Airsevices Australia

DRAFT PRICE NOTIFICATION

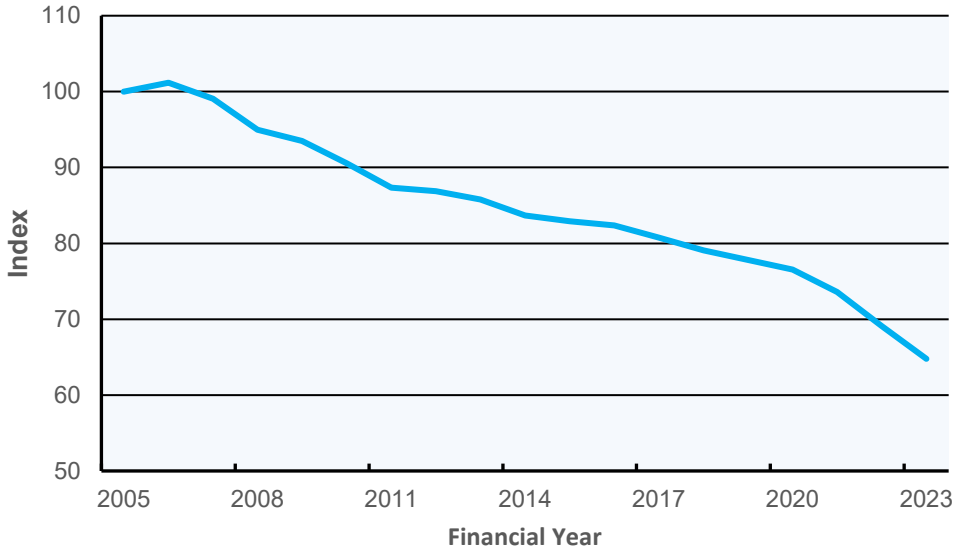
2024 - 2026

Contents

1. EXECUTIVE SUMMARY

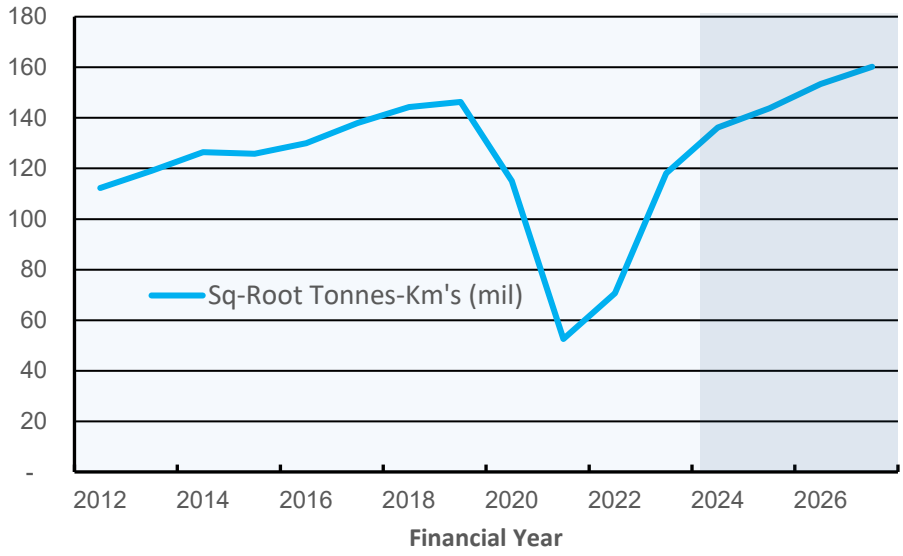
Airservices' charges are at 2012 levels on a weighted average basis. Following a reduction in prices in 2019, and over eight years since Airservices last increased its charges (0.4% on 1 July 2015), Airservices has provided real price reductions of 35% to industry since the first Long Term Pricing Agreement was introduced in 2005.

Figure 1 – Real price movements 2005 to 2023



At the end of FY2023 airways activity levels were 20% below pre-COVID levels (2019). With the recovery from the impact of the COVID-19 still forecast to impact traffic levels over the coming years, pricing increases are now required to rebalance Airservices charges to changes in demand to enable Airservices to continue to fund front line service delivery and invest in key programs to support industry's ongoing recovery and future growth.

Figure 2 – Air traffic activity (Square-root tonnes kilometres) FY2005 to FY2026



Noting risks over the longer-term outlook and timing of industry and economic recovery, this proposed agreement is important in delivering industry price certainty through to FY2026, with increases in charges implemented over a gradual price path, to avoid any one-off pricing shocks.

Acknowledging Airservices recent service delivery challenges, this agreement will underpin our commitment to deliver at the standard required. It will also fund the delivery of improved capabilities and industry benefits through $0.8b of investment, whilst allowing Airservices to return to a sustainable financial position.

To mitigate the risk of any unwanted pricing impacts while there is still economic volatility, no changes to pricing structures are proposed. As economic conditions stabilise in the coming years, Airservices will seek to re-engage industry on its commercial priorities to support the development of future charging arrangements (including pricing arrangements for OneSKY, Western Sydney International Airport, new runway services at Perth and Melbourne and Uncrewed Services). No risk sharing is proposed for this agreement.

The pricing increases are planned to be implemented from 2024 for each service line, Enroute Navigation (Enroute), Terminal Navigation (TN) and Aviation Rescue and Fire Fighting (ARFF), totalling 18% over three years to 2026. Airservices is not proposing to claw back the circa $1.4bn of losses it and its shareholder has already absorbed over FY2020 to FY2023. The proposed service line weighted average pricing increases are shown in the **Table 1** below.

Table 1: Weighted average price change by service line

Service	Apr 24	Sep 24	Jul 25	Jan 26
Enroute	4.5%	4.5%	2.0%	1.0%
Terminal Navigation	6.7%	6.2%	4.8%	5.1%
ARFF	8.9%	6.0%	4.5%	3.8%
Weighted Average (nominal)	**6.0%**	**5.3%**	**3.4%**	**3.0%**

At the end of this agreement prices will be only 16% higher than the prices last approved by the ACCC on 1 July 2015 (noting Airservices implemented a unilateral voluntary 2% price reduction in 2019). This is materially less than the projected CPI increase from FY2017 to FY2026 – leaving Airservices real prices lower in FY2026 than in FY2016.

Projections of the net present value of recoveries and shortfalls from FY2024 is provided in **Table 2** both with and without the proposed price increase.

Table 2: NPV of cost recovery/(shortfall) from FY2024 until a future date (Financial Years)

Scenario ($mil)	2026	2027	2028	2029	2030
No price increase (current services)	(319)	(477)	(604)	(725)	(814)
Airservices proposed price increase *	(48)	(68)	(66)	(73)	(58)

*2027 – 2030 includes the impact of OneSKY, WSIA and new runways

Once this price notification process is complete, Airservices will begin consultation on another (FY2027) Price Notification process to be implemented as this agreement expires.

This future price notification will be needed to rebalance service line recoveries and deal with the pricing impact of OneSKY and pricing structure issues created by the operation of new services at Western Sydney International Airport and expanded services at Perth and Melbourne airports with the operation of their new runways.

The issues involved are complex and cannot be properly consulted on in the expedited timeline that is necessary for the current pricing notification which must set prices from FY2024 (or Airservices will continue to absorb unreasonably high levels

of losses). The proposed prices for each service and location over the term of the agreement are set out in **Section 6**.

2. Airservices' Role and Operating Environment

Airservices is a government owned corporation providing safe, secure, efficient and environmentally responsible services to the aviation industry. Established under the Air Services Act 1995, our services are delivered in the public interest and each year we support our customers by providing services to over four million aircraft movements and 140 million regular passenger transport movements.

We provide the aviation industry with aeronautical data, telecommunications, navigation services and aviation rescue fire fighting services.

We employ about 3,400 staff, including approximately 1,200 in air traffic management[1] roles 800 fire fighters working from two major centres in Melbourne and Brisbane, 29 towers and 27 fire stations at international and regional airports.

Australia's aviation safety performance is among the top three in the world and continues to have one of the lowest loss of separation occurrence rates attributable to civilian air traffic control globally. Airservices has twice been named the world's best air traffic services by the International Air Transport Association.

To achieve this, we work closely with the Civil Aviation Safety Authority (CASA), the Department of Infrastructure and Regional Development (DIRD), the Australian Transport Safety Bureau (ATSB) and the Australian Maritime Safety Authority (AMSA). We also collaborate with the International Civil Aviation Organisation (ICAO) and other global forums to share in advancements in aviation technology, safety and performance.

Key to our ongoing success is working collaboratively with our customers, airports and other airspace users to ensure our people, regulations and technology are focused on supporting the safest and most efficient air traffic services it can.

As part of the financial undertakings established in our Act, Airservices is also required to earn a reasonable rate of return on capital with the expectation that Airservices will pay a reasonable dividend to the government.

The services we provide, and many of the inputs used to provide them, are not determined by Airservices

Airservices' operating environment is strictly delimited by governing legislation and decisions made by CASA. These constraints on Airservices limit its ability to choose the level of service it supplies at each airport and, also, how it achieves that level of service.

In many cases this prescription does not just apply to the outputs Airservices supplies but also the inputs Airservices uses to provide those outputs. This is discussed in more detail for each serviced below.

[1] This includes both air traffic controllers in operations, supporting and supervisory roles

Our Services

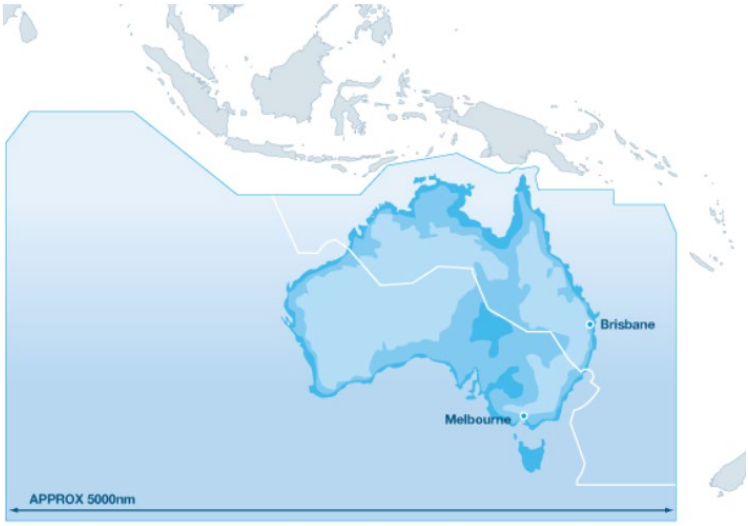
Airservices manages 11% of the world's airspace. Our area of operations covers the Australian Flight Information Region which includes the nation's sovereign airspace and international airspace over the surrounding oceans.

Our services support flights 24 hours a day. Across major, regional and remote centres we employ a specialised, safety regulated in-house trained workforce. We have a national infrastructure footprint of specialised assets which are predominantly maintained by our internal staff where there are limited supplier markets to support many of our specialised assets nationally.

Enroute Services

Enroute services manage the provision of all air traffic control services, outside of Tower and Terminal airspace, over the Australian mainland and on oceanic routes within Australia's flight information region. These services are responsible for managing aircraft operations from surface (SFC) to Flight Level 60,000 feet (FL60) and are provided from our two major centres located in Brisbane and Melbourne.

Figure 3 – Enroute Services fight information region



The level of service provided to aircraft is dependent on the class of airspace and as in the case of terminal services is authorised by CASA in consultation with Airservices and industry. The class of airspace is determined based on risk in accordance with the Australian Airspace Policy Statement (AAPS).

Within that airspace the efficiency of the service provision is managed by Airservices. Traffic levels determine the equipment required to provide the level of safety and efficiency of the service expected by industry. Requirements to improve efficiency for industry and cope with increasing demand is one of the drivers behind the program to deliver Australia's new air traffic system. The step changes to improve efficiency in the system are detailed in the Global Air Navigation Plan through a series of block upgrades. CASA provides regulatory oversight of the safety of the service provision.

Terminal Navigation Services

Airservices' Terminal Navigation services encompass air traffic, aeronautical information, radio navigation, or telecommunications service for the direction and control of air traffic departing and arriving at any one of the 28 controlled aerodromes

(plus an Aerodrome Flight Information Service – AFIS – at Port Hedland) in the Australian flight information region.

Terminal Control Units (TCU) use radar and other surveillance technology to manage the flow of aircraft arriving and departing from identified airports. These services are provided by dedicated TCU's in Sydney and Perth and dedicated units within Airservices Control Centres at Brisbane and Melbourne.

Tower controllers are responsible for all aircraft and vehicle movements on taxiways, runways and aircraft movements in the immediate vicinity of the aerodrome.

Figure 4 – Terminal Navigation service locations

Air traffic controllers apply separation standards to keep aircraft a minimum distance apart operating in controlled airspace and at airports. Different separation standards apply depending on the level of safety technology in the airspace sector and whether or not the aircraft are operating under instrument flight rules (IFR—all large passenger aircraft) or visual flight rules (VFR—most light aircraft and helicopters).

Where and when to provide Terminal Navigation services is determined by CASA utilising guidance contained in the AAPS. This work is undertaken in consultation with Airservices and industry. Once determined Airservices will be provided a direction to implement the service.

Where the risk does not require the establishment of a controlled aerodrome service CASA may determine an alternate risk mitigation, e.g. an Aerodrome Flight Information Service (AFIS), or Surveillance Flight Information Service (SFIS). An AFIS is a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights in the vicinity of the aerodrome. Currently Port Hedland is the sole AFIS location in Australia.

The assessment of service levels at Port Hedland provides a useful case study of how CASA decisions are made, and Airservices' role in that decision making. In October 2011 CASA conducted an Aeronautical Study of Port Hedland airspace. CASA's conclusions from that review were as follows:

1 That the Port Hedland aerodrome operator and Airservices should consider the introduction of either a Certified Air/Ground Radio Service5 (CA/GRS) – as supplied by the aerodrome operator or an Aerodrome Flight Information

Service (AFIS) provided by Airservices Australia (Airservices) in the short-term. This will assist with risk mitigation until further measures are adopted.

2 If no other mitigations such as CA/GRS or an AFIS are implemented, CASA should make a Determination that Port Hedland becomes a controlled aerodrome before June 2013 and at that time re-classify the Port Hedland airspace accordingly.
3 Airservices should immediately prepare strategies for Port Hedland aerodrome to become a controlled aerodrome with associated change to the airspace classification.
4 CASA should continue to monitor traffic levels at Port Hedland.

In essence, CASA determined that Airservices should implement either a CA/GR service or an AFIS or, if it did not implement either of these, it should implement an ATC tower service by June 2013. A supplementary report to this study was issued in March 2013 requiring a Class D control tower to commence in November 2014 (notwithstanding that an AFIS services was under implementation and commenced in June 2013). In April 2014 the Airservices Board approved expenditure of $20m for the construction of a new modular tower.

However, following this Board approval there was a decrease in aircraft movements and passenger numbers at Port Hedland Airport. Airservices requested CASA review their determination and CASA did so, issuing a new instrument requiring that the AFIS continue and revoking the requirement for a tower service.

The AFIS service was conducted out of Port Hedland by Airservices staff on a FIFO basis. The ongoing costs for providing this service are primarily direct costs for two staff, including travel costs. This is considerably less than the significant up-front costs associated with deploying a Class D control tower and higher associated staffing costs.

Airservices considers that this case study demonstrates the potential for some flexibility within CASA decision making processes to lead to appropriate and efficient outcomes in terms of the level and cost of services delivered at a location. However, the fact remains that the ultimate decision on the level of service provided is CASA's. Airservices can, and does, seek to inform and influence that decision but the ultimate decision maker on what is required for consistency with the AAPS is CASA.

Aviation Rescue & Fire Fighting (ARFF) services

Airservices provides aviation rescue fire fighting services at 27 of Australia's busiest airports, by passenger movements, operating a fleet of more than 100 of the largest specialised fire fighting vehicles in the country and 16 vessels for rescue operations at airports with significant movements over water.

Figure 5 – Aviation Rescue & Fire Fighting service locations

We operate in alignment with strict international / regulatory obligations, including our response times. We must be able to respond and attend an aircraft incident at either end of a runway within three minutes from the initial call and be able to apply firefighting agent at 50 per cent of the required discharge rate.

Additionally, we have an operational objective to respond to any part of the airport movement area within three minutes. We provide varied levels of services, dependant on the size of the largest aircraft at each airport.

Fire stations at our busiest airports provide a 24-hour service. Hours of operation at smaller airports are determined by commercial passenger aircraft flight schedules.

The requirement to establish new Aerodrome Rescue and Fire Fighting (ARFF) service or upgrade existing ARFF services is currently tightly regulated under Civil Aviation Safety Regulation (CASR) Part 139 Subpart H (139H):

- Subpart H sets out general standards that an ARFFS must comply with.
- The Manual of Standards (MOS) sets out the detailed requirements, as authorised by those Regulations.

The nature of this regulation is that services need to be provided once regulatory triggers are met. This contrasts somewhat with terminal navigation services where regulatory triggers provide some flexibility for CASA to investigate and determine the appropriate level of service to be provided.

The regulatory triggers set out in CASR 139H are aligned to the International Civil Aviation Organisation (ICAO) Standards and Recommended Practices (SARPs), especially those stated in ICAO Annex 14, Chapter 9, Part 9.2. Where there is a difference between a standard prescribed in these documents and the standard described in the MOS, the MOS standards prevail.

These requirements specify that an ARFF service must be established at:

- an aerodrome from or to which an international passenger air service operates; and
- any domestic aerodrome through which more than 350,000 passengers passed through on air transport flights during the previous financial year.

The level of the service is determined by the size of the aircraft normally operating at the aerodrome.

By contrast, disestablishment of ARFF services is not mandatory but may be considered when the number of annual passengers on air transport falls below 300,000 and remains below this level for a 12-month period. In order to cease providing an ARFF service, Airservices must provide CASA with a Safety Case which justifies the closure of the ARFF service.

Over the last decade Airservices has established ARFF services at six new locations (at Gladstone, Newman, Ballina, Coffs Harbour, Port Hedland, and Whitsunday Coast). It has also upgraded a number of services where the size of the aircraft operating at the aerodrome has increased. The establishment or upgrade of ARFF services requires significant infrastructure, equipment and human resource investment. The automatic trigger for establishment (and similar triggers for upgrades to service) result in substantial investments being incurred at a location. As is the case with terminal navigation investments, many of these investments are 'sunk' in the sense that they are only useful as long as a service continues to be provided at that service (an ARFF station cannot be moved to a new location).

This means that, if the service is disestablished during the life of the assets, then the cost per year of service provision can be very high (given the assets are utilised for only a fraction of their life).

Service Characteristics and Customer Demographics

Airservices serves a diverse customer base. While they all require safe, efficient and affordable services, due to the nature of their operations and commercial priorities, they all have differing service needs and requirements. From capital city international gateway services, regional and low-cost carrier airlines, to mining and aeromedical services to general aviation and training operations, they all create different drivers of service demand.

Generally speaking, long haul international airline services require flexible routes to maximise fuel efficiency with a premium on aerodrome efficiency and supporting infrastructure to land and turn the service around for its return flight. Major domestic airline services require efficiency across the network to optimise resource utilisation with infrastructure support across high traffic routes (the "J-curve") to maximise efficiency of operations while maintaining safety. Regional services typically operate where traffic is less dense and want service accessibility in cost sensitive markets, with ability to connect to major city centres. General aviation and training schools have specific needs. They are also content to operate outside of the network.

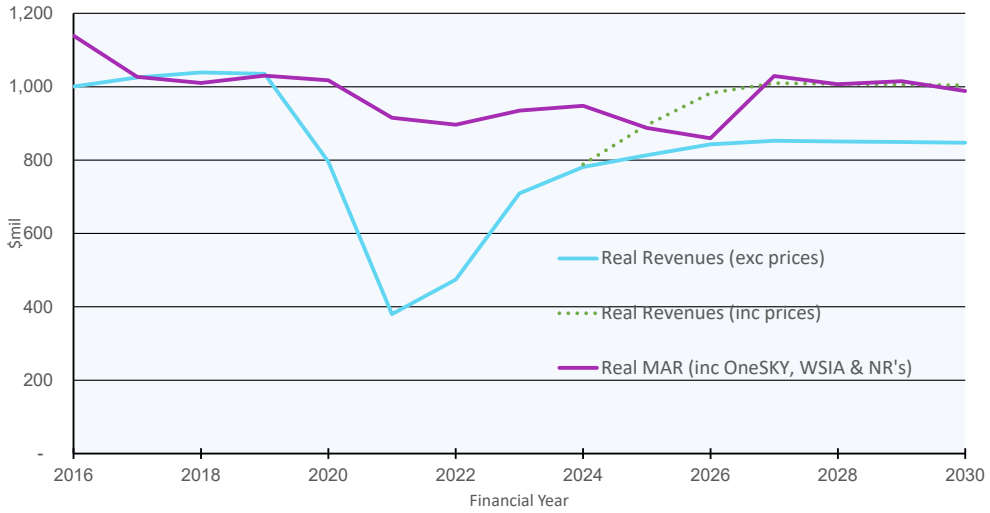
In meeting these service needs, and changes across industry over time, Airservices has sought to move in step with its customers by ensuring it provides cost efficiency and enables growth so as to support the long term sustainability of the industry.

However, over the short to medium term, in periods of volatility, there can be challenges in matching the supply of services to demand. To address this, Airservices has sought to continue to transform its business. Through investments in new capabilities that support efficiency, capacity and growth; by making services and costs more flexible and responsive; and by improving systems and processes to make our services more resilient. More information on Airservices services improvements and expansions is shown at **Appendix 4**.

3. Overview of Airservices Operations FY2016 to FY2030

Figure 6 describes actual and forecast revenues and building block costs out to FY2030. It can be seen that from FY2020 onwards Airservices has been under-recovering building block costs and that, without a price increase, this is forecast to continue to FY2030 and beyond (noting that OneSKY, WSIA and new runways at Perth and Melbourne will be the subject of future price notifications).

Figure 6: Airservices' real revenue and real building block costs (FY2016 – FY2030)

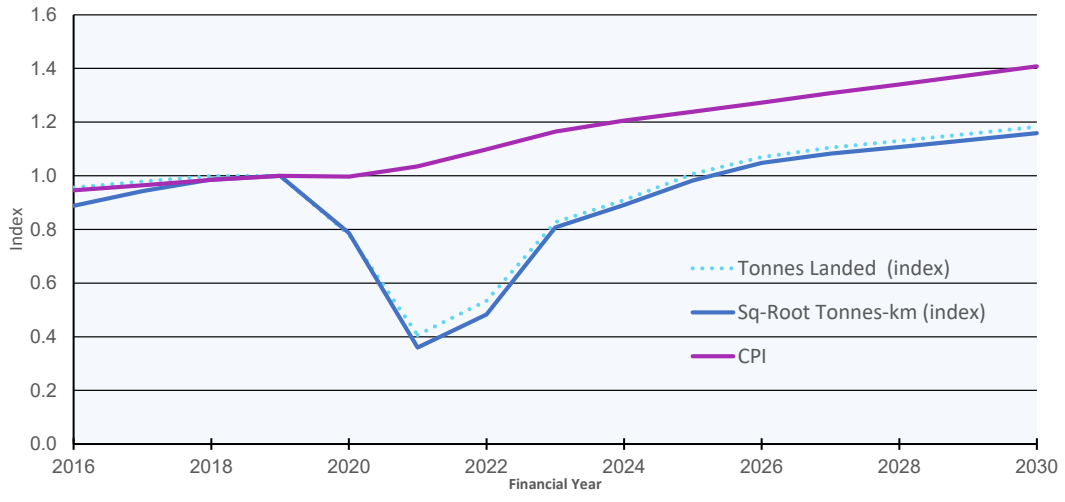


The impact of Airservices' proposed price increases on total revenues is illustrated by the dotted green time series that departs from the blue time series in 2024.

The impact of COVID-19 on air traffic and, therefore, Airservices' revenues can be seen in the dramatic drop in actual revenues from FY2020 onwards. The recovery in revenues in FY2023 and beyond reflects actual and forecast traffic growth.

Airservices charges on a mix of tonnes landed and the square root of tonne-km. **Figure 7** shows the actual and forecast quantity of these metrics from FY2016 onwards.

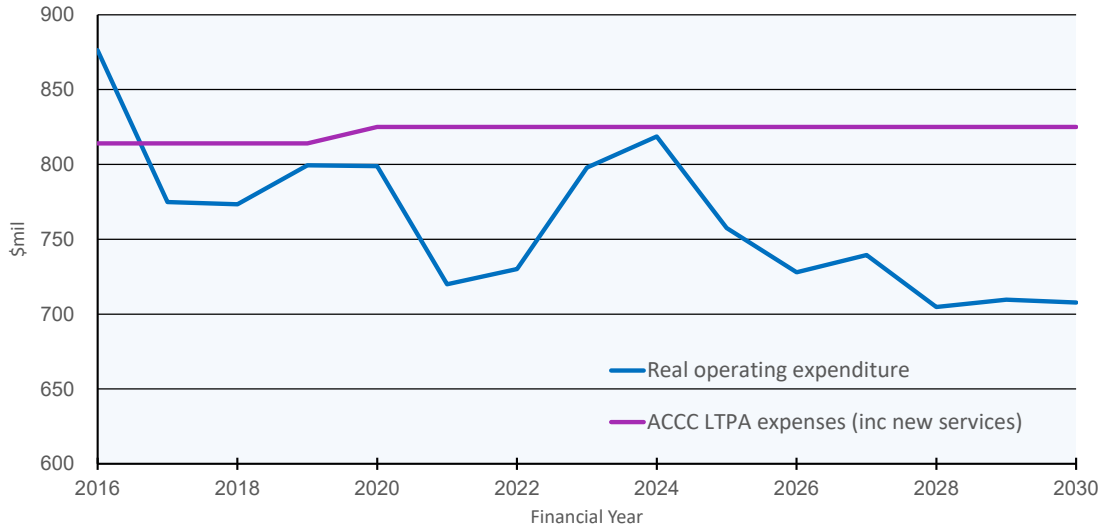
Figure 7: Actual and forecast air traffic volume index vs CPI (FY2019=1)



Current forecasts project air traffic activity levels to return to 2019 levels by between FY2025 (tonnes landed) or FY2026 (square root tonne kms). Nominal revenues are, therefore, forecast to return to 2019 levels around the same time. However, real revenues, as shown in **Figure 6**, are not forecast to return to 2019 levels due to the rate of inflation outstripping growth in air traffic.

Airservices' real operating costs (total expenditure less capital expenditure) have fallen materially since the last price notification. Actual and forecast real operating expenditure from FY2017 onwards is lower than the level of operating expenditure the ACCC used in the last FY2012 to FY2016 LTPA (adjusted upwards by $20m-$31m[2] to reflect the cost of new ARFF and Terminal Navigation services not included in the last LTPA cost base).

Figure 8: Real operating expenditure ($FY2016)



It is forecast that, by FY2026 (FY2030), real operating expenditure will be 10% (14%) lower than the ACCC's allowance in the last LTPA. Over the same period tonnes landed is forecast to be 13% (24%) higher than in FY2016.[3] On a per tonne landed (square of tonne-km) basis real operating costs are forecast to be 31% (35%) lower in FY2030 than in FY2016.

The path taken by real operating expenditure reflects the impact of Airservices initiated efficiency programs, the impact of COVID-19 and, in the post FY2026 period, the benefits from Airservices forward change (investment) program – all of which are discussed in more detail below.

In large part lower operating costs reflect the impact of business restructuring on staffing. Some of these reductions were temporary in the wake of COVID-19 but some involve an ongoing reduction in labour intensity as new systems are introduced.

2 $20m additional cost from FY2016 to FY2019 and $31m from FY2020 onwards reflecting new services at Ballina, Gladstone, Newman, Brisbane parallel runways, Whitsunday Coast, and service upgrades across 7 ports

3 The same figures for square root tonnes kms is 18% and 32%.

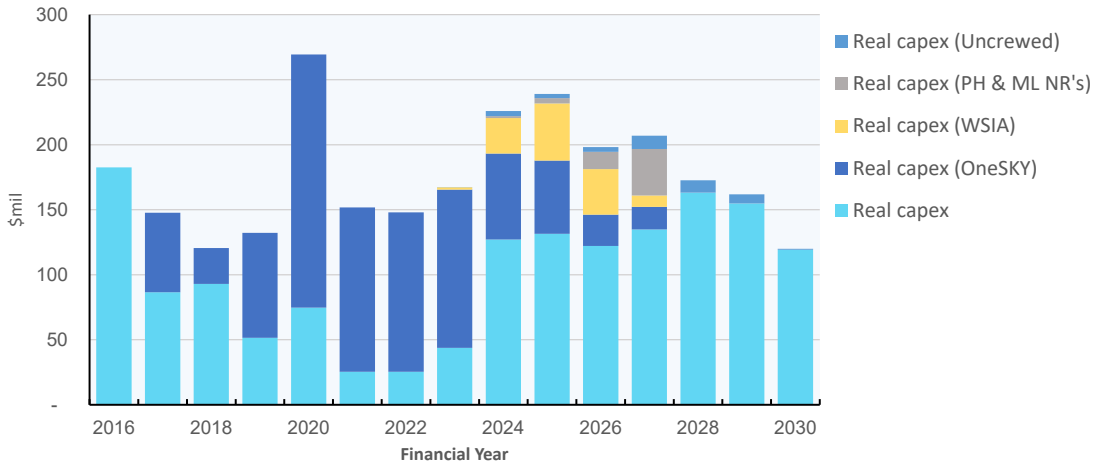
Table 4: Staffing levels over time

Financial Year ($mil)	2016	2017	2018	2019	2020	2021	2022	2023
Air Traffic Management	1,580	1,443	1,340	1,362	1,384	1,307	1,183	1,233
Aviation Rescue & Fire Fighting Services	856	826	843	858	886	852	785	813
Engineering, Technical & Info Technology	809	625	587	547	548	480	474	523
Other	1,223	817	764	817	837	714	792	861
Total	**4,468**	**3,711**	**3,534**	**3,584**	**3,655**	**3,353**	**3,234**	**3,430**

Since 2017 Airservices has embarked on a significant investment in what is known as the "OneSKY" program. When commissioned in 2027 this will effectively replace current legacy software and hardware platforms used for both enroute and terminal navigation services (the OneSKY program is discussed in detail in **Appendix 4**).

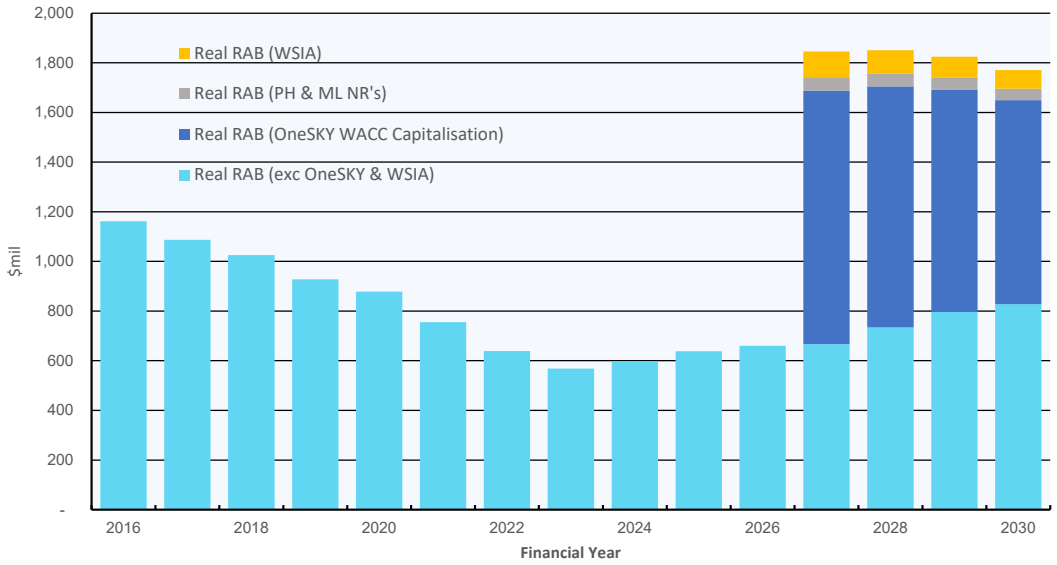
Over the forecast period Airservices will also need to invest materially in new Terminal Navigation and Aviation Rescue and Fire Fighting services at Western Sydney International Airport (WSIA) and at expanded services for new runways at Perth and Melbourne as well as investments relating to managing uncrewed aircraft (drones). Airservices' historical and forecast capex program is summarised in **Figure 9** below.

Figure 9: Historical and forecast real capex



Capex on existing assets has been below replacement costs since 2016 as legacy platforms are rundown in anticipation of replacement by OneSKY related infrastructure in 2027. Over this same period, as shown in **Figure 10** below, the regulatory asset base (RAB) falls materially out to 2023 consistent with capex on existing assets being less than depreciation. By 2023 the platforms are largely depreciated and the real RAB is $570m (around half of its 2016 value). The RAB is then relatively stable until the commissioning of both WSIA and OneSKY investments in FY2027– at which point there is a material increase in the RAB – reflecting the capitalisation of accumulated expenditure on WSIA and OneSKY.

Figure 10: Historical and forecast real RAB

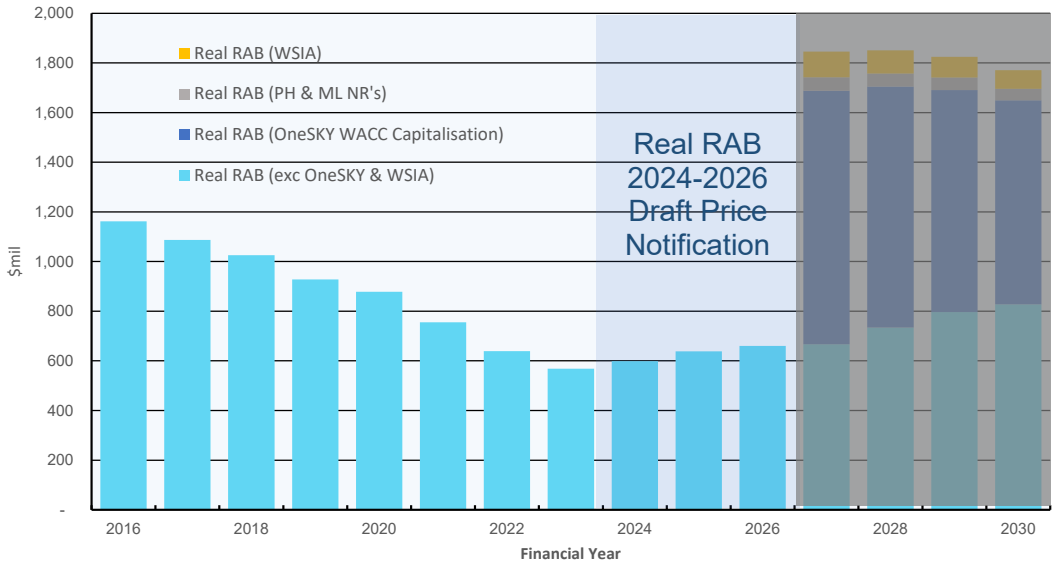


The large increase in the real RAB beyond FY2026 relative to FY2016 is a result of three factors:

- Airservices' RAB is not indexed for inflation, which has the effect of reducing the real value of the assets in place in FY2016;
- Low replacement capex on legacy systems in anticipation of OneSKY investment
- Material investment on capex for new services/systems (WSIA/OneSKY) that only enters the RAB on commissioning those services/systems.

Because of the significance of this impact, Airservices has excluded OneSKY and WSIA from the FY2024 – FY2026 pricing calculations. These will be considered as part of a future (FY2027) price notification.

Figure 11: Historical and FY2024 – FY2026 price notification real RAB.



COVID-19 impacts

Prior to COVID-19 Airservices' efficiency program 'Accelerate' (discussed in **Appendix 7**) was delivering material cost reductions. Averaged over FY2017 to FY2019 real operating costs were 11% lower than in FY2016 (and 14%/19% lower on a per tonne landed/per tonne km basis). The success of this program averted the requirement for pricing increases to address funding shortfalls following the industries contraction (in traffic) and helped provide financial capacity to fund early investment associated with the OneSKY program and services expansion.

