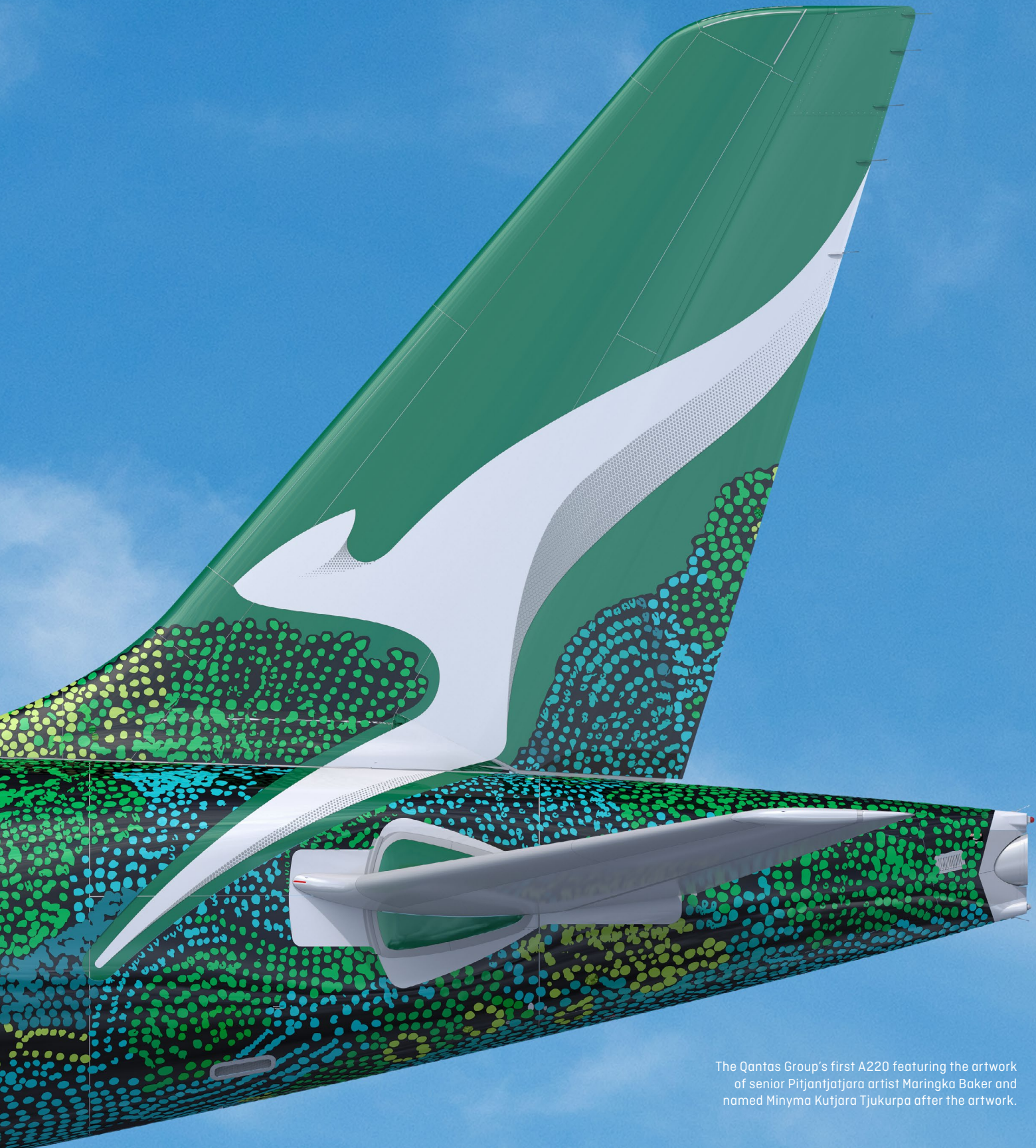




QANTAS GROUP SUBMISSION  
TO AVIATION GREEN PAPER 2023



The Qantas Group's first A220 featuring the artwork of senior Pitjantjatjara artist Maringka Baker and named Minyma Kutjara Tjukurpa after the artwork.

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## Executive Summary

The Qantas Group welcomes the opportunity to comment on the Aviation Green Paper and participate in a process that will chart the course for Australian aviation through to 2050 and articulate the long-term policy direction for the sector.

As the world's sixth largest country by land mass but ranking 54th on population, aviation in Australia is both vital and challenging. It plays a critical role in connecting international, domestic, regional and remote communities and supply chains, and provides a key source of employment and tourism.

In the 2023 financial year, the Qantas Group contributed 50,700 full time equivalent jobs and added \$14.1 billion to the Australian economy.<sup>1</sup>

The Government's focus on aviation policy comes at a critical time for the sector. The COVID-19 pandemic was incredibly damaging for aviation globally. The return to flying presented acute challenges, with sick leave, supply chain issues and aircraft availability meaning that the industry couldn't initially meet the huge demand for travel. For our customers, this meant unacceptable levels of flight delays and cancellations, issues with refunds and credits, missing baggage and poor contact centre experiences — all of which the Qantas Group has sincerely apologised for, and has worked hard to fix.

While there is understandable attention on industry shortcomings at the moment — and on the Qantas Group in particular — it is important that with a 30 year planning horizon, the Aviation White Paper does not place undue weight on temporary restart issues that occurred as the industry recovered from the biggest shock it has ever experienced.

Australia is one of the most liberalised aviation markets in the world. Foreign investors are able to establish domestic airlines here — one of the only mature markets where that is allowed. Consumers can choose from over 50 airlines that offer international services from Australia. Competition is rigorous, both domestically and internationally, and has delivered, and continues to deliver, lower prices, better quality services and more choices for all Australians. It has made the Qantas Group better, led to the establishment of Jetstar and encouraged new frontiers to be pushed.

Ensuring regulatory settings are fit-for-purpose is a fundamental part of the White Paper process. Airports are a critical part of Australia's national infrastructure and an increasing cost input to airfares. Sensible, measured reform within the existing light-handed regulatory framework governing airports will help deliver urgently needed benefits to the sector and consumers.

Transport is a major contributor to carbon emissions and aviation was the first industry to voluntarily commit to emission reduction targets as far out as 2050. Until zero emission technology, like electric aircraft or green hydrogen, are available, sustainable aviation fuel represents the most significant tool airlines have to reduce their impact on the environment while still providing a critical service to the travelling public.

Building a domestic sustainable aviation fuel industry represents a significant opportunity for jobs and economic growth for regional Australia and the wider economy. It would help bridge a significant gap in Australia's energy independence and resilience. Achieving these objectives will require partnership between Government and industry, and relies on the implementation of supportive policy settings and sector-wide incentives. Other major economies — including the European Union, United Kingdom

<sup>1</sup> Deloitte Access Economics Report. Provided as Annexure A to this submission.

and the United States — have made significant progress towards establishing their own sustainable aviation fuel sectors. In a country like Australia where air transport is crucial, we must do the same.

Australia's aviation sector has maintained one of the best safety records of any country. This is the result of careful regulation by Government combined with high levels of compliance and vigilance from industry. Significant incidents are scrutinised closely and maturely, and safety lessons shared for the benefit of all participants. This should never change.

Our submission provides detailed context and commentary on the policy areas identified in the Aviation Green Paper, and offers responses to each of the questions posed. A summary of our position and recommendations is offered at the start of each section for ease of reading.

The Qantas Group acknowledges the significant investment of time and effort the Government is making in the Aviation White Paper process and we look forward to engaging further.



# The Qantas Group's economic contribution to Australia<sup>1</sup>

## Boosting skills & training



**8,500 new onshore jobs** created over the next 10 years:

- 4,500 Cabin Crew
- 1,600 Pilots
- 800 Engineers
- 1,600 other ops roles



Only major airline to operate a heavy maintenance facility in Australia



**290+ graduates** from Qantas Group Pilot Academy since 2020



**New Engineering Academy** to open in 2025

## Recognising our people



**27,000 employees<sup>2</sup>**



**>\$4 billion wages bill**, including \$160 million in one-off bonuses across all employees and \$120 million in wage increases<sup>3</sup>

## Supporting Australian businesses<sup>3</sup>



- 3,000 suppliers** across Australia
- **1,900+** small business suppliers
- **\$8 billion** annual supplier spend
- **\$13 million** spend across **30** First Nation suppliers

## Connecting communities & supply chains

### NETWORK & FREIGHT



**46 million passengers** carried<sup>4</sup>



**71 new routes** launched<sup>5</sup>

- 46 Domestic
- 25 International



**65 domestic destinations** served across the Qantas Group



**340,000 tonnes** of freight carried<sup>3</sup>



**26 destinations** served with dedicated freighter aircraft<sup>7</sup>

### FARES<sup>8</sup>



**1 million+ passengers** flew under \$200 (Qantas Dom.)<sup>9</sup>

**2 million fares** below \$200 expected to be sold by Qantas Domestic in 2023



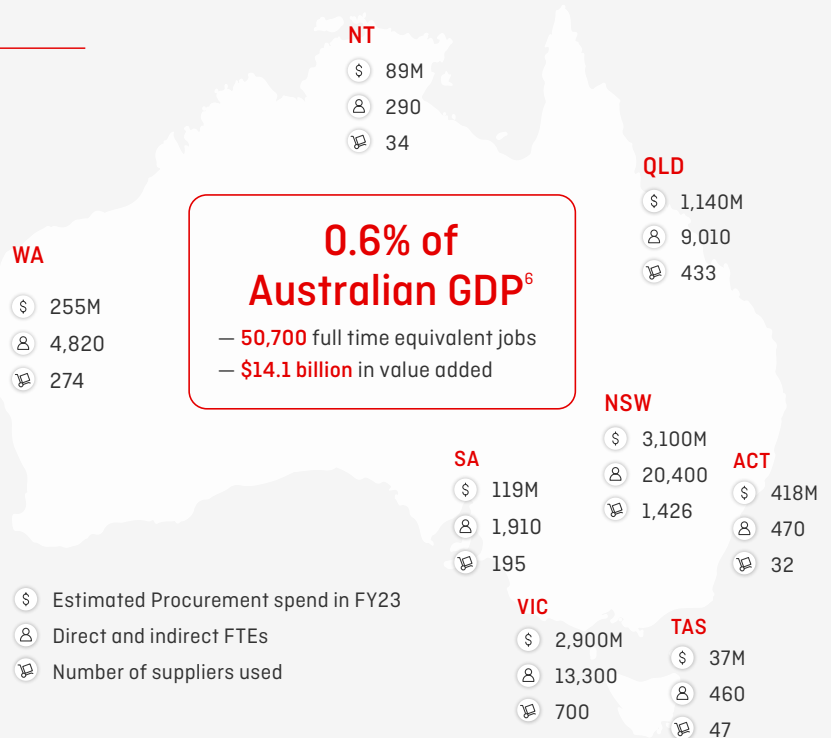
**2 million+ passengers** flew under \$100 (Jetstar)<sup>9</sup>

**10 million fares** below \$100 expected to be sold by Jetstar Group in 2023<sup>10</sup>

## Contribution to tourism<sup>11</sup>



Equivalent to **0.7% of Australian GDP**  
**\$14.9 billion** in facilitated tourism, up 13%  
**121,200** full time equivalent jobs, up 14%



## Investing for customers



- 1 aircraft** arriving on average **every three weeks** over the next three years<sup>12</sup>
- **194** new firm aircraft on order
- **12 Airbus A350s** ordered for Project Sunrise flights from late 2025



**\$230 million** customer improvements<sup>13</sup>



The **most on-time major airline** in Australia for 14 months in a row<sup>14</sup>



**\$100 million** lounge investment over the next three years

1 Deloitte Access Economics Report. Provided as Annexure A to this submission. 2 Total number of employees of wholly-owned entities of the Qantas Group, as well as Jetstar Asia Airways Pte Ltd, and majority-owned entities Holiday Tours, Travel Ltd and Taylor Fry Holdings Pty Ltd and Trip A Deal Pty Ltd. As at 30 June 2023. 3 FY23. 4 2023 Annual Report. 5 Across the Group since COVID-19 as at November 2023, including routes to launch in 2024. 6 FY23. Includes direct and indirect contribution. Deloitte Access Economics Report. 7 Domestic and International destinations. 8 All fares expressed as base fares. 9 In IH23. 10 Includes Jetstar Japan, New Zealand and Jetstar Asia. 11 FY23, increase since FY19. Includes direct and indirect contribution. Deloitte Access Economics Report. 12 Between FY23-FY25 inclusive, in relation to committed orders for Qantas Group Domestic's fleet renewal, 787-9's and Qantas Freight narrow body fleet renewal program. 13 Includes \$80 million in FY24 plus \$150 million previously budgeted. 14 At October 2023.





# CHAPTER 1

A competitive aviation sector



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## Key points in this chapter:

- Australia needs an efficient, safe, sustainable and competitive aviation sector.
- Australia has one of the most liberalised aviation markets in the world, with majority foreign-owned companies able to start a domestic airline and over 50 carriers offering international services. As a result, competition is rigorous and has delivered lower prices, better quality services and more choices for all Australians. It has made the Qantas Group better, led to the establishment of Jetstar and ensured that new frontiers, including direct flights from Australia to all inhabited continents, continue to be pushed.
- While the domestic market is concentrated, it is still highly competitive. Twelve ACCC Domestic Airline Monitoring reports between 2020 and 2023 made no findings of anticompetitive conduct and confirm that the industry that emerged from the COVID-19 pandemic was more competitive than before it, with Regional Express expanding onto mainline routes and the entry of Bonza.
- Sydney Airport is a critical piece of national infrastructure. The Qantas Group supports implementation of the Harris Review recommendations on the *Sydney Airport Demand Management Act 1997* (Cth) to increase transparency, efficiency and increase alignment with the World Airport Slot Guidelines.
- The Qantas Group acknowledges community concerns about regional airfares. While this topic has already been the subject of a number of inquiries, the Qantas Group supports the Productivity Commission undertaking an inquiry into the determinants of regional airfares.
- Changes to existing cabotage arrangements come with significant risks and would put Australia out of step with other jurisdictions.



