivity

2.69 The figure below illustrates differences in ATCO-hour productivity across comparable ANSPs.

Figure 2.24: ATCO-hour productivity by ANSP, 2019



Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019)

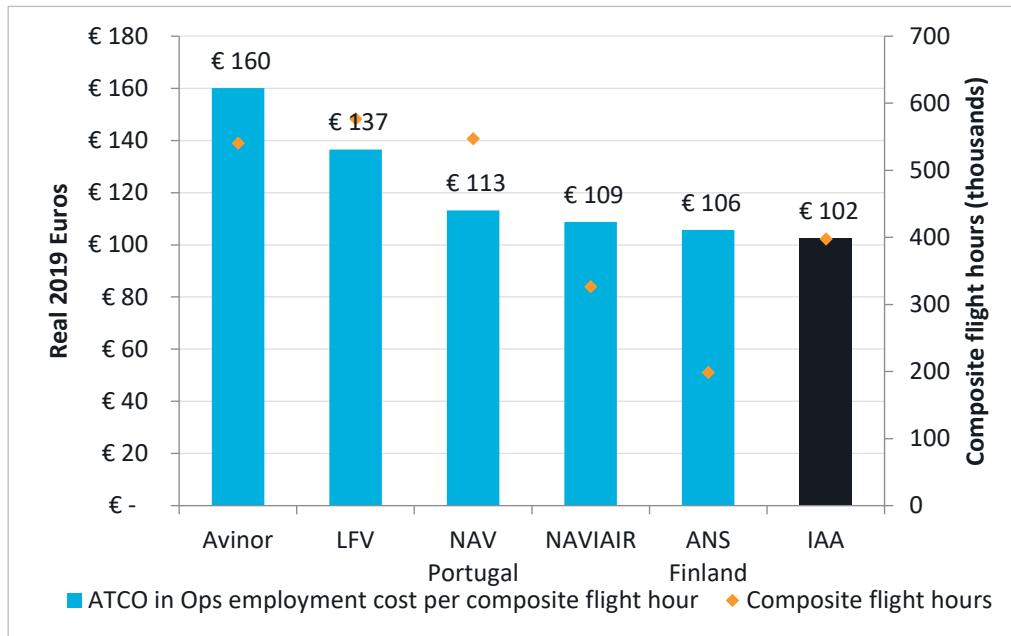
2.70 From this, IAA's ATCO-hour productivity is between 17% and 30% higher than three other ANSPs in the comparator group, but is lower than NAV Portugal (27% lower) and NAVIAIR (7%

lower). There is no clear relationship between composite flight hours and this measure of ATCO productivity across ANSPs.

Employment cost for ATCOs in Ops per composite flight hour

2.71 Productivity across ANSPs using the broader, monetary measure of productivity, ATCO-in-Ops employment cost per composite flight hour, is presented below. This measure depends on each of the three factors shown in the charts above (annual ATCO cost, annual hours worked and ATCO-hour productivity).

Figure 2.25: ATCO in Ops employment cost per composite flight hour by ANSP, 2019



Source: Steer analysis of EUROCONTROL’S ACE Benchmarking Report (2019)

2.72 As the chart above illustrates, IAA has the lowest unit cost of operational ATCOs (“ATCOs in Ops”) across the comparator ANSPs in terms of employment costs per composite flight hour handled. ATCO in Ops employment costs per composite flight hour are between 3% and 56% higher at other comparable ANSPs than at IAA. We also see that there is no clear relationship between composite flight hours and this measure of ATCO productivity across ANSPs.

2.73 The table below summarises how each of the three factors examined above combines to produce the differences in the broader productivity measure in Figure 2.25.

Table 2.4: ATCO productivity drivers by ANSP, 2019

Cost driver	Effect on (d)	Avinor	LFV	NAV Portugal	NAVIAIR	ANS Finland	IAA
a ATCO in Ops unit employment cost	mult.	€209k	€184k	€314k	€168k	€124k	€154k
b Hours on duty per ATCO in Ops	divide	1544	1773	2054	1473	1541	1521
c ATCO-hour productivity	divide	0.84	0.76	1.35	1.05	0.76	0.99
d ATCO in Ops employment cost per composite flight hour	= a/b/c	€ 160	€ 137	€ 113	€ 109	€ 106	€ 102

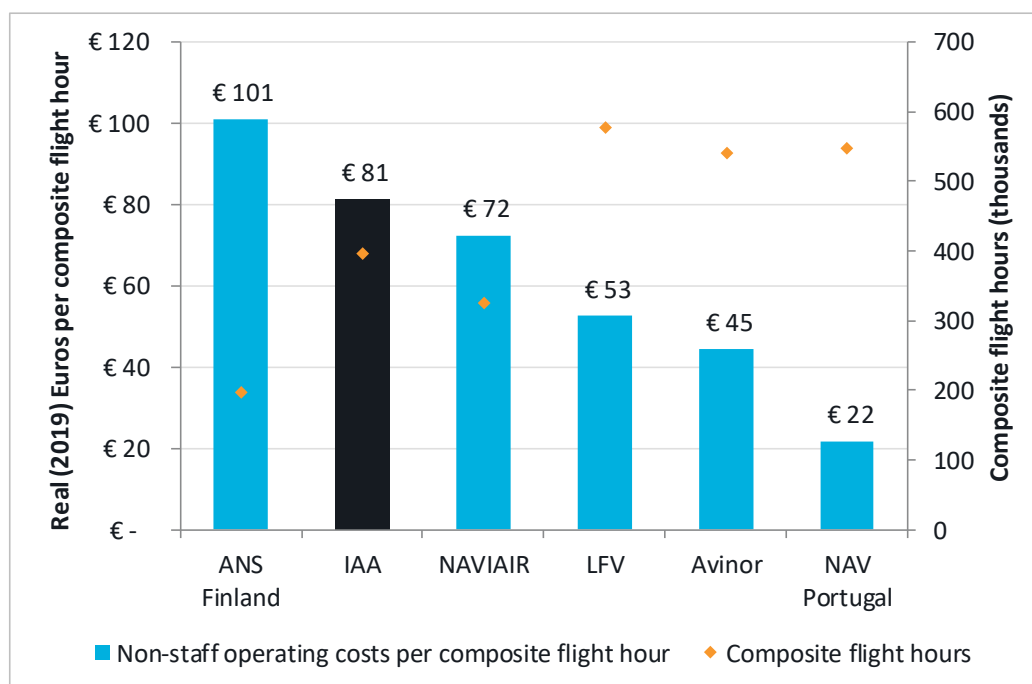
Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019). Values may not equal the exact product due to rounding.

2.74 The table shows that IAA' ANSPs performance is better than those of the comparator group. This performance is driven by strong performance in terms of low ATCO in Ops unit employment cost (a) and high ATCO-hour productivity (c) which offsets relatively low hours on duty per ATCO in Ops (b) relative to the rest of the comparator group. Notably, it is not best in class for any of the contributing factors.

Non-staff operating costs

2.75 Non-staff operating costs (excluding cost of capital and depreciation) per composite flight hour are shown in the figure below.

Figure 2.26: Non-staff operating costs by ANSP, €/composite flight hour (2019)



Source: Steer analysis of EUROCONTROL'S ACE Benchmarking Report (2019).

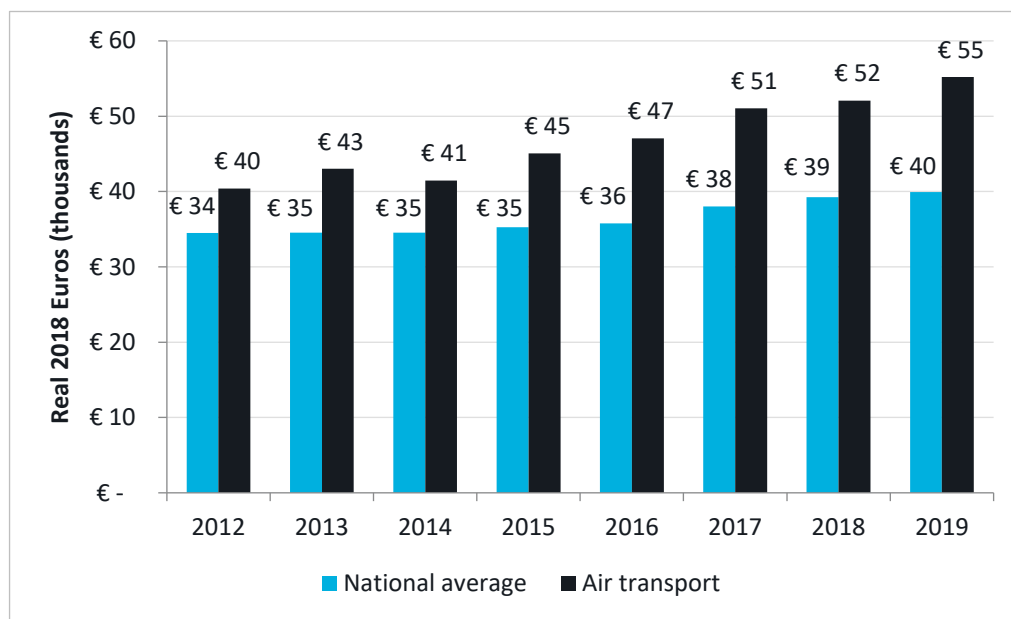
2.76 As shown in the figure above, IAA ANSP has the second highest non-staff operating costs relative to traffic compared to the rest of the sample group. Non-staff cost account for 32% of IAA’s total annual operating expenditure (excluding depreciation and cost of capital), which is similar to ANS Finland (34%) but significantly higher than others (such as Avinor, 14%; or NAV Portugal, 8%).

Regional labour market benchmarking

2.77 This section reviews staff earnings at IAA in comparison with those across the Irish labour market.

2.78 Average real earnings for workers in Ireland’s air transport sector are greater than the average for the wider Irish economy, and have been growing faster than the average, as shown in the figure below.

Figure 2.27: Average annual earnings – employees in air transport, Ireland, € (2019 prices)



Source: Irish Central Statistical Office (Table EHQ15). Based on average weekly earnings assuming 49.5 week working year.

2.79 As detailed above, average earnings per worker in the air transport sector have increased in real terms by a compound annual rate of +3.8% between 2012 and 2019, compared to a rate of +1.4% per year for the national average. On average, air transport workers are paid €55,727 per annum versus a nationwide average of €40,283 in nominal terms in 2019.

Salary benchmarking

Overview

2.80 This section benchmarks gross salaries for a variety of IAA roles. These are compared to salaries for other roles in Ireland which are equivalent in terms of scope (e.g. safety critical roles), skillset and/or industry. Gross salaries are presented in terms of salary ranges for each role based on upper and lower bounds for a given job description. The salaries are based on quoted basic pay, not including any additional allowances such as shift pay or pension costs.

2.81 For roles within IAA, these upper and lower salary bounds have been provided by IAA for each specific job, with these job descriptions then being grouped by type (ATCO, manager, etc.).

Staff headcount against each job description has been provided and these have been used to provide weighted average values for each of upper and lower bounds within each job grouping. These averaged upper and lower bounds form the basis of the ranges shown for each staff group. In addition, for the IAA jobs, we also show the full salary range, incorporating the lower bound of the lowest-remunerated specific job and the upper bound of the highest-remunerated specific job within the job grouping. Finally, using data from IAA's Regulated Accounts for 2019, it has been possible to estimate the cost per employees (excluding pensions) for two staff groupings, ATCOs and Engineers, which are also shown on the relevant charts. These have been included to provide an indication of the relationship between basic salaries and staff costs, the latter include staff allowances above basic salary, including for most ATCOs, a +27% shift pay allowance.

2.82 For comparator (non-IAA) roles, salaries have been sourced from a number of sources⁸:

- Glassdoor.ie;
- the Pilot Jobs Network;
- the Brightwater salary survey;
- Fórsa; and
- Garda.

2.83 These sites generally also provide a range of salaries for a given job description, so we have again averaged each of the upper bounds and lower bounds across jobs within a given category. For pilots, we took an average of the salary ranges (for captains and first officers respectively) shown on the Pilot Jobs Network for each of Aer Lingus and Ryanair.

2.84 A specific selection of IAA ANSP roles has been selected for benchmarking. This has been derived from salary scales data submitted to us by the IAA. This data also maps specific occupations (e.g. 'Security Supervisors') into specific roles (e.g. 'Support staff'). The below lists the IAA roles which have been benchmarked and includes the constituent occupations within each role in parentheses:

- ATCOs (ATCOs, ATCO Specialists, Station Managers);
- Data Assistants (single job category);
- Managers (Functional Officers 1-2, Division Managers 1-3, Managers, Senior Managers);
- Engineers (Engineers, ATM Specialists, SMC Engineers, Principal Engineers);
- Administrative staff (Officers, Executives, Senior Executives); and
- Support staff: security (Security Officers, Security Supervisors) and services (Services Attendants, Services Officers).

2.85 The benchmarking analysis for each role is presented in the remainder of this section.

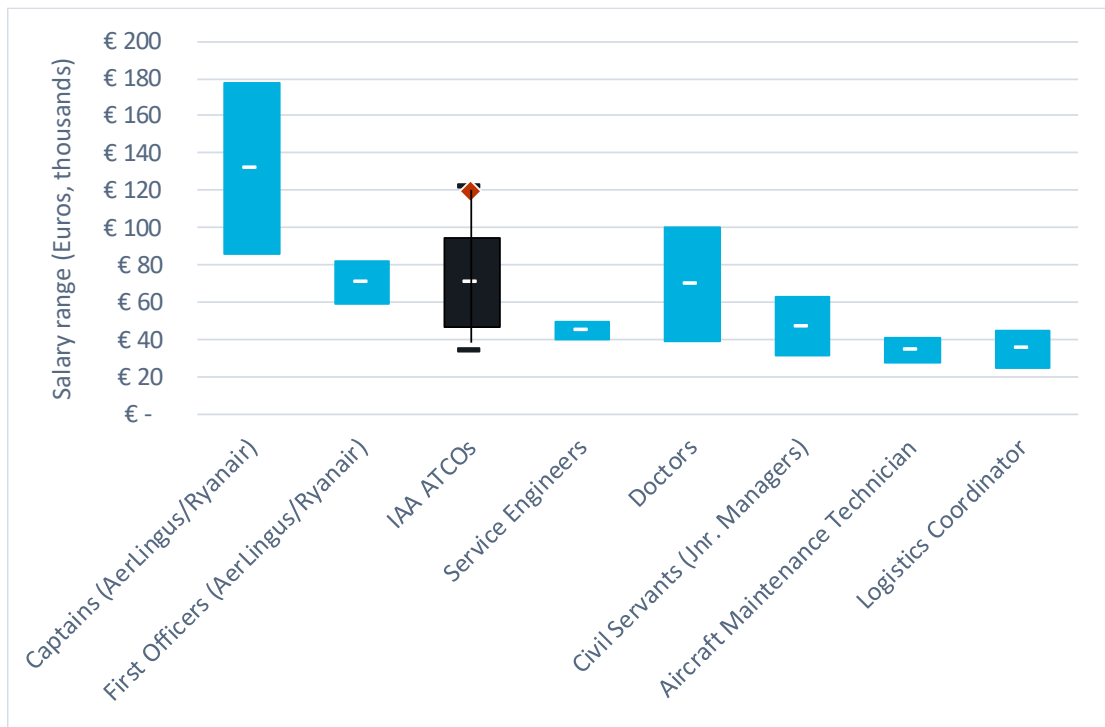
Operational staff

2.86 ATCOs, Data Assistants and Engineers are categorised as operational staff. Each is considered in turn below.

⁸ IAA ANSP also provided a Salary Guide document from Morgan McKinley, but the roles were less specifically comparable to the ANSP roles being benchmarked.

2.87 For IAA ATCOs, relevant comparator roles within Ireland includes pilots, doctors, aircraft technicians, logistics coordinators and middle-management civil service grades. Many of which, like ATCOs go through specific and intensive training. Figure 2.28 shows the average gross salary for IAA ATCOs in comparison to these other roles. Note that most ATCOs receive a +27% shift pay allowance, which is not shown on the chart. However, the average cost per employee (not including pension costs) does incorporate this allowance and is shown for comparison (based on IAA Regulatory Accounts data for 2019).

Figure 2.28: ATCO gross salary benchmarking, 2020



Salary range (white bar = midpoint) IAA full salary range IAA average cost per FTE, excluding pensions

Source: Steer analysis of data from IAA, Forsa.ie, Glassdoor.ie and the Pilot Jobs Network. Note: IAA data is for 2019. Average cost per IAA FTE from Regulatory Accounts for 2019, excluding pension contributions.

2.88 As illustrated above, IAA ATCOs are relatively highly paid compared to equivalent roles in Ireland, with the exception of airline pilot captains. For example, ATCOs at the start of their career will likely earn more than most of the comparable roles – notably doctors and civil servants in junior management roles,⁹ both of which typically require a university degree and/or “significant experience at management level.”¹⁰ Similarly, more senior ATCOs will be earning significantly more than these roles, and approximately the same amount as senior doctors.

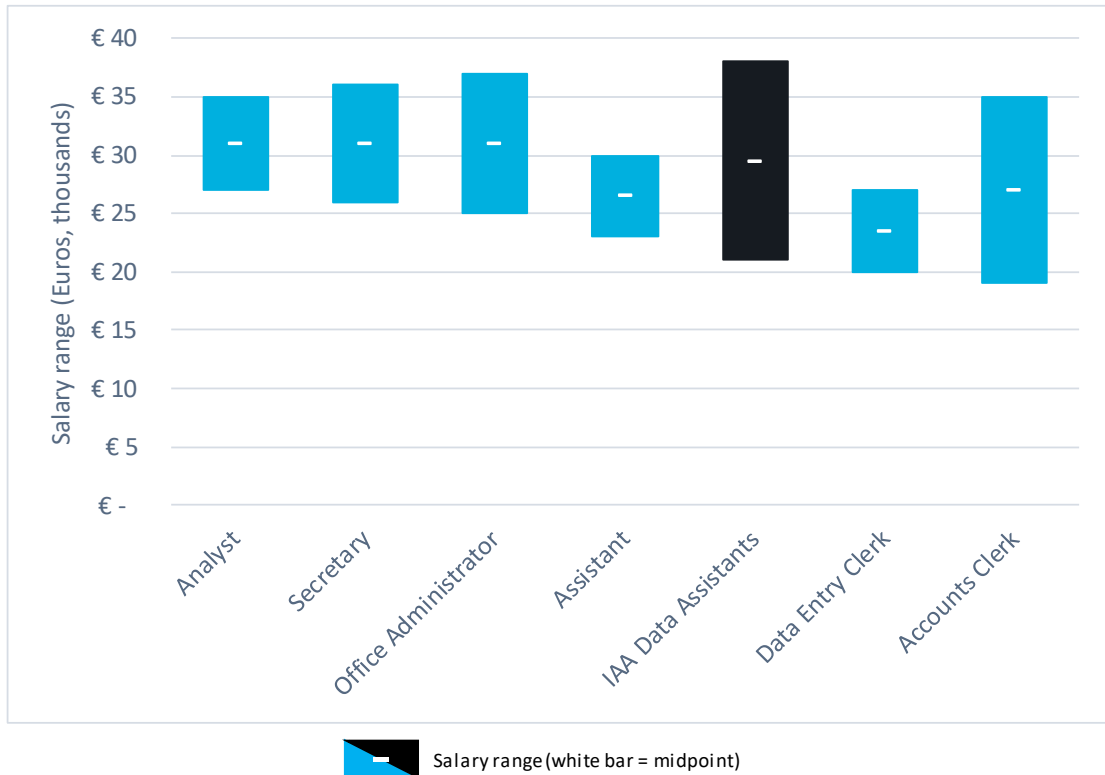
⁹ Administrative Officers and Higher Executive Officers.

¹⁰ Department of Public Expenditure and Reform (2017). Circular 15/2017.

2.89 Note that the full range of salaries for IAA ATCOs is €34,000 to €122,000 which is wider than the average upper and lower bound salaries presented above (€46,000 to €95,000). The average cost per ATCO FTE (excluding pension costs), is close to the top of the full basic salary range, at €119,000.

2.90 For IAA DAs, relevant comparator roles within Ireland includes clerks (data entry, accounts), secretaries, office administrators, analysts and assistants. Figure 2.29 shows the average salary for IAA Data Assistants (DAs).

Figure 2.29: Data Assistant gross salary benchmarking, 2020



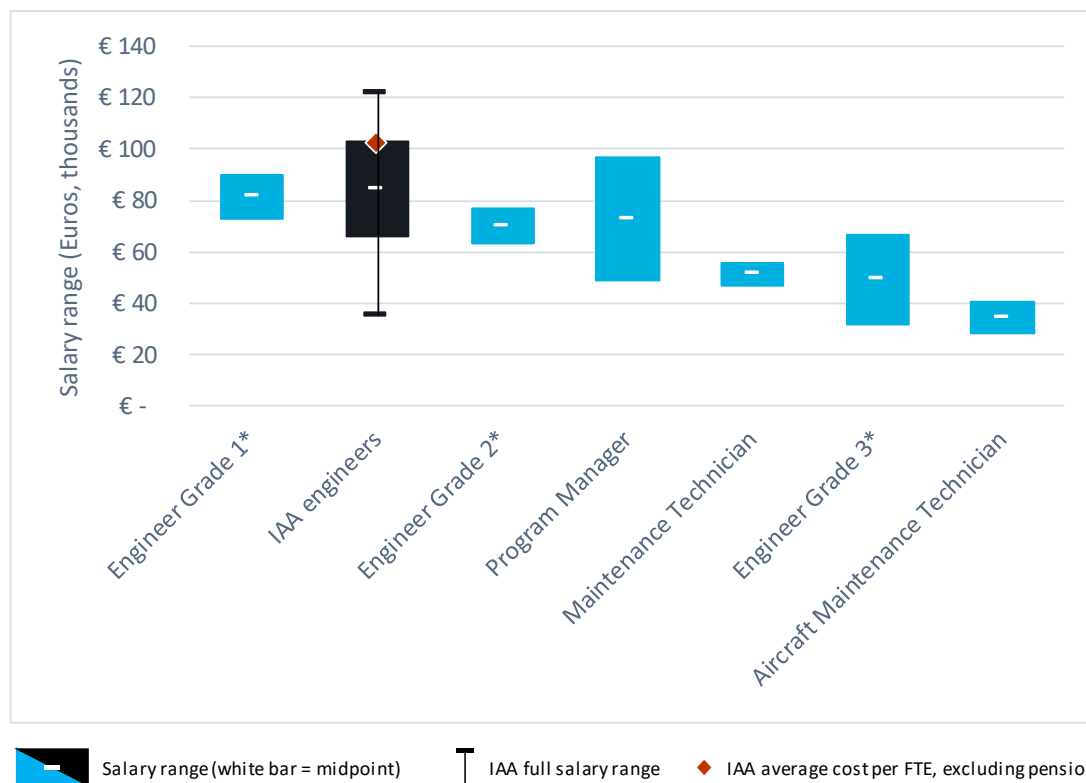
Source: Steer analysis of data from IAA, Forsa.ie and Glassdoor.ie. Note: IAA data is for 2019.

2.91 The picture is less clear for IAA’s DAs because the large salary-scale range for DAs (€21,000 to €38,000). Overall, although DAs are paid similarly to Data Entry Clerks at more junior levels, pay levels rise considerably over time. Senior DAs closer to the average upper-bound salary are paid more than any other role in the sample.

2.92 Note that the true range of salaries for IAA DAs is the same as the average upper and lower bound salaries presented above because only one salary scale is used for all IAA DAs.

2.93 IAA engineering staff salaries are considered in Figure 2.30 below. Comparable roles in Ireland may include: civil service engineers, programme managers and aircraft maintenance technicians.

Figure 2.30: Engineering staff gross salary benchmarking, 2020



Source: Steer analysis of data from IAA, Forsa.ie and Glassdoor.ie. Note: (*) Civil Service role; IAA data is for 2019. Average cost per IAA FTE from Regulatory Accounts for 2019, excluding pension contributions.

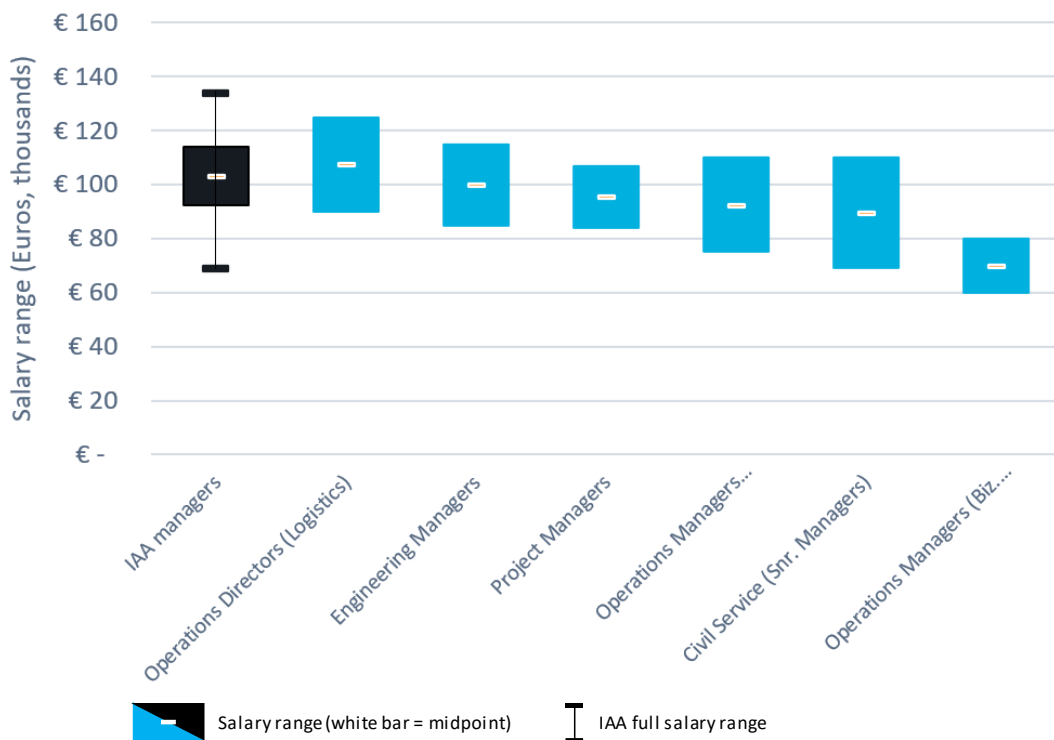
2.94 As with the previously discussed operational roles, IAA engineers are some of the highest paid in Ireland. IAA engineers have the highest average salary of the sample for senior engineers. The average upper-bound salary is 14% higher than that of the highest grade (1) for engineers in the Irish Civil Service – a role which requires at least 5 years of senior management experience, postgraduate professional qualifications, etc. Average salaries for junior IAA engineers are also some of the highest in the sample. Despite these trends, IAA noted that it has lost engineers to the Tech sector in Ireland.

2.95 Note that the full range of salaries for IAA engineers is €36,000 to €122,000 which is wider than the average upper and lower bound salaries presented above (€66,000 to €103,000). The average cost per Engineer FTE (excluding pension costs), is close to the top of the average basic salary range, at €102,000.

Managerial staff

2.96 IAA managers have been benchmarked against Civil Service senior managers and division heads, and project, logistics and engineering managers. IAA’s managerial staff have levels of remuneration broadly in line with, but towards the upper end of the managerial salary comparators shown, though are significantly below Civil Service Divisional Heads salaries, as shown in Figure 2.31.

Figure 2.31: Managerial staff gross salary benchmarking, 2020



Source: Steer analysis of data from IAA, Forsa.ie and Glassdoor.ie. Note: IAA data is for 2019.

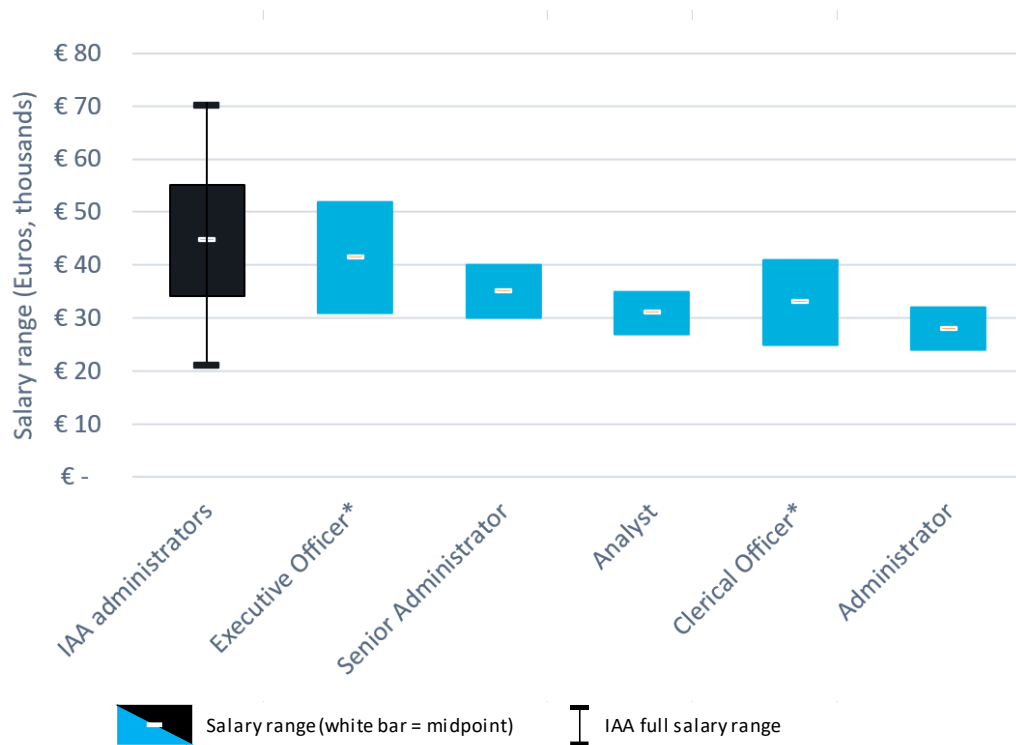
2.97 Senior managers at IAA at entry-level can expect to earn marginally more than elsewhere. In general, IAA managers are paid similarly to Logistics Operations *Directors* but more than Logistics Operations Managers. Furthermore, when we consider average upper-bound salaries, this premium for IAA managerial staff largely disappears.

2.98 Note that the true range of salaries for IAA managerial staff is €69,000 to €134,000 which is wider than the average upper and lower bound salaries presented above (€92,000 to €114,000).

Support staff

2.99 Support staff have been compared against analysts, administrators and junior civil service analyst and clerical roles. As with operational staff, IAA’s administrative staff are remunerated relatively highly compared to these groups, as shown in the figure below.

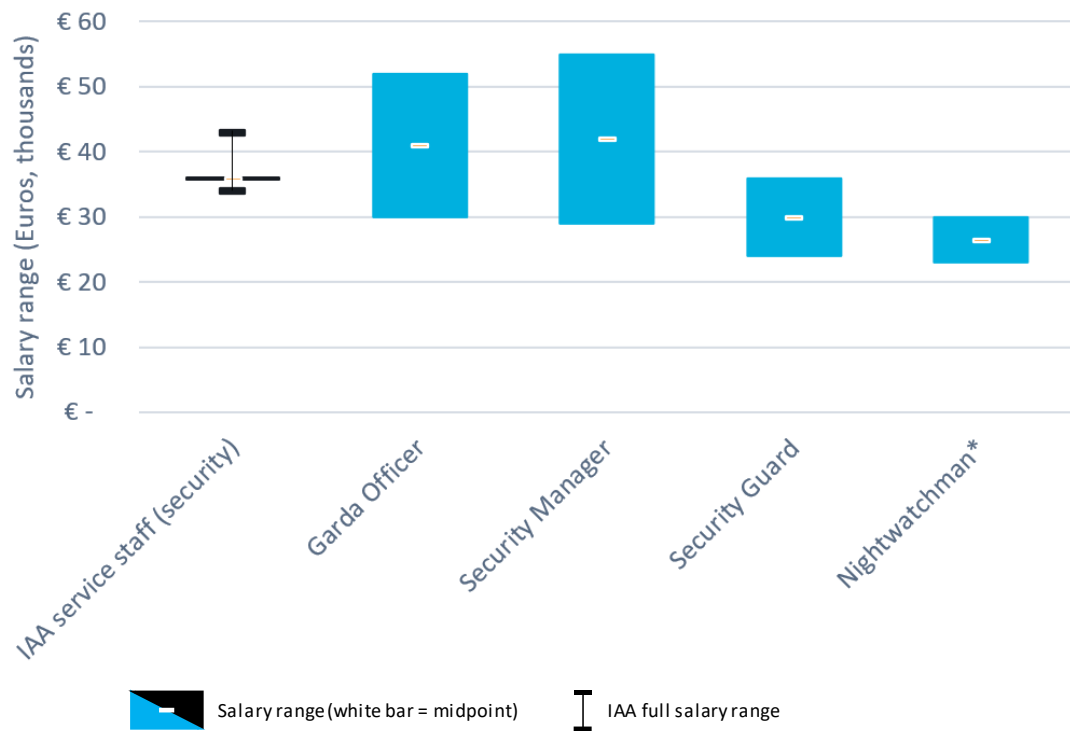
Figure 2.32: Administrative staff gross salary benchmarking, 2020



Source: Steer analysis of data from IAA, Forsa.ie and Glassdoor.ie. Note: (*) Civil Service role; IAA data is for 2019.

- 2.100 As the figure above shows, IAA administrative staff receive the highest level of remuneration in the sample. Although IAA administrators’ gross salaries are similar to that received by Executive Officers (an entry-level junior management role) in the Irish Civil Service, they are significantly higher than other Administrators and Senior Administrators in Ireland.
- 2.101 Note that the true range of salaries for IAA administrative staff is €21,000 to €70,000 which is wider than the average upper and lower bound salaries presented above (€34,000 to €55,000).
- 2.102 IAA’s security staff have been compared to roles including Garda officers, security managers, security guards and nightwatchmen, as shown in the figure below.