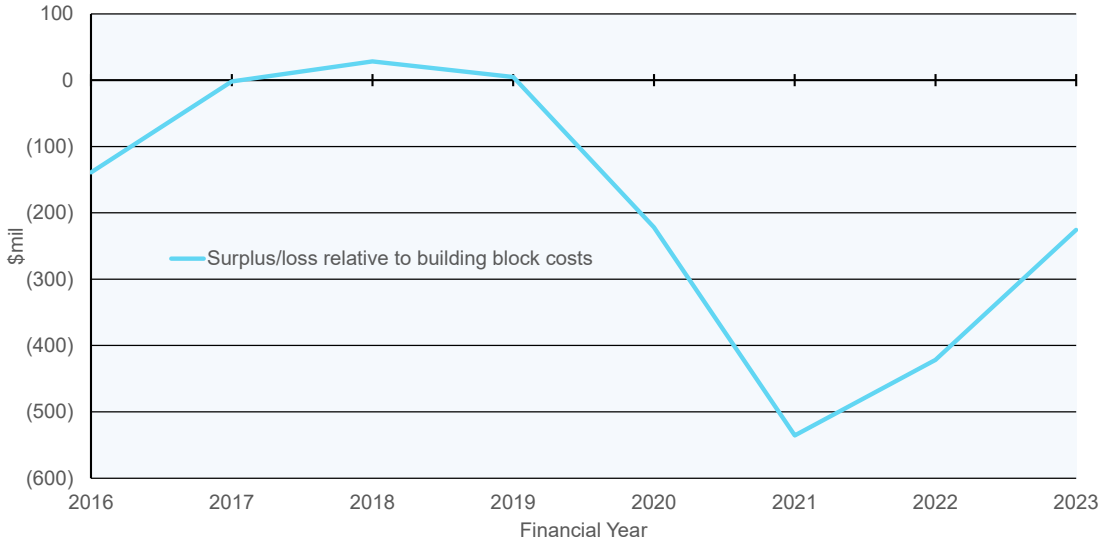
Despite declining real prices for our services (due to the lack of any nominal price increase since FY2016) and greater service delivery, these cost reductions lowered Airservices' building block costs modestly below actual revenues. As illustrated in **Figure 6** (above), actual revenues over FY2017 and FY2018 were 2.0% above building block costs over the same period. In recognition of this and anticipation of further modest cost savings Airservices unilaterally lowered prices (weighted average) by 2.0% in 2019 (FY2020).

Then, at the start of 2020, the impact of COVID-19 on traffic and revenues began to be felt. In FY2021, the first full COVID-19 affected financial year, traffic and revenue was down 63% and the expectation, which was borne out by actual events, was that any recovery in air traffic would be slow.

Figure 12 – Traffic Australian Airspace (7 day rolling average of daily flights)

As a result of Airservices' costs being largely (circa 90%) fixed in nature, especially in the short term, this traffic and revenue reduction resulted in significant losses for Airservices relative to building block costs.

Figure 13: Surplus/(loss) relative to building block costs ($2016)



Given these losses and very high levels of uncertainty surrounding the probability/extent of any immediate recovery in traffic levels, Airservices considered the need to seek a price increase to reflect the higher level of costs per unit of traffic.

However, Airservices rejected this course of action primarily because there was no realistic prospect that Airlines would be able to pay the higher prices given their already dire financial position (noting that Virgin had entered voluntary administration in April 2020). Consequently, Airservices had no option other than to bear the traffic risk associated with the pandemic.

In this context, Airservices undertook the following actions:

1) Restructured its business operating model and implemented both short term and long term savings measures reducing front line and back office staff, supplier costs and rationalising investment. This resulted in:
    a. One off costs of $92m ($34m and $58m in FY2021 and FY2022 respectively). These have not been included in building block operating expenses reported above;
    b. $148m lower real operating costs in FY2021 and FY2022 than compared to Fy2019 and FY2020.
    c. A 10% -15% reduction in aviation rescue & fire fighting and air traffic management staff by FY2022 compared to FY2020; and
2) Obtaining:
    a. an equity injection of $495m; and
    b. a $840m ($1,382m) in net (gross)[4] government assistance.

[4] The difference between net and gross values reflects the fact that, in part, the Government assistance was directly linked to compensation for Airservices waiving fees. In this Price Notification, we report "actual revenues" based on actual prices multiplied by actual volumes. In reality, Airlines paid less than this and, in recognition of this, the Government compensated Airservices for waiving some fees for airlines. That is, the "actual revenues" we report were, in part, paid by the Government. The total value of fee waivers was $181m. This brings the net value of Government assistance down to $1,201m before tax. However, because of the way in which this was paid (as a grant instead of as an equity injection) it was included in taxable income. This means that Airservices' tax losses were reduced by $360m (=30% of $1,201m) and, therefore, the value of tax payable back to the Government in the long run was increased by the same amount.

While the legal form of the funding provided by Government differed (equity injection versus grant), as a matter of economic essence, both were equity funding by Airservices' sole shareholder.[5]

Even if the net value of grants are treated as revenue (and not equity funding) this would only serve to reduce Airservices' COVID-19 losses from $1,391m to $643m.[6] Given that Airservices is not seeking to recover its COVID-19 losses from customers the classification of these grants as revenues or equity injection has no impact.

[5] In FY2021 Airservices employee and supplier expenses were $840m. Airservices revenue before Government grants was $350m. Airservices could not have continued to operate absent a funding injection. Airservices sole shareholder chose to provide this funding via a Government grant which was, in its economic essence, equivalent to an equity injection. In return for this funding, the sole shareholder kept Airservices operating while maintaining the right to the 100% of future profits. Had Airservices been in the position of benchmark efficient firm it would have had to seek the same funding injection from its shareholders or capital markets more generally. If the Government was not the sole shareholder then it would not have provided $840m in funding to (a privately owned) Airservices as evidenced by the fact that the Government did not provide such funding to airlines – including to Virgin when it entered into voluntary administration.

[6] Airservices total losses over the FY2020 to FY2023 period would fall from $1,391m to $551m. If one off expenses associated with the Retirement Incentive Scheme were included then total losses net of grant revenue would increase to $643m.

4. Airservices Price Increases are Minimum Necessary

The 2024 price notification (PN) must, of necessity, be expedited to fund the recovery

Absent any price increase, Airservices revenues will remain below building block costs for the foreseeable future and, barring unprecedented traffic growth, forever. **Table 5** below sets out the projected NPV of revenues net of building block costs over various periods both without, and with, Airservices' proposed price increases, and with the impact of OneSKY and new services (Western Sydney International Airport and new runways at Perth and Melbourne).

Table 5: NPV of cost recovery/(shortfall) from FY2024 until a future date (Financial Years)

Scenario ($mil)	2026	2027	2028	2029	2030
No price increase (current services)	(319)	(477)	(604)	(725)	(814)
Airservices proposed price increase *	(48)	(68)	(66)	(73)	(58)

*2027 – 2030 includes the impact of OneSKY, WSIA and new runways

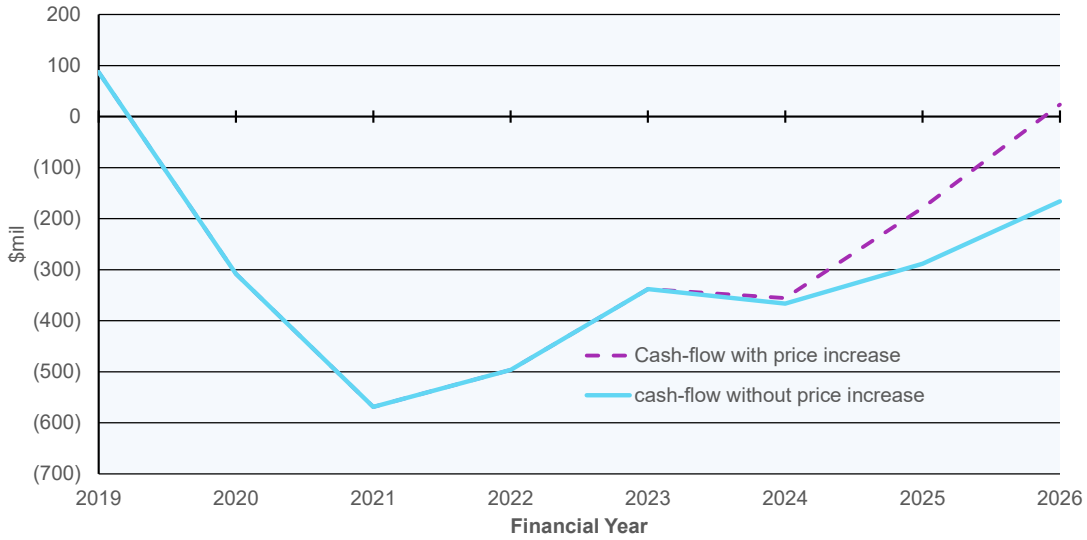
Even with Airservices' proposed price increases total revenues are expected to fall short of full cost recovery over the pricing period. In this sense, Airservices views this Price Notification (the 2024 PN) process as the first step towards limiting losses and recalibrating prices to better reflect the impact on unit costs of the shift in activity levels post COVID-19.

The 2024 PN is, of necessity, on an expedited timeline that is driven by the very large COVID-19 induced losses Airservices is experiencing and the need for Airservices to fund the additional resources required to manage the recovery of traffic volumes.

Returning to long-term performance expectations in the post-pandemic environment requires greater resourcing and resilience as almost all businesses in the aviation industry are now experiencing. To address this and improve the consistency of service performance Airservices is actively recruiting and strengthening rostering and training systems and refining service delivery processes to match the supply of its services with recovering demand.

However, Airservices needs sufficient cash-flow in order to be able to fund these service delivery programs. As shown in **Figure 14** below, without a price increase, Airservices' cash-flow, even before interest and debt funding impacts, is projected to be negative out to 2030. Even with Airservices' proposed price increases cash-flows after interest costs are projected to be negative in FY2024 and FY2025 and, effectively, zero in FY2026.

Figure 14: Airservices' cash flow after interest costs out to 2026



Airservices projected negative cash-flows with the proposed price increase are $511m over FY2024 to FY2026. Airservices actual gearing levels have risen from 28% in 2019 to 60% in FY2022 dropping back to 46% in FY2023 as a result of the $495m equity injection. However, with further projected negative cash-flows gearing levels are forecast to be 63% by FY2026[7].

This represents a very high level of gearing for a privately owned, benchmark efficient firm, which is exposed to the sales volume risk that Airservices is exposed to. It is much higher than privately owned airports and airlines which are exposed to similar risks. For example, CEPA, in a report for the New Zealand Commerce Commission, estimated that the average gearing for listed airports globally over 2017 to 2022 was just 12.5%.[8]

Absent the price increases the entirety of the additional cash-flow shortfall (of $310m) would have to be funded by additional debt and/or new equity injection by Airservices' shareholder. This would amount to a 20% increase in net debt (from a projected level of $1.4b in FY2026 to $1.7b) and an increase in gearing to 75%. This level of leverage for a firm exposed to Airservices revenue risk would likely not be financeable for a privately owned benchmark efficient entity.

In short, Airservices has absorbed significant losses from FY2022 to FY2023. These losses have only been able to be absorbed by virtue of both:

- a dramatic increase in funding from its shareholder; and
- a dramatic increase in the level of debt and gearing.

As it stands, in FY2023 Airservices' debt levels are well in excess of those that a privately owned benchmark efficient firm, exposed to the same revenue risks, would be able to sustain (at least not at an investment grade credit rating). Even with Airservices' price increase these debt levels are projected to rise to 63% in FY2026. This compares to a comparator set of benchmark companies average gearing of 21% (see Incenta consulting report at **Appendix 5** for more information on cost of capital estimations).

7 Airservices 2023-24 Corporate Plan

8 CEPA, Review of Cost of Capital 2022/2023 New Zealand Commerce Commission 29 November 2022 p. 17

An important reason that Airservices' has been able to sustain an investment grade credit rating in these circumstances is the implicit backing of its shareholder, the Commonwealth Government of Australia. However, relying on this source of support would amount to pricing in an ongoing implicit subsidy from taxpayers to the airline industry.

The focus of the 2024 PN process is to stem Airservices' losses, stabilise Airservices' balance sheet, and allow it to focus on adequately funding Airservices' capacity to cater to the recovery in airline traffic post COVID-19.

Following the 2024 Price Notification

To provide price certainty to customers and move away from annual price setting arrangements Airservices' practice has been to establish long term pricing arrangements over five-year periods. Given the uncertainty in the business environment and the need to consult more extensively on longer term pricing issues Airservices has proposed a shorter duration for this agreement.

Once this price notification process is complete, Airservices will begin consultation on another Price Notification process to be implemented as this agreement expires. This future price notification will be needed to deal with the pricing impact of OneSKY and pricing structure issues created by the operation of new services at Western Sydney International Airport and expanded services at Perth and Melbourne airports with the operation of their new runways.

The above cost recovery forecasts implicitly assume that Airservices will recover revenues for tonnes landed at WSIA at the same price as Sydney airport. However, Airservices currently has no prices set for WSIA for any of its services. Moreover, there are a number of issues that will need to be consulted on before deciding what level of prices is appropriate at WSIA and the relativity of those prices to Sydney and other airports.

Similarly, new runways at Perth and Melbourne airports will materially increase complexity of the airspace at those airports and increase costs per movement for Airservices. It is likely that this will require an increase in Terminal Navigation and ARFF prices at those airports relative to other airports.

The issues involved are complex and cannot be properly consulted on in the short timeline necessitated by setting prices for 2024 in the current PN. Moreover, depending on how traffic levels evolve there may need to be some recalibration of cost recovery levels between Airservices three services.

International experience

The losses that Airservices absorbed during COVID-19 are reflected in low levels of pricing compared to international comparators.

Figure 15 below compares the total charge for 2016 and 2021 and Airservices proposed 2024 charge (both Terminal Navigation and Enroute charges) levied by ANSPs for an A320 aircraft travelling 1,000kms. Here Airservices charges rank 3rd for both 2021 and, proposed, for 2024.[9] Airservices has a lower price than in 2016 while eight out of the other 12 ANSP's have a higher price. Even with the proposed price increase of 18% by 2026 Airservices price would remain in 3rd place – assuming other ANSPs kept their pricing constant over the relevant five year period.

Figure 15: Price (USD) per 1,000km flight for A320 by ANSP – 2016, 2021, 2024 Proposed

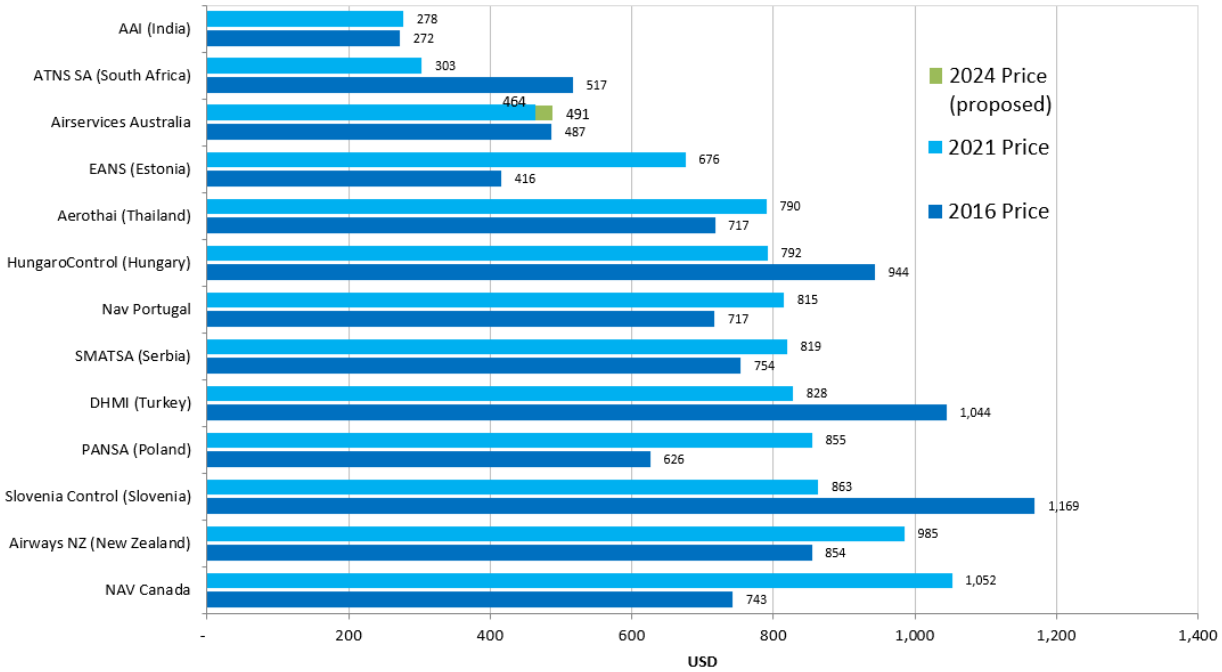
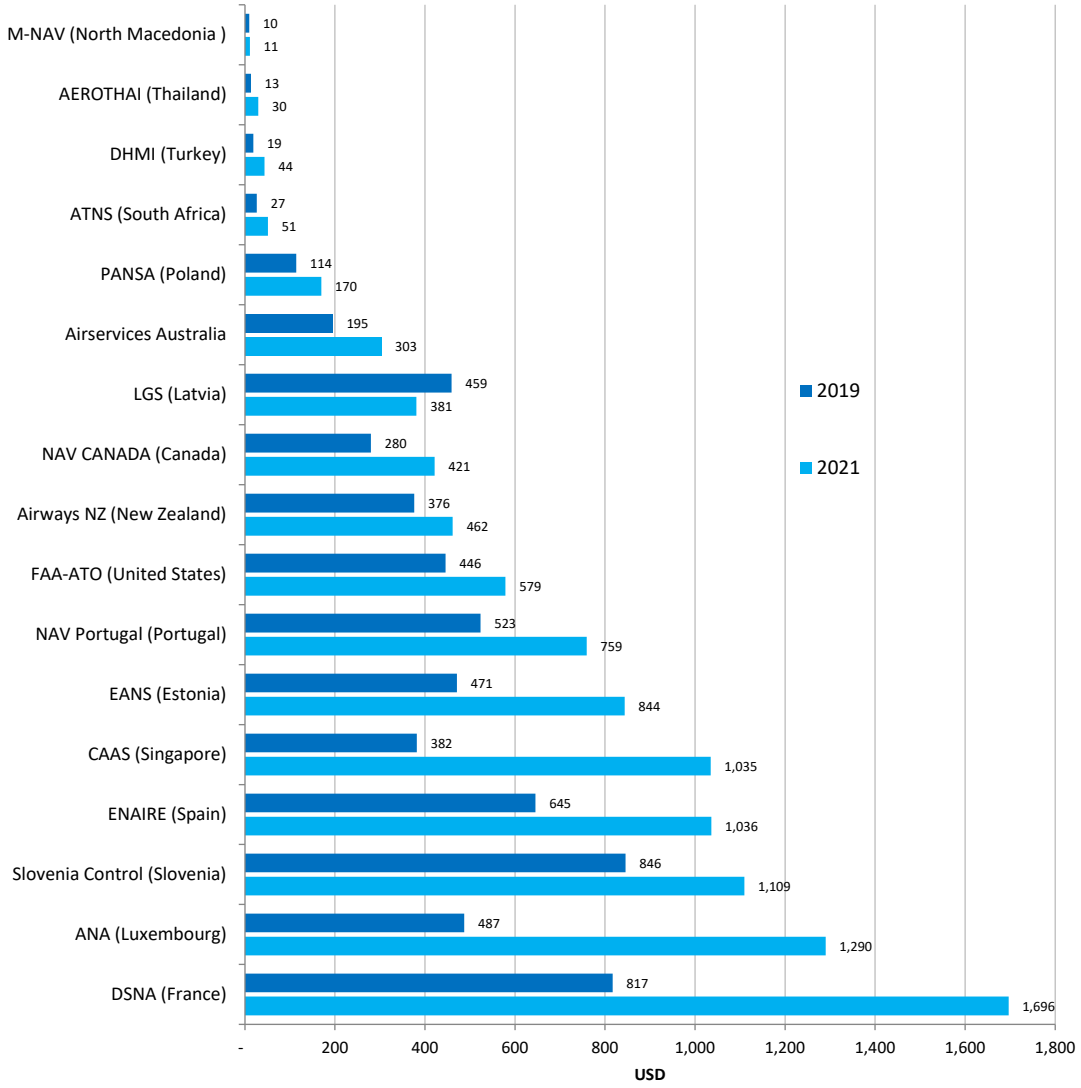


Figure 16 below shows that Airservices Australia has among the lowest financial costs per IFR flight hour.[10] Noting that Airservices IFR flight hour traffic was still heavily impacted by the pandemic in 2021. Even with the proposed 18% price increase by FY2026 Airservices' charges per IFR flight hour would remain low compared to its international comparators (assuming the same flight hour intensity and no price changes at comparator ANSPs).

[9] CANSO – Global Air Navigation Services Performance Report 2021
[10] Instrument Flight Rule (IFR) hours are a measure of the number of hours aircraft are operating under air traffic management control

Figure 16: Price (USD) Cost per IFR flight hour by ANSP – 2019 v 2021



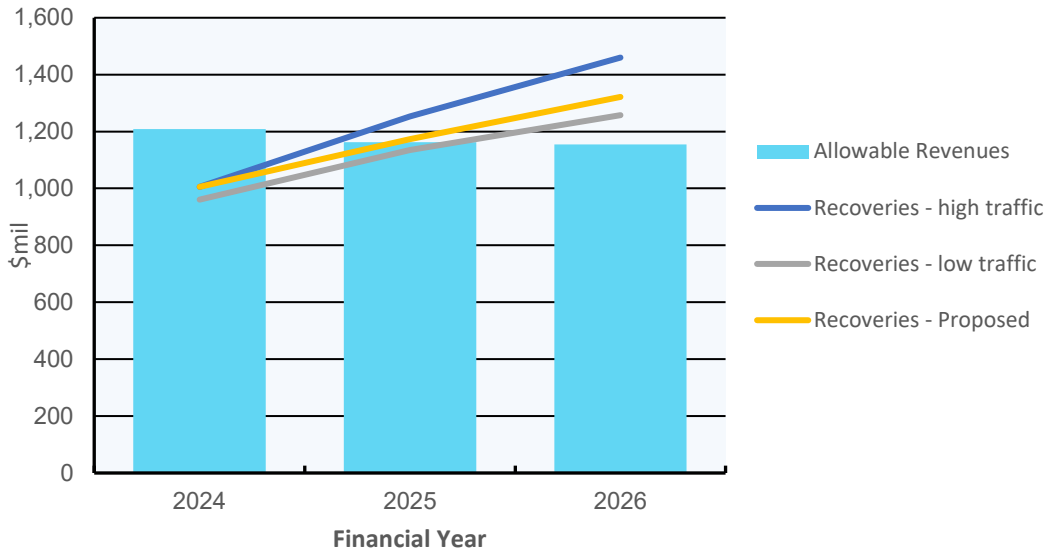
Sensitivity analysis

Traffic assumptions

We note that there are still strong downside risks in the economy. With Airservices airways revenues and activity volumes 4% below forecast in FY2023 and economic forecasters pointing to strong downside risk in the economy[11], Airservices has adopted a mid-point traffic growth outlook in its price modelling (**Appendix 6** provides further information on the traffic growth forecasts for Australian Aviation Traffic).

To understand the sensitivities in adopting this traffic outlook, **Figure 17** below plots, maximum allowable revenue estimates against revenue recovery outcomes on proposed pricing increases across a high-low range of traffic forecast scenarios.

Figure 17: Revenue recoveries traffic sensitivity



As shown in the **Table 7** below this suggests a -6% to +4% sensitivity (on a present value basis), on proposed prices across potential traffic and revenue outcomes compared to our forecast. With Airservices not proposing any risk sharing, given the importance of providing industry with price certainty through its ongoing recovery, Airservices believes its application of the proposed traffic forecast, with potential impact of volume variations, is appropriate.

Table 7: Surplus/(shortfall) traffic sensitivity (financial years)

$mil	2024	2025	2026	NPV	% of Cum MAR
High traffic	(202)	92	307	**142**	**4%**
Low traffic	(247)	(27)	103	**(186)**	**-6%**
Proposed	(202)	12	170	**(48)**	**-1%**

Capital Investment

To balance the need to continue to invest in critical airways infrastructure against potential liquidity risks during COVID-19 Airservices rationalised and re-prioritised its investment program through FY2021 and FY2022. This result of this was to prioritise

[11] IMF Global Outlook, Apr 2023, OECD Economic Outlook, Interim Report March 2023

OneSKY investment as well as Enterprise Network Modernisation Program critical remediation activities and planning and design work.

With industry now recovering Airservices has re-calibrated its investment program, which will see an increase in investment levels over the next three years. This is primarily to continue to deliver OneSKY and invest in new Western Sydney International Airport infrastructure, but also to undertake sustainment works and benefits enabling works relating to our Operational Technology and Cyber and Support Services programs.

Tables 8 and **9** below show the return of and on capital incorporated in building block Maximum Allowable Revenue calculations relating to existing assets and Airservices forward investment program.

Table 8: Depreciation (return of capital) analysis (financial years)

Depreciation (return of capital) ($mil)	2024	2025	2026
Existing Assets	90.4	80.1	70.4
New Investment (2024 - 2026)*	1.3	10.2	19.3
TOTAL	**91.7**	**90.3**	**89.6**

Table 9: Cost of Capital (return on capital) analysis (financial years)

Return on Capital ($mil)	2024	2025	2026
Existing Assets	65.6	56.6	48.7
New Investment (2024 - 2026)*	7.7	23.0	36.7
TOTAL	**73.3**	**79.6**	**85.4**

* Note: New Investment (2024 – 2026) excludes spending relating to OneSKY, Western Sydney International Airport, New Runways (Perth and Melbourne) and Uncrewed Services

This analysis shows that over FY2024 to FY2026 (with the higher levels of investment relating to OneSKY and WSIA excluded from this price notification) our forward investment program does not materially contribute to increasing overall building block depreciation, and cost of capital levels in this price notification. Note other investments relating to new runways (Perth and Melbourne) and Uncrewed Services have also been excluded from building block calculations and will be the subject of future price notifications.

5. Consultation on the Draft Pricing Proposal

Consultation Program

To inform the development of this Draft Notification Airservices consulted with industry on a FY2024-FY2026 Draft Pricing Proposal. The proposal was shared to provide information and gather feedback from industry on proposed prices, traffic forecasts, cost of capital, investment and building block model revenue calculations.

Consultation was conducted over three months, through multi and bi-lateral industry meetings, involving the following customers, industry associations, and stakeholders:

Air New Zealand
Airlines for Australia and New Zealand
Australian Airports Association
Australian Business Aviation Association
Australian Parachute Association
Board of Airlines Representatives of Australia
Brisbane Airport
Cathay Pacific
International Air Transport Association
Melbourne Airport
Qantas Airways
Qatar Airways
Recreational Aviation Australia
Regional Aviation Association of Australia
Rex Airlines
Royal Federation of Aero Clubs
Royal Flying Doctor Service
Singapore Airlines
Sydney Airport
Virgin Australia

Summary of changes to the proposal following consultation

Through this engagement Airservices received feedback, some formally and some informally, covering a number of issues. Based on this feedback Airservices has made a number of revisions to the information in this Draft Notification including:

- Price path: the timing and level of the price path has been updated to introduce charges over a longer time frame.
- Airways activity: airways activity growth forecasts have been revised to reflect feedback on a stronger traffic outlook for domestic services
- Expenditure and Investment: expenditure and investment forecasts have been updated to prioritise key services delivery programs. Overall the spend amounts for FY2024 – FY2026 remain unchanged.
- OneSKY timing and pricing impacts: the timing and pricing impacts for OneSKY have been updated to align with later projected commissioning
- Weighted Average Costs of Capital: Weighted Average Cost of Capital (WACC) estimates have been updated based on an external economic consultancy review provided by Incenta Consulting.

6. Draft Notification

The following **Tables** set out Airservices proposed price increases for the next three financial years. Airservices notes that the 2023/24 price increase will only be implemented part way through the financial year and there will be no attempt to retrospectively recover the higher prices on services provided prior to the price increase being approved.

Table 10 – Enroute Services charging rates

Current	Service Price (inc GST)	Apr 24	Sep 24	Jul 25	Jan 26
Enroute:					
$3.87	20 tonnes or more	$4.04	$4.23	$4.31	$4.35
$0.86	Up to 20 tonnes	$0.90	$0.94	$0.96	$0.97

Charging formula for Enroute services:

For IFR aircraft with an MTOW of 20 tonnes or more: $price \times \frac{distance}{100} \times \sqrt{MTOW}$

For IFR aircraft with an MTOW up to 20 tonnes: $price \times \frac{distance}{100} \times MTOW$

Table 11 – Terminal Navigation charging rates

Current	Service Price (inc GST)	Apr 24	Sep 24	Jul 25	Jan 26
Terminal Navigation:					
$11.89	Adelaide	$12.78	$13.74	$14.56	$15.51
$15.22	Albury	$16.36	$17.59	$18.64	$19.86
$15.22	Alice Springs	$16.36	$17.59	$18.64	$19.86
$15.22	Archerfield	$16.36	$17.59	$18.64	$19.86
$5.39	Avalon	$5.79	$6.23	$6.60	$7.03
$15.22	Bankstown	$16.36	$17.59	$18.64	$19.86
$6.18	Brisbane	$6.64	$7.14	$7.57	$8.06
$15.22	Broome	$16.36	$17.59	$18.64	$19.86
$12.20	Cairns	$13.12	$14.10	$14.94	$15.92
$15.22	Camden	$16.36	$17.59	$18.64	$19.86
$11.68	Canberra	$12.56	$13.50	$14.31	$15.24
$15.22	Coffs Harbour	$16.36	$17.59	$18.64	$19.86
$1.75	Darwin	$1.86	$1.97	$1.97	$1.97
$15.22	Essendon	$16.36	$17.59	$18.64	$19.86
$8.50	Gold Coast	$9.14	$9.82	$10.41	$11.09
$11.03	Hamilton Island	$10.37	$9.75	$9.16	$8.61
$9.68	Hobart	$9.10	$8.55	$8.55	$8.55
$15.22	Jandakot	$16.36	$17.59	$18.64	$19.86
$14.71	Karratha	$14.71	$14.71	$14.71	$14.71
$14.65	Launceston	$13.77	$12.94	$12.17	$11.44
$11.95	Mackay	$12.85	$13.81	$14.64	$15.59
$5.52	Melbourne	$5.85	$6.20	$6.39	$6.45
$15.22	Moorabbin	$16.36	$17.59	$18.64	$19.86
$15.22	Parafield	$16.36	$17.59	$18.64	$19.86
$7.56	Perth	$8.13	$8.74	$9.26	$9.86
$0.00	Port Hedland	$6.85	$7.36	$7.81	$8.31
$13.47	Rockhampton	$14.48	$15.57	$16.50	$17.57
$14.21	Sunshine Coast	$13.36	$12.56	$11.80	$11.09
$5.62	Sydney	$6.04	$6.49	$6.88	$7.33
$15.22	Tamworth	$16.36	$17.59	$18.64	$19.86
$2.27	Townsville	$2.41	$2.53	$2.53	$2.53

Charging formula for Terminal Navigation services:

For all aircraft: $price_{Location} \times MTOW$

Terminal Navigation Call-out charges are set out on page **Page 32**

Table 12: Aviation Rescue & Fire Fighting (ARFF) Services charging rates

Current	Service Price (inc GST)	Apr 24	Sep 24	Jul 25	Jan 26
Aviation Rescue & Fire Fighting:					
Category 6 Aircraft and below					
$2.32	All locations	$2.46	$2.63	$2.76	$2.90
Category 7 Aircraft					
$3.26	Adelaide	$3.46	$3.70	$3.88	$4.08
$2.57	Brisbane	$2.72	$2.91	$3.06	$3.21
$3.69	Cairns	$3.91	$4.19	$4.39	$4.61
$9.08	Canberra	$7.72	$6.95	$6.25	$5.63
$5.46	Darwin	$5.79	$6.19	$6.50	$6.83
$3.79	Gold Coast	$4.02	$4.30	$4.51	$4.74
n/a	Hamilton Island	$13.64	$14.59	$15.32	$16.09
$10.00	Hobart	$8.50	$7.99	$7.51	$7.29
n/a	Launceston	$13.64	$14.59	$15.32	$16.09
n/a	Mackay	$13.64	$14.59	$15.32	$16.09
$2.52	Melbourne	$2.67	$2.86	$3.00	$3.15
$2.81	Perth	$2.98	$3.19	$3.35	$3.51
n/a	Sunshine Coast	$7.48	$7.48	$7.85	$8.25
$2.48	Sydney	$2.63	$2.81	$2.95	$3.10
$13.64	Townsville	$13.64	$13.64	$13.91	$14.61
Category 8 Aircraft					
$5.27	Adelaide	$5.59	$5.98	$6.28	$6.59
$3.41	Brisbane	$3.61	$3.87	$4.06	$4.26
$7.67	Cairns	$8.13	$8.70	$9.13	$9.59
n/a	Canberra	$23.06	$24.67	$25.90	$27.20
$21.75	Darwin	$23.06	$24.67	$25.90	$27.20
$6.46	Gold Coast	$6.85	$7.33	$7.69	$8.08
$3.01	Melbourne	$3.19	$3.41	$3.58	$3.76
$4.85	Perth	$5.14	$5.14	$5.14	$5.14
$2.64	Sydney	$2.80	$2.99	$3.14	$3.30
Category 9 and 10 Aircraft					
n/a	Adelaide	$8.87	$9.49	$9.97	$10.47
$6.09	Brisbane	$6.46	$6.91	$7.25	$7.62
$4.99	Melbourne	$5.09	$5.09	$5.09	$5.09
$8.37	Perth	$8.87	$9.05	$9.05	$9.05
$3.67	Sydney	$3.89	$4.16	$4.37	$4.59

Charging formula for Aviation Rescue & Fire Fighting services:

For all aircraft >15.1 tonnes and target aircraft between 5.7 and 15.1 tonnes

$$price_{Category\ Location} \times MTOW$$

Aviation Rescue & Fire Fighting Call-out charges are set out on **Page 32.**

Out of Hours Charges (unscheduled)

For terminal navigation and ARFF services out-of-hours charges will apply where services are required before services commence or after services close, based on operational service times contained in ERSA or NOTAMs.

Out-of-hours charges are calculated to cover the cost of holding back or recalling staff on overtime and are applied in addition to the normal terminal navigation and ARFF charges levied during normal hours of operations.

The **Tables** below provide details of out-of-hours charging rates applicable to each financial year up to 2026-27.

Table 13: Terminal Navigation out of hours charging rates

Before or After Normal Hours	Charges		
(inc GST)	2023-24	2024-25	2025-26
Up to 15 minutes	n/a	n/a	n/a
Over 15 up to 60 minutes	$244	$254	$261
Each additional hour or part hour	$244	$254	$261

Table 14: Terminal Navigation recall of service charging rates[1]

Per call out	Recall of Staff (flat rate)		
(inc GST)	2023-24	2024-25	2025-26
	$732	$761	$784

1. Recall of service charges apply only where the timing of the out of hours service requires staff to be called in from home to work.

Table 15: ARFF out of hours charging rates recall of service (greater than 15 minutes)

Aircraft Category	Charges		
(inc GST)	2023-24	2024-25	2025-26
6 (and below) [2]	$117	$122	$126
7	$143	$149	$153
8 (and above) [3]	$188	$195	$201

1. If more than 15 minutes, charges apply every 15 minutes thereafter, or part thereof
2.Out of Hours services provided to aircraft operations less than Category 6 will be charged at the Category 6 rate
3.Out of Hours services provided to aircraft operations greater than Category 8 will be charged at the Category 8 rate.

Table 16: ARFF recall of service charging rates[1]

Aircraft Category	Recall of Staff (flat rate)		
(inc GST)	2023-24	2024-25	2025-26
6 (and below)	$1,407	$1,463	$1,507
7	$1,719	$1,788	$1,841
8 (and above)	$2,254	$2,345	$2,415

1. Recall of service charges apply only where the timing of the out of hours service requires staff to be called in from home to work.

Interim Prices for ARFF Services Upgrades

Proposed prices for ARFF services take into account the current aerodrome category service level provided, ranging from category 6 through to category 9/10.

Over the course of this agreement, where location services are required to increase above these levels to meet regulatory service obligations the following service prices shall apply to higher aircraft category operations that necessitated the increase in aerodrome service category.

Table 17: Interim prices for ARFF services upgrades

Service Price (inc GST)	Apr 24	Sep 24	Jul 25	Jan 26
Category 7 Service	$13.64	$14.59	$15.32	$16.09
Category 8 Service and above	$23.06	$24.67	$25.90	$27.20

These charges shall apply on an interim basis at the effected aerodrome, until such time a new pricing agreement is established which fully considers the ongoing cost and traffic impact of these higher aircraft category operations.