## Why Competition Matters

Competition delivers lower prices, better quality services and more choices for all Australians. It has made the Qantas Group better, driving the establishment of Jetstar which has put air travel within the reach of Australians who had previously never flown, and ensured that new frontiers, including direct flights from Australia to the world, continue to be pushed.

Aviation is a challenging industry. It is complex, capital intensive, low margin and sensitive to external shocks. Airlines survive by innovating, adapting and seeking new and better ways of doing things. Over the past 30 years, Qantas has moved from government to private ownership, faced deregulation, gone through a number of restructures, entered new markets and started new airlines to broaden the range of services it provides to consumers and businesses. While not without its challenges, this competitive evolution has delivered significant benefits across the Australian economy, including job growth, lower air fares and the opening of new routes.

## Competition in Australia's Airline Sector

### Policy Settings

Australia is one of the most liberalised aviation markets in the world. Unlike a lot of other jurisdictions, Australia has Open Skies Agreements with its key markets and there are no restrictions on foreign carriers setting up domestic operations here. Virgin Australia, Regional Express and Bonza are all beneficiaries of these settings.

### Concentration

Australia's domestic aviation market has long been highly concentrated. This is not a new phenomenon, nor is it particularly unique. The Green Paper attributes the concentration of Australia's domestic aviation market to geography and population and notes that domestic aviation in other countries is also often highly concentrated, pointing to Canada and the United States as examples.

Notwithstanding this, successive governments from the time of the two airline policy in the 1980s have considered the industry's concentration in reviewing and adjusting policy settings.

Before deregulation, Qantas and Ansett operated the same networks, the same schedules, with the same service and near-identical pricing. Low cost carriers, like Jetstar and Virgin Blue, did not exist and the cost of travel was significantly higher in relative terms. Generations of Australians had never flown domestically or internationally. In the decades that followed, Australian aviation transformed into a dynamic and sophisticated industry, catering to a vast number of domestic and international travellers.

## Competition in Practice

As the Green Paper acknowledges, a concentrated market does not necessarily equate to a lack of competition. There are now four large jet operators, with Regional Express expanding onto mainline routes and the entry of Bonza.

The suggestion that Regional Express and Bonza would need to expand their operations significantly to become meaningful competitors to the Qantas Group and Virgin Australia is without basis. Given the competitive nature of the market, Qantas and Jetstar continue to closely monitor changes to the Regional Express and Bonza operating models (along with Virgin Australia's) and respond appropriately. Failing to respond to this competition through improvements to capacity, price and service would have a negative impact on the Qantas Group.

For example, in circumstances where Regional Express is now offering consumers interconnectivity between its regional ports and domestic mainline ports, as well as its charter business, it is entirely appropriate that Qantas would re-assess and improve its own customer proposition as part of a process of vigorous competition. The Qantas Group's competitive response remains predicated on the basis that Regional Express and Bonza (along with Virgin Australia) are effective long-term competitors, funded partly or wholly by offshore investors, who will continue to innovate, scale and refine their offerings.

The Qantas Group does not accept the ACCC's assessment that market segmentation is leading to a reduction in competitive tension and a lack of direct competition. All carriers compete in the same product market, albeit with some differentiation in terms of target customers in response to demand. There will always be some customers that are extremely price sensitive and will only ever fly on low cost carriers. Conversely, there are also those customers that only want the inclusions of a full service carrier. However, all airlines compete for the passenger who could either trade up to the full service product or, for the right price discount, move to a lower cost product. In that way, the pricing conduct of all airlines constrain each other as they compete for marginal passengers and there is a considerable degree of competitive overlap.

### Unique operational challenges, not a lack of competition, responsible for performance issues

As set out further in Chapter 2 (Consumer protections), the Qantas Group acknowledges that since travel restarted post-COVID, the experience for travellers has often fallen well short of what passengers, and industry itself expect. While these acute performance issues and negative customer experiences have dominated headlines, they have occurred worldwide and there is no causal link between them and the longstanding features of the domestic aviation market, such as high concentration.

## Downward Trend for Airfares

The Qantas Group appreciates the importance of sustainable and affordable air travel.

As the Green Paper observes, the data shows that the long-term trend for airfares has been inexorably down. Since the Australian industry was deregulated in the 1990s, the price of domestic flights has dropped by about 50 per cent, adjusted for inflation. There are few goods or services where that has been the case.

Airfares rose in the post-COVID period, peaking in December 2022, and have trended down significantly since. The temporary spike in fares reflected reductions in capacity to improve operational resilience following the challenging restart of the industry once borders opened. These reductions coincided with a period of high demand and the imbalance pushed up fares across all airlines. At the same time, fuel prices increased by more than 60 per cent, driving fares higher again.

Average fares have declined from their December 2022 peak, and Bureau of Infrastructure, Transport and Regional Economics Air Fares Index (BITRE) data shows that in October 2023 most fare categories are sitting below pre-COVID levels.<sup>1</sup> Sale fares are frequently available, with Qantas offering an average of 17 network-wide sales per year and Jetstar on track to offer 10 million fares less than \$100 by the end of 2023.

## Slots

Sydney Airport is a critical piece of national infrastructure and ensuring its capacity is utilised efficiently, competitively and sustainably for regional, domestic and international services must be a priority for the Government.

The Qantas Group broadly supports the recommendations of the Harris Review, most of which are aimed at increasing transparency, alignment with the Worldwide Airport Slot Guidelines (WASG) and the efficiency of Sydney Airport. That is in the best interests of the industry and the travelling public, because it will ultimately reduce delays and costs.

In particular, the Qantas Group supports changes to the definition of 'new entrants' to align with the global standards set out in the WASG and recommendations enhancing the effectiveness of the compliance regime, consistent with the WASG and other jurisdictions and making it easier for new entrants to access slots.

The Qantas Group recognises the importance of connectivity for communities in regional NSW and supports the preservation of the current regional definition to ensure that the regime's objective of guaranteeing required access for flights between Sydney and regional NSW is maintained. We know that this is critical for regional communities for medical, business and tourism purposes. The Qantas Group supports other recommendations to enhance the regional access regime,



including amending the definition of 'peak times' in line with actual demand for slots.

It has been suggested that the slots regime operates as a barrier to entry and that the Qantas Group has been 'hoarding' slots and exploiting the system. We completely reject these assertions.

Network planning is highly complex for all airlines. In accordance with standard global industry practice, core schedules for each season are based on prior years and adjusted to account for a range of factors. Airline Network teams develop network plans for their fleet and decide where and when aircraft should fly, ensuring that network capacity matches demand. These network plans cannot remain static and must be adjusted and refined in response to changes that can include operational issues like crewing availability and shifts in customer demand. The Qantas Group does not hold slots in excess of our published schedule. Any unrequired slots are handed back in accordance with the scheme.

The Sydney Airport Demand Management Scheme is based on international principles, consistent with the WASG. In a rule that is common worldwide, including at the world's busiest and most slot-constrained airports, airlines at Sydney Airport are required to operate at least 80 per cent of their allocated slots in order to keep them. Qantas is operating over 90 per cent of its allocated slots — well above threshold levels administered by the Worldwide Airports Slots Board, of which Sydney Airport is a member. Ninety-nine per cent of Qantas' slots were returned in the most recently completed season. The Harris Review considered a recommendation to impose a 90/10 rule on domestic inter-State flights — but determined the evidence did not justify a shift away from the present 80/20 rule.

Sydney Airport is not full — only 75 per cent of its available slots are allocated. In 2023, numerous new entrants commenced international services into Sydney. In 2021, Regional Express commenced domestic jet operations out of Sydney, including during peak periods.

<sup>1</sup> BITRE. 2023. Domestic Air Fares – Graphs. Link [here](#).

In both Summer and Winter 2023, Regional Express was awarded the majority of additional peak slots it sought — 108 additional slots in total. Bonza did not participate in the seasonal slot process in Summer or Winter 2023 and so did not obtain any slots.

The Qantas Group notes that the Harris Review had a limited scope and that the 80 movement cap, Sydney Airport curfew and broader Sydney basin were explicitly out of scope. This was a missed opportunity. A comprehensive review addressing known operational challenges and efficiency gains cannot be properly conducted without engaging with these issues.

## Regional Aviation

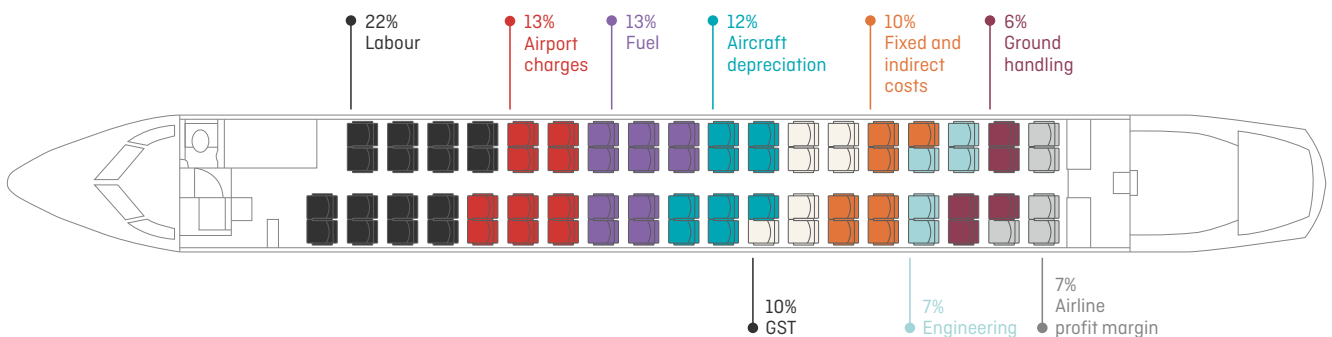
The Qantas Group welcomes the Government’s focus on regional and remote aviation.

Aviation plays a crucial role in supporting regional economies and communities, providing access to key services, enabling tourism and connecting regional businesses to domestic and international markets. As set out in more detail in Chapter 5 (Regional and remote aviation services), the Qantas Group is committed to supporting regional Australia and is a significant contributor to regional economies.

This commitment endures despite the significant operational and commercial challenges that regional aviation poses. Vast distances, high input costs, small populations and irregular demand patterns place sustained pressure on the viability of regional services. Regional turboprop operations cost the Qantas Group around 100 per cent more than mainline domestic 737 flying, and close to 150 per cent more than international operations.

Figure 1 below sets out the economics of a regional airfare. Airport charges make up 13 per cent of the overall fare and are second only to labour costs. They are equal to the cost of fuel, and escalating, even though fuel is around 50 per cent above pre-COVID levels.<sup>2</sup>

Figure 1: Economics of a Turboprop Airfare



Based on FY23 Qantas Group turboprop operations, and includes crew accommodation, transport, catering, marketing, IT costs, property and other expenses.

The Qantas Group acknowledges community concerns about regional airfares and supports the Productivity Commission undertaking an inquiry into the determinants of domestic airfares on the routes to and between regional centres in Australia, including an assessment of cost inputs and options for preserving connectivity. The Qantas Group considers that regulated routes have a place for the small number of routes that are otherwise unviable commercially, but that caution must be exercised in considering price controls to avoid unintended consequences for services and pricing.

The Green Paper refers to the ACCC’s investigation of allegations by Regional Express that Qantas’ entry onto new regional routes during the COVID-19 pandemic was anti-competitive. The allegations were thoroughly investigated by the ACCC in 2021, and no such finding was made.

In many cases, Qantas’ entry meant that customers could choose between competing operators for the first time, given that many routes were previously only operated directly by one carrier. Entry also increased the likelihood of the incumbent innovating and improving its proposition in response to competition.

The suggestion that Qantas should effectively ‘sit still’ or ‘make way’ for its competitors is not reasonable and not how any business operating in a competitive industry can sustainably operate. Importantly, ‘sitting still’ would also lead to an inferior outcome for the Australian public by diminishing competition and innovation among carriers and reducing choice for customers.

## Cabotage

Cabotage is the right of a foreign carrier to carry domestic passengers and freight between cities within another country, with the domestic sector operated as an extension of a service that originates in an airline’s home country. With very limited exceptions<sup>3</sup>, cabotage is rarely granted in air services agreements.

<sup>2</sup> As at October 2023. <sup>3</sup> Including the member States of the European Union and Australia and New Zealand under the Single Aviation Market.





Successive Australian governments have supported an established domestic aviation policy which is one of the most liberal in the world. Foreign airlines can access the domestic market under the ‘investment cabotage’ policy which attracts long-term capital to the Australian domestic market — with Bonza, Virgin Australia and Regional Express all beneficiaries. Short-term cabotage dispensations are available in exceptional circumstances.

Allowing cabotage would put Australia at odds with the rest of the world. Despite this, and apparently without detailed analysis, a number of forums over recent years have suggested cabotage as a possible mechanism by which competition might be enhanced.

In evidence before the Senate Select Committee on Commonwealth Bilateral Air Service Agreements in September 2023,<sup>4</sup> the ACCC acknowledged that no in-depth analysis had been conducted about the value or detriment of cabotage for particular routes or the domestic industry more broadly and recognised that there may be practical challenges in implementation.<sup>5</sup>

Any expansion of cabotage beyond discrete exceptional circumstances would represent an extraordinary shift. Cabotage concessions would encourage foreign international airlines to cherry pick high-density trunk routes by adding marginally-costed extra sectors to existing international services and would effectively remove incentives for foreign airlines contemplating establishing as fully-fledged domestic airlines.

The introduction of cabotage would destabilise Australia’s aviation market and have significant implications for the commercial and operational viability of the domestic aviation network — especially in the regions. It would:

- Damage the route and network economics of Australia’s aviation sector, resulting in less sustainable operations over the medium to long-term;
- Compromise investment;
- Result in job losses — especially in the regions;
- Erode Australia’s negotiating position for entry of the ASEAN Single Aviation Market; and
- Undermine Australia’s regulatory and safety regimes.