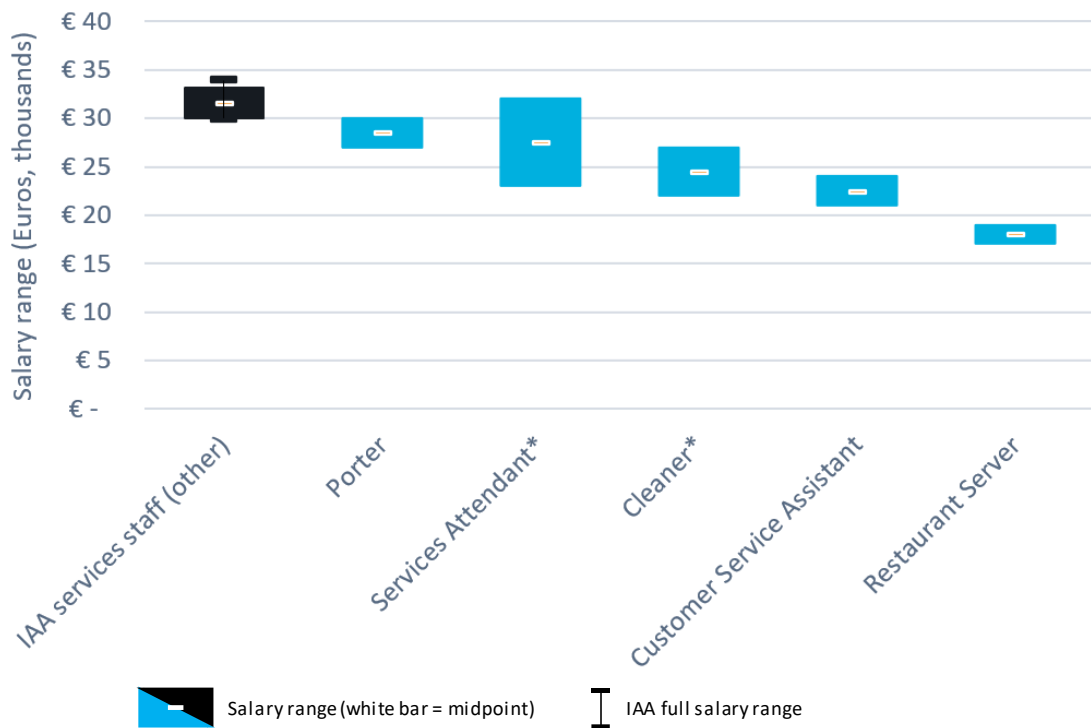
Figure 2.33: Support (security) staff gross salary benchmarking, 2020



Source: Steer analysis of data from IAA, Forsa.ie, Garda and Glassdoor.ie. Note: (*) Civil Service role; IAA data is for 2019.

- 2.103 As shown above, IAA security staff salaries start high at entry but do not scale with seniority. Resultantly, although base salaries are high, particularly relatively to security guards and nightwatchmen elsewhere, this advantage fades with seniority.
- 2.104 Note that the true range of salaries for IAA security staff is €34,000 to €43,000, compared to the average upper and lower bound salaries presented above, which are both close to €36,000.
- 2.105 Finally, and similarly to IAA’s administrative staff, service staff at IAA also receive above average gross salaries – as shown in the figure below. The comparable roles in Ireland may include: porters, cleaners, services attendants and customer service assistants.

Figure 2.34: Support (services) staff gross salary benchmarking, 2020



Source: Steer analysis of data from IAA, Forsa.ie and Glassdoor.ie. Note: (*) Civil Service role; IAA data is for 2019.

- 2.106 As above, the average lower-bound salary for IAA’s services staff is higher than the average upper-bound salary for restaurant servers, cleaners, porters and customer service assistants. When benchmarked against the closest like-for-like public-sector role (Services Attendants within the Civil Service), however, the difference is less pronounced.
- 2.107 Note that the true range of salaries for IAA services staff is €30,000 to €34,000 which is slightly wider than the average upper and lower bound salaries presented above (€30,000 to €33,000).

3 2020-2021 Base year

Introduction

- 3.1 This chapter presents the cost reductions by IAA ANSP, compared to 2019, which took place in 2020 and which are planned for 2021. It goes on to compare these reductions to corresponding reductions by other ANSPs and by comparable aviation and other organisations operating in Ireland, before describing Steer's approach to two alternative scenarios for IAA ANSP Operating costs for 2020-2021.

Cost reductions by IAA ANSP in 2020-2021

- 3.2 This section describes the actual cost reductions achieved by IAA in 2020, and planned for 2021, using data taken from IAA ANSP's Revised RP3 Business Plan¹¹, which has been reconciled to the IAA's full-calendar-year 2020 Financial Report.¹² These values are compared against the corresponding figures for 2019. Costs are presented using a 2017 price base for ease of comparison.

Total costs

- 3.3 The table below provides a comparison of actual total ANSP in-scope costs in 2020 and of projected in-scope costs for 2021 versus 2019 (i.e. including staff and non-staff operating costs, but excluding depreciation and cost of capital).

Table 3.1: IAA ANSP operating costs, 2019-2020 - Summary (€'000s, 2017 prices)

Item	2019		2020		Business Plan	2021	
	Actual	Actual	Change vs 2019 (€k)	Change vs 2019 (%)		Change vs 2019 (€k)	Change vs 2019 (%)
Staff (exc. EWSS)	67,550	65,086	-2,464	-3.6%	61,918	-5,632	-8.3%
<i>Of which payroll costs</i>	54,084	51,965	-2,119	-3.9%	48,977	-5,107	-9.4%
<i>Of which pension cost</i>	13,466	13,121	-345	-2.6%	12,941	-525	-3.9%
Staff (inc. EWSS)	67,550	63,729	-3,821	-5.7%	57,909	-9,641	-14.3%
Non-Staff costs	31,694	26,448	-5,246	-16.6%	34,286	2,592	8.2%

¹¹ *Service Delivery in 2020-21 and Business Plan 2022-24 (Draft)*, prepared by the Irish Aviation Authority's Air Navigation Service Provider covering both En Route and Terminal Services 2020-2024, 12 July 2021

¹² IAA. 31 December 2020. *Financial Report: En Route and Terminal Businesses*.

Item	2019	2020			2021		
	Actual	Actual	Change vs 2019 (€k)	Change vs 2019 (%)	Business Plan	Change vs 2019 (€k)	Change vs 2019 (%)
Total ANSP (exc. EWSS)	99,244	91,534	-7,710	-7.8%	96,204	-3,040	-3.1%
Total ANSP (inc. EWSS)	99,244	90,177	-9,067	-9.1%	92,195	-7,049	-7.1%

Source: Steer analysis of IAA ANSP's Revised RP3 Business Plan

- 3.4 Total in-scope costs reduced by €7.7m (-7.8%) in 2020 versus 2019 costs, not including the impact of Ireland's Employment Wage Subsidy Scheme (EWSS). When the EWSS contribution of (€1.4m) is taken into account, in-scope costs were reduced by €9.1m (-9.1%). Staff cost savings of €2.5m (-3.6% versus 2019), whilst non-staff contributed a €5.2m cost saving (-16.6% versus 2019).
- 3.5 For 2021, the Revised RP3 Business Plan shows that in-scope costs are planned to reduce by €3.0m (-3.1%) versus 2019 costs, not including the impact of Ireland's Employment Wage Subsidy Scheme (EWSS). When the expected EWSS contribution of (€4.0m) is taken into account, in-scope costs are planned to reduce by €7.0m (-7.1%). These in-scope cost saving comprised of staff cost savings of €5.6m (-8.3% versus 2019), whilst non-staff costs were forecast to increase by +€2.6m above 2019 (an +8.2% increase versus 2019).

Staff costs

- 3.6 Reductions in staff costs were achieved through changes to payroll and pension costs.
- 3.7 Payroll costs were reduced by €2.1m (-3.9%), while pension costs fell by €0.3m (-2.6%). Based on information from IAA ANSP, overtime fell by -65% compared with 2019. The combined effect of these changes amounted to an overall reduction of -3.6% in payroll costs compared with 2019. The IAA also benefitted from a €1.36m contribution provided by the EWSS programme in 2020.
- 3.8 For 2021, the Revised RP3 Business Plan shows that staff costs are expected to fall by €5.6m (-8.3%), driven by a -9.4% reduction in payroll and a -3.9% reduction in pension costs. Overtime is predicted to reach 51% of 2019 levels. The IAA ANSP expects to benefit from a €4.0m contribution from the EWSS programme in 2021.

Non-staff operating costs

- 3.9 The actual 2020 and expected 2021 in-scope non-staff operating costs are shown in comparison to 2019 actuals in the table below.

Table 3.2: IAA ANSP non-staff operating costs, 2019-2020 - Detailed (€' 000s, 2017 prices)

Item	Actual	Actual	Change vs 2019 (€k)	Change vs 2019 (%)	Business Plan	Change vs 2019 (€k)	Change vs 2019 (%)
Travel	1,284	401	-883	-68.8%	782	-502	-39.1%
Training / Telecommunications	9,159	7,543	-1,616	-17.6%	8,996	-163	-1.8%
Utilities	480	470	-10	-2.1%	621	141	29.4%
Operational	6,232	6,264	32	0.5%	7725	1,493	24.0%

Item	Actual	Actual	Change vs 2019 (€k)	Change vs 2019 (%)	Business Plan	Change vs 2019 (€k)	Change vs 2019 (%)
Subscriptions	453	249	-204	-45.0%	389	-64	-14.1%
Administration	14,086	11,521	-2,565	-18.2%	15773	1,687	12.0%
Total	31,694	26,448	-5,246	-16.6%	34,286	2,592	8.2%

Source: Steer analysis of IAA financial data (from Revised RP3 Business Plan)

3.10 In-scope non-staff operating costs reduced by -€5.2m, representing a -17% reduction in costs. Significant reductions to training costs (3<), administration costs (-€2.6m/-18%) and travel costs (-€0.9m/-69%) were the primary contributors.

3.11 For 2021, the Revised RP3 Business Plan shows that non-staff operating costs are expected to rise to €34.3m, which is +€2.6m or +8% higher than in 2019. This is driven by significant increases in Operational costs (+€1.5m, +24%) and Administration costs (+€1.6m, +12%), despite continuing falls in travel and training costs. When compared to 2020, the increases in cost are very significant in these categories of costs.

Cost reductions by other ANSPs in 2020-21

3.12 All European ANSPs were required to provide updated RP3 business plans to the Performance Review Body (PRB) in December 2020 in response to the COVID-19 pandemic outlining cost containment measures their implication on operating costs throughout RP3. In this section expected cost reductions planned by all European ANSPs were analysed and compared with the IAA ANSP submission to allow its relative performance to be evaluated.

Data submitted to the PRB

3.13 All European ANSPs were required to provide updated RP3 business plans to the PRB in December 2020. It is noted that this was a time of considerable uncertainty and the results need to be understood in this light. These submissions included:

- Actual (2012-2019) and forecast (2020-2024) traffic service units;
- A summary of actual costs and 'initial' cost forecasts;
 - Disaggregated by Staff costs, Other operating costs, Depreciation, Costs of capital and Exceptional items;
- Rates of inflation used by each ANSP by EU Member state¹³;
- Additionally, cost containment information regarding the impact of any actions taken or planned for RP3 as a result of the COVID-19 pandemic that are different from draft Performance Plans submitted in November 2019. Information primarily related to measures taken and/or planned for 2020 and 2021. Levels of information provided varied considerably by ANSP submission and cost savings specified were with respect to the previous RP3 cost submissions to the PRB made in 2019.

3.14 Costs were available at an overall level by EU Member State, as well as being split into costs associated with ANSP, MET and NSA activities. For the purposes of this analysis, only ANSP

¹³ Submitted rates of inflation were used to convert all submitted costs into real terms

costs were included. The list of ANSPs presented by Member State (plus Norway and Switzerland) can be found in Table 3.3 below.

Table 3.3: European ANSPs included in PRB data analysis

Member State		ANSP
AT	Austria	AustroControl
BE	Belgium	Skeyes
BG	Bulgaria	BULATSA
CH	Switzerland	Skyguide
CY	Cyprus	DCAC
CZ	Czechia	ANS CR
DE	Germany	DFS
DK	Denmark	Naviair
EE	Estonia	EANS
EL	Greece	HCAA
ES	Spain	ENAIRES
FI	Finland	ANS Finland
FR	France	DSNA
HR	Croatia	CCL-ANSP
HU	Hungary	HungaroControl
IE	Ireland	IAA
IT	Italy	ENAV
LT	Lithuania	Oro navigacija
LU	Luxembourg	ANA Luxembourg
LV	Latvia	Latvijas Gaisa Satiksme
NL	Netherlands	LVNL
NO	Norway	Avinor
PL	Poland	PANSA
PT	Portugal	NAV Portugal
RO	Romania	ROMATSA
SE	Sweden	Luftfartsverket (LFV)
SI	Slovenia	SLOVENIA CONTROL
SK	Slovakia	LPS SR

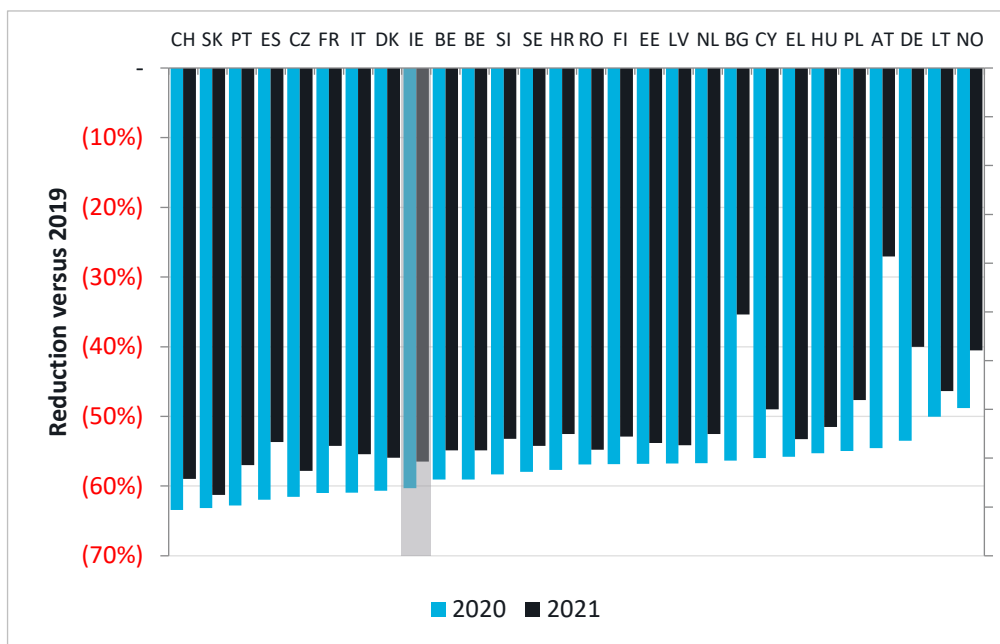
Source: PRB

- 3.15 *It should be noted that the data submitted to the PRB represents costs and savings associated with **en-route** functions only. Whilst this is not truly representative of the whole IAA operation, it provides a more consistent means by which comparisons can be made between ANSPs. In 2019, en route costs represented 76% of total regulated IAA ANSP costs (according to the IAA's revised RP3 Business Plan). Moreover, it should also be noted that IAA ANSP costs for 2021 appear to have been updated in the Draft RP3 Business Plan submission as compared to the December 2020 submission to the PRB.*

Demand

- 3.16 Figure 3.1 below shows changes in traffic service units by forecast by ANSPs in 2020 and 2021 in comparison to 2019 traffic levels as provided in their submissions to the PRB in December 2020. 2020 values will be influenced by a combination of actual service units realised for an unspecified period up until the PRB submission and forecast values for the remainder of the year.

Figure 3.1: Forecast changes in en-route traffic service units by ANSP, 2020 and 2021 versus 2019



Source: Steer analysis of PRB data submitted by ANSPs (November 2020)

- 3.17 Nearly all European ANSPs reported service unit reductions of at least 50% in 2020 (Norway (NO) was the only exception to this at -49%), with the majority submitting reductions of between 55% and 65%. In 2021, traffic volumes expected are largely similar to those in 2020 for most ANSPs, with the exception of Bulgaria (BG) and Austria (AT), whose ANSPs expected to see larger improvements in traffic recovery in 2021.
- 3.18 The service unit forecast submitted by the IAA for 2020 appears reasonable and improvements expected in the 2021 forecast appear consistent with those submitted by other ANSPs.

Total operating costs

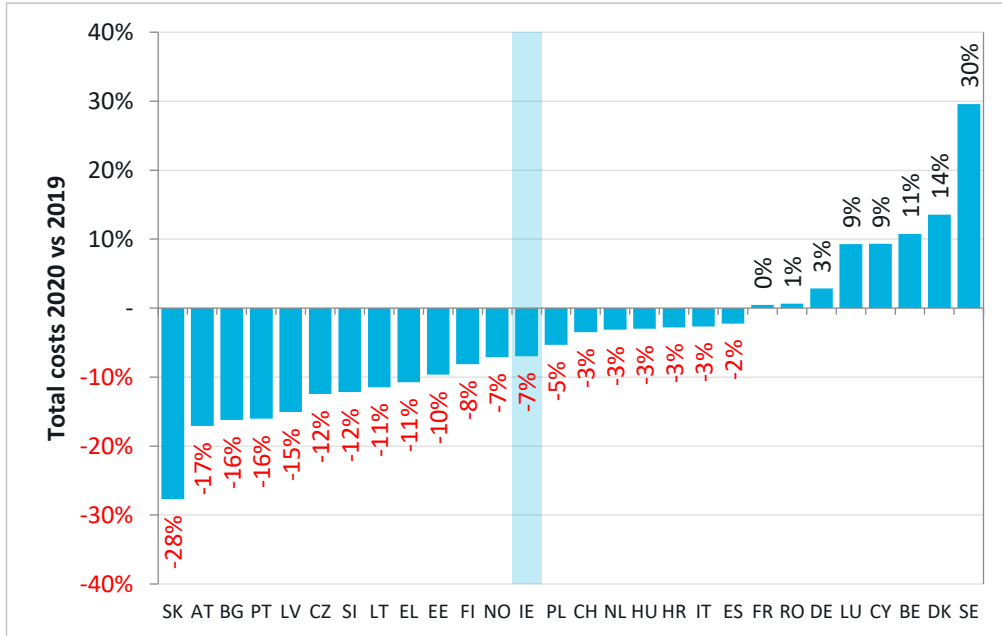
- 3.19 A comparison of total operating cost expectations for 2020 and 2021 was produced from the PRB data. Total operating costs include the following line items:
- staff costs;
 - other operating costs (i.e. non-staff operating costs);
 - depreciation;
 - costs of capital; and
 - exceptional items¹⁴.
- 3.20 As noted above, the costs shown are for ANSP en route costs only, so excluding ANSP terminal costs as well as NSA and MET costs. Therefore, in the charts below, the country labels should be taken to represent only the en route costs of the relevant ANSP in each country, as per Table 3.3 above.

¹⁴ Costs designated as ‘exceptional items’ were included in ANSP submissions from Austria, Germany, Denmark, Spain and Romania only.

Total operating costs

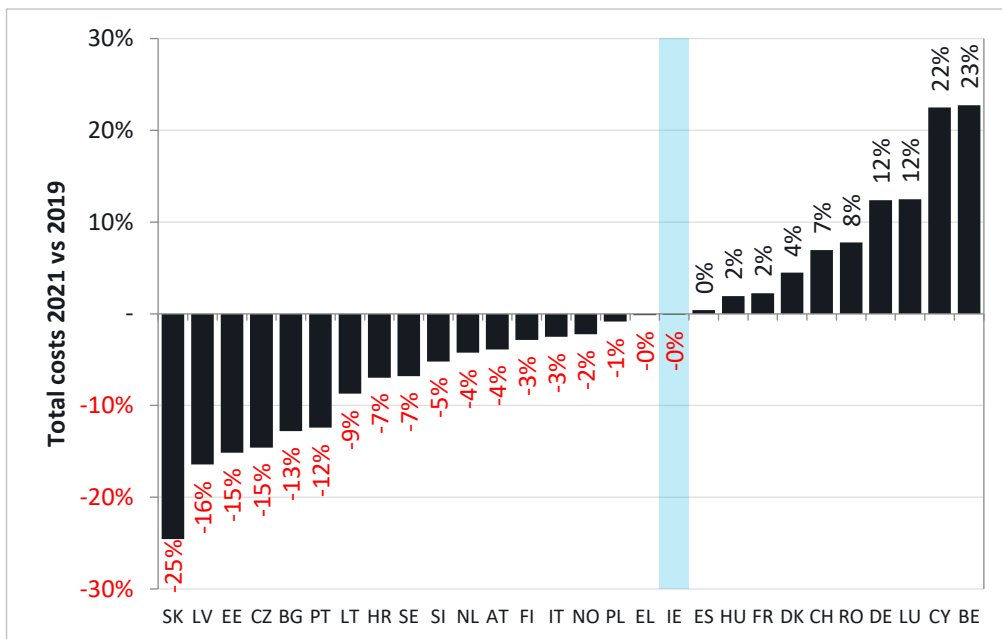
3.21 Figure 3.2 and Figure 3.3 below present the change in ANSP total en route costs between 2019 and 2020 and between 2019 and 2021. Note that for Ireland, this is not directly comparable with the costs in Table 3.1, which include all regulated costs, i.e. both en route and terminal costs.

Figure 3.2: Change in ANSP total en-route costs, 2020 versus 2019 (real)



Source: Steer analysis of PRB data. Note: totals include staff and non-staff costs, depreciation, cost of capital and exceptional items.

Figure 3.3: Change in ANSP total en-route costs, 2021 versus 2019 (real)



Source: Steer analysis of PRB data. Note: totals include staff and non-staff costs, depreciation, cost of capital and exceptional items.

- 3.22 These figures both highlight that the direction and magnitude of changes in total operating costs across ANSPs were not uniform with expected total operating cost changes varying significantly, between -28% and +30% in 2020 and between -25% and +23% in 2021.
- 3.23 The average cost change in total operating costs versus 2019 across all ANSPs in 2020 was -4.2%, reducing to -1.7% in 2021.
- 3.24 Of the 28 reporting ANSPs, eight¹⁵ expected total costs to increase in 2020 versus 2019, increasing to 10 ANSPs expecting total costs to increase above 2019 levels in 2021.
- 3.25 The IAA expected 2020 total costs to reduce by -7.0% versus 2019 costs, ranking 13th out of the 28 ANSPs and with expected savings exceeding the average of -4.2%. In 2021, total IAA costs were expected to be -0.1% lower than those in 2019, below the average rate of -1.7%. This ranks the IAA 18th out of the 28 ANSPs in terms of cost saving performance in 2021. The return to 2019 cost levels in 2021 is primarily driven by increases in other operating costs (i.e. non-staff operating costs), as staff cost reductions are maintained.
- 3.26 IAA cost reductions compare favourably with comparator group reductions made by Finland (-8%) and Norway (-7%) in 2020, however both ANSPs expected to make larger cost reductions in 2021.
- 3.27 Note that while the expected cost reductions for the IAA ANSP en route services in 2020 shown in Figure 3.4 above (-7%) are broadly in line with those shown in Table 3.1 (-9%), the expected cost reductions for 2021 shown in Figure 3.5 (-0.1%) are much less than those shown in Table 3.1 (-7%). The discrepancies are due to two factors: firstly, the PRB submissions were forecasts provided before the end of 2020, and secondly, the PRB submissions cover only en route services, whereas the values in Table 3.1 are from the Revised RP3 Business Plan and cover all regulated services, i.e. both en route and terminal services. IAA ANSP is forecasting very significantly lower costs in its terminal services in both 2020 and 2021, with much greater reductions than it is forecasting for its en route services.

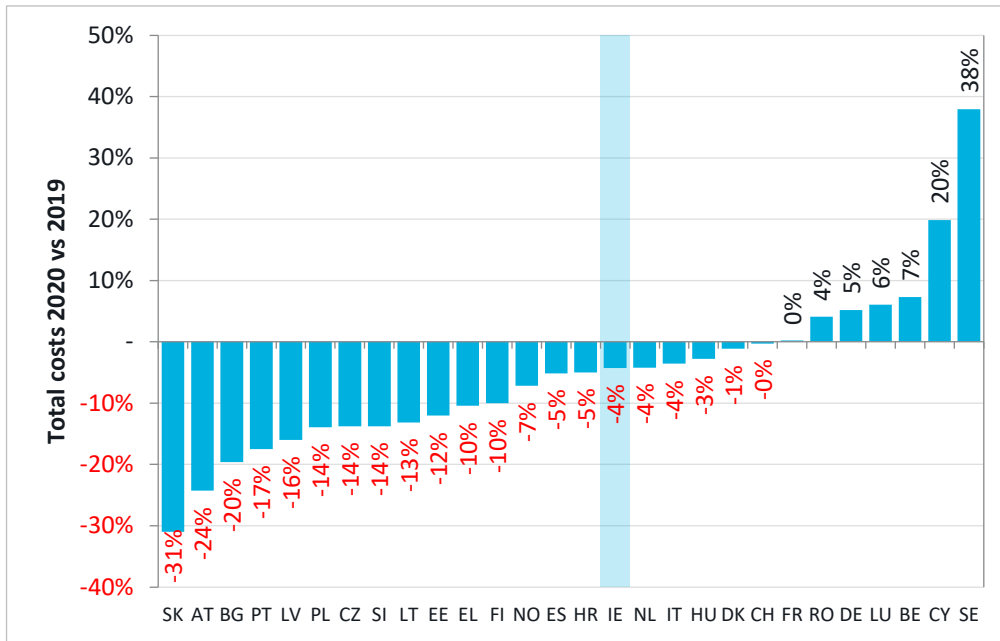
Total in-scope operating costs

- 3.28 A further comparison including in-scope costs has also been included as depreciation and cost of capital are not included within the scope of this study. When in-scope costs only are included¹⁶, the overall situation is broadly similar as shown in Figure 3.4 and Figure 3.5 below.

¹⁵ France, Romania, Germany, Luxembourg, Cyprus, Belgium, Denmark and Sweden

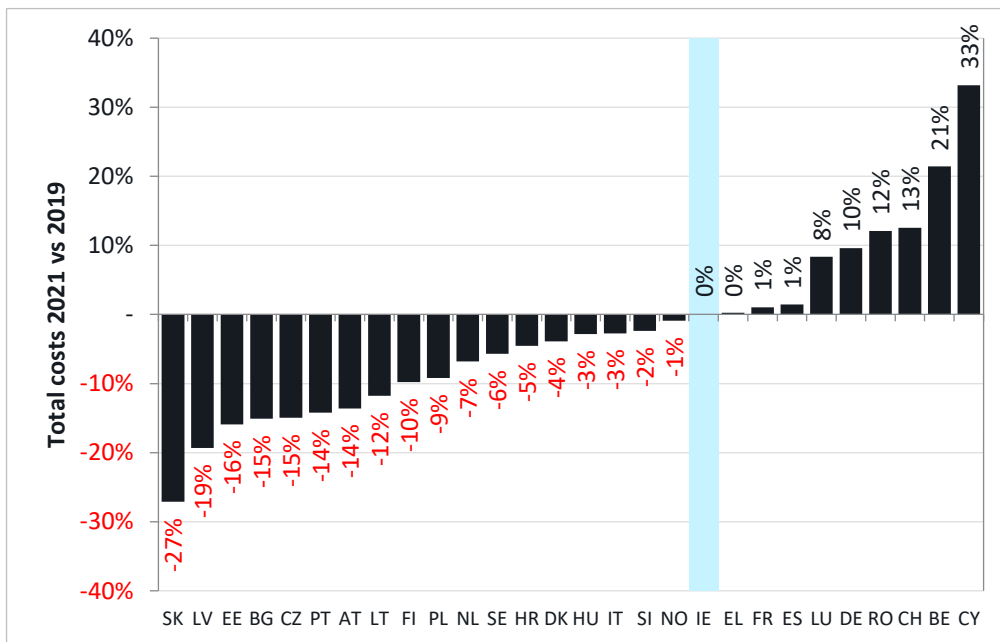
¹⁶ Staff and other (non-staff) operating costs only

Figure 3.4: Change in ANSP total in-scope en-route costs, 2020 versus 2019 (real)



Source: Steer analysis of PRB data. Note: totals in-scope costs include staff and other operating costs. Depreciation, cost of capital and exceptional costs are excluded.

Figure 3.5: Change in ANSP total in-scope en-route costs, 2021 versus 2019 (real)



Source: Steer analysis of PRB data. Note: totals in-scope costs include staff and other operating costs. Depreciation, cost of capital and exceptional costs are excluded.

- 3.29 Strong variability in ANSP costs are still expected, although the number of ANSPs expecting total costs to increase above 2019 levels reduces from eight to seven. The average cost reduction expected across the ANSPs versus 2019 reduces to -5.3% in 2020 and is higher at -2.9% in 2021.
- 3.30 The IAA ANSP’s 2020 total in-scope en route costs were expected (in its PRB submission) to reduce by -4.3%, ranking 16th out of the 28 ANSPs and with expected savings slightly smaller

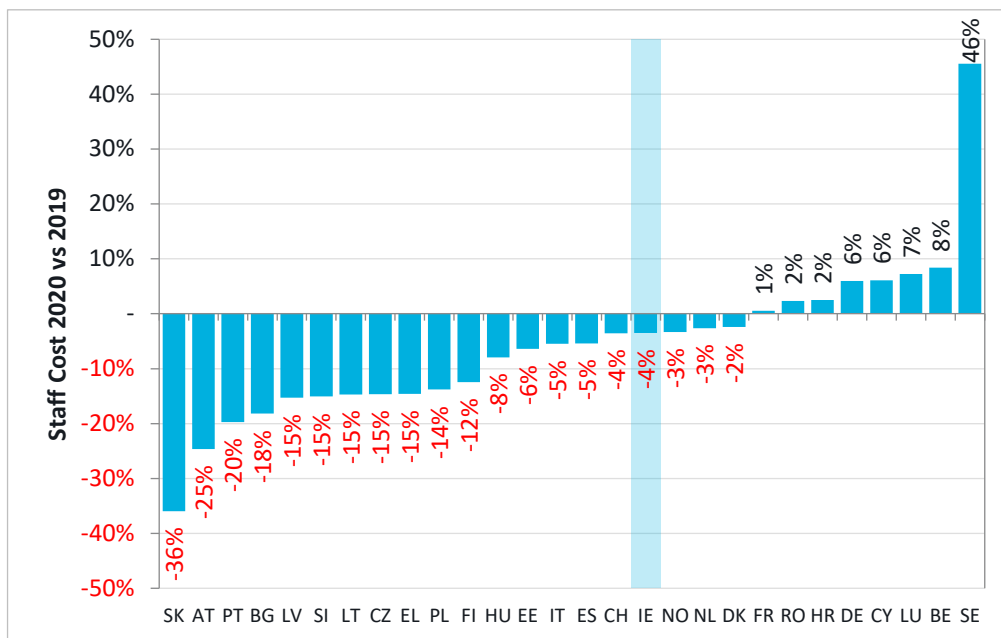
than the average saving of -5.3%. Relative to its comparator group, savings expected by the IAA ANSP are smaller than those expected by ANS Finland (-10%) and Avinor ANSP in Norway (-7%), but significantly higher than those expected by LFV in Sweden, due to a large expected cost increase in 2020. In 2021 total in-scope costs are expected to increase by +0.2%, ranking 19th out of the 28 ANSPs and weaker than the average performance of a reduction of -2.9%. Relative to its comparator group, savings expected by the IAA ANSP are similar to those expected by Avinor ANSP (-1%), however savings expected by Sweden’s LFV (-7%) and ANS Finland (-10%) are considerably greater.

Staff costs

Overview

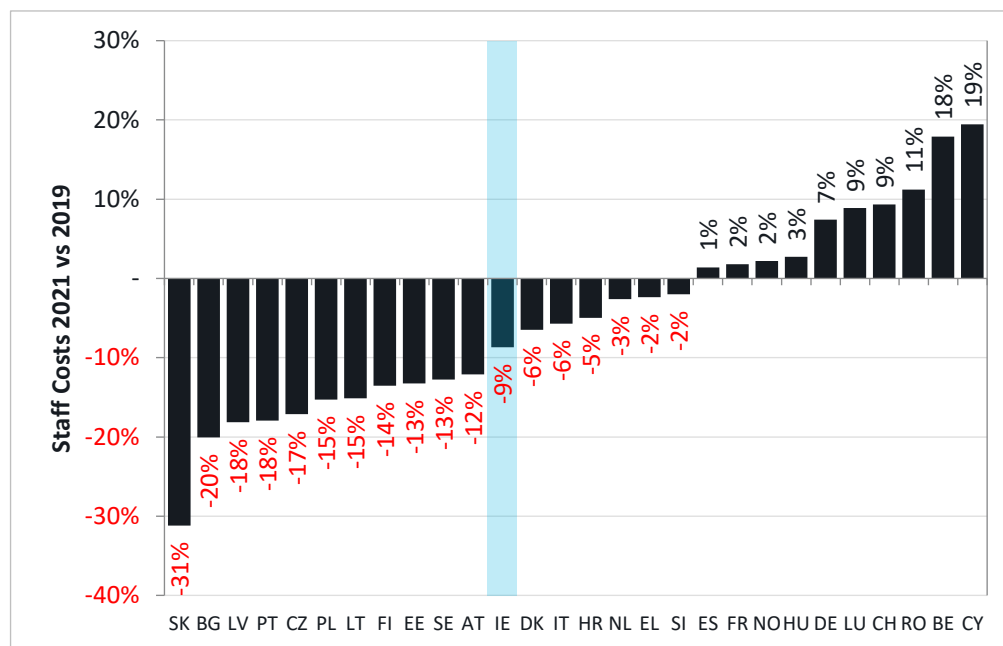
3.31 Figure 3.6 and Figure 3.7 below present changes in ANSP in-scope en-route staff costs between 2019 & 2020 and 2019 & 2021 respectively.

Figure 3.6: Change in ANSP en-route staff costs, 2020 versus 2019 (real)



Source: Steer analysis of PRB data

Figure 3.7: Change in ANSP en-route staff costs, 2021 versus 2019 (real)



Source: Steer analysis of PRB data

- 3.32 Eight ANSPs expected their staff costs to increase in 2020, whilst the remaining 20 expected costs to reduce. In 2021 the number of ANSPs expecting their costs to increase versus 2019 increased to 10. Significant increases in staff costs for Sweden are the primary driver of the overall operating cost increase expected in 2020.
- 3.33 Slovakia submitted the largest expected staff cost reductions for 2020, representing a -36% reduction in costs versus 2019. This is followed by Austria, Portugal and Bulgaria, which are expected to make savings of -25%, -20% and -18% respectively. Five ANSPs (Latvia, Slovenia, Lithuania, Czechia and Greece) expected to make staff cost reductions of -15%. The average cost reduction expected across all ANSPs in 2020 was -5.7%.
- 3.34 In 2021, Slovakia also submitted the largest expected cost reduction, representing a -31% reduction in costs versus 2019. Although 13 ANSPs¹⁷ expected to reduce staff costs below 2019 levels by a greater extent in 2021 than they achieved in 2020, the average cost reduction expected across all ANSPs in 2021 was less, at -4.9% vs 2019, than the average reduction expected for 2020 (-5.7%).
- 3.35 The IAA ANSP expected to make staff costs savings of -3.5% in 2020 versus 2019, ranking them 17th out of the 28 ANSPs and also performing below the average saving of -5.7%. Due to the inclusion of government support in the cost containment measures submitted, it was assumed that this saving also accounts for government support, however it was also noted that the IAA 2020 Regulated Accounts record a -3.4% saving in staff costs when EWSS is *excluded* compared to a -5.4% reduction when it is included. This difference may be influenced by the lower rate

¹⁷ Bulgaria, Czechia, Denmark, Estonia, Finland, Croatia, Ireland, Italy, Lithuania, Latvia, the Netherlands, Poland and Sweden

of EWSS that was available between July and October 2020. From the end of October 2020 EWSS rates increased from €203 to €350 per week for eligible employees.