7. Services Performance

In accordance with previous pricing arrangements this pricing agreement will be underpinned by Airservices' services performance commitment. This commitment will continue to focus on the safety, reliability, and efficiency of our services.

Among its' peers Airservices has consistently been regarded a world leader in safety and services provision. However, with the challenges of managing the impact of COVID-19 Airservices level of reliability has not been consistently delivered to the desired service standard.

This is a priority focus for our business and dedicated programs have been established to respond and improve customer outcomes. As part of this we are increasing our intake levels of front line staff, (noting the time taken to recruit and train operational staff) as well as the expedited recruitment of experienced staff alongside additional resourcing to increase training capacity.

To specifically measure performance outcomes in this area, and underpinning this pricing agreement, the below key performance indicators have been established, and are reflected in our 2023-24 Corporate Plan.

Table 18: Key performance indicators and target commitments

Performance Outcomes	Key Performance Indicator	Baseline	Targets FY2024 – FY2028
Zero Significant Attributable Safety Occurrences	Significant Attributable Safety Occurrences:	0	No significant attributable safety occurrences
100% Planned Aerodrome Capacity Delivered	Planned Capacity Delivered as a Percentage of Time: – Sydney – Melbourne – Perth – Brisbane – Total	 78% 79% 82% 93% 82%	Meet planned capacity greater than 85% of time as traffic grows
	Airservices Attributable Cancellations: – Sydney – Melbourne – Perth – Brisbane – Total	 17 0 1 6 24	Monthly average, year-on-year improvement trending towards zero
	Airservices Attributable Ground Delay (Hours): – Sydney – Melbourne – Perth – Brisbane – Total	 70 0 1 38 109	Monthly average, year-on-year improvement trending towards zero

To ensure transparency in our progress toward delivering these performance outcomes we will continue to share performance information on our website[12], supported through ongoing operational and commercial meetings with customers. Moreover, Airservices will continue to work across industry through such things as Aviation Network Performance Roundtable and monthly Aviation Network Overview reporting processes to foster a more informed conversation about how we tackle this common industry challenges.

[12] (Newsroom - Airservices (airservicesaustralia.com), Air Traffic Management (ATM) Network Performance Dashboard

8. Impact of Price Changes

Table 19: Aircraft and route impact of proposed price changes

	Current Charge				Proposed 2024 Charge				Passenger Impact		
Aircraft type/return flight	Enroute	Terminal Navigation	ARFF	Total	Enroute	Terminal Navigation	ARFF	Total	PAX impact from change in charge	Ave PAX fare	% Impact on Ticket Price
AIRBUS A380											
SINGAPORE - SYDNEY	$7,122	$2,810	$1,835	**$11,767**	$7,442	$3,021	$1,945	**$12,408**	$1.90	$1,768	0.1%
DUBAI - MELBOURNE	$13,370	$2,760	$2,495	**$18,625**	$13,971	$2,926	$2,545	**$19,442**	$2.42	$3,796	0.1%
LOS ANGELES - SYDNEY	$2,241	$2,810	$1,835	**$6,886**	$2,342	$3,021	$1,945	**$7,308**	$1.25	$3,596	0.0%
BOEING 787-900											
SINGAPORE - SYDNEY	$5,063	$1,420	$927	**$7,411**	$5,291	$1,527	$983	**$7,801**	$1.65	$1,768	0.1%
LONDON - PERTH	$5,457	$1,910	$2,115	**$9,482**	$5,702	$2,054	$2,242	**$9,998**	$2.19	$3,897	0.1%
BOEING 737-800											
MELBOURNE - BRISBANE	$868	$481	$200	**$1,549**	$908	$517	$212	**$1,636**	$0.74	$471	0.2%
BRISBANE - MELBOURNE	$868	$430	$196	**$1,494**	$908	$455	$208	**$1,571**	$0.65	$471	0.1%
SYDNEY - GOLD COAST	$389	$661	$295	**$1,345**	$407	$711	$313	**$1,430**	$0.72	$398	0.2%
GOLD COAST - SYDNEY	$389	$437	$193	**$1,019**	$407	$470	$205	**$1,081**	$0.53	$398	0.1%
AIRBUS A320											
SYDNEY - GOLD COAST	$378	$625	$171	**$1,174**	$395	$672	$181	**$1,248**	$0.57	$398	0.1%
BRISBANE - CAIRNS	$850	$897	$171	**$1,917**	$888	$964	$181	**$2,033**	$0.89	$420	0.2%
BALI - MELBOURNE	$2,336	$406	$171	**$2,912**	$2,441	$430	$181	**$3,052**	$1.07	$1,329	0.1%
CAIRNS - BRISBANE	$850	$454	$171	**$1,475**	$888	$488	$181	**$1,557**	$0.63	$420	0.2%
SAAB 340											
CANBERRA - SYDNEY	$29	$74	$31	**$133**	$30	$79	$32	**$142**	$0.33	$401	0.1%
MELBOURNE - ALBURY	$34	$200	$0	**$234**	$36	$215	$0	**$251**	$0.63	$427	0.1%
SYDNEY - COFFS HARBOUR	$75	$200	$31	**$306**	$79	$215	$32	**$327**	$0.78	$384	0.2%
SYDNEY - HOBART	$210	$127	$31	**$368**	$221	$120	$32	**$373**	$0.19	$418	0.0%
CESNA 172											
PARAFIELD (5 Curcuits with Full Stop)	$0	$17	$0	**$17**	$0	$19	$0	**$19**	n/a	n/a	n/a
BANKSTOWN - COFFS HARBOUR	$3	$17	$0	**$21**	$4	$19	$3	**$25**	n/a	n/a	n/a

Note:

- Fare prices were sourced 3/8/2023 and based on return flights return airfare departing early October 2023
- CESNA 172 charges are not calculated based on a return flight

APPENDICIES

Appendix 1: Overview

1.1 Current Price Structures

Airservices' current pricing structure incorporates elements of network and location specific charges to reduce the risk of distorting efficient investment signals. The current pricing structures have been through extensive consultation in the past, including with the ACCC in the FY2012-FY2016 LTPA. The rationale for Airservices current pricing structure remains unchanged. Airservices is satisfied that the same logic holds up over the over the proposed period of this pricing agreement.

That said, Airservices acknowledges the need to continue to review its pricing structures to ensure they continue to deliver a balanced economic outcome over time.

Airservices last completed a rigorous examination of the current price structure in the FY2012-FY2016 LTPA process and the need, explained in **Section 4**, for the current LTPA to be an expeditated process, Airservices does not propose to consult on changing the current price structures in this LTPA. Airservices also notes that the airline industry is still in a recovery phase post COVID-19 and there is uncertainty about the overall rate of traffic growth as well as the distribution across airports. Where these dynamics exist and the industry is in a state of flux there is risk of potential unwanted pricing shocks, or winners or losers, that may arise when moving away from status quo price structure. However, given the introduction of OneSKY, WSIA and new runways at Melbourne and Perth, Airservices will require the overall price structure to be reviewed to accommodate these new services. Airservices intends to consult on these matters when establishing the following LTPA.

Price Setting Challenge

Airservices Australia is subject to prices surveillance under s.95X of the Competition and Consumer Act 2010. Under this Act, the ACCC must determine whether or not it objects to any proposal to increase the price of a declared service. In undertaking its assessment, the ACCC must have regard to a number of statutory criteria set out in subs.95G(7). As discussed in the ACCC's Statement of regulatory approach to assessing price notifications (March 2017)[13], the ACCC considers that the statutory criteria will generally be met by economically efficient prices that reflect an efficient cost base and a reasonable rate of return on capital.

Economic efficiency is commonly disaggregated into three components:

- Productive efficiency. This is achieved when firms, including Airservices, produce a given output at least cost. This requires that Airservices maintains an efficient overall cost base which is generally calculated on the basis of a 'building block' approach which takes into account the efficient cost components or 'building blocks' that are required to supply a service.

- Allocative efficiency. This is achieved when the outputs are optimally tailored to the satisfaction of consumer and social welfare. That is, when resources are allocated to the goods and services that provide the greatest value.

[13] ACCC, Statement of regulatory approach to assessing price notifications under Part VIIA of the Competition and Consumer Act 2010, 2017

- Dynamic efficiency. This can be thought of as “allocative efficiency over time”. This requires that firms invest in innovation and improvement in the quality adjusted cost of their outputs.

When it comes to price setting, there can be a trade-off between cost recovery (including of fixed costs) and promoting allocative efficiency (which, ideally, involves setting prices based on the marginal or incremental cost of providing additional outputs.

For Airservices the price-setting challenge has been to set economically efficient prices that enable the cost of air navigation and ARFF services to be recovered, while minimising undesirable distortions to airline/airport usage. The ACCC has acknowledged Airservices needs to achieve cost recovery while minimising the attendant distortion to allocative efficiency.

Using these parameters, and considering discussions with customers and stakeholders, Airservices applies the following criteria in determining prices:

- prices should encourage economically efficient resource allocation and, as such, should have a strong relationship to the cost and investment decisions in providing services
- prices should be equitable; and
- prices should be simple and transparent and facilitate planning by end users

Current Pricing Structures

Airservices current charging structures reflect the evolution of pricing mechanisms that have been shaped through extensive industry consultation, feedback and ACCC review over a number of years. Previously released Airservices discussion papers, review papers, and pricing notifications have prompted discussion and debate on how to balance the impact of a range of potential pricing outcomes that could be applied within a heavily regulated aviation safety focused environment.

Typically, points of contention relate to whether Terminal Navigation and ARFF costs should be recovered on a network basis, or whether location (airport) specific pricing arrangements should be adopted. There are proponents at both extremes and Airservices challenge is to balance the various competing priorities and subsequent industry impacts over time.

To limit price increases to affordable levels Airservices also employs longer term transitional price paths that seek to fully recover costs for that service line or location over a reasonable period of time. In our previous pricing agreement transitional pricing caps were implemented at price sensitive locations and services.

Aircraft weight is used to calculate Airservices charges for Terminal Navigation and ARFF services. Weight and distance flown is used to calculate charges for Enroute services. These are both internationally accepted conventions in the calculation of charges for the provision of aviation services, noting weight may be applied less than in direct proportion.[14]

To move away from using a pure weight-based charge, and to simplify the administration of charging, Airservices applies a C*hargeable Weight* for each aircraft

[14] ICAO, Policies on Charges for Airports and Air Navigation Services (Doc 9082)

type/series up to a maximum of 500 tonnes. These weights are broadly based on average aircraft maximum take-off weights (MTOW), for the aircraft type/series.

Airservices also applies a *Chargeable Distance*, based on estimates of average actual distances flown over time for city pairs to simplify charging arrangements.

Table 20, below, provides a summary of the structure and basis of services charges for Enroute, Terminal Navigation and Aviation Rescue and Fire Fighting services.

Table 20: Services basis of charges

Service	Basis of Charge
Enroute Services	– Levied on IFR flights only – Based on weight (Chargeable Weight*) and distance flown (Chargeable Distance) – Weight capping for large aircraft (500t)
Terminal navigation Services	– Levied on IFR and VFR full stop landings and practice instrument approaches – Based on weight (Chargeable Weight*) – Capital city basin pricing – Weight capping for large aircraft (500t) – Includes charging for Aerodrome Flight Information Services (AFIS)
Aviation Rescue Fire Fighting Services	– Applies to aircraft with MTOW >15.1t, or "target" aircraft with MTOW between 5.7t and 15.1t – Levied on full stop landings and practice instrument approaches – Based on weight (Chargeable Weight*) and aircraft ARFF category – Nationwide price for Category 6 aircraft, location specific price for larger aircraft where a higher Category of service is provided – Weight capping for large aircraft (500t) – Call-out charge for non-aviation false alarms
General Aviation	– As per above, with optional fixed annual charge through general aviation option (GAO) – Free access for low volume general aviation users (less than $500 in previous year)

* Note:
- Chargeable Weight are broadly based on average aircraft maximum take-off weights (MTOW)
- Chargeable Distance is based on estimates of average actual distances flown for city pairs

Enroute Charges

Enroute charges are network based and applied to Information Flight Rules (IFR) operations.

Terminal Navigation Charges

Terminal Navigation Charges are location specific. Charges are levied on full-stop landings. Charges for a session of 'touch-and-go' training circuits are only levied on the single full stop landing.

They also incorporate capital city basin subsidies between large international airports and their secondary Metro D airports to recognise the joint services relationship. This also acknowledges the fact that the safe and efficient management of traffic at secondary airports located near major airports improves the safety and efficiency of the management of traffic at major airports. **Table 21** provides information on the capital city and basin ports where subsidies are provided.

Table 21: Pricing basins incorporated in the Terminal Navigation pricing framework

Capital city airport/basin	Sydney	Brisbane	Melbourne	Adelaide	Perth
Closely located general aviation airport	Bankstown Camden	Archerfield	Essendon Moorabbin	Parafield	Jandakot

Aviation Rescue and Fire Fighting Charges (ARFF)

ARFF charges are applied to commercial passenger aircraft operations weighing between 5.7 and 15.1 tonnes and all aircraft over 15.1 tonnes. ARFF charges take into account both the aerodrome and aircraft category of the service. To address concerns regarding the impact of location-specific charges for ARFF services at regional locations, ARFF charges comprise two components:

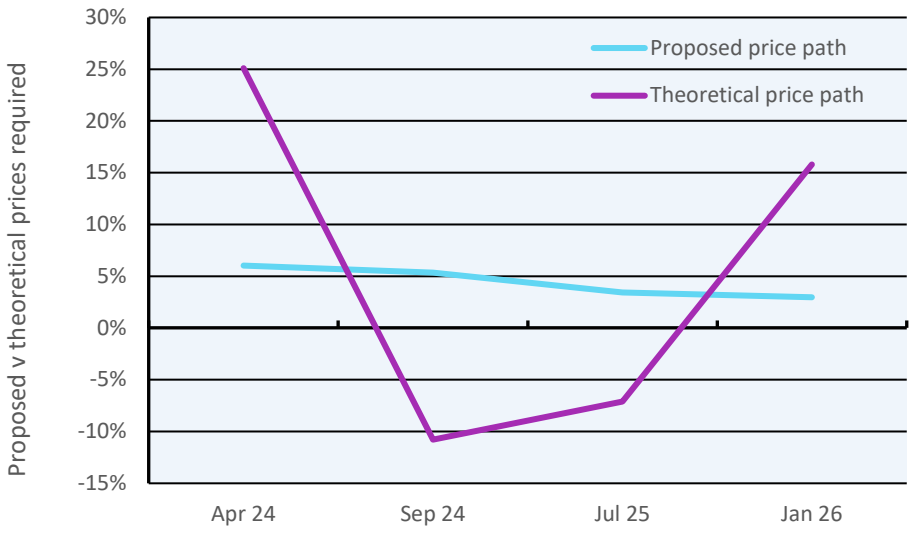
- a base level service network charge (the same charge for all Category 6 aircraft and below at all locations)
- an incremental location and category specific charge to reflect the higher level of resources associated with higher categories of service

Pricing path

Airservices also employs longer term transitional price paths that seek to fully recover costs for that service line or location over a reasonable period of time. In our previous pricing agreement transitional pricing caps were implemented at price sensitive locations and services.

Airservices has proposed a price path that rebalances revenues and costs gradually over a three year period. This avoids prices spikes and swings that would otherwise arise when precisely matching prices to building block costs in each year. **Figure 18** below compares the proposed price increases (blue time series) to the price increases that would be necessary to recover building block costs in each individual year.

Figure 18: Transitional price path recoveries



Risk Sharing

Previous pricing arrangements have sought to mitigate revenue and investment forecasting risk and potential unwanted windfall gains, or losses associated with

longer term pricing arrangements. However for this agreement, no risk sharing arrangements are proposed.

While Airservices wishes to highlight its willingness to share any excess recoveries with industry in the absence of any risk sharing mechanisms, as was the case when Airservices prices were reduced in 2019, this decision mainly reflects:

- the shorter duration of the agreement;
- the inability of previous risk sharing arrangements to effectively manage Airservices downside risk associated with falls in traffic volumes; and
- the need to continue to assess the appropriateness of other risk sharing mechanisms such as levels of investment spend, versus the delivery of outcomes, or services capabilities.

1.2 Building Block Approach Applied to Revenues per Service

Airservices proposed prices have been developed with regard to the ACCC's post tax revenue building block model. The building block model aims to estimate the amount of revenue required to cover the costs of an efficient service while providing a reasonable rate of return to cover the cost of capital. The aggregate level of maximum allowable revenue is calculated as the sum of:

- operating and maintenance expenditure
- return of capital for depreciation
- return on capital (and an allowance for tax) for the cost of capital.

Dual-Till

Where revenues are derived from other sources, Airservices adopts a dual-till approach to ensure that both direct and common costs relating to other sources of revenues are identified and appropriately allocated and excluded from the building block model. Examples of activities where Airservices derives other revenues, includes services to the Department of Defence, Airports, as well as data sales.

Estimated Allowable Revenues

Airservices assessment of allowable revenues as calculated under the ACCC building block model are set out in the **Table 22** below:

Table 22: Allowable Revenues (financial years)

Building Block ($mil)	2024	2025	2026
Operating Costs	1,043.1	991.8	979.3
Return of Capital (depreciation)	91.7	90.3	89.6
Return on Capital (cost of capital)	65.1	70.7	75.9
Tax Allowance	8.2	8.9	9.6
Total Allowable Revenues	**1,208.1**	**1,161.8**	**1,154.3**

Forecast Recoveries

Against these estimates under-recoveries totalling $47.6m (on a Net Present Value basis) are forecast over the three years, as shown below.

Table 23 – Services surpluses/(shortfalls) ($nominal financial years)

Service ($mil)	2024	2025	2026
Enroute	(35.2)	53.2	118.2
Terminal Navigation	(77.1)	(10.7)	52.9
ARFF	(89.7)	(30.1)	(1.5)
Total	**(201.9)**	**12.5**	**169.5**
Net Present Value			**(47.6)**

Following FY2026 recovery shortfalls are forecast (see **Table 24** below) with pricing impacts for OneSKY and Western Sydney International Airport estimated to add additional building block revenue allowances in excess of $200m. To rebalance recovery levels, Airservices will begin consultation on another (FY2027) Price Notification process to be implemented as this agreement expires.

Table 24: cost recovery/(shortfall) from FY2024 until a future date (Financial Years)

Recovery Surplus/Shortfall ($mil)	2026	2027	2028	2029	2030
Annual Nominal	170	(24)	4	(11)	26
Cumulative NPV	(48)	(68)	(66)	(73)	(58)

*2027 – 2030 includes the impact of OneSKY, WSIA and new runways

Operating Costs

To determine operating costs, expenditure forecast have been based on existing services with allowances for wages and inflation growth, and the impact of our forward change (investment) program.

Change program cost impacts include project delivery operating expenses (which are not capitalised), changes in running costs arising from the commissioning of new assets or services, and savings and benefits enabled by the change program activity.

Airservices' cost structures are mostly driven by staff costs relating to our specialised workforce of air traffic controllers, aviation rescue fire fighters and engineering and technical staff and represent approximately 75% of operating expenses. The remaining operating expenses relate to asset maintenance and running costs and project operating expenses required to deliver our investment program.

While these cost structures have remained largely unchanged over time, they do reflect a gradual shift as some of Airservices' business functions have moved to outsourced, or managed services arrangements. While this has improved our capability and the flexibility of our cost base, overall, it has had the combined impact of shifting some costs from depreciation to supplier costs. It has also meant that some implementation costs associated with managed services arrangements and 'right of use' assets are recognised in the period in which they costs are incurred, rather than amortised over the service life. This is in line with financial accounting recognition practices and is common across industries as noted recently by the Australian Energy Regulator. [15] This has given rise to one-off cost increases, most notably in relation to the implementation of our Enterprise Network Modernisation Program during FY2023 and FY2024.

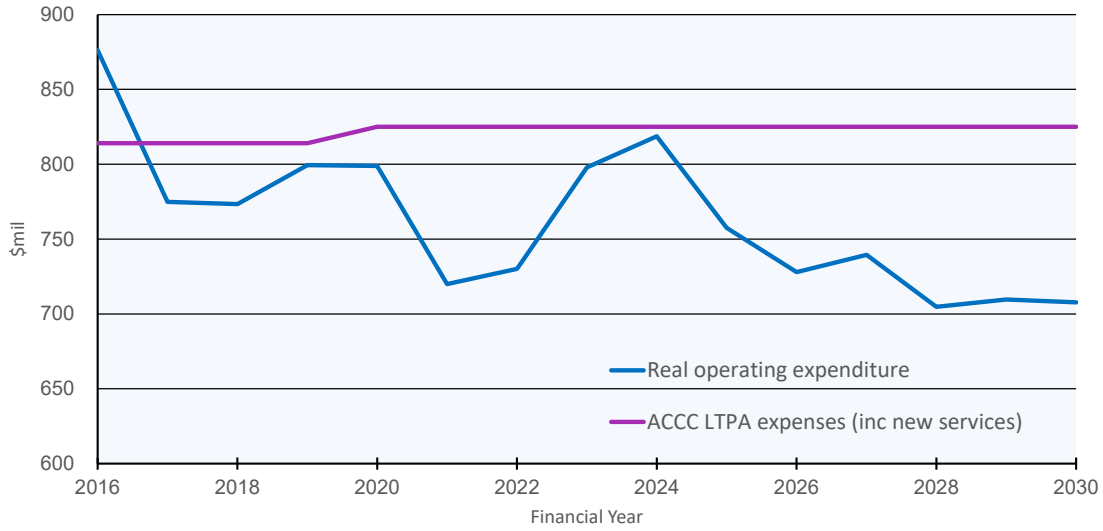
Even with these accounting changes serving to increase reported operating costs, the operating costs incorporated in this agreement are forecast to deliver real savings of 10% by FY2026 when compared to the FY2016 cost base incorporated in the

[15] AER, How the AER will assess the impact of capitalisation differences on our benchmarking, Draft Guidance note, October 2022.

> "For example, for ICT solutions, we have observed some DNSPs are increasingly opting for cloud solutions (opex) over investing in ICT assets (capital inputs). Further, recent guidance in relation to statutory accounting standards requires from 1 April 2021 certain Software as a Service (SaaS) expenditure to be classified as opex rather than capex.
>
> For statutory accounting purposes, SaaS has been considered as capex but, depending on its nature, is now considered opex under new International Financial Reporting Standards (IFRS) guidance published in April 2021. We note there is no requirement in the NER to align regulatory reporting with statutory accounts. However, we generally expect NSPs' capitalisation policies to align with the relevant accounting standards. That said, for a variety of reasons we consider it is preferable if DNSPs do not implement any mid-regulatory control period accounting changes until the start of the new regulatory control period."

FY2012-FY2016 LTPA, as last reviewed by the ACCC ($794m, plus adjustments for new services)[16].

Figure 19: Real Operating Costs (excluding depreciation) ($FY2016)



Return Of Capital (Depreciation)

Depreciation forecasts have been based on existing assets, valued at cost and per original asset lives and new asset values in accordance with our forward investment plan and projected timing of commissioning. For more information see below section, Regulated Asset Base.

Return On Capital (weighted average cost of capital - WACC)

In addition to the recovery of operating costs and depreciation, the ACCC's building block model provides for a return on capital. This provides a return to equity and debt holders for the opportunity cost of capital invested in the business. It is calculated by applying the weighted average cost of capital (WACC) to the average written down value of assets.

To assist with the estimation of WACC Airservices engaged Incenta Economic Consulting. **Table 25** below shows the estimated WACC parameters, and a comparison to the ACCC's assessment of WACC from the 2011 Airservices decision. A copy of Incenta's report is shown at **Appendix 5**.

[16] ACCC, Airservices Australia price notification Final decision, p 20

Table 25 – WACC Parameters

Parameters	2011 ACCC final decision	Estimate as at 31 July
Market Wide Parameters:		
Risk free rate (Rf)	4.72%	4.09%
Market Risk Premium (MRP)	6.00%	6.20%
Gamma (γ)	0.50	0.57
Inflation	-	2.96%
Cost of Equity:		
Asset Beta (βA)	0.55	0.70
Gearing (D/V)	45%	21%
Equity Beta (βE)	1.00	0.89
Cost of Debt:		
Credit Rating	AAA	BBB+
Term of debt (years)	5	10
Return on Debt	6.03%	6.35%
Return on equity (post tax nominal)	**10.70%**	**9.61%**
Nominal Vanilla WACC	**8.60%**	**8.93%**
Real Vanilla WACC	**-**	**5.80%**

Regulated Asset Base

To calculate both returns on, and of, capital Airservices has applied nominal regulated asset base values. These values take into account existing assets and depreciation, valued at cost and per original asset lives, and new asset and depreciation values in accordance with our forward investment plan and projected timing of asset commissioning. This approach is consistent with the Government's requirements for price monitored airports and removes the impact of asset revaluations that have been recognised as part of normal statutory financial reporting as a result of indexing or re-lifing. These values also discount any right of use assets (e.g. arising out of managed services arrangements) which are otherwise recognised as assets in statutory financial accounts under AASB18.

Opening Asset Values

The opening asset values used in this forecast have been updated since our previous price notification and take into account actual levels of investment, depreciation and disposal, as well as the impact of asset impairments arising out of business restructuring activities. **Table 26** below compares information on actual asset balances and movements to forecast asset movements under our most recent pricing agreement.

Table 26 – 2012-2016 Actual and LTPA forecast asset balances and movements (financial years)

Asset Value ($mil)	2012	2013	2014	2015	2016	TOTALS	2012 LTPA	Variance
Op Balance	830.1	925.9	1,007.8	1,072.6	1,125.8	**830.1**	**865.0**	**(34.9)**
CapEX	177.4	185.1	184.9	173.1	182.6	903.2	957.5	(54.3)
Depreciation	(81.6)	(103.2)	(120.1)	(119.9)	(121.1)	(546.0)	(555.0)	9.0
2016 restructure*		-	-	-	(25.0)	(25.0)	-	(25.0)
CI Balance	**925.9**	**1,007.8**	**1,072.6**	**1,125.8**	**1,162.3**	**1,162.3**	**1,267.5**	**(105.2)**

RAB Movements

Table 27 below shows the movements in the RAB since the end of the last pricing agreement. For information purposes other capital investment relating to OneSKY, Western Sydney International Airport, New Runways at Perth and Melbourne and Uncrewed Services are also shown, but have not been included in RAB calculations and will be the subject of future price notifications.

Table 27 – Actual-forecast regulated asset base balances and movements (financial years)

Asset Value ($mil)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Op RAB Balance	**1,162.3**	**1,107.7**	**1,067.0**	**980.5**	**924.9**	**826.6**	**741.8**	**699.8**	**758.1**	**826.1**
CapEX (exc OneSKY, WSIA, NR's & UC)	88.2	96.7	54.5	78.8	27.7	29.5	53.4	150.1	158.4	136.7
Depreciation	(142.8)	(137.4)	(141.0)	(134.4)	(126.0)	(114.2)	(95.5)	(91.7)	(90.4)	(89.7)
CI RAB Balance	**1,107.7**	**1,067.0**	**980.5**	**924.9**	**826.6**	**741.8**	**699.8**	**758.1**	**826.1**	**873.1**
Capital Expenditure (total)										
CapEX (exc OneSKY, WSIA & NR's)	88.2	96.7	54.5	78.8	27.7	29.5	53.4	150.1	158.4	136.7
Other CapEX Investment (excluded from RAB calculations):										
OneSKY (CMATS & Facilities)	62.4	28.7	85.3	205.1	138.3	142.4	149.8	84.3	73.8	32.3
Western Sydney International Airport	0.0	0.0	0.0	0.0	0.0	0.0	2.2	34.7	57.5	47.2
New Runways (Pth & Mel)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	5.2	17.8
Uncrewed Services	0.0	0.0	0.0	0.0	0.0	0.0	0.2	5.0	4.3	4.9
Total CapEX	**150.6**	**125.4**	**139.8**	**283.9**	**166.0**	**171.9**	**205.6**	**276.0**	**299.2**	**238.9**

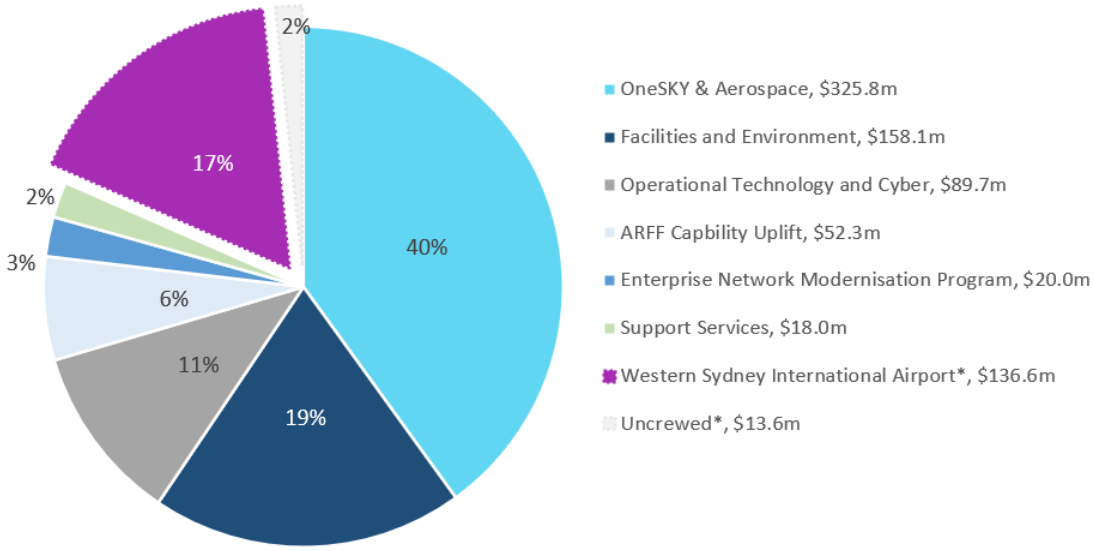
*__Note__: OneSKY investment only includes specific investments associated with the Civil Military Air Traffic System (CMATS) and Air Traffic Services Centres.

1.3 Capital Expenditure Program

Forward Investment (CapEX)

The investment plan underpinning this Draft Price Notification will invest $0.8b in airways infrastructure and systems and supporting services over the next 4 years.

Figure 20 – Capital Investment Program



*Note: Investment for OneSKY, Western Sydney International Airport, New Runways at Perth and Melbourne and Uncrewed Services excluded have been excluded from 2024- 2026 Regulatory Asset Base calculations.

The majority of this investment continues to focus on the delivery of the OneSKY program, which accounts for 23% of the program spend. Other investment activity will deliver both front line services improvements and industry benefits, increased services resilience, enable enterprise cost efficiency, and sustain and upgrade our facilities and systems. Investment shown for Enterprise Network Modernisation (to be delivered as a managed service) only reflects capital expenditure components with the majority of the program costs recognised as an operating expense.

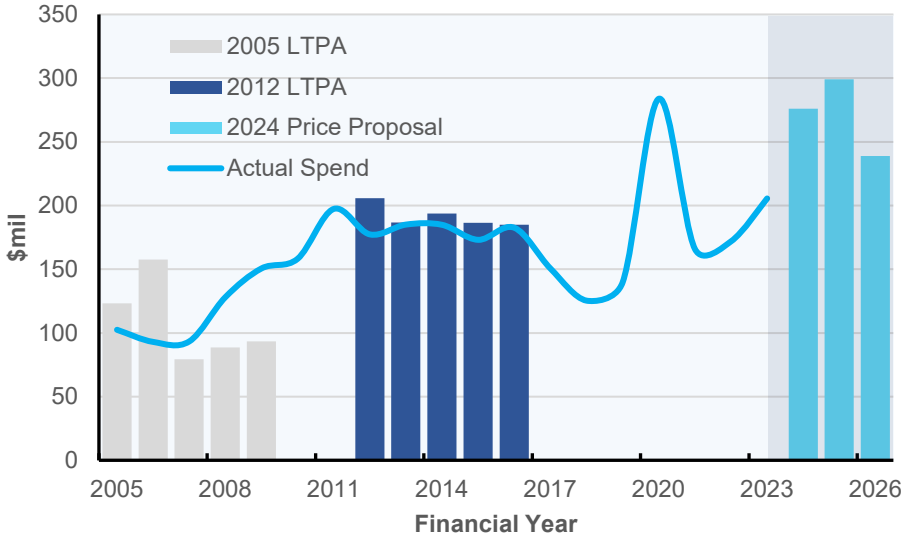
The program will also deliver infrastructure for Western Sydney International Airport, new runways at Perth and Melbourne airport, and emerging Uncrewed services. Noting that these services (and OneSKY) will be the subject of future price notifications, the investment for these activities' accounts for approximately 21% of the total program spend. **Appendix 4** provides more information on our FY2024 – FY2026 capital investment program.

Long Term Investment Performance

Overall, the investment plan in this Draft Notification has been shaped by the need to continue to invest in key infrastructure to support long term industry needs (in particular, OneSKY), while balancing the shorter term impact of the COVID-19 against the ongoing requirement for Airservices to continue to transform its business to make it more sustainable.

Figure 21 below highlights the shape of Airservices investment performance over time since the first long term pricing agreement was introduced 2005.

Figure 21: Capital Investment Performance



This investment profile mainly reflects:

- services expansion (led by the mining boom) and peaks in asset renewals following investment deferrals due to potential services privatisation in the early 2000's
- investment rationalisation to respond to 2016 domestic industry contraction
- lumpy timing of key investment (OneSKY scoping and system specification activities)
- FY2021 – FY2022 investment re-prioritisation and rationalisation following COVID-19 industry downturn; and
- +FY2023 investment uplift to support OneSKY and future services transformation and sustainability

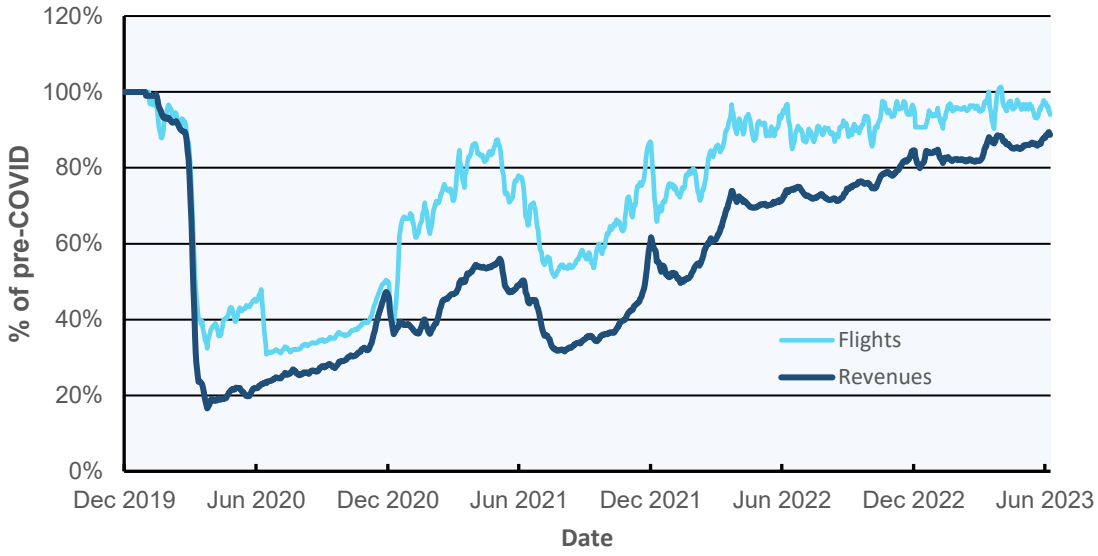
While many of these investments have been important in sustaining airways services delivery over time they have also been significant in delivering improved service outcomes for industry. **Appendix 4** provides more information on Airservices FY2017 – FY2023 capital investment program and key service improvements programs delivered from the end of last pricing agreement, and, to be delivered by the end of this pricing period

1.4 Airways Traffic Volume Forecasts

Air Traffic Volume Forecasts

Since the outbreak of the global pandemic in 2020, forecasting airways traffic volumes has been problematic.