Any economic benefit of cabotage is premised on the capacity of foreign airlines to import the lower cost base stemming from the foreign regulatory frameworks under which they operate. While this may appear superficially attractive if it enables foreign carriers to offer lower airfares, it would inevitably lead to network rationalisation by local operators over the medium to longer term, with Australian carriers redeploying aircraft onto higher-yielding trunk routes at the expense of marginally-profitable or loss-making regional routes. This would also likely lead to the loss of Australian aviation jobs.

Any changes to cabotage policy settings must therefore be assessed in the context of the Government’s broader policy objective — for an efficient, safe, sustainable and competitive Australian aviation sector.

## Questions

**What types of data and analysis should the Australian Government produce to support aviation competition outcomes?**

Since the Green Paper was released, the Treasurer has directed the ACCC under section 95ZE(1) of the *Competition and Consumer Act 2010* to monitor the prices, costs and profits of domestic air passenger services.<sup>6</sup> This effectively resumes the Direction issued by the previous Treasurer to monitor the industry during the COVID-19 pandemic.<sup>7</sup>

Importantly, and irrespective of its monitoring function, the ACCC is a vigorous and effective regulator and has extensive investigative powers beyond the monitoring regime that it does not hesitate to use whenever it is concerned about potential breaches of competition or consumer law.

The data and analysis of the ACCC’s monitoring function will supplement and to some extent duplicate the significant data already published by BITRE.<sup>8</sup> BITRE’s wide-ranging statistics cover domestic and international airline activity, domestic on-time performance, domestic airfares, airfreight, airport traffic, general aviation activity, and aviation fuel sales.

In the context of a White Paper that is about long-term policy for the sector, it is notable that Australian airlines are subject to greater regulatory oversight — in terms of both frequency of reporting and scrutiny of performance

<sup>4</sup> Select Committee on Commonwealth Bilateral Air Service Agreements. 2023. Link [here](#). <sup>5</sup> Mr David Cranston, ACCC, Proof Committee Hansard, 22 September 2023, p.51. Link [here](#). <sup>6</sup> Media Release. Link [here](#). <sup>7</sup> Media Release. Link [here](#). <sup>8</sup> BITRE Aviation Statistics. Link [here](#).

— than airports, with Australia’s airports among the least regulated airports worldwide.<sup>9</sup> In contrast to the growing competition and declining prices in the airline sector, successive ACCC airport monitoring reports have documented steep rises in airport charges over time, unmatched by increases in quality. Only four of Australia’s airports come under the ACCC’s annual monitoring function, despite most of them being monopolies. As noted in Chapter 4 (Economic regulation of airports), airport charges are becoming an increasing part of the input costs to airfares.

In its 2019 Final Report of the *Inquiry into the Economic Regulation of Airports*, the Productivity Commission recommended that enhanced ACCC monitoring of airports would deliver transparency over airports’ operations and assist in maintaining a credible threat of additional regulation.<sup>10</sup> Specifically, the Productivity Commission recommended that the ACCC collect more detailed information from the monitored airports on their financial performance to aid with transparency and the ability to more easily determine if the monitored airports are exercising their market power (Recommendation 9.4).<sup>11</sup> In doing so, the Productivity Commission argued that appropriate scrutiny of airport performance required an improved evidence base, noting that while relatively high aeronautical charges at some airports “could be consistent with the airports exercising their market power...the monitoring reports do not contain sufficient detail to make that assessment.”<sup>12</sup>

The Government at that time endorsed the recommendation in December 2019, and agreed, in principle, to amend Part 7 of the Airports Regulations 1997 to expand the reporting requirements for monitored airports, noting that it would “benefit users of airports, both passengers and commercial users, and the broader community in the long-run.”<sup>13</sup>

Following the pandemic, in June 2022, the current Government asked the ACCC to commence a review and provide advice on these matters. When the ACCC consulted on the potential options to implement these new transparency requirements, the airports and their representative body, the AAA pushed back against any change.<sup>14</sup>

Decisive action has recently been taken by Government to reinstate the domestic airline monitoring regime. Similarly decisive action should apply to uplifting airport monitoring to restore confidence across the sector. Further comments on mechanisms to address the deficiencies in the airport regulatory regime are provided in Chapter 4 (Economic regulation of Australian airports) of this submission.

**Would the Australian Government’s publication, in consultation with industry, of a decision making framework and guide for short-term cabotage dispensations support clarity of current processes to manage future decisions to implement longer term cabotage arrangements?**

The Qantas Group supports the Government’s existing ‘case-by-case’ approach to cabotage, which permits short-term (generally one-off) cabotage dispensations in exceptional circumstances. The Government has outlined examples of when this might be appropriate, such as for operational reasons when domestic services are temporarily unavailable, or on a longer-term basis when a foreign carrier seeks to operate a route which is not currently served by Australian airlines or which requires a government subsidy (such as routes between some of Australia’s external Territories).

In circumstances where the Green Paper notes that discussions about cabotage rights are not expected to occur in the short to medium term, and the conditions for consideration of these dispensations will be confined and necessarily varied, the Qantas Group sees limited value in the publication of a decision making framework.

Any expansion of cabotage beyond such discrete exceptional circumstances would represent an extraordinary shift and put Australia out of step with other jurisdictions. Cabotage concessions would encourage foreign international airlines to cherry pick high-density trunk routes by adding marginally-costed extra sectors to existing international services and would effectively remove incentives for any foreign airlines or investors to contemplate establishing a new domestic airline or curb any expansion plans of recent new entrants.

Cabotage is almost never granted in air services agreements and for good reason. Cabotage would destabilise Australia’s aviation market and have significant implications for the commercial and operational viability of the Australian aviation network — especially regional aviation — and would compromise Australian jobs. Weakening or reducing the competitiveness of Australian airlines is at odds with the stated intentions of the White Paper in relation to both the sustainability of the sector and the outcomes for consumers, as well as broader Government policy in areas such as tourism.

**What should the Australian Government take into account in designing the terms of reference for the proposed Productivity Commission inquiry?**

The Qantas Group welcomes the Government’s focus on regional and remote aviation, and the acknowledgement of the crucial role airlines play in supporting regional economies and communities.

As set out in Chapter 5 (Regional and remote aviation services), regional aviation in Australia is operationally and commercially difficult due to the vast distances, high input costs, small populations and irregular demand patterns involved.

The Qantas Group acknowledges community concerns about regional airfares. While this issue has already been extensively canvassed in a number of recent inquiries,

9 IATA. 2018. Submission to the Productivity Commission Inquiry into the Economic Regulation of Airports. Link [here](#). 10 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92. Link [here](#). 11 Ibid 12 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92. Link [here](#). 13 Australian Government. 2019. Australian Government response to the Productivity Commission Inquiry into the Economic Regulation of Airports. Link [here](#). 14 Australian Airports Association. 2022. Submission to the ACCC: Airport monitoring – more detailed information on financial performance of airports. Link [here](#).

the Qantas Group supports the Productivity Commission undertaking an inquiry into the determinants of domestic airfares on the routes to and between regional centres in Australia. The terms of reference of that inquiry should include:

- The historical performance of regional aviation;
- The current and projected likely future of regional aviation;
- The current regulatory framework;
- The importance of network and frequency to communities;
- The demand profile of regional aviation/specific routes;
- The input costs airlines face, including for labour, airport access and fuel;
- The role of operational subsidies;
- The role (and limitations) of price controls;
- Existing fare frameworks, including residents fare programs;
- The role of regulated routes; and
- Options for macro policy change to build scale in regional towns, including investment incentives and diversifying regional economies.

The Qantas Group supports Government investment and initiatives that preserve and enhance connectivity with regional communities, without imposing unsustainable cost. Where changes are proposed, the network and service consequences for regional Australia must be considered. Poor regulation which embeds existing structural issues is likely to lead to poor consumer and economic outcomes and create market inefficiencies.





# CHAPTER 2

Consumer protections

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## Key points in this chapter:

- The post-COVID restart presented acute challenges for the global aviation industry.
- Flight delays and cancellations, issues with refunds and credits, missing baggage and poor contact centre experience when things went wrong have driven disappointment and frustration for airline customers across the globe.
- The Qantas Group recognises that service levels during this period were unacceptable and represented a significant departure from the high standards maintained prior to the pandemic. Importantly, many of the restart issues have been resolved, with the Qantas Group's core operational performance largely back to pre-COVID levels. This steady return to 'normal' is important context for assessing the need for policy change.
- The Qantas Group acknowledges the Government's desire to improve complaint handling processes and strengthen consumer protections in the airline sector. We are committed to making changes to earn back the trust of our customers and the communities we serve, including through improvements to the Airline Customer Advocate.
- Government, the aviation industry, its customers and the broader community share an interest in:
  - Reducing delays and cancellations;
  - Improving customer experience when things do go wrong; and
  - Keeping airfares sustainable and affordable.
- It is important that any changes to the consumer protection framework are assessed against these objectives, recognise the deep structural incentives for airlines to address these issues themselves and take account of the existing comprehensive consumer protection regime provided by the Australian Consumer Law, including the Consumer Guarantees provisions.

## Australia’s Consumer Protection Regime

The Australian Consumer Law is enacted through the *Competition and Consumer Act 2010* (Cth). It sets out consumer rights and business obligations, and applies to all Australian businesses, including airlines. The whole-of-economy application of the Australian Consumer Law represents best practice and has been identified as one of its key strengths.<sup>1</sup> Its simplicity ensures that no matter what the product or service, consumers are clear about their rights and recourse. Conversely, the introduction of industry-specific consumer protection runs the risk of proliferation of rights and recourse not readily appreciated or navigated by consumers.

While the regime itself is sound, the Qantas Group understands that heightened calls for change within the aviation sector specifically stem from frustrations arising from the past few years, including improving the process for making complaints when things do go wrong.

## The Context for Increased Consumer Complaints

The COVID pandemic was incredibly damaging for the aviation sector.

By July 2021, the Qantas Group’s operational document dealing with border changes had been updated over 350 times. This shifting environment increased the complexity of customer queries and placed extraordinary pressure on airline call centres, leading to longer waiting times even with a doubling of staffing levels.

When border restrictions finally eased in late 2021, the Qantas Group took immediate steps to bring all its staff back to work and add capacity. But like airlines around the world, the return to flying was not nearly as smooth as we had hoped. Sick leave, supply chain issues and aircraft still in hibernation meant the industry couldn’t meet the huge demand for travel. The result was long queues, delays and cancellations.

To improve operational resilience, during 2022 the Qantas Group invested a further \$200 million in a

conservative approach to scheduling that meant around 20 per cent of the Group’s flying capacity was left in reserve, rostering additional crew, training new recruits and overtime in key areas such as contact centres.<sup>2</sup> These investments reduced capacity in the market, which put upwards pressure on airfares, but ultimately delivered better reliability.

## Delays and cancellations

Aviation is a complex, safety-focussed industry. While airlines always strive to deliver their schedules, delays and cancellations are an inevitable — if unfortunate — result of that complex environment, even at the best of times.

The challenges experienced by the entire global aviation supply chain in restarting following the COVID-19 pandemic have been widely reported. In Australia, Bureau of Infrastructure, Transport and Regional Economics Air Fares Index (BITRE) statistics, the ACCC’s Domestic Airline Monitoring Reports and the Green Paper document the higher rates of cancellation and delays for passengers since flying recommenced following the COVID-19 pandemic.

Australia is far from alone in experiencing these systemic issues. Airlines around the world have faced increased delays and cancellations. The on-time performance (OTP) metrics of some the major European carriers are set out in Figure 1 below.

While OTP is still sitting below pre-COVID levels, the Qantas Group’s operations have materially improved since we restarted flying post-COVID. BITRE data shows that Qantas has been the most on-time of the major domestic airlines for 14 months in a row (averaging 74.4 per cent) and has had the lowest cancellations the past six months.

Many factors influence on-time departure or arrival, including weather, air traffic control, crewing and engineering considerations — most of which are a subset of safety. While staff shortages were experienced across the aviation ecosystem during post-COVID restart, others remain persistent issues, including weather and the performance of Airservices Australia.<sup>4</sup>

When operational problems mean that the Qantas Group can’t fly our planned schedule, we lean on recovery flights

Figure 1: European Union Carrier OTP<sup>3</sup>

Airline	2019	2023	Change	Jun 23	Jul 23
Lufthansa	75%	66%	-9%	63%	54%
Air France	79%	62%	-17%	54%	53%
British Airways	74%	58%	-16%	50%	51%
KLM	72%	72%	-	65%	62%

1 Australian Government. 2017. Australian Consumer Law Review – Final Report. Link [here](#). 2 Qantas Media Release. Link [here](#). 3 Cirium, cross referenced with Annual Reports, airline websites and Government agencies, where available. 4 Thore, A. 2023. Air Traffic Control Not Delivering Good Service, Admits CEO. Australian Aviation [04/08/2023]. Link [here](#).



from high-frequency routes like Melbourne–Sydney or Canberra–Sydney because the impact on customers on these routes is usually limited to an hour or so. This helps us protect lower-frequency routes to regional centres and places like Darwin or Hobart, where the impact of a cancelled flight for passengers could be half a day or more.

While this context is important, the Qantas Group appreciates the dissatisfaction this causes for passengers travelling on those high-frequency routes. We’ve adjusted our schedule to address this and we’re working internally and with industry stakeholders, particularly Airservices Australia, to lower our cancellation rate. When a flight is cancelled, customers are offered an alternative flight as close as possible to their original departure time, or a refund.

Suggestions that the concentrated structure of Australia’s domestic aviation market or a lack of competition are responsible for causing these ongoing operational issues are entirely misplaced and reflect neither the available evidence nor the drivers on airlines to deliver on-time performance.<sup>5</sup>

### COVID Credits

Throughout the COVID-19 pandemic, Qantas’ COVID credit policy compared favourably to most airlines in the world, but we accept that customers have not always found it easy to use.