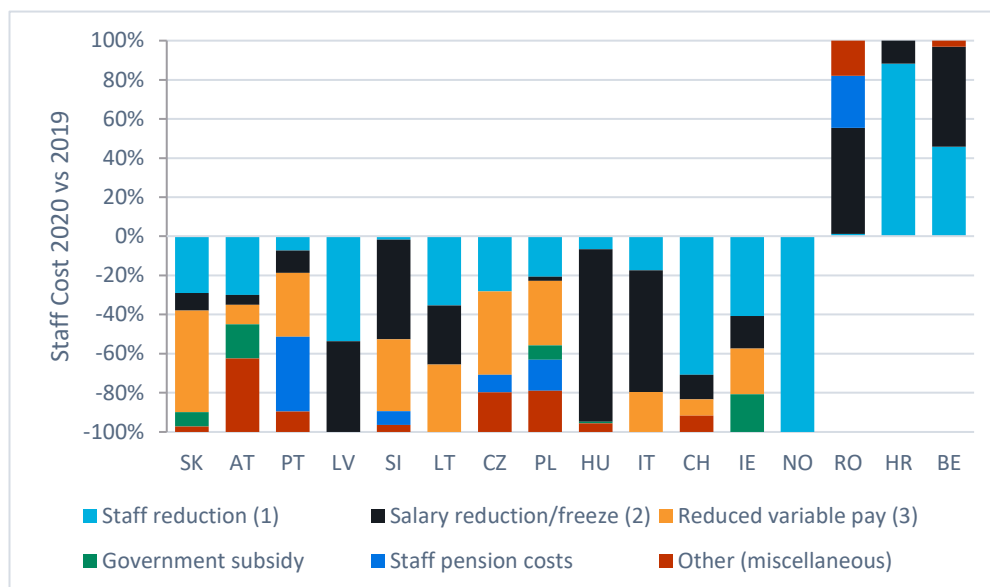
3.36 In 2021 the IAA ANSP expected to make staff cost savings of -8.7% versus 2019, ranking them 12th out of the ANSPs. This also represents a saving greater than that of the 2021 average across all ANSPs (a reduction of -4.9%).

Composition of savings

3.37 Each ANSP provided information regarding cost containment measures taken to reduce costs in 2020 and 2021. In addition to descriptions of measures undertaken, cost reduction estimates were also included. These reductions are presented as absolute reductions against the original ANSP RP3 cost forecasts submitted in 2019, and in some cases may therefore reflect deferred or lesser cost increases vis-à-vis the original plan, rather than reductions against 2019 actuals. Consequently, the percentage cost reduction generated versus the corresponding 2019 level from each measure cannot be deduced. The absolute values have instead been used to generate an indicative representation of the composition of staff cost savings sought by each ANSP which are shown in Figure 3.8 and Figure 3.9 below for 2020 and 2021 respectively. Due to varying levels of information provided in each ANSPs submission, this analysis could only be presented for 16 ANSPs as data provided by the other ANSPs was not disaggregated to a suitable level. Information submitted by ANSPs was grouped into one the six categories indicated below:

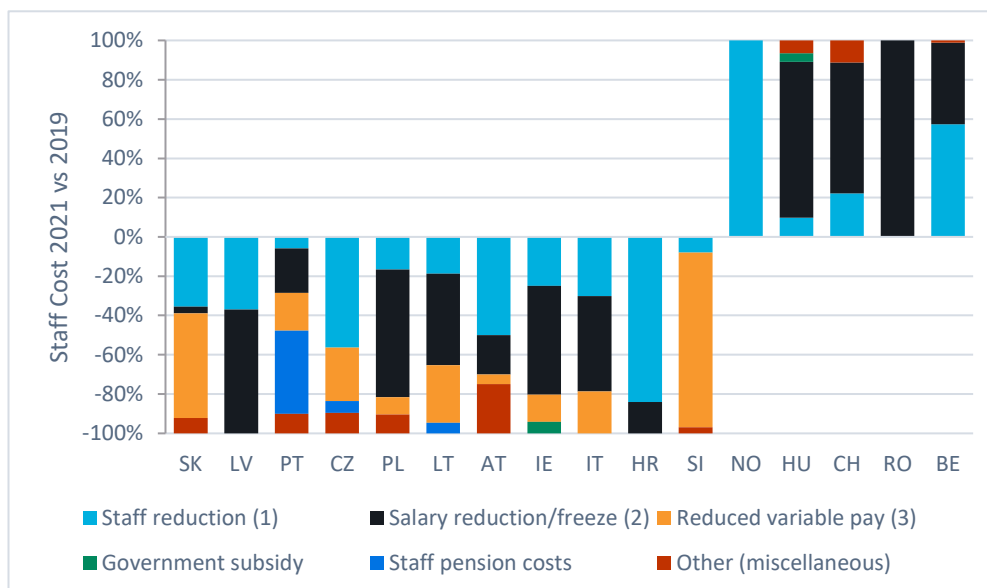
- staff reduction;
- salary reduction/pay freeze;
- reduced variable pay;
- government subsidy;
- staff pension costs; and
- other (miscellaneous).

Figure 3.8: Estimated composition of ANSP en-route staff cost changes by type, 2020



Source: Steer analysis of PRB data. Notes: (1): includes but is not limited to changes to shift length, number of personnel, recruitment freezes and early retirements; (2) includes but is not limited to changes in holiday entitlement, renegotiated wage levels, postponement/cancellation of committed salary increased; (3) includes but is not limited to changes in overtime and bonus pay.

Figure 3.9: Estimated composition of ANSP en-route staff cost changes by type, 2021



Source: Steer analysis of PRB data. Notes: (1): includes but is not limited to changes to shift length, number of personnel, recruitment freezes and early retirements; (2) includes but is not limited to changes in holiday entitlement, renegotiated wage levels, postponement/cancellation of committed salary increased; (3) includes but is not limited to changes in overtime and bonus pay.

3.38 The figures indicate that there is considerable variation in how staff cost savings were sought by ANSPs, likely representing the different operational environments and opportunities to generate savings. Further information on each of the staff costs saving measures has been included in the sections below.

Reduction of staff working hours/salaries

3.39 Table 3.4 below showcases the actions taken by European ANSPs to reduce staff working hours and/or salaries. Although no longer included in the SES and hence in PRB submissions, we have also included information on UK ANSP (NATS) directly from the NATS website, where available. Please note that:

- For the purposes of effective comparison across ANSPs, we also include changes to variable pay and holiday allowances within this section.
- Savings specified in the cost containment reports are with respect to each ANSPs original RP3 business plan and should not be viewed as savings versus 2019 staff operating costs.

Table 3.4: Actions taken by ANSPs to reduce staff working hours/salaries, 2020-2021

ANSP	Action taken	Total Saving specified (2020-2021)
NO	Temporary redundancy: 471 FTE-months of unpaid leave	39 FTEs
	4 months of voluntary salary reductions were implemented for 38 staff in management roles	Not specified
SK	Salary reduction (60% of basic salary)	€1.1m
	Pay freeze (unspecified)	€1.1m
AT	Reductions to vacation accruals and overtime provisions (unspecified)	€5.0m

ANSP	Action taken	Total Saving specified (2020-2021)
	Reduction in staffing and working hours (unspecified)	€22m
	Removal of salary inflation adjustments	€6.0m
PT	Salary freeze in 2020 and 2021 (unspecified)	€12.0m
LV	Reduction of working hours (to 4 days per week)	€2.2m
	Pay freeze (unspecified)	€2.0m
CZ	Reduction of basic salary (unspecified)	€17.0m
	Suspension of monthly performance pay	€8.6m
SI	Reduced holiday allowance to minimum legally prescribed	€0.2m
	Salary reduction (-15% from Q2 to Q4 2020) compared to existing collective agreements	€2.1m
LT	Agreed salary increase (+4%) cancelled	€0.4m
IE	Reduction of working week (unspecified)	€1.6m
	Reduced pay (unspecified)	€5.3m
	Pay freeze (unspecified)	€5.0m
PL	Working hours reduction (unspecified)	€6.3m
	Salary reduction by 23.5% (except for the lowest earners)	€23.3m
CH	Pay freeze (unspecified)	€6.7m
HU	Reduction in planned salary increase and staff performance bonuses (unspecified)	€18.2m
HR	Salary cut (unspecified)	€3.0m
RO	Salary freeze	€9.4m
	Removal of salary inflation adjustment	€4.8m
UK	Less than one-third of the usual number of ATCOs are on duty or physically working in the operation with another quarter available for contingency (similar staffing levels to night-time operations).	Not specified
	Voluntary pay reduction by the Board, Executive team and senior management	Not specified

Source: Steer analysis of PRB data, NATS, Avinor. Note: (*) includes effect of other actions.

- 3.40 14 ANSPs introduced measures to reduce staff costs through reduced working hours and salaries. Slovakia implemented the most impactful measure, reducing basic salaries by 40%. In Poland, salaries were reduced by 23.5%, whilst the introduction of a four-day working week Latvia essentially manifests a 20% reduction in pay. However, the respective periods during 2020 which these savings were implemented were not indicated, but as they do not cover the full year, their impact will be reduced on a full-year basis. Now outside the PRB remit, NATS (UK) reduced staff hours significantly, but further information on the details was not available.
- 3.41 In comparison all IAA staff earning in excess of €38,500 had their working hours and pay reduced by 10% for four months to October 2020.

Reduced variable pay

- 3.42 Table 3.5 below shows ANSPs which specified reduced variable pay as a measure to reduce staff costs. Information for 10 ANSPs has been provided. Additionally, it was found that NATS also deferred bonuses and pay awards to staff in 2020.

Table 3.5: Actions taken by ANSPs to reduce variable pay, 2020-2021

ANSP	Action taken	Total Saving specified (2020-2021)
SK	Cancellation of bonuses and other rewards	€18.6m
PT	Overtime reduction (unspecified)	€18.0m
CZ	Reduction in variable pay (unspecified)	€6.3m
	Reduction in overtime (unspecified)	€3.7m
SI	Reduced performance bonus (unspecified)	€3.2m
	Reduced allowances (unspecified)	€0.2m
LT	Variable salaries cancelled	€1.8m
IT	Overtime reduction (unspecified)	€15.5m
IE	Reduced variable pay (unspecified)	€4.4m
CH	Variable salary reduction (unspecified)	€1.5m
	Personnel expenses reduction (unspecified)	€2.2m
RO	Reduced additional benefits (unspecified)	€3.5m
CY	Overtime reduction	€4.5m
UK	Deferral of bonuses and pay awards for all staff	Not specified

Source: Steer analysis of PRB data, NATS

Headcount rationalisation

- 3.43 Table 3.6 below presents ANSPs which specified headcount rationalisation (including early retirements) as a measure to reduce staff costs. Headcount rationalisations measures were mentioned in 17 ANSP submissions to the PRB, in addition to being mentioned by NATS.

Table 3.6: Actions taken by ANSPs to reduce headcount, 2020-2021

ANSP	Action taken	Total Saving specified (2020-2021)
NO	Voluntary severance scheme	€2.7m
SK	Recruitment freeze and rationalization of organizational structure	€11.3m
LV	Personnel reduction (unspecified)	€4.8m
CZ	Personnel reduction (unspecified)	€7.2m
SI	Recruitment freeze and early retirements	€0.2m
IT	Personnel reduction (unspecified)	€18.0m
EE	Personnel reduction (40 FTEs in 2020 including ATCOs)	€6.7m*
IE	Moratorium on recruitment	€5.9m
	Early retirements	€0.4m
PL	Recruitment freeze	€4.1m

ANSP	Action taken	Total Saving specified (2020-2021)
CH	FTE reduction (unspecified)	€2.2m
NL	Non-ATCO recruitment freeze for RP3; ATCO recruitment freeze in 2021; rationalisation in labour conditions.	€5.5m*
HU	Freeze of non-ATCO headcount due to the pandemic	€3.5m
HR	Recruitment freeze	€15.1m
	Early retirements (unspecified)	€0.9m
FR	2020 ATCO recruitment was postponed until year-end; 50% reduction in 2021 ATCO recruitment.	Not specified
RO	Recruitment freeze	€0.2m
DK	No rehiring on vacant positions in 2020	€1.3m
	Voluntary resignations (77 by end of 2020) with effect from 2022 and temporary reduction in recruitment.	€4.5m
SE	Adaptation of staff volumes to current situation (includes less overtime, more leave of absence and vacancies).	€22.0m*
	Rationalisation of safety department (reduction of 2 FTE)	€0.4m
UK	External recruitment freeze	Not specified

Source: Steer analysis of PRB data, NATS, Avinor. Note: (*) includes the effect of other actions

Government subsidy

- 3.44 Table 3.7 below presents ANSPs which specified government subsidies as a means by which staff costs could be reduced. Five ANSPs mentioned government subsidies in their PRB submissions, whilst NATS also mentioned that almost half of their staff were placed on furlough.

Table 3.7: Government subsidies received by ANSPs, 2020-2021

ANSP	Action taken	Total Saving specified (2020-2021)
SK	Government subsidy	€1.4m
AT	Government subsidy	€7.0m
IE	Government subsidy	€2.8m
PL	Government subsidy	€2.5m
NL	Government subsidy	€12.4m
UK	Furloughing of almost half of the ANSP's staff	Not specified
	Deferral of monthly PAYE and National Insurance Contributions payments	

Source: Steer analysis of PRB data, NATS

Staff pensions costs

- 3.45 Table 3.8 below presents ANSPs which specified reducing staff pensions costs as a means of reducing staff costs could be reduced. Five ANSPs mentioned reducing the employer's contribution rate to pension schemes, whilst in Poland the ANSP temporarily suspended contributions to its pension scheme in addition to temporarily suspending health insurance.

Apart from Portugal, all of the ANSPs reducing pensions costs were in Central and Eastern Europe.

Table 3.8: Actions taken by ANSPs to reduce staff pension costs, 2020-2021

ANSP	Action taken	Total Saving specified (2020-2021)
PT	Employer pension contribution rate reduction	€28.2m
CZ	Employer pension contribution rate reduction	€4.0m
SI	Employer pension contribution rate reduction	€0.4m
LT	Employer pension contribution rate reduction	€0.2m
PL	Temporary suspension of contributions to the occupational pension scheme (and group health insurance)	€5.4m*
RO	Employer pension contribution rate reduction	€5.2m*

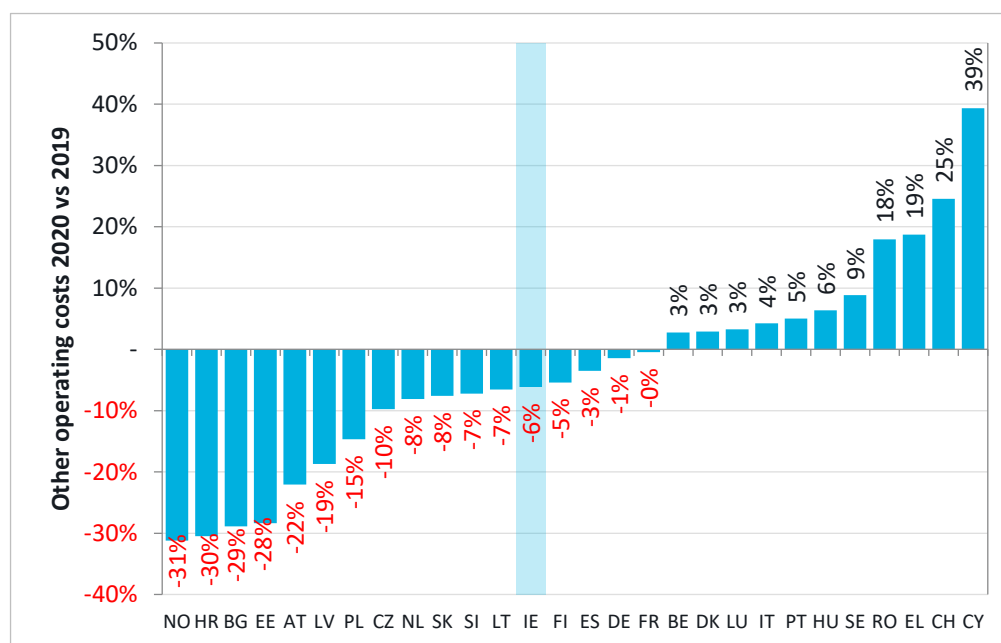
Source: Steer analysis of PRB data. Note: (*) includes the effect of other actions

Other (non-staff) operating costs

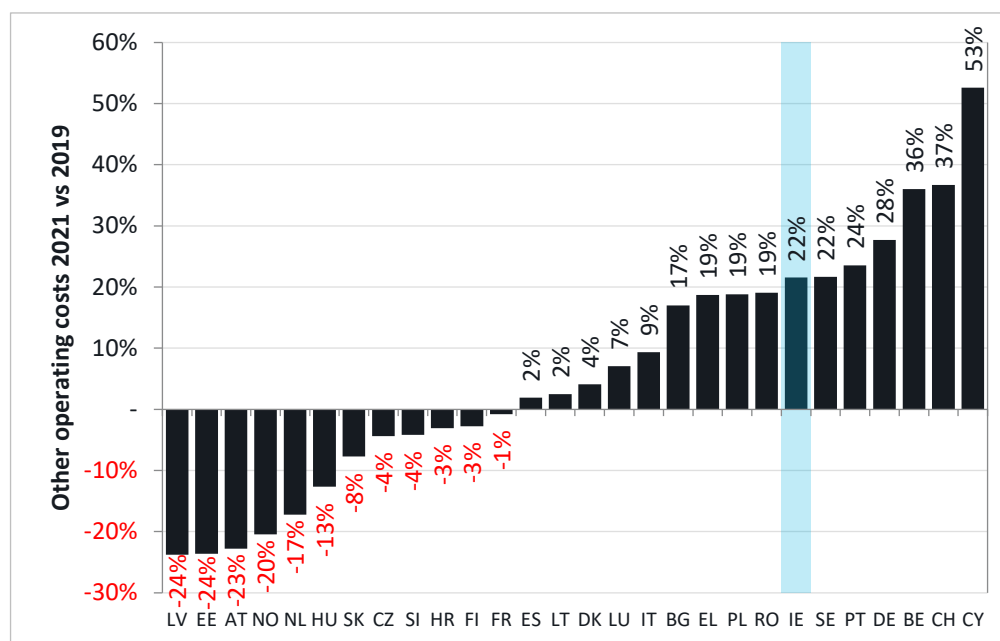
Overview

3.46 Figure 3.10 and Figure 3.11 below present the change in ANSP other non-staff operating costs between 2019 and 2020 and between 2019 and 2021 as submitted to the PRB in November 2020.

Figure 3.10: Change in ANSP en-route other non-staff operating costs, 2020 versus 2019 (real)



Source: Steer analysis of PRB data

Figure 3.11: Change in ANSP en-route other non-staff operating costs, 2021 versus 2019 (real)

Source: Steer analysis of PRB data

- 3.47 There is significant variability in the level of other non-staff operating cost changes expected by ANSPs in 2020 and 2021 versus 2019.
- 3.48 Of the 28 ANSPs which submitted to data to the PRB, 11 expected costs to increase in 2020. In the cases of Romania (RO), Greece (EL), Switzerland (CH) and Cyprus (CY), these increases are significant and range between +18% to +29%. All of these ANSPs (excluding Greece) describe ways in which other operating costs had been reduced in their submissions, thus the nature of cost increases is unclear (but are assumed to have been in the respective ANSPs' original plans for 2021, with the decreases described being against these plans rather than versus 2019). In 2021, the number of ANSPs expecting other non-staff operating costs to increase above 2019 levels increased to 16 and includes the IAA.
- 3.49 The IAA ANSP's submission to the PRB indicated a -6.1% saving in other non-staff operating costs in 2020 versus 2019. This compares with an overall average saving achieved by ANSPs of -3.5%. In 2020, the IAA's -6.1% saving ranks it 12th out of 28 ANSPs and the saving compares similarly to that of comparator group partner Finland (-5%), however is considerably smaller than that of Norway (-31%).
- 3.50 A +22% increase in other non-staff operating costs was estimated by the IAA ANSP for 2021, considerably above the overall average cost increase of +6% submitted by other ANSPs. This increase in other operating costs places it 22nd out of the 28 ANSP in 2021. In its submission the IAA noted new operational facilities as a driver behind the cost increase.
- 3.51 Significant non-staff operating cost decreases were maintained by Austria, Estonia, Latvia and Norway in 2020 and 2021.

Structure of other non-staff operating cost reductions

- 3.52 Disaggregated other non-staff operating cost data was not available from the PRB submissions, thus it was not possible to compare savings made across individual line items by European ANSPs. Descriptions of how savings were expected to be realised in 2020 and 2021

were however included and have been summarised in Table 3.9 below. These have been taken at face value and not further verified. Further information has been provided in the subsequent subsections and has been quantified where possible.

Table 3.9: Structure of reductions to other non-staff operating costs by ANSP, 2020-2021

ANSP	Savings vs 2019			Rent	Travel	Training	Supplier contracts/ Data	External support	Utilities	Maintenance		Projects	Other/Notes
	2020	2021	Average							Building	ATM		
EE	-28%	-24%	-26%		✓	✓							
NO	-31%	-20%	-26%		✓			✓					
AT	-22%	-23%	-22%		✓		✓						
LV	-19%	-24%	-21%				✓						Reduction of 'non-critical costs'
HR	-30%	-3%	-17%		✓	✓	✓			✓	✓	✓	
NL	-8%	-17%	-13%		✓	✓	✓	✓				✓	
SK	-8%	-8%	-8%		✓		✓	✓			✓		
CZ	-10%	-4%	-7%		✓		✓			✓	✓		
BG	-29%	17%	-6%		✓			✓	✓		✓		
SI	-7%	-4%	-6%		✓	✓							
FI	-5%	-3%	-4%		✓								'Most costs'
HU	6%	-13%	-3%	✓	✓	✓	✓					✓	
LT	-7%	2%	-2%		✓	✓				✓			
ES	-3%	2%	-1%										not compromising safety and quality'
FR	0%	-1%	-1%										None specified
PL	-15%	19%	2%	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DK	3%	4%	3%		✓								
LU	3%	7%	5%		✓	✓	✓	✓					
IT	4%	9%	7%						✓	✓	✓		

ANSP	Savings vs 2019			Rent	Travel	Training	Supplier contracts/ Data	External support	Utilities	Maintenance		Projects	Other/Notes
	2020	2021	Average							Building	ATM		
IE	-6%	22%	8%		✓	✓	(✓)	(✓)	(✓)	(✓)	(✓)	✓	Reductions across all categories
DE	-1%	28%	13%		(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	Reductions across all categories
PT	5%	24%	14%		✓								
SE	9%	22%	15%		✓	✓		✓					Retirement of MSSR-radars
RO	18%	19%	19%		✓	✓		✓			✓		
EL	19%	19%	19%										None specified
BE	3%	36%	19%		✓		✓	✓			✓	✓	
CH	25%	37%	31%					✓		✓	✓		MET reimbursement
CY	39%	53%	46%			✓	✓						

Source: Steer analysis of PRB data

3.53 Further to this, NATS (UK ANSP) – which no longer reports to the EU PRB – has reported completing the following actions to reduce other non-staff operating costs:

- Service cutbacks: delivering the same services differently where it is possible to do so as a short-term measure (e.g. the Flight Information Service) and suspending services that are not required during the UK’s lockdown (e.g. Airspace User Portal for drone);
- Immediate freeze on non-essential expenditure;
- Termination of most external contractors; and
- Seeking agreement for extended payment terms with suppliers.

Rent

- 3.54 Reductions in rental costs were cited by two ANSPs in their submissions.
- 3.55 The Hungarian ANSP was able to negotiate a temporary reduction in rent for the use of state-owned properties. This amounts to HUF342m (€962,000) for 2021; no saving was achieved in 2020. Total expected property expenditure was not available, and the percentage reduction achieved cannot be deduced.
- 3.56 The Polish ANSP noted that lower rental and lease costs were achievable due to the revision of their investment plan and that the cancellation of new ATCOs recruitment had also reduced the requirement for additional space. The individual cost saving associated with this measure cannot be presented it was presented as part of a larger amalgamated saving.

Travel

- 3.57 21 ANSPs explicitly cited reductions in travel costs, including the IAA. Operating costs savings expected from reduced travel were stated by 10 ANSPs and are presented in Table 3.10 below.

Table 3.10: ANSP travel costs reductions, 2020

ANSP	Total Saving specified (2020)
CZ	€ 1.1m
DK	€ 0.8m
HR	€ 1.3m
HU	€ 1.0m
IE	€ 0.6m
LU	€ 0.2m
PL	€ 2.7m
PT	€ 0.6m
RO	€ 0.6m
SE	€ 1.5m

Source: Steer analysis of PRB data

Training

- 3.58 15 ANSPs explicitly cited reductions in training costs as a component of other operating cost reductions and associated costs reductions were provided by eight. These are presented in Table 3.11 below.

Table 3.11: ANSP training costs reductions, 2020

ANSP	Total Saving specified (2020-2021)
DK	€ 0.8m
HR	€ 2.3m
HU	€ 0.3m
IE	€ 2.0m
LU	€ 0.1m
PL	€ 3.5m
RO	€ 2.3m
SE	€ 1.0m

Supplier contracts/Data subscriptions

- 3.59 11 ANSPs cited reductions in supplier contract costs as a component of other operating cost reductions. Information submitted by ANSPs was not provided at a level allowing supplier contract and data subscription cost savings to be quantified.

External support/consultants

- 3.60 10 ANSPs cited reductions in external support/consultant costs as a component of other operating cost reductions. Information submitted by ANSPs was not provided at a level allowing external support and consultant cost savings to be quantified.

Utilities

- 3.61 Three ANSPs cited reductions in utility cost costs as a component of other operating cost reductions. Some ANSPs noted that utility costs had increased. Information submitted by ANSPs was not provided at a level allowing utility cost savings to be quantified.

Maintenance

- 3.62 Nine ANSPs cited reductions in maintenance costs as a component of other operating cost reductions. Information submitted by ANSPs was not provided at a level allowing supplier maintenance cost savings to be quantified and differentiating between property and system maintenance was not possible.

Projects

- 3.63 Five ANSPs cited reductions in project costs as a component of other operating cost reductions. Information submitted by ANSPs was not provided at a level allowing project cost savings to be quantified.

Cost reductions achieved by other organisations

- 3.64 This section discusses the responses to COVID-19 by major companies across Ireland whose activities and revenues have been impacted strongly by the pandemic due to restrictions on their activities comparable to those imposed on IAA ANSP. We have selected organisations in the aviation sector as well as more widely, where relevant cost containment data has been made available (either directly to Steer or from public sources). The organisations reviewed were:

- Dublin airport;
- Ryanair;
- Aer Lingus;
- Irish Continental (ferries); and
- Bank of Ireland.

- 3.65 The analysis of cost containment measures is presented in the same format as the previous section. While these organisations do of course differ from IAA in their operational characteristics, all are major entities working in Ireland which have suffered significant demand and revenue impacts from the COVID-19 pandemic to which they have had to respond. They have all had to implement significant reductions across their staff and other operational costs operating in the same jurisdiction and labour market in Ireland as the IAA, and subject to the same Irish Government support schemes.

- 3.66 While the proportions of very highly skilled staff differ from those of IAA, all the organisations do have significant numbers of highly trained employees, many of whom work in safety-critical

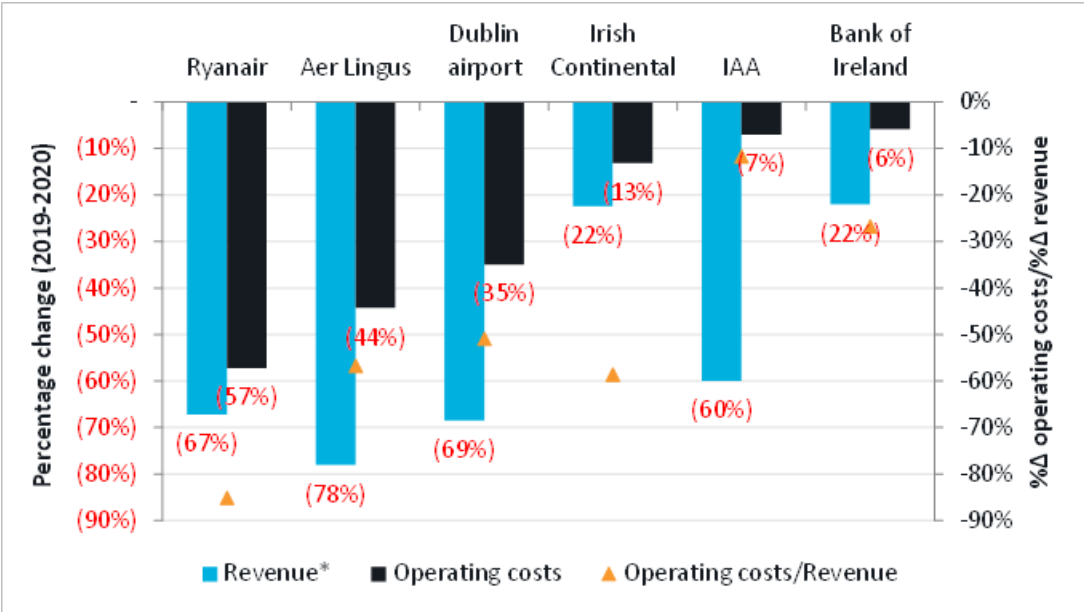
environments (e.g. airline pilots). Some categories of costs, such as rents and external contracts, present similar opportunities for cost savings as available to IAA. Therefore, while the cost containment measures undertaken by these organisations are not directly comparable in all categories, there are sufficient similarities for the comparisons to be informative.

3.67 The comparator organisations do differ from IAA in having more direct commercial pressures, as their revenues are not guaranteed against traffic (or volume) risk in the way that the SES charging scheme does for IAA and other ANSPs. Therefore, it is helpful to see how they have responded to the challenges of the pandemic and to identify whether such commercial pressures have led them into responding more aggressively than IAA in finding operating cost savings.

Demand and total operating costs

3.68 The chart below shows the reduction in revenue experienced by the organisation in 2020 compared to 2019, as well as the corresponding reduction in operating expenditure (in the case of the IAA ANSP, the revenue should be interpreted as the reduction in receipts in the year). The diamonds show the ratio of the reduction in costs to the reduction in revenue.

Figure 3.12: Change in revenue and operating costs by organisation, 2020 versus 2019 (nominal)



Source: Steer analysis, daa, Ryanair, IAG, Irish Continental, Bank of Ireland and IAA. Note: (*) value for IAA is based on traffic service units (TSU). Excludes EWSS payments where identified.

3.69 The chart in Figure 3.12 shows that the IAA ANSP’s relative reduction in operating costs was significantly lower than that achieved by the other organisations, with cost reductions only 12% of the fall in revenue (7% reduction in operating costs vs 60% reduction in revenue). In contrast, Ryanair reduced its costs by 85% of the fall in revenue (-57% vs -67%) and the Bank of Ireland reduced its costs by 27% of the fall in revenue (6% vs 22%). The other organisations considered reduced their costs by between 50% and 60% of their respective falls in revenue.

Staff costs

Overview

3.70 We set out the staff cost reductions in 2020 versus 2019 achieved by each organisation below:

- Dublin airport reduced payroll and related costs by 21% (-37% including the effect of EWSS);
- Ryanair reduced staff costs by 53% in the last quarter of 2020 compared to the same period in 2019 (we assume including EWSS support);
- Aer Lingus reduced staff costs by 46% (including EWSS);¹⁸
- Irish Continental reduced staff costs by 17% (by 24% including the EWSS);
- Bank of Ireland reduced staff costs by 3% over 2020 exclusively stemming from a reduction in staff pension costs (wages and salaries *increased* by 3% on 2019, despite a reduction in the workforce of 121 FTEs).

Reduction of staff working hours/salaries

3.71 The table below showcases the actions taken by the comparator companies to reduce staff working hours and/or salaries. Note that, for the purposes of effective comparison across companies, we include changes to variable pay and holiday allowances within this section.

Table 3.12: Actions taken to reduce staff working hours/salaries by organisation, 2020

Organisation	Action	Reduction on 2019
Dublin airport	Changes to working practices and ways of working (detail not specified) Removal of pay inflation and increments Removal of performance bonuses Removal of overtime pay 20% reduction in hours worked during 2020	[Confidential]
Ryanair	Examples of actions: CEO pay reduced by 50% for the full year to March 2021. 10% pay cut for cabin crew (and cancellation of bonus) and 20% pay cut for pilots.	-10% cabin crew pay, - 20% pilot pay.
Aer Lingus	Examples of actions: Agreed 50% pay cut with staff at start of pandemic and ongoing 40% reduction of hours/salaries at Dublin base.	-40-50% hours/pay cut
Irish Continental	Wage and salary cost reduction	€4.3m (-23%)
Bank of Ireland	Detail not available	-

Source: Steer analysis, daa, Ryanair, IAG, Irish Continental, Bank of Ireland. Confidential daa data redacted.

Headcount rationalisation

3.72 The table below sets out the reductions to headcount (or staff agency fees) made by each of the comparator organisations in 2020 in response to the pandemic.

Table 3.13: Actions taken to reduce staff headcount by organisation, 2020

Organisation	Examples of Actions	Reduction on 2019
Dublin airport	Voluntary severance scheme	[Confidential]
	Career breaks (temporary)	
Ryanair	Recruitment freeze. Temporary closure of Cork and Shannon bases from October 2020 to April 2021.	135 staff temporarily laid off.

¹⁸ It is not known whether this includes wage subsidy receipts

Organisation	Examples of Actions	Reduction on 2019
Aer Lingus	Voluntary severance. Permanent closure of Shannon cabin crew base	400 staff
Irish Continental	Redundancies	19 FTEs (-6%)
Bank of Ireland	Voluntary redundancy scheme	438 FTEs* (-4%)

Source: Steer analysis, daa, Ryanair, IAG, Irish Continental, Bank of Ireland. Note: (*) Workforce decreased by a net 121 FTEs in 2020 compared to 2019 due to additional recruitment.