Figure 22: Daily Traffic & Airways Revenues (7-day rolling average) % of pre-COVID



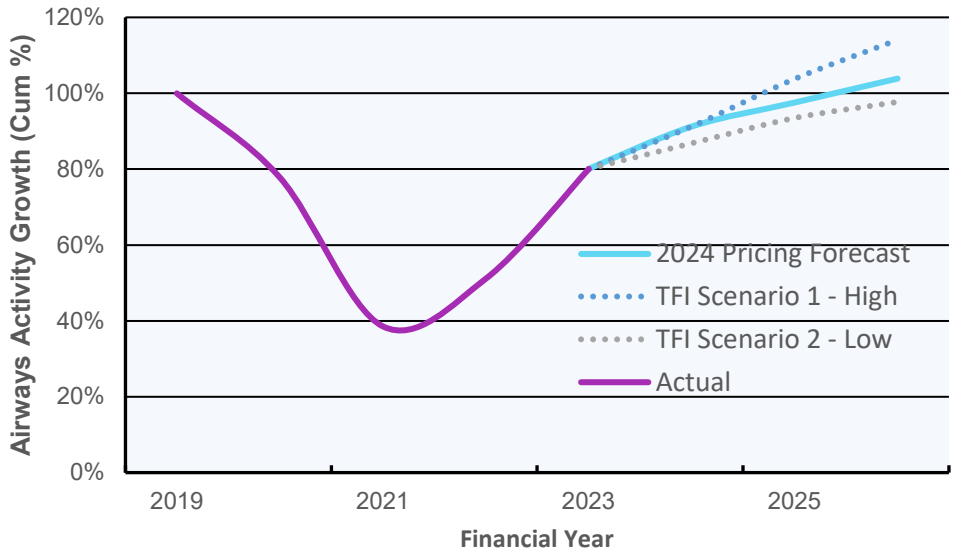
The Australian aviation industry is still in recovery, with ongoing volatility and uncertainty likely to persist. Not only has the timing and shape of the recovery from the pandemic been hard to predict, the interplay of other factors such as:

- the recovery rate of different markets (international versus domestic)
- emerging domestic and global economic headwinds (inflation, supply chain pressures and fuel prices)
- airline fleet mix (a shift toward the use of smaller aircraft) changing relationship between flights and revenue activity
- predicting where industry will rebalance at a service and location level (noting such things remote working, the absence of Tiger Airways, and emerging new entrants), has made air traffic forecasting increasingly difficult.

To help inform the traffic forecast to be used in this Draft Notification Airservices engaged Tourism Futures International (TFI) to forecast aggregate airways activity volumes. A copy of TFI's full report can be found at **Appendix 6**.

Referencing the two growth scenarios presented in this report, the airways activity volumes that underpin the recovery of service costs under this Draft Notification have been projected to grow, on a weighted average basis, by 30% over the term of this agreement. This forecast reflects a stronger growth rate for domestic airways traffic, which is forecast to rebalance to pre-COVID levels in FY2024, and a conservative growth rate for international traffic, which is forecast to rebalance to pre-COVID levels in FY2026.

Figure 23: Actual/forecast airways activity growth FY2019 - FY2026



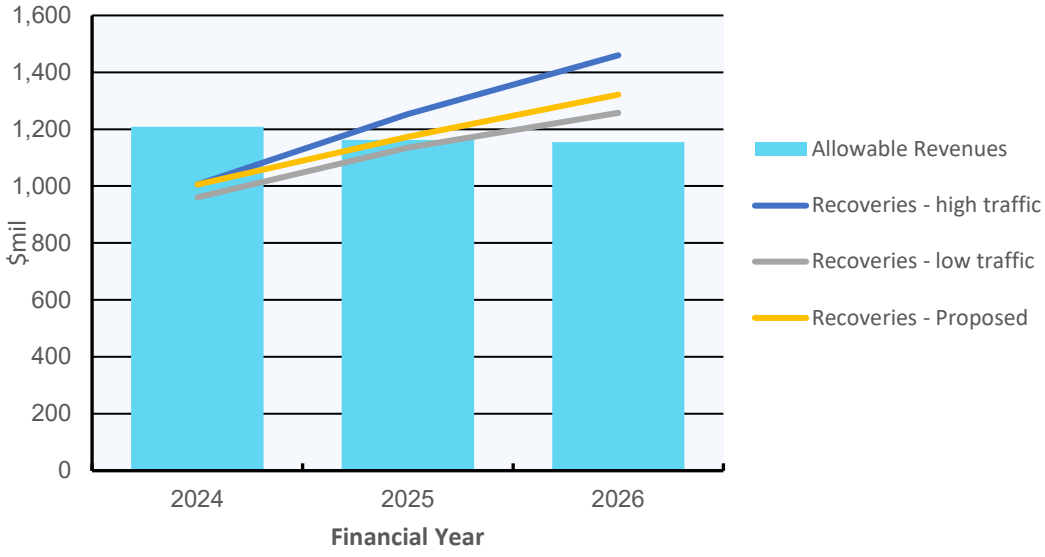
The actual and forecast aggregate pricing units of activity of airport tonnes landed and square-root tonnes kilometres, are shown in the **Table** below.

Table 28: Airways Activity Volumes Actual – Forecast (financial years)

Service	2023	2024	2025	2026	Change on FY23
Enroute (Sq-rt tonnes/kms)	117.9	136.0	143.6	153.1	
Terminal Navigation (tonnes landed)	48.5	54.7	59.2	62.9	
ARFF (tonnes landed)	48.2	54.5	58.9	62.7	
Weighted Average Growth (year on year)		**14%**	**7%**	**6%**	**30%**
Draft Pricing Proposal		**8%**	**8%**	**5%**	**22%**

To understand the sensitivities in adopting this traffic outlook, **Figure 24** below plots, maximum allowable revenue estimates against revenue recovery outcomes on proposed pricing increases across a high-low range of traffic forecast scenarios.

Figure 24: Revenue recoveries traffic sensitivity



As shown in **Table 29** below this suggests a -6% to +4% sensitivity (on a present value basis), on proposed prices across potential traffic and revenue outcomes compared to our forecast. With Airservices not proposing any risk sharing, given the importance of providing industry with price certainty through its ongoing recovery, Airservices believes its application of the proposed traffic forecast, with potential impact of volume variations, is appropriate.

Table 29: Surplus/(shortfall) traffic sensitivity (financial years)

$mil	2024	2025	2026	NPV	% of Cum MAR
High traffic	(202)	92	307	**142**	**4%**
Low traffic	(247)	(27)	103	**(186)**	**-6%**
Proposed	(202)	12	170	**(48)**	**-1%**

Appendix 2: Pricing Methodology

2.1 Description of pricing methodology

To develop this Draft Price Notification Airservices has adopted the same pricing methodology applied in previous price notifications,[17] on the basis of the building block model and attribution of costs to specific services and location and forecast flight activity volumes.

To ensure cumulative recovery of costs over a gradual pricing path, services prices have been increased from current pricing levels up to a maximum rate, as specified in the **Table 30** below.

Table 30: Maximum pricing increase

Service	Apr 24	Sep 24	Jul 25	Jan 26
Enroute	4.5%	4.5%	2.0%	1.0%
Terminal Navigation	7.5%	7.5%	6.0%	6.5%
ARFF*	6.0%	7.0%	5.0%	5.0%

* Excludes the impact of pricing increases relating to ARFF services upgrades (e.g. upgrade of service from category 6 to category 7

Where the application of this maximum pricing increase leads to cumulative over-recoveries for service locations, the rate of increase has been adjusted to align with service location allowable revenue levels.

Where the service is new with no existing reference pricing point (e.g. an upgraded ARFF service category), the maximum service price has been set in line with the highest priced comparative service (e.g. new category 7 ARFF services prices have been aligned to Townsville).

Table 31 below compares the expected revenues from each service to the expected building block costs by service, the surplus, or shortfall generated and the stand-alone service outcomes, excluding attributions of overheads.[18].

[17] Airservices 2011 Draft Price Notification, p38

[18] Building block costs already include an allocation of overheads. The effective contribution shown in the table takes into account this contribution in addition to further any additional recovery above or below cost

Table 31: Service revenues, allowable revenues, surplus/(shortfalls) and stand-alone outcomes

Service ($mil)	2024	2025	2026
Proposed revenues by service:			
Enroute	483.6	547.5	603.0
Terminal Navigation	351.5	419.5	484.1
ARFF	171.1	207.3	236.7
Building Block by service:			
Enroute	518.8	494.3	484.9
Terminal Navigation	428.6	430.2	431.2
ARFF	260.7	237.3	238.2
Service surplus/(shortfall):			
Enroute	(35.2)	53.2	118.2
Terminal Navigation	(77.1)	(10.7)	52.9
ARFF	(89.7)	(30.1)	(1.5)
Service surplus/(shortfall) against stand-alone costs:*			
Enroute	69.9	153.0	221.8
Terminal Navigation	32.1	93.0	160.5
ARFF	(21.7)	34.4	65.5

* Stand-alone costs exclude overheads

Noting a formal definition of a cross subsidy, as noted by the ACCC, comprises two tests:

- "*A service is a potential source of subsidy if the revenue generated by that service is greater than the stand-alone cost of the service. Whether or not such a service is an actual source of subsidy depends on whether or not the second test is satisfied. That is, revenue greater than stand-alone cost is not, of itself, evidence of a cross-subsidy.*
- *A service is the recipient of a subsidy if the revenue generated by that service is not sufficient to cover the incremental cost of providing it.*"[19]

ARFF is the only service that does not cover it's stand alone costs in FY2024, while overall, cumulatively, each service contributes to the recovery of overheads and recovers its stand-alone costs.

[19] ACCC, *Assessing cross-subsidy in Australia Post*, July 2006, p.1.

2.2 Cost Allocation Methodology

Airservices has adopted the same cost allocation methodology in the development of this Draft Notification as it has applied in previous price notifications.

Standard costing

In calculating the building block costs, standard costings have been applied. This approach provides for the standardisation of costs for similar cost inputs, smoothing any cost anomalies that are not location driven, and providing a cost base that better reflects the level of service and types of assets employed at a particular location The effect of standard costing is twofold:

- to smooth variation in standard cost inputs across locations; and
- to smooth variation in standard cost inputs across time.

This means that inputs such as staff and assets, providing the same functionality, have been costed to services at the same rate. For example, a standard salary cost for an air traffic controller and a standard asset value and depreciation cost per facility type. This contrasts to actual costs where air traffic controller salaries will vary from location to location based on length of tenure.

The effect over time on the recovery of an asset is important because it implies that recovery is the same regardless of the remaining life of the asset. This differs from the use of straight line depreciation with return on capital calculated off the written down value, where total recovery per year decreases with remaining life. However, it is consistent with annuity concepts used by the ACCC to price telecommunications assets, and avoids price shocks caused by the timing of the replacement program which may roll out over a number of years.

It is important to note that standard costing as applied by Airservices does not increase or decrease the quantum of costs across all services. Standard costs have been calculated to ensure that total recovery is unchanged.

Cost allocation across activity

Airservices applies an activity based approach in determining the cost of each service at each location. This methodology provides for location specific pricing, underpinning the principle of ‘user pays’ and supports efficient resource allocation, particularly around capital investment decision making.

To appropriately allocate costs an inventory of services and key cost statistics was undertaken. These cost statistics have then been used as the basis for allocating costs and asset values to service lines to the following broad functions:

- Direct operational functions; and
- Non-operational functions.

Direct operational functions are attributed to services using location and service specific key cost statistics. These include direct ATC and ARFF service costs and asset costs.

Non-operational functions are attributed to services at an aggregated level using broad attribution statistics. These include operational support and safety, environment and corporate management costs.

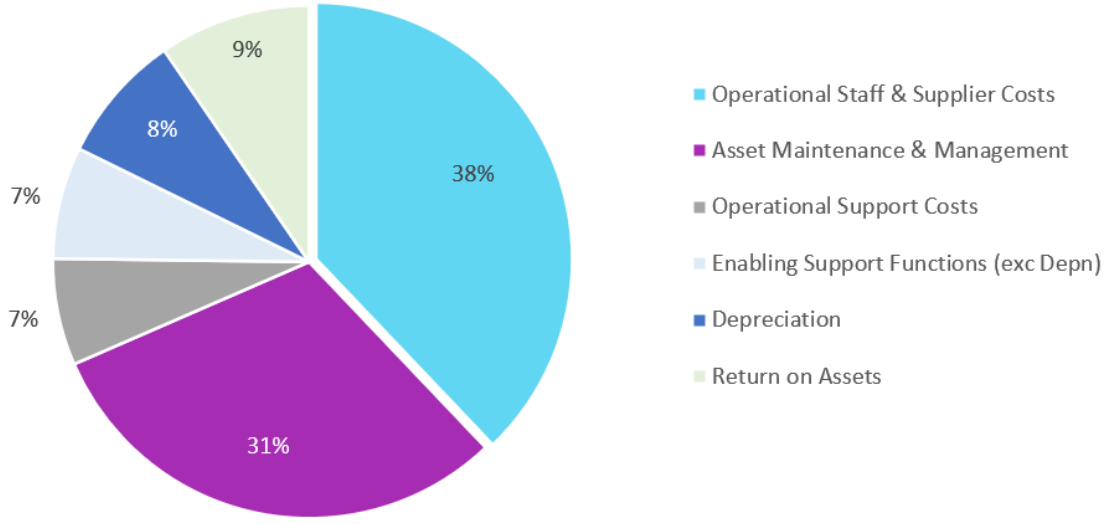
Cost allocation to location

Service costs have been broadly categorised as:

- Location specific (i.e. operational staff, supplier costs, asset maintenance, depreciation and management costs consumed at a location
- Non-location specific (i.e. operational support costs, enabling support functions, asset maintenance, depreciation and management costs attributed to a location but not consumed at a location.)

The costs at a location comprise both the location specific and non-location specific costs that are attributed to a location's cost base by a range of different allocation methods. The main cost components and how they are allocated are discussed below.

Figure 25: Composition of Service Costs



Operational Staff and Supplier Costs

Service line (ATC, ARFF and Enroute) location costs are operational staff and supplier costs relating to air traffic controllers and firefighters that are incurred at a location. These costs are attributed to service locations based on staff numbers and the standard staffing and supplier costs relating to the different categories of ATC or firefighter.

For each category there are different salary and associated cost structures. A standard cost is then attributed to a location based on the number of staff in each of the categories that are working at that location.

Operational Support Costs

Operational support costs are specialist support costs that are service specific, but do not directly relate to the provision of ATC or ARFF services at a specific location, or airspace sector. These costs include such things as operational training, safety compliance and standardisation as well as some network management services such as aeronautical charting, flight information services and the National Coordination Centre.

These costs are allocated to service locations in proportion to the locations share of location specific costs.

Asset Maintenance and Management Costs

Asset costs include Airservices technical maintenance staff costs, third party support contracts, asset support services, non-capital expenses relating to asset renewals and upgrades and property services such as rents, utilities and security.

They comprise both location and non-location specific Asset Maintenance and Management costs, with the majority relating to location based operational assets and equipment.

Location specific Asset Maintenance and Management costs reflect the costs of assets that are typically involved in the provision of ATC and ARFF services at a location. These include airways technical equipment and infrastructure (e.g. radars, navigation aids, towers, operational software and communication equipment) and rescue and fire fighting equipment and infrastructure (e.g. fire vehicles, water rescue equipment, alarm monitoring equipment, fire stations and communications equipment).

These location specific based costs are standardised so that the cost of a similar piece of equipment is the same across all locations and is attributed to each service based on the number of units installed at that location. Standard costs take into account asset type as well as the level of service the asset supports.

Non-location specific Asset Maintenance and Management costs relate to asset services that are not involved in the provision of a specific ATC or ARFF service, or are not service specific (e.g. engineering management). These costs are across the asset systems they support and then to individual service locations based on the number of units installed at the location.

Depreciation

Depreciation costs are allocated in the same way as Asset Maintenance and Management costs. Location specific depreciation costs are attributed on a standard cost basis to a location. Non-location specific depreciation costs are attributed applying the same two-step process as that used for non-location specific Asset Maintenance and Management costs.

Enabling Support Functions

Non-location specific service costs include functions such as safety, environmental monitoring, human resources, finance and administrative support. These costs have been allocated to service locations in two steps. Firstly, to services based on their proportional share of location costs, then secondly, to individual service locations based on overall demand (i.e. the chargeable units underpinning the service such as tonnes landed).

Appendix 3

3.1 Customer Engagement

Airservices customer engagement on commercial matters has been impacted by COVID-19. Prior to the pandemic Airservices' consulted regularly with customers and industry associations on pricing and other commercial matters including alignment and understanding of services and investment needs, through its pricing consultative committee meeting. This committee has been important in the development of previous pricing arrangements, as well as contributing to such things as the development and review of Airservices investment plans, investment business cases, and understanding Airservices financial management and performance. **Table 32** below provides a summary of pricing consultative committee meetings and discussions that have occurred since Airservices last formally engaged the ACCC in 2015.[20]

However, through the COVID-19 pandemic pricing consultative committee meetings ceased, with industry restructuring impacting engagement and much of the commercial dialogue at the time focusing on priority issues of liquidity and the administration of the Governments' COVID-19 assistance package.[21] As industry is now recovering and is in an improved position to re-engage more fully on commercial matters Airservices has discussed, as part of our consultation on the Draft Pricing Proposal, future commercial engagement models with customers. While this model is still to be finalised, Airservices intention is that the future engagement model will play an important role in the development and review of future commercial arrangements with customers and be a key consideration in future ACCC review processes.

Table 32 – Airservices Pricing Consultative Committee Meetings (Mar 2015 – Apr 2020)

Meeting Date	Agenda Items
Standing Agenda Items	Key Performance Indicator Results, Progress on key programs, Investment Performance
Mar 2015	– OneSKY program update
Apr 2015	– OneSKY program update – Traffic forecast (IATA) – Weighted Average Cost of Capital review
Jun 2015	– Business Case: o Canberra airport ILS upgrade o OneSKY facilities work
Sep 2015	– Business Case: o Perth airport ILS upgrade – Draft Pricing Proposal 2016 - 2021
Nov 2015	– Business Cases: o Cairns Tower Life Extension o Perth Tower Life Extension – Financial results and outlook – 2016-2021 LTPA update
May 2016	– Business Case:

[20] Airservices price notification 2015 - ACCC decision
[21] Australian Government, Economic Response to the Coronavirus, Support for Australian Airlines and Airports

Meeting Date	Agenda Items
	○ Adelaide and Cairns TCU Integration – OneSKY Program Update – 2017-2022 LTPA
Sep 2016	– Financial Results 2015-16, Risk Sharing Outcomes & Financial Plan 2017 – 2021 – ANSP (CANSO) Benchmarking – ANS update ○ ANS structure and Accelerate Program Progress ○ ANS Major projects ○ ANS Key priorities
Dec 2016	– Business Case: ○ CMATS Voice Communications Phase 1 ○ Brisbane New Parallel Runway – Accelerate Program & LTPA Update
Mar 2017	– Business Case: ○ Airport Collaborative Decision Making – Draft Investment Plan – Accelerate Program & LTPA Update
Aug 2017	– 2017-2018 Corporate Plan – 2017-18 Financial Plan, LTPA update & risk sharing
Nov 2017	– OneSKY Program Update ○ System Acquisition Path ○ OneSKY Program Scope ○ Thales CMATS Offer, Contracting Model, Defence ○ Program Schedule ○ Benefits Realisation ○ Costs, Funding & Business Case – Eurocat Base Case and Sustainment Case Assessed in the Deloitte “Airservices Australia – OneSKY Business Case (5E offer version)
Apr 2018	– Business Case: ○ Airport Collaborative Decision Making (A-CDM) ○ Cyber Security
Dec 2018	– Business Case: ○ New ARFF services, Whitsunday Coast Airport – Business outlook – new services, traffic, investment and profitability – Preliminary Planning Parameters 2020 – 2024 – OneSKY Update – ATM Change program overview
Mar 2019	– Draft Corporate Planning Parameters 2020 – 2024 ○ Areas for Strategic focus ○ Draft investment plan ○ Key business parameters & risks
Jul 2019	– Corporate Plan 2020 -2024 – Pricing
Dec 2019	– Enterprise Investment Program & Priorities – Outlook & Key Programs – Economic outlook, Traffic Trends, Key Planning Milestones & Programs – Pricing

Meeting Date	Agenda Items
Mar 2020	– Digital Aerodrome Services (DAS) demonstration – Corona Virus update – Customer Service Performance Framework
April 2020	– COVID -Customer Presentation o Funding Impacts & Outlook o Planning Response o Cost Management o Enterprise Investment Plan update and Reprioritisation actions

Appendix 4

4.1 Capital Investment 2024 – 2026

Table 33: Capital Investment 2024 – 2027 (Financial Years)

$mil	2024	2025	2026	TOTAL
OneSKY & Aerospace*	125.2	126.9	73.8	**325.8**
Facilities and Environment	57.6	51.6	48.9	**158.1**
Operational Technology and Cyber	31.8	25.9	31.9	**89.7**
ARFF Capability Uplift	7.2	18.4	26.8	**52.3**
Enterprise Network Modernisation Program	10.0	10.0	0.0	**20.0**
Support Services	6.0	6.0	6.0	**18.0**
Western Sydney International Airport	33.5	56.3	46.8	**136.6**
Uncrewed Services	4.7	4.1	4.8	**13.6**
TOTAL	**276.0**	**299.2**	**238.9**	**814.1**

*Note: includes investment for new runways at Perth and Melbourne

Table 34: Program outcomes & key sub-programs

Program	Outcomes & Sub-Programs
OneSKY & Aerospace	**Program Outcomes:** – A modern, resilient, and secure air traffic management service that unites both civil and military systems – Modernisation of our airspace – Standardised aerodrome development – Regionalisation of Digital Aerodrome Services – Enabling 30% increase in Australian air traffic movements – Allow all airspace users to leverage environmental, capacity, efficiency and capability benefits **Key Sub-programs:** – OneSKY Australia (CMATS) – Sydney KSA tower upgrade – Airspace improvements, including: o Continuous Decent Operations o Network Coordination Centre relocation o National Airspace Management Office o National Operations Disruption Response Capability o Single Flight Data Region o Integrated Approach Services Melbourne
Facilities & Environment	**Program Outcomes:** – Property consolidation and environmental rehabilitation – Facility upgrades and sustainment – Inclusive Facilities and Modern Workplaces – A review and rationalisation of the terrestrial Backup Navigation Network – Environmentally sustainable initiatives including climate change awareness and resilience – Remediation of physical and environmental hazards – Foster and promote growth of aviation locally and internationally **Key Sub-programs:** – Infrastructure and facilities sustainment – Communications, navigation and surveillance sustainment and rationalisation

Program	Outcomes & Sub-Programs
Operational Technology and Cyber	**Program Outcomes:** – Improved and streamlined Flight Planning Services for our customers which includes modern Flight Briefing Services and Notice to Airmen (NOTAM) management services – Enhanced cyber security to protect our data, systems and networks – Reduction of CO2 emissions and fuel burn through efficient management of aircraft ground movements – Improved information services which will redefine our services and drive the evolution of products and services with a customer centric focus – Improved and modernised ICT Service Management – Improved network planning, disruption event management and workforce utilisation **Key Sub-programs:** – Airport Collaborative Decision Making – Digital Twin – Aeronautical Information Management, including digital services platform
ARFF Capability Uplift	**Program Outcomes:** – Increased operational efficiency – scalable and flexible – Safer, more realistic and effective training – Efficient resource allocation – Financially and environmentally sustainable **Key Sub-programs:** – Emergency vehicle fleet replacement – Centralised technology including fire control centres and integrated monitoring – Training modernisation
Enterprise Network Modernisation Program	**Program Outcomes:** – Transition to a fully managed service of modern network and communication infrastructure and services supporting 275 existing locations and 240 existing business applications – Delivery of a next-generation network designed for service expansion, providing greater network bandwidth, security and resilience – Enabling the introduction of new features and functionality, and a platform for future services
Support Services	**Program Outcomes:** – Centralised and standardised ways of working – Simplified digitised processes across Finance, Procurement, Asset Management and People and Culture – Automated rostering – Data-driven decision making enabled through automated workflows – Standardised, self-service and mobile-enabled leadership reporting **Key Sub-programs:** – Back office service enhancement transformation – Enterprise Resource planning (e.g. digital HR and rostering)
Western Sydney International Airport	**Program Outcomes:** – Aerospace and Aviation Rescue & Fire Fighting Services – First greenfield Australian airport to have Digital Aerodrome Services (DAS) **Key Sub-programs:** – Digital Aerodrome Service

Program	Outcomes & Sub-Programs
	– ARFFS Fleet and Facilities – Communications, Navigation and Surveillance infrastructure – Flight path and airspace design and community engagement
Uncrewed Services	**Program Outcomes:** – Facilitation of new market, enabling growth of UAS flights – Reduce current processing times for airspace authorisations by 99.9% – Enhance the safety of our customers and community **Key Sub-programs:** – Flight Information Management System (FIMS) – Drone Detection – Integrated Traffic Management (ITM)

4.2 Capital Investment 2017 – 2023

Table 35: Capital Investment 2017 – 2023 (Financial Years)

Program/Project ($mil)	2017	2018	2019	2020	2021	2022	2023	TOTAL
ARFF Capability & Uplift								
Brisbane (New) Fire Station	0.2	0.6	2.7	11.4	0.5	-	-	**15.4**
Whitsunday Coast Fire Station	-	-	0.4	9.8	0.6	0.0	- 0.0	**10.9**
Fire Control Centre & Communications Upgrade	-	-	-	-	-	3.7	4.4	**8.1**
Fire Vehicles	0.4	2.0	3.0	-	-	-	0.0	**5.4**
Canberra ARFF Station Upgrade	0.0	0.0	0.6	4.4	2.6	0.3	0.1	**8.0**
Brisbane Fire Station Upgrade	0.1	3.1	0.0	-	-	-	-	**3.2**
Breathing Apparatus Replacement Project	-	-	-	-	1.0	1.3	0.6	**2.9**
ARFF System, Equipments and Facilities	3.6	2.3	3.0	1.6	0.3	0.2	1.4	**12.4**
sub-total	**4.3**	**8.0**	**9.7**	**27.3**	**4.9**	**5.6**	**6.5**	**66.3**
Facilities & Environment								
Cairns Control Tower Life Extension	6.7	2.6	-	-	-	-	-	**9.3**
Brisbane Control Tower Life Extension	5.4	0.6	-	-	-	-	-	**5.9**
Water Cooling System Upgrades	0.1	4.9	-	-	-	-	-	**5.1**
Inclusive Facilities	-	-	-	-	0.4	1.6	2.9	**4.8**
Residual Current Device Compliance Program	-	0.1	0.3	3.5	- 0.0	-	-	**3.9**
Structural Repairs to Sydney Building (TCU)	2.1	0.0	-	-	-	-	-	**2.1**
Facilities & Environment Other	1.6	1.4	1.3	2.1	1.2	2.6	3.8	**14.1**
sub-total	**15.8**	**9.6**	**1.7**	**5.6**	**1.5**	**4.2**	**6.7**	**45.1**
OneSKY & Aerospace Transformation								
OneSKY Civil Military Air Traffic System	59.2	22.2	72.8	116.8	118.7	116.8	132.8	**639.2**
OneSKY Air Traffic Services Centres & Facilites	22.3	6.9	13.4	90.4	27.1	24.8	16.7	**201.7**
OneSKY Voice Comm Sys and Enabling Work	0.2	57.6	16.7	0.5	-	-	-	**75.1**
OneSKY Integration Work	-	-	0.5	1.6	2.8	5.1	7.2	**17.3**
Brisbane New Parallel Runway	0.1	1.6	10.7	14.9	2.9	0.0	-	**30.3**
Sydney KSA Tower	-	0.9	0.3	2.2	0.1	4.2	5.2	**13.0**
Digital Aerodrome Services Program	-	-	-	-	-	0.6	5.8	**6.3**
Adeladie & Cairns Terminal Control Unit Integration	3.3	0.1	-	-	-	-	-	**3.4**
Other Aerospace & Aerodrome Trans/Develop Prg	-	1.6	0.1	0.3	0.1	0.6	0.9	**3.4**
sub-total	**85.1**	**91.0**	**114.5**	**226.8**	**151.7**	**152.0**	**168.6**	**989.7**
Operational Technology & Cyber								
Tower Automation Program	13.0	3.1	-	-	-	-	-	**16.1**
Eurocat Life Extension	12.6	0.9	-	-	-	-	-	**13.5**
Aeronautical & Digital Information Program	-	-	-	3.3	-	-	5.1	**8.5**
Airport Collaborative Decision Making	-	0.5	2.8	3.2	0.0	0.0	0.0	**6.6**
Communications Upgrades	3.1	1.2	0.1	0.1	-	-	-	**4.4**
Cyber Security Program	0.2	1.2	1.6	0.4	-	-	0.1	**3.5**
Regional Towers Technology Program	-	-	-	0.3	1.8	0.9	0.5	**3.5**
Enroute Radar Replacement Program	3.4	-	-	-	-	-	-	**3.4**
Aerdrome ILS Upgrades & GBAS	6.2	1.2	2.0	-	-	-	-	**9.4**
ADS-B Expansion Programs	0.8	1.2	0.2	0.1	- 0.0	-	0.4	**2.7**
TAAATS PCMS Replacement	0.6	1.8	- 0.0	0.0	-	-	-	**2.5**
Harmony Upgrade	-	-	1.1	1.0	-	-	-	**2.2**
Australian Aeronautical Msg Syst Refresh	-	0.2	1.4	0.3	-	-	-	**2.0**
TSAD UFB HW Sustainment	0.7	0.9	0.1	-	-	-	-	**1.7**
Other Operational Technology & Cyber	1.9	2.9	1.3	4.7	0.7	0.7	4.0	**16.2**
sub-total	**42.5**	**15.2**	**10.6**	**13.4**	**2.5**	**1.6**	**10.2**	**96.0**
Support Services								
Business Technology	2.9	1.5	1.2	0.4	-	0.5	0.2	**6.7**
Enterprise Network Modernisation Program	-	-	2.1	10.5	5.3	7.9	10.7	**36.6**
Western Sydney International Airport	-	-	-	-	-	-	2.1	**2.1**
TOTAL	150.6	125.4	139.8	283.9	166.0	171.9	205.0	1,242.5

4.3 Service Improvements & Expansion (2017 – 2027)

Program 2017 - 2023	Description
Airport Capacity Enhancement (ACE) - Improved capacity management	Delivery of initiatives in accordance with ACE strategic plans for Melbourne, Brisbane, Perth and Sydney to continually improve the efficiency and utilisation of existing infrastructure
Automated Dependent Surveillance Broadcast (ADS-B) Expansion program	Expansion of ADS-B services including establishing automated dependent surveillance broadcast (ADS-B) receivers in the Browse Basin in Western Australia to increase the safety of operations supporting the local gas and oil industry
Brisbane parallel runway Air Traffic Management and Rescue & Fire Fighting services	Installation of airways infrastructure to support new parallel runway operations at Brisbane airport
Cairns and Adelaide Terminal Control Unit Consolidation	Consolidation of Cairns and Adelaide Terminal Control Units into major Air Traffic Control Centres, reducing our infrastructure footprint and producing greater operational and staff efficiency
CMATS voice communication systems	Implementation of new Civil Military Air Traffic Management System (CMATS) voice communication system at Sydney, Melbourne, Perth and Brisbane facilities enabling our air traffic resources to be more efficient, enhancing safety and minimising the risk of service disruptions
Demand and Capacity Management Capabilities	Delivery of demand and capacity management capabilities and tools, including: • Meteorological CDM into Melbourne /Brisbane and associated disruption management procedures • Metron traffic flow management enhanced capabilities
Expansion of surveillance approach services	Installation of surveillance approach services at Hobart, Launceston, Mackay and Rockhampton airports
Gold Coast Airport Instrument Landing System (ILS)	Installation of Instrument Landing System (ILS) at Gold Coast Airport to provide vertical and horizontal guidance to pilots when landing in low visibility weather conditions, reducing flight delays and diversions
Melbourne Ground Based Augmentation System (GBAS)	Installation of satellite-based precision approach capability in Melbourne with a ground-based augmentation system, assisting the industry with fewer weather disruptions, more efficient descents, and improved airport capacity

Program	Description
Proserpine (new) Aviation Rescue & Fire Fighting Services	New Aviation Rescue & Fire Fighting services for Whitsunday Coast Airport
Surveillance Flight Information Services	Surveillance Flight Information Service (SFIS) at Ballina and Mangalore
2024 – 2027	
Business continuity and service resilience	Establishment of National Operations Disruption Response Capability (NODRC), supporting ATC endorsements and CMATS enabling capabilities to improve resilience for unplanned events and optimising use of resourcing for uninterrupted service provision across all Australian airspace
Demand and Capacity Management Capabilities	Delivery of demand and capacity management capabilities and tools, including: – Airport Collaborative Decision Making Systems (A-CDM) – Digital Twin Collectively these programs will improve the predictability of the network, minimise delays and reduce cost inefficiencies, improve asset utilisation and enhance customer and passenger experience
Enterprise Network Modernisation	Implementation of a modernised network to improve services capacity, availability, flexibility and security
Route optimisation services	Implementation and expansion of user preferred route services, including dynamic airborne re-routing and wake turbulence management
Shared (Flexible) Use Airspace	Establishment of National Airspace Management Office (NAMO) and supporting services to enable optimal use of airspace, allowing for better fuel planning, preferred routes and optimal flight levels
Trajectory Based Operations	Support continuous descent operations during the arrival phase, enabling opportunity to decrease noise, save fuel and reduce carbon emissions.

4.4 OneSKY Program

OneSKY Australia™ (OneSKY) is a partnership between Airservices and the Department of Defence, to replace the two current, independent civil and military air traffic management systems with a single advanced system, the Civil Military Air Traffic Management System (CMATS). OneSKY will deliver more than $1.2 billion of economic benefits to Australian airspace users over 20 years.

Background

Airservices currently delivers civil air traffic management via The Australian Advanced Air Traffic Management System (TAAATS) - based on the Thales platform, Eurocat. The existing system was originally installed in 1996 and has been continually upgraded to meet new requirements and enhancements in technologies.

The Australian Defence Force (Defence) also currently operates its own air traffic management system to manage military aviation operations and air traffic control at some airports with a shared civil and military use. Defence uses the Australian Defence Air Traffic System (ADATS) supplied by Raytheon.

Both systems are reaching end of life and have had software and hardware upgrades to extend their use.

The Australian Government's 2009 Aviation White Paper explored the possibility of a single national air traffic management system, which led to the OneSKY Australia™ Program.

Airservices Australia is the lead agency for the acquisition of the new air traffic management system and the Contract Authority with the supplier, Thales Australia. Defence is the supported agency, providing active participation in decision making through an on supply agreement with Airservices. The stated objective of the OneSKY Program is to procure and commission a harmonised national air traffic management system that will introduce seamless services to both civil and military aircraft, including:

- a national solution to air traffic management infrastructure and systems;
- a national system resilience and contingency response capability, including national security and interoperability with military air defence capability;
- an enhancement of the business continuity capability for both Defence and Airservices organisations;
- a robust military battlespace control capability;
- a nationally-accredited and capability-focussed workforce;
- a national regulatory compliance framework;
- harmonisation with international standards and procedures; and
- system performance which will meet the ATM community's future expectations and facilitate future air traffic management evolution, while meeting and enhancing present levels of safety

Following the development of a strategic options paper and evaluation of a wide range of operating models, available air traffic management system options, both on a stand-alone and harmonised basis and infrastructure options, a request for tender for the joint procurement approach was released in 2013. From this process, Airservices contracted with Thales to deliver the core air traffic management system at an estimated economic cost of $1.6b (PV) with the delivery of estimated industry benefits of $1.2b (PV) over a twenty-year period.

Program Scope

The scope of OneSKY Australia for Airservices includes:

CMATS

At the core of a harmonised system is the Civil Military Air Traffic Management System (CMATS) to replace the current independent civil and defence systems.. A single, shared air traffic management system will support a joint and integrated Defence force by enabling more strategic, contemporary, integrated, and agile air power capability.

Early Voice Communication System

Replacement of the legacy voice communications technology at Brisbane, Melbourne, Sydney and Perth with a Voice Over Internet Protocol (VOIP)-based system in February 2019.

Bypass CMATS Voice Communication System

An independent, backup voice switch that can be used if the primary CMATS Voice Communication System is not operational. This provides enhanced reliability and resilience, providing a backup capability to all civil operator positions for our enroute and terminal area operations.

CMATS Air Traffic Services Centres (ATSCs) and TAAATS ATSCs Refurbishment

Purpose-built Air Traffic Services Centres (ATSCs) have been built in Brisbane, Melbourne and Perth to house the new system, the operations room, equipment rooms, service rooms, showers, sleep rooms, locker rooms and Air Traffic Control support areas.

Power to the ATSCs is delivered by a separate Building Services Centre which includes four generators, uninterrupted power supply and associated switchboards to provide the required level of redundancy.