On 31 August 2023, following three previous deadline extensions, the Qantas Group announced the removal of the expiry date on COVID travel credits that were due to run out at the end of this year. Qantas customers with COVID credits can request a cash refund, and Jetstar customers can use their COVID vouchers for flights, indefinitely.<sup>6</sup>

Qantas continues to work to make it as easy as possible for customers to use their COVID credits, including by:

- Sending regular emails and SMS’s to COVID Flight Credit holders with reminders and usage assistance;
- Making regular appeals via mainstream media for people to use their credits, particularly in connection with sales;
- Offering double frequent flyer points to incentivise credit usage;
- Establishing a Travel Credits Hub which is a one-stop destination for all information relating to flight credits;
- Providing enhanced support, including a Credit Concierge, which provides customers with a dedicated help line with specially trained staff;
- Launching the ‘Find My Credit’ online tool to help customers who may have lost their original credit details; and
- Working with banks on options for direct electronic refunds, despite the fact most credit cards used for flight bookings would have since expired.

## Prioritising Customer Experience

The Qantas Group has reflected on the mistakes made over the post-COVID period and the concerns raised by consumers, consumer advocates, regulators and Government and is making changes to earn back the trust of our customers and the communities we serve.

Those initiatives include a \$230 million investment in<sup>7</sup>:

- Putting more specialists in our call centres to help solve problems faster;
- Adding more frequent flyer reward seats;
- Reviewing our customer policies and processes to make sure they’re fair; and
- Giving our frontline staff more flexibility so they can better help when things don’t go to plan;
- Making our largest ever investment in our technology platforms to enhance communication in a disruption, proactively re-accommodating customers on new flights and enabling self-service for accommodation and refunds;
- An overhauled Qantas app that gives customers more control over their bookings, introduction of baggage tracking and better integration of Qantas Frequent Flyer; and
- Supporting on-time performance such as enhancements to our aircraft reliability program, engineering recruitment, front-line staff training, optimising turn-times and resourcing, and bringing forward check-in, bag drop and gate closure times.

More detail is included in Figure 2.



<sup>5</sup> See BITRE data which suggests no correlation between the rate of cancellations and competitors on a route. In fact, cancellations tend to be higher on routes with more operators. <sup>6</sup> Qantas Media Release. Link [here](#). <sup>7</sup> Some of which is outlined [here](#).

Figure 2: Customer Initiatives and Investment

# Customer initiatives and investment

In September 2023 we announced a material increase in our spending on customer experience to fix pain points, provide more value and make sure we're easier to deal with. We're investing \$230 million in customer improvements across FY24 with a range of immediate, near-term and longer-term initiatives.

The information below highlights some of the progress we've already made.

## EASIER TO DEAL WITH



### Improving contact centres

- 100 new contact centre agents onboard since October including experienced airline agents
- Review underway of bringing more contact centre agents back onshore



### Better flexibility for frontline teams to help customers

- Toolkit of options provided to airport staff and cabin crew to support customers when things don't go to plan including flight vouchers, Qantas Points and refunds
- Ex-gratia vouchers for significant disruptions and service failures



### Review of all commercial policies to make sure they're fair

- Qantas Points can now be transferred to a family member after a death
- Removed the fee to change a customer's name if they made a mistake



### Making it easier to use COVID credits

- Removed the expiry date
- All COVID credits are now refundable
- SMSs and regular email reminders sent to COVID credit holders
- Working with banks to automate refunds



### Better self-service during disruptions

- Improved digital self-service capability now available to customers for more choice and flexibility during disruptions

## A BETTER CUSTOMER EXPERIENCE

### New Qantas app

- Tens of millions of dollars invested in Qantas app to make it easier to manage booking and journey
- Baggage tracking functionality to be rolled out in app by end of year

### Investment in aircraft cabins

- Dedicated Engineering Cabin Focus Team established to quickly maintain and refresh aircraft cabins
- Special Chair Bay set up in Brisbane Base maintenance to proactively maintain A380 First chairs amongst global parts shortage

### Improved on time performance

- Qantas has been the most on time major domestic airline for 12 months in a row
- Cancellations, contact centre wait times and mishandled bags below pre-COVID levels

### New routes

- Creating new travel opportunities for our customers including recently announced Perth-Paris, Brisbane-Wellington, Brisbane-Honiara and Melbourne-Hervey Bay (JQ) flights

### Resilience for upcoming holiday period

- Contingencies in place for peak Christmas holiday travel period for smooth travel

## FREQUENT FLYER IMPROVEMENTS



### More reward seats, the best points value

- 6,000 new reward seats already released to Europe during peak summer period



### Significant discounts across Points Plus Pay

- Five-day offer in October with 50 per cent discount to the number of points required for any Premium international seat on any Qantas flight in our system



### Innovation — New options in pipeline

- Permanent improvements to Frequent Flyer program coming early next year
- New travel management experience for Qantas Business Rewards customers (SME market)

## LISTENING TO CUSTOMERS AND OUR PEOPLE



### Weekly focus groups with customers

- Senior executives participating in direct customer feedback sessions based on positive and negative experiences



### Better response to customer and service issues raised by cabin crew

- Dedicated resource set up to action and respond to issues raised through cabin crew feedback portal



### Customer Advisory Council established

- Council of frontline employees from cabin crew, pilots, airports, contact centres and freight established in November to advise on customer initiatives

A detailed assessment of complaints has considered their drivers, handling and resolution and identified key customer pain points, a pathway to improvement and targets for implementation. The three strategic priorities for complaints handling are set out in Figure 3 below.

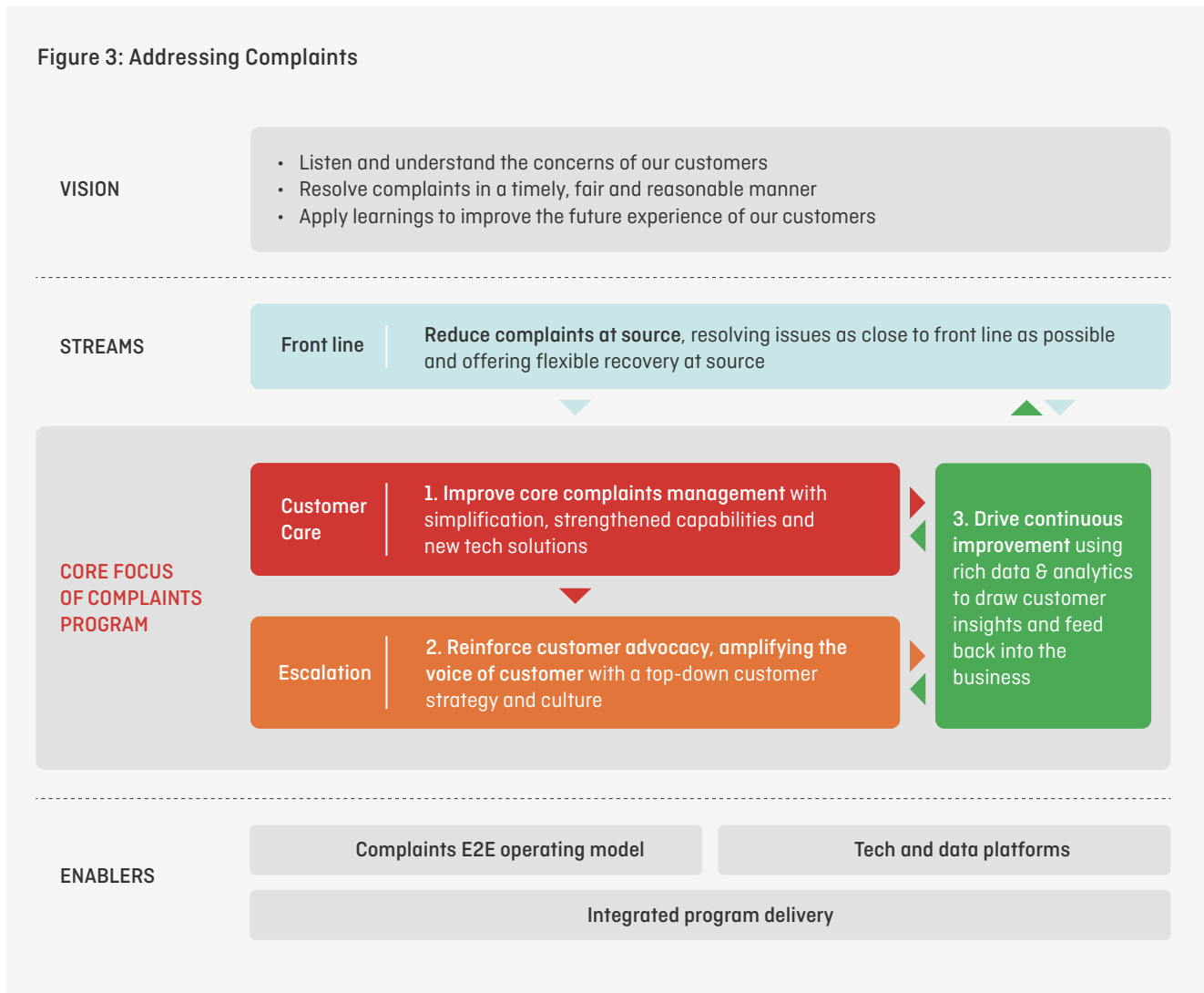
Before the end of the calendar year 2023, Qantas is committed to:

- Clearing backlogged cases;
- Giving customers more transparency on the complaints process including through the refreshed and simplified website — see Figure 4;

- Providing customers with the ability to request a review if they are not happy with how their complaint has been handled; and
- Enabling a systematic feedback loop to ensure that our customers’ concerns are captured and managed by us.

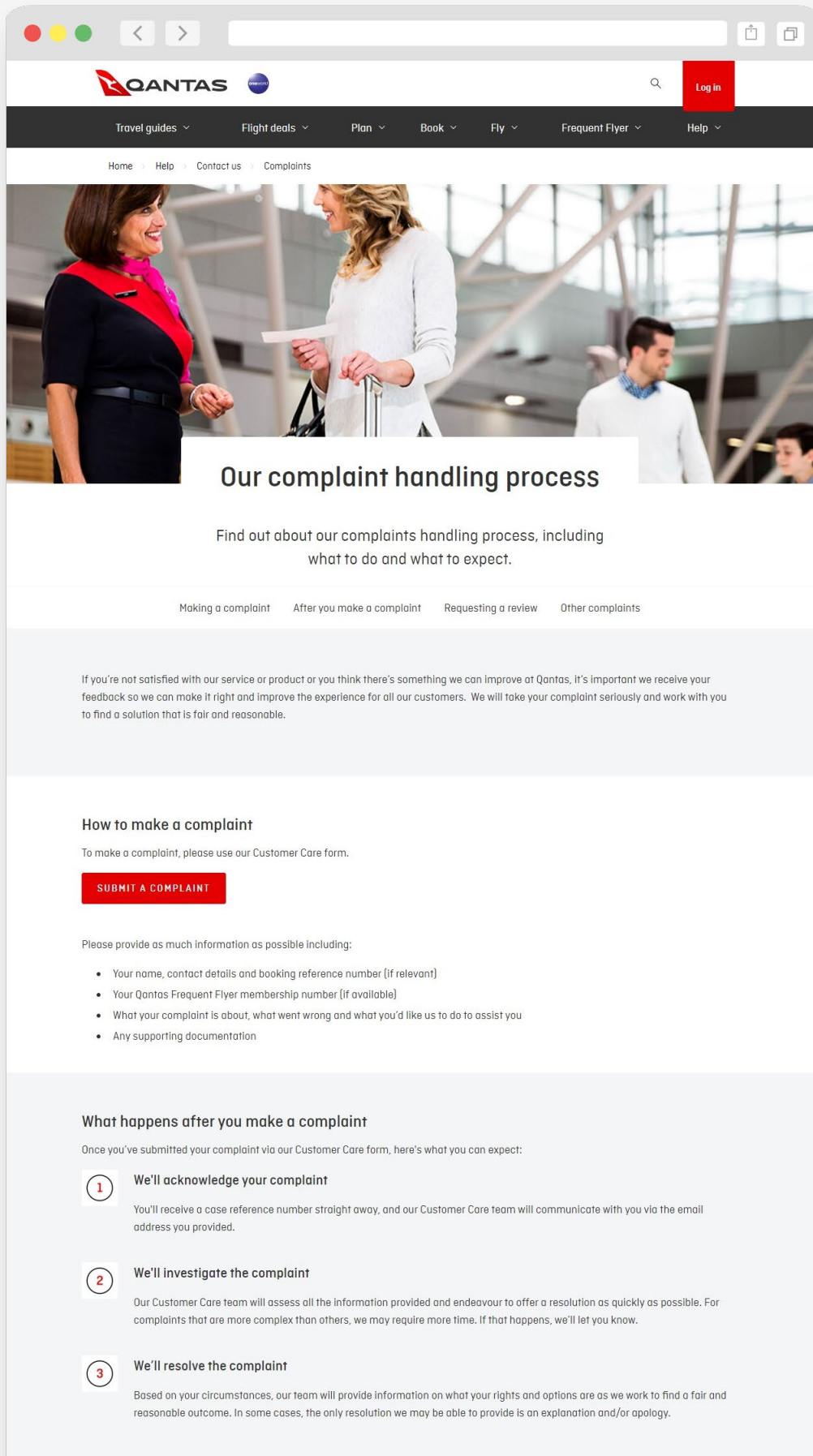
This will be followed by an uplift in training, the implementation of streamlined processes to deliver faster complaint resolution<sup>8</sup> and the expansion of onshore complaint servicing.

**Figure 3: Addressing Complaints**



<sup>8</sup> Acknowledge 100 per cent of complaints within 2 days, with final outcomes offered to 95 per cent of customers within 30 days.

Figure 4: Improved Complaints Handling Website





## Options for Reform

The Qantas Group acknowledges the Government’s desire to improve complaint handling processes and strengthen consumer protections in the airline sector, including by increasing awareness of the rights available to consumers. As set out above, all stakeholders share an interest in:

- Reducing delays and cancellations;
- Improving customer experience when things do go wrong; and
- Keeping airfares sustainable and affordable.

The Green Paper notes that “An appropriate consumer framework needs to reflect the operational realities of air travel while providing adequate minimum baseline protections for travellers.”<sup>9</sup> The ICAO Core Principles on Consumer Protection state that national customer protection regimes should reflect the principle of proportionality.<sup>10</sup>

It is important that any changes to the consumer protection framework are assessed against these objectives, recognise the changes being made by the industry and deep structural incentives on airlines to address these issues themselves and take account of the already comprehensive consumer protection regime provided by the Australian Consumer Law, including the Consumer Guarantees provisions.