3.73 Furthermore, for Ryanair, in addition to the measures described above, the following staff cost containment measures proposed in May 2020¹⁹ are being implemented:

- headcount rationalisation of ~3,000 roles (predominantly pilot and cabin crew, but also extended to Head Office and back office teams);
- pay cuts of up to 20% with CEO pay reduced by 50% for the full year to March 2021; and
- unpaid leave (undefined).

Government subsidy

3.74 During the pandemic, the Irish government (and other governments) provided various forms of subsidy to companies affected by the pandemic. The table below shows, where data is available, how the comparator companies availed themselves of these subsidies.

Table 3.14: Actions taken to draw subsidy from government, 2020

Organisation	Action	Subsidy amount
Dublin airport	Employment Wage Subsidy Scheme (EWSS)	€27.6m
Ryanair	Various European governments' payroll support schemes	Not reported
Aer Lingus	EWSS	Not reported*
Irish Continental	Government subsidy (unspecified)	€1.7m
Bank of Ireland	Detail not available	-

Source: Steer analysis, daa, Ryanair, IAG, Irish Continental, Bank of Ireland. Note: (*) At the Group-level, IAG reported receiving €344m from the Irish and UK governments' TWSS/EWSS and CJRS schemes respectively.

Staff pensions costs

3.75 No data concerning any cost reductions relating to pension schemes have been identified.

Non-staff operating costs

Overview

3.76 We set out the non-staff operating cost reductions in 2020 versus 2019 achieved by each organisation below:

- Dublin airport reduced other non-staff operating costs by 49% in 2020 (excludes depreciation, amortisation, exceptional items and waivers);
- Ryanair reduced other non-staff operating costs by 67% in 2020 (excludes depreciation and amortisation but includes variable costs such as fuel and charges);

¹⁹ <https://investor.ryanair.com/wp-content/uploads/2020/05/Ryanair-May-1-2020.pdf>

- Aer Lingus reduced other non-staff operating costs by 50% in 2020 (excludes depreciation and amortisation but includes variable costs such as fuel and charges); and
- Irish Continental reduced other non-staff operating costs by 12% in 2020 (includes variable costs such as fuel and charges).

3.77 We note that the Bank of Ireland did not report other non-staff operating costs in a format which facilitated valid comparison with other organisations in the sample.

Actions taken

3.78 The table below sets out the actions taken to reduce other non-staff costs in 2020 versus 2019 by each of the comparator organisations.

Table 3.15: Actions taken to reduce other non-staff costs by organisation, 2020

Organisation	Action	Reduction on 2019
Dublin airport	Deferral of €25m of costs for commercial rates (2020 only)	[Confidential]
	Traffic volume related reductions in non-staff operating costs”	
Ryanair	Detail not available	-
Aer Lingus	Detail not available	-
Irish Continental	Contract renegotiation: rent concessions	Not reported
	Service cutbacks: suspension of Dublin Swift fastcraft sailings pending relaxation of travel restrictions	Not reported
Bank of Ireland	Detail not available	-

Source: Steer analysis, daa, Ryanair, IAG, Irish Continental, Bank of Ireland.

3.79 Detailed data is available for Dublin airport for a certain non-staff operating costs (specifically, the cost lines falling under maintenance and spares, accounting for 80% of 2020 non-staff operating costs). This is reproduced in the table below.

Table 3.16: Results of cost containment measures at Dublin airport for maintenance and spares, nominal Euros

Maintenance and services	2019	2020	%change
Repairs and maintenance costs	13628	10656	(22%)
Rents and rates	15233	9698	(36%)
Energy costs	5722	4688	(18%)
Technology operating costs	10720	8765	(18%)
Insurance	4615	4057	(12%)
Cleaning contracts and materials	3858	2680	(31%)
Fees and professional services	12133	8807	(27%)
Marketing and promotional costs	4809	923	(81%)
Aviation customer support	718	-1593	(322%)
Telephone, print and stationery	944	725	(23%)
Employee related overheads	6637	3495	(47%)
Other overheads	15764	9415	(40%)
PRM service provider	8936	2793	(69%)
Travel and subsistence	864	71	(92%)
Car park direct overheads	5025	1798	(64%)
CAR costs	4609	3694	(20%)
Total	114,215	70,672	(38%)

Source: Steer analysis of daa plc Regulated Entity Accounts (2020).

Scenarios

Introduction

- 3.80 As noted in Chapter 1, the objective of this analysis is to review the cost savings measures undertaken by the IAA ANSP during the 2020-2021 “Base Year” period and to assess whether the ANSP has taken appropriate steps to minimise existing and new operating costs, in a timely manner, resulting in an efficient level of operating expenditure, as set out by CAR in its comments to IAA ANSP in April 2020.
- 3.81 This analysis should be informed by what cost saving measures IAA has in fact achieved during 2020 (and has planned to achieve in 2021), as well as the performance in this regard of other organisations which could plausibly be considered to be benchmarks, including other ANSPs as well as other major organisations in Ireland affected in comparable ways by the pandemic. These have been considered in the preceding sections.
- 3.82 In developing the scenarios, it is also necessary to take into account the particular circumstances and duties of the ANSP, including:
- the need to maintain services for the demand environment at the time;
 - the need to maintain the capability to scale up services safely, efficiently and expeditiously in light of expected traffic recovery/recoveries;
 - uncertainty surrounding the characteristics of future traffic growth (start date, pace, magnitude) and threats to such growth (e.g. cycles of lockdown, international cooperation on travel corridors, cost of testing, etc.);
 - labour market constraints (industrial relations in the context of air navigation service provision, competition in the labour with other sectors for particular workers e.g. technical engineers, Collective Labour Agreements, government incentive schemes to retain staff e.g. EWSS, etc.);
 - contractual obligations that could not have been effectively mitigated;
 - the costs associated with postponing or cancelling aspects of capex programmes both in terms of sunk costs and future operational performance;
 - legal constraints (including requirements to maintain ATCO training currency and staffing levels to satisfy regulatory requirements); and
 - other operational constraints (e.g. maximum on-the-job (OTJ) staff training class sizes).
- 3.83 Acknowledging the uncertainties around the development of cost savings scenarios, especially given their counterfactual nature, answering the question: “*what cost savings might the ANSP have reasonably achieved had it followed a different approach from what was actually done*”, Steer has developed two different cost savings scenarios described in greater detail below. Further, Steer has developed a spreadsheet operating cost model to support the calculation of key drivers of the IAA ANSP 2020 and 2021 position and the ability to use different assumptions for driver values in the scenarios:
- **Scenario A:** An ANSP-oriented scenario, with savings consistent with those achieved and promised by the European ANSPs over the 2020-2021 period; and
 - **Scenario B:** A commercially focused scenario, with savings closer to those achieved by parts of the aviation industry working on a largely commercial basis, in particular airports and airlines²⁰.

²⁰ Dublin Airport, while not fully commercial, is subject to a different traffic risk allocation in its price regulation compared with IAA ANSP.

3.84 Scenario B incorporates a higher level of saving than Scenario A, reflecting the stronger commercial incentives which apply outside the ANSP industry.

Scenario assumptions

3.85 This section ties the evidence presented in the previous sections with the respective assumptions underpinning Scenario A and Scenario B. For non-standard line items where valid comparators were not available, cost reductions achieved by IAA have been used.

3.86 The parameters determined in this section for each of the scenarios are then been applied in Steer's IAA ANSP operating cost model to determine the overall level of operating cost savings that would have resulted had these input assumptions been delivered.

3.87 The results of this analysis, and how each scenario compares to what the ANSP achieved in 2020 and plans to achieve in 2021, are presented in the final section of this chapter. A full record of assumptions used can be found in appendix A.

Approach to developing the scenarios

3.88 The cost reductions achieved by IAA ANSP in 2020 and planned in 2021 were set out in an earlier section. For staff costs, the reductions were based on reduced overtime, agreed reductions in staff salaries of up to 10% for some staff groups, voluntary severance/early retirement and reduced pension costs. For non-staff operating costs, there were significant reductions to travel, training and subscription costs for both 2020 and 2021 and, in 2020, also minor reductions in utility costs. However, in 2021, apart from travel, training and subscriptions, other cost categories show significant *increases* in costs above 2019 levels.

3.89 **For the ANSP-focused Scenario A**, for staff costs, we have reviewed the reductions achieved by IAA ANSP and extended these across a wider section of the workforce and applied them over a more extended period. For non-staff operating costs, we have applied cost reductions consistent with those achieved at the lower end of the top quartile of ANSPs (as per their PRB submissions). Achieving these reductions would have moved IAA ANSP towards the upper end of European ANSPs, while not requiring a "best-in-class" level of savings.

3.90 **For the commercially-focused Scenario B**, we have assumed deeper salary cuts of 15%, which are still conservative compared to the cuts imposed at other major companies both within and outside the aviation industry in Ireland (while recognising the different nature of more commercial organisations from the ANSP, airlines and airports do also operate safety critical processes under highly regulated conditions). For non-staff operating costs, we have retained IAA ANSP's assumptions on cuts to travel and training (as being very specific to the organisation), but otherwise have assessed that operating costs could be reduced by levels achieved by other major organisations (in particular Dublin Airport).

3.91 Furthermore, the scenarios are based on the assessment that, that due to pressures on cost containment, no substantive increases in operating costs will be caused by the capital programme.

3.92 The details of the assumptions in each cost category are set out in the sub-sections below. See in particular Table 3.17 (salary reductions), Table 3.18 (early retirement), Table 3.19 (EWSS), Table 3.20 (non-staff costs reductions summary) and Table 3.21 (detail on administration cost reductions).

Traffic

3.93 For 2021 it is assumed that traffic levels remain well below pre-pandemic levels (e.g. 2019), leading ANSPs to strive to keep their cost bases as low as possible, while avoiding undertaking

any avoidable projects with the potential to drive up operating costs. This is consistent with EUROCONTROL'S traffic forecast (Scenario 2), which assumes that only 45% of Irish 2019 en-route service units and 41% of Irish 2019 terminal service units are expected to operate in 2021.

Staff costs

3.94 The analysis in the section above indicates that IAA ANSP achieved staff cost savings of around 5% in 2020, compared to a range of between 5% and 15% reductions for the third quartile of ANSPs covered by the SES scheme (PRB data), noting that this comparison covers en route functions only. The other organisations considered above achieved significantly larger staff cost reductions in a range typically between 17% and 50%. While recognising that the IAA needs to operate under its own constraints, as set out in paragraph 3.82 above, this indicates that improvements above those actually achieved or planned level may have been achievable.

3.95 Four measures to reduce staff payroll costs were considered and are described below:

- Reduction of working week/salaries;
- Reduced variable pay;
- Headcount rationalisation; and
- Receipt of government employment subsidy.

3.96 The assumptions adopted under each scenario are set out, in comparison with IAA ANSP's actual achievement in 2020 and plans for 2021.

Reduction of staff working hours/salaries

3.97 Cost savings achieved (2020) and forecast (2021) by IAA ANSP are compared against those proposed in Scenario A and B for ATCO and non-ATCO staff in the table below. This is followed by a description of IAA ANSP's 2020-2021 reductions and each scenario. The evidence underpinning each scenario is also presented.

Table 3.17: IAA ANSP Staff working week/salary reductions

	ATCOs	% Costs		IAA		Scenario A		Scenario B	
		2020	2021	2020	2021	2020	2021		
ATCOs	€0 - €38,500	-	-	-	-	-	-	-	-
	€38,500 +	100%	-10% (Jul-Oct)	-10%	-10% (Jul-Dec)	-10%	-15% (Jul-Dec)	-15%	
Non-ATCOs	€0 - €38,500	22%	-	-	-	-	-	-	
	€38,500 – €56,930	25%	-10% (Jul-Oct)	-5%	-10% (Jul-Dec)	-10%	-15% (Jul-Dec)	-15%	
	€56,930 +	53%	-10% (Jul-Oct)	-9.75%	-10% (Jul-Dec)	-10%	-15% (Jul-Dec)	-15%	

Source: IAA, Steer assumptions

3.98 According to the IAA ANSP's cost containment report to the PRB, all staff earning in excess of €38,500 had their working hours and pay reduced by 10% for four months to October 2020. Full pay and hours were re-instated for all staff in November and December 2020. In 2021, the same level of cost containment was applied to ATCOs earning in excess of €38,500. However, reductions in working hours for non-ATCOs were reduced by a smaller amount, between 0.25% and 5%.

3.99 In Scenario A, we have assumed that the same proportionate reduction in working hours / salaries could have been extended across all employees earning in excess of €38,500. We also

assumed that the discontinuity in working hours / salary reduction could have been avoided in November and December 2020.

3.100 Scenario B entails a similar harmonisation of the scheme across all roles and is supplemented by a reduction in working hours by an additional quarter of a day per employee (5 percentage points). These assumptions took into account the general level of savings achieved by some ANSPs and most of the other Irish organisations reviewed, including the following examples:

- 15% salary reduction between April and December 2020 for staff at the Slovenian ANSP;
- 20% reduction in working hours at the Latvian ANSP;
- 23.5% reduction in pay at the Polish ANSP;
- Dublin airport's payroll reduction measures, which includes introducing a 4-day working week in 2020.

Reduced variable pay

3.101 Overtime accounted for €1.9m of staff costs in 2019, of which €1.3m was paid to ATCOs.

3.102 In both Scenarios A and B, overtime costs are assumed to have reduced by 65% in 2020 and remain constant at this level in 2021. This is justified on the basis of:

- for 2020, the collapse in demand for air travel in Q2-Q4 2020 inclusive (Irish Traffic Service Units fell 60% in 2020 from 2019 levels);
- for 2021, EUROCONTROL's STATFOR Five-Year Forecast which forecasts²¹ that en-route and terminal service units operated in Ireland will be 55% and 59% lower respectively than 2019 levels in 2021; however
- specific staff competency requirements combined with the geographical spread of IAA locations across Ireland necessitate some overtime to provide required services, regardless of the service level required.

3.103 These reductions allow for some overtime coverage for local sickness (and staff vaccinations) while recognising that overtime will not generally be needed to provide the required level of service to meet the much-reduced level of demand, especially given that total ATCO headcount will remain similar to 2019 levels. This is consistent with the cost containment measures adopted by several other European ANSPs and Dublin airport:

- The Lithuanian and Slovakian ANSPs have cancelled all variable pay for 2020 and 2021;
- An Italian ANSP has contained staff overtime to "minimum levels;"
- 6 other ANSPs²² have also taken steps to limit variable pay (to unspecified degrees); and
- Dublin airport has cancelled all overtime pay in 2020.

Headcount rationalisation

3.104 The level of traffic in 2020 and projected for 2021 implies that very large reductions in headcount could be absorbed in those years while still maintaining a good quality and safe level of service for customers. However, it is recognised that in the labour environment operated in by IAA and the lead-time for training ATCOs, it is not feasible for headcount to be

²¹ See 'Scenario 2: Vaccine deployed by 2022' in Eurocontrol (2020) *STATFOR Five-Year Forecast 2020-2024*. Available from: <https://www.eurocontrol.int/covid19>

²² PT, PL, RO, BE, CZ, and CY

sharply reduced temporarily and then to return back to previous levels once traffic has recovered.

- 3.105 We have therefore assumed that any headcount reductions implemented by the ANSP needed to be undertaken on the basis of voluntary severance or early retirement taking into account the medium-term staffing requirements implied by the traffic forecasts for the later part of RP3 (i.e. 2022-2024) and moving into RP4. We have not assumed that some of the measures undertaken by other ANSPs, including compulsory redundancies or career breaks, were realistic for IAA.
- 3.106 The vast majority of staff eligible for early retirement will be senior staff, on higher pay scales. We have assumed the following average salary costs based on provided IAA pay grade data:
- ATCO: €110,000; and
 - Non-ATCO: €95,000.
- 3.107 The IAA sought agreement from staff who could retire with occupational pension entitlement (those aged 60+ in Ireland). According to data provided by the IAA, 27 staff were aged 61 or above. An additional 26 staff who were within two years of qualifying for their pension benefits were offered the option of retiring early and becoming deferred members of their pension scheme. We understand that this has had limited success: four staff are expected to take voluntary early retirement in 2021 (2020: 0). These early retirement cost savings will be fully realised in 2022, while the majority of training costs will be incurred in 2023. Neither are within the scope of the 2020-2021 period and are therefore investigated in more detail for the work on the 2022-24 operating cost forecast in the next chapter.
- 3.108 Given the advantageous terms offered by IAA for staff taking early retirement, which it stated was usually around two years' pay, we consider that uptake could have been higher than actually achieved by the ANSP, had the offer been strongly publicised to a wider group of employees. We have assumed that five ATCO staff could have taken voluntary redundancy in Scenario A and that 10 ATCO staff could have taken voluntary redundancy in Scenario B.
- 3.109 The table below sets out the assumptions used for Scenarios A and B based on the analysis set out above. We note that in the IAA's Cost Containment Plan submitted to the PRB, a saving of €406,000 was assumed in 2021 which recognised the uncertainty surrounding this figure based on the voluntary nature of the early retirement scheme. This saving was generated by a reduction in headcount of four employees (assumed to be ATCOs).

Table 3.18: Early retirement cost reductions (€, 000s)

	IAA		Scenario A		Scenario B	
	2020	2021	2020	2021	2020	2021
ATCO	4	-	5	-	10	-
Savings	-	€406k	-	€550k	-	€1,100k

Source: IAA, Steer assumptions

- 3.110 Costs associated with severance are estimated as equalling two years of staff pay costs (based on statements from IAA ANSP) but these are assumed to be treated as exceptional items in IAA's accounts and have not been included within the operating costs presented. Cost savings associated with redundancies made in 2020 are realised in 2021 as the early redundancies would not have been processed until the end of the year.

Government subsidy

- 3.111 The 2020 Financial report indicated that the IAA received €1.4m of subsidy from the EWSS. We understand that IAA was not eligible for subsidy under the scheme's predecessor (the Temporary Wage Support Scheme or TWSS) which applied from 24 March 2020 and was replaced by the EWSS on 1 September.
- 3.112 Both scenarios assume that IAA will draw down the full government wage subsidy available to it through the government's ongoing Employment Wage Subsidy Scheme (EWSS).
- 3.113 From 1 July 2020, a subsidy of up to €203 per week was available from the government for eligible employees. Staff earning less than €7,878 and more than €76,024 were not eligible for a subsidy, while those earning between €7,878 and €10,556 were eligible for a reduced subsidy. The scheme was reformed in October 2020, when many of the subsidy rates were increased. The table below presents the levels of subsidy available from the scheme depending on salary level.

Table 3.19: EWSS subsidy rates

Gross pay per week	Gross pay per Year		Subsidy payable per week	
	Lower	Upper	Jul 2020 - Oct 2020	Oct 2020 – Jun 2021
Less than €151.50	€ -	€ 7,878	€ 0	€ 0
€151.50 - €202.99	€ 7,878	€ 10,556	€ 152	€ 203
€203 - €299.99	€ 10,556	€ 15,600	€ 203	€ 250
€300 - €399.99	€ 15,600	€ 20,800	€ 203	€ 300
€400 - €740	€ 20,800	€ 38,500	€ 203	€ 350
€740 - €1,094	€ 38,500	€ 56,930	€ 203	€ 350
€1,094 - €1,462	€ 56,930	€ 76,024	€ 203	€ 350
Over €1,462	€ 76,024	+	€ 0	€ 0

Source: Irish Tax and Customs

- 3.114 According to IAA pay grade data, the minimum salary payable was €21,359, which enabled all IAA staff earning less than €76,024 to be eligible for the maximum subsidy under the scheme. It was estimated that the IAA was able to collect €6,771 per eligible employee in 2020, implying that 204 employees met the eligibility criteria (i.e. annual salary <€76,000).
- 3.115 The EWSS is currently expected to be available until 31 December 2021 at the current rate of €350 per week for eligible employees. Based on information provided by IAA, the ANSP should be able to benefit from €4.0 million in wage subsidies in 2021.
- 3.116 Changes to the EWSS, particularly extending the scheme's duration, will be reviewed and accounted for in the operating cost model as necessary.

Staff pension costs

- 3.117 Pension costs have been reduced in line with assumptions from the IAA updated RP3 business plan. Pensions costs are expected to reduce by 2.6% in 2020 and 17.5% in 2021 versus 2019.

Non-staff operating costs

- 3.118 The comparison of ANSP submissions to the PRB presented above, indicates that IAA ANSP expected to achieve non-staff cost savings of around 6% in 2020 in its en route functions versus 2019. In fact, according to its revised RP3 Business Plan, savings of nearly 10% were achieved in en route non-staff operating costs, while for terminal non-staff operating costs the saving was much larger, at 38%, resulting in non-staff operating costs across the regulated business (en route and terminal) falling by 17%. This is similar to the fall of 15% indicated in

the 2020 Financial Report. We understand from IAA that the large fall in non-staff operating costs arises from a write off of debtors of €2.7million relating to terminal costs in 2019, which is a one-off effect not related to any cost savings initiatives in 2020.

- 3.119 These large differences in the measures of changes in non-staff operating costs between 2019 and 2020 indicate that caution is needed in relying on the values shown in the ANSP comparisons shown above, although it is nevertheless worth noting that these comparisons show that IAA ANSP’s performance in reducing non-staff operating costs in 2020 (versus 2019) was mid-range (13th out of 28 ANSPs) and at the lower-performing end of the range in 2021 (22nd out of 28).
- 3.120 Taking these factors into account, we have developed both “top-down” and “bottom-up” assumptions for each of the main cost lines contributing to the “non-staff cost” category.
- 3.121 The assumptions in Scenario A have been developed using data from other European ANSPs submitted to the PRB, whilst those in Scenario B have been developed from other organisations in the Irish aviation industry. An overview of the assumptions is presented in Table 3.20 below.

Table 3.20: Non-staff costs reductions (annualised)

	Scenario A			Scenario B			
	2020	2021	Driver	Annualised	2020	2021	Driver
Travel	-14.7%	-7.7%	PRB	-	-69%	-51%	IAA
Training				-	-25%	-10%	IAA
Subscriptions				-90%	-45%	-68%	IAA ²³
Utilities				-15%	-7.5%	-11.3%	DUB
Telecommunications				-15%	-7.5%	-11.3%	DUB
Operational				-15%	-7.5%	-11.3%	DUB
Administration				-20%	-9.8%	-14.7%	DUB

Source: Steer assumptions

- 3.122 Further detail on the cost reductions assumed for each component of the “Administration” category is set out in Table 3.21 below.
- 3.123 Annualised savings had a factor of 50% applied in 2020 to account for the fact that most could only be actioned from July onwards, whilst for 2021 a 75% factor has been applied to account for the potential for recovery later during the year. Each line item is described in more detail in the sections below.

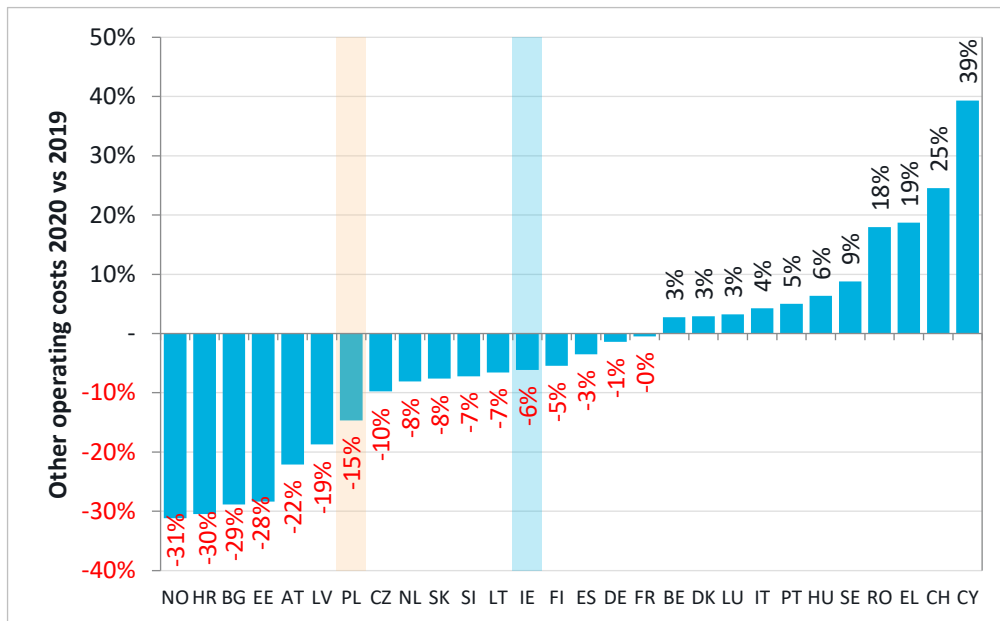
Scenario A

- 3.124 To formulate an ANSP-oriented scenario for Scenario A, savings consistent with those achieved and promised by the European ANSPs in the PRB submissions were generated. As data submitted to the PRB was not disaggregated into individual line items, an overall saving was generated and applied to the remaining line items.
- 3.125 The IAA indicated other operating cost savings of 6.1% in their PRB submissions, ranking 13th out of 28 ANSPs. A target cost reduction at the bottom of the first quartile of the ANSPs ranked in decreasing order of the level of savings made was deemed reasonable, representing

²³ 2020 reduction in costs (assumed enacted for 6 months in H2) maintained for 9 months in 2021

a 14.7% reduction in non-staff costs. This would place other operating costs savings in line with those achieved by the Polish ANSP PANSO and has been represented in Figure 3.13 below.

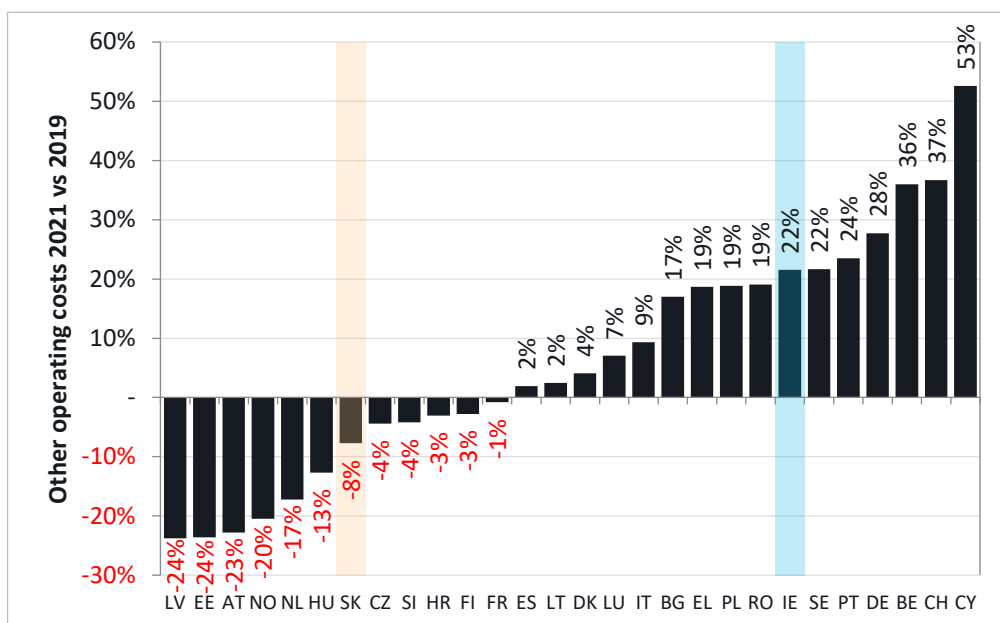
Figure 3.13: Change in ANSP en-route other operating costs, 2020 versus 2019 (real)



Source: Steer analysis of PRB data

3.126 The same approach was taken for 2021 where savings of 7.7% were expected at the bottom of the first quartile. This would place other operating costs savings in line with those achieved by the Slovakian ANSP and has been represented in Figure 3.14 below.

Figure 3.14: Change in ANSP en-route other operating costs, 2021 versus 2019 (real)



Source: Steer analysis of PRB data

Scenario B

- 3.127 Scenario B has been developed from other organisations in the Irish aviation industry. Due allowance for the difference in the type of activities undertaken in relation to those of IAA ANSP was considered when using information from other organisations in the Irish aviation industry. The process by which assumptions for each of the line items were developed has been included below.
- 3.128 **Travel:** Significant savings in travel cost were made by the IAA in 2020 (-69%). These savings have been replicated due to the unique travel requirements on IAA staff not being comparable to that of other industries. It was assumed that 75% of this cost reduction (-51%) could be achieved in 2021 as travel restrictions are likely to relax towards the end of the year.
- 3.129 **Training:** Training costs were also significantly reduced by the IAA in 2020 (30%). These savings were replicated in both proposed scenarios due to IAAs training requirements not being comparable to that of other industries. It was assumed that 30% of this cost reduction (30%) could be achieved in 2021 as additional training may be required for staff to retain their Unit Endorsements and other certifications.
- 3.130 **Subscriptions:** The IAA reduced subscriptions costs by 45% in 2020, representing a 90% reduction in annualised costs assuming savings were made from July 2020.
- 3.131 **Utilities:** An annualised cost saving of -15% was assumed for utilities in Scenario B. These reductions were informed by Dublin airport's ability to reduce non-critical energy consumption by 18% in 2020 together with reducing technology operating costs by 18%, while recognising that some saving achieved by Dublin airport can be attributed to reducing its operational footprint during the period of reduced traffic.
- 3.132 **Telecommunications:** An annualised cost saving of 30% was assumed for telecommunications in Scenario B. These assumed reductions were informed by Dublin airport's ability to reduce its technology operating costs by 18%.
- 3.133 **Operational costs** include the following line items.
- maintenance and repairs; and
 - insurance.
- 3.134 An annualised cost saving of -15% was assumed for operational costs in Scenario B. These assumed reductions were informed by Dublin airport's ability to maintenance and repair costs by 22% and technology operating costs by 18%.
- 3.135 **Administration:** A compound annualised cost saving of -20% was derived for administration in Scenario B. Administration costs include the following line items in the updated RP3 business plan:
- rent and rates;
 - computer maintenance;
 - network and information security (NIS);
 - consultancy;
 - insurance; building repairs;
 - environmental;
 - security;
 - professional services;
 - cleaning;
 - IAA restructuring;
 - Impairment;

- public relations;
- staff related; and
- other.

3.136 Reductions to each sub-line item were informed by confidential data submitted by daa on the effectiveness of Dublin Airport's cost containment measures which has been redacted from this report. Table 3.21 presents how the overall administration cost saving assumptions were derived, using the 2019 accounts to weight the respective percentage reductions.

Table 3.21: Calculation of administration cost reduction

Administration line item	Materiality (2019)	Dublin Airport	Scenario B
Rent	15.1%	-	-15%
Rates	3.1%	-36%	-
Computer maintenance	∞	-19%	-15%
NIS	-	-	-
Consultancy	7.2%	-42%	-30%
Insurance	∞	-	-
Building repairs	6.7%	-22%	-15%
Environmental	-	-	-
Security	∞	-31%	-20%
Professional Services	3.8%	-42%	-30%
Cleaning	∞	-31%	-20%
IAA Restructuring	-	-	-
Impairment	-	-	-
Public relations	2.5%	-42%	-30%
Staff Related	3.7%	-47%	-20%
Categories redacted above	20.7%		
Other	26.9%	Unknown	-30%
Total	100%	-38%	-20%

Source: DAA, Steer assumptions

Scenario results

3.137 The combined impact of staff and non-staff cost saving measures in each of Scenario A and Scenario B are presented in Table 3.22 below, in comparison with the savings projected by IAA ANSP in its Revised RP3 Business Plan.

Table 3.22: Operating costs, IAA actuals and scenarios

€000s, 2017 prices	Actual	IAA		Scenario A		Scenario B	
	2019	2020	2021	2020	2021	2020	2021
Payroll	52,214	51,304	48,416	49,806	47,398	48,602	44,990
Overtime	1,870	661	961	661	661	661	661
Early retirement	-	-	-400	-	-550	-	-1,100
Pension	13,466	13,121	12,941	13,121	12,941	13,121	12,941
EWSS	-	-1,357	-4,009	-1,357	-4,009	-1,357	-4,009

€000s, 2017 prices	Actual	IAA		Scenario A		Scenario B	
	2019	2020	2021	2020	2021	2020	2021
Total Staff Cost excl. EWSS	67,550	65,086	61,918	63,588	60,450	62,384	57,492
Staff cost % change vs 2019 (excl. EWSS)		-3.60%	-8.30%	-5.90%	-10.50%	-7.60%	-14.90%
Total Staff Cost incl. EWSS	67,550	63,729	57,909	62,231	56,441	61,027	53,483
Staff cost % change vs 2019 (incl. EWSS)		-5.70%	-14.30%	-7.90%	-16.40%	-9.70%	-20.80%
Travel	1,284	401	782	1,095	1,185	402	622
Training / Telecommunications	9,159	7,543	8996	7,813	8,453	7327	8150
Utilities	480	470	621	409	443	444	426
Operational	6,232	6,264	7,725	5,316	5,752	5,765	5,531
Subscriptions	453	249	389	386	418	249	147
Administration	14,086	11,521	15,773	12,015	13,001	12,702	12,010
Total Non-staff Operational Cost	31,694	26,448	34,286	27,035	29,254	26,888	26,887
Non-Staff cost % change vs 2019		-16.60%	8.20%	-14.70%	-7.70%	-15.20%	-15.20%
Total ANSP cost (excl. EWSS)	99,244	91,534	96,204	90,623	89,704	89,272	84,379
Total ANSP % Change vs 2019 (excl. EWSS)		-7.80%	-3.10%	-8.70%	-9.60%	-10.00%	-15.00%
Total ANSP cost (incl. EWSS)	99,244	90,177	92,195	89,266	85,695	87,915	80,370
Total ANSP % Change vs 2019 (incl. EWSS)		-9.10%	-7.10%	-10.10%	-13.70%	-11.40%	-19.00%

Source: Steer analysis and assumptions

- 3.138 According to its Revised RP3 Business Plan, the IAA ANSP achieved an 9.1% reduction in in-scope operating costs in 2020 versus 2019 including the impact of EWSS. Excluding EWSS a reduction of 7.8% was achieved. Note that this covers the whole regulated IAA ANSP business, en route and terminal (and is therefore not directly comparable with the ANSP comparisons presented earlier in this chapter, which covered only en route costs). IAA ANSP expects to achieve a -7.1% cost reduction versus 2019 in 2021 including the impact of EWSS (-3.1% impact excluding EWSS).
- 3.139 Under Scenario A, a 10.1% reduction in in-scope operational costs would be achieved in 2020 versus 2019 (8.7% excluding the impact of EWSS). In 2021 it is expected that further cost savings will be achievable as the full year effect of cost savings implemented in 2020 is realised. In 2021 cost savings of 13.7% are forecast (9.6% excluding EWSS).
- 3.140 Under Scenario B, an 11.4% reduction in in-scope operational costs would be achieved in 2020 versus 2019 (10.0% excluding the impact of EWSS). In 2021 cost savings of 19.0% are forecast (15.0% excluding EWSS).