The decommissioning and removal of the existing air traffic management system (TAAATS) also requires refurbishment of existing TAAATS operations rooms and upstairs office spaces.

Training Support Facilities

The training support facilities include the CMATS Pseudo Pilots Room, Operational Simulator and Training Systems (OSTS), Ab Initio Simulator and Training System (ASTS) and Part TASK Trainers used for skill-specific training.

Located at each CMATS Operational Centre, the OSTS will support the initial and ongoing training of air traffic controllers and provide business continuity, while the Psuedo Pilot Rooms accommodate Psuedo Pilot consoles which simulate air traffic control training scenarios on the OSTS consoles. Located in Melbourne, the ASTS will support initial entry training.

Joint Software Support Facility and Support Platform Space

Located in Melbourne, the Joint Software Support Facility (JSSF) will provide a range of support functions for CMATS including test and evaluation, data adaptation, final verification, and installation.

Co-located with the JSSF is the Support Platform Space, providing a range of support functions for CMATS including software support, fault investigation and software development.

OneSKY Equipment Rooms

The OneSKY Equipment Rooms (OER) are a dedicated equipment room to house CMATS operational equipment. New buildings house the Melbourne and Brisbane OER. The Perth OER is aa partial build within the existing ATSC building.

Technical Operations Centres

Located in the Brisbane and Melbourne ATSCs, the Technical Operations Centre (TOC) provides system monitoring, system administration and fault reporting management; system recovery using control and monitoring tools; configuration changes and preventive maintenance actions to restore system functionality.

System Integration

Integrating new technologies with existing Airservices and Defence air traffic management systems -including systems which require updating, modification, acquisition or decommissioning.

Cost Sharing Principles

Airservices Australia is the lead agency for the acquisition of CMATS with an on supply agreement established with Defence. To support these arrangements and provide clarity around the cost contribution by Defence the following cost sharing principles apply:

- Cost incurred for the benefit of the OneSKY Australia Program as a whole (costs incurred to provided harmonised requirements to achieve the benefits of the OneSKY project as a whole) will be shared equally between the parties.
- Cost incurred for the benefit of one party shall be borne by that party (if party receives the complete benefit, the costs of that line item(s) will be allocated solely to that party).
- Costs for managing the contracts with the vendors will be shared between Airservices and Defence (equally) with additional overhead incurred by Airservices as a result of managing on behalf of Defence to be addressed on an equally shared basis.
- Each of Airservices and Defence will be responsible for costs associated with their own facilities, equipment, data, warranted information, personnel, and services, except where those facilities have a joint use for which costs may be negotiated between the parties.

Program Benefits Outcomes

The capabilities provided by OneSKY will accommodate growth in air traffic and leverage technological advancements in the aviation industry to deliver benefits across the following areas:

Improved Productivity

Optimising how resources are deployed to ensure a sustainable workload. Achieved through improved decision support tools and dynamically redesigned airspace.

Business Continuity

Providing uninterrupted services for all portions of Australian airspace, improving resilience for unplanned events and optimising use of available resources

Shared Use Airspace

Providing greater access for all users to available airspace, enabling optimal use of airspace, better fuel planning, preferred routes and optimal flight levels.

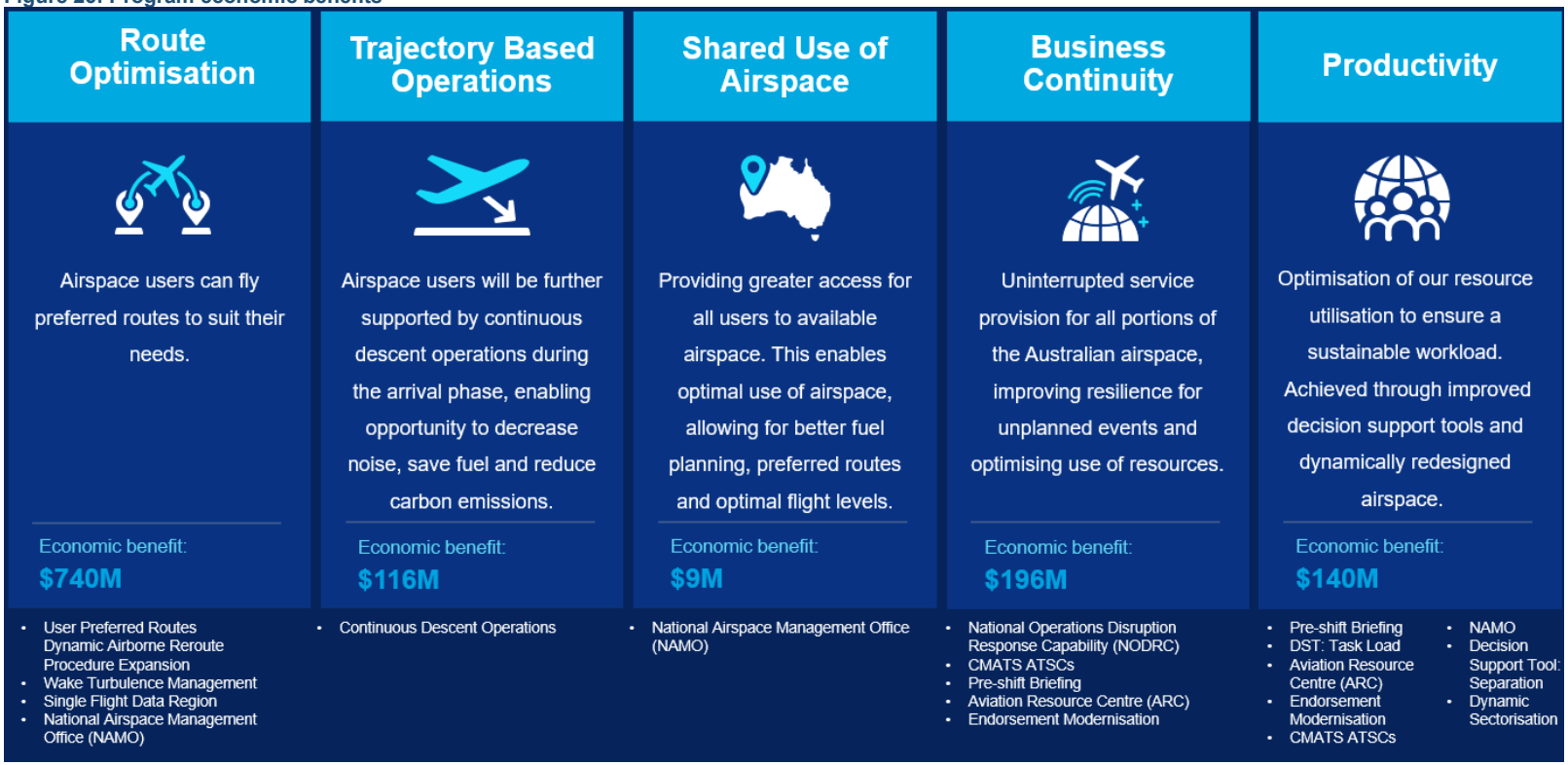
Trajectory Based Operations

Airspace users will be able to plan their arrival using a continuous descent from cruise to touchdown, enabling opportunity to decrease noise, save fuel and reduce carbon emissions.

Route Optimisation

Enabling airspace users to fly their preferred routes, to better suit their needs on the day of operation.

Figure 26: Program economic benefits



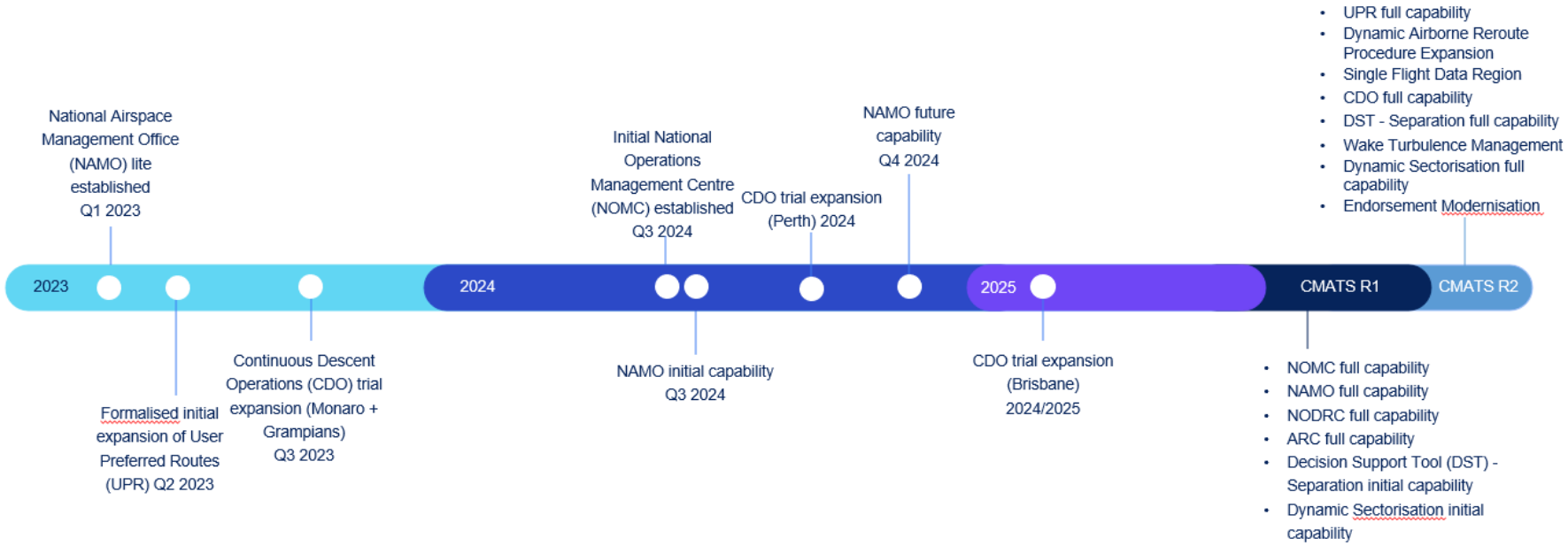
Program Delivery

The CMATS Program has experienced delays due to a combination of vendor performance, COVID-19 impacts, and a protracted design process. To address this, Airservices, Defence and Thales have developed a Remediation Plan which includes a streamlined delivery strategy.

The outcome of this work is anticipated to be finalised in the new calendar year. As part of ongoing industry engagement, Airservices continue to provide updates to industry on OneSKY Australia progress.

In readiness, Airservices has already commenced implementing some of the change processes which are delivering benefits to customers (e.g. user preferred routes, continuous decent operations (trials took place recently in Melbourne). Once implemented, CMATS will enable the sustainment and growth of these benefits as traffic increases. **Figure 27** below provides information on the estimated benefits delivery program schedule

Figure 27: OneSKY benefits delivery schedule



Appendix 5
5.1 Weighted Average Cost of Capital

Review of Weighted Average Cost of Capital for Airservices Australia

Airservices Australia

September 2023

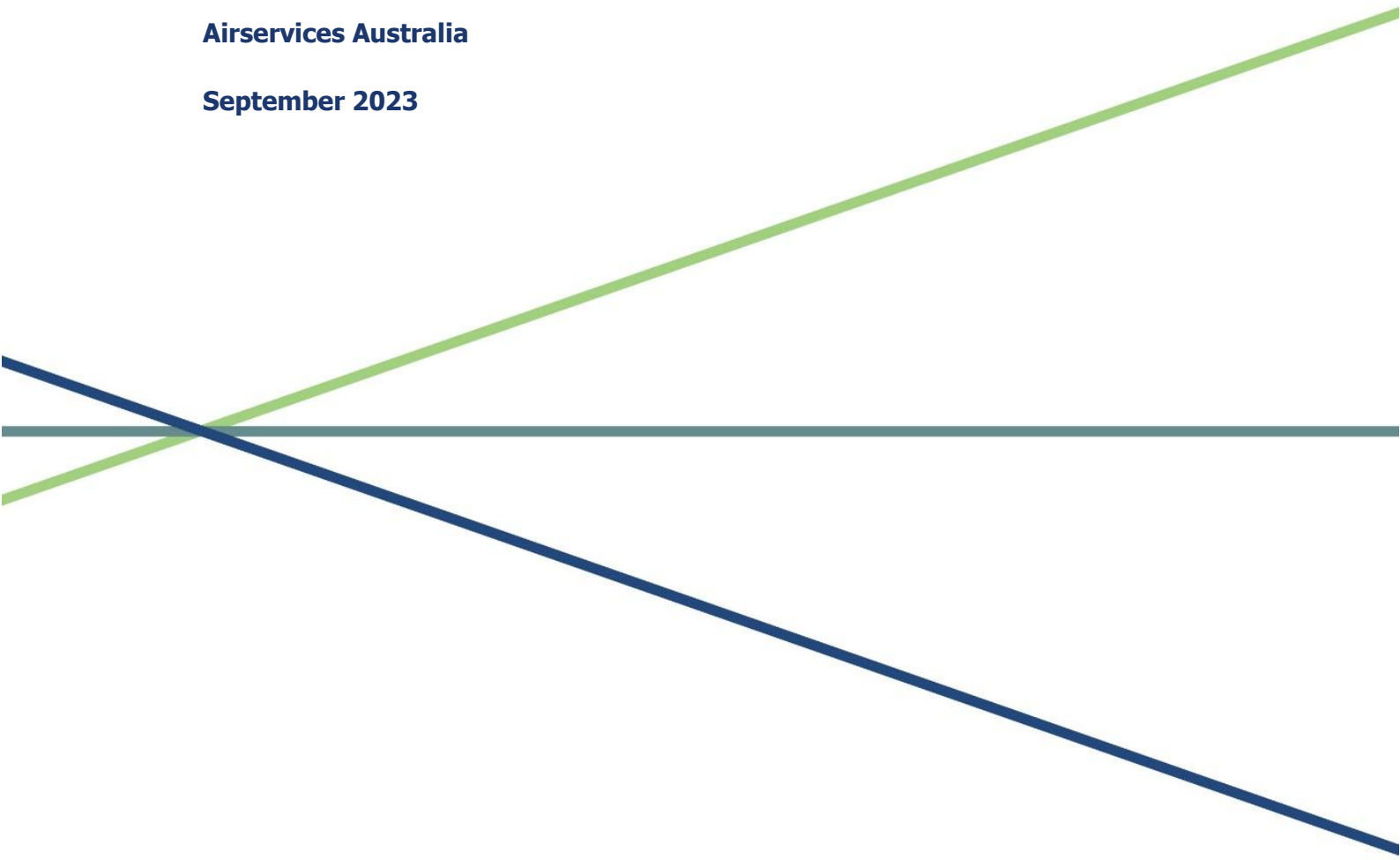


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Table of Contents

1. Executive Summary

Airservices Australia (Airservices) is a government-owned organisation that provides air traffic control services and aviation and fire-fighting rescue services to airports and airlines. Its services are declared under the Competition and Consumer (Airservices Australia Prices Surveillance) Declaration 2018, under which it is required to notify the Australian Competition and Consumer Commission (ACCC) of its proposed price changes for its services.

As part of the Airservices 2023-2028 Long Term Pricing Agreement, Airservices Australia (Airservices) is assessing its Weighted Average Cost of Capital (WACC), and has engaged Incenta Economic Consulting (Incenta) to assist it by developing a benchmark WACC for its services. The findings of our review is summarised as follows.

1.1 Market wide parameters – risk free rate, market risk premium and gamma

- Risk free rate – During the period of very low levels of the risk free rate we expressed concern about the divergence between market practice and the practice of regulators, who were applying a mechanistic version of the Capital Asset Pricing Model (CAPM). With recent rises in the risk free rate we observe that market and regulatory estimates of the risk free rate are no longer materially divergent. To estimate the risk free-rate we have averaged the annualised yield on 10-year Commonwealth Government Securities (CGS) by reference to the Bloomberg service.[1] This yield a risk free rate value of **4.092 per cent.**

- Market risk premium – For consistency with the current approach being applied by the Australian Energy Regulator (AER), we recommend that a market risk premium of **6.2 per cent** be applied in the case of Airservices.[2]

- Gamma – The AER currently applies a gamma estimate of 0.57.[3] Whilst debate about the appropriate value of gamma continues, we have not undertaken an independent analysis ourselves and for the purposes of Airservices' proposal recommend that a value of **0.57** be adopted.

- Inflation – Applying the AER's current methodology, which is to take the next two years of specific inflation forecasts and interpolate the next two years of inflation as the glide-path to the RBA's implied long term inflation estimate of 2.5 per cent at year 5 (i.e. the middle of the target band),[4] we estimate an inflation rate of **2.96 per cent** over the coming 5-year period.

1.2 Cost of equity

We have undertaken a first principles analysis of the factors impacting on Airservices' systematic risk. That review indicated that based on its fundamental characteristics, including a volume exposure to the airline industry, we would expect Airservices to have a systematic risk profile close to that of airports. Both Airservices and the airport sector are largely dependent on aircraft movements and are therefore subject to similar volume risks. Our specific findings relating to the cost of equity are:

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1 Specifically, we applied the BV100127 BVLI Index values provided by the Bloomberg service.
2 AER, (February, 2023), *Rate of Return Instrument*, para. 4 (c).
3 AER, (February, 2023), *Rate of Return Instrument*, para. 27.
4 AER, (December, 2020), Final Position, Regulatory treatment of inflation, p.6.

- Asset beta – Given on-going debate in New Zealand and the UK regarding the impact of the Covid-19 pandemic on airports, you have instructed us to estimate betas to 31 December 2019, and leave it to future reviews to consider how the data of the Covid-19 period should be treated when estimating the asset beta. We developed a comparator group of 29 international airports that was initially largely based on the comparators that have previously been relied upon by the New Zealand Commerce Commission (NZCC). We used Bloomberg weekly and monthly frequency beta estimates, and found that the average asset beta for two sets of 5 year estimation intervals (2010-2014, and 2015-2019) was 0.66. However, we believe that a more reliable comparator set can be derived by eliminating firms that have a relatively high bid-ask spread, which may indicate a lack of liquidity and thereby artificially depress the asset beta estimate. Applying a cutoff bid-ask spread filter of 0.5 per cent reduces the comparator group to 19 firms. The average asset beta of the refined sample was 0.72, which we have rounded down to our preferred asset beta estimate of **0.70.**

- Benchmark gearing – Consistent with the approach adopted by the New Zealand Commerce Commission (NZCC) and the UK's CAA, we have applied the same benchmark gearing level that is observed in the comparator sample used to estimate the asset beta. Using that approach we have calculated a benchmark gearing level of **21 per cent.**

1.3 Benchmark credit rating and cost of debt

Our approach to estimating the cost of debt began with estimating the benchmark credit rating, and assuming that a 10 year benchmark term is appropriate, since this has been applied by the AER for regulated energy networks, and by the Queensland Competition Authority (QCA) for regulated transport networks. We then estimated the debt risk premium using methodologies that used Bloomberg data, and Reserve Bank of Australia (RBA) data.[5] We have estimated a cost of debt consistent with a debt strategy that uses interest rate swaps to convert the underlying base interest rate to match the regulatory period (i.e. swapping a 10 year fixed rate obligation into a floating obligation, and then swapping the variable obligations for two sequential fixed rate obligations.

Our specific findings were:

- Benchmark credit rating – We conclude that it is not appropriate to apply Airservices' own AAA credit rating as this reflects the sovereign risk of Australia. Instead, we have adopted a benchmark credit rating of **BBB+**, which is assumed by the Australian Competition and Consumer Commission (ACCC), the AER and other regulators, and is widely applied as the target credit rating for regulated infrastructure businesses.

- Debt risk premium estimate – We have applied the AER's methodology for estimating the spot cost of debt for a BBB+ credit-rated infrastructure business, averaging the Reserve Bank of Australia (RBA) and Bloomberg estimates, but not the Refinitiv estimate. We do not expect this to result in a material difference in the cost of debt estimate. For the 20 business day averaging period to 31 July, 2023, we found the 10 year cost of debt to be **6.35 per cent.**

[5] AER (February, 2023), *Rate of Return Instrument*, paragraphs 10-18.

1.4 Weighted Average Cost of Capital estimate

Table 1 below shows the parameter estimates of the WACC, and estimates a nominal vanilla WACC range of **8.93 per cent**. Applying an inflation estimate of 2.96 per cent, the real vanilla WACC estimate becomes **5.80 per cent.**

Table 1: Estimated WACC parameters for Airservices, as at 31 July 2023

Parameters	Estimation methodology	at 31 July 2023
Gearing	Average gearing of comparator firms - 5 years to 2014 & 2019	21%
Credit rating	Standard assumption for regulated infrastructure	BBB+
Risk free rate	Bloomberg annualised yield, 20 business days to 31 July, 2023	4.09%
Asset Beta	Asset beta for comparator firms: Average of W&M estimates to 2014 & 2019	0.70
Equity Beta	Relevered equity beta	0.89
Market Risk Premium	AER RORI estimate	6.2%
Return on equity	CAPM formula	9.61%
Gamma	AER RORI estimate	0.57
Return on Debt	20 business day average of RBA & Blomberg interpolated BBB+ yields	6.35%
Vanilla WACC		**8.93%**
inflation forecast	AER (2020) method based on explicit RBA forecasts and 2.5% target at 5 years	2.96%
Real Vanilla WACC		**5.80%**

Source: RBA, Bloomberg, AER, and Incenta analysis

2. Analysis of WACC parameters

2.1 Firm-specific parameters

2.1.1 Asset beta

The key firm-specific parameter is Airservices' asset beta, which reflects its fundamental systematic business risk. In order to assess this risk, we start by undertaking a first principles analysis, which then informs the empirical analysis that follows.

First Principles Analysis

Our analysis indicates that airports represent reasonably close comparators for the operations of Airservices. This conclusion has been reached after consideration of a number of key characteristics of Airservices, and the market it operates in, including:

- Nature of regulation;
- The mix of customers and their characteristics;
- Pricing flexibility;
- Duration of contracts;
- Market power;
- Growth options;
- Operating leverage; and
- Stranding risk.
- Airservices' operations include:
- Enroute Services across the Australian Flight Information Region
- Terminal Navigation Services across 29 airports
- Aviation Rescue and Fire Fighting Services at 27 airports
- Aeronautical data services, such as charts and departure and approach procedures
- Noise complaint and information services
- Management of Australia's national air navigation infrastructure
- Management of airspace usage

In undertaking these tasks, in 2018-19 Airservices managed more than 4 million flights a year, maintained an asset base worth in excess of $1 billion, and employed 3,584 staff.[6]

Nature of regulation

Airservices is regulated under a price monitoring arrangement by the Australian Competition and Consumer Commission (ACCC), which in effect applies a price-cap regime. At the beginning of each five year regulatory period a forward looking assessment is made of costs and revenues taking account of the estimated Weighted Average Cost of Capital (WACC). This is a transparent process, with interactions taking place among the stakeholders.

Mix of customers and their characteristics

The customers and stakeholders of Airservices include airlines, the general aviation industry, the travelling public, airport owners and the Australian Government. The vast majority of Airservices revenues are derived from the airlines, which includes relatively diverse international traffic and relatively concentrated domestic traffic. Payments to Airservices are based on movements of aircraft rather than the number of passengers, but these are generally correlated. Airservices provides a monopoly service at each specific location. Like airports, Airservices is affected by route cancellations.

Pricing flexibility

The regulatory arrangements effectively apply a price-cap to Airservices over a 5 year period, which indicates an inability to react to market movements.

Market power

Airservices has a legislated monopoly over the provision of air-traffic control, terminal navigation, and air rescue and firefighting at Australian airports. While a monopoly position combined with a regulatory framework might be expected to reduce beta, Airservices' position is not too different to that of the airports sector, where the large fixed costs of developing an airport, combined with the significance of land transport costs, creates an effective monopoly position over a geographic location.

Growth options

With respect to growth options, we would expect Airservices to have similar growth options to airports, given that both are dependent on a growing aviation market.

Operating leverage

The profits of firms with high operating leverage will suffer disproportionately when they experience revenue volatility. After the September 11 terrorist incident over 20 years ago, Airservices did not experience significant revenue volatility, however volatility has occurred, including a global recession (Global Financial Crisis of 2008-09) and a pandemic (as was the case with Covid-19). It has similar exposure to airports. The EBITDA ratio is an indicator of operating leverage that suggests Airservices

6 Air Services Australia (2019), *2018-19 Annual Report.*

higher operating leverage owing to a relatively lower EBITDA Margin than the average airport. However, we found that some of the airports in our sample have a similar margin to Airservices and we found no relationship between EBITDA Margin and airport asset betas. Therefore, we have not distinguished Airservices from the airports comparator group on account of operating leverage.

Summary of first principles analysis

Based on our first principles analysis of Airservices, we consider that the best comparators for Airservices can be found in the airports sector.

Selection of the sample

We searched the Bloomberg data service for firms engaged in the provision of airport services over the period from 2010 to 2019 that had at least 36 months of share price data as at December, 2014 or December 2019. We have previously adopted the requirement for 36 months of data, which reflects our view of the minimum number of observations required to deliver an estimate of beta with a reasonable level of accuracy. We applied a December 2019 cutoff as we have been instructed that given current uncertainty about the impact of the Covid-19 pandemic on airport betas, at this time Airservices will apply a pre-Covid beta, and re-visit this question at the next review.

This process derived a sample of 27 firms including the listed Italian air traffic control company, Enav S.p.A. (ENAV IM Equity), which had 41 months of price data at December 2019. We excluded Enav because it has a revenue protection framework that does not apply in the case of Airservices, and is likely to dampen systematic risk relative to Airservices. As noted by a market analyst:[7]

> *ENAV takes full traffic risk for just the first 2ppt of traffic decline vs the regulated plan, between 2-10% traffic loss is shared with the airlines with ENAV taking just 30% of the risk and for any decline above 10% full traffic risk is transferred away for ENAV.*

Of the 26 remaining airport businesses, 24 were included in the New Zealand Commerce Commission's 2016 Input Methodologies review of the cost of capital for New Zealand airports.[8] Two additional firms were found, Aeroporto Guglielmo Marconi Di Bologna S.p.A. (ADB IM Equity) and Airports Corp of Vietnam JSC (ACV VN Equity), which had the requisite number of monthly observations as at December 2019.

Applying a liquidity filter to the raw sample

The New Zealand Commerce Commission currently is undertaking a review of cost of capital parameters for New Zealand airports. In relation to the asset beta, it has proposed applying a number of new "filters" when selecting its sample of comparable entities compared to what it applied in its 2016 review.[9]

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7 Rishika Savjani and Mark McVicar (13 March, 2020), "ENAV: The perks of being a regulated asset," *Barclays Equity Research*, p.1.

8 New Zealand Commerce Commission, (20 December, 2016), *Input methodologies review decisions: Topic paper 4: Cost of capital issues*, p.245.

9 Commerce Commission (14 June, 2023), *Cost of capital topic paper, Part 4 Input Methodologies Review 2023 – Draft decision.*

One of the new filters the Commission has proposed is to eliminate firms that have insufficient liquidity. We agree with applying a liquidity filter because the presence of illiquidity is likely to result in beta estimates that are biased downwards, which in turn is because the price response of the stock is less likely to fully reflect the appropriate response given a change in the market index. We have previously applied a liquidity filter in our own work in other assignments.

The Commission's principal test of sufficient liquidity was whether the average "bid-ask spread"[10] for the relevant firms is below 0.5 per cent, which we have applied to the current matter.[11] Applying the Commission's liquidity filter to the current matter reduces the comparator sample from 26 to 17 firms.

Other filters the NZ Commerce Commission has proposed to apply

However, the Commission has also proposed eliminating firms on the basis of:

- The reliability of the beta estimate
- The comparability of the market in which the firm is listed, and
- If the firm has a negative net debt (i.e., a positive cash balance).

We do not agree with these additional filters, and note that these elements of the Commission's proposal are the subject of strong push-back.[12] Our reasons are summarised below.

Unreliable beta

In our view there is no *a priori* reason to exclude airports on the ground that the estimate of beta is imprecise. The idea behind the Capital Asset Pricing Model (CAPM) and the beta coefficient is that there will be numerous factors causing volatility in a firm's returns, but only a portion (the beta coefficient) will be related to movements in the overall market. In other words there will be much "noise" in share prices that is assumed to be diversifiable because it is not related to the market. The best way to address the issue of beta imprecision is to assemble a large number of valid / comparable entities.

In addition, the Commission's indicator of whether a beta estimate was unreliable was based on the maximum difference between betas estimated using monthly return intervals, weekly returns and daily returns, and in most cases where a beta was deemed to be unreliable, the last of these estimates – daily returns – were the low value. However, there are well-known factors that may cause betas estimated using daily return intervals to be downward biased, namely if the shares are thinly traded or where the complexity of the firm's operations means that changes in market wide events flow through to share price movements with a lag (which is referred to in the literature as "opacity"). These biases disappear when betas are estimated using longer return intervals. Thus, what the Commission's test for

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10 The "bid-ask spread" is the difference between the price at which shares are offered ("asked") for sale, and the price that is "bid" for purchase, expressed as a percentage of average of the two prices.

11 Other measures that we have applied previously (as well as the bid-ask spread) are the free float market cap (product of the market capitalisation and free float percentage) and the number of analysts following the stock. In the current matter, we found that firms that were judged to be illiquid based on the bid-ask spread also would have been found to be illiquid on one or more of these other measures.

12 See, Incenta Economic Consulting (July, 2023), *Airport comparator selection*, Report for Christchurch International Airport.

unreliability most likely would detect are situations where betas estimated using daily return intervals are unreliable (or, more specifically, downward biased), which is remedied by not using daily return intervals – there is no need to reject the firm from the set of comparable entities.

Market comparability

The most important screen for comparable businesses is whether the *operations* are comparable, and face similar risk to the target entity. The Commission also proposed testing whether the firms were also operating in comparable *markets*. It proposed two measures for this, which were whether the airport operated in a country that was "developed" according to the FTSE Equity Country Classification, and the Market Risk Premium (MRP). The FTSE measure of a "developed market" is a flawed measure of the comparability of a country because it refers to the breadth of derivatives and financial instruments in different markets, and not to the ability of the share markets in those countries to price stocks to allow a valid beta to be estimated. The Commission also provided no valid reason why markets with a high Market Risk Premium (MRP) should be excluded from the analysis.

Firms without debt in their capital structure

We disagree with the Commission's exclusion of airports on the basis that they have "unusual capital structures" as they have no debt. This position finds no support in economic theory. The Modigliani and Miller (1958) theorem holds that firm value is invariant to how a business is financed.[13]

Asset beta estimates

Table 2 displays the results of our empirical estimates. We downloaded Bloomberg equity betas using weekly and monthly return frequencies over 5 year estimation windows ending in December 2019 and December 2014. This gave us four estimates of beta for each business, which we then averaged.

For the full 26 airport sample the beta estimate is 0.66, but for the 17 comparators sample with adequate liquidity (measured by bid-ask spread) the equity beta estimate rises to 0.72. Given the uncertainty of beta estimation we consider it reasonable to round this estimate down to 0.70.

[13] Modigliani, Franco, and Merton H. Miller, (June, 1958), "The Cost of Capital, Corporation Finance and the Theory of Investment," *The American Economic Review*, Vol. 48, No. 3, pp.261-297.

Table 2: Estimation of airport asset beta using weekly and monthly frequency returns to 31 December, 2019

Ticker	Name	Country	Ave. Bid-Ask (%)	Ave. Asset Beta
600009 CH Equity	Shanghai International Airport Co Ltd	China	0.09	0.78
FRA GR Equity	Fraport AG Frankfurt Airport Services Worldwide	Germany	0.10	0.41
ADP FP Equity	Aeroports de Paris	France	0.11	0.46
600004 CH Equity	Guangzhou Baiyun International Airport Co Ltd	China	0.13	0.90
600897 CH Equity	Xiamen International Airport Co Ltd	China	0.13	0.92
FHZN SW Equity	Flughafen Zurich AG	Switzerland	0.17	0.62
GAPB MM Equity	Grupo Aeroportuario del Pacifico SAB de CV	Mexico	0.18	0.78
9706 JP Equity	Japan Airport Terminal Co Ltd	Japan	0.18	1.14
ASURB MM Equity	Grupo Aeroportuario del Sureste SAB de CV	Mexico	0.19	0.81
000089 CH Equity	Shenzhen Airport Co Ltd	China	0.20	0.95
AIA NZ Equity	Auckland International Airport Ltd	New Zealand	0.22	0.83
SYD AU Equity	Sydney Airport	Australia	0.23	0.33
TAVHL TI Equity	TAV Havalimanlari Holding AS	Turkey	0.24	0.38
GMRI IN Equity	GMR Airports Infrastructure Ltd	India	0.26	0.49
694 HK Equity	Beijing Capital International Airport Co Ltd	Hong Kong	0.27	0.48
8864 JP Equity	Airport Facilities Co Ltd	Japan	0.32	0.60
MAHB MK Equity	Malaysia Airports Holdings Bhd	Malaysia	0.32	1.08
AOT TB Equity	Airports of Thailand PCL	Thailand	0.37	0.97
OMAB MM Equity	Grupo Aeroportuario del Centro Norte SAB de CV	Mexico	0.43	0.81
FLU AV Equity	Flughafen Wien AG	Austria	0.56	0.24
ACV VN Equity	Airports Corp of Vietnam JSC	Vietnam	0.61	0.61
SAVE IM Equity	SAVE SpA/Venezia	Italy	0.76	0.16
ADB IM Equity	Aeroporto Guglielmo Marconi Di Bologna SpA	Italy	0.89	0.39
357 HK Equity	Hainan Meilan International Airport Co Ltd	Hong Kong	1.16	0.44
KBHL DC Equity	Koebenhavns Lufthavne A/S	Denmark	1.18	0.45
AERO SG Equity	Aerodrom Nikola Tesla AD Beograd	Serbia	1.31	1.47
TYA IM Equity	Toscana Aeroporti SpA	Italy	2.81	0.15
MIA MV Equity	Malta International Airport PLC	Malta	N/A	0.72
Asset Beta (All)				**0.66**
Asset Beta (Exclude Bid-Ask Spread above 0.5%)				**0.72**

Source: Bloomberg and Incenta analysis

2.1.2 Benchmark gearing and credit rating

Benchmark gearing

When estimating the benchmark gearing of airports, the New Zealand Commerce Commission applies the gearing level that has been observed for the comparator group that it uses in estimating beta. This approach is practical as it avoids the issues that surround inaccuracies resulting from the re-levering of beta from an asset beta to a gearing level that does not match that of the original sample.

Table 3 displays the gearing levels observed for the 17 firms comparator sample that was used to derive the 0.70 asset beta estimate. Gearing was estimated as the ratio of Net Debt / (Net Debt plus Market Capitalisation) over the two 5-year periods ending December, 2014 and December, 2019. If Net Debt was negative as it was in the case of two Chinese airports, we rounded the Net Debt to zero. This yielded an average gearing estimate of 21 per cent.

Table 3: Benchmark airport gearing level

Ticker	Name	Country	2014	2019	Average
600009 CH Equity	Shanghai International Airport Co Ltd	China	0%	0%	0%
FRA GR Equity	Fraport AG Frankfurt Airport Services Worldwide	Germany	43%	38%	40%
ADP FP Equity	Aeroports de Paris	France	27%	21%	24%
600004 CH Equity	Guangzhou Baiyun International Airport Co Ltd	China	1%	2%	2%
600897 CH Equity	Xiamen International Airport Co Ltd	China	0%	0%	0%
FHZN SW Equity	Flughafen Zurich AG	Switzerland	23%	9%	16%
GAPB MM Equity	Grupo Aeroportuario del Pacifico SAB de CV	Mexico	1%	4%	2%
9706 JP Equity	Japan Airport Terminal Co Ltd	Japan	22%	11%	17%
ASURB MM Equity	Grupo Aeroportuario del Sureste SAB de CV	Mexico	1%	5%	3%
000089 CH Equity	Shenzhen Airport Co Ltd	China	10%	1%	5%
AIA NZ Equity	Auckland International Airport Ltd	New Zealand	23%	20%	21%
SYD AU Equity	Sydney Airport	Australia	44%	35%	40%
TAVHL TI Equity	TAV Havalimanlari Holding AS	Turkey	41%	33%	37%
GMRI IN Equity	GMR Airports Infrastructure Ltd	India	76%	72%	74%
694 HK Equity	Beijing Capital International Airport Co Ltd	Hong Kong	41%	15%	28%
8864 JP Equity	Airport Facilities Co Ltd	Japan	35%	39%	37%
MAHB MK Equity	Malaysia Airports Holdings Bhd	Malaysia	25%	26%	25%
AOT TB Equity	Airports of Thailand PCL	Thailand	13%	0%	6%
OMAB MM Equity	Grupo Aeroportuario del Centro Norte SAB de CV	Mexico	8%	5%	6%
Average gearing					**21%**

Source: Bloomberg and Incenta analysis

Benchmark credit rating

We consider it reasonable to assume a BBB+ credit rating for Airservices. The ACCC and AER and many other regulators have adopted a BBB+ benchmark stand-alone credit rating for efficiently financed regulated infrastructure in several industries. We see no reason to apply a different credit rating to Airservices, and note that this reflects a stand-alone credit rating rather than the actual credit rating of Airservices, because the latter factors in government support.