We address each of the proposals below.

### Improving the Effectiveness of the Airline Customer Advocate

The Airline Customer Advocate was established in 2012 in response to a recommendation in the previous Aviation White Paper.<sup>11</sup> It is funded by participating airlines with a mandate to facilitate the efficient resolution of complaints about airline services that have not been resolved by direct communication between a customer and a participating airline.

In parallel with our commitment to improve our own customer complaint handling, the participating airlines are now implementing initiatives that will improve the operation of the Airline Customer Advocate to make it more efficient and effective, including:

- Additional investment in resourcing the Airline Customer Advocate to improve case management and the overall customer experience, including seasonal surges or temporary increases in case load;
- Refreshing the Airline Customer Advocate’s website to enhance its functionality and simplicity, and to include additional upfront information for consumers;
- Including more information about the Airline Customer Advocate and how to access it (with links) on all airline websites so that customers are more aware of their options;

- Reviewing and streamlining the Airline Customer Advocate’s complaint management processes;
- A renewed commitment to improving response timeframes;
- Periodic review of performance, to boost efficiency; and
- Including other airlines, and potentially international airlines, in the Airline Customer Advocate service, to enable their customers to also access its services.

These improvements to the Airline Customer Advocate are informed by Treasury’s guidance on *Benchmarks for Industry-based Customer Dispute Resolution*.<sup>12</sup> The key principles include:

- **Accessibility** The office makes itself readily available to customers by promoting knowledge of its services, being easy to use and having no cost barriers;
- **Independence** The decision making process and administration of the office are independent from participating organisations;
- **Fairness** The procedures and decision making of the office are fair and seen to be fair;
- **Accountability** The office publicly accounts for its operations by publishing its final determinations and information about complaints and reporting any systemic problems to its participating organisations, policy agencies and regulators;
- **Efficiency** The office operates efficiently by keeping track of complaints, ensuring complaints are dealt with by the appropriate process or forum, and regularly reviewing its performance; and
- **Effectiveness** The office is effective by having an appropriate and comprehensive jurisdiction.

The Qantas Group considers the changes outlined above have the potential to improve customer experience when things do go wrong and would welcome the opportunity to discuss the mechanisms by which the Airline Customer Advocate’s operation might be further improved.

### Airline Ombudsman

In circumstances where the Australian aviation industry is already taking significant steps to address the concerns that consumers and Government have raised, including through the uplift of the Airline Customer Advocate, and that for their considerable cost, current Ombudsman models are notoriously ineffective at delivering timely resolution of consumer complaints, the Qantas Group believes any consideration of an Ombudsman model:

- Requires more work and comprehensive industry consultation to assess the net benefit;
- Should determine whether an Ombudsman model is well-suited to address the key issues facing the industry and consumers;

<sup>9</sup> Australian Government. 2023. Aviation Green Paper – Towards 2050. Link [here](#). <sup>10</sup> ICAO. 2023. Economic Development - ICAO Core Principles on Consumer Protection. Link [here](#). <sup>11</sup> Australian Government. 2009. National Aviation Policy White Paper. Link [here](#). <sup>12</sup> Australian Treasury. 2015. Benchmarks for Industry-based Customer Dispute Resolution. Link [here](#).

- Should extend to the entire aviation ecosystem – not just airlines – in the same way that the Telecommunications and Financial Services Ombudsmen do. Applying an equivalent approach would capture travel agents, airports and other providers of services to both consumers and other participants in the aviation ecosystem and would demonstrate an important shared accountability; and
- Closely considers cost implications.

### Passenger Bill of Rights

ICAO’s Core Principles on Consumer Protection provide that “Efforts should be made to increase awareness of passengers to help them make informed choices. Air passengers should benefit from:

- Accessible information on their rights;
- Clear guidance on legal or other protection applicable in their specific situation, including assistance expected, for example, in case of service disruption; and
- Consumer education about passengers’ consumer rights and the available avenues for recourse in cases of disputes.”<sup>13</sup>

While the rights of passengers are clearly set out on airline websites and Conditions of Carriage, airline Customer Charters, the ACCC’s website<sup>14</sup> and the aviation complaints [website](#) hosted by CASA, the Qantas Group acknowledges that submissions on the Green Paper Terms from consumer advocates show that consumers do not always find them easy to access or navigate.

If the Government considers that it would assist consumers, the Qantas Group would support a central source of information that clearly articulates existing rights and the available avenues for recourse in cases of disputes. The Airline Customer Advocate would be a good place to house these, and the proposals outlined above to enhance the functionality and simplicity of the Airline Customer Advocate’s website and to include additional upfront information for consumers may address this goal.

However, if the Government is minded to explore a broader-based passenger charter or bill of rights, the Qantas Group suggests that the Government consider the model adopted in the United Kingdom. In its *Flightpath to the Future plan*<sup>15</sup>, the United Kingdom Government collaborated with industry and consumer groups to develop an Aviation Passenger Charter. The charter’s purpose was “to provide a helpful communication tool, which can be used as a clear, single information point for consumers, on what they should know when travelling by air. It will include information on their rights and responsibilities, and what they can reasonably expect from the aviation industry.” The Charter, now renamed the Air Passenger Travel Guide, details what people can expect from the entire aviation ecosystem, including airlines, travel agents, tour operators and airports, and what to do if things don’t go to plan, including guidance on how to complain.<sup>16</sup> Such an approach would

appropriately reflect the fact that there are many parts of the passenger experience over which airlines do not have control, but which nonetheless contribute to the challenges consumers can face when travelling.

### Compensation in the Event of Cancellation or Delay

The Qantas Group notes calls from some Australian consumer groups for the introduction of mandatory compensation in the event of delays and cancellations along the lines of that available in some other jurisdictions, particularly Europe. It is important to recognise that this scheme, named EU261, was never intended to address operational disruption but was introduced to deal with overbooking practices. Successive legal interpretations by the Court of Justice of the European Union have fundamentally altered the way EU261 is implemented so that most claims now relate to operational disruption.

The Qantas Group considers that the introduction of mandatory compensation would be a backwards step that will do nothing to reduce delays and cancellations, will increase confusion and complaints and materially increase costs, ultimately leading to higher fares and potentially compromising the viability of marginal routes.

This view is supported by the European Commission’s 2020 review of EU261. It questioned the spiralling costs of the program, the corrosive role of “claim agencies” and whether it was achieving its original objective of incentivising improved resilience and performance across the aviation ecosystem.<sup>17</sup>

Importantly, the scheme hasn’t led to a reduction in the amount of disruption. As IATA noted in June 2023, the Commission’s own data shows that disruptions have *increased* since EU261 was introduced.<sup>18</sup> That increase in delays and cancellations has been in large part attributable to events outside airlines’ control, including weather, and air traffic control issues. This has led to a commensurate increase in consumer complaints, rather than a decrease, as has been suggested by some advocates for the EU scheme to be used as a template in Australia.

The European Commission’s 2020 Review also found that, as a result of poorly-defined right to redress, airlines have not been able to recover costs incurred in providing assistance and compensation to passengers for disruptions generated by third parties (such as air navigation service providers, ground handlers, airports, and other parties), which are responsible for the large majority of disruptions. Airlines UK highlighted the disproportionate burden that is increasingly being borne by airlines, arguing that “Airlines cannot be the insurer of a last resort. We can’t have a situation whereby airlines carry the can every time we see disruption of this magnitude.”

In an industry that must always put safety before schedule, a compensation regime delivers little but increased costs. Ultimately, the biggest negative impact is on the consumer. The European Commission’s Review

13 ICAO. 2023. Economic Development - ICAO Core Principles on Consumer Protection. Link [here](#). 14 ACCC. 2023. Specific Products and Activities – Travel delays and cancellations. Link [here](#). 15 UK Department for Transport. 2022. Flightpath to the Future. Link [here](#). 16 UK Department for Transport. 2023. Air travel guidance refreshed to give passengers more clarity on their rights. Link [here](#). 17 See study [here](#). 18 IATA. 2023. Aviation Consumer Protection Regulation Should Address Shared Responsibilities. Media Release: 05/06/2023. Link [here](#).

recognised that the scheme generally leads to the cost being passed through to consumers in the form of higher ticket prices and/or airlines cutting costs in other areas to offset this burden.

In June 2023, the United Kingdom Government completed a significant consultation on consumer protections for air travel, as part of its *Flightpath to the Future* plan. It reasoned that, while there may be some benefits to improving compensation for cancellations and delays for domestic flights, there are also “significant complexities” with compensation schemes.<sup>19</sup> As IATA has noted, EU261 — which has been held up by many consumer groups as an ideal template — has been subject to more than 70 interpretations by the European Court of Justice, each of which sought to take the regulation further than originally envisaged by the authorities.<sup>20</sup> The United Kingdom Government has determined that further work is needed to consider the merits and limitations of any changes in this area.<sup>21</sup>

In circumstances where compensation regimes have done nothing to reduce delays and cancellations, or to deliver better outcomes for consumers, the Qantas Group cautions against introducing such a regime in Australia without closely examining, and seeking detailed stakeholder input on the adverse cost, network and service consequences of adopting a model where consumers are compensated for delays and cancellations, including:

- The inflationary impact on fares for what will effectively be mandatory travel insurance for all passengers (including domestically);
- The significant implications for low cost carriers and the low fare model; and
- The likely negative effect on marginal routes, particularly the impact on services to Australia’s uniquely vast and scattered regional network, where recovery options are more limited.

## Civil Aviation (Carriers’ Liability) Act 1959 (Cth)

### Passenger Claims

The *Civil Aviation (Carriers Liability) Act 1959* (Cth) is a capped liability framework in which the maximum compensation is \$925,000 for death or bodily injury. This threshold is updated in line with inflation and other limits set out in the Act.

There is strict liability on the part of the aircraft operator which removes the burden of proof from the passenger, or the passenger’s estate, to prove that the operator was negligent, avoiding the time-consuming and costly legal expenses involved in litigation and court proceedings.

The Act also mandates liability insurance on the part of the operator for passenger claims, giving passengers certainty of cover. The cap on the maximum compensation payable allows the operator to purchase appropriate insurance to protect its liabilities and ensure continued operations.

The cap is an appropriate and balanced trade-off for strict liability and the removal of the burden on the passenger to prove the operator’s negligence. The monetary cap is also reasonable when compared with liability limits and caps on other modes of transport in Australia and is generally in line with liability awards for compensation claims in Australia.

This regime is preferable in a domestic carriage context to the application of the Montreal Convention because:

- Claims are settled much more efficiently and with significantly lower legal costs;
- It provides greater certainty to both the passenger and to the operator;
- It avoids exposing operators, especially smaller ones to unlimited liability and materially increased insurance premiums or the inability to obtain insurance at all;
- It avoids placing domestic passenger claims at odds with other transport claims leading to inconsistent settlements across the various modes of transport, disadvantaging airline operators.

### Baggage

The *Civil Aviation (Carriers Liability) Act 1959* (Cth) also provides an effective framework for baggage and cargo liability.

These claims are also capped, with the maximum compensation being \$3,000 for registered baggage and \$300 for other baggage. These thresholds are also updated in line with inflation and other limits set out in the Act.

These standards are generally in line with those in other modes of transport and are more than adequate to cover the vast majority of domestic baggage claims.

Passengers can also purchase a wide range of comprehensive, affordable travel insurance products and cargo shippers have access to broad and affordable transit insurance to cover their interests, to the extent required.

## Questions

**Should the Australian Government look to revise current consumer protection arrangements and, if so, through existing or new mechanisms?**

As set out above, Australia already has a comprehensive Consumer Guarantees regime in the Australian Consumer Law provisions of the *Competition and Consumer Act 2010* (Cth). The whole-of-economy application of the Australian Consumer Law represents best practice and has been identified as one of its key strengths.

In assessing the appropriateness of the existing regime and proposals for reform, consideration should be given to:

- Distinguishing the temporary restart issues as airlines came out of COVID hibernation from the (by world

19 UK Department for Transport. 2023. Response to the aviation consumer policy reform consultation. Link [here](#). 20 IATA. 2023. Aviation Consumer Protection Regulation Should Address Shared Responsibilities. Media Release: 05/06/2023. Link [here](#). 21 UK Department for Transport. 2023. Response to the aviation consumer policy reform consultation. Link [here](#).

standards) high levels of operational performance the industry had beforehand and is now returning to;

- The comprehensive consumer guarantees framework that already exists in *Australia’s Competition and Consumer Act 2010* (Cth);
- The significant efforts already being made by airlines to improve their services and complaint handling;
- The considerable support already offered to passengers by airlines for events within their control;
- The clear structural incentives on airlines to minimise cancellation and delays; and
- The role played by all parts of the aviation ecosystem in delivering a positive or negative experience of air travel, including air traffic control, travel agents, ground transport providers, security screening and airports.

**Would an expanded remit for the Airline Customer Advocate to educate customers on their legal entitlements be useful?**

As set out above, the participating airlines recognise that the Airline Customer Advocate needs to be significantly improved and are now implementing initiatives to make it more efficient and effective, including through educating customers on their legal entitlements. While these changes are already underway, the Qantas Group would welcome feedback to ensure they address the Government’s objectives.

**Previous consultation processes have explored options to refine the passenger liability and insurance framework under the Civil Aviation (Carriers’ Liability) Act 1959 — do stakeholders still consider amendments to this framework are needed?**

The previous Government reviewed the *Civil Aviation (Carriers Liability) Act 1959* in 2020. At that time the capped liability regime and relevant limits were adjusted to reflect indexation and a range of other clarifications were made. The Qantas Group agreed with the overall approach taken at that time and considers the resulting insurance obligations to be balanced and reasonable.

While the Qantas Group regards the current regime as an appropriate model for compensating passengers, the *Civil Aviation (Carriers Liability) Act* would benefit from amendments to clearly state that the Civil Liability Acts in various states apply to domestic aviation passenger claims.