3.141 The two scenarios therefore show slight improvements in cost reduction in 2020 compared with the actual achievement by the IAA ANSP (10% in Scenario A and 11% in Scenario B, versus the actual 9% achieved).

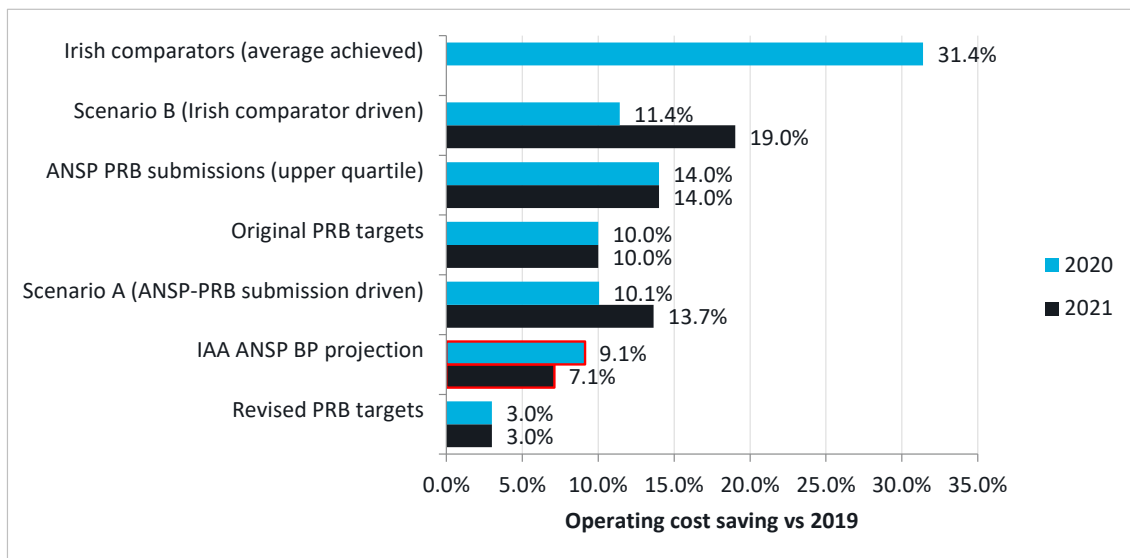
3.142 For 2021, the two scenarios show reductions of 14% (Scenario A) and 19% (Scenario B), compared with IAA ANSP’s Revised RP3 Business Plan assumption of cost reducing by 7%. Therefore, the scenarios indicate significantly greater savings than is assumed for 2021 by IAA in its Business Plan, as we have not assumed the significant cost increases in some non-staff cost categories which are included in the Business Plan.

3.143 The results expected by IAA ANSP in its Business Plan for each of the two years 2020 and 2021, as well as the results of the two scenarios, can be compared against a number of benchmarks, including:

- the original PRB cost savings targets for 2020 and 2021 (-10% versus 2019 levels);
- the adopted Union-wide targets for 2020 and 2021 (-3% versus 2019 levels);
- a benchmark from the ANSP PRB submissions (we have used the lower end of the first (best) quartile of the ANSPs); and
- a benchmark from the Irish organisations (used as comparators in Chapter 2 – we have taken the average level of cost reduction achieved in 2020).

3.144 These are shown in the chart in Figure 3.15 below. This shows that while costs savings were made by IAA in 2020 and are forecast in 2021 versus the 2019 levels, and these are above the adopted Union-wide targets, they lie below the PRB’s benchmark 10% reduction in costs compared to 2019 and the two scenarios based on the ANSPs other European ANSPs and operations of commercial organisations in Ireland and the upper quartile of ANSP PRB submissions.

Figure 3.15: Top down comparison of IAA projections, Steer scenarios and external benchmarks



Source: IAA, PRB, DAA, Ryanair, Steer analysis

4 2022-2024 forecast

Introduction

- 4.1 This chapter sets out the analysis and methodology undertaken to produce Steer’s operating cost scenario for the period 2022-2024, complementing and building off our analysis for the “Base Year” period covering 2020-2021 (all calendar years) presented in the previous chapter. The chapter contains:
- an overview of Steer’s modelling approach, including a description our understanding of IAA ANSP’s Business Plan assumptions, as transformed into inputs into the Steer operating cost model of the IAA ANSP (noting that the model has been calibrated to ensure that its outputs, under the BP assumptions scenario, match the operating cost projections in the IAA ANSP July 2021 Business Plan); and
 - Steer’s corresponding assumptions to be used in the operating cost model of the IAA ANSP.
- 4.2 Steer’s projections for operating costs resulting from the assumptions and modelling approach detailed in this chapter are set out and compared to IAA ANSP’s July 2021 figures in Chapter 5 below.
- 4.3 The scope covered is the IAA ANSP operating costs only (labelled as total ANSP costs in the summary tables). These costs exclude Depreciation, Cost of Capital, MET and NSA/Regulatory re-charge costs. MET and NSA/Regulatory re-charge costs will be addressed when reviewing the respective forecasts produced in their separate business plans. Depreciation and Cost of Capital are being covered by other CAR workstreams.
- 4.4 The analysis is based on the May 2021 Eurocontrol traffic forecast (Scenario 2), so as to be directly comparable with IAA ANSP’s July 2021 Business Plan.
- 4.5 For ease of comparability with the IAA ANSP’s Business Plan, all results are presented in constant 2017 prices.

Steer modelling approach

- 4.6 An operating cost model was constructed in Microsoft Excel to determine required staff numbers and associated costs together with non-staff costs for the RP3 period. Additionally, the model was extended to capture staffing requirements in 2025 and 2026 to ensure that sufficient ATCO staff commence training during RP3 to meet the anticipated requirements of the first years of RP4 (2025-2029). The model was constructed at an annual level.

Baseline, Parameter and Traffic forecast inputs

- 4.7 To allow for consistency in comparison between the IAA ANSP April 2021 Business Plan and the scenarios developed by Steer, actual 2019 operating costs presented in the IAA ANSP April 2021 Business Plan were used as the baseline for the model. These are presented in Table 4.1 below.

Table 4.1: Operating cost data provided in the IAA ANSP April 2021 Business Plan

Group	Line Item	2019 Costs (€000s, 2017 prices)
Staff	Staff Costs	54,084
	Pension	13,466
Travel	Travel	1,284
Training	Training	✂
Utilities	Utilities	480
Telecommunications	Telecoms	✂
Operational	Maintenance	4,185
	Spares	779
	Power	833
	Flight checking	211
	Other	224
Subscriptions	Subscriptions	453
Administration	Rent and rates	2,574
	Computing	1,660
	NIS	-
	Consultancy	1,013
	Insurance	✂
	Building repairs	949
	Environmental	-
	Security	✂
	Professional services	538
	Cleaning	✂
	IAA Restructuring	-
	Impairment	-
	PR	355
	Staff related	523
Other	3,794	
Redacted items above	Training/Telecoms/Computing/Insurance/Security/Cleaning	11,839
Depreciation	Depreciation	10,607
Cost of capital	Cost of capital	4,234
Total		114,086
Total ex Dep and CoC		99,245

Source: IAA ANSP July 2021 Business Plan

Note: The analysis presented in this document covers all operating costs excluding Depreciation and Cost of Capital

4.8 Supplementary data sets were provided by the IAA, which provided further information about some of the line items presented in Table 4.1 above. This enabled some line items to be

analysed in more detail, and for line items to be appropriately apportioned in the model where a variety of factors and drivers influenced costs. These data sets included:

- Headcount by business unit, cost centre and job category (2016-2019);
- Detailed staff costs, pension costs and overtime costs by business unit, cost centre and job category (2016-2019);
- Staff attrition by role and reason (2012-2020);
- IAA salary scales and terms & conditions;
- Pension schemes in place and eligible employees; and
- Non-staff operating costs, split by business unit.

4.9 Although cost data at the total-cost level was broadly similar to what had been reported in IAA's 2021 Business Plan, it was not always possible to reconcile more granular data extracted from the various sources above with what had been provided in the IAA's 2021 Business Plan. In these cases, we have made suitable assumptions to ensure that the projections can be made, while maintaining a reconciliation to the base level data.

4.10 Where staff numbers and costs are influenced by traffic forecasts, the current version of the model uses Scenario 2 of EUROCONTROL's May 2021 traffic forecast for Ireland.

4.11 Outputs from the model are presented in 2017 prices to permit the comparability of outputs with the IAA ANSP July 2021 Business Plan. Where conversion to 2017 prices is required the IMF April 2021 CPI forecast for Ireland has been used²⁴.

Staff costs – Operational ATCOs

4.12 The number of operational ATCOs required is modelled in a number of complementary ways:

- as a function of traffic levels;
- minimum staffing levels required to provide a safe level of service; and
- additional staff required in the future to assist with capex plans as well as changes to regulatory compliance.

4.13 The model also allows improvements in productivity to be taken into account in the calculation of the required number of ATCOs.

4.14 All of these factors are included in the model, allowing sufficient staffing levels in each year to be determined. Salaries and permitted overtime levels are then applied to determine total staff payroll costs. Further detail of the approach is provided in the sections below.

Relationship between traffic and operational ATCOs

4.15 A relationship between traffic and the number of staff required was established.

4.16 Contractual hours were taken from ACE data, which finds that the average number of contracted hours per IAA operational ATCO in 2019 was 1,574, whilst the average number of hours not on duty per ATCO in 2019 was 95. Combining these, it can be assumed that each operational ATCO worked for 1,479 hours in 2019 (excluding overtime accrual). 2019 contractual hours and hours not on duty are assumed to remain constant across RP3.

4.17 The number of hours overtime worked per operational ATCO was obtained from IAA data, which recorded 10,055 hours of overtime by ATCOs for en-route services and 2,899 hours of

²⁴ <https://www.imf.org/external/datamapper/PCPIPCH@WEO/IRL?zoom=IRL&highlight=IRL>

overtime for terminal services in 2019. Dividing these overtime hours by the respective number of operational en-route and terminal ATCOs (224/35) allows the average number of overtime hours recorded per operational ATCO to be calculated. On average en-route operational ATCOs worked 45 hours overtime in 2019, whilst terminal ATCOs worked 83 hours.

- 4.18 Combining the contractual and overtime hours it was assumed that en-route operational ATCOs each worked on average 1,525 hours in 2019, whilst terminal operational ATCOs worked 1,562 hours. Multiplying these figures by the 2019 number of operational en-route and terminal ATCOs (224/35) allows the total number of operational ATCO hours on duty to be estimated; 341,351 en-route operational ATCOs hours and 54,664 terminal operational ATCO hours were provided in 2019.
- 4.19 Airport flight hours per movement were stated as being 0.27, whilst en-route flight hours per movement were calculated as being 0.89 in 2019. By multiplying these figures with the Eurocontrol IFR movement statistics (2019) an estimation of flight hours under the jurisdiction of the IAA could be derived. In 2019 there were 319,777 en-route flight hours and 77,998 terminal flight hours.
- 4.20 Flight hours per operational ATCO hour could then be derived. In 2019 there were 0.94 en-route flight hours per en-route operational ATCO and 1.43 terminal flight hours per terminal operational ATCO.

Minimum ATCO requirement

- 4.21 An absolute minimum staff profile was obtained by multiplying the 2022-2024 flight hour forecast by flight hours per operational ATCO. This methodology does not account for minimum staffing and safety requirements and is recognised as being non-attainable, especially in the early years of RP3, however in later years it provides a lower-bound to required staffing levels.
- 4.22 To account for minimum staffing and safety requirements an overlay was incorporated into the model stating minimum staffing requirements to provide the service.
- 4.23 Inputs for additional ATCOs required to satisfy developments such as the parallel runway and new Tower at Dublin, and adhering to Regulation (EU) 2017/373, were also included, the latter taking into account comments from SRD. The model contains the functionality to adjust these requirements to account for changes to the commissioning date of the parallel runway and tower.

Scenario calculations

- 4.24 In the user defined scenarios in the model, ATCO staffing levels take account of the rate of attrition, which is defined by the user. This can take the form of natural attrition, which uses the profile of expected ATCO retirements, or early retirement, where a specified number of ATCO retirements are brought forward.
- 4.25 These changes influence the number of ATCOs available for work in each year and in turn the total number of operational ATCO hours available. Provided that the number of operational hours available is greater than the minimum ATCO hours required, the number of operational ATCOs is assessed as sufficient. Where the number of available operational ATCO hours is less than the minimum operational ATCO hours level, additional staff are added to allow this condition to be satisfied. Where levels of overtime are also defined by the user, these additional available hours are included, with the effect of reducing the number of additional staff required to satisfy requirements.

4.26 A large proportion of IAA ANSP ATCOs are certified to work on both en-route and Dublin-terminal operations. It was assumed in the calculations that sufficient operational ATCOs with transferrable skills are available to cover both sectors and that additional staff are only required where there is an overall operational ATCO hour deficit. We account for the lack of interoperability of Shannon and Cork ATCOs with other stations (i.e. en-route and Dublin terminal) and vice versa by ring-fencing Shannon and Cork ATCOs at 2019 levels across the whole of RP3.

Introduction of new staff

4.27 A surplus of staffing hours is generally available until 2023 when, based on the May 2021 EUROCONTROL forecasts, a deficit in available staffing hours materialises as traffic grows back to 2019 levels while retired staff are not immediately replaced. This deficit in staffing hours is converted into a headcount requirement using the derived parameters set out in the 'Relationship between traffic and operational ATCOs' section (from paragraph 4.15 above).

4.28 All new ATCOs are assumed to be graduates from the trainee programme. For modelling purposes, it was assumed that trainee ATCOs need to commence training two years prior to their required commencement of service.

Salaries

4.29 The calculation of operating ATCO staff salaries is dependent on whether staff were already working for the IAA in 2019, or whether they are new staff joining from the ATCO training programme.

4.30 Average salaries were back-calculated from total operational ATCO staff costs. These rates of pay were subsequently used as the baseline from which salary changes were applied in the model in subsequent years. The model considers changes in the rates of pay at each grade, grade progression (staff benefit from regular, pre-defined, incremental pay rises up to a cap) and changes in CPI.

4.31 In terms of grade progression, although detailed data on the distribution of ATCOs across the IAA's prescribed salary grades was not provided, it has been possible to estimate average grade progression for different ATCO positions (ATCOs, ATM Specialists and Station Managers). On average, 19 in 20 ATCOs and all ATM Specialists and Station Managers are remunerated at the highest point on the ANSP's prescribed pay scales. For the remaining ATCOs to be remunerated at the highest band, total ATCO salary costs (excluding pension and overtime costs) would increase by €1.67m (2019). This implies that ATCO salary growth due to grade progression is constrained at a total of +4.7% on 2019 levels, assuming no revisions to these grades. For context, graduates from the trainee programme are paid a salary of $\text{€}X$ in their first year of service, rising to $\text{€}2X$ in year 2, $\text{€}3X$ in year 3, $\text{€}4X$ in year 4. Pay rises are primarily contractual but also reflect, to a degree, improvement in junior ATCO's operational effectiveness over time.

Overtime costs

4.32 Permitted overtime costs are defined by the user in the scenario inputs. The permitted cost is divided by the average hourly rate of overtime pay (determined from IAA 2019 costs) to allow the additional number of ATCO hours to be calculated. Overtime hours generated are added to the operational ATCO hours, which in turn reduces the overall headcount required.

4.33 ATCOs are remunerated at double salary for overtime – implying that additional FTEs will be strictly more cost effective than additional overtime allowances, subject to the accuracy of

forecasting expected future workload in light of the lead time required (at least 16 months in the case of training additional ATCOs).

Staff costs – Non-Operational ATCOs

- 4.34 There were 50 non-operational ATCOs staff in 2019. It is assumed that non-operation ATCO staff remained at 50 throughout RP3. Average non-operational ATCO salaries were calculated from total non-operational ATCO salary cost data in 2019 and this was used as a baseline from which salary changes (changes in the rates of pay for each grade and grade progression) could be applied in the model.

Staff costs – Non ATCOs

- 4.35 Non-ATCO staff include the following staff roles:

- Corporate services;
- Data Assistants;
- Engineers; and
- Operational Management Support.

- 4.36 For each role, the number of staff present in 2019 was taken as the baseline from which the average actual cost per staff member could be calculated. This average staff cost for each role was then used as a baseline, from which salary changes could in applied in future years.

- 4.37 The number of staff in each role was determined by user inputs to each scenario. The IAA's April 2021 Business Plan outlines staffing changes in each role during RP3 and these changes were verified and/or adapted by Steer where appropriate.

Staff costs - Pension costs

- 4.38 Total pension cost data was provided by the IAA as well as further detail on the number of staff who were members of each pension scheme between 2012 and 2019.

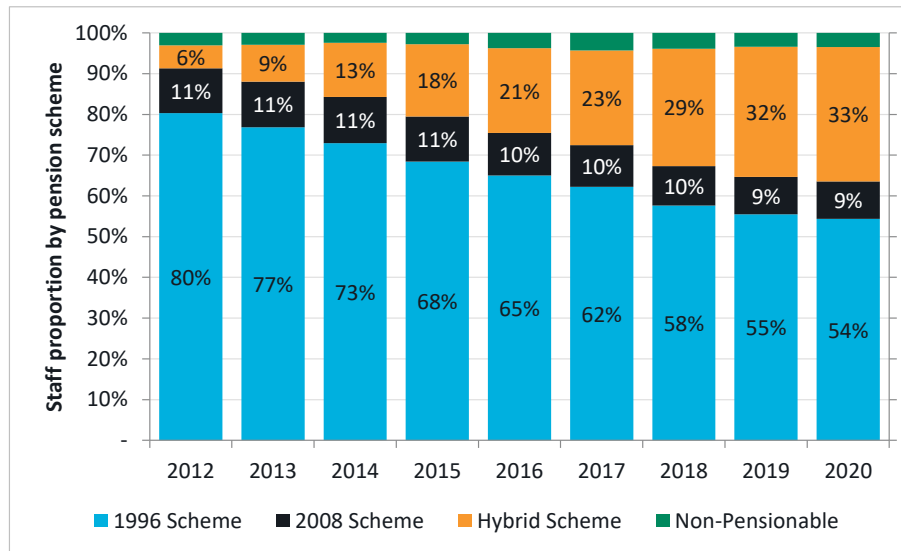
- 4.39 There are currently three pension schemes utilised by IAA staff:

- **1996 scheme** – defined benefit scheme for all staff transferring from the civil service to the IAA in 1993 as well as staff commencing employment prior to 1 April 2008;
- **2008 scheme** – defined benefit scheme, similar to the 1996 scheme, however with some changes including a minimum pensionable age of 65 and different member contribution rates. This scheme was available to staff commencing employment between 1 April 2008 and 31 December 2011; and
- **Hybrid scheme** – a combined defined benefit and defined contribution scheme available to staff joining from 1 January 2012.

- 4.40 Additionally, a small proportion of staff are not eligible for pension pay.

- 4.41 Figure 4.1 below presents the proportion of staff on each pension scheme between 2012 and 2020.

Figure 4.1: Staff proportion by pension scheme



Source: IAA, Steer analysis and forecast

4.42 The proportion of staff on the 1996 scheme has declined since 2012, reducing from 80% of staff to 54%. Conversely the number of staff on the hybrid scheme has increased from 6% in 2012 (year of introduction) to 33% in 2020. These changes are primarily driven by the retirement of staff on the 1996 scheme and their replacements being placed on the hybrid scheme.

4.43 Table 4.2 below shows a comparison of pension costs as a proportion of pay across the data sets received from the IAA. Both the IAA Payroll and FTE and Pensions working table data show that pension costs as a proportion of pay were 23.8% in 2019, whilst in the IAA Updated Business plan this rate is 24.9%. This difference is partially accounted for by the inclusion of SRD staff in the IAA payroll data.

4.44 Across all of the data sets however a downward trend in both historical and forecast pension costs as a proportion of salary costs can be seen reflecting the change in membership of the respective pension schemes (with the exception of 2020).

Table 4.2: Comparison of pension costs as a proportion of pay

Data Source	2016	2017	2018	2019	2020	2021	2022	2023	2024
IAA Payroll	31.5%	29.3%	28.4%	23.8%	-	-	-	-	-
FTE and Pensions working table	-	-	-	23.8%	25.3%	24.9%	23.5%	23.0%	22.8%
IAA Updated Business Plan (exc. EWSS)	-	-	-	24.9%	25.2%	27.5%	24.7%	24.1%	23.7%
<i>Difference (pp)</i>	-	-	-	1.1%	-0.1%	2.6%	1.2%	1.1%	0.9%

Source: IAA, Steer analysis and forecast

4.45 Information regarding the pension costs as a proportion of salary costs under each scheme was available in the IAA ANSP April 2021 Business Plan. An estimate of the overall pension contribution obtained when pension costs and the share of staff on each scheme are taken into consideration was made. A value of 25.6% was obtained, which is reasonably similar to the 24.9% specified by the IAA in their business plan. It should be noted that this analysis was

conducted using the share of staff on each scheme. These pension cost rates were combined with the changing share of total staff in each year to derive an overall pension cost rate as a proportion of total salaries. Table 4.3 below presents the estimated pension costs as a proportion of salary together with rates as presented in the IAA Business plan. Under the IAA April 2021 Business Plan pension costs as a proportion of salary are expected to increase from 2021. It should be noted that the estimated pension rate assumptions vary across the scenarios dependent on the number of staff retirements (assumed to be on the 1996 scheme) and new recruits (assumed to be on the hybrid scheme).

Table 4.3: Pension cost assumptions

	2019	2020	2021	2022	2023	2024
Pension Rate IAA Business Plan	24.9%	25.2%	27.5%	24.7%	24.1%	23.7%
Pension Rate estimated in model (IAA Scenario)	25.6%	25.3%	28.0%	27.1%	25.8%	24.4%
Pension Rate estimated (IAA Scenario– rebased to Business plan)	24.9%	24.6%	27.2%	26.4%	25.2%	23.8%
<i>Adjustment (%)</i>	2.7%	0.1%	5.9%	10.1%	7.0%	3.1%

Source: IAA, Steer analysis and forecast

- 4.46 An adjustment factor was then applied so that the resulting proportions in the IAA scenario matched the IAA Business plan.
- 4.47 2019 pension costs by staff type were derived from the detailed IAA payroll data and rates of change derived at the total level were applied to each line. This is shown in Table 4.4 below which presents the pension costs by staff type derived in the IAA Scenario to match the IAA April 2021 Business Plan. These pension cost rates were then applied to respective staff costs in each year to determine pension costs.

Table 4.4: Pension costs by staff type – IAA Scenario

	2019	2020	2021	2022	2023	2024
ATCO en-route	25.4%	28.0%	25.3%	24.9%	24.7%	25.4%
ATCO Terminal	26.1%	28.6%	25.9%	25.5%	25.3%	26.1%
Corp Services	24.8%	27.3%	24.7%	24.3%	24.1%	24.8%
Data Assistant	29.2%	32.1%	29.0%	28.6%	28.3%	29.2%
Engineer	25.8%	28.3%	25.6%	25.2%	25.0%	25.8%
Operational Management Support	24.7%	27.2%	24.5%	24.2%	24.0%	24.7%

Source: IAA, Steer analysis and forecast

Non-Staff costs

- 4.48 2019 non-staff costs were taken from the IAA July 2021 Business Plan and incorporated into the model at the most disaggregated level to which we have access (25 line items).
- 4.49 Steer has used assumptions applied at the level data was provided, unless more detailed analysis was required to support the use of key drivers of costs.
- 4.50 Changes to non-staff costs in each scenario can be implemented in the model as either a:

1. Year-on-year percentage change to each line item, starting from the 2019; and/or
2. Absolute value input, supported by bottom-up calculations for each cost category where used.

4.51 Absolute value inputs were used to determine costs associated with:

- The ATCO trainee programme costs;
- Network and Information Systems (NIS);
- Environmental considerations;
- IAA restructuring; and
- Impairment.

Scenarios and Dashboard

Scenarios

4.52 The model user is able to define a number of parameters in the construction of each scenario in the model. Table 4.5 below presents the inputs available to the user. Functionality for three user-generated scenarios has been incorporated into the model.

Table 4.5: Scenario Inputs

Category	Line Item	Inputs
Productivity and safe working	Contractual working hours per ATCO in OPS per year	#, hours
	Average number of hours not on duty per ATCO in OPS per year	#, hours
	Flight hours per ATCO (enroute)	#, Flight hours per ATCO
	Flight hours per ATCO (terminal)	#, Flight hours per ATCO
	Operational ATCOs – Minimum Safety Requirement	#, Headcount
Salaries	Working week Reduction/ Increase (impacts staff pay and available working hours)	YoY % reduction for (ATCOs/non-ATCOs)
	Salary Reduction/ Increase (Impacts staff pay only)	YoY % change for (ATCOs/non-ATCOs)
	Pay rise (above inflation)	YoY % change for (ATCOs/non-ATCOs)
	Pay rise (attributed to grade increment and promotion)	YoY % change for (ATCOs/non-ATCOs)
	Overtime	% of 2019 overtime costs
	Government Subsidy (EWSS) (2020 subsidy received/2021 eligible subsidy estimation)	#, subsidy (€)
Staff changes	ATCO Retirement	#, Headcount
	ATCO Early Retirement	#, Headcount
	ATCO Headcount adjustment	#, Headcount
	Non-ATCO Headcount Adjustment	#, Headcount
Non-Staff	Cost containment measures (%) per line item	YoY % reduction
	Cost containment measures (Absolute) per line item	#, estimated costs (€)

Category	Line Item	Inputs
Pension calibration factor	Calibration between Steer pension cost rate estimate and IAA actual	%, difference in each year

Source: Steer

Dashboard

- 4.53 On the model dashboard the user is able to select constructed scenarios for comparison with the IAA ANSP April 2021 Business Plan. Scenarios can be viewed in combination for the periods 2020-2021 (IAA, Scenario A, and Scenario B) and 2022-2024 (IAA and Scenario C). The scenarios are described below.
- 4.54 Outputs in both real (2017) and nominal pricing can be calculated and presented in the dashboard.

Calibration process

- 4.55 In order to incorporate the IAA ANSP July 2021 Business Plan Scenario (2020-2024) and Steer's Scenarios A and B (2020-2021) into the model, an exercise was undertaken to back-calculate and calibrate the required inputs to the model to obtain the same outcomes presented in the 2020-2021 report.
- 4.56 Upon completion of the model, both the IAA business plan and the 2020-2021 Scenarios A and B were incorporated into the model to check its suitability. This required the derivation of appropriate model inputs.

Steer assumptions for 2022-2024 (Scenario C)

- 4.57 In addition to the two scenarios developed by Steer for the period 2020-2021 (Scenarios A and B, described from paragraph 3.80 above), a further scenario (Scenario C) has been developed for the period 2022-2024. This 2022-2024 scenario has been developed so that it can be combined in conjunction with one of the scenarios specified for the period 2020-2021. The user has the ability to select any of the IAA/Scenario A/Scenario B options for 2020-2021 and to select either of the IAA/Scenario C options for 2022-2024.
- 4.58 The Scenario C assumptions for 2022-2024, have been developed to follow the same model input structure as the derived IAA assumptions.

Staff numbers

- 4.59 The analysis below is based on Steer's bottom-up analysis of IAA staffing requirements, as researched through discussions and briefing notes shared between Steer, IAA and CAR.

ATCO productivity

- 4.60 The table below shows the traffic recovery profile for Ireland through RP3 according to the EUROCONTROL STATFOR forecast (May 2021).

Table 4.6: Irish traffic forecast, percentage of 2019 levels

Service	2020	2021	2022	2023	2024
En-route	43%	45%	69%	87%	102%
Terminal	38%	41%	72%	87%	100%
Average*	41%	44%	70%	87%	101%

Source: Steer analysis of Eurocontrol forecast, November 2020 (scenario 2: vaccination by summer 2022). (*) Note: weighted according to operational intensity of en-route (69%) and terminal (31%) services for IAA in terms of ATCO hours on-duty.

- 4.61 As supported by the above, it is assumed that ATCO productivity (composite flight hours per ATCO hour on duty) remains constant for most of RP3 due to traffic volumes remaining depressed below 2019 levels. However, in 2024 we expect ATCO productivity to increase by 2% because:
- traffic volumes are expected to be relatively similar to 2019 levels in 2024, thereby helping to facilitate demand-led productivity improvements similar to those witnessed historically (average productivity improvement of 2% per annum between 2010 and 2018²⁵); and
 - all SESAR Deployment Programme projects are expected to complete by 2024,²⁶ with associated ATCO productivity improvements estimated by the SESAR Joint Undertaking of +12%²⁷, of which we have conservatively assumed that a modest proportion (i.e. 2%) could realistically be achieved by 2024.
- 4.62 The productivity improvement is only applied in 2024, as before then traffic is depressed below 2019 levels and productivity would not materialise.
- ATCO numbers*
- 4.63 Under Scenario A, ATCOs reduce in 2020 and 2021 due to attrition and early retirement from 309 ATCOs in 2019 to 290 ATCOs in 2021. We assume that severance/early retirement in 2021 will bring forward retirements otherwise expected in 2022, 2023 and 2024. Therefore, we assume no attrition between 2022 and 2024. 290 ATCOs existing ATCOs are assumed to remain in service between 2022-2024.
- 4.64 The IAA ANSP July 2021 Business Plan outlines additional staffing requirements in 2024 due to:
- 18-hour parallel runway operations at Dublin – 14 ATCOs
 - Safety and regulatory compliance work – 3 ATCOs
 - Development and ongoing maintenance of a training programme for all staff within the ANSP – 2 ATCOs.

²⁵ Based on Steer analysis of Eurocontrol ATM Cost Effectiveness Benchmarking reports for 2010 to 2018.

²⁶ p.120. SESAR Deployment Manager (2019). Guidance Material for SESAR Deployment Programme Implementation: Monitoring View 2019. FPA MOVE/E2/2014-717/SESAR FPA. Brussels. Available from: https://downloads.ctfassets.net/krj50g99u3hm/1qAlHutNBhbTnsiYuLLSga/53571fb6bada5333014c6c01d5726d94/2019_09_25_Monitoring_View_2019.pdf

²⁷ p.34. SESAR Joint Undertaking (2013). Proposal on the Content of a Pilot Common Project. Brussels. Available from: <https://ec.europa.eu/transport/sites/default/files/modes/air/consultations/doc/2014-01-31-sesar/sju1.pdf>

- 4.65 Steer agrees with the IAA’s requirement to staff positions for the second runway and quality, compliance and security, however analysis of existing staff levels assumed in 2022-2023 versus traffic recover means that many of these roles can be at least partly fulfilled by existing staff in 2022 and 2023 due to suppressed traffic levels.
- 4.66 These additional requirements have been reflected in the model and Steer’s assumptions on ATCO numbers over 2022-2024 are presented in the table below.

Table 4.7: Steer assumptions – cumulative additional ATCO headcount requirements, 2022-2024 vs 2019

Drivers	2022	2023	2024
Second runway and new DUB tower staff	5	14	14
Quality, compliance and security*	3	3	3
Training	1	1	1

Source: Steer analysis. (*) Note: associated with Regulation 2017/373 compliance

- 4.67 It is also important to note that it is not clear whether the +2 additional ATCOs for training provision (as above) are required. IAA’s central justification for this was that SRD had interpreted Regulation 2017/373²⁸ to mean a step-change in training for all staff. However, the specific provision referenced under Regulation 2017/373²⁹ is of little substantial difference to a provision previously established under Regulation 1035/2011.³⁰ Consequently it has been assumed one additional staff member is required for this role.

Engineers

- 4.68 The table below presents Steer’s assumptions on engineering staff numbers in 2024.

Table 4.8: IAA assumptions – cumulative change in engineering FTEs, 2022-2024 vs 2019

Drivers	2024
Systems Monitoring and Control (SMC) and maintenance, of which	8
<i>Increased SMC for NTPR³¹ monitoring</i>	1
<i>Additional parallel runway systems</i>	5
<i>CEROC³² maintenance</i>	2
Supporting the capex programme	6

²⁸ Regulation 2017/373, Annex III, Subpart B, ATM/ANS.OR.B.005(a) (6): “A service provider shall implement and maintain a management system that includes: (6) a process to ensure that the personnel of the service provider are trained and competent to perform their duties in a safe, efficient, continuous and sustainable manner. In this context, the service provider **shall establish policies for the recruitments [sic] and training of its personnel.**”

²⁹ *Ibid.*

³⁰ Regulation 1035/2011, Annex I, Section 5: Human Resources: “Air navigation service providers shall employ appropriately skilled personnel to ensure the provision of air navigation services in a safe, efficient, continuous and sustainable manner. In this context, they **shall establish policies for the recruitment and training of personnel.**”

³¹ New Tower and Parallel Runway (NTPR)

³² En-route Contingency Centre (CEROC), Ballygirreen

Drivers	2024
Additional regulatory requirements, of which	4.5
<i>Change, software and security management*</i>	2
<i>Dedicated ATSEP training staff*</i>	1
<i>Regulatory change driven training*</i>	1.5
Total (Steer)	18.5
Total (IAA)**	22
<i>Difference**</i>	<i>(3.5)</i>

Source: Steer analysis. (*) Note: associated with Regulation 2017/373 compliance; (**) shown for comparison.

- 4.69 As shown above, Steer expects 3.5 fewer engineering FTEs on the payroll in 2024 than IAA (and similarly 3 fewer in 2022 and 2.5 fewer in 2023).

Other staff

- 4.70 Steer's assumptions on the number of other staff employed by IAA ANSP are shown in the table below.

Table 4.9: IAA assumptions – cumulative change in other staff FTEs, 2024 vs 2019

Roles	2024
Corporate services	(11)
Data Assistants	(1)
Operational management support	6.5
Total (Steer)	(5.5)
Total (IAA)*	(2.5)
<i>Difference*</i>	<i>(3)</i>

Steer analysis. (*) shown for comparison.