2.1.3 Benchmark cost of debt

To estimate the benchmark cost of debt we have applied the method recommended by the AER to derive the cost of debt for a BBB+ rated bond at a 10 year term at issuance.[14] Under this approach, for an "On the day" estimate, 20 business days of annualised BBB+ bond yield estimates are averaged using the Reserve Bank of Australia (RBA), Bloomberg and Refinitiv services. We average only the first two of these services and believe that this will not make a material difference to the estimate.

For Australia both the Bloomberg and RBA data are assembled on a broad BBB and broad A credit rating band basis. This means that to estimate a BBB+ credit rating it is necessary to interpolate by applying a weight of 2/3 to the BBB yield and 1/3 to the A yield.

The Bloomberg bond yield data is provided on a daily basis, which can readily be averaged over the 20 day estimation period, in this case up to 31 July 2023. However, the RBA data is provided at discrete estimation dates at the end of each month, and in order to obtain daily yield estimates it is

[14] AER (February, 2023), clauses 10-18.

necessary to interpolate between the ends of each month. In this case we interpolated yields for 20 days between the end dates of the June and July, 2023.

As shown in Table 4 below, the estimated yield of 10-year term BBB+ rated bond for the 20 business days to 31 July, 2023 is found to be **6.346 per cent**.

Table 4: Cost of 10-year term BBB+ rated debt, 20 business days to 31 July, 2023

	RBA	Bloomberg	Average	Weights	Value
BBB	6.786	6.412	6.599	66.7%	4.399
A	5.938	5.743	5.841	33.3%	1.947
BBB+					**6.346**

Source: RBA, Bloomberg and Incenta analysis

2.2 Market-wide parameters

We applied the market-wide parameters that have been recommended by the AER in its most recent *Rate of Return Instrument*, as follows.[15]

2.2.1 Risk-free rate

The risk free rate has been estimated as the average annualised yield on Commonwealth Government Securities (CGS) over the same 20 day estimation period ending 31 July, 2023. This estimate is **4.092 per cent** using the Bloomberg service (BV100127 BVLI Index).

We note that during the recent period of very low interest rates, a number of commentators (us included) expressed concern that the Total Market Return (TMR) that was implied by the then prevailing risk free rate, and a market risk premium that is largely based on historical returns (as we have applied in this report) was below the return that was be expected by investors, and indeed lower than that applied by market analysts and regulators in other countries. Those same commentators recommended applying either an upward adjustment to the risk free rate, or an alternative estimate of the market risk premium. However, we consider the risk free rate is currently at a level that would not warrant adjustments being made by market analysts and regulators.

2.2.2 Market risk premium

The AER's *Rate of Return Instrument* applies a Market Risk Premium of **6.2 per cent**, which we have also applied.

2.2.3 Gamma

The AER's *Rate of Return Instrument* applies a gamma of 0.57, which is slightly above the levels applied by other Australian regulators; however, we have applied this value for consistency with other parameters.

[15] AER, (February, 2023), *Rate of Return Instrument.*

2.2.4 Inflation rate

The AER recently determined its revised method for estimating the inflation rate for a 5 year regulatory period.[16] This method consists of taking the Reserve Bank of Australia's (RAB) explicit inflation forecasts for the next 2 years as published in the latest *Statement on Monetary Policy*, calculating (interpolating) the glide-path between the second year's explicit forecast and the 5th year's assumed inflation forecast (2.5 per cent, which is the middle of the RBA's target inflation band), and finding the average inflation rate over that period.

Applying the AER's method in Table 5 we derive an inflation forecast of **2.96 per cent.**

Table 5: Inflation estimate using the AER method

Year (s)	Inflation
Inflation forecast (AER method - 2024 to 2028)	**2.96%**
June 2024 (RBA explicit forecast)	3.60%
June 2025 (RBA explicit forecast)	3.10%
June 2026 (Interpolated)	2.90%
June 2027 (Interpolated)	2.70%
June 2028 (Middle of RBA band)	2.50%

Source: AER (December 2020) and RBA

16 AER (December, 2020), Final position – Regulatory treatment of inflation.

Appendix 6

6.1 Australian Aviation Traffic forecast report for 2023-2026

Australian Aviation Traffic Forecasts for 2023-2026

Report for Airservices Australia

Commercial-In-Confidence

June 2023

Table of Contents

1. Overview

1.1 Forecasting in a Period of Considerable Uncertainty

Tourism Futures International (TFI) has prepared two aviation traffic scenarios for the period FY23 to FY26 for Airservices Australia (ASA). Scenario 1 assumes that economies grow faster than predicted by the IMF and other economic forecasters, passenger demand grows, airlines add capacity to meet the demand and airfares and travel costs fall in real terms. This is an optimistic scenario. Scenario 2 assumes that economies are impacted by rising interest rates and reduced discretionary spending including on travel. For this scenario economies are assumed to grow at a slower rate than that of the IMF and other economic forecasters and passenger demand grows but at a slower rate than for Scenario 1. These two scenarios should not be seen as 'boundary' scenarios. The OECD, IMF and other economic forecasters point to the strong downside risks for economies at present. This is also the case with the recovery in air passenger demand. Scenario 2 suggests that Australia's international passenger market will recover to FY19 levels by FY26. However economic recession and/or sluggish recovery in just a couple of markets (particularly China) could push this recovery into FY27.

TFI prepared the forecasts contained in this Report over April and May 2023 based on data from earlier in the year. TFI intends to include the actual outcome for FY23 and review further the market response to interest rate rises before finalising this review.

The scenarios and outcomes reported herein were prepared over April through June 2023 based largely on data available in the first quarter 2023:

- The World Health Organisation (WHO) reports a decreasing trend in new COVID-19 cases, hospitalisations and deaths (at the same time noting that new case numbers may be underestimates due to the reduction in testing). The Omicron variant accounts for most of the current reported cases, with several subvariants under monitoring. The impact of variants differs by country depending on various factors such as previous immunity and public health and social measures in place.
- In its November 2022 outlook the OECD noted that the war in Ukraine had pushed up prices substantially, especially for energy, aggravating inflationary pressures at a time when the cost of living was already rising rapidly around the world. Global financial conditions had tightened significantly and real incomes weakened. In March 2023 the OECD reports that growth had slowed to 3.2% in 2022, well below expectations at the start of the year, with growth in 2023 and 2024 projected to remain below trend rates at 2.6% and 2.9% respectively. These projections are slightly above those presented in November as the drag on income from high inflation is expected to recede, China to fully reopen, and business and consumer sentiment to improve. However the OECD also indicates that the improvement in the outlook is still fragile with risks remaining tilted to the downside.
- In its October 2022 outlook the IMF had pointed towards the weakest growth profile since 2001 excluding the global financial crisis and the acute phase of the COVID-19 pandemic, with significant slowdowns expected for the largest economies. In its January 2023 update the IMF was indicating that the reopening of China could pave the way for a slightly faster-than-expected recovery. Most recently (April 2023) the IMF points towards a phase during which economic growth remains low by historical standards at the

same time as there are rising financial risks and ongoing inflation. The baseline forecast is now for global growth to fall to 2.8% in 2023, well below the 3.6% expected 12 months earlier and below the historical (2000-2019) average of 3.8%. Growth during 2024 is forecast to increase to 3.0%, down from the 3.4% forecast in April last year. The world economy is not currently expected to return over the medium term to the rates of growth that prevailed before the pandemic, with projections averaging 3.1% over 2025 to 2028. Risks remain tilted to the downside.

- Oil prices fluctuated during 2022, peaking at US$123 per barrel in June and averaging US$101/b over the year, up 42% over 2021 and the highest average annual price since 2013. The US Energy Information Administration (EIA) forecasts oil prices to average US$80/b in 2023 and US$84/b in 2024. Ongoing considerations about weakening global economic conditions, perceived risks around the global banking sector and persistent inflation have led to recent lower prices. The recent OPEC+ announcement to extend crude oil production cuts through 2024, is expected to put some upward pressure on prices from late-2023.
- Inflation globally and in Australia has been rising and remains high. The Reserve Bank of Australia (RBA) has responded by increasing interest rates. In June 2023 the RBA increased the cash rate target by 25 basis points to 4.10% (the twelfth monthly increase since May last year, after 18 months of maintaining the cash rate target at 0.10%). The central forecast as at May 2023 is for inflation to decline this year and next, to be around 4.5% in 2023 (down from 7.8% over 2022 to the December quarter) and to reach 3.0% by mid-2025.
- The recent closure of the Silicon Valley Bank and issues with Credit Suisse and Deutsche Bank, could lead to a financial crisis.

The economic factors outlined above all represent downside risks to income growth and point to a slower recovery in passenger demand than might have been envisaged during 2022. Reductions in forecast annual GDP growth rates of 0.5 to 1 percentage point for FY24 are common with smaller reductions thereafter.

1.2 Key Assumptions

The main drivers of the forecasts are GDP growth rates and costs or fares.

The forecasts used for GDP growth are provided in **Table 5.1**. These are mainly sourced from the IMF but for Australia also reflect Reserve Bank of Australia (RBA) and Treasury forecasts.

To create Scenarios 1 and 2:

- For GDP Australia TFI adds 0.5pp per year for Scenario 1 and subtracts 1pp per year for Scenario 2.
- For the GDP Foreign growth TFI:
    - Adds 1pp for FY24 and 0.5pp per year for FY25 and FY26 for Scenario 1.
    - Subtracts 1pp for FY24 and 0.5pp per year for FY25 and FY26 for Scenario 2.

TFI assumes that Domestic airfares are at a high and will fall as capacity increases:

- Scenario 1: A reduction in fares of 5.5%, 3.5% and 2.5% is assumed for FY24, FY25 and FY26 respectively. This represents a drop by FY26 of 11% over the FY23 level, and a CAGR increase since FY19 of 1.4% (FY19 to FY26). Note that over the decade to FY19 the CAGR decreased by 1%, with an increase of 1.6% in the five years to FY19.
- Scenario 2: A reduction in fares of 4.0%, 2.0% and 1.0% is assumed for FY24, FY25 and FY26 respectively. This represents a drop by FY26 of 7% over the FY23 level, and a CAGR increase since FY19 of 2.3% (FY19 to FY26).

The international market is influenced by Australian Travel CPI (in real terms). For the international segment airline capacity may not be restored as quickly as for the domestic segment and for this reason TFI assumes:

- Scenario 1: A reduction in real CPI Travel Costs of -2.5% in FY24 and decreases of -1.0% in each of FY25 and FY26. This represents a drop by FY26 of 4.4% over the FY23 level, and a CAGR increase since FY19 of 0.8% (FY19 to FY26). Note that over the decade to FY19 the CAGR decreased by 0.6%, with an increase of 0.1% in the five years to FY19.
- Scenario 2: A reduction in fares of -1.5% for FY24 and no change for each of FY25 and FY26. This represents a drop by FY26 of 1.5% over the FY23 level, and a CAGR increase since FY19 of 1.4% (FY19 to FY26).

1.3 Forecast Approach

Models were estimated to explain changes in passenger demand over time for Australia in aggregate and for the following tourism sectors:

- Seven domestic route types including SE Golden Triangle, Other Inter-capital, Interstate Leisure Routes, Other Interstate, Intrastate Mining Routes, Other Intrastate, Industry Non-Competitive.
- Residents returning to Australia by main country/country group visited including NZ, UK/Europe, Mid East, SE Asia, China, NE Asia, India, Americas and Other.
- Visitor arrivals by country and country groups (same as resident groupings).

A number of economic drivers were tested for the models:

- Gross domestic product (GDP) is considered the main income driver of demand as it determines the market's ability to afford air travel. Different GDP measures were used for the demand types: Australian GDP for domestic travel and resident departure with international GDPs used for visitor arrivals (for specific countries or GDP OECD for certain groups).
- Trade weight index (TWI), as a proxy for exchange rates, can impact the relative cost for Australians to travel abroad and foreign residents to visit Australia and therefore are likely to impact the inbound/outbound mix of passengers.
- Hotel accommodation and travel costs as measured by ABS indices for domestic and international travellers.

- Air fares are the other cost indicator that could be presented in different forms - economy fare, discount fare and best discount fare.
- For the domestic markets, several route types were affected by airline capacity constraint during the period from 2014 to 2019. Dummy variables were used to capture this effect.
- Seasonality was captured with the use of quarterly dummy variables.

The models are structured in the log-linear form so that the estimated coefficients also represent the estimated demand elasticities for the corresponding drivers e.g. income or cost. These models were also reviewed for different time periods. The projections directly made from the models can only be seen to present a long-term demand pattern which may or may be not be returned to, partially or wholly, over the next decade.

A review of current literature and market assessments was undertaken to develop possible rates of recovery over the next few years.

TFI is also monitoring recovery assumptions of international agencies such as the Airports Council International (ACI) and the International Air Transport Association (IATA) for benchmarking purposes (summarised in **Section 6**).

1.4 Scenario Outcomes

TFI's initial aggregate forecasts are summarised in **Table 1.1**.

For the international market:

- The CAGR for international passengers over FY19 to FY26 is 2.9% for Scenario 1 and 0.0% for Scenario 2. For Scenario 2 the market just recovers to FY19 levels into FY26. This could be delayed if markets such as China take longer to recover in the face of major economic uncertainty.
- The CAGR for ASA activity indicators (MTOW Km and Terminal MTOW) are lower than passenger growth, consistent with the historical outcomes and flow from increases in passenger seat factors, average aircraft size and aircraft size/weight efficiencies.

For the domestic market:

- The CAGR for domestic passengers over FY19 to FY26 amounts to 2.9% for Scenario 1 and 1.0% for Scenario 2.
- The CAGR for ASA activity indicators are lower than passenger growth consistent with historical outcomes.

Table 1.1: Annual Passenger, MTOW Km and Terminal MTOW Scenarios ('000s)

	FY19 Actual	FY20 Actual	FY21 Actual	FY22 Actual	FY23 Estimate	FY24 Scenarios	FY25 Scenarios	FY26 Scenarios	CAGR FY19 to FY26
SCENARIO 1									
International									
Passengers	43,306	31,507	1,117	6,562	27,869	35,293	43,667	52,883	2.9%
MTOW Km	99,496	77,568	27,719	38,653	71,995	86,616	101,810	117,132	2.4%
Terminal MTOW	23,292	17,947	6,334	8,884	16,041	19,502	23,164	26,930	2.1%
Domestic									
Passengers	63,549	48,045	24,993	33,770	58,618	64,902	72,852	77,698	2.9%
MTOW Km	46,926	36,898	24,890	32,000	46,057	49,464	53,857	55,717	2.5%
Terminal MTOW	35,317	27,115	16,719	22,220	32,167	34,903	38,395	40,131	1.8%
SCENARIO 2									
International									
Passengers	43,306	31,507	1,117	6,562	27,869	32,783	38,130	43,357	0.0%
MTOW Km	99,496	77,568	27,719	38,653	71,995	80,878	89,838	97,557	-0.3%
Terminal MTOW	23,292	17,947	6,334	8,884	16,041	18,209	20,438	22,426	-0.5%
Domestic									
Passengers	63,549	48,045	24,993	33,770	58,618	62,741	66,799	68,334	1.0%
MTOW Km	46,926	36,898	24,890	32,000	46,057	47,571	48,875	48,248	0.4%
Terminal MTOW	35,317	27,115	16,719	22,220	32,167	33,914	35,566	35,837	0.2%

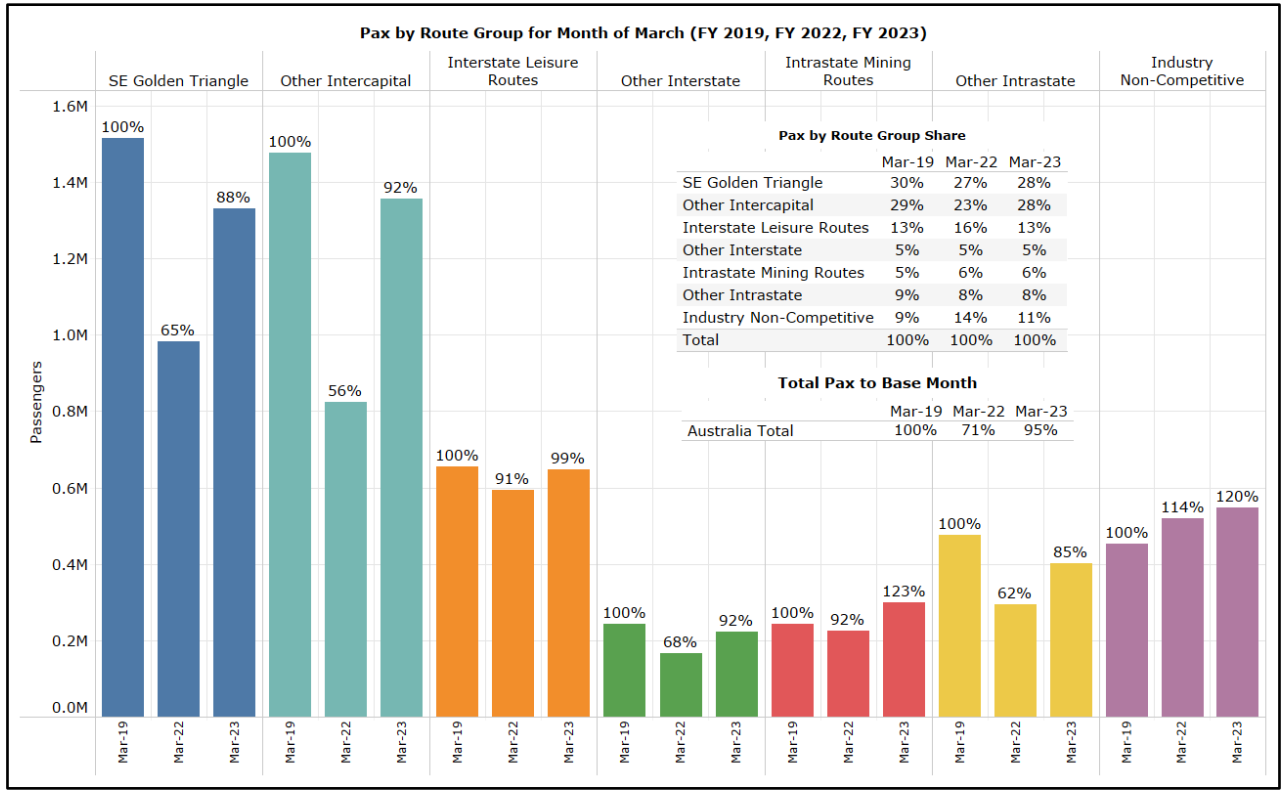
Notes: CAGR = Compound Annual Growth Rates. Domestic passengers include RPT and Charter passengers. Source: TFI based on BITRE, ASA data

2. Domestic RPT Market Structure and Recovery

2.1 Australian Domestic Recovery by Route Type

Figure 2.1 shows passenger recovery in March 2023 relative to 2022 and 2019 for Australian route types.

Figure 2.1: Recovery in the Australian Domestic Passenger Market, March (FY 2019, FY 2022 and FY 2023)



Source: TFI based on BITRE

TFI has defined seven route types:

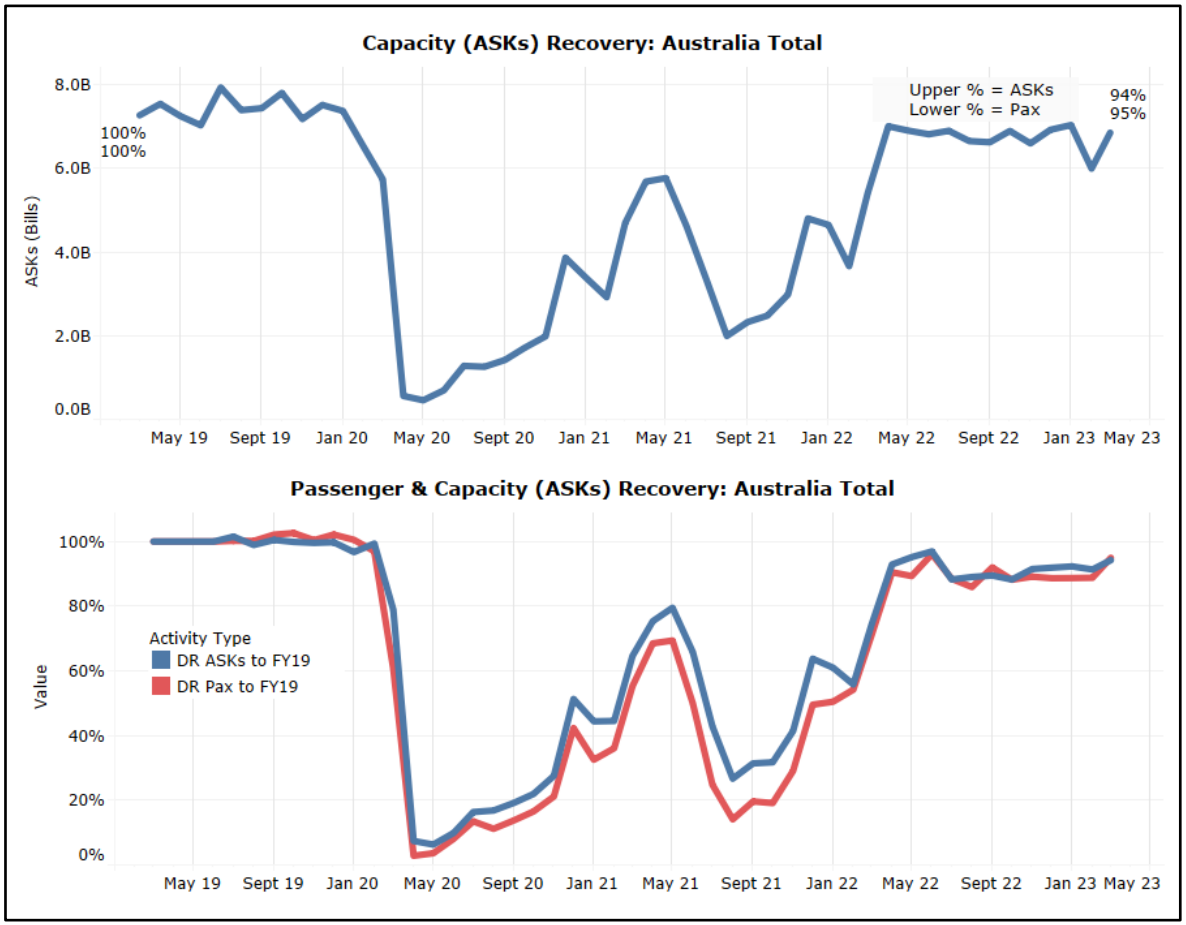
- SE Golden Triangle: business-oriented routes Sydney, Melbourne and Brisbane (30% of passengers in Mar-19).
- Other Inter-capital routes such as Melbourne-Perth (29%).
- Interstate Leisure Routes such as those to the Gold Coast and Cairns (13%).
- Other interstate routes (5%).
- Intrastate mining routes (5%).
- Other intrastate routes (9%).
- Non-competitive routes (9%).

Overall passenger volumes in Mar-23 amounted to 95% of the Mar-19 level. Leisure and mining routes led the way with recovery to 99% and 123% of pre-Pandemic levels respectively.

Passenger numbers on routes for which there was only one operator in Mar-23 are high relative to FY19 (120%) but this reflects limited recovery on a number of formerly competitive routes.

2.2 Post COVID-19 Domestic Recovery – Capacity and Passengers

Figure 2.2: Domestic Capacity (ASKS) – Capacity and Pax Recovery (%), Mar-19 to Mar-23



Source: TFI based on BITRE

The upper chart in **Figure 2.2** shows the recovery in domestic capacity (upper % to FY19) and passengers (lower % to FY19). The lower chart shows the percentage recovery to FY19 each month:

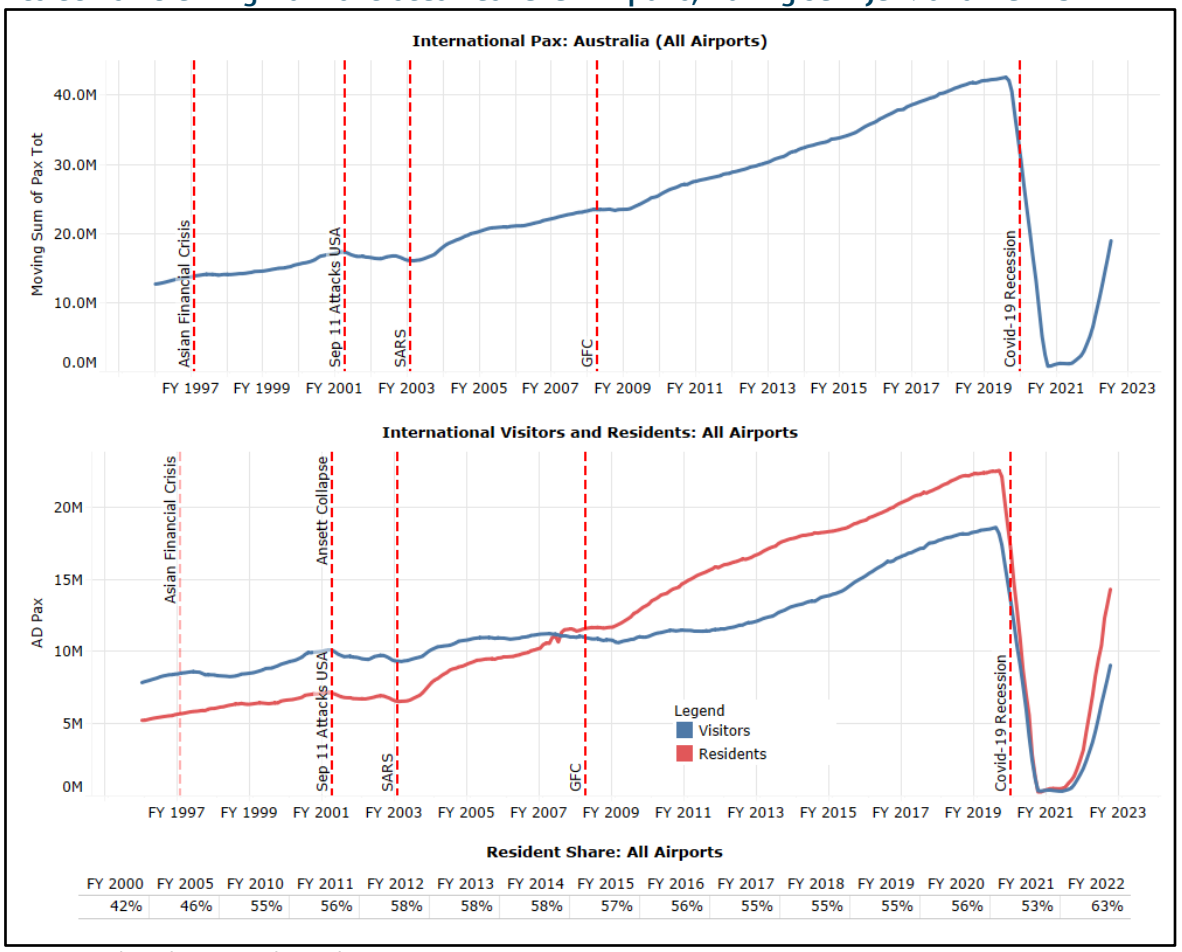
- Recovery was well underway up until Apr-21. The Delta COVID-19 variant was declared a variant of concern by the World Health Organisation in May-21, and regional lockdowns were re-introduced.
- The Omicron variant then struck in Nov/Dec-21 further reducing traveller confidence and delaying some border re-openings. The re-opening of state borders, which had commenced in Nov-21 by NSW, Victoria and the ACT, was followed by SA, Queensland, the NT and Tasmania by late-Dec and WA in early Mar-22.
- There was strong recovery in domestic capacity & passengers to around 90% of pre-COVID until Apr-22, and then has been relatively flat.

By Mar-23 domestic capacity had grown to 94% of Mar-19 levels with passengers back to 95%.

3. International Market Structure and Recovery

3.1 Longer Term International Traffic Performance

Figure 3.1: International passengers to Dec-22, Short-Term Visitor Arrivals and Residents Returning from Overseas Australian Airports, Rolling Sum Jul-96 to Mar-23



FY 2000	FY 2005	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
42%	46%	55%	56%	58%	58%	58%	57%	56%	55%	55%	55%	56%	53%	63%

Source: TFI based BITRE and ABS data.

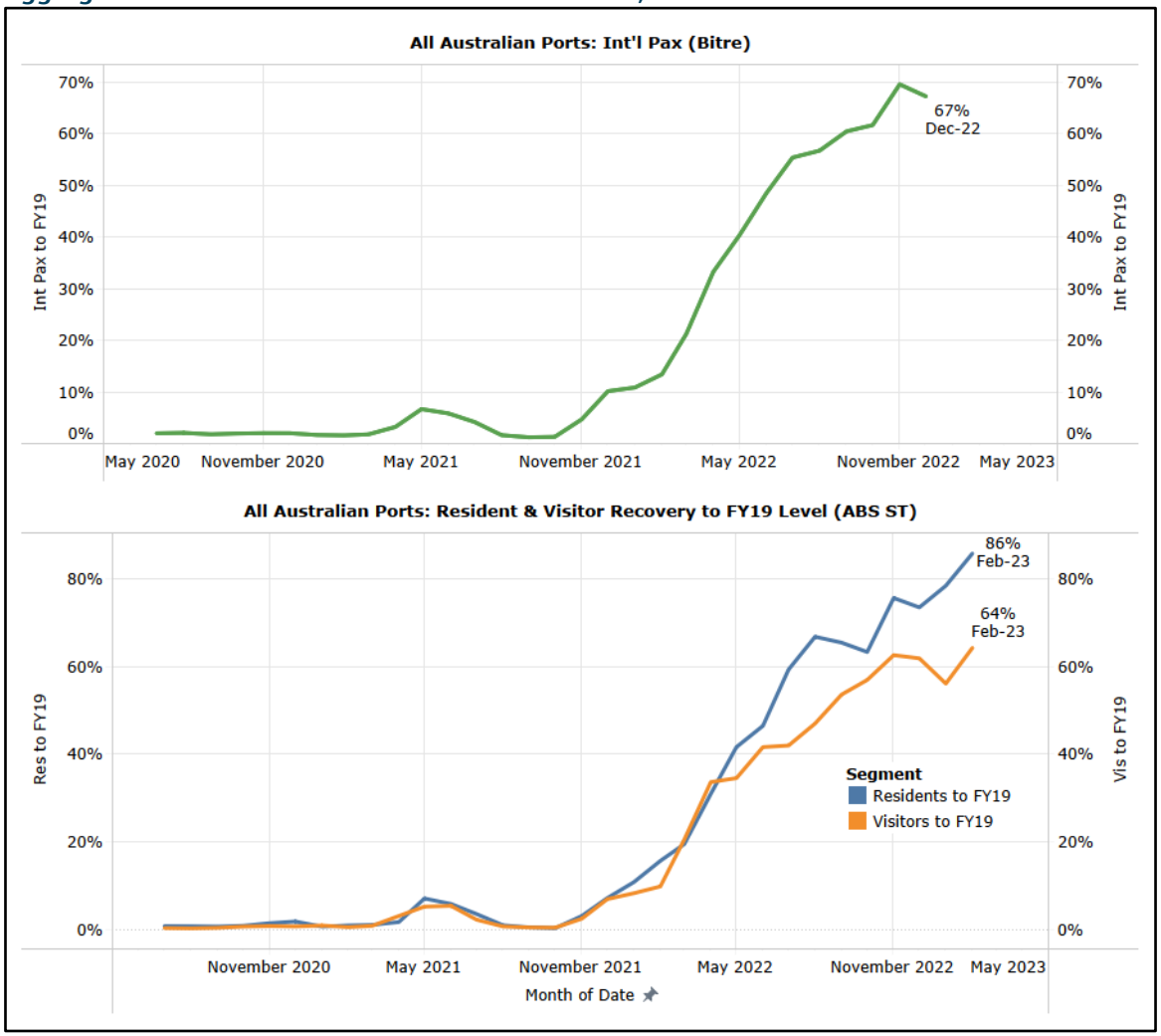
Figure 3.1 shows the rolling 12-month sum of total international passengers to/from Australia over the period from Jul-96 to Dec-22 and visitor arrivals/residents returning to Mar-23. The trend in international passenger movements shows ongoing growth with interruptions to trend following the:

- Asian financial crisis of July 1997.
- Series of events over 2001 to 2003 including the September 11 terrorist attacks in the USA, collapse of Ansett in Australia, Bali bombings and the outbreak of SARS in Hong Kong.
- Global Financial Crisis from September 2008 and the dip below trend following the end of the mining boom.
- The post Pandemic fall from March 2020.
- Start of recovery from November 2021.

Also shown are the market components of international movements, residents and visitors, for the same period based on data from the Australian Bureau of Statistics (ABS). The resident share increased from 40% in FY97 to 58% over FY12 to FY14 before falling marginally to 55% over FY17 to FY19. The FY22 share of 63% for residents shows the faster recovery for resident travel.

3.2 Post COVID-19 International Traffic Performance

Figure 3.2: International Passenger Volumes Relative to Same Period in FY19, Aggregate and for Residents and Overseas Visitors, All Australian Ports



Source: TFI based BITRE and ABS data.

The top chart in **Figure 3.2** shows the recovery in international passengers from Jul-20 to Dec-22:

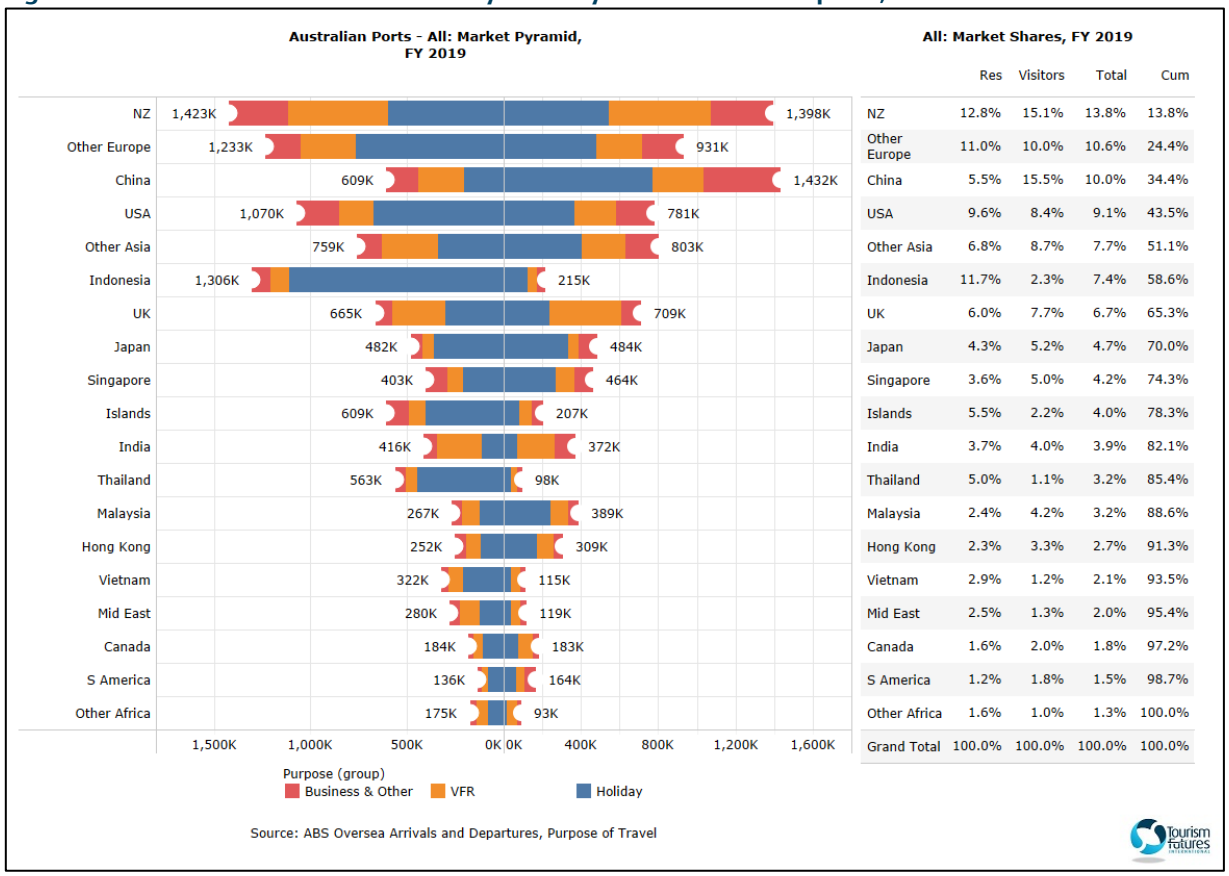
- Note the recovery began from Nov/Dec-21 with the removal of restrictions on outbound travel for fully vaccinated Australians, along with a limited reopening for arrivals from NZ, Singapore, Japan, Korea, and for a range of eligible visa holders.
- NSW and Victoria removed quarantine requirements and caps for fully vaccinated overseas arrivals from Nov-21, followed by all other states and territories by Mar-22.
- From Feb-22 Australia re-opened to fully-vaccinated visa holders, and from Apr-22 abolished the entry requirement of pre-departure COVID testing.
- From Jul-22 travellers entering or leaving Australia were no longer required to provide proof of vaccination.
- From Jan-23 a negative pre-departure test requirement was reintroduced for all arrivals from Hong Kong, Macau and China. This was removed in Mar-23.