There has been long-standing confusion as to whether the Civil Liability Acts apply to domestic carriage, which has led to delays in passenger settlements and protracted litigation. The New South Wales Court of Appeal considered this issue in *Arefin v Thai Airways* (2018) but did not settle the question, leaving it to legislative amendment.

The *Damage by Aircraft Act 1999* (Cth) would also benefit from amendment. It currently imposes strict and unlimited liability on the aircraft operator for surface damage, with no

defence (either for contributory negligence or a right of contribution), which goes significantly beyond the liability position in the Rome Convention, exposing operators to the risk of a claim for surface damage exceeding the levels of insurance available.

Prior to Australia denouncing the Rome Convention in 1999, this Convention applied to surface damage claims and had a maximum cap on liability. This situation arose following the terrorist attacks on September 11, 2001. In the Qantas Group’s view, the *Damage by Aircraft Act 1999* (Cth) should be amended to:

- Cap the operator’s liability based on:
  - The level of insurance purchased by the operator;
  - Minimum levels of liability based on the size of the operator, or the size and type of aircraft operated; or
  - Strict liability to apply up to a cap of \$100 million, and beyond that the operator should be entitled to defend its liability position; and
- Exclude or limit the operator’s liability for acts of terrorism (as operators should not be liable for damage caused by the actions of terrorists or unlawful interference with an aircraft).

The Qantas Group does not object to minimum required insurance standards being extended to third party surface damage, but notes the requirement may impose a significant cost burden on smaller operators.

The European Union has introduced legislation which requires operators within and to the European Union to carry minimum levels of third party liability insurance (with levels dependent on aircraft maximum take-off weight). EC785 increased insurance costs for many operators, and many recreational operators and exhibition air shows continue to experience difficulty obtaining the required insurance.

**Would policies pursued in other jurisdictions such as a Passenger Bill of Rights or a stronger ombudsman model deliver benefits in Australia’s aviation sector.**

As set out above, while the Qantas Group considers detailed information about rights and responsibilities in the context of air travel is already readily available, if the Government considers it would assist consumers, the Qantas Group would support the development of a central source of information that clearly articulates existing consumer rights and available avenues for recourse. The Airline Customer Advocate could serve that function, as could an Air Passenger Travel Guide along the lines of that adopted in the United Kingdom.

If the Government is minded to explore a broader-based passenger charter or bill of rights, the Qantas Group suggests that the Government consider the shared accountability model adopted in the United Kingdom that details what people can expect from the entire aviation ecosystem, including airlines, air traffic control, baggage handlers, border agencies, travel agents, and airports.



In circumstances where industry is already taking significant steps to address the concerns consumers and Government have identified, including through the uplift of the Airline Customer Advocate, it is not clear that an ombudsman model would address the key objectives of improved on-time performance, enhanced customer experiences when things go wrong and keeping airfares affordable. The Qantas Group considers more work and comprehensive industry consultation is required to assess the net benefit before proceeding to implement an industry ombudsman model, particularly one that only applies to airlines.

The experience of compensation based regimes such as EU261 and the Canadian APPRs show these schemes do not deliver better outcomes for consumers. They increase the cost of travel and put connectivity, consumer choice and competition at risk. The Government should closely consider:

- The inflationary impact on fares for what will effectively be mandatory travel insurance for all passengers;
- The significant implications for low cost carriers and the low fare model; and
- The likely negative effect on economically marginal routes, particularly the impact on services to Australia's uniquely vast and scattered regional network, where recovery options are more limited.



# CHAPTER 3

Disability access

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## Key points in this chapter:

- The Qantas Group is committed to carrying all customers in a safe and dignified manner and takes seriously the accessibility, safety and comfort of all customers.
- Aviation is already a highly regulated industry and unique in terms of public transport. Any proposed changes must consider the effect on safety, network and the low fare model of low cost carriers.
- To deliver continuous improvement in accessibility in the aviation sector, the Qantas Group recommends the following reforms:
  - A national accreditation scheme for assistance dogs, including a specific scheme for air travel;
  - Regulation to address the dangers posed by lithium-ion batteries for mobility aids in an aviation context;
  - Harmonisation of the Transport Standards and the Premises Standards; and
  - Improving the utility and format of Disability Access Facilitation Plans.

## Access and Inclusion

In any given year the Qantas Group carries around 300,000 customers with disabilities. We recognise that air travel can be challenging for customers with disability and strive to make the customer journey as seamless as possible for people with disability, while ensuring the safety of customers and staff.

### The Qantas Group's Access and Inclusion Plan

In July 2023, the Qantas Group launched its Access and Inclusion Plan (the Plan) which outlines our commitment to access and inclusion for our customers and staff with disability, as well as the broader community. The Plan outlines how we can create a more consistent and inclusive experience for people with disability throughout their journey, starting from when they book with us.

A copy of the Plan is available on our [website](#).

In developing the Plan, the Qantas Group consulted extensively, including with our partners, Australian Network on Disability and Paralympics Australia, as well as with our staff and customers with disability.

The Plan sets out key goals to improve accessibility across four pillars:

- Customer Experience: Ensuring we make the customer journey as seamless as possible for people with disability;
- Sustainable Careers: Supporting people with disability to build their careers;
- Places and Technology: Striving for an accessible and inclusive environment for staff and customers; and
- Community and Partnerships: Creating more inclusive and accessible communities through our partnerships and procurement.

Over the next three years the Qantas Group has committed to a series of actions in relation to each of the pillars with an annual review and report on progress. The implementation and reporting of the Plan is the responsibility of the Access and Inclusion Committee, which comprises employees with lived experience of disability and senior leaders.

### The Qantas Group's Ongoing Commitment

The Qantas Group's commitment to ongoing improvement and engagement with customers with disability is further underpinned by:

- Our active membership of the Aviation Access Forum since its inception;
- Holding regular sessions with customers and stakeholder groups representing people with disability to better understand their experiences and concerns;
- Reviewing any barriers experienced by our customers with disability and the end-to-end processes relating to wheelchair assistance and the carriage of personal

mobility aids across all ports to identify opportunities to enhance the customer experience;

- Investing in training and development for our people to ensure that they can continue to provide an exceptional and safe service for our customers with disability; and
- Having dedicated specific assistance contact centre/ customer assistance teams to assist customers with accessibility requirements.

The Qantas and Jetstar websites and our Disability Access Facilitation Plans contain detailed specific assistance information to ensure customers understand the support that is offered by each carrier across the customer journey and to inform their purchasing decisions.

## Customer Initiatives

The Qantas Group is committed to continued investment to assist customers with disability to travel with us. Our goals and some of our current initiatives are outlined below.

### Customer Experience

As a part of our ambition to ensure that we provide a seamless experience for our customers with disability, our focus across the Qantas Group is on improving:

- Policy, process and support improvement;
- Communications and accessibility of communications to customers with disability;
- Consultation with customers with disability; and
- Support for customers with disability.

### The Sunflower Program

In September 2023, the Qantas Group became the first Australian airline to join a network of airports, retail stores, tourism and transport providers in the Hidden Disabilities Sunflower Program, a global initiative which aims to help to better recognise customers with a non-visible disability.<sup>1</sup>

A sunflower pin or lanyard is a voluntary and discreet symbol that indicates the wearer may need more time or help throughout their journey, which can then be provided by our staff. To support the implementation of the program, hidden disability training has been incorporated into the Qantas Group's disability awareness training for frontline staff.

Customers can contact their nearest participating airport to obtain a free sunflower lanyard.

Together with nine participating Australian airports, the Qantas Group aims to better support customers living with hidden disability.

### Carer's Fares

Since 2006, the Qantas Carer Concession Card, administered by People with Disability Australia, has been available to customers with disability who have

<sup>1</sup> The Hidden Disabilities Sunflower Program website. Link [here](#).



significant support requirements and are unable to travel onboard an aircraft without the full-time assistance of a carer. Cardholders and their nominated carer receive discounts of 30 per cent off selected domestic fares for flights operated by Qantas. In the 12 months prior to August 2023, this amounted to around A\$300,000 in discounts.

**Places and Technology**

The Qantas Group is striving for an accessible and inclusive environment for our staff and customers through:

- Continuously improving the built environment and technology. For example, Hearing Loops are available in all major Qantas Lounges;
- Continuing to factor in accessibility into aircraft cabin design and procurement; and
- Engaging with airport partners on accessibility.

**Case Study: Adelaide Lounge**



Our soon to be completed Adelaide Lounge was developed utilising accessible and inclusive designs.

- Hearing Loop will be newly installed in the precinct
  - Braille Signage
  - All gender bathrooms and showers in Qantas Club and accessible to customers in any lounge
  - Newly constructed accessible bathroom in the Domestic Business Lounge
  - Baby change tables in all lounges
  - Accessible seating, and adjusted seating and table heights in specific seating areas based on feedback from our accessibility consultant
  - Path of Travel consideration for wheelchairs
- Future lounge builds and retrofits will consider accessibility design principles.

**Case Study: New Qantas Aircraft Features**

- Direct aisle access and transfer to seats specifically allocated for customers with reduced mobility.
- Larger aircraft are typically fitted with accessible lavatories, passenger oxygen, medical outlets and a stretcher location.
- In some of our Business Class cabins, a dedicated service dog suite is available which has a specific area and additional space for an assistance dog.
- Considering accessibility and universal design principles when designing our digital interfaces, for example, the entertainment App and seatback entertainment screens.
- Passenger “crew call” buttons are positioned near all seated locations, including additional buttons at separate bed locations.
- We regularly consult with independent ergonomists and human factors experts in the design of our aircraft product and service.
- We design our seats to accommodate a torso harness for customers who require upper body support.



## Collaboration and Investment

The Green Paper identifies certain areas which can pose challenges to people with disability and where ongoing collaboration and investment is required, each of which is addressed below.

### Staff Training

The Qantas Group provides training to relevant staff on discrimination, disability awareness and accessibility.

In February 2023, refreshed online disability awareness training was released featuring people with lived experience of disability. The rollout of this training is initially prioritising frontline and customer-facing team members.

The Qantas Group is also currently undertaking a review of its current face-to-face training in relation to content, recency and audience reach. The review aims to ensure that training meets the needs of our customers with disability and appropriately supports our team members to provide a customer journey that is seamless and safe for all. The Qantas Group is currently reviewing training for support staff for the transfer of customers between wheelchairs and the aircraft seat using the transfer method appropriate to each airline.

### Carriage of Assistance Dogs

The Qantas Group carries many assistance dogs each year and recognises and supports the important work that properly trained guide, hearing and assistance dogs perform for their handlers, including those that alleviate the effects of psychiatric disabilities and physical disabilities.

Safety is the Qantas Group's number one priority and an aircraft is a unique environment. To ensure the safety of the aircraft for our customers and staff, we have always required assistance dogs to be trained to an appropriate minimum standard in order to travel in the aircraft cabin.

A key issue is that some assistance animals do not have the required training accreditation to travel on an aircraft.

The carriage of assistance dogs in the aircraft cabin is subject to a framework of legislation, including the *Disability Discrimination Act 1992* (Cth), the *Civil Aviation Act 1988* (Cth), the *Civil Aviation Safety Regulations 1988* (Cth) (the Safety Regulations) and the requirements prescribed by the Civil Aviation Safety Authority.

The Qantas Group carries three types of assistance dogs in the aircraft cabin, subject to the criteria set out below:

- Guide dogs (which assist to alleviate the effects of a vision impairment);
- Hearing dogs (which assist to alleviate the effects of a hearing impairment); and
- Assistance dogs (which assist to alleviate the effects of a diagnosed disability, including physical, sensory or psychological disabilities, other than a vision or hearing impairment).

To provide a safe aircraft and travel experience, we need to be satisfied that the above categories of assistance dogs can safely and competently work with their handlers in the aviation environment.

An assistance dog is permitted to travel in the aircraft cabin on a Qantas Group flight if they meet our criteria for carriage, available on [Qantas' website](#) and [Jetstar's website](#).

These are the minimum standards that the Qantas Group considers are required in order to satisfy its civil aviation safety obligations, including the Safety Regulations.

If an assistance dog has not been trained and certified or accredited by an organisation or trainer that is a full member of Assistance Dogs International (ADI) or approved under the *Queensland Act Guide, Hearing and Assistance Dogs Act 2009* (Qld) (the Queensland Act), the Qantas Group will consider carrying the assistance dog on a case-by-case basis. This requires further information to assess whether it is safe to carry the assistance dog in the cabin, including whether the trainer or training organisation meets or exceeds the minimum standards set by ADI in respect of organisations which are eligible to be full members of ADI or the Queensland Act and the standards set out above.

Qantas and Jetstar have an application process and works with its customers to understand more about their assistance dog, its training and the handler/dog competency. In circumstances where an assistance dog is not approved to travel in the cabin, alternatives are explored with the customer, including whether they wish to travel without the assistance dog, or for the assistance dog to travel in the aircraft hold pursuant to Qantas' Pets Policy, or they prefer a refund.

### A National Scheme

There is currently no scheme which provides a nationally consistent standard of accreditation or training for assistance dogs in Australia. There is also no scheme that takes account of the safety considerations and the unique and complex environment of air travel, as the aircraft environment is very different to a café, restaurant, shopping centre or other types of public transport such as buses or trains.

The Qantas Group has extensively reviewed the Queensland Act and validated that it is an appropriate standard required for aviation safety.

While there are other State and Territory based schemes, they are inconsistent with each other and do not meet the high standards of the Queensland Act.

The Qantas Group would welcome the establishment of a national scheme specific to the aviation context that aligns with the comprehensive approach taken in the Queensland Act.

This would also assist people with assistance dogs to make informed choices about assistance dog trainers and accreditors if they wish to travel by air.

## Other Animals

While Qantas supports the carriage of assistance dogs that meet the relevant requirements as outlined above, it does not support the carriage of other types of animals within the cabin on the basis that other animals may have an adverse effect on the safety of the flight.

CASA's Advisory Circular AC 91-03v1.0 'Carriage of assistance animals' dated May 2021 provides additional guidance regarding the carriage of assistance dogs for the reference of Australian operators, which:

- Lists a number of relevant considerations when determining whether to grant permission for the carriage of an animal in the aircraft cabin, including whether the animal has been trained to a standard of behaviour and hygiene that is appropriate for travel in the cabin of an aircraft and whether the owner/handler/trainer has been trained and will be able to control the animal on board the aircraft; and
- Only refers to dogs and makes no reference to any other animals.