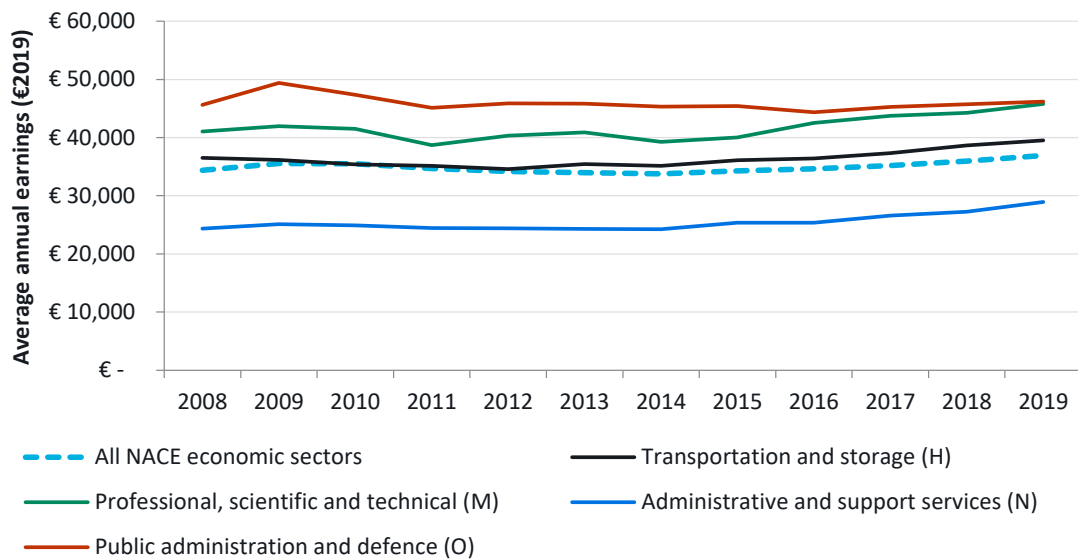
- 4.71 Steer accepts IAA's assumptions on the evolution of corporate services staff and Data Assistants. It is also accepted that Regulation 2017/373 will increase IAA ANSP's administrative workload. However, Steer's analysis of IAA's own detailed review of the impact of the Regulation suggests that the increase in operational management support staff is limited to 6.5 FTEs in 2024 (3 fewer than IAA assume), through elimination of roles which appear to be double-counted.
- 4.72 We note that the IAA has considered the institutional separation of SRD and IAA ANSP and this results in the decreased in corporate services staff from 2022 onwards.

Staff salaries

- 4.73 Salaries scales are assumed to increase at an annual rate of CPI + 1% across the period 2022-2024 (exclusive of the cost impacts of grade progression as staff move up salary scale increment points). This takes 2019 average salaries as the starting point (the methodology to which was previously described on p.80). This is based on a review of historical trends in the Irish labour market, with the assumed rate matching the trend growth for professional, scientific and technical workers between 2008 and 2019. Notably, wages for other Irish public

sector professional/technical roles have fallen by between 0.3% and 0.6% in nominal terms between 2008 and 2019.³³ This is illustrated in the figure below.

Figure 4.2: Average annual earnings by sector (€2019)



Source: Steer analysis of Central Statistics Office Ireland statistics (Table EHQ03).

- 4.74 Reconciliation of staff number and staff cost data in our model suggests that IAA implicitly assumes a CPI +4.1% salary scale increase in 2022 (above the base 2019 levels), with CPI + 1.8% in 2023 and CPI +1.8% in 2024.
- 4.75 Although Ryanair³⁴ has committed to reversing nominal pay cuts introduced in 2020 over a four-year period for Irish flight crew, no examples were identified of the recovery of foregone salary increases. Furthermore, pressure to contain costs is likely to continue – with Aer Lingus stating in March 2021 that cost containment measures would “continue for the foreseeable future” and further measures “could not be ruled out.”³⁵
- 4.76 Overall, our assumptions on staff salary translate to a 3.0% nominal salary increase per annum between 2022 and 2024 (i.e. CPI + 1.0%, with CPI assumed at 2% p.a.). This compares against IAA’s assumed average nominal growth of 4.6% per annum (2.6% real) over the same period.
- 4.77 Note that these increases to the salary scales do not incorporate the cost of staff moving up the salary increment scale points (grade progression). However, the impact of grade progression is estimated to be relatively small, at 0.3% p.a. cost increase, as most staff appear to have already reached, or be close to the top of their respective salary scales. This 0.3% p.a. grade progression cost increase has been added to both the IAA and Steer assumptions for the increased levels of the salary scales described above.

³³ Steer analysis of Civil Service pay scales for a sample of roles (Administrative Officer, Executive Officer, and Principal grades)

³⁴ <https://www.irishtimes.com/business/energy-and-resources/ryanair-cabin-crew-to-vote-on-10-temporary-pay-cut-1.4294768>

³⁵ <https://www.rte.ie/news/munster/2021/0521/1223194-shannon-airport/>

Non-staff costs

- 4.78 A range of techniques have been used to derive assumptions for different cost lines based on the level of granularity and quality of the data available. These are described below. Note that a table of the assumptions made for non-staff costs can be found on p.92.
- 4.79 For most cost lines, our analysis provides no rationale for costs in 2022 to rise above those incurred in 2019, when traffic was significantly greater than it will be in 2022. For these cost lines, it is therefore assumed that costs revert to 2019 levels in 2022 unless a specific reason is presented to deviate from this. This approach reflects the lack of sensitivity to traffic of non-staff costs and the relatively low levels of variation of most of the non-staff cost lines over RP2. This is evidenced in the table below.

Table 4.10: Stability of non-staff costs by line item

Cost line	Standard deviation	Mean	Coefficient of variation
Utilities	€ 39,444	€ 905,867	4%
Subscriptions	€ 428,208	€ 8,288,263	5%
Training	€ ✂	€ ✂	8%
MET costs	€ 759,518	€ 9,039,270	8%
Other operating costs	€ 631,981	€ 6,615,858	10%
Administration	€ 1,938,022	€ 18,563,971	10%
Travel and subscriptions	€ 222,639	€ 2,070,197	11%
Telecoms	€ ✂	€ ✂	23%
Total	€ 3,890,318	€ 55,463,732	7%

Source: Steer analysis of IAA RP2 P&L.

- 4.80 Furthermore, there is little to suggest that 2019 is an abnormal year to baseline non-staff costs for RP3, with most line items for 2019 following the same general rates of growth as previous years. Telecoms is perhaps the only exception to this, with an 87% increase over RP2 (2015 to 2019) and a 13% increase in 2019 alone.
- 4.81 For the Operational Maintenance and Operational Spares cost lines, an allowance was calculated which was proportional to the increase in the size of the capital programme – explained below. IAA explained that increases to these cost lines had been driven predominantly by the NTPR and CEROC projects³⁶ – representing €68m in capital expenditure or a 24% increase in the size of IAA’s tangible Gross Book Value asset base from 2020 levels. Because new projects typically exhibit lower maintenance costs at the start of their service lives, we assume that maintenance costs increase at a 50% rate. In other words, the 24% increase in the size of the tangible asset base results in a 12% increase in maintenance costs. Note that we assume that all testing and implementation costs are treated as project costs (capex) before the asset enters fully operational service. It has not been possible to control for possible reductions in maintenance opex due to the retirement of older assets, however.
- 4.82 Computing costs have been estimated based on historical computing cost data from IAA, as shown in the table below.

³⁶ New Tower and Parallel Runway (NTPR); En-route Contingency Centre (CEROC)

Table 4.11: Index of IAA ANSP computing costs over time

Cost line (2015 = 100)	2016	2017	2018	2019	2020	CAGR 2016-20
HW maintenance contracts	152	190	207	159	115	(7%)
SW maintenance contracts	102	103	131	143	157	11%
Framework Agreement	120	120	107	98	147	5%
Security	243	265	305	3801	255	1%
Back-up and storage	273	216	231	187	189	(9%)
Disaster recovery	81	70	70	70	70	(4%)
Computer related consumables	64	36	45	189	138	21%
Annual % Increase Year on Year	125	129	145	153	150	5%

Source: Steer analysis of IAA data

- 4.83 In line with average percentage increases in computing costs of 5% over the period 2016 to 2020, it is assumed that computing costs will continue increasing at this annual rate over the rest of RP3 as no significant step changes are expected. This is substantively lower than the 10% p.a. growth assumed by IAA ANSP, but still provides a very significant real growth in costs.
- 4.84 We have also added an operating cost efficiency factor to several cost lines (Operational maintenance, Computing, Building repairs and Security). This is based on Steer's analysis of the operating cost savings committed to by IAA as part of the original project business cases, as qualitatively described in each project's investment appraisal document and Appendices 1 through 3 of the IAA's April 2021 RP3 Business Plan. For projects where operating cost savings would reasonably be expected, a quantitative operating cost saving for each year has been estimated based on an assessment of:
- the nature of the project (i.e. its purpose, description, etc.);
 - the primary and secondary drivers of each project (see RP3 Business Plan);
 - the key benefits listed;
 - the project's total cost;
 - the life expectancy of the project deliverable(s); and
 - the project's expected level of completion over 2022 to 2024.
- 4.85 Project benefits are assumed to be proportional to the project's cost – implying that project operating cost savings should be proportional to annualised project depreciation. Furthermore, operating cost savings depend upon the specific nature and purpose of the project. Thirdly, the realisation of project benefits will depend upon the proportion of the project complete over time. Therefore, annual operating cost savings for each project were calculated by multiplying:
- the expected annual depreciation of project outputs;
 - an operating cost savings coefficient; and
 - the proportion of the project completed in each year.
- 4.86 Firstly, the expected annual depreciation of project outputs was calculated using straight line depreciation – i.e. dividing total capital cost by expected service life (for both factors, using values supplied by the CAR). Secondly, a savings coefficient for each project was assumed based on qualitative analysis of the benefits, drivers, purpose, etc. of each project. Thirdly, the project's expected level of completion is calculated based on the cumulative capital value of its completed components (e.g. delivery milestones) for each year, as provided by IAA.
- 4.87 Operating expenditure savings for each project were then assigned to relevant cost lines. Savings in each cost line were then applied to the costs assumed by IAA for each cost line as to derive an annual operating cost efficiency factor (i.e. as a percentage reduction).

4.88 Finally, training costs are treated as a modelling output and are derived from modelled requirements for ATCO numbers based on traffic. Therefore, no input assumption is made on training costs as these are derived from first principles ('bottom-up').

4.89 A summary of our assumptions are presented in the table below, by cost line, by year.

Table 4.12: Steer assumptions for change in non-staff costs, year on year growth, 2022-2024

Cost category	Line item	Rate of change assumption		
		2022	2023	2024
Travel	Travel	Revert to 2019 actual costs	CPI	CPI
Training	Training	[Model output]	[Model output]	[Model output]
Utilities	Utilities	Revert to 2019 actual costs	CPI	CPI
Telecoms	Telecoms	Revert to 2019 actual costs	CPI	CPI
Operational	Maintenance	Revert to 2019 actual costs +12% - 4% efficiency factor*	CPI - 1.9% efficiency factor*	CPI - 2.1% efficiency factor*
Operational	Spares	Revert to 2019 actual costs +12%	CPI	CPI
Operational	Power	Revert to 2019 actual costs	CPI	CPI
Operational	Flight checking	Revert to 2019 actual costs	CPI	CPI
Operational	Other	Revert to 2019 actual costs	CPI	CPI
Subscriptions	Subscriptions	Revert to 2019 actual costs	CPI	CPI
Administration	Rent and rates	Revert to 2019 actual costs	CPI	CPI
Administration	Computing	Revert to 2019 actual costs + 5% - 2.3% efficiency factor*	CPI +5% - 1.0% efficiency factor*	CPI + 5% - 0.8% efficiency factor*
Administration	NIS	Revert to 2019 actual costs	CPI	CPI
Administration	Consultancy	Revert to 2019 actual costs	CPI	CPI
Administration	Insurance	Revert to 2019 actual costs	CPI	CPI
Administration	Building repairs	Revert to 2019 actual costs - 15.7% efficiency factor*	CPI - 2.4% efficiency factor*	CPI - 4.1% efficiency factor*
Administration	Environmental	Revert to 2019 actual costs	CPI	CPI
Administration	Security	Revert to 2019 actual costs - 3.2% efficiency factor*	CPI - 2.6% efficiency factor*	CPI - 0.2% efficiency factor*
Administration	Professional services	Revert to 2019 actual costs	CPI	CPI

Cost category	Line item	Rate of change assumption		
		2022	2023	2024
Administration	Cleaning	Revert to 2019 actual costs	CPI	CPI
Administration	IAA restructuring	Revert to 2019 actual costs	CPI	CPI
Administration	Impairment	Revert to 2019 actual costs	CPI	CPI
Administration	PR	Revert to 2019 actual costs	CPI	CPI
Administration	Staff related	Revert to 2019 actual costs	CPI	CPI
Administration	Other	Revert to 2019 actual costs	CPI	CPI

Source: Steer assumptions. (*) Note: efficiency factor derived from Steer analysis and assumptions on gross opex savings from capex projects.

Comparison between IAA ANSP and Steer Scenario C assumptions

Staff numbers

4.90 A comparison of the assumptions adopted by Steer and IAA on staff numbers is presented in the table below.

Table 4.13: Comparison of 2024 IAA and Steer Scenario C assumptions on staff numbers

Category	IAA	Steer	Difference
ATCO productivity	N/A	2%	N/A
ATCOs	11	0.5	10.5
Engineers	22	18.5	3.5
Corporate services	(3)	(3)	0
Data Assistants	(1)	(1)	0
Operational management support	8	6.5	1.5

Source: IAA and Steer analysis.

Non-staff costs

4.91 Non-staff costs were formulated using either year-on-year percentage changes, or with absolute value inputs where there was no 2019 base.

4.92 A comparison of the assumptions adopted by Steer and IAA on year-on-year percentage changes in non-staff costs is presented below.

Table 4.14: Comparison of 2022-2024 IAA and Steer Scenario C assumptions on non-staff costs, change versus 2019 (€2017)

Cost category	Line item	IAA			Steer		
		2022	2023	2024	2022	2023	2024
Travel	Travel	(13.3%)	(1.4%)	6.3%	-	-	-
Training	Training						
Utilities	Utilities	32.3%	32.3%	32.3%	-	-	-
Telecoms	Telecoms	✂	✂	✂	✂	✂	✂
Operational	Maintenance	39.5%	48.6%	49.8%	9.3%	8.0%	6.6%
Operational	Spares	76.9%	76.9%	76.9%	12.0%	12.0%	12.0%
Operational	Power	60.9%	60.9%	60.9%	-	-	-
Operational	Other	77.9%	78.9%	79.1%	-	-	-
Subscriptions	Subscriptions	(15.5%)	(17.0%)	(18.3%)	-	-	-
Administration	Rent and rates	14.5%	16.4%	16.4%	-	-	-
Administration	Computing	75.1%	82.4%	96.7%	(6.7%)	(2.8%)	1.4%
Administration	NIS						
Administration	Consultancy	60.5%	52.5%	60.4%	-	-	-
Administration	Insurance	✂	✂	✂	✂	✂	✂
Administration	Building repairs	47.4%	53.3%	47.5%	(8.0%)	(9.7%)	(11.1%)
Administration	Environmental						
Administration	Security	✂	✂	✂	✂	✂	✂
Administration	Professional services	48.5%	48.5%	48.5%	-	-	-
Administration	Cleaning	✂	✂	✂	✂	✂	✂
Administration	IAA restructuring						

Cost category	Line item	IAA			Steer		
		2022	2023	2024	2022	2023	2024
Administration	Impairment						
Administration	PR	199.4%	130.7%	153.2%	-	-	-
Administration	Staff related	104.2%	104.2%	104.2%	-	-	-
Administration	Other	(40.6%)	(37.9%)	(37.8%)	-	-	-
	Redacted items above	36.6%	42.5%	28.6%	(2.6%)	8.1%	13.5%

Source: IAA and Steer analysis. Note: grey cells represent absolute value inputs (see below) and “-“ denotes a 0% change.

4.93 A comparison of the assumptions adopted by Steer and IAA on absolute changes in non-staff costs is presented below.

Table 4.15: Comparison of 2022-2024 IAA and Steer Scenario C assumptions on non-staff costs, cumulative absolute change versus 2019 (€2017, thousands)

Cost category	Line item	IAA			Steer		
		2022	2023	2024	2022	2023	2024
Training	Training	€ 2,448	€ 3,927	€ 5,635	€ 43	€ 1,072	€ 2,958
Administration	NIS	€ 190	€ 470	€ 744	€ 190	€ 470	€ 744
Administration	Environmental	€ 476	€ 791	€ 1,106	€ 315	€ 630	€ 945
Administration	IAA Restructuring	€ 1,032	€ 1,032	€ 1,032	€ -	€ -	€ -
Administration	Impairment	€ 873	€ 873	€ 873	€ -	€ -	€ -

Source: IAA and Steer analysis.

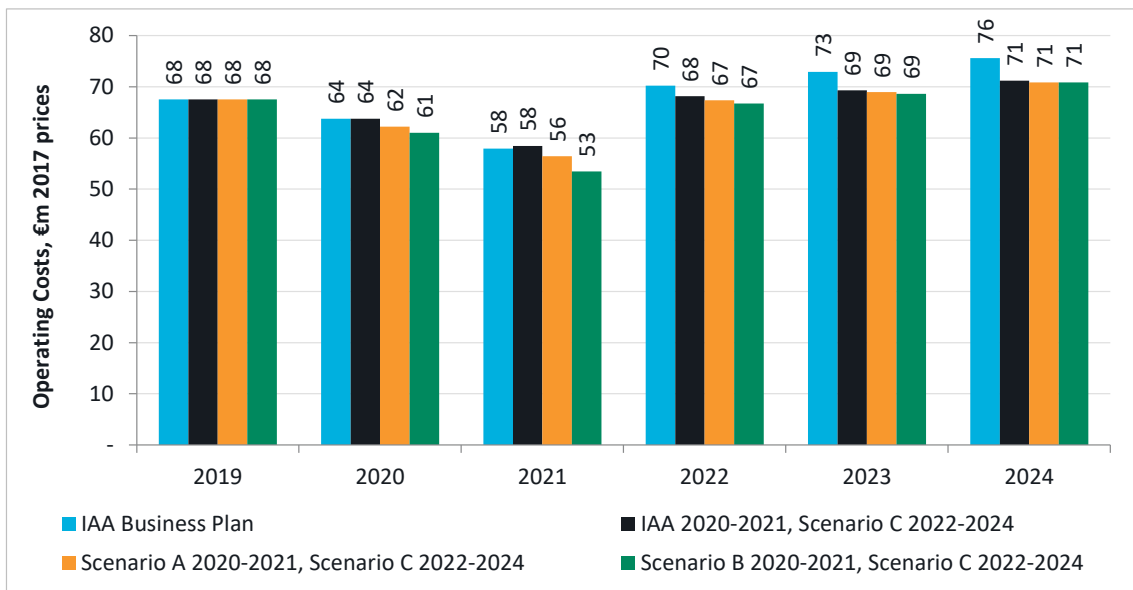
5 Conclusions

Operating cost projections

Summary of Results

- 5.1 In the following pages, we present the results of the combined scenarios presented in the charts for:
 - IAA ANSP RP3 Business Plan 2020-2024;
 - IAA ANSP Business Plan 2020-2021 assumptions, Steer Scenario C 2022-2024;
 - Steer Scenario A 2020-2021, Steer Scenario C 2022-2024; and
 - Steer Scenario B 2020-2021, Steer Scenario C 2022-2024.
- 5.2 The results presented are for staff costs, non-staff operating costs and total operating costs. All costs are presented in constant 2017 prices.
- 5.3 Figure 5.1 below compares the Steer projection scenarios for staff costs against the IAA ANSP Business Plan.

Figure 5.1: Staff cost scenario comparison against IAA ANSP Business Plan

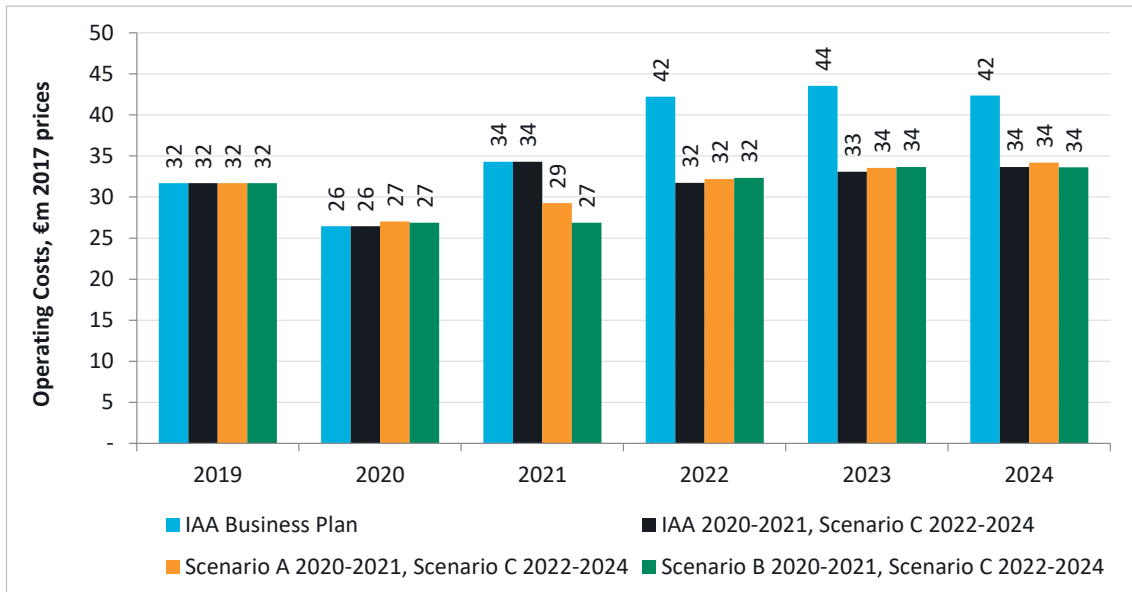


Source: IAA, Steer operating cost model

- 5.4 For staff costs, by 2024 the Steer projections are approximately 6% lower than IAA's business plan. In broad terms, Steer projects that Staff costs should return back to 2019 levels by 2022-2023, followed by a modest traffic-driven increase in 2024. The difference is driven by the assumed level of wage escalation and a lower level of increase in staff numbers as presented above.

5.5 Figure 5.2 below compares the Steer projection scenarios for non-staff costs against the IAA ANSP Business Plan.

Figure 5.2: Non-staff cost scenario comparison against IAA ANSP Business Plan

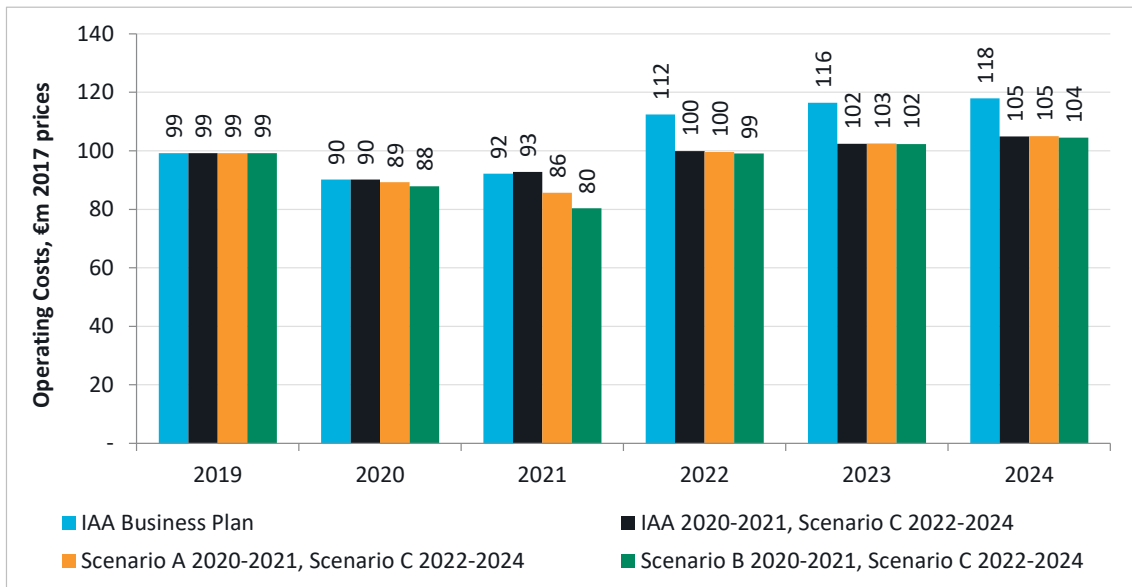


Source: IAA, Steer operating cost model

5.6 For Non-staff costs, by 2024 the Steer projections are approximately 20% lower than IAA’s business plan. In broad terms, Steer projects that Non-staff costs are slightly higher than 2019 levels in 2024. The difference is driven by only some cost category increases being evidenced in the analysis presented above.

5.7 Figure 5.3 below compares the Steer projection scenarios for total operating costs against the IAA ANSP Business Plan. Note these costs exclude depreciation and cost of capital.

Figure 5.3: Total in-scope operating cost scenario comparison against IAA ANSP Business Plan



Source: IAA, Steer operating cost model

- 5.8 For total in-scope operating costs, by 2024 the Steer projections are approximately 11% lower than IAA’s business plan. In broad terms, Steer projects that Total costs should return back to just above 2019 levels in 2024.

En-route and terminal costs allocation

- 5.9 In addition to presenting operating costs at a total level, costs have also been allocated out between the en-route and terminal operations of IAA ANSP. The methodology by which costs were allocated is described below. Different methodologies were used to derive respective shares for staff and non-staff costs.

Staff payroll costs - ATCOs

- 5.10 The Steer operating model calculates ATCO staffing requirements and respective costs separately for the en-route and terminal operation. These costs flow through the model and the resulting share of en-route costs is presented in Table 5.1 below.
- 5.11 The share of the IAA ANSPs ATCO staff en-route costs was supplied as a supplement to the IAA ANSP’s April 2021 Business Plan. Updated numbers were not included with the July 2021 Business Plan and the April 2021 Business Plan numbers have been included for comparison. The IAA ANSP assumed that ATCO en-route payroll costs increase from 85.5% to 86.2% between 2019 and 2021, reflecting the en-route operations as a proportion of total costs. This steps down to 85.6% in 2022 before rising to 85.8% in 2024.
- 5.12 The profiles modelled by Steer also increase between 2019 and 2021, however reduce thereafter reflecting the increase in terminal operations required for the new tower at Dublin airport.

Table 5.1: Share of ATCO staff payroll costs allocated to en-route operations

Scenario	2019	2020	2021	2022	2023	2024
IAA Business Plan	85.5%	85.6%	86.2%	85.6%	85.7%	85.8%
IAA/Scenario C	85.5%	85.5%	86.3%	86.3%	85.7%	84.0%
Scenario A/Scenario C	85.5%	85.5%	87.1%	87.1%	86.3%	84.4%
Scenario B/Scenario C	85.5%	85.5%	88.2%	88.2%	85.9%	84.5%

Source: IAA, Steer operating costs model

Staff payroll costs – Non ATCOs

- 5.13 Non-ATCO payroll and pension costs were allocated using the same allocations as used by the IAA ANSP’s April 2021 Business Plan. These are not presented in the Business Plan and were supplied after being requested by Steer. Table 5.2 presents the shares used by the IAA and in the model.

Table 5.2: IAA share of non-ATCO staff payroll costs allocated to en-route operations

	2019	2020	2021	2022	2023	2024
Corp Services	84.4%	83.9%	83.3%	82.8%	82.8%	82.8%
Data Analyst	88.9%	88.2%	88.1%	88.2%	88.1%	88.1%
Operational Management Support	86.9%	85.9%	86.0%	85.9%	85.9%	85.9%
Engineering	85.0%	85.4%	85.4%	85.0%	85.0%	85.3%

Source: IAA, Steer analysis

Pensions, overtime and EWSS

- 5.14 The allocation of pension costs in the model used the share of payroll costs respective to each of the five roles presented in the model.
- 5.15 Overtime costs were split using the resulting ATCO and non-ATCO payroll costs shares.
- 5.16 The overall en-route/terminal cost share for all staff was used to determine the allocation of EWSS payments between the en-route and terminal operation.

Non-staff costs

- 5.17 Non-staff costs were allocated using the same allocations as used by the IAA ANSP's April 2021 Business Plan. These are presented in Table 5.3 below.

Table 5.3: Share of non-staff costs allocated to en-route operations

Group	Line Item	2019	2020	2021	2022	2023	2024
Travel	Travel	85.7%	87.0%	83.9%	83.9%	84.0%	84.0%
Training	Training	✂	✂	✂	✂	✂	✂
Utilities	Utilities	85.0%	77.7%	76.7%	76.9%	76.9%	76.9%
Telecommunications	Telecoms	✂	✂	✂	✂	✂	✂
Operational	Maintenance	80.5%	79.1%	78.3%	78.6%	78.7%	78.7%
	Spares	80.5%	79.1%	78.3%	78.6%	78.7%	78.7%
	Power	80.5%	79.1%	78.3%	78.6%	78.7%	78.7%
	Flight checking	80.5%	79.1%	78.3%	78.6%	78.7%	78.7%
	Other	82.1%	83.9%	82.8%	82.8%	83.0%	82.7%
Subscriptions	Subscriptions	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
Administration	Rent and rates	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Computing	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	NIS	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Consultancy	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Insurance	✂	✂	✂	✂	✂	✂
	Building repairs	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Environmental	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Security	✂	✂	✂	✂	✂	✂
	Professional services	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Cleaning	✂	✂	✂	✂	✂	✂
	IAA Restructuring	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Impairment	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	PR	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Staff related	67.6%	82.9%	82.1%	82.1%	82.0%	82.2%
	Other	85.7%	87.0%	83.9%	83.9%	84.0%	84.0%
Redacted Items		79.3%	83.1%	82.8%	82.2%	82.1%	82.2%

Source: IAA ANSP's April 2021 Business Plan

Comparison of resulting cost allocation

- 5.18 A comparison in the share of costs allocated to en-route operations has been presented in the tables below, which present the share of en-route costs at total cost, staff cost and non-staff cost levels across the scenarios.
- 5.19 Variation in total cost allocation is primarily driven by staff costs, where the proportion of modelled costs allocated to en-route services is noticeably higher in 2021 and 2022 compared with the IAA Updated Business Plan.
- 5.20 The small variation in non-staff costs is a result of varied cost forecast by line item being multiplied by the same cost allocation proportions.

Table 5.4: Comparison of share of en-route costs – Total

Scenario	2019	2020	2021	2022	2023	2024
IAA Business Plan	82.2%	84.5%	84.1%	83.9%	83.9%	84.1%
IAA/Scenario C	82.2%	84.4%	84.2%	84.4%	84.1%	83.5%
Scenario A/Scenario C	82.2%	84.4%	84.8%	84.8%	84.4%	83.7%
Scenario B/Scenario C	82.2%	84.4%	85.2%	85.2%	84.3%	83.8%

Source: IAA ANSP's April 2021 Business Plan, Steer operating costs model

Table 5.5: Comparison of share of en-route costs – Staff-costs

Scenario	2019	2020	2021	2022	2023	2024
IAA Business Plan	85.2%	85.6%	85.6%	85.4%	85.4%	85.6%
IAA/Scenario C	85.2%	85.4%	85.9%	85.8%	85.5%	84.5%
Scenario A/Scenario C	85.2%	85.4%	86.4%	86.3%	85.8%	84.8%
Scenario B/Scenario C	85.2%	85.4%	87.0%	87.0%	85.7%	84.9%

Source: IAA ANSP's April 2021 Business Plan, Steer operating costs model

Table 5.6: Comparison of share of en-route costs – Non-staff-costs

Scenario	2019	2020	2021	2022	2023	2024
IAA Business Plan	75.7%	82.0%	81.5%	81.3%	81.3%	81.3%
IAA/Scenario C	75.7%	82.0%	81.4%	81.5%	81.4%	81.5%
Scenario A/Scenario C	75.7%	82.2%	81.5%	81.4%	81.4%	81.4%
Scenario B/Scenario C	75.7%	82.1%	81.5%	81.4%	81.4%	81.5%

Source: IAA ANSP's April 2021 Business Plan, Steer operating costs model

Results

- 5.21 The detailed set of results generated in the operating costs model use the following Scenario combinations. These together with a comparison against the IAA ANSP's Business Plan, have been presented in the tables below:
- IAA Business Plan;
 - IAA 2020-2021, Scenario C 2022-2024;
 - Scenario A 2020-2021, Scenario C 2022-2024; and
 - Scenario B 2020-2021, Scenario C 2022-2024.