By Nov-22 international passenger levels were back to 70% of their FY19 levels, falling slightly to 67% at Dec-22.

The lower chart shows resident and visitor arrival recovery levels to Feb-23. Resident travel has shown the strongest recovery, to 86% of pre-pandemic levels (up from 73% in Dec-22), with visitor recovery at 64% (62% in Dec-22).

3.3 International Market Mix and Travel Purpose by Country

Figure 3.3: International Market Mix by Country at Australian Airports, FY19



All: Market Shares, FY 2019

	Res	Visitors	Total	Cum
NZ	12.8%	15.1%	13.8%	13.8%
Other Europe	11.0%	10.0%	10.6%	24.4%
China	5.5%	15.5%	10.0%	34.4%
USA	9.6%	8.4%	9.1%	43.5%
Other Asia	6.8%	8.7%	7.7%	51.1%
Indonesia	11.7%	2.3%	7.4%	58.6%
UK	6.0%	7.7%	6.7%	65.3%
Japan	4.3%	5.2%	4.7%	70.0%
Singapore	3.6%	5.0%	4.2%	74.3%
Islands	5.5%	2.2%	4.0%	78.3%
India	3.7%	4.0%	3.9%	82.1%
Thailand	5.0%	1.1%	3.2%	85.4%
Malaysia	2.4%	4.2%	3.2%	88.6%
Hong Kong	2.3%	3.3%	2.7%	91.3%
Vietnam	2.9%	1.2%	2.1%	93.5%
Mid East	2.5%	1.3%	2.0%	95.4%
Canada	1.6%	2.0%	1.8%	97.2%
S America	1.2%	1.8%	1.5%	98.7%
Other Africa	1.6%	1.0%	1.3%	100.0%
Grand Total	100.0%	100.0%	100.0%	100.0%

Source: TFI based ABS data.

At the country level, during FY19 (the last full year prior to the onset of COVID-19):

- New Zealand was the main destination for Australian residents (almost 13% of total) and also accounted for 15% of visitor arrivals.
- Visitors arriving in Australia from China accounted for 15.5% of total visitors but only 5.5% of Australian residents were returning from China.
- Indonesia was the second main destination for Australian residents returning from overseas (11.7% of total) but provided only 2.3% of visitor arrivals.
- Europe and the UK combined accounted for almost 18% of visitor arrivals, and also accounted for 17% of Australian residents returning.
- In FY19 travel for the purpose of Holiday accounted for 57% of Australian resident overseas travel, with travelling for the purpose of visiting friends and relatives (VFR) accounting for a further 26%. For international visitors Holiday accounted for 47% of travel with VFR at 30%.

4. Aviation Industry Environment – Issues and Outlook

From the start of the COVID-19 pandemic national, state and territory border closures and restrictions (at times combined with local lockdowns of varying lengths) were a key part of the Australian response to managing the crisis through reducing virus transmission. A gradual lifting of restrictions commenced in November 2021 and were removed Australia-wide by July 2022.

Australian interstate travel restrictions had been lifted across Australia by April 2022 and in its December 2022 and March 2023 reports "Airline Competition in Australia", the ACCC noted the subsequent strong increase in passenger flying, with an average 4.5 million passengers travelling domestically each month on the three monitored airline groups (Qantas, Virgin, Rex). Over the ten months to January 2023 this represented 89% of the number of passengers who flew domestically over the same period pre-pandemic (April 2019 to January 2020). More recent ACCC data indicates that during January to April 2023 passengers travelling domestically on the three monitored airline groups had recovered to 91% of the same period 2019.

The ACCC had earlier pointed to operational challenges in the aviation industry which had led to an increase in cancelled and delayed flights. At the same time airfares had increased significantly following a combination of higher seat load factors (resulting from strong demand plus reduced capacity) and high jet fuel prices. After falling to an 11-year low in April 2022 at just 47.5, the BITRE index for discount economy airfares increased to a fifteen year high in December 2022. International airfares were also impacted by reduced competition as airlines temporarily or permanently withdrew services from Australia during the pandemic.

The ACCC notes that jet fuel prices have trended downwards (to $137 per barrel in May 2023, a fall of almost 50% since the record high of June 2022), and the industry has increased domestic seat capacity (with Qantas at 101% of its pre-COVID capacity in April 2023, Virgin Australia 96% and Jetstar 85%). The price index of best discount economy airfares in May 2023 was 43% below what it was in December 2022 but was still 13% higher in real terms (32% in nominal terms) compared to the same month pre-pandemic. Average revenue per passenger in April 2023, representing average prices across all fare types, was down 14% in real terms compared with the December 2022 peak, but remained 2% higher than the pre-pandemic level (17% higher in nominal terms).

4.1 Domestic Capacity Environment

TFI notes a number of recent changes for Australian domestic aviation capacity:

- Qantas Group Domestic capacity during FY22 averaged 63% of FY19 pre-COVID levels, up from 51% during FY21:
    - While the first three quarters of FY22 had continued to be impacted by border closures and uncertainty caused by COVID variants, domestic flying returned to near pre-COVID levels through the fourth quarter, reaching 103% by 30 June 2022. At that time capacity was expected to average 102% over the first half of FY23. However in response to higher fuel costs and operational challenges, Qantas had made a series of changes over the following months to its 1H FY23 domestic capacity

expectations, reducing to 94%-95%. Recent reporting indicates actual first half FY23 capacity reached 94% of the pre-COVID level.

- In its November 2022 market update Qantas had indicated that it would be "adding capacity as quickly as possible in the second half of the year while maintaining operational reliability". A commitment to increase capacity from late March 2023 was expected to see total Group domestic capacity increase to 104% of pre-COVID levels in the fourth quarter of FY23, (recently amended to 102%, up from 98% in the third quarter). Second half FY23 capacity was expected to recover to 101% (below the 106% expected six months earlier), with recovery over the first half of FY24 expected to increase to 109% of the pre-COVID level.
- Qantas reported that it was flying 132 domestic routes in 4Q FY22, up from 101 pre-COVID.
- Jetstar domestic growth was boosted by redeployment of A320s from Jetstar Asia and from Jetstar Japan, and temporarily by the reactivation of B787-8s for domestic use (now all returned to international services). Jetstar's new A321neo LR aircraft are to operate popular domestic routes as well as longer-range international routes; four had been received by December 2022, two for domestic and two for international, with 20 in total to be received by FY26.
- Qantas indicated that the resource sector had contributed to a strong return in business purpose travel. Another A320 was transferred from Jetstar to QantasLink to support resources sector demand growth, increasing its fleet to 11 by June 2022 (up from three as at December 2019). An additional eight are to be transferred in from the Jetstar fleet by FY29 to fulfill Network Aviation obligations, with another five A319/320s to be externally sourced.
- Up to 18 E190s are available to Qantas on a capacity hire arrangement with Alliance Aviation. 16 were operating by December 2022 providing access to new route options and enhancing fleet flexibility. Qantas has recently announced its intention to take its total E190 fleet to 30. Qantas owns just under 20% of Alliance and in May 2022 announced it had reached an agreement to fully acquire the company to "better serve the growing resources sector with a combined fleet". The ACCC has outlined preliminary competition concerns with the proposed acquisition, with a decision now delayed to April 2023.
- Qantas will start the renewal of its narrow body jet fleet from late 2023 with firm orders for 20 A321XLRs and 29 A220-300s, to arrive as the Boeing 737s and 717s are gradually retired. The order includes purchase right options for another 85 aircraft for delivery through to at least 2034.
- The first five A220s for Qantas, largely replacing the B717s, are due to arrive in FY24, another nine in FY25, and all 29 by FY29. A321XLRs deliveries are to start a year later, in FY25, with all 20 delivered by FY29.

- Virgin Australia's primary focus remains domestic travel and obtaining a 33% share of the domestic RPT travel market:
  - Virgin reported capacity had exceeded pre-COVID levels at several points towards the end of the 2022 financial year, and in January 2023 reported business bookings at more than 110% of pre-COVID levels.

- At the close of FY22 Virgin had 77 B737s in operation, up from 58 at the November 2020 re-launch and 63 at the beginning of the financial year. CASA reports that by December 2022 the fleet had increased to 81, with the addition of four more B737-700s for the regional fleet.
- Four new MAX 8's are scheduled to start entering service in the second quarter of 2023 with an additional four starting in the second half (for domestic and international services), taking the total B737 fleet to 92 (consisting of 737-700s, 737-800s and MAX 8s). Recent reports indicate that delivery may be delayed, with only four in service by end-2023.
- The Virgin Group had maintained a regional and charter fleet of F100s and A320s for its resource sector and contract flying operations. The F100 fleet (reduced from 14 as at June 2019 to 10 by June 2022) is to be gradually transitioned out from early-2023 and replaced by B737-700s; seven B737-700s have been secured with four received over the last four months of 2022 (adding to the two already in the mainline fleet). The A320 fleet had increased from four at June 2019 to seven at June 2022.
- In May 2022 Virgin and Alliance applied to the ACCC for an extension of a May 2017 Charter Alliance Agreement which enables the two airlines to cooperate, coordinate and jointly bid for, and provide, FIFO and value-added services to corporate customers. The ACCC has recently issued a draft determination proposing to deny authorisation (final determination is now expected April/May 2023). Alliance noted that this draft determination did not have any impact on the wet lease services it performed on behalf of the Virgin Group. In April 2021 Virgin had received ACCC approval through to end-March 2023 to collaborate with Alliance on 41 regional routes throughout Australia.

- Regional Express (Rex) commenced FY22 operating five domestic routes with another two added during the year. A seventh B737-800NG was received at end-August 2022 to add additional capacity on the 'Golden Triangle' services between Sydney, Brisbane and Melbourne:
  - Strong growth in domestic jet passenger numbers and revenue was reported during the first half FY23 over the same period FY22 (the jet network had resumed full schedule in February 2022). Rex plans to expand its fleet for domestic RPT operations by adding another two B737s, expected to arrive in June and July 2023.
  - In June 2022 Rex announced significant increases in service to 11 major regional centres for FY23, and the following month took delivery of an additional Saab 340B plus, taking its Saab fleet to 61 (including the Pel-Air fleet). At the same time Rex withdrew from eight regional routes. Over the first four months of FY23 compared to the same period pre-COVID, regional Saab network passenger numbers reduced by 1.7% while revenue grew by 2.5% on 1.4% less flying. Regional SAAB operations are expected to return to monthly profitability by Q3 of FY23.
  - Rex has completed its purchase of National Jet Express, the regional services arm of Cobham Aviation Services Australia focusing on FIFO activities. Included in the purchase are eight Bombardier Q400 turboprops and six Embraer E190s, currently used by National Jet Express to provide FIFO services in Western and South Australia. Rex announced that it was looking to lease another two Dash 8-400 NextGen aircraft to add to the fleet, with plans for an expansion into Queensland and the Northern Territory.

- National Jet Express had been progressively modernising and expanding its fleet, introducing the E190 jet and Q400 turboprop for charters and FIFO flights in support of Australian mining, oil and gas projects. The sixth E190 was added to the CASA register in May 2022, followed by an eighth Q400 in July 2022. The last of its BAe 146/Avro RJ fleet was retired from passenger services by mid-2022.

- Alliance further increased its E190 acquisition plans during FY22 to take the fleet to 33, with all to be deployed by June 2023 - 18 in service for Qantas, nine for Alliance, three on dry lease, and three in maintenance:
  - In February 2023 Alliance entered into a sale and purchase agreement for an additional 30 E190s, to be delivered from September 2023 through January 2026 (to be purchased one at a time over a two-year period). While some may be used for parts, should all aircraft be added to the company's operating fleet the total E190 fleet size would eventually reach 63.
  - Alliance has also increased the number of wet lease aircraft options available to Qantas from 18 to 30 (and extended the term of the wet lease of each aircraft from three to seven years, with two-by-two-year extension options).
  - Wet lease activity increased significantly from April 2022 with Alliance projecting increased levels of activity continuing throughout all FY23 and into FY24. 16 E190s were operating on contracted wet lease routes in December 2022 (25 in total were in service).
  - RPT flying hours continued to decline along with the Group's strategy to reduce its RPT footprint.
  - Sustained activity in contract flying was reported for the resources sector during FY22 and first half FY23, along with a number of client conversions from charter to contract.
  - All five Fokker 50s had been retired by December 2022, leaving Alliance as an all-jet operator with 37 Fokker aircraft (mix F70/F100) and 33 Embraer aircraft.

- The launch into the Australian domestic market of Bonza (a new independent, low-cost airline) took place at end-January 2023 (delayed from 2022 as the company awaited necessary regulatory approval):
  - Air Operator's Certificate (AOC) was received on 12 January 2023.
  - Four leased B737-8 MAX aircraft have been delivered with a fifth expected by June 2023. Bonza plans to grow the fleet to eight aircraft.
  - The first three aircraft are based at the Sunshine Coast, the next two at Melbourne.
  - The initial planned route map includes 27 routes to 17 destinations, with all now available for sale.
  - Phase one of flight releases commenced February 2023. All 27 routes are schedule to commence by end-May 2023. 13 of the routes operate from the Sunshine Coast, another eight from Melbourne.

The December 2022 fleet and capacity outlooks for the Qantas Group, Virgin Australia, Regional Express and Alliance Airlines follow (**Tables 4.1** to **4.4**).

4.2 International Capacity Environment

Australian international travel restrictions were progressively lifted from November 2021 through July 2022 (with quarantine requirements for unvaccinated international arrivals and international arrival passenger caps lifted over April to June, and the entry requirement for evidence of vaccination lifted in July). The pace of reopening around the world also gained momentum during 2022 - Japan, Hong Kong, Taiwan and India were the latest countries within Asia to announce an easing of border restrictions, and within Europe, Spain became the final European country to lift all remaining entry restrictions. In early-January 2023 China relaxed its entry restrictions, no longer requiring quarantine or post-arrival testing.

The latest BITRE data reports that 45 airlines were offering international passenger services to and from Australia during November 2022, down from 59 airlines in November 2019 with available international passenger capacity continuing to be severely impacted by the pandemic. Total seats made available on international scheduled operations to/from Australia during November 2022 were down 36% on November 2019. The overall seat utilisation increased over this period from 80.6% to 85.5%. Australian designated airlines - Qantas Airways, Jetstar and Virgin Australia - accounted for 33% of total passenger carriage in November 2022 on par with November 2019.

Several other international airlines have more recently recommenced passenger services to/from Australia, including AirAsia X and American Airlines. Early 2023 sees the planned return of Air China, Beijing Capital Airlines and Sichuan Airlines to the China/Australia route, along with a ramping up of services by China Eastern, China Southern and Xiamen Airlines – in November 2022 just three airlines were operating passenger services between China and Australia, in November 2019 the route was served by 10 airlines (including Qantas).

TFI notes a number of recent changes for Australian international aviation capacity:

- During FY22 Qantas Group International capacity (in ASKs) was at approximately 17% of pre-COVID (FY19) levels, up from 2% during FY21. Capacity rose to 49% of pre-COVID levels by 30 June 2022. First half FY23 capacity increased to 60% of pre-COVID (below the 71% expected six months earlier):
    - Second half FY23 capacity is now expected to be 76% of pre-COVID (down from 84% expected in August 2022), with first half FY24 capacity increasing to 89%.
    - As at December Qantas reported that services to 28 international ports had commenced since Australia's borders reopened.
    - Qantas had previously indicated that its capacity outlook was largely determined by the ability to return additional A380s to service from storage and required maintenance, as well as the delivery of the last three new B787-9s for Qantas International and additional A321LRs for Jetstar. The sixth A380 returned to service mid-December 2022, but return of the last four has been delayed due to Maintenance and Repair Organisation (MRO) slot availability impacting return-to-service through to early 2025 (from the previously expected December 2023). The last three B787-9s on order are still expected by end of FY23.
    - Jetstar has received four A321LRs, two for domestic services and two for international, with another four to arrive in FY23, six in FY24, and all 20 by FY26. The aircraft will support growth in key markets (e.g., Bali) allowing redeployment of the

B787s to longer range new markets (as well as operating on some domestic routes). The first three A321XLRS for Jetstar are to arrive during FY26, with 15 in total to be delivered by FY29.

- The first three of 20 A321XLRS for Qantas are to arrive during FY25, with all 20 to be delivered by FY29 (as the B737s are gradually retired).
- Qantas is expected to receive its first A350-1000 during FY26 (for the Project Sunrise long-haul non-stop flights), with all 12 to be delivered by FY29.

- Virgin Australia has resumed limited short-haul international services, operating to Denpasar, Nadi and Queenstown, with services to Samoa and Vanuatu planned to commence in March 2023. These international services are operated using narrow-body B737-800 aircraft:
  - New services from Cairns to Tokyo, to commence in June 2023, will be operated by new MAX 8 aircraft. Virgin has reported that the new short-haul international services will see its international capacity grow by 50% by mid-2024.
  - Four new MAX 8's were to start entering service in 2Q 2023 with an additional four starting in 2H 2023 (for use on domestic and international routes). Delivery may be delayed with only four possibly in service by end-2023. Delivery of the 25 MAX 10's on order is reported as part of "a future phase" of the fleet program.
  - New strategic partnerships have commenced with Qatar Airways and United Airlines, and codeshare flights resumed with Singapore Airlines. The ACCC has granted authorisation for Virgin to enter into codeshare pricing arrangements with its international airline partners on long-haul international routes for a five-year period through to September 2027.
  - Virgin has reported that it may consider long-haul international travel at some point in the future. In its June 2022 submission to the ACCC Virgin indicated that it was investigating the recommencement of long-haul services, while noting that a decision would consider costs, including a significant investment in fit-for-purpose aircraft suitable to operate the services, and the likely passenger and revenue impact.

4.3 Australian Airline Fleets and Outlook

Table 4.1: Qantas Group Fleet (excl Jetstar Asia)

Aircraft Type	Fleet at Dec-22[a]	Fleet at Jun-22[a]	Orders at Dec-22	Arrivals by FY29
Qantas:				
A380[b]	10	10		
B737-800NG[c]	75	75		
B787-9[d]	11	11	3	3
A330-300	10	10		
A330-200[e]	18	18		
A350-1000[f]			12	12
A321XLR[g]			20	20
A220-300[h]			20	29
QantasLink:				
B717-200[i]	20	20		
Q400	31	31		
Q200/300	19	19		
F100	18	18		
A320-200[j]	11	11		8
E190[k]	16	12		2
Jetstar Aust/NZ:				
B787-8[l]	11	11		
A320-200[j] [m]	57	58		-8
A321-200[n]	6	6		
A320neo[o]			45	7
A321neo[o]			80	
A321LR[p]	4			20
A321XLR[q]				15
Total Pax Aircraft[a]	**317**	**310**	**180**	**108**

Source: Qantas, CASA, Airbus, Boeing

Notes:

(a) Operational fleet: incls purchased/leased; temporarily stored or parked. Excls Jetstar Asia fleet, incls 6 Jetstar Japan A320s repositioned to Australia. Incls wet-leased E190s.

(b) Six in service, five flying lines as at end Dec-22, return of the last four delayed from Dec-23 though to early 2025 due to MRO slot availability (2 of 12 in pre-COVID fleet not returning to service).

(c) Narrow-body domestic fleet to be renewed; A321XLRs arrive from FY25 as B737s are gradually retired.

(d) Remaining three B787-9s expected by Jun-23 (previously scheduled by end-CY20).

(e) Two to be converted into freighters; one entered conversion Dec-22, other planned Feb-23.

(f) First three to arrive in FY26 (end of CY25, first delayed from FY25), all 12 by FY29.

(g) First three to arrive FY25, nine in FY26, all 20 by FY29 (as B737s are gradually retired).

(h) Exercised purchase rights in Feb-23 for another nine A220s taking total to 29; first five to arrive in FY24, nine in FY25, 10 in FY26 and all 29 by FY29 (mainly replacing retiring B717s).

(i) Fleet to be renewed with A220s commencing FY24.

(j) An additional eight planned to be transferred in from Jetstar fleet by FY29 to fulfill Network Aviation obligations, with another five to be externally sourced under discussion for WA resources (fleet has increased from 3 as at Dec-19).

(k) Operating four additional E190s in capacity hire arrangement with Alliance Airlines; up to 18 are available. Intention to acquire another 12 from Alliance, to take total to 30.

(l) All 11 back in international fleet (as at Jun-22 two were still in domestic fleet; all had been parked during COVID, re-activated for domestic use from mid-2021; first international service from Dec-21).

(m) One returned to lessor. Incls 7 in NZ trans-Tasman/domestic fleet, 7 operated by Jetstar Int, and 6 Jetstar Japan A320s repositioned to Australia during FY22 to provide additional temporary capacity. Excls 7 in Jetstar Asia fleet and 19 in Jetstar Japan fleet.

(n) All are in the Australian domestic fleet.

(o) Five A320neos to arrive FY25; total of seven by FY29; part of existing order prior to May-22 fleet renewal announcements.

(p) To replace A320ceos; first four A321LRs received for JQ Aust, two each for domestic and international (another two went to Jetstar Japan); four more to arrive in FY23, six in FY24, eight in FY25, and one in FY26 (delivery schedule incls 3 A321Fs); to support growth in key markets (eg Bali) allowing redeployment of B787s to longer range new markets.

(q) To replace A320ceos; first three XLRS for Jetstar to arrive in FY26, 15 in total by FY29.

Table 4.2: Virgin Australia Fleet

Aircraft Type	Fleet at Dec-22[a]	Fleet at Jun-22[a]	Planned net additions
Narrow body			
B737-800[b] [c]	75	75	
B737-700[b] [d]	2	2	
B737 MAX 8[b] [e]			8
B737 MAX 10[f]			25
Mainline Fleet	**77**	**77**	**33**
Regional			
B737-700[b] [d]	4		3
F100[g]	10	10	-10
A320[h]	7	7	
Total Pax Aircraft	**98**	**94**	**26**

Source: Virgin Australia, CASA, Boeing

Notes:

(a) Fleet as sourced from CASA Register (may include aircraft parked and not currently in the operating fleet or in storage and not yet removed from CASA register) and Virgin announcements. In Aug-20 Virgin announced the end of the Tigerair brand and removal of its fleet (6 B737s & 9 A320s). Total wide-body fleet (6 A330s & 5 B777s) was removed with suspension of long-haul flying during 2020. Fleet of 8 ATR-72s had been returned to lessors by Sep-20.

(b) Virgin has stated a broader growth strategy of bringing total B737 fleet to 92 (comprising 84 B737-700/800s and 8 MAX 8s), up from 58 at Nov-20 relaunch.

(c) Compared with pre-COVID Group fleet of 83 B737-800s (incl 6 in Tigerair fleet); but up from 56 at Nov-20 relaunch.

(d) An additional seven B737-700s have been secured for the regional fleet; four registered with CASA by December 2022; will replace retiring F100s from early-2023.

(e) Four MAX 8's to start entering service from 2Q 2023, and an additional four planned from the 2H of 2023. A previous order for 23 MAX 8s was cancelled in Dec-20.

(f) In Dec-20 first delivery of the 25 MAX 10's on order was delayed from Jul-21 to mid-2023. Most recently MAX 10s reported as part of "a future phase" of the fleet program. Original MAX order was made in 2012 with delivery planned over 2019-2021.

(g) F100 fleet (reduced from 14 as at Jun-19) is to be gradually transitioned out and replaced by B737-700s from early-2023; Virgin has announced that seven -700s have been secured.

(h) Tigerair A320 fleet had been reduced to nine by Dec-19 (from 14), with four moving to Virgin Australia Regional (taking its fleet to six). By Apr-21 the last Tigerair A320 had left the fleet, along with one Regional A320. Two more leased A320s were added to the Regional fleet in Mar-22, taking the current fleet to seven.

Table 4.3: Regional Express Fleet

Aircraft Type	Fleet at Dec-22[a]	Fleet at Jun-22[a]	Planned Additions
SAAB 340[b]	58	57	
B737-800[c]	7	6	2
	65	**63**	**2**
National Jet Express[d]			
Dash 8-400[e]	8		2
E190	6		
	14		**2**

Source: Regional Express, CASA

Notes:

(a) Excludes subsidiary Pel-Air Aviation. May include aircraft parked/in storage.

(b) 58th SAAB 340 for Rex was delivered in July 2022. Excludes three in fleet of Pel-Air.

(c) 7th B737 entered services in early-September 2022. Another two to be added June/July 2023.

(d) Acquired as part of September 2022 purchase of National Jet Express.

(e) Announced intention to lease another two Dash 8-400 NextGen (NG) aircraft

Table 4.4: Alliance Aviation Fleet

Aircraft Type	Fleet at Dec-22[a]	Fleet at Jun-22[a]	Planned changes
Fokker 100[b]	25	25	-1
Fokker 70LR[b]	14	14	
Fokker 50 turboprop[c]		5	
Embraer E190[d]	26	20	37
Pax Aircraft	**65**	**64**	**36**

Source: Alliance, CASA

Notes:

(a) 39 Fokker aircraft were in service at December 2022 (42 at 30 June 2022) and 25 Embraer aircraft (19 at 30 June 2022).

(b) Fokker fleet forecast for FY23 comprises an all-jet fleet of 24 100-seat F100s and 13 80-seat F70s.

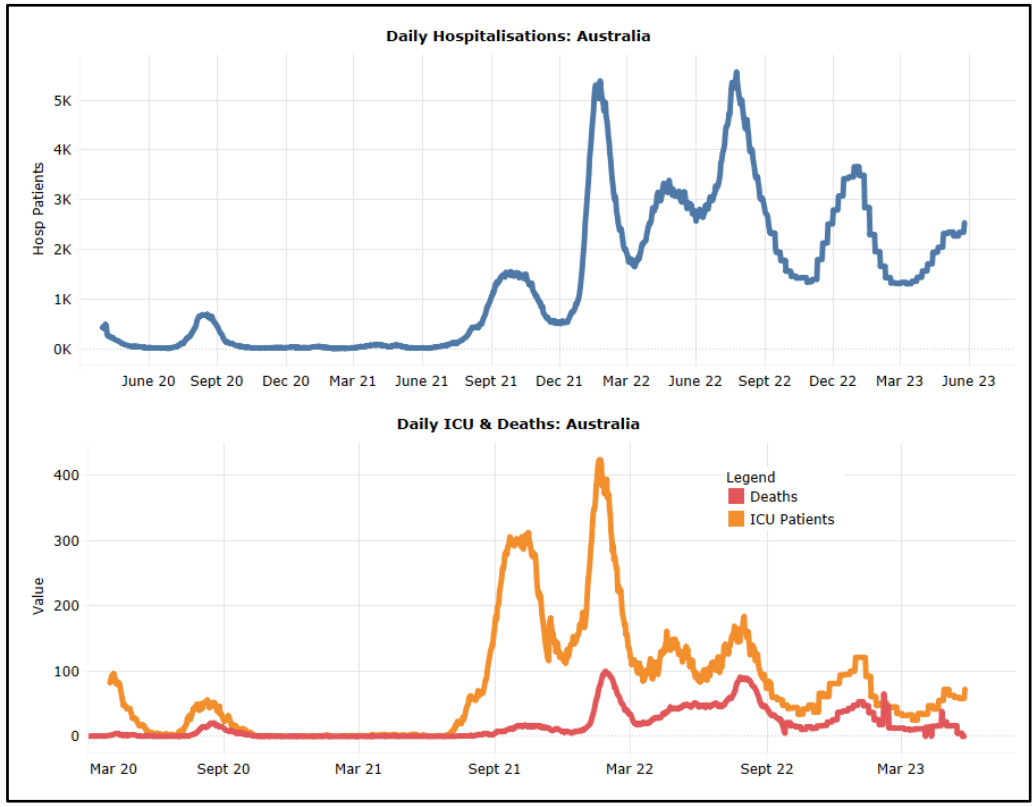
(c) Early fleet retirement (previously used predominately to service the Adelaide to Olympic Dam route), in storage with an August 2022 committed contract to sell.

(d) 30 E190s (94-114 seats) were in Australia at December 2022, with 26 registered by CASA and 25 in service. Three more are expected by March 2023 and all 33 from the original orders are expected to be in service by June 2023 - 18 contracted to Qantas, 9 in the Alliance fleet, 3 leased externally and 3 for maintenance. In February 2023 Alliance announced an additional 30 E190s to be purchased and delivered over September 2023-January 2026.

5. Business Environment – Issues and Outlook

5.1 COVID-19 Status

Figure 5.1: COVID-19 Hospitalisations, ICU & Deaths, Australia (Apr-20 to May-23)



Source: TFI based on Our World in Data

The COVID-19 pandemic has been characterised by waves of infection driven by several variants of concern. The impact of variants differs by country depending on various factors such as previous immunity and public health and social measures in place.

Figure 5.1 shows COVID-19 hospitalisations, ICU patients and deaths (all per hundred population) for Australia.

Hospitalisations in Australia peaked at 5,571 in late July 2022, and have since trended downwards, with a mini-peak of 3,665 in Jan-23 and a new emerging peak currently.

The World Health Organisation (WHO) reports a decreasing trend in new COVID-19 cases, hospitalisations and deaths (at the same time noting that new case numbers may be underestimates due to the reduction in testing).

In early May-23 WHO declared COVID-19 over as a global health emergency. However the Director-General of WHO also indicated that the COVID-19 virus is here to stay with a risk of new variants emerging that cause new surges in cases and deaths.

TFI has assumed no ongoing travel impacts from the COVID-19 pandemic.

5.2 Economic Issues and Assumptions

In its January 2023 update the IMF indicated that the reopening of China had paved the way for a slightly faster-than-expected recovery than had been presented in the October 2022 World Economic Outlook (WEO). At that time the IMF had pointed towards the weakest growth profile since 2001 excluding the global financial crisis and the acute phase of the COVID-19 pandemic. More recently, in its April 2023 WEO, the IMF points towards a phase during which economic growth remains low by historical standards at the same time as there are rising financial risks and ongoing inflation:

- The baseline forecast is now for global growth to fall from an estimated 3.4% in 2022 to 2.8% in 2023, well below the 3.6% expected 12 months earlier and below the historical (2000-2019) average of 3.8%. Growth during 2024 is forecast to increase to 3.0%, down from the 3.4% forecast in April 2022. The world economy is not currently expected to return over the medium term to the rates of growth that prevailed before the pandemic, with projections averaging 3.1% over 2025 to 2028.
- Global inflation, which had increased from 4.7% in 2021 to 8.7% in 2022, is expected to decrease more slowly than previously anticipated, to 7.0% this year and 4.9% in 2024 (remaining above the pre-pandemic level of around 3.5% over 2017-2019).
- The IMF indicates that risks to the outlook are heavily tilted to the downside, with recovery potentially held back by such factors as increased financial sector stress, an escalation of Russia's war in Ukraine, persistent core inflation (which would require even more monetary tightening), and increased geoeconomic fragmentation. In a severe downside scenario, global GDP per capita could come close to falling.

Annual economic growth assumptions for Australia and for the major markets are provided in **Table 5.1**. Also provided are the indices of the economies relative to FY19. These are modified for the Scenarios as indicated in **Section 1.2**.

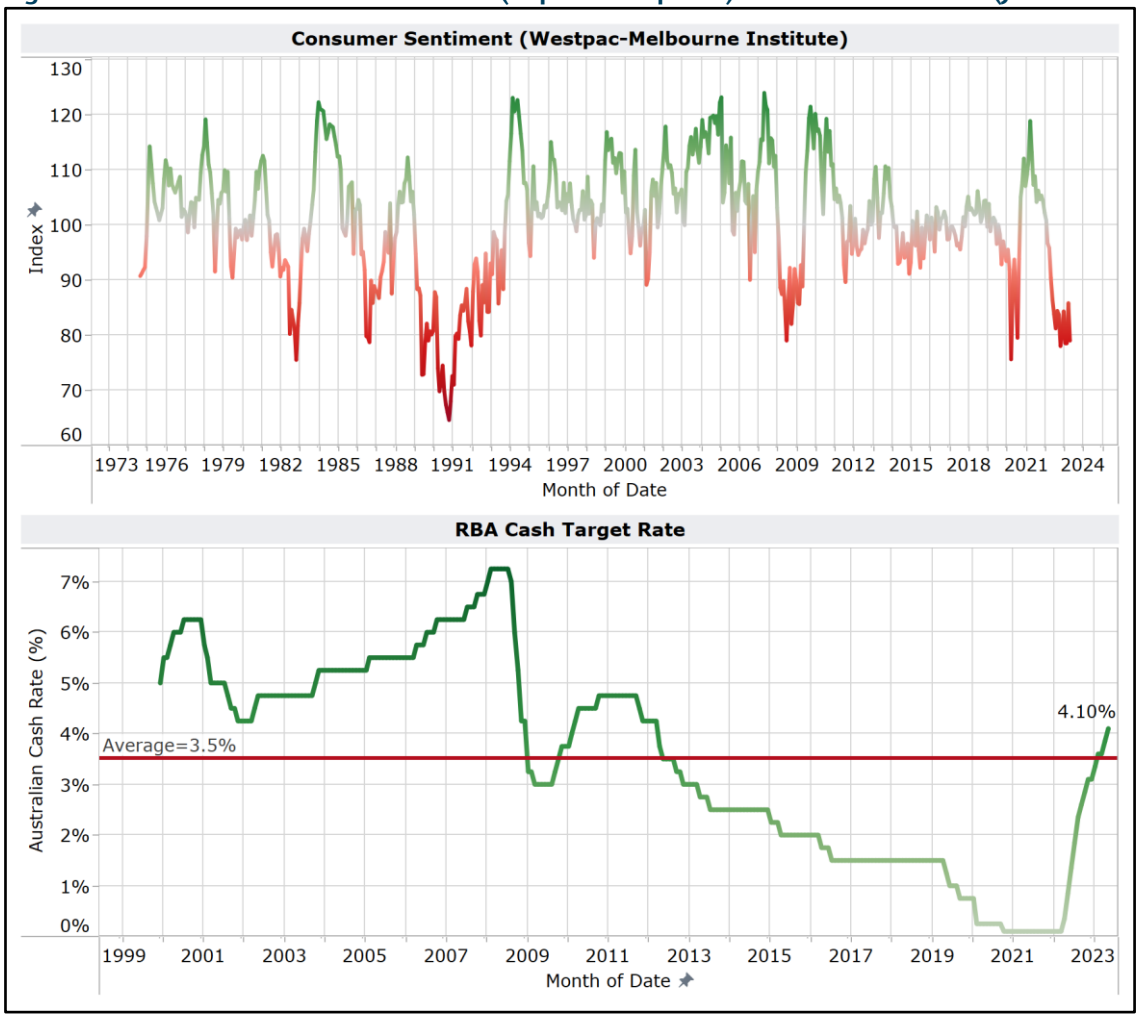
Table 5.1: Economic Growth Projections (Annual Change in GDP)

	Australia	OECD	NZ	USA	China	Japan	India	SE Asia
FY 2023	3.3%	0.7%	1.1%	1.6%	5.2%	1.3%	5.9%	4.5%
FY 2024	1.5%	1.4%	0.8%	1.1%	4.5%	1.0%	6.3%	4.6%
FY 2025	2.0%	1.7%	2.4%	1.8%	4.1%	0.6%	6.2%	4.6%
FY 2026	2.0%	1.7%	2.4%	2.1%	4.0%	0.5%	6.1%	4.6%
Index to FY 2019								
FY 2023	109	104	108	107	120	100	116	110
FY 2024	111	106	109	108	126	101	124	115
FY 2025	113	108	112	110	131	102	131	120
FY 2026	116	110	115	112	136	102	139	125

Note: Years to June for Australia, December for other countries. Source: IMF Global Outlook April 2023, RBA Monetary Statement May 2023, Deloitte Access Economics

5.3 Economic Issues – Australia

Figure 5.2: Australian Sentiment Index (Sep-74 to Apr-23) and RBA Cash Rate (Jan-00 to May-23)



Source: TFI based RBA

The upper chart in **Figure 5.2** shows the Consumer Sentiment Index (CSI) over Sep-74 to Apr-23, with the lower chart showing the Reserve Bank of Australia (RBA) Cash Target Rate over the period Jan-00 to May-23.