The position that only dogs and no other animals may be carried in the cabin is universal among the domestic airlines in Australia and consistent with the vast majority of aviation regulators worldwide.

## Carriage of Mobility Aids

The Green Paper references damage to mobility aids in transit as a key concern of customers with disability.

Qantas is currently reviewing the end-to-end processes relating to wheelchair assistance and the carriage of personal mobility aids across all ports to identify opportunities to enhance our customer experience and will continue to make improvements arising out of this broad end-to-end review. We have a working group specifically reviewing loading techniques for mobility aids to avoid damage.

Some examples of processes that are in place include:

- Streamlining the codes entered by our Customer Contact Centres when a customer requests additional assistance to ensure that operational staff are prepared to meet those requests on the day of travel;
- Implementing a report to relevant operational staff to ensure they are aware of all customers travelling in a motorised wheelchair and the additional support they have requested;
- Sessions with major airports to ensure that there are effective processes to collect correct information regarding mobility aid battery types (which is required to comply with IATA dangerous goods regulations) prior to travel, and updating the relevant training materials for airport staff; and
- Implementing a new procedure to scan baggage tags on mobility aids that are collected at the gate (not submitted at check-in) to ensure that the mobility aid is returned to the passenger when they disembark the aircraft.

## Lithium-ion Batteries

Lithium-ion batteries are used in most electronic devices and come in various sizes and wattages. These batteries can pose a significant safety risk due to the potential for thermal runaway where the cells enter into an uncontrollable, self-heating state, leading to fire.

ICAO and IATA place Watt hour (Wh) size restrictions on lithium-ion batteries dependent on the type of device or equipment they operate, for example:

- E-bikes, tricycles, e-scooters, cameras: must not exceed 160Wh; and
- Mobility aids: if the lithium battery is removed from the aid, it must not exceed 300Wh.

Lithium-ion batteries must also undergo a rigorous series of testing and must meet the United Nations Manual of Tests and Criteria to be certified as safe to transport. The tests must be performed by an approved independent testing laboratory.

There has been an increase in customer requests for carriage of non-wheelchair devices with lithium-ion batteries including, e-bikes, self-balancing devices, e-scooters and segways (well in excess of 160Wh, sometimes in excess of 800Wh) which customers advise they are using as a mobility aid. These devices are very different to wheelchairs and traditional mobility scooters which generally have more rigorous manufacturing and testing standards which meet the requirements of the United Nations Manual of Tests and Criteria.

Manufacturers of such devices often do not provide enough information for airlines to validate that they meet mandatory requirements or provide details of how to prepare the device for safe carriage by air.

Without this clarity, airlines are unable to classify the device as a mobility aid. In such situations, we email the customer to explain why the device has been denied uplift and explore alternative arrangements with the customer, including sending the device as freight.

Clear regulation is urgently required to facilitate accessibility requirements while ensuring the safe carriage of all onboard.

This would also assist customers to make informed choices about their mobility aids at time of purchase if they wish to travel by air.

## Complaint Processes

Both Qantas and Jetstar have dedicated teams within their Customer Contact Centres to assist customers with specific needs and an escalation pathway for complaint cases to be managed by internal customer advocacy teams. There are specific processes in place to ensure cases of this nature are routed to these specialist teams so that they can be managed with additional sensitivity and care.



Both airlines are committed to reviewing and improving the complaints processes for customers with disability, including making the process more accessible for customers using alternative forms of communication.

For example, as part of Qantas' review into the end-to-end processes relating to wheelchair assistance and the carriage of personal mobility aids, Qantas has created a specific option on our website to enable customers to report a damaged mobility aid and provided additional information to assist the customer in reporting this to us for action. We recognise the impact the loss or damage of a mobility aid has to a customer with disability, and this ensures the case is routed to our specialist teams for investigation and remediation as quickly as possible.

### Accessible Communications and Dissemination

The Qantas Group is committed to delivering an inclusive and accessible experience across its digital channels. Some of the initiatives across the Qantas Group include:

- Review and improvement of the accessibility of the Qantas and Jetstar websites, prioritising the most visited pages to deliver a significantly improved accessibility experience; and
- Training digital, digital engineering, marketing and design staff to enable them to deliver more inclusive experiences across marketing, operational and digital touchpoints.

### Security Screening

A mandated upgrade of security equipment in airports is currently underway. Qantas is aware that some delays have occurred to that upgrade, primarily due to COVID-19 related issues. To accommodate these delays, the Department of Home Affairs has issued bespoke Screening Notices to specific Airport Screening Authorities. This has resulted in customers experiencing some differences as they pass through different airports which may present additional challenges for customers with disability.

Qantas anticipates that once all airports complete their installation program and all aviation security screeners have been accredited to the new training standards, greater standardisation in the screening experience will be achieved across the airport network.

The Department of Home Affairs' issue of a single national Aviation Screening Notice to all Screening Authorities in late 2023 or early 2024 will also deliver greater consistency.

As detailed in Chapter 8 (Fit-for-purpose agencies and regulations) of this submission, a single national Screening Authority managed and implemented by the Department of Home Affairs, similar to the models in New Zealand, the United States of America and Canada, would enhance efforts to improve accessibility for customers with disability, in addition to providing other benefits.

### Kerbside Assistance

As a premium airline, Qantas provides kerbside assistance for customers with disability who require this assistance.

Jetstar provides point-to-point air travel at a very low cost. These low fares rely on its different staffing and operational settings. While Jetstar is committed to improving the support it provides to customers with disability within the limitations of its low-cost business model, these different settings mean that the level of assistance provided may differ when compared to a full service carrier.

The Qantas Group notes that the European model for kerbside and other specific assistance has the airport take responsibility for this part of the passenger's journey utilising existing staff within the terminal.

Consistent with the Qantas Group's commitment to continually review and improve the experience of customers with disability, we consider this an opportunity to work with airports to develop a common user experience, identifying a clear delineation of responsibilities. We are looking to convene an industry roundtable to explore ways to improve kerbside assistance and other support and are separately re-examining whether there is a sustainable model for offering Jetstar customers kerbside assistance at Australian airports within the operational limitations of its low-cost business model.

The impact to customers with disability should also be considered during the design and approval process relating to kerbsides. For example, Melbourne Airport is planning on moving its kerbside around 300 metres further away from its current location in coming years, which may present additional accessibility challenges.

### Questions

**What further improvements can be made to the Disability Standards for Accessible Public Transport to accommodate the unique requirements of air travel?**

As the Green Paper acknowledges, the aviation context is unique in terms of modes of public transport and has its own specific operational requirements. This needs to be factored into any review or refresh of the Transport Standards in the future. Some considerations include:

- Aviation's status as one of the most heavily regulated industries in Australia, and operators have various compliance obligations, including in respect of civil aviation safety laws;
- The limitations on what can be provided within the aviation environment. The cost, impact to network and connectivity, implications for low cost carriers and the low fare model, as well as low-margin routes and smaller operators;
- The range of entities who provide various aspects of the public transport service, including airports, airlines, security screening providers and ground handlers;

- The differences in the ownership/leasing of different parts of airports and in the distribution of responsibilities between airports and airlines for supporting and assisting customers with disability. With different airport operations and delivery modes (for example, smaller regional airports compared with larger airports, lower amenity/higher amenity airports and terminals) and different airline operations (for example, full service versus low cost/low fares airlines and different aircraft type). Some airports have a range of infrastructure challenges that cannot be easily overcome while others have been redeveloped/upgraded/refreshed since the introduction of the Transport Standards. Retrofit or expansion of airport infrastructure is also significantly more expensive than for other transport types because it is highly regulated;
- The unique challenges for aviation operations in providing support and assistance to customers, including because of short turnaround times between flights and finite airport infrastructure such as slot times and access to gates and runways. Some customers require significant assistance to be able to travel which involves additional equipment, resourcing and operational/safety considerations; and
- International regulations and standards to ensure consistency, clarity and an even playing field for all operators operating to and within Australia.

There is also some complexity involved in the interaction and differences between the Transport Standards and the *Disability (Access to Premises – Buildings) Standards 2010* (Premises Standards). It would be beneficial if the Transport Standards and the Premises Standards worked together more harmoniously.

There are exemptions in the Transport Standards that should be reviewed and refreshed as part of any review of the Transport Standards which reflect the complexities of the aviation context. For example:

- The unjustifiable hardship exemption consistent with the *Disability Discrimination Act 1992* (Cth) must be retained because there may be circumstances where compliance is not possible or not feasible for operational, financial, safety, technical or other reasons (for example, a narrow-body or turboprop aircraft is manufactured to a certain size and specification and some equipment cannot fit through cargo doors);
- The statutory authority and compliance with laws exemption or similar from section 47 of the *Disability Discrimination Act 1992* (Cth) should be reflected in the Transport Standards because there are important aspects of the civil aviation and safety laws that need to be considered for the aviation context. For example, subsection 98(6B) of the *Civil Aviation Act 1988* (Cth) allows regulations made under that Act to contain provisions that are inconsistent with the *Disability Discrimination Act 1992* (Cth) if the inconsistency is

necessary for the safety of air navigation. An example of this is the emergency exit row requirements in regulations 121.270 and 121.275 *Civil Aviation Safety Regulations 1998* (Cth) which are prescribed laws for the purpose of 47(2) of that Act; and

- There are some aspects of aviation where direct assistance and equivalent access alternatives may be required or may be more appropriate (for example, for safety reasons, airline staff provide customers with wheelchair assistance on aerobridge ramps which may exceed the gradient requirements of the Transport Standards).

#### Aviation Specific Transport Standard

The Qantas Group considers that the Transport Standards have been working well in improving accessibility for customers in the aviation context and supports retaining the existing regulatory framework.

Airline and airport operators have already committed to ongoing and significant investment in improvements which are delivering more accessible and inclusive products and services to customers with disability. Given the unique nature of aviation as a public transport, the effect of any changes on safety, connectivity on marginal routes and the low fare model of low cost carriers should be factored in.

#### What improvements can be made to aviation accessibility that are outside the scope of the Disability Standards for Accessible Public Transport?

As outlined above, the industry and customers with disability would benefit from the following reforms:

- A national accreditation scheme for assistance dogs, including a specific scheme for air travel;
- Regulation to address the dangers posed by lithium-ion batteries in an aviation context; and
- Improving the utility and format of Disability Access Facilitation Plans.

#### What are the specific challenges faced by people with disability wishing to travel by air in regional and remote areas?

Travel to regional and remote airports involves additional constraints for people with disability, which are not in all cases easily overcome.

Servicing regional and remote airports is significantly more expensive than major ‘trunk’ routes (such as Sydney and Melbourne), as outlined in detail in Chapter 5 (Regional and remote aviation services) of this submission. Due to economies of scale and other factors, turboprop operations for the Qantas Group are 100 per cent more expensive than mainline domestic 737 flying, and close to 150 per cent more expensive than international operations.

Investment in additional infrastructure at regional and remote airports places cost burden on the airport,

which is passed onto airlines. This can impact route viability, reducing critical connectivity on often already marginal routes.

Accordingly, any additional investment requirements must be balanced and consider both the broader implications and any viable alternatives. For example, many regional remote airports do not have aerobridges which are typically used at larger airports to transport customers in a wheelchair. To overcome this, QantasLink co-designed the Qramp in lieu of using steep aircraft stairs. The Qantas Group has invested in both ramps and lifts at relevant airports to safely transport customers who are unable to use the stairs to the tarmac. We are also encouraging all ground handling companies to have ramps available for this purpose.

There are also unavoidable limitations arising out of the smaller aircraft types that service regional and remote airports. As set out above, some equipment cannot be accommodated on smaller aircraft because of the size of cargo and other doors. While some airports have a range of aircraft types that service them, larger aircraft are not necessarily an option because:

- Not all airports have the infrastructure to accept larger aircraft (such as runway capability);
- Not all routes have viable demand for a larger aircraft; and/or
- Airlines do not operate or have availability of larger aircraft.

**How can Disability Access Facilitation Plans by airlines and airports be improved?**

Most airports and airlines have published plans on their websites and on the Department’s website.

Qantas and Jetstar have published Disability Access Facilitation Plans which educate customers on the service offered by each airline and the assistance that is available throughout their journey. This complements the information available on the respective websites.

Customer feedback suggests there may be scope to refresh and improve the plan template and format currently specified by the Department of Infrastructure to ensure it remains fit-for-purpose, for example, by aligning sections to specific disability to facilitate navigation of the document.

Further consultation with relevant stakeholders and people with disability about what would enhance the useability of such plans would ensure an improved resource for customers.

**How should the Aviation Access Forum (AAF) be restructured to be more effective and better able to drive and enforce change to address issues faced by travellers living with disability?**

While the Qantas Group recognises the AAF is an important forum for engagement with the disability community, airlines, airport operators and Government, it recommends a review of its governance and objectives to ensure it remains action-orientated and better able to deliver change. Consideration should be given to the AAF’s structure, the transparency of its objectives and invited stakeholders to ensure appropriate and broad representation, including people with lived experience of disability.



The Qantas Qramp





## **CHAPTER 4**

Economic regulation of Australian airports

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## Key points in this chapter:

- Airports are a critical part of Australia’s national infrastructure.
- Inefficient regulation of monopolies such as airports distorts competitive and economic efficiency, compromises opportunities and adversely impacts the end consumer, the travelling public.
- The aviation industry needs a regulatory framework that is robust, addresses bargaining power imbalances, allows for efficient dispute resolution and better protects Australian consumers from the impact of monopoly market power, in a way that Part IIIA of the *Competition and Consumer Act 2010* (Cth) and recourse to litigation do not.
- Sensible, measured reform within the existing light-handed framework is urgently needed, with the key priorities:
  - A tailored dispute resolution mechanism to enable the timely, efficient and cost-effective resolution of intractable disputes; and
  - Mandating the Aeronautical Pricing Principles (APPs).