IAA Business Plan

Total

		IAA Updated Business Plan						Modelled						Delta					
Group	Line Item	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€52,214	51,304	48,017	54,932	57,119	59,319	52,214	51,304	48,017	54,931	57,119	59,319	-	-	-	-	-	-
Staff	Overtime	€1,870	661	961	1,413	1,608	1,785	1,870	661	960	1,412	1,608	1,785	-	-	-	-	-	-
Staff	EWSS	-	(1,357)	(4,009)	-	-	-	-	(1,357)	(4,009)	-	-	-	-	-	-	-	-	-
Staff	Pension	€13,466	13,121	12,941	13,889	14,180	14,484	13,466	13,121	12,941	13,889	14,180	14,484	-	-	-	-	-	-
Staff		€67,550	63,729	57,909	70,233	72,907	75,588	67,550	63,729	57,909	70,233	72,907	75,588	-	-	-	-	-	-
Travel	Travel	€1,284	401	782	1,113	1,266	1,365	1,284	401	782	1,113	1,266	1,365	-	-	-	-	-	-
Training	Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilities	Utilities	€480	470	621	635	635	635	480	470	621	635	635	635	-	-	-	-	-	-
Telecommunications	Telecommunications	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational	Maintenance	€4,185	4,048	5,017	5,837	6,220	6,268	4,185	4,048	5,017	5,837	6,220	6,268	-	-	-	-	-	-
Operational	Spares	€779	879	1,093	1,378	1,378	1,378	779	879	1,093	1,378	1,378	1,378	-	-	-	-	-	-
Operational	Power	€833	914	1,162	1,340	1,340	1,340	833	914	1,162	1,340	1,340	1,340	-	-	-	-	-	-
Operational	Other	€435	423	453	774	778	779	435	423	453	774	778	779	-	-	-	-	-	-
Subscriptions	Subscriptions	€453	249	389	383	376	370	453	249	389	383	376	370	-	-	-	-	-	-
Administration	Rent and rates	€2,574	2,734	2,921	2,947	2,997	2,997	2,574	2,734	2,921	2,947	2,997	2,997	-	-	-	-	-	-
Administration	Computing	€1,660	1,612	2,319	2,907	3,028	3,266	1,660	1,612	2,319	2,907	3,028	3,266	-	-	-	-	-	-
Administration	NIS	€-	-	-	190	280	274	-	-	-	190	280	274	-	-	-	-	-	-
Administration	Consultancy	€1,013	414	1,118	1,626	1,545	1,625	1,013	414	1,118	1,626	1,545	1,625	-	-	-	-	-	-
Administration	Insurance	€-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	Building repairs	€949	809	1,594	1,399	1,455	1,400	949	809	1,594	1,399	1,455	1,400	-	-	-	-	-	-
Administration	Environmental	€-	-	161	332	332	332	-	-	161	332	332	332	-	-	-	-	-	-
Administration	Security	€-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	Professional services	€538	520	527	799	799	799	538	520	527	799	799	799	-	-	-	-	-	-
Administration	Cleaning	€-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	IAA Restructuring	€-	339	693	-	-	-	-	339	693	-	-	-	-	-	-	-	-	-
Administration	Impairment	€-	873	-	-	-	-	-	873	-	-	-	-	-	-	-	-	-	-
Administration	PR	€355	83	350	1,063	819	899	355	83	350	1,063	819	899	-	-	-	-	-	-
Administration	Staff related	€523	437	761	1,068	1,068	1,068	523	437	761	1,068	1,068	1,068	-	-	-	-	-	-
Administration	Other	€3,794	297	1,290	2,253	2,355	2,360	3,794	297	1,290	2,253	2,355	2,360	-	-	-	-	-	-
Redacted Items		€11,839	10,946	13,035	16,170	16,875	15,224	11,839	10,946	13,035	16,170	16,875	15,224	-	-	-	-	-	-
Non-Staff Operating Costs		€31,694	26,448	34,286	42,214	43,546	42,379	31,694	26,448	34,286	42,214	43,546	42,379	-	-	-	-	-	-
Total	Total	€99,244	90,177	92,195	112,447	116,453	117,967	99,244	90,177	92,195	112,447	116,453	117,967	-	-	-	-	-	-
ATCOs		Headcount 309	301	291	300	311	328	309	301	291	300	311	328	-	-	-	-	-	-
Engineers		Headcount 72	73	84	90	93	94	72	73	84	90	93	94	-	-	-	-	-	-
Data Assistants		Headcount 39	39	38	38	38	38	39	39	38	38	38	38	-	-	-	-	-	-
Ops Management and support		Headcount 60	60	64	68	70	70	60	60	64	68	70	70	-	-	-	-	-	-
Corporate services		Headcount 68	66	65	57	57	57	68	66	65	57	57	57	-	-	-	-	-	-
Total		Headcount 548	539	542	553	569	587	548	539	542	553	569	587	-	-	-	-	-	-

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as “Redacted items” for confidentiality.

En-route

		IAA Updated Business Plan						Modelled						Delta					
Group	Line Item	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€44,627	€43,938	€41,166	€46,965	€48,870	€50,849	44,627	43,876	41,301	46,848	48,249	50,007	-	(63)	135	(117)	(622)	(842)
Staff	Overtime	1,438	527	766	1,127	1,282	1,424	1,438	528	768	1,127	1,281	1,420	-	-	2	1	(1)	(4)
Staff	EWSS	-	(1,162)	(3,437)	-	-	-	-	(1,161)	(3,448)	-	-	-	-	2	(11)	-	-	-
Staff	Pension	11,517	11,238	11,103	11,887	12,145	12,414	11,517	11,199	11,111	11,866	12,048	12,291	-	(39)	8	(21)	(97)	(123)
Staff		€57,583	€54,541	€49,598	€59,978	€62,298	€64,687	57,583	54,441	49,731	59,841	61,577	63,718	-	(100)	133	(137)	(721)	(969)
Travel	Travel	1,101	349	656	934	1,063	1,146	1,101	349	656	934	1,063	1,146	-	-	-	-	-	-
Training	Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilities	Utilities	408	365	476	488	488	488	408	365	476	488	488	488	-	-	-	-	-	-
Telecommunications	Telecommunications	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational	Maintenance	3,368	3,203	3,926	4,588	4,894	4,930	3,368	3,203	3,926	4,588	4,894	4,930	-	-	-	-	-	-
Operational	Spares	627	695	855	1,083	1,084	1,084	627	695	855	1,083	1,084	1,084	-	-	-	-	-	-
Operational	Power	670	723	909	1,053	1,054	1,054	670	723	909	1,053	1,054	1,054	-	-	-	-	-	-
Operational	Other	350	335	354	608	612	613	350	335	354	608	612	613	-	-	-	-	-	-
Subscriptions	Subscriptions	372	209	322	317	312	306	372	209	322	317	312	306	-	-	-	-	-	-
Administration	Rent and rates	1,739	2,265	2,398	2,419	2,459	2,462	1,739	2,265	2,398	2,419	2,459	2,462	-	-	-	-	-	-
Administration	Computing	1,122	1,336	1,904	2,386	2,484	2,683	1,122	1,336	1,904	2,386	2,484	2,683	-	-	-	-	-	-
Administration	NIS	-	-	-	156	230	225	-	-	-	156	230	225	-	-	-	-	-	-
Administration	Consultancy	685	343	918	1,335	1,267	1,335	685	343	918	1,335	1,267	1,335	-	-	-	-	-	-
Administration	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	Building repairs	641	670	1,309	1,148	1,194	1,150	641	670	1,309	1,148	1,194	1,150	-	-	-	-	-	-
Administration	Environmental	-	-	132	273	272	273	-	-	132	273	272	273	-	-	-	-	-	-
Administration	Security	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	Professional services	364	431	433	656	655	656	364	431	433	656	655	656	-	-	-	-	-	-
Administration	Cleaning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	IAA Restructuring	-	281	569	-	-	-	-	281	569	-	-	-	-	-	-	-	-	-
Administration	Impairment	-	723	-	-	-	-	-	723	-	-	-	-	-	-	-	-	-	-
Administration	PR	240	69	287	873	672	739	240	69	287	873	672	739	-	-	-	-	-	-
Administration	Staff related	353	362	625	877	876	877	353	362	625	877	876	877	-	-	-	-	-	-
Administration	Other	2,564	246	1,059	1,849	1,932	1,939	2,564	246	1,059	1,849	1,932	1,939	-	-	-	-	-	-
Redacted Items		9,384	9,094	10,796	13,293	13,849	12,508	9,384	9,094	10,796	13,293	13,849	12,508	-	-	-	-	-	-
Non-Staff Operating Costs		€23,989	€21,699	€27,927	€34,335	€35,397	€34,469	23,989	21,699	27,927	34,335	35,397	34,469	-	-	-	-	-	-
Total	Total	€81,572	€76,240	€77,525	€94,313	€97,695	€99,156	81,572	76,140	77,659	94,177	96,974	98,187	-	(100)	133	(137)	(721)	(969)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

Terminal

		IAA Updated Business Plan						Modelled						Delta						
Group	Line Item		2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€ ,000s 2017 prices	7,587	7,366	6,851	7,967	8,249	8,470	7,587	7,429	6,716	8,083	8,870	9,312	-	63	(135)	117	622	842
Staff	Overtime	€ ,000s 2017 prices	432	134	194	286	326	361	432	133	193	285	327	365	-	-	(2)	(1)	1	4
Staff	EWSS	€ ,000s 2017 prices	-	(195)	(572)	-	-	-	-	(197)	(561)	-	-	-	-	(2)	11	-	-	-
Staff	Pension	€ ,000s 2017 prices	1,949	1,883	1,838	2,002	2,035	2,070	1,949	1,922	1,830	2,023	2,132	2,193	-	39	(8)	21	97	123
Staff		€ ,000s 2017 prices	9,967	9,188	8,311	10,255	10,609	10,901	9,967	9,288	8,178	10,392	11,330	11,870	-	100	(133)	137	721	969
Travel	Travel	€ ,000s 2017 prices	183	52	126	179	203	219	183	52	126	179	203	219	-	-	-	-	-	-
Training	Training	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilities	Utilities	€ ,000s 2017 prices	72	105	145	147	147	147	72	105	145	147	147	147	-	-	-	-	-	-
Telecommunications	Telecommunications	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operational	Maintenance	€ ,000s 2017 prices	817	845	1,091	1,249	1,326	1,338	817	845	1,091	1,249	1,326	1,338	-	-	-	-	-	-
Operational	Spares	€ ,000s 2017 prices	152	184	238	295	294	294	152	184	238	295	294	294	-	-	-	-	-	-
Operational	Power	€ ,000s 2017 prices	163	191	253	287	286	286	163	191	253	287	286	286	-	-	-	-	-	-
Operational	Other	€ ,000s 2017 prices	85	88	99	166	166	166	85	88	99	166	166	166	-	-	-	-	-	-
Subscriptions	Subscriptions	€ ,000s 2017 prices	81	40	67	66	64	64	81	40	67	66	64	64	-	-	-	-	-	-
Administration	Rent and rates	€ ,000s 2017 prices	835	469	523	528	538	535	835	469	523	528	538	535	-	-	-	-	-	-
Administration	Computing	€ ,000s 2017 prices	538	276	415	521	544	583	538	276	415	521	544	583	-	-	-	-	-	-
Administration	NIS	€ ,000s 2017 prices	-	-	-	34	50	49	-	-	-	34	50	49	-	-	-	-	-	-
Administration	Consultancy	€ ,000s 2017 prices	328	71	200	291	278	290	328	71	200	291	278	290	-	-	-	-	-	-
Administration	Insurance	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	Building repairs	€ ,000s 2017 prices	308	139	285	251	261	250	308	139	285	251	261	250	-	-	-	-	-	-
Administration	Environmental	€ ,000s 2017 prices	-	-	29	59	60	59	-	-	29	59	60	59	-	-	-	-	-	-
Administration	Security	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	Professional services	€ ,000s 2017 prices	174	89	94	143	144	143	174	89	94	143	144	143	-	-	-	-	-	-
Administration	Cleaning	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration	IAA Restructuring	€ ,000s 2017 prices	-	58	124	-	-	-	-	58	124	-	-	-	-	-	-	-	-	-
Administration	Impairment	€ ,000s 2017 prices	-	150	-	-	-	-	-	150	-	-	-	-	-	-	-	-	-	-
Administration	PR	€ ,000s 2017 prices	115	14	63	190	147	160	115	14	63	190	147	160	-	-	-	-	-	-
Administration	Staff related	€ ,000s 2017 prices	170	75	136	191	192	191	170	75	136	191	192	191	-	-	-	-	-	-
Administration	Other	€ ,000s 2017 prices	1,230	51	231	404	423	421	1,230	51	231	404	423	421	-	-	-	-	-	-
Redacted Items		€ ,000s 2017 prices	2,455	1,852	2,239	2,877	3,026	2,716	2,455	1,852	2,239	2,877	3,026	2,716	-	-	-	-	-	-
Non-Staff Operating Costs		€ ,000s 2017 prices	7,705	4,749	6,359	7,879	8,149	7,910	7,705	4,749	6,359	7,879	8,149	7,910	-	-	-	-	-	-
Total	Total	€ ,000s 2017 prices	17,672	13,937	14,670	18,134	18,758	18,811	17,672	14,037	14,536	18,270	19,479	19,780	-	100	(133)	137	721	969

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

IAA 2020-2021, Scenario C 2022-2024

Total

		IAA Updated Business Plan	Modelled	Delta
Group	Line Item			
Staff	Payroll (inc. Early redundancy)	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Staff	Overtime	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Staff	EWSS	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Staff	Pension	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Staff		€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Travel	Travel	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Training	Training	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Utilities	Utilities	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Telecommunications	Telecommunications	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Operational	Maintenance	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Operational	Spares	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Operational	Power	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Operational	Other	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Subscriptions	Subscriptions	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Rent and rates	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Computing	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	NIS	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Consultancy	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Insurance	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Building repairs	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Environmental	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Security	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Professional services	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Cleaning	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	IAA Restructuring	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Impairment	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	PR	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Staff related	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Administration	Other	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Redacted Items		€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Non-Staff Operating Costs		€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Total	Total	€,000s 2017 prices	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
ATCOs		Headcount	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Engineers		Headcount	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Data Assistants		Headcount	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Ops Management and support		Headcount	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Corporate services		Headcount	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024
Total		Headcount	2019 2020 2021 2022 2023 2024	2019 2020 2021 2022 2023 2024

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

En-route

			IAA Updated Business Plan						Modelled						Delta					
Group	Line Item		2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€ ,000s 2017 prices	44,627	43,938	41,166	46,965	48,870	50,849	44,627	43,876	41,301	45,064	45,946	47,125	-	(63)	135	(1,901)	(2,925)	(3,725)
Staff	Overtime	€ ,000s 2017 prices	1,438	527	766	1,127	1,282	1,424	1,438	528	768	1,110	1,194	1,411	-	-	2	(16)	(89)	(13)
Staff	EWSS	€ ,000s 2017 prices	-	(1,162)	(3,437)	-	-	-	-	(1,161)	(3,448)	-	-	-	-	2	(11)	-	-	-
Staff	Pension	€ ,000s 2017 prices	11,517	11,238	11,103	11,887	12,145	12,414	11,517	11,199	11,111	12,230	12,046	11,610	-	(39)	8	343	(99)	(804)
Staff		€ ,000s 2017 prices	57,583	54,541	49,598	59,978	62,298	64,687	57,583	54,441	49,731	58,405	59,185	60,145	-	(100)	133	(1,573)	(3,113)	(4,541)
Travel	Travel	€ ,000s 2017 prices	1,101	349	656	934	1,063	1,146	1,101	349	656	1,077	1,078	1,078	-	-	-	143	15	(68)
Training	Training	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,159)	(1,663)	(6)
Utilities	Utilities	€ ,000s 2017 prices	408	365	476	488	488	488	408	365	476	369	369	369	-	-	-	(119)	(119)	(119)
Telecommunications	Telecommunications	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(512)	(446)	(188)
Operational	Maintenance	€ ,000s 2017 prices	3,368	3,203	3,926	4,588	4,894	4,930	3,368	3,203	3,926	3,536	3,473	3,399	-	-	-	(1,051)	(1,421)	(1,531)
Operational	Spares	€ ,000s 2017 prices	627	695	855	1,083	1,084	1,084	627	695	855	686	686	686	-	-	-	(397)	(398)	(398)
Operational	Power	€ ,000s 2017 prices	670	723	909	1,053	1,054	1,054	670	723	909	655	655	655	-	-	-	(398)	(399)	(399)
Operational	Other	€ ,000s 2017 prices	350	335	354	608	612	613	350	335	354	342	342	342	-	-	-	(266)	(270)	(271)
Subscriptions	Subscriptions	€ ,000s 2017 prices	372	209	322	317	312	306	372	209	322	375	376	375	-	-	-	58	64	69
Administration	Rent and rates	€ ,000s 2017 prices	1,739	2,265	2,398	2,419	2,459	2,462	1,739	2,265	2,398	2,113	2,112	2,115	-	-	-	(306)	(347)	(348)
Administration	Computing	€ ,000s 2017 prices	1,122	1,336	1,904	2,386	2,484	2,683	1,122	1,336	1,904	1,265	1,314	1,371	-	-	-	(1,121)	(1,170)	(1,313)
Administration	NIS	€ ,000s 2017 prices	-	-	-	156	230	225	-	-	-	156	230	225	-	-	-	-	-	-
Administration	Consultancy	€ ,000s 2017 prices	685	343	918	1,335	1,267	1,335	685	343	918	831	831	832	-	-	-	(503)	(436)	(503)
Administration	Insurance	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(434)	(483)
Administration	Building repairs	€ ,000s 2017 prices	641	670	1,309	1,148	1,194	1,150	641	670	1,309	657	641	615	-	-	-	(492)	(553)	(535)
Administration	Environmental	€ ,000s 2017 prices	-	-	132	273	272	273	-	-	132	273	272	273	-	-	-	-	-	-
Administration	Security	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(592)	(615)	(617)
Administration	Professional services	€ ,000s 2017 prices	364	431	433	656	655	656	364	431	433	442	441	442	-	-	-	(214)	(214)	(214)
Administration	Cleaning	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(397)	(399)	(399)
Administration	IAA Restructuring	€ ,000s 2017 prices	-	281	569	-	-	-	-	281	569	-	-	-	-	-	-	-	-	-
Administration	Impairment	€ ,000s 2017 prices	-	723	-	-	-	-	-	723	-	-	-	-	-	-	-	-	-	-
Administration	PR	€ ,000s 2017 prices	240	69	287	873	672	739	240	69	287	291	291	292	-	-	-	(581)	(381)	(447)
Administration	Staff related	€ ,000s 2017 prices	353	362	625	877	876	877	353	362	625	429	429	430	-	-	-	(447)	(447)	(448)
Administration	Other	€ ,000s 2017 prices	2,564	246	1,059	1,849	1,932	1,939	2,564	246	1,059	3,114	3,112	3,117	-	-	-	1,265	1,180	1,178
Redacted Items		€ ,000s 2017 prices	9,384	9,094	10,796	13,293	13,849	12,508	9,384	9,094	10,796	9,245	10,292	10,815	-	-	-	-	-	-
Non-Staff Operating Costs		€ ,000s 2017 prices	23,989	21,699	27,927	34,335	35,397	34,469	23,989	21,699	27,927	25,856	26,945	27,431	-	-	-	(8,479)	(8,452)	(7,038)
Total	Total	€ ,000s 2017 prices	81,572	76,240	77,525	94,313	97,695	99,156	81,572	76,140	77,659	84,261	86,130	87,576	-	(100)	133	(10,053)	(11,564)	(11,580)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

Terminal

		IAA Updated Business Plan	Modelled					Delta												
Group	Line Item		2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€ ,000s 2017 prices	7,587	7,366	6,851	7,967	8,249	8,470	7,587	7,429	6,716	7,371	7,738	8,616	-	63	(135)	(596)	(510)	146
Staff	Overtime	€ ,000s 2017 prices	432	134	194	286	326	361	432	133	193	279	301	362	-	-	(2)	(7)	(25)	1
Staff	EWSS	€ ,000s 2017 prices	-	(195)	(572)	-	-	-	-	(197)	(561)	-	-	-	-	(2)	11	-	-	-
Staff	Pension	€ ,000s 2017 prices	1,949	1,883	1,838	2,002	2,035	2,070	1,949	1,922	1,830	2,026	2,037	2,047	-	39	(8)	24	2	(23)
Staff		€ ,000s 2017 prices	9,967	9,188	8,311	10,255	10,609	10,901	9,967	9,288	8,178	9,675	10,075	11,025	-	100	(133)	(579)	(534)	124
Travel	Travel	€ ,000s 2017 prices	183	52	126	179	203	219	183	52	126	207	206	206	-	-	-	28	3	(13)
Training	Training	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(514)	(398)	(1)
Utilities	Utilities	€ ,000s 2017 prices	72	105	145	147	147	147	72	105	145	111	111	111	-	-	-	(36)	(36)	(36)
Telecommunications	Telecommunications	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(82)	(71)	(30)
Operational	Maintenance	€ ,000s 2017 prices	817	845	1,091	1,249	1,326	1,338	817	845	1,091	963	941	922	-	-	-	(286)	(385)	(415)
Operational	Spares	€ ,000s 2017 prices	152	184	238	295	294	294	152	184	238	187	186	186	-	-	-	(108)	(108)	(108)
Operational	Power	€ ,000s 2017 prices	163	191	253	287	286	286	163	191	253	178	178	178	-	-	-	(109)	(108)	(108)
Operational	Other	€ ,000s 2017 prices	85	88	99	166	166	166	85	88	99	93	93	93	-	-	-	(73)	(73)	(73)
Subscriptions	Subscriptions	€ ,000s 2017 prices	81	40	67	66	64	64	81	40	67	78	77	78	-	-	-	12	13	14
Administration	Rent and rates	€ ,000s 2017 prices	835	469	523	528	538	535	835	469	523	461	462	459	-	-	-	(67)	(76)	(75)
Administration	Computing	€ ,000s 2017 prices	538	276	415	521	544	583	538	276	415	276	288	298	-	-	-	(245)	(256)	(285)
Administration	NIS	€ ,000s 2017 prices	-	-	-	34	50	49	-	-	-	34	50	49	-	-	-	-	-	-
Administration	Consultancy	€ ,000s 2017 prices	328	71	200	291	278	290	328	71	200	182	182	181	-	-	-	(110)	(96)	(109)
Administration	Insurance	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(85)	(95)	(105)
Administration	Building repairs	€ ,000s 2017 prices	308	139	285	251	261	250	308	139	285	143	140	134	-	-	-	(107)	(121)	(116)
Administration	Environmental	€ ,000s 2017 prices	-	-	29	59	60	59	-	-	29	59	60	59	-	-	-	-	-	-
Administration	Security	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(129)	(135)	(134)
Administration	Professional services	€ ,000s 2017 prices	174	89	94	143	144	143	174	89	94	96	97	96	-	-	-	(47)	(47)	(47)
Administration	Cleaning	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(87)	(87)	(87)
Administration	IAA Restructuring	€ ,000s 2017 prices	-	58	124	-	-	-	-	58	124	-	-	-	-	-	-	-	-	-
Administration	Impairment	€ ,000s 2017 prices	-	150	-	-	-	-	-	150	-	-	-	-	-	-	-	-	-	-
Administration	PR	€ ,000s 2017 prices	115	14	63	190	147	160	115	14	63	64	64	63	-	-	-	(127)	(83)	(97)
Administration	Staff related	€ ,000s 2017 prices	170	75	136	191	192	191	170	75	136	94	94	93	-	-	-	(98)	(98)	(97)
Administration	Other	€ ,000s 2017 prices	1,230	51	231	404	423	421	1,230	51	231	680	682	677	-	-	-	276	259	256
Redacted Items		€ ,000s 2017 prices	2,455	1,852	2,239	2,877	3,026	2,716	2,455	1,852	2,239	1,980	2,240	2,358	-	-	-	(1,992)	(1,999)	(1,668)
Non-Staff Operating Costs		€ ,000s 2017 prices	7,705	4,749	6,359	7,879	8,149	7,910	7,705	4,749	6,359	5,887	6,150	6,242	-	-	-	(1,992)	(1,999)	(1,668)
Total	Total	€ ,000s 2017 prices	17,672	13,937	14,670	18,134	18,758	18,811	17,672	14,037	14,536	15,562	16,226	17,267	-	100	(133)	(2,572)	(2,533)	(1,544)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

Scenario A 2020-2021, Scenario C 2022-2024

Total

		IAA Updated Business Plan	Modelled	Delta																
Group	Line Item	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	
Staff	Payroll (inc. Early redundancy)	€52,214	€51,304	€48,017	€54,932	€57,119	€59,319	52,214	49,806	46,848	52,387	53,722	55,749	-	(1,498)	(1,168)	(2,545)	(3,397)	(3,570)	
Staff	Overtime	1,870	661	961	1,413	1,608	1,785	1,870	661	661	951	1,374	1,666	-	-	(300)	(461)	(234)	(119)	
Staff	EWSS	-	(1,357)	(4,009)	-	-	-	-	(1,357)	(4,009)	-	-	-	-	-	-	-	-	-	
Staff	Pension	€13,466	€13,121	€12,941	€13,889	€14,180	€14,484	13,466	13,121	12,941	14,050	13,855	13,430	-	-	-	161	(325)	(1,054)	
Staff		67,550	63,729	57,909	70,233	72,907	75,588	67,550	62,231	56,441	67,388	68,950	70,844	-	(1,498)	(1,468)	(2,845)	(3,957)	(4,744)	
Travel	Travel	1,284	401	782	1,113	1,266	1,365	1,284	1,095	1,185	1,284	1,284	1,284	-	694	403	171	18	(81)	
Training	Training	-	-	-	-	-	-	-	-	-	-	-	-	-	675	210	(2,377)	(1,808)	246	
Utilities	Utilities	480	470	621	635	635	635	480	409	443	480	480	480	-	(61)	(178)	(155)	(155)	(155)	
Telecommunications	Telecommunications	-	-	-	-	-	-	-	-	-	-	-	-	-	(405)	(753)	(594)	(517)	(218)	
Operational	Maintenance	4,185	4,048	5,017	5,837	6,220	6,268	4,185	3,570	3,863	4,575	4,520	4,461	-	(478)	(1,154)	(1,262)	(1,700)	(1,807)	
Operational	Spares	779	879	1,093	1,378	1,378	1,378	779	664	719	872	872	872	-	(215)	(374)	(506)	(506)	(506)	
Operational	Power	833	914	1,162	1,340	1,340	1,340	833	711	769	833	833	833	-	(203)	(393)	(507)	(507)	(507)	
Operational	Other	435	423	453	774	778	779	435	371	402	435	435	435	-	(52)	(51)	(339)	(343)	(344)	
Subscriptions	Subscriptions	453	249	389	383	376	370	453	386	418	453	453	453	-	137	29	70	77	83	
Administration	Rent and rates	2,574	2,734	2,921	2,947	2,997	2,997	2,574	2,196	2,376	2,574	2,574	2,574	-	(538)	(545)	(373)	(423)	(423)	
Administration	Computing	1,660	1,612	2,319	2,907	3,028	3,266	1,660	1,416	1,532	1,549	1,613	1,684	-	(196)	(787)	(1,358)	(1,415)	(1,582)	
Administration	NIS	-	-	-	190	280	274	-	-	-	190	280	274	-	-	-	-	-	-	
Administration	Consultancy	1,013	414	1,118	1,626	1,545	1,625	1,013	864	935	1,013	1,013	1,013	-	450	(183)	(613)	(532)	(612)	
Administration	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	(497)	(549)	(472)	(529)	(588)	
Administration	Building repairs	949	809	1,594	1,399	1,455	1,400	949	809	876	873	857	844	-	-	(718)	(526)	(598)	(556)	
Administration	Environmental	-	-	161	332	332	332	-	-	-	332	332	332	-	-	(161)	-	-	-	
Administration	Security	-	-	-	-	-	-	-	-	-	-	-	-	-	(460)	(740)	(716)	(740)	(741)	
Administration	Professional services	538	520	527	799	799	799	538	459	497	538	538	538	-	(61)	(30)	(261)	(261)	(261)	
Administration	Cleaning	-	-	-	-	-	-	-	-	-	-	-	-	-	(160)	(276)	(484)	(486)	(486)	
Administration	IAA Restructuring	-	339	693	-	-	-	-	-	-	-	-	-	-	(339)	(693)	-	-	-	
Administration	Impairment	-	873	-	-	-	-	-	-	-	-	-	-	-	(873)	-	-	-	-	
Administration	PR	355	83	350	1,063	819	899	355	303	328	355	355	355	-	220	(22)	(708)	(464)	(544)	
Administration	Staff related	523	437	761	1,068	1,068	1,068	523	446	483	523	523	523	-	9	(278)	(545)	(545)	(545)	
Administration	Other	3,794	297	1,290	2,253	2,355	2,360	3,794	3,236	3,502	3,794	3,794	3,794	-	2,939	2,212	1,541	1,439	1,434	
Redacted Items		11,839	10,946	13,035	16,170	16,875	15,224	11,839	10,099	10,927	11,527	12,795	13,437	-	587	(5,032)	(10,014)	(9,994)	(8,193)	
Non-Staff Operating Costs		31,694	26,448	34,286	42,214	43,546	42,379	31,694	27,035	29,254	32,200	33,552	34,186	-	587	(5,032)	(10,014)	(9,994)	(8,193)	
Total	Total	99,244	90,177	92,195	112,447	116,453	117,967	99,244	89,266	85,695	99,588	102,501	105,030	-	(911)	(6,500)	(12,859)	(13,952)	(12,937)	
ATCOs		Headcount	309	301	291	300	311	328	309	301	290	290	295	325	-	-	(1)	(10)	(16)	(3)
Engineers		Headcount	72	73	84	90	93	94	72	72	72	87	91	91	-	(1)	(12)	(3)	(3)	(4)
Data Assistants		Headcount	39	39	38	38	38	38	39	39	39	38	38	38	-	-	1	-	-	-
Ops Management and support		Headcount	60	60	64	68	70	70	60	60	60	67	67	67	-	-	(4)	(2)	(3)	(3)
Corporate services		Headcount	68	66	65	57	57	57	68	68	68	57	57	57	-	2	3	-	-	-
Total		Headcount	548	539	542	553	569	587	548	540	529	539	547	577	-	1	(13)	(15)	(22)	(10)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

En-route

		IAA Updated Business Plan						Modelled						Delta					
Group	Line Item	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€44,627	€43,938	€41,166	€46,965	€48,870	€50,849	44,627	42,592	40,531	45,288	46,173	47,268	-	(1,346)	(635)	(1,676)	(2,698)	(3,581)
Staff	Overtime	1,438	527	766	1,127	1,282	1,424	1,438	528	528	761	1,097	1,326	-	-	(238)	(366)	(185)	(98)
Staff	EWSS	-	(1,162)	(3,437)	-	-	-	-	(1,161)	(3,469)	-	-	-	-	2	(31)	-	-	-
Staff	Pension	11,517	11,238	11,103	11,887	12,145	12,414	11,517	11,198	11,177	12,125	11,912	11,465	-	(40)	74	238	(233)	(949)
Staff		€57,583	€54,541	€49,598	€59,978	€62,298	€64,687	57,583	53,158	48,768	58,174	59,182	60,059	-	(1,383)	(830)	(1,804)	(3,116)	(4,628)
Travel	Travel	1,101	349	656	934	1,063	1,146	1,101	953	994	1,077	1,078	1,078	-	604	338	143	15	(68)
Training	Training	-	-	-	-	-	-	-	-	-	-	-	-	-	544	170	(1,920)	(1,459)	198
Utilities	Utilities	408	365	476	488	488	488	408	318	340	369	369	369	-	(47)	(136)	(119)	(119)	(119)
Telecommunications	Telecommunications	-	-	-	-	-	-	-	-	-	-	-	-	-	(356)	(657)	(512)	(446)	(188)
Operational	Maintenance	3,368	3,203	3,926	4,588	4,894	4,930	3,368	2,824	3,023	3,595	3,556	3,509	-	(378)	(903)	(992)	(1,338)	(1,421)
Operational	Spares	627	695	855	1,083	1,084	1,084	627	526	563	686	686	686	-	(170)	(293)	(397)	(398)	(398)
Operational	Power	670	723	909	1,053	1,054	1,054	670	562	602	655	655	655	-	(161)	(308)	(398)	(399)	(399)
Operational	Other	350	335	354	608	612	613	350	294	314	342	342	342	-	(41)	(40)	(266)	(270)	(271)
Subscriptions	Subscriptions	372	209	322	317	312	306	372	324	346	375	376	375	-	115	24	58	64	69
Administration	Rent and rates	1,739	2,265	2,398	2,419	2,459	2,462	1,739	1,819	1,950	2,113	2,112	2,115	-	(446)	(448)	(306)	(347)	(348)
Administration	Computing	1,122	1,336	1,904	2,386	2,484	2,683	1,122	1,173	1,258	1,271	1,323	1,383	-	(162)	(646)	(1,115)	(1,161)	(1,300)
Administration	NIS	-	-	-	156	230	225	-	-	-	156	230	225	-	-	-	-	-	-
Administration	Consultancy	685	343	918	1,335	1,267	1,335	685	716	768	831	831	832	-	373	(150)	(503)	(436)	(503)
Administration	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	(412)	(451)	(387)	(434)	(483)
Administration	Building repairs	641	670	1,309	1,148	1,194	1,150	641	671	719	717	703	693	-	-	(589)	(432)	(490)	(457)
Administration	Environmental	-	-	132	273	272	273	-	-	-	273	272	273	-	-	(132)	-	-	-
Administration	Security	-	-	-	-	-	-	-	-	-	-	-	-	-	(381)	(607)	(588)	(607)	(608)
Administration	Professional services	364	431	433	656	655	656	364	380	408	442	441	442	-	(51)	(25)	(214)	(214)	(214)
Administration	Cleaning	-	-	-	-	-	-	-	-	-	-	-	-	-	(132)	(227)	(397)	(399)	(399)
Administration	IAA Restructuring	-	281	569	-	-	-	-	-	-	-	-	-	-	(281)	(569)	-	-	-
Administration	Impairment	-	723	-	-	-	-	-	-	-	-	-	-	-	(723)	-	-	-	-
Administration	PR	240	69	287	873	672	739	240	251	269	291	291	292	-	182	(18)	(581)	(381)	(447)
Administration	Staff related	353	362	625	877	876	877	353	370	396	429	429	430	-	8	(228)	(447)	(447)	(448)
Administration	Other	2,564	246	1,059	1,849	1,932	1,939	2,564	2,682	2,875	3,114	3,112	3,117	-	2,435	1,816	1,265	1,180	1,178
Redacted Items		9,384	9,094	10,796	13,293	13,849	12,508	9,384	8,357	9,024	9,489	10,504	11,028	-	-	-	-	-	-
Non-Staff Operating Costs		23,989	21,699	27,927	34,335	35,397	34,469	23,989	22,220	23,847	26,225	27,313	27,844	-	521	(4,080)	(8,110)	(8,084)	(6,625)
Total	Total	€81,572	€76,240	€77,525	€94,313	€97,695	€99,156	81,572	75,377	72,615	84,399	86,495	87,903	-	(863)	(4,910)	(9,914)	(11,200)	(11,253)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