The CSI is currently at levels experienced during the 1980 recession and the Global Financial Crisis.

Part of the reason for this is shown in the lower chart with interest rates having increased sharply since Apr-22.

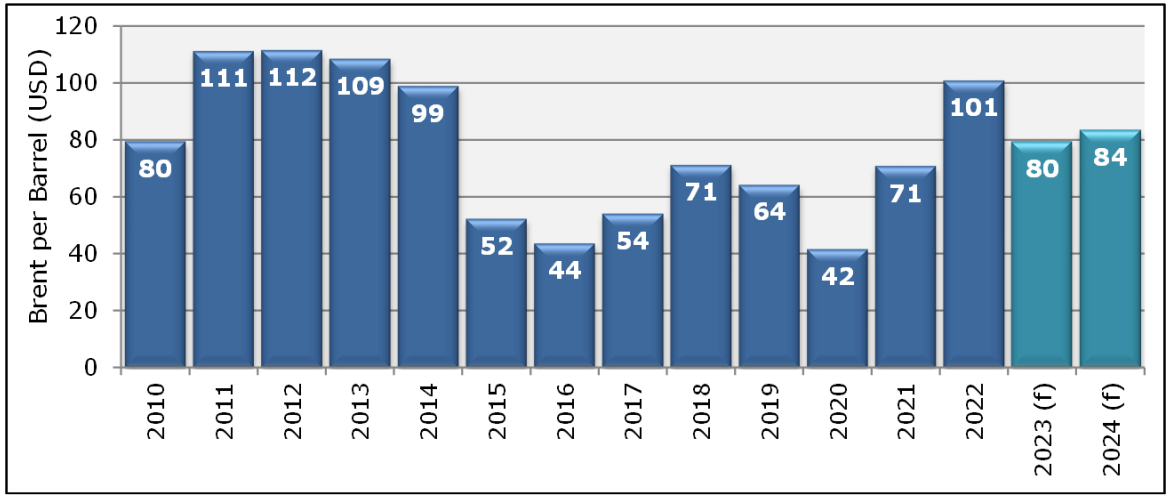
The RBA notes slowing growth in the Australian economy, with GDP increasing by 0.5% in the Dec-22 quarter and 2.7% over the year, and with below trend results expected over the next couple of years.

The IMF, in its April 2023 outlook, forecasts Australian economic growth to fall to 1.6% in 2023 and 1.7% in 2024. Over the medium term, 2025 to 2028, growth is expected to average 2.2%, below the historical (2000-2019) average of 2.9%.

Inflation globally and in Australia has been rising and remains high, and the RBA has responded by increasing interest rates. In May 2023 the RBA increased the cash rate target by 25 basis points to 3.85% (the eleventh monthly increase since May last year, after 18 months of maintaining the cash rate target at 0.10%). The central forecast is for inflation to decline this year and next, to be around 4.5% in 2023 (down from 7.8% over 2022 to the December quarter) and 3.0% in mid-2025.

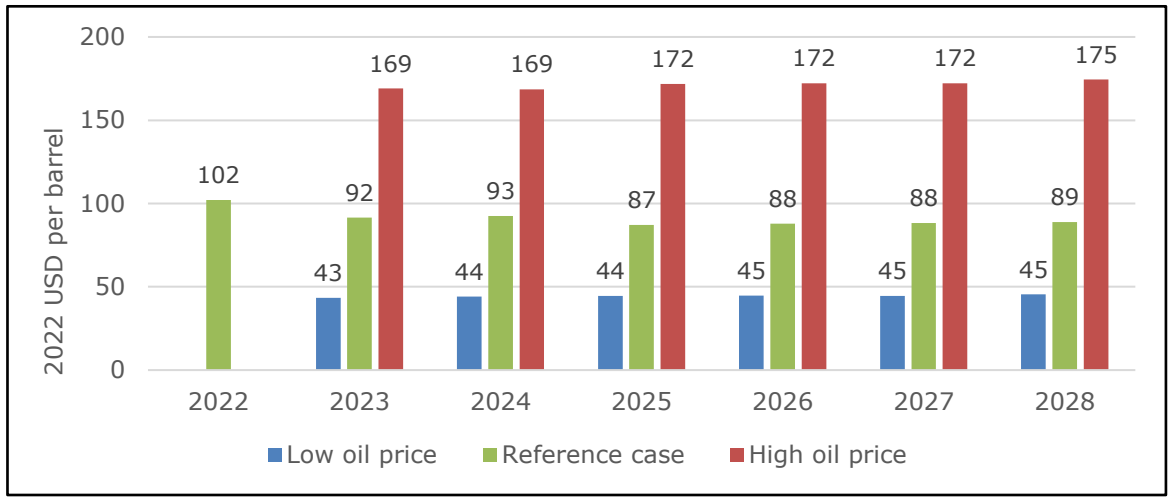
5.4 Economic Issues – Oil Prices

Figure 5.3a: Average Annual Brent Crude Oil Price (USD): 2010 to 2022, Projections to 2024



Source: TFI based on US Energy Information Administration, June 2023

Figure 5.3b: Brent Crude Oil Price (2022 USD): Projections 2023 to 2028



Source: TFI based on US Energy Information Administration, March 2023

Oil prices increased substantially during the first half of 2022, peaking at US$123/b in June, up from US$74/b six months earlier. Over the following six months prices largely trended downwards to average around US$95/b. Over this period IATA's jet fuel price monitor indicated a mid-June price of US$177/b, up 129% on the previous year, with an early-December price of US$123/b, still up 49% on the previous year.

The June 2023 forecasts by the US Energy Information Administration (EIA) show oil prices averaging US$80/b in 2023 and US$84/b in 2024, down from the nine-year high of US$101/b in 2022. Ongoing considerations about weakening global economic conditions, perceived risks around the global banking sector and persistent inflation have outweighed the initial increase in oil prices due to OPEC+ production cuts and led to a lower price forecast for 2023. Demand growth (mainly from China & India) and a recent OPEC+ announcement to extend crude oil production cuts through 2024 is expected to put upward pressure on crude oil prices from late-2023. .

EIA's latest long-range projections were released in March 2023 with global market balances, primarily international supply and demand factors, driving future crude oil prices. In these projections the EIA shows real Brent crude oil prices (per barrel in constant 2022 USD) averaging around $89 over 2023-2028 (Reference case). Under varying assumptions relating to global oil supply and

5.5 Population Growth and Projections

Population growth across Australia was impacted by COVID-19 with travel restrictions impacting both overseas and interstate migration patterns. Compared with 1.5% growth during the year end June 2019 (pre-COVID), Australia's resident population grew by just 0.1% during the same period 2021. Overseas migration, a past key driver of Australia's past population growth, recorded a net outflow during FY21 of 85,000 (compared with a net inflow of over 241,000 during the pre-COVID period of FY19). Interstate migration patterns also changed during the pandemic with Victoria moving from past net gains to a net loss, and the reverse occurring in South and Western Australia.

With the easing of international travel restrictions, the year end June 2022 saw a return to positive net overseas migration, contributing to 1.1% annual growth in Australia's population. Net overseas migration added 170,900 persons.

The Australian Government Centre for Population released its third Population Statement in January 2023, detailing how Australia's population growth is projected to recover from impacts of the pandemic and how it is expected to change over the next decade. Annual population growth is forecast to increase to 1.4% by FY23, stronger than previously expected largely due to upward revisions in the forecast of net overseas migration (based on border re-openings and higher travel volumes than previously expected). Annual growth is then expected to gradually decline to 1.3% by FY27 and 1.2% by FY31.

The Centre indicates that while its medium-term projected growth rates are similar to those expected prior to the pandemic, recent losses in migration will lead to a population being smaller and older than forecast before the pandemic. The latest Centre projections show around 656,000 fewer people for Australia at 30 June 2028 than the pre-COVID estimates for the same year.

The updated projections are shown below in **Table 5.2**. For the projections net overseas migration is assumed to return to pre-pandemic trends from FY23. Assumptions for internal migration at the state and capital city/rest-of-state levels include:

- No future, large-scale, internal movement restrictions and lockdowns.
- The uncertainty due to the pandemic which has led to fewer people moving interstate is expected to continue over the short-term.
- Patterns of internal migration will gradually recover from the lockdown induced lows to pre-pandemic patterns by FY24.

Table 5.2: Australian Population by State/Territory and Capital City, and Centre of Population Central Projections to 2028

Population	ERP ('000) at 30 Jun-22[a]	Chg over 30 Jun-21	Projected Population at 30 June ('000)			Projected CAGR		
			2024	2026	2028	2022-24	2024-26	2026-28
NSW	8,154	0.7%	8,319	8,504	8,686	1.0%	1.1%	1.1%
VIC	6,614	1.0%	6,841	7,077	7,310	1.7%	1.7%	1.6%
QLD	5,322	2.0%	5,467	5,623	5,778	1.5%	1.4%	1.4%
WA	2,785	1.3%	2,866	2,949	3,031	1.5%	1.4%	1.4%
SA	1,821	1.0%	1,865	1,901	1,937	1.2%	1.0%	0.9%
TAS	572	0.6%	588	602	615	1.1%	1.1%	1.1%
ACT	457	0.7%	474	492	509	1.5%	1.8%	1.7%
NT	251	0.6%	262	269	275	1.4%	1.3%	1.3%
AUSTRALIA	**25,979**	**1.1%**	**26,687**	**27,421**	**28,146**	**1.4%**	**1.4%**	**1.3%**
	Popn ('000) at 30 Jun-21[b]	**Chg over 30 Jun-20**	**2024**	**2026**	**2028**	**2021-24**	**2024-26**	**2026-28**
Sydney	5,260	-0.5%	5,440	5,584	5,724	1.1%	1.3%	1.2%
Melbourne	4,976	-1.6%	5,217	5,419	5,618	1.6%	1.9%	1.8%
Brisbane	2,569	0.7%	2,708	2,794	2,878	1.8%	1.6%	1.5%
Perth	2,192	1.2%	2,299	2,374	2,448	1.6%	1.6%	1.5%
Adelaide	1,402	0.5%	1,457	1,489	1,521	1.3%	1.1%	1.1%
Hobart	251	0.6%	262	271	279	1.5%	1.6%	1.5%
Darwin	149	0.0%	158	164	169	2.1%	1.8%	1.6%

Notes: [a] Estimated Resident Population, State estimates as at 15 Dec-22, Australia total includes "Other Territories". [b] Capital City population estimates as at 26 Jul-22 rebased to the 2021 Census. Source: ABS Australian Population Statistics; Australian Government Centre for Population, 2022 Population Statement, released January 2023.

6. Benchmarking

Expectations of the time for passenger traffic to recover to pre-pandemic levels continue to be revised using the most recent data and information as a base. **Table 6.1** summarises the recovery expectations of some of the major travel and tourism organisations.

Table 6.1: Travel Recovery Expectations

	Domestic	International	Global	Notes
Tourism Research Australia	2023-2024	2025		Domestic air travel; International visitor arrivals
UNWTO		2024 +		Depending on factors incl economic slowdown, Asia/Pacific recovery, Ukraine
IATA			2024	Varies between regions, Asia Pacific not until 2025
ACI	2024	2025	2024	2026 under a more pessimistic perspective due to macroeconomic risks
US Travel Assocn	2024	2025		Domestic air; International inbound excl Canada/Mexico
Eurocontrol		2025		2028 under a low scenario
Airbus			2023-2025	Lower boundary included risk of further waves of COVID
Boeing			2024	Domestic before international; Short-haul before long-haul

Source: TFI based on selected organisations

6.1 TRA Australian Recovery Outlook

In December 2022 Tourism Research Australia (TRA) released new domestic and international tourism forecasts, updating the December 2021 domestic forecasts and the November 2020 international forecasts. The latest forecasts cover the period 2022 to 2027.

The December 2022 domestic forecasts (by all modes of travel including air and road) indicate that:

- Nationally, domestic tourism (measured in visitor nights) was nearing parity with its pre-pandemic level by end-2022 and is expected to surpass its 2019 peak in 2023, followed by a more moderate growth trajectory through to FY27.
- Holiday nights are forecast to remain strong and return to pre-pandemic levels more quickly than nights spent away from home for the purpose of visiting friends and relatives (VFR) or for business. Holiday segment nights recover in 2022, with travel for VFR expected to fully recover in 2024, followed by travel for business purposes in 2025.
- The speed of forecast recovery in the domestic visitor economy within each state/territory reflects factors such as differences in the composition of domestic tourism, mode of travel and type of travel activity, with:
    - Business travel recovering more slowly than leisure.
    - Air travel recovery over 2023 and 2024 possibly impacted by aviation supply constraints and the price of airfares.

    - The major shift to regional travel during the pandemic likely to ease over the forecast period.
- Queensland and the territories show recovery in 2022 (due to strong growth in leisure travel) and Tasmania in 2023, with the other states expected to recover a year later in 2024.

The recovery of international tourism is expected to take longer and be uneven across markets and across purpose of travel:

- Total international visitor arrivals are forecast to surpass pre-pandemic levels in 2025. By 2027 arrivals are forecast to reach the number previously expected by 2022-23 in the absence of a global pandemic. This result would represent a loss of nearly five years of growth.
- The New Zealand and India markets are projected to recover first, in 2024. It is expected to take until 2025 for arrivals from the United Kingdom, Europe and the United States to surpass pre-pandemic levels, and not until 2026 for arrivals from Japan. Due to ongoing uncertainties forecasts for the China market have not been published, however the aggregate international forecasts project visitor arrivals from China returning to pre-pandemic levels by 2026. Visitor arrivals from other countries (dominated by other Asian countries) are forecast to exceed pre-pandemic levels by 2025.
- As aviation access increases holiday arrivals are forecast to increase in 2023 and 2024, with full recovery in 2025. This is a year later than recovery in travel for VFR purposes which has been boosted by pent-up demand to reunite with family and friends. While recovery in travel for the purpose of education is expected to build momentum, a return to pre-pandemic levels is not forecast until 2026 (pre-pandemic travel for education was dominated by visitors from China). With an uncertain economic outlook for many markets and the increased use of virtual business practices through the pandemic, a full recovery in business travel is not expected until the end of the forecast period in 2027.
- Outbound departures of Australian travellers are rebounding quickly and are expected to reach 98% of the 2019 level in 2024.

TRA notes several risks to its outlook, including: potential new waves of COVID-19; the duration and severity of economic headwinds (domestically and in visitor markets); the conflict in the Ukraine; conditions in China (with scenarios showing a return to pre-pandemic levels ranging from 2025 to 2027); and the speed with which aviation supply returns to pre-pandemic levels. Domestic travel could also be impacted by a faster than forecast return to Australian outbound travel.

The TRA recovery timelines for domestic and international tourism are shown in **Table 6.2.**

Table 6.2: TRA Views on Australian Tourism Recovery (December 2022)

	Domestic Visitor Nights	International Visitor Arrivals & Resident Departures
National	2023	2025
By Travel Purpose:		**International Visitor Arrivals**
Holiday	2022	2025
VFR	2024	2024
Business	2025	2027
Other/Education	2026	2026
Arrivals by International Market:		
New Zealand and India		2024
UK, Europe and the US		2025
Japan		2026
China[(a)]		2026

Notes: [(a)] Due to ongoing uncertainties the report does not publish forecasts for the China market however the aggregate international forecasts project visitor arrivals from China returning to pre-pandemic levels by 2026. Source: Tourism Research Australia, Tourism Forecasts Australia 2022 to 2027 (December 2022).

6.2 External Views on Traffic Recovery

The major international travel and tourism organisations have presented a range of changing views on travel recovery since the start of the COVID-19 pandemic. The latest views generally note ongoing headwinds which could slow the pace of recovery despite the lifting of travel restrictions and strong pent-up demand.

UN World Tourism Organisation (UNWTO)

The latest UNWTO data (January 2023) reports that more than 900 million tourists travelled internationally during 2022, double the number recorded in 2021 but still reaching just 63% of pre-pandemic levels. Results were boosted by strong pent-up demand, improved confidence levels and the lifting or relaxation of travel restrictions in an increasing number of destinations. As at end-December 2022, 122 countries were without any COVID-19 travel restrictions, up from 86 in September and just 45 in June. However by mid-January 2023 this number had slipped back to 96 with multiple countries issuing new restrictions for travellers coming from China.

Europe reached nearly 80% of pre-pandemic levels during 2022 (boosted by strong intra-regional demand and travel from the US), and the Americas recovered around 65% of their pre-pandemic visitors. Asia and the Pacific, with stronger pandemic-related restrictions and the delayed opening of many destinations, reached just 23%.

The UNWTO expects recovery to continue throughout 2023 despite the economic, health and geopolitical challenges. The recent lifting of COVID-19 related travel restrictions in China is seen as a significant step for the recovery of the tourism sector in Asia and the Pacific and worldwide. Globally, international tourist arrivals during 2023 are expected to reach 80% to 95% of pre-pandemic levels, depending on factors including the extent of the economic slowdown, the ongoing recovery of travel in Asia and the Pacific, and the evolution of the Russian offensive in Ukraine.

The choice of travel destinations during 2023 is expected to be shaped by the availability and cost of air travel, visa regulations and processes, as well as COVID-19 related restrictions. Tourists are expected to increasingly seek value for money and travel close to home in response to the challenging economic environment.

The majority of the UNWTO Panel of Experts believe international tourism will not return to 2019 levels until 2024 or later.

International Air Transport Association (IATA)

IATA reports that the post-COVID recovery momentum continued throughout 2022 with industry-wide RPKs reaching 68.5% of the 2019 level (76.9% in December 2022 compared with same month 2019). Total Domestic traffic in 2022 recovered to almost 80% of the 2019 level, with domestic US at 94% and Australia at around 81%. International passenger traffic reached 62% of the 2019 level, with all regions experiencing strong growth boosted by pent-up demand for air travel and easing restrictions globally. International traffic within Asia maintained its growth momentum during December 2022 and increased to 79.1% of December 2019 levels.

IATA expects the on-going recovery and near-term growth of passenger traffic will vary across regions, with recovery in the Asia Pacific region lagging. North America's traffic is forecast to recover to 2019 levels in 2023, followed by Latin America, the Middle East and Europe in 2024, and by Africa and Asia Pacific in 2025. Globally, industry-wide passenger traffic is expected to recover to the 2019 levels in 2024, and then grow at an annual average rate of around 3% over IATA's forecast horizon.

IATA has recently reported on the key risks facing the air transport industry in 2023. Most of the headwinds from 2022 are considered likely to remain in 2023, and the balance of risks remains tilted to the downside:

- The war in Ukraine, a major reason behind the global economic slowdown in 2022, is assumed to dominate the global picture again in 2023.
- With the US, China, and the EU economies slowing simultaneously, global GDP is expected to decelerate further in 2023 but remain positive.
- While inflation globally is likely to have reached around 9% in 2022 the base effect should bring inflation lower in 2023. However the price level will remain high.
- Further oil price volatility is to be expected in 2023, but the slowing global economy should have a dampening effect on average oil prices.

- COVID-19 has re-emerged as a risk to the 2023 outlook as it spreads through China and will probably dampen GDP growth in that country as a result. However, the lifting of lockdowns and travel restrictions will, on the other hand, support economic activity in the economy and in air transportation.
- The re-introduction of travel restrictions by several countries in response to the COVID outbreak in China may impact economic activity.
- The risk of US debt ceiling crisis in 2023 is greater than usual and would have significant consequences for the US and for global financial markets. However the risk of an outright default considered to be still low.
- Extreme weather events pose an ongoing risk to all infrastructure and will likely continue to disrupt air travel at some airports and flight routes. The costs associated with such events can be expected to increase, as can the costs relating to any policy response to climate change.

International Civil Aviation Organisation (ICAO)

ICAO estimates for 2022 indicate a recovery in world passenger numbers to 71-72% of pre-COVID (2019) levels, a more pessimistic outlook than was expected in mid-2022, with international recovering to 64-65% (down from 71-75%) and domestic to 76-77% (down from 80-82%).

As at February 2023 ICAO forecasts that air passenger demand in 2023 will rapidly recover to pre-pandemic levels on most routes by the first quarter, and that growth of around 3% on 2019 figures will be achieved by year end. Air passenger demand in 2024 is expected to be stronger, at around 4% higher than 2019. This translates to a Compound Annual Growth Rate (CAGR) of 0.7% over the 2019-2024 period.

ICAO notes that the number of passenger aircraft in service in 2022 reflects the overall traffic recovery, with current estimates suggesting 75% of pre-pandemic levels. The number of Airbus and Boeing orders in 2022 exceeded that seen since 2019, indicating the recovery of aircraft demand.

Airports Council International (ACI)

In its February 2023 outlook the ACI noted that following the removal of travel restrictions and quarantine requirements for vaccinated travellers in 2022 there had been an upsurge in demand across many markets, which has continued into 2023. Global passenger traffic over 2022 was at 72% of 2019 levels, with domestic passenger numbers at 79% and international at 60%. The recovery in passenger volumes in 2022 remained uneven around the world, with the Asia-Pacific region lagging at just 52%.

Global passenger traffic is forecast to reach 92% (or 8.4 billion passengers) of 2019 levels in 2023. The baseline projections for global passenger traffic indicate that the industry will recover to 2019 levels by 2024, driven mainly by domestic travel with international travel

recovering a year later. ACI presents a more pessimistic perspective indicating that the recovery can be delayed to the year 2026 due to macroeconomic risks.

The ACI notes that the speed of the recovery depends on several factors. While the possible slowing in GDP growth in major economies coupled with the rise in airfares due to higher jet fuel prices weighs negatively on demand, at the same time a strong labour market and the re-opening of China represent boosts to global passenger traffic.

Regionally recovery patterns remain uneven:

- North America continued its recovery trend in 2022, reaching 88.1% of the 2019 level, but is now expected to slow down due to economic risks, with expected full-year recovery in the year 2024.
- Asia-Pacific region is expected to recover significantly in the year 2023 and onwards following the recent easing of travel restrictions in the region, with full-year recovery to 2019 levels expected by the end of 2024.
- Due to economic risks in Europe, it is expected that the recovery will be significantly challenged with the full recovery not expected until 2025 or later.

The ACI points to some of the near-term risks in 2023, both upside and downside:

- Low unemployment rates in major economies which supports demand for air travel. However, some analysts argue that this may be short lived as central banks continue to tame inflation with higher interest rates, thereby contracting economies.
- Strong traveller sentiment following the lifting of restrictions in 2022. Again, this may change with changing economic factors.
- Re-opening of China - historically the largest contributor to global passenger traffic growth prior to the pandemic.
- High inflation and interest rates, with an ongoing and systematic tightening of global monetary policy.
- Jet fuel prices and air fares. Jet fuel prices remain high as compared to previous years. With a potential economic slowdown, prices are expected to ease and stabilize.
- The conflict between Russia and Ukraine further weakened the global economy, disrupting trade and driving a slowdown in 2022. Euro area economies are particularly vulnerable in the current context.
- Consumer and business confidence. In the later months of 2022, the OECD's Consumer Confidence Index was the lowest it has been in years. Similarly, the Business Confidence Index shows a downward trend.
- Trade and supply chains. Air cargo volumes continue to soften following a surge amidst 2021 in tandem with strong e-commerce sales.

The latest ACI World Airport Traffic Forecasts 2022–2041 point to total passenger traffic worldwide growing at a compound annual growth rate (CAGR) of 7.5% from 2021–2041, to reach 19.3 billion passengers. This includes a steep recovery gradient observed in the first five years (CAGR for 2021–2026) at 19.0%.

Association of Asia Pacific Airlines (AAPA)

In November 2022 the AAPA noted the surge in international air travel occurring since the region's governments had gradually removed border restrictions. As cross-border travel was progressively restored, regional carriers had put on flights to meet demand stimulated by the pent-up desire to travel and savings accumulated in the two years of isolation.

Recently released data indicates that Asia Pacific airlines recorded a six-fold increase in the number of international passengers carried during 2022 compared to 2021. Capacity expanded by over 140% over the same period and the international passenger load factor increased by almost 40 percentage points to average 72.8%. By December international passengers had reached 47.5% of pre-pandemic levels, up from just 7.0% in January. However, over the year demand averaged just 27% of pre-pandemic 2019 levels indicating significant progress still required towards full recovery.

In January 2023, on the back of strong travel demand, particularly for leisure travellers during the Lunar New Year holidays, and with the easing of border restrictions, notably in North Asia, the number of passengers carried by Asia Pacific carriers increased to 52.1% of the pre-pandemic traffic level.

In contrast, international air cargo demand weakened in 2022 and continues to face multiple challenges. A steep increase in inflation, a strong US dollar and the tightening of monetary policy across economies led to a slowdown in global economic activity. Pandemic-related lockdowns in China and the Russia-Ukraine war also aggravated prevailing supply chain disruptions.

AAPA expects that over 2023 the strong need for connectivity and desire to travel will continue to drive further recovery in the region's international travel markets, despite the uncertain macroeconomic outlook. The reopening of China's borders with quarantine-free travel is expected to markedly improve demand prospects.

US Travel Association

The US Travel Association reports that while its November 2022 forecast produced a moderate downgrade in projections for 2023, the overall recovery was expected to remain robust. The latest data was showing no signs of weakness in travel despite soaring inflation and the increasing chances of a recession. The strength in travel is attributed to ongoing pent-up demand coupled with strong household balance sheets and a continuing recovery in businesses travel. There are however differences between sectors:

- A slower recovery of overseas inbound travel to the US (excludes Canada and Mexico) is expected than previously forecast, with travel impacted by the strong dollar and unstable global economies. Overseas visitors are now forecast to just reach full recovery in 2025, at 101% of the pre-COVID level. The Association notes that the downgrade in inbound travel came at a time when

outbound travel was nearly fully recovered - while total inbound travel recovered to just 66% of 2019 levels in October 2022, outbound travel was at 95%.

- Domestic leisure travel (total person-trips) had already surpassed pre-pandemic levels and is expected to continue to be supported by household finances and a strong labour market, despite inflationary pressures.
- Domestic business travel recovery progress is expected to slow during 2023 as the economy enters a mild recession, but not reverse, with a full recovery still forecast for 2024.
- The forecast for full recovery in total domestic air travel has been delayed from 2023 to 2024, despite a stronger than previously expected result in 2022.

Table 6.3: US Travel Association Recovery Forecasts

	Forecast Share of 2019 Level (Years end 31 December)				
	2022	**2023**	**2024**	**2025**	**2026**
Overseas Visitors (excl Canada/Mexico)	56%	66%	88%	**101%**	109%
Domestic person-trips -	97%	**100%**	105%	107%	109%
Leisure	**101%**	103%	106%	108%	110%
Business	80%	90%	**100%**	102%	103%
Air	93%	98%	**107%**	111%	112%

Source: US Travel Association, November 2022

Eurocontrol

In total, 2022 European air traffic recovered to reach 83% of the 2019 level. Eurocontrol predicts a further strengthening to 92% of pre-COVID levels in 2023, but also notes challenges in terms of matching capacity with demand and in keeping delays down. Full recovery is now expected during 2025, one year later than had been forecasted in June 2022. This 'base scenario' prediction factors in weak economic growth, inflationary pressures and no immediate resolution to war in Ukraine.

The 'low scenario' considers the impact of several downside risks including a number of countries in recession in 2023, the demand for travel strongly reduced by the effects of inflation and the possibility of a periodical reimposition of travel restrictions due to resurgence of COVID-19 variants. This forecast does not foresee a recovery to 2019 levels until 2028.

Under a 'high scenario', with more optimistic GDP growth, a more limited impact on demand from inflation and stronger passenger confidence, recovery could take place during 2023.

Boeing Commercial Market Outlook (BCMO)

Boeing in latest Commercial Market Outlook (July 2022) reported a recovery timeline fundamentally unchanged from its 2021 outlook. A full recovery of global aviation is expected by 2024 along with a return to growth rates comparable with pre-pandemic:

- Global passenger traffic growth (RPKs) is forecast by Boeing to increase by an average of 3.9% per year from 2019 to 2031, comparable with the previous forecast for 2019-2030, but down from the pre-COVID forecast of 5.1% (2018-2028).
- While domestic recovery is still expected before international it is currently constrained by China and capacity issues in the US and Europe. International recovery on the other hand is outpacing expectations led by transatlantic traffic.
- The forecast includes a robust outlook for short-haul travel (under 3,000 miles), which is now approaching (or exceeding in some regions) 2019 levels, and is expected to remain amenable to stimulation through improved offerings such as new direct routings and lower fares. Long-haul traffic will grow at slower rates, 3.3% from 2019 to 2031 compared with 4.1% for short-haul, due in part to the difficulty of coordinating re-openings across regions.
- Over the second decade, 2031-2041, annual growth globally is forecast at 3.6%, down from 4.0% in the previous forecast for 2030-2040 and down from the pre-COVID forecast of 4.1% over 2028-2038.
- In comparison, during the pre-COVID decade, 2009 to 2019, the growth in passenger air travel had averaged 6.4% per year, above the long-term average of 5.0%.

Passenger traffic growth (RPKs) to/from and within the Oceania region is forecast to increase by an average of 3.1% over 2019 to 2031, on par with the previous forecast, but down from 6.1% over the decade to 2019.

- While growth expectations for air traffic within the Oceania region and for China/Oceania have been reduced, this is offset by increased growth expectations for traffic to/from the Middle East, Southeast Asia and North America.
- Traffic growth within Oceania (representing 28% of total Region traffic in 2019) is forecast at 2.1% annually over 2019-2031, and 1.7% over 2031-2041. This is down from the previous comparable forecasts of 2.5% (2019-2030) and 2.9% (2030-2040), and down from 4.0% annually recorded over the pre-COVID decade 2009-2019.
- Oceania-Southeast Asia traffic (24% of 2019 Region traffic) is forecast to grow annually at 3.7% over 2019-2031 up from the previous forecast of 3.4% for 2019-2030. Forecast growth over the following decade of 2.8% is down from the previous comparable forecast of 3.6%, and down from the 5.4% recorded annually over the pre-COVID decade 2009-2019.
- China-Oceania traffic (18% of 2019 Region traffic) is forecast to grow at 3.2% annually over 2019-2031, and 3.5% over 2031-2041. This is down from the previous comparable forecasts of 3.9% (2019-2030) and 4.5% (2030-2040), and down from 12.0% annually recorded over the pre-COVID decade 2009-2019.

Airbus Global Market Forecast (AGMF)

Airbus in its July 2022 Global Market Forecast also maintained its air traffic recovery outlook, with a full recovery to 2019 levels expected between 2023 and 2025. The lower boundary of the Airbus recovery 'corridor' includes risk of further waves of COVID.

Over the forecast period, 2019 to 2041, global passenger traffic is expected to grow by a CAGR of 3.6%, slightly down from the 3.9% forecast for 2019 to 2040 in the 2021 Global Market Forecast. Pre-COVID Airbus was forecasting 4.3% average annual traffic growth over the period 2018-2038.

Airbus indicates that recovery of domestic leg traffic (RPK) is continuing, with the exception of China – globally excluding China at around 90% of 2019 traffic by first quarter 2022, with China falling to around 20%. At the same time world international recovery was approaching 80% with the exclusion of from/to/within the Asia-Pacific which was at around 20% of 2019 traffic.

For passenger traffic to/from Australia and New Zealand the 'mature flows' are forecast to grow from 2019 to 2031 by a CAGR of around 2-4% per year (USA 2.5%, Europe 3.7%), increasing to 4-6% for other flows (Indian subcontinent 4.3%, China 4.5%, Asia Emerging 5.5%).

Abbreviations

ABS: Australian Bureau of Statistics

ACCC: Australian Competition and Consumer Commission

ACI: Airports Council International

AGMF: Airbus Global Market Forecast

ASA: Airservices Australia

ASK: Available Seat Kilometres

BCMO: Boeing Commercial Market Outlook

BITRE: Bureau of Infrastructure, Transport and Regional Economics

CAGR: Compound Annual Growth Rate

CP: Centre for Population

CPI: Consumer Price Index

CY: Calendar Year

EIA: Energy Information Administration

ERP: Estimated Resident Population

FIFO: Fly-in/Fly-out

FSC: Full Service Carrier

FY: Financial Year (Year end 30 June)

GDP: Gross Domestic Product

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

IMF: International Monetary Fund

IVA: International Visitor Arrivals

IVS: International Visitor Survey

LCC: Low Cost Carrier

LR: Long Range

NEO: New Engine Option

NG: Next Generation

NVS: National Visitor Survey

NEO: New Engine Option

OD: Origin Destination

OECD: Organisation for Economic Co-operation and Development

PATA: Pacific Asia Travel Association

Pax: Passengers

Pp: Percentage Point

RBA: Reserve Bank of Australia

RPK: Revenue Passenger Kilometres

RPT: Regular Public Transport

TA: Tourism Australia

TFI: Tourism Futures International

TRA: Tourism Research Australia

USD: US Dollar

VFR: Visiting Friends and Relatives

USD: US Dollar

VFR: Visiting Friends and Relatives

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Appendix 7

7.1 Accelerate Program

In 2016 Airservices restructured its services to deliver savings of 15% across the business. The program averted the requirement for pricing increases to address funding shortfalls following a contraction in the domestic aviation market and to help provide financial capacity to fund peaks in investment associated with:

- the OneSKY program
- services expansion following the mining boom
- the modernisation of our operational networks across the country
- new infrastructure to support continuing growth of airport capacity through new and extended runways, and a new Western Sydney Airport

The program was underpinned by the implementation of a new business operating model driving significant efficiencies, improved asset and project management and technology upgrade to support new business processes through automation and digitisation.

By sustaining these savings and improving the financial sustainability of the organisation, it also provided additional capacity to invest in new levels of cyber resilience, digital infrastructure and the information management capabilities required to meet the demands of continuing growth and a reduction in prices by 2 per cent.

Appendix 8

8.1 ANSP Benchmarking

Noting the differences in airspace characteristics, services, capabilities, and business structures, the below **Table** provides comparative information on Airservices and other Air Navigation Services providers. For comparison Airservices information has been adjusted to exclude ARFF services (which are provided by the airports in New Zealand and Canada).

Table 36 – Comparison of sample Air Navigation Service Providers

Description	Airways New Zealand	Nav Canada	Airservices Australia[1]
Service Characteristics			
Aircraft Movements 2019 (mil)	1.0	4.7	3.3
Aircraft Movements 2022 (mil)	0.4	3.9	2.3
Airspace Sq-km (mil)	30	18	52
Area Control Centres	2	7	2
Aerodrome Control Services	19	42	29
Estimated Airline and General Aviation Customers (000's)	2	50	6
Key Statistics (2021-2022)[2]			
Staff Numbers	780	4,413	2,475
ATCO's	330	1,800	960
Expenses ($mil)	*NZD*	*CAD*	*AUD*
Employee Costs	127	987	560
Supplier Costs	40	285	137
Depreciation & Amortisation	28	144	88
Total Expenses before Interest & Tax	195	1,416	785
Assets ($mil)			
Property Plant & Equipment & Intangibles	182	1,282	730
Work in progress[3]	33	190	787
Price per 1,000km Flight for A320 (USD)			
2016 Charge[4]	$854	$743	$487
2021 Charge[5]	$985	$1,152	$464
Current charge[6]	$1,004	$1,042	$417
Proposed Charge (2024)	-	-	$441

Notes:

ATCO's, Air Traffic Controllers in Operations

1. Airservices information adjusted to exclude Aviation Rescue & Fire Fighting services
2. Information based on Annual Financial Reports and CANSO Global Air Navigation Services Performance report information
3. Airservices work in progress mainly relates to OneSKY investment program
4. Information based on CANSO Global Air Navigation Services Performance report information (USD 2016 spot rate)
5. Information based on CANSO Global Air Navigation Services Performance report information (USD 2021 spot rate)
6. Based on current charges (USD July 2023 spot rate)