Terminal

			IAA Updated Business Plan						Modelled						Delta					
Group	Line Item		2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€ ,000s 2017 prices	7,587	7,366	6,851	7,967	8,249	8,470	7,587	7,214	6,317	7,099	7,549	8,480	-	(152)	(533)	(868)	(700)	10
Staff	Overtime	€ ,000s 2017 prices	432	134	194	286	326	361	432	133	133	191	276	340	-	-	(62)	(95)	(49)	(21)
Staff	EWSS	€ ,000s 2017 prices	-	(195)	(572)	-	-	-	-	(197)	(541)	-	-	-	-	(2)	31	-	-	-
Staff	Pension	€ ,000s 2017 prices	1,949	1,883	1,838	2,002	2,035	2,070	1,949	1,923	1,764	1,924	1,943	1,964	-	40	(74)	(78)	(92)	(106)
Staff		€ ,000s 2017 prices	9,967	9,188	8,311	10,255	10,609	10,901	9,967	9,073	7,673	9,214	9,768	10,785	-	(115)	(638)	(1,041)	(841)	(116)
Travel	Travel	€ ,000s 2017 prices	183	52	126	179	203	219	183	142	191	207	206	206	-	90	65	28	3	(13)
Training	Training	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	130	40	(457)	(349)	47
Utilities	Utilities	€ ,000s 2017 prices	72	105	145	147	147	147	72	91	103	111	111	111	-	(14)	(42)	(36)	(36)	(36)
Telecommunications	Telecommunications	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(49)	(96)	(82)	(71)	(30)
Operational	Maintenance	€ ,000s 2017 prices	817	845	1,091	1,249	1,326	1,338	817	745	840	979	964	952	-	(100)	(251)	(270)	(363)	(386)
Operational	Spares	€ ,000s 2017 prices	152	184	238	295	294	294	152	139	156	187	186	186	-	(45)	(81)	(108)	(108)	(108)
Operational	Power	€ ,000s 2017 prices	163	191	253	287	286	286	163	148	167	178	178	178	-	(42)	(85)	(109)	(108)	(108)
Operational	Other	€ ,000s 2017 prices	85	88	99	166	166	166	85	77	87	93	93	93	-	(11)	(11)	(73)	(73)	(73)
Subscriptions	Subscriptions	€ ,000s 2017 prices	81	40	67	66	64	64	81	62	72	78	77	78	-	22	5	12	13	14
Administration	Rent and rates	€ ,000s 2017 prices	835	469	523	528	538	535	835	376	425	461	462	459	-	(92)	(98)	(67)	(76)	(75)
Administration	Computing	€ ,000s 2017 prices	538	276	415	521	544	583	538	243	274	277	290	300	-	(34)	(141)	(243)	(254)	(282)
Administration	NIS	€ ,000s 2017 prices	-	-	-	34	50	49	-	-	-	34	50	49	-	-	-	-	-	-
Administration	Consultancy	€ ,000s 2017 prices	328	71	200	291	278	290	328	148	167	182	182	181	-	77	(33)	(110)	(96)	(109)
Administration	Insurance	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(85)	(98)	(85)	(95)	(105)
Administration	Building repairs	€ ,000s 2017 prices	308	139	285	251	261	250	308	139	157	156	154	151	-	-	(129)	(94)	(107)	(99)
Administration	Environmental	€ ,000s 2017 prices	-	-	29	59	60	59	-	-	-	59	60	59	-	-	(29)	-	-	-
Administration	Security	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(79)	(132)	(128)	(133)	(132)
Administration	Professional services	€ ,000s 2017 prices	174	89	94	143	144	143	174	79	89	96	97	96	-	(10)	(5)	(47)	(47)	(47)
Administration	Cleaning	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(27)	(50)	(87)	(87)	(87)
Administration	IAA Restructuring	€ ,000s 2017 prices	-	58	124	-	-	-	-	-	-	-	-	-	-	(58)	(124)	-	-	-
Administration	Impairment	€ ,000s 2017 prices	-	150	-	-	-	-	-	-	-	-	-	-	-	(150)	-	-	-	-
Administration	PR	€ ,000s 2017 prices	115	14	63	190	147	160	115	52	59	64	64	63	-	38	(4)	(127)	(83)	(97)
Administration	Staff related	€ ,000s 2017 prices	170	75	136	191	192	191	170	76	86	94	94	93	-	2	(50)	(98)	(98)	(97)
Administration	Other	€ ,000s 2017 prices	1,230	51	231	404	423	421	1,230	555	627	680	682	677	-	504	396	276	259	256
Redacted Items		€ ,000s 2017 prices	2,455	1,852	2,239	2,877	3,026	2,716	2,455	1,742	1,904	2,038	2,291	2,409	-	66	(952)	(1,904)	(1,910)	(1,568)
Non-Staff Operating Costs		€ ,000s 2017 prices	7,705	4,749	6,359	7,879	8,149	7,910	7,705	4,815	5,406	5,975	6,239	6,342	-	66	(952)	(1,904)	(1,910)	(1,568)
Total	Total	€ ,000s 2017 prices	17,672	13,937	14,670	18,134	18,758	18,811	17,672	13,888	13,080	15,189	16,007	17,127	-	(49)	(1,590)	(2,945)	(2,751)	(1,684)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

Scenario B 2020-2021, Scenario C 2022-2024

Total

		IAA Updated Business Plan	Modelled	Delta																
Group	Line Item	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	
Staff	Payroll (Inc. Early redundancy)	€52,214	€51,304	€48,017	€54,932	€57,119	€59,319	52,214	48,602	43,890	51,373	53,212	55,344	-	(2,702)	(4,126)	(3,558)	(3,907)	(3,975)	
Staff	Overtime	1,870	661	961	1,413	1,608	1,785	1,870	661	661	637	995	1,544	-	-	(300)	(776)	(613)	(241)	
Staff	EWSS	-	(1,357)	(4,009)	-	-	-	-	(1,357)	(4,009)	-	-	-	-	-	-	-	-	-	
Staff	Pension	13,466	13,121	12,941	13,889	14,180	14,484	13,466	13,121	12,941	14,696	14,392	13,973	-	-	-	807	212	(511)	
Staff		67,550	63,729	57,909	70,233	72,907	75,588	67,550	61,027	53,483	66,706	68,599	70,861	-	(2,702)	(4,426)	(3,527)	(4,308)	(4,727)	
Travel	Travel	1,284	401	782	1,113	1,266	1,365	1,284	402	622	1,284	1,284	1,284	-	1	(160)	171	18	(81)	
Training	Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	(2,066)	(1,497)	(43)	
Utilities	Utilities	480	470	621	635	635	635	480	444	426	480	480	480	-	(26)	(195)	(155)	(155)	(155)	
Telecommunications	Telecommunications	-	-	-	-	-	-	-	-	-	-	-	-	-	(217)	(846)	(594)	(517)	(218)	
Operational	Maintenance	4,185	4,048	5,017	5,837	6,220	6,268	4,185	3,871	3,714	4,500	4,414	4,322	-	(177)	(1,303)	(1,337)	(1,806)	(1,946)	
Operational	Spares	779	879	1,093	1,378	1,378	1,378	779	721	691	872	872	872	-	(158)	(402)	(506)	(506)	(506)	
Operational	Power	833	914	1,162	1,340	1,340	1,340	833	771	739	833	833	833	-	(143)	(423)	(507)	(507)	(507)	
Operational	Other	435	423	453	774	778	779	435	402	386	435	435	435	-	(21)	(67)	(339)	(343)	(344)	
Subscriptions	Subscriptions	453	249	389	383	376	370	453	249	147	453	453	453	-	-	(242)	70	77	83	
Administration	Rent and rates	2,574	2,734	2,921	2,947	2,997	2,997	2,574	2,321	2,195	2,574	2,574	2,574	-	(413)	(726)	(373)	(423)	(423)	
Administration	Computing	1,660	1,612	2,319	2,907	3,028	3,266	1,660	1,497	1,415	1,541	1,602	1,668	-	(115)	(904)	(1,366)	(1,426)	(1,598)	
Administration	NIS	-	-	-	190	280	274	-	-	-	190	280	274	-	-	-	-	-	-	
Administration	Consultancy	1,013	414	1,118	1,626	1,545	1,625	1,013	913	864	1,013	1,013	1,013	-	499	(254)	(613)	(532)	(612)	
Administration	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	(426)	(653)	(472)	(529)	(588)	
Administration	Building repairs	949	809	1,594	1,399	1,455	1,400	949	856	809	800	781	749	-	47	(785)	(599)	(674)	(651)	
Administration	Environmental	-	-	161	332	332	332	-	-	-	332	332	332	-	-	(161)	-	-	-	
Administration	Security	-	-	-	-	-	-	-	-	-	-	-	-	-	(417)	(801)	(721)	(749)	(751)	
Administration	Professional services	538	520	527	799	799	799	538	485	459	538	538	538	-	(35)	(68)	(261)	(261)	(261)	
Administration	Cleaning	-	-	-	-	-	-	-	-	-	-	-	-	-	(144)	(300)	(484)	(486)	(486)	
Administration	IAA Restructuring	-	339	693	-	-	-	-	-	-	-	-	-	-	(339)	(693)	-	-	-	
Administration	Impairment	-	873	-	-	-	-	-	-	-	-	-	-	-	(873)	-	-	-	-	
Administration	PR	355	83	350	1,063	819	899	355	320	303	355	355	355	-	237	(47)	(708)	(464)	(544)	
Administration	Staff related	523	437	761	1,068	1,068	1,068	523	472	446	523	523	523	-	35	(315)	(545)	(545)	(545)	
Administration	Other	3,794	297	1,290	2,253	2,355	2,360	3,794	3,421	3,235	3,794	3,794	3,794	-	3,124	1,945	1,541	1,439	1,434	
Redacted Items		11,839	10,946	13,035	16,170	16,875	15,224	11,839	9,743	10,442	11,833	13,096	13,138	-	440	(7,392)	(9,864)	(9,886)	(8,742)	
Non-Staff Operating Costs		31,694	26,448	34,286	42,214	43,546	42,379	31,694	26,888	26,894	32,350	33,660	33,637	-	440	(7,392)	(9,864)	(9,886)	(8,742)	
Total	Total	€99,244	€90,177	€92,195	€112,447	€116,453	€117,967	99,244	87,915	80,377	99,055	102,259	104,498	-	(2,262)	(11,818)	(13,392)	(14,194)	(13,469)	
ATCOs		Headcount	309	301	291	300	311	328	309	301	280	280	297	327	-	-	(11)	(20)	(14)	(1)
Engineers		Headcount	72	73	84	90	93	94	72	72	72	87	91	91	-	(1)	(12)	(3)	(3)	(4)
Data Assistants		Headcount	39	39	38	38	38	38	39	39	39	38	38	38	-	-	1	-	-	-
Ops Management and support		Headcount	60	60	64	68	70	70	60	60	60	67	67	67	-	-	(4)	(2)	(3)	(3)
Corporate services		Headcount	68	66	65	57	57	57	68	68	68	57	57	57	-	2	3	-	-	-
Total		Headcount	548	539	542	553	569	587	548	540	519	529	549	579	-	1	(23)	(25)	(20)	(8)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

En-route

			IAA Updated Business Plan						Modelled						Delta					
Group	Line Item		2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€ ,000s 2017 prices	44,627	43,938	41,166	46,965	48,870	50,849	44,627	41,563	38,233	44,728	45,605	46,952	-	(2,375)	(2,933)	(2,237)	(3,265)	(3,897)
Staff	Overtime	€ ,000s 2017 prices	1,438	527	766	1,127	1,282	1,424	1,438	528	529	510	794	1,228	-	-	(237)	(617)	(488)	(195)
Staff	EWSS	€ ,000s 2017 prices	-	(1,162)	(3,437)	-	-	-	-	(1,161)	(3,492)	-	-	-	-	2	(55)	-	-	-
Staff	Pension	€ ,000s 2017 prices	11,517	11,238	11,103	11,887	12,145	12,414	11,517	11,198	11,256	12,776	12,407	11,978	-	(40)	153	889	262	(436)
Staff		€ ,000s 2017 prices	57,583	54,541	49,598	59,978	62,298	64,687	57,583	52,128	46,526	58,013	58,806	60,159	-	(2,413)	(3,072)	(1,965)	(3,492)	(4,528)
Travel	Travel	€ ,000s 2017 prices	1,101	349	656	934	1,063	1,146	1,101	350	522	1,077	1,078	1,078	-	1	(134)	143	15	(68)
Training	Training	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	(1,669)	(1,208)	(35)
Utilities	Utilities	€ ,000s 2017 prices	408	365	476	488	488	488	408	345	327	369	369	369	-	(20)	(149)	(119)	(119)	(119)
Telecommunications	Telecommunications	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(190)	(738)	(512)	(446)	(188)
Operational	Maintenance	€ ,000s 2017 prices	3,368	3,203	3,926	4,588	4,894	4,930	3,368	3,063	2,906	3,536	3,473	3,399	-	(140)	(1,019)	(1,051)	(1,421)	(1,531)
Operational	Spares	€ ,000s 2017 prices	627	695	855	1,083	1,084	1,084	627	570	541	686	686	686	-	(125)	(314)	(397)	(398)	(398)
Operational	Power	€ ,000s 2017 prices	670	723	909	1,053	1,054	1,054	670	610	579	655	655	655	-	(114)	(331)	(398)	(399)	(399)
Operational	Other	€ ,000s 2017 prices	350	335	354	608	612	613	350	318	302	342	342	342	-	(16)	(52)	(266)	(270)	(271)
Subscriptions	Subscriptions	€ ,000s 2017 prices	372	209	322	317	312	306	372	209	122	375	376	375	-	-	(200)	58	64	69
Administration	Rent and rates	€ ,000s 2017 prices	1,739	2,265	2,398	2,419	2,459	2,462	1,739	1,923	1,802	2,113	2,112	2,115	-	(342)	(596)	(306)	(347)	(348)
Administration	Computing	€ ,000s 2017 prices	1,122	1,336	1,904	2,386	2,484	2,683	1,122	1,240	1,162	1,265	1,314	1,371	-	(95)	(742)	(1,121)	(1,170)	(1,313)
Administration	NIS	€ ,000s 2017 prices	-	-	-	156	230	225	-	-	-	156	230	225	-	-	-	-	-	-
Administration	Consultancy	€ ,000s 2017 prices	685	343	918	1,335	1,267	1,335	685	757	709	831	831	832	-	414	(209)	(503)	(436)	(503)
Administration	Insurance	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(536)	(387)	(434)	(483)
Administration	Building repairs	€ ,000s 2017 prices	641	670	1,309	1,148	1,194	1,150	641	709	664	657	641	615	-	39	(644)	(492)	(553)	(535)
Administration	Environmental	€ ,000s 2017 prices	-	-	132	273	272	273	-	-	-	273	272	273	-	-	(132)	-	-	-
Administration	Security	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(346)	(658)	(592)	(615)	(617)
Administration	Professional services	€ ,000s 2017 prices	364	431	433	656	655	656	364	402	377	442	441	442	-	(29)	(56)	(214)	(214)	(214)
Administration	Cleaning	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(119)	(246)	(397)	(399)	(399)
Administration	IAA Restructuring	€ ,000s 2017 prices	-	281	569	-	-	-	-	-	-	-	-	-	-	(281)	(569)	-	-	-
Administration	Impairment	€ ,000s 2017 prices	-	723	-	-	-	-	-	-	-	-	-	-	-	(723)	-	-	-	-
Administration	PR	€ ,000s 2017 prices	240	69	287	873	672	739	240	265	248	291	291	292	-	196	(39)	(581)	(381)	(447)
Administration	Staff related	€ ,000s 2017 prices	353	362	625	877	876	877	353	391	366	429	429	430	-	29	(259)	(447)	(447)	(448)
Administration	Other	€ ,000s 2017 prices	2,564	246	1,059	1,849	1,932	1,939	2,564	2,835	2,656	3,114	3,112	3,117	-	2,589	1,597	1,265	1,180	1,178
Redacted Items		€ ,000s 2017 prices	9,384	9,094	10,796	13,293	13,849	12,508	9,384	8,086	8,623	9,736	10,747	10,786	-	-	-	-	-	-
Non-Staff Operating Costs		€ ,000s 2017 prices	23,989	21,699	27,927	34,335	35,397	34,469	23,989	22,073	21,905	26,346	27,400	27,402	-	374	(6,022)	(7,989)	(7,996)	(7,067)
Total	Total	€ ,000s 2017 prices	81,572	76,240	77,525	94,313	97,695	99,156	81,572	74,201	68,431	84,360	86,207	87,560	-	(2,039)	(9,094)	(9,954)	(11,488)	(11,596)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

Terminal

		IAA Updated Business Plan	Modelled					Delta												
Group	Line Item		2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Staff	Payroll (inc. Early redundancy)	€ ,000s 2017 prices	7,587	7,366	6,851	7,967	8,249	8,470	7,587	7,039	5,657	6,645	7,607	8,392	-	(327)	(1,193)	(1,322)	(642)	(78)
Staff	Overtime	€ ,000s 2017 prices	432	134	194	286	326	361	432	133	132	127	201	316	-	-	(63)	(159)	(125)	(46)
Staff	EWSS	€ ,000s 2017 prices	-	(195)	(572)	-	-	-	-	(197)	(517)	-	-	-	-	(2)	55	-	-	-
Staff	Pension	€ ,000s 2017 prices	1,949	1,883	1,838	2,002	2,035	2,070	1,949	1,923	1,685	1,920	1,985	1,995	-	40	(153)	(82)	(50)	(75)
Staff		€ ,000s 2017 prices	9,967	9,188	8,311	10,255	10,609	10,901	9,967	8,899	6,957	8,692	9,793	10,703	-	(289)	(1,354)	(1,562)	(816)	(198)
Travel	Travel	€ ,000s 2017 prices	183	52	126	179	203	219	183	52	100	207	206	206	-	-	(26)	28	3	(13)
Training	Training	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	(398)	(289)	(8)
Utilities	Utilities	€ ,000s 2017 prices	72	105	145	147	147	147	72	99	99	111	111	111	-	(6)	(46)	(36)	(36)	(36)
Telecommunications	Telecommunications	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(26)	(107)	(82)	(71)	(30)
Operational	Maintenance	€ ,000s 2017 prices	817	845	1,091	1,249	1,326	1,338	817	808	808	963	941	922	-	(37)	(283)	(286)	(385)	(415)
Operational	Spares	€ ,000s 2017 prices	152	184	238	295	294	294	152	150	150	187	186	186	-	(33)	(87)	(108)	(108)	(108)
Operational	Power	€ ,000s 2017 prices	163	191	253	287	286	286	163	161	161	178	178	178	-	(30)	(92)	(109)	(108)	(108)
Operational	Other	€ ,000s 2017 prices	85	88	99	166	166	166	85	84	84	93	93	93	-	(4)	(15)	(73)	(73)	(73)
Subscriptions	Subscriptions	€ ,000s 2017 prices	81	40	67	66	64	64	81	40	25	78	77	78	-	-	(42)	12	13	14
Administration	Rent and rates	€ ,000s 2017 prices	835	469	523	528	538	535	835	398	393	461	462	459	-	(71)	(130)	(67)	(76)	(75)
Administration	Computing	€ ,000s 2017 prices	538	276	415	521	544	583	538	257	253	276	288	298	-	(20)	(162)	(245)	(256)	(285)
Administration	NIS	€ ,000s 2017 prices	-	-	-	34	50	49	-	-	-	34	50	49	-	-	-	-	-	-
Administration	Consultancy	€ ,000s 2017 prices	328	71	200	291	278	290	328	157	155	182	182	181	-	86	(46)	(110)	(96)	(109)
Administration	Insurance	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(73)	(117)	(85)	(95)	(105)
Administration	Building repairs	€ ,000s 2017 prices	308	139	285	251	261	250	308	147	145	143	140	134	-	8	(141)	(107)	(121)	(116)
Administration	Environmental	€ ,000s 2017 prices	-	-	29	59	60	59	-	-	-	59	60	59	-	-	(29)	-	-	-
Administration	Security	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(72)	(144)	(129)	(135)	(134)
Administration	Professional services	€ ,000s 2017 prices	174	89	94	143	144	143	174	83	82	96	97	96	-	(6)	(12)	(47)	(47)	(47)
Administration	Cleaning	€ ,000s 2017 prices	-	-	-	-	-	-	-	-	-	-	-	-	-	(25)	(54)	(87)	(87)	(87)
Administration	IAA Restructuring	€ ,000s 2017 prices	-	58	124	-	-	-	-	-	-	-	-	-	-	(58)	(124)	-	-	-
Administration	Impairment	€ ,000s 2017 prices	-	150	-	-	-	-	-	-	-	-	-	-	-	(150)	-	-	-	-
Administration	PR	€ ,000s 2017 prices	115	14	63	190	147	160	115	55	54	64	64	63	-	41	(8)	(127)	(83)	(97)
Administration	Staff related	€ ,000s 2017 prices	170	75	136	191	192	191	170	81	80	94	94	93	-	6	(56)	(98)	(98)	(97)
Administration	Other	€ ,000s 2017 prices	1,230	51	231	404	423	421	1,230	586	579	680	682	677	-	536	348	276	259	256
Redacted Items		€ ,000s 2017 prices	2,455	1,852	2,239	2,877	3,026	2,716	2,455	1,657	1,819	2,097	2,349	2,351	-	66	(1,370)	(1,875)	(1,890)	(1,675)
Non-Staff Operating Costs		€ ,000s 2017 prices	7,705	4,749	6,359	7,879	8,149	7,910	7,705	4,815	4,989	6,003	6,259	6,235	-	66	(1,370)	(1,875)	(1,890)	(1,675)
Total	Total	€ ,000s 2017 prices	17,672	13,937	14,670	18,134	18,758	18,811	17,672	13,714	11,946	14,696	16,052	16,938	-	(223)	(2,724)	(3,438)	(2,706)	(1,873)

Source: Steer operating costs model. Note training, telecommunications, insurance, security and cleaning individual categories redacted and grouped as "Redacted items" for confidentiality.

Next steps

- 5.22 This analysis has been developed to enable stakeholders and CAR to have access to an independent assessment of the operating costs and key drivers of costs so that an informed analysis of an efficient level of operating costs can be established.
- 5.23 It is assumed that it will be reviewed by CAR, the IAA ANSP and stakeholders during the consultation period. The analysis will be updated following receipt of comments during the consultation.

Appendices

Appendix A: Record of Assumptions 2020-2021

Table A.1: 2019 operating cost baseline

	Line item	2019 Costs (000s, 2019 prices)
Staff	Payroll	€ 53,053
	Overtime	€1,900
	Early redundancy	-
	EWSS	-
	Pension	€ 13,682
Non-staff operational	Travel	€1,305
	Training / Telecommunications	€9,306
	MET	€ -
	Utilities	€488
	Operational	€6,332
	Subscriptions	€460
	Administration	€14,312
	Depreciation	€10,777
	Cost of capital	€4,302
Total		€115,918
Total (excluding depreciation and cost of capital)		€100,838

Source: IAA Updated RP3 Business Plan, Steer analysis

Table A.2: Record of operating cost reduction assumptions

Line item			Scenario	2020	2021	Source
Staff	Reduction in working week	ATCOs	IAA	-10% (Jul-Oct)	-10%	IAA Cost containment plan
			Scenario A	-10% (Jul-Dec)	-10%	IAA Cost containment plan – 2020 extended to year end
			Scenario B	-15% (Jul-Dec)	-15%	Level of savings achieved by some ANSPs and most of the other Irish organisations reviewed ³⁷

³⁷ Savings reviewed include:

- 15% salary reduction between April and December 2020 for staff at the Slovenian ANSP;

Line item		Scenario	2020	2021	Source
	Non-ATCOs (€38,500 – €56,930)	IAA	-10% (Jul-Oct)	-5%	IAA Cost containment plan
		Scenario A	-10% (Jul-Dec)	-10%	IAA Cost containment plan – 2020 extended to year end
		Scenario B	-15% (Jul-Dec)	-15%	Level of savings achieved by some ANSPs and most of the other Irish organisations reviewed ¹
		IAA	-10% (Jul-Oct)	-9.75%	IAA Cost containment plan
		Scenario A	-10% (Jul-Dec)	-10%	IAA Cost containment plan – 2020 extended to year end
		Scenario B	-15% (Jul-Dec)	-15%	Level of savings achieved by some ANSPs and most of the other Irish organisations reviewed ¹
	Variable Pay All Staff	IAA	-65%	-49%	IAA Updated business plan presentation
		Scenario A	-65%	-65%	IAA Updated business plan presentation – 2021 held at 2020
		Scenario B	-65%	-65%	
	Headcount	IAA	-	-€406k	IAA – Cost containment plan
		Scenario A	-	-€550k	Early retirement of 5 ATCO
		Scenario B	-	- €1,100k	Early retirement of 5 ATCO
	Government Subsidy	IAA	€1,379k	€4,009k	IAA 2020 Regulated accounts 2021 Estimated on EWSS available per eligible employee (to 31 Dec 2021)
		Scenario A	€1,379k	€4,009k	
		Scenario B	€1,379k	€4,009k	
Non-Staff operational	Travel	IAA	-68.7%	-39.1	IAA Updated business plan
		Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff costs)</i>
		Scenario B	-68.7%	-51.5%	2020: IAA Updated business plan 2021: 75% of 2020 reduction
	Training	IAA	-25%	-10.8%	IAA Updated business plan
		Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff costs)</i>
		Scenario B	-25%	-10.8%	IAA Updated business plan

- 20% reduction in working hours at the Latvian ANSP;
- Dublin airport's payroll reduction measures, which includes introducing a 4-day working week for all staff from April 2020 (-20%), with some staff moving to a 3-day working weeks (-40%) from October 2020.

Line item	Scenario	2020	2021	Source
Subscriptions	IAA	-45.0%	-14.1%	IAA Updated business plan
	Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff costs)</i>
	Scenario B	-45.0%	-67.5%	45% reduction in achieved in H2 2020 applied for 75% of 2021
	IAA	-2.1%	+29.4%	IAA Updated business plan
	Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff costs)</i>
	Scenario B	-7.5%	-11.3%	DAA reduction in non-critical utilities (-18%). Annualised reduction of 15% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
	IAA	+0.8%	+21.0%	IAA Updated business plan
	Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff costs)</i>
	Scenario B	-7.5%	-11.3%	DAA reduction in technological operating costs (-19%). Annualised reduction of 15% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
Operational	IAA	+0.5%	+24.0%	IAA Updated business plan
	Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>
	Scenario B	-7.5%	-11.3%	DAA reduction in technological operating costs (-19%). Annualised reduction of 15% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
Administration	IAA	-18.2%	+11.5%	IAA Updated business plan
	Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff costs)</i>
	Scenario B	-9.8%	-14.7%	See table below

Source: IAA, DAA, Steer analysis and assumptions

Table A.3: Record of operating cost reduction assumptions – Administrative costs

Line item	Materiality (2019)	Scenario	2020	2021	Source/reasoning	
Administration	Rent	15.1%	IAA	+7.5%	+14.7%	IAA Updated business plan (Proportionally uplifted to account for rates)
		Scenario A	-14.7%	-7.7%	PRB – bottom of first quartile (applied to all non-staff cost)	
		Scenario B	-7.5%	-11.3%	Annualised reduction of 15% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.	
	Rates	3.1%	IAA	-	-	No reduction in rates permitted
			Scenario A	-14.7%	-7.7%	PRB – bottom of first quartile (applied to all non-staff cost)
			Scenario B	-	-	No reduction in rates permitted
	Computer Maintenance	11.8%	IAA	-2.9%	+39.7%	IAA Updated business plan
			Scenario A	-14.7%	-7.7%	PRB – bottom of first quartile (applied to all non-staff cost)
			Scenario B	-7.5%	-11.3%	DAA reduction in technological operating costs (-19%). Annualised reduction of 15% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
	Consultancy	7.2%	IAA	-59.1%	+10.4%	IAA Updated business plan
			Scenario A	-14.7%	-7.7%	PRB – bottom of first quartile (applied to all non-staff cost)
			Scenario B	-15.0%	-22.5%	DAA reduction in professional and legal services (-42%). Annualised reduction of 30% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
Insurance	10.4%	IAA	+19.1%	+29.6%	IAA Updated business plan	

Line item	Materiality (2019)	Scenario	2020	2021	Source/reasoning	
		Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>	
		Scenario B	-	-	No change assumed	
	Building repairs	6.7%	IAA	-14.8%	+68%	IAA Updated business plan
			Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>
			Scenario B	-7.5%	-11.3%	DAA reduction in non-critical repairs and maintenance (-22%). Annualised reduction of 15% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
			IAA	+37.7%	+76.5%	IAA Updated business plan
	Security	6.2%	Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>
			Scenario B	-10.0%	-15.0%	DAA reduction in third party cleaning and materials (-31%). Annualised reduction of 20% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
	Professional Services	3.8%	IAA	-3.3%	-2.0%	IAA Updated business plan
			Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>
			Scenario B	-15.0%	-12.5%	DAA reduction in professional and legal services (-42%). Annualised reduction of 30% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
	Cleaning	2.3%	IAA	+33.5%	+75.8%	IAA Updated business plan
Scenario A			-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>	
Scenario B			-10.0%	-15.0%	DAA reduction in third party cleaning and	

Line item	Materiality (2019)	Scenario	2020	2021	Source/reasoning
					materials (-31%). Annualised reduction of 20% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
Public relations	2.5%	IAA	-76.6%	-1.4%	IAA Updated business plan
		Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>
		Scenario B	-15.0%	-22.5%	DAA reduction in professional and legal services (-42%). Annualised reduction of 30% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
Staff related	3.7%	IAA	-16.4%	+45.5%	IAA Updated business plan
		Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>
		Scenario B	-10.0%	-15.0%	DAA reduction in employee related costs (-47%). Annualised reduction of 20% assumed to account for different operating characteristics. 50% Implementation in 2020 and 75% in 2021.
Other	26.9%	IAA	-92.2%	-67.1%	IAA Updated business plan
		Scenario A	-14.7%	-7.7%	<i>PRB – bottom of first quartile (applied to all non-staff cost)</i>
		Scenario B	-15.0%	-22.5%	Annualised reduction of 30% assumed based on overall DAA reduction (38%). 50% implementation in 2020 and 75% in 2021.

Source: IAA, DAA, Steer analysis and assumptions

Appendix B- Record of Assumptions 2022-2024

Table B.1: 2019 operating cost baseline

Group	Line Item	2019 Costs (€000s, 2017 prices)
Staff	Staff Costs	54,084
	Pension	13,466
Travel	Travel	1,284
Training	Training	✂
Utilities	Utilities	480
Telecommunications	Telecoms	✂
Operational	Maintenance	4,185
	Spares	779
	Power	833
	Flight checking	211
	Other	224
Subscriptions	Subscriptions	453
Administration	Rent and rates	2,574
	Computing	1,660
	NIS	-
	Consultancy	1,013
	Insurance	✂
	Building repairs	949
	Environmental	-
	Security	✂
	Professional services	538
	Cleaning	✂
	IAA Restructuring	-
	Impairment	-
	PR	355
	Staff related	523
	Other	3,794

Group	Line Item	2019 Costs (€000s, 2017 prices)
Redacted Items above	Training/Telecoms/Insurance/Security/Cleaning	11,839
Depreciation	Depreciation	10,607
Cost of capital	Cost of capital	4,234
Total		114,086
Total ex Dep and CoC		99,245

Source: IAA ANSP July 2021 Business Plan

Table B.2: Staff costs assumptions

Category	Line Item		Inputs	IAA				Scenario C		
				2019	2022	2023	2024	2022	2023	2024
Productivity and safe working	Operational ATCO Productivity	Contractual working hours per ATCO in OPS per year	#, hours	1,574	1,574	1,574	1,574	1,574	1,574	1,574
		Average number of hours not on duty per ATCO in OPS per year	#, hours	95	95	95	95	95	95	95
		Flight hours per ATCO (enroute)	#, Flight hours per ATCO	0.94	0.77	0.90	0.95	0.94	0.94	0.96
		Flight hours per ATCO (terminal)	#, Flight hours per ATCO	1.43	1.17	1.37	1.45	1.43	1.43	1.46
Payroll	Pay rise (above inflation)		YoY % change	-	4.1%	1.8%	1.8%	1.0%	1.0%	1.0%
	Pay rise (attributed to grade increment and promotion)		YoY % change	-	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
	Overtime hours per ATCO (enroute)		#, hours	45	34	37	40	24	34	37
	Overtime hours per ATCO (terminal)		#, hours	83	63	69	73	45	63	69
	Government Subsidy (EWSS)		#, subsidy (€m)	-	-	-	-	-	-	-
Staff changes (Cumulative)	ATCO Retirement		#, Headcount	(5)	-	-	-	-	-	-
	ATCO Early Retirement		#, Headcount	-	-	-	-	-	-	-
	ATCO Headcount adjustment - 2nd Runway/Tower		#, Headcount	-	5	14	14	5	14	14
	ATCO Headcount adjustment - Safety and compliance staff		#, Headcount	-	3	3	3	3	3	3
	ATCO Headcount adjustment - Other		#, Headcount	-	2	2	2	1	1	1
	Non-ATCO Headcount Adjustment - Corp Serv		#, Headcount	-	(11)	(11)	(11)	(11)	(11)	(11)
	Non-ATCO Headcount Adjustment - Data Assistant		#, Headcount	-	(1)	(1)	(1)	(1)	(1)	(1)
	Non-ATCO Headcount Adjustment - Engineer		#, Headcount	-	18	21	22	15	19	19
Non-ATCO Headcount Adjustment - Op Mgt Support		#, Headcount	-	8	10	10	7	7	7	
Pension	Calibration between Steer pension cost rate estimate and IAA actual		%, difference in each year	1.02	0.98	1.03	1.04	1.00	1.00	1.00

Source: Steer assumptions. IAA figures calculated from July 2021 Business Plan.

Table B.3: Non-staff cost assumptions, year on year growth, 2022-2024

Cost category	Line item	Rate of change assumption		
		2022	2023	2024
Travel	Travel	Revert to 2019 actual costs	CPI	CPI
Training	Training	[Model output]	[Model output]	[Model output]
Utilities	Utilities	Revert to 2019 actual costs	CPI	CPI
Telecoms	Telecoms	Revert to 2019 actual costs	CPI	CPI
Operational	Maintenance	Revert to 2019 actual costs +12% - 4% efficiency factor*	CPI - 1.9% efficiency factor*	CPI - 2.1% efficiency factor*
Operational	Spares	Revert to 2019 actual costs +12%	CPI	CPI
Operational	Power	Revert to 2019 actual costs	CPI	CPI
Operational	Flight checking	Revert to 2019 actual costs	CPI	CPI
Operational	Other	Revert to 2019 actual costs	CPI	CPI
Subscriptions	Subscriptions	Revert to 2019 actual costs	CPI	CPI
Administration	Rent and rates	Revert to 2019 actual costs	CPI	CPI
Administration	Computing	Revert to 2019 actual costs + 5% - 2.3% efficiency factor*	CPI +5% - 1.0% efficiency factor*	CPI + 5% - 0.8% efficiency factor*
Administration	NIS	Revert to 2019 actual costs	CPI	CPI
Administration	Consultancy	Revert to 2019 actual costs	CPI	CPI
Administration	Insurance	Revert to 2019 actual costs	CPI	CPI
Administration	Building repairs	Revert to 2019 actual costs - 15.7% efficiency factor*	CPI - 2.4% efficiency factor*	CPI - 4.1% efficiency factor*
Administration	Environmental	Revert to 2019 actual costs	CPI	CPI
Administration	Security	Revert to 2019 actual costs - 3.2% efficiency factor*	CPI - 2.6% efficiency factor*	CPI - 0.2% efficiency factor*
Administration	Professional services	Revert to 2019 actual costs	CPI	CPI

Cost category	Line item	Rate of change assumption		
		2022	2023	2024
Administration	Cleaning	Revert to 2019 actual costs	CPI	CPI
Administration	IAA restructuring	Revert to 2019 actual costs	CPI	CPI
Administration	Impairment	Revert to 2019 actual costs	CPI	CPI
Administration	PR	Revert to 2019 actual costs	CPI	CPI
Administration	Staff related	Revert to 2019 actual costs	CPI	CPI
Administration	Other	Revert to 2019 actual costs	CPI	CPI

Source: Steer assumptions. (*) Note: efficiency factor derived from Steer analysis and assumptions on gross opex savings from capex projects.

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