## Overview

Australian airports face very little (and typically, no) competition, particularly in the domestic aviation sector, which accounts for more than 80 per cent of the total market.

As effectively unregulated monopoly infrastructure, many Australian airports have a track record of using their market power, with the current regulatory regime providing no constraint on monopoly behaviour or providing any incentive to lower costs or improve quality. Cross ownership between major airports continues to increase, compounding this issue.

Under the light-handed regulatory regime, airports have little incentive to innovate, efficiently invest or increase operational efficiencies. They can largely pass on their high costs to airlines and other airport users, without transparency or need for a genuine compromise, and often with a 'take it or leave it' approach. Their profits continue to persist well above normal commercial returns off the back of unreasonable terms.

Dedicated Aeronautical Pricing Principles (APPs) that were drafted to enable efficient negotiation and appropriate pricing have never been formally enshrined and are therefore unenforceable and typically ignored. The recent case study of the Qantas Group's protracted dispute with Perth Airport highlights the need for cost effective and timely dispute resolution options.

Failure to address this will continue to hamper growth opportunities in existing markets, constrain the establishment of new routes and squander economic opportunities (including creating more aviation jobs) for the broader economy.

The economic implications highlight the imperative of a fit-for-purpose regulatory regime and the need for urgent reform.

Appearing before the House of Representatives in March 2023, the ACCC Chair indicated: "The existing framework around the regulation of essential monopoly infrastructure...creates a drag on productivity and makes supply chains less efficient. Ultimately businesses and consumers pay that price and the economy suffers."<sup>1</sup>

Sensible, measured reform, within the scope of the current light-handed regulatory regime, will unlock immediate benefits, placing downward pressure on airfares and enhancing competition. This should include a tailored dispute resolution mechanism to allow for the timely, efficient, and cost-effective resolution of intractable disputes (compared to multi-year court proceedings) and mandating the APPs.

## Profitability of Australian Airports

**"The most observable manifestation of market power is the ability of a firm to profitably sustain prices above competitive levels".<sup>2</sup>**

Excerpt of ACCC Guidelines on the Misuse of Market Power.

Airports can and do impose unreasonably and unsustainably high charges on airlines and consumers. Their profitability is well beyond what would be achievable if airports were constrained by competition or effective regulation.

Between 2007–2008 and 2018–2019 the profit margins of Sydney, Melbourne and Brisbane airports were consistently between 55 per cent and 65 per cent, while Perth fluctuated between 45 per cent and 80 per cent.<sup>3</sup> By comparison, in 2022–2023, when the Qantas Group posted a record profit, the profit margin was 13 per cent.

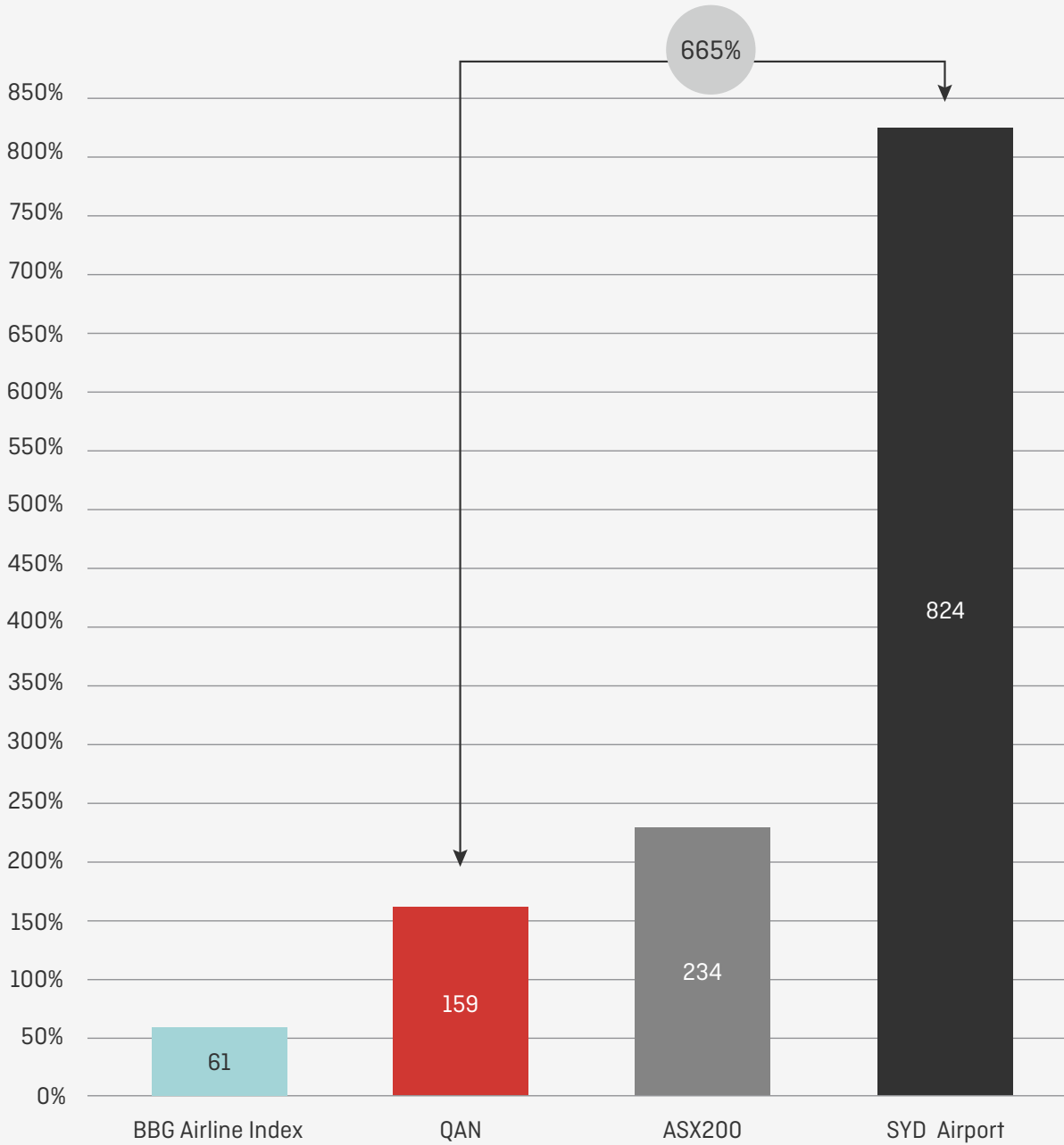
Notwithstanding continued travel restrictions, falling passenger numbers, lockdowns and the international border remaining closed until February 2022, Brisbane, Sydney and Perth airports all still reported a profit in financial year 2020–2021.<sup>4</sup> By the following financial year 2021–2022, all four monitored airports were profitable again.<sup>5</sup> To put this in perspective, over the three years marked by the pandemic the Qantas Group accumulated A\$7 billion in statutory losses before tax, lost A\$25 billion in revenue, and did not return to profitability until financial year 2022–2023.



<sup>1</sup> Ms Gina Cass-Gottlieb, Chair, Australian Competition and Consumer Commission, Transcript House of Representatives Standing Committee on Economics, Inquiry into promoting economic dynamism, competition and business formation, dated 17 March 2023, pg 2. Link [here](#). <sup>2</sup> ACCC Guidelines on the Misuse of Market Power, dated 31 August 2018. Link [here](#). <sup>3</sup> ACCC Media Release "Airports Suffered during 2020-21 pandemic but most still made a profit" dated 6 June 2022. Link [here](#). <sup>4</sup> ACCC Airport Monitoring Report 2020-21, dated 6 June 2022, pg viii. Link [here](#). <sup>5</sup> ACCC Airport Monitoring Report 2021-22, dated 14 August 2023, pg viii. Link [here](#).

Shareholder return provides a strong indicator of the low risk, high profit nature of Australian monopoly airports. As set out in Figure 1, Sydney Airport has delivered 824 per cent total shareholder return between 2008 and 2022 (when it was privatised) versus the ASX200 at 234 per cent and the Qantas Group at 159 per cent.

Figure 1: Total Share Return since the 2008 Global Financial Crisis<sup>6</sup>



<sup>6</sup> Bloomberg Finance L.P. – Historical Studies for Multiple Securities Template : 31 Dec 08 – 31 Dec 22.

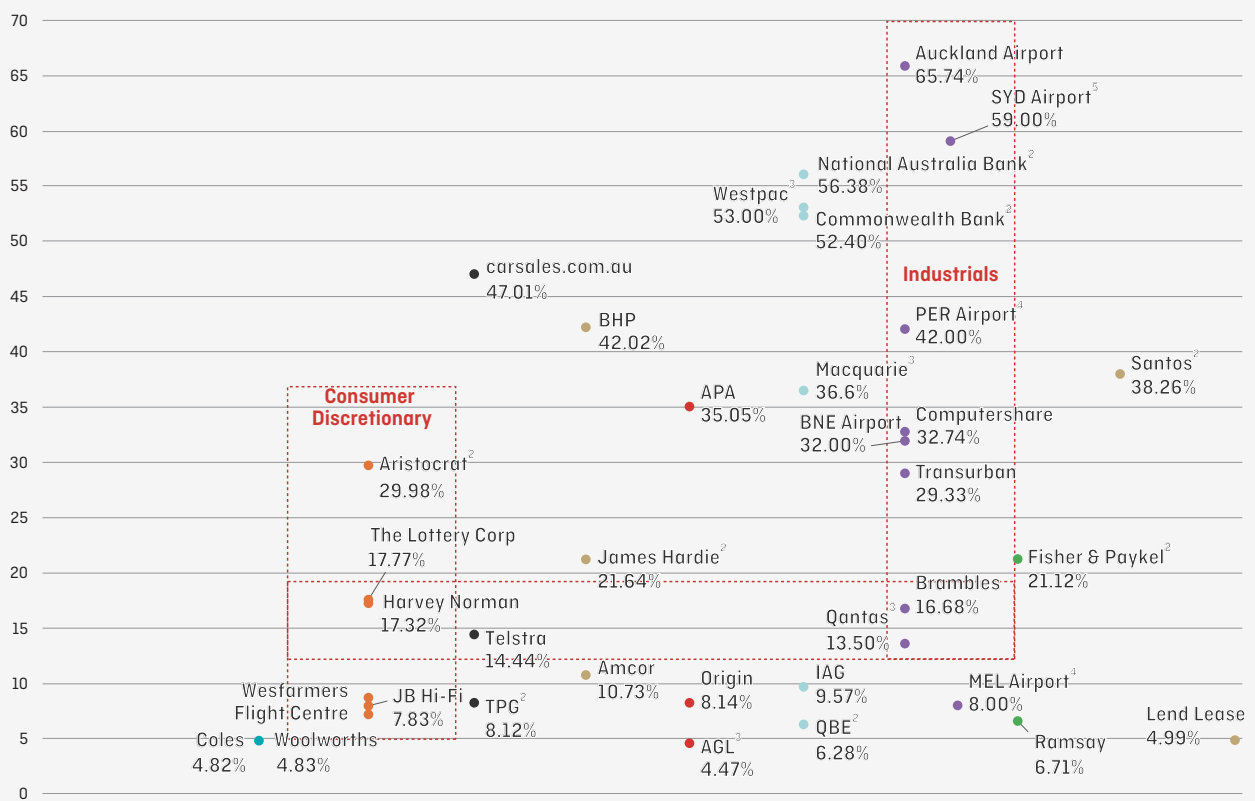


In contrast to the low risk nature of airports, the airline industry in Australia is typically highly cyclical and low margin. As demonstrated in Figure 2, while the Qantas Group returned a profit in the last financial year, its profit margin sits at the lower end of companies in the industrial and customer discretionary sectors, with airports at the top along with banks.

Airline profitability also fluctuates significantly year on year. In its December 2021 Airline Monitoring Report, the ACCC reports that only 14 of 24 results published by Australian airlines over the last decade contained a net profit after tax.<sup>7</sup>

As detailed in Chapter 1 (A competitive aviation sector) of this submission, while there have been spikes in airfares in certain periods due to factors like supply and demand, both international and domestic airfares have consistently trended down. Since the domestic airline market was deregulated in the early 1990s, domestic airfares have been tracked under the Bureau of Infrastructure, Transport and Regional Economics Air Fares Index (BITRE). The real best discount index shows that domestic fares are down by ~50 per cent adjusted for inflation.<sup>8</sup> There are very few goods and services where this has been the case.

Figure 2: Comparison of Profit Margins



1 Source: Visible Alpha; consensus values as at 10 August, actuals only where results have been released.

2 Last 12 months due to FY end falling on month other than June.

3 FY23 reported result.

4 FY22 reported result (most recent available).

5 FY19 reported result (only non-Covid impacted year available).

7 ACCC Airline Monitoring Report "Airline Competition in Australia" dated 6 December 2021, pg 15-16. Link [here](#). 8 Sourced from BITRE data. Link [here](#).

This downward trend has coincided with significant shifts in the market, including deregulation, liberalisation, new airline business models and technology. The benefits of these factors have largely been handed to consumers in the form of reduced fares while airline profits remain marginal.

In contrast, revenue per passenger for the four monitored airports (which is typically used by the ACCC as a proxy for what airports charge airlines) grew an average of 32 per cent between financial years 2017 and 2022.

Table 1 provides an analysis of the aeronautical revenue per passenger of the four monitored airports as reported by the ACCC.

Figure 3 shows that Australian airports are also consistently more expensive than airports in

other jurisdictions. In financial year 2021, Australian airports’ aeronautical revenue per passenger was 35 per cent above other airports globally.

In August 2023, the Australian Airports Association asserted that aeronautical revenue per passenger demonstrates how “small a proportion aeronautical fees are in making up the cost of an airfare ticket”.<sup>11</sup> This grossly misrepresents and understates the significance of airport charges as a component of airline costs.

As demonstrated in Figure 1 in Chapter 1 (A competitive aviation sector), airport charges for the Qantas Group turboprop fleet make up 13 per cent of the overall fare and are second only to labour costs. Airport charges are equal to the cost of fuel, even though fuel is around 50 per cent above pre-COVID levels.<sup>12</sup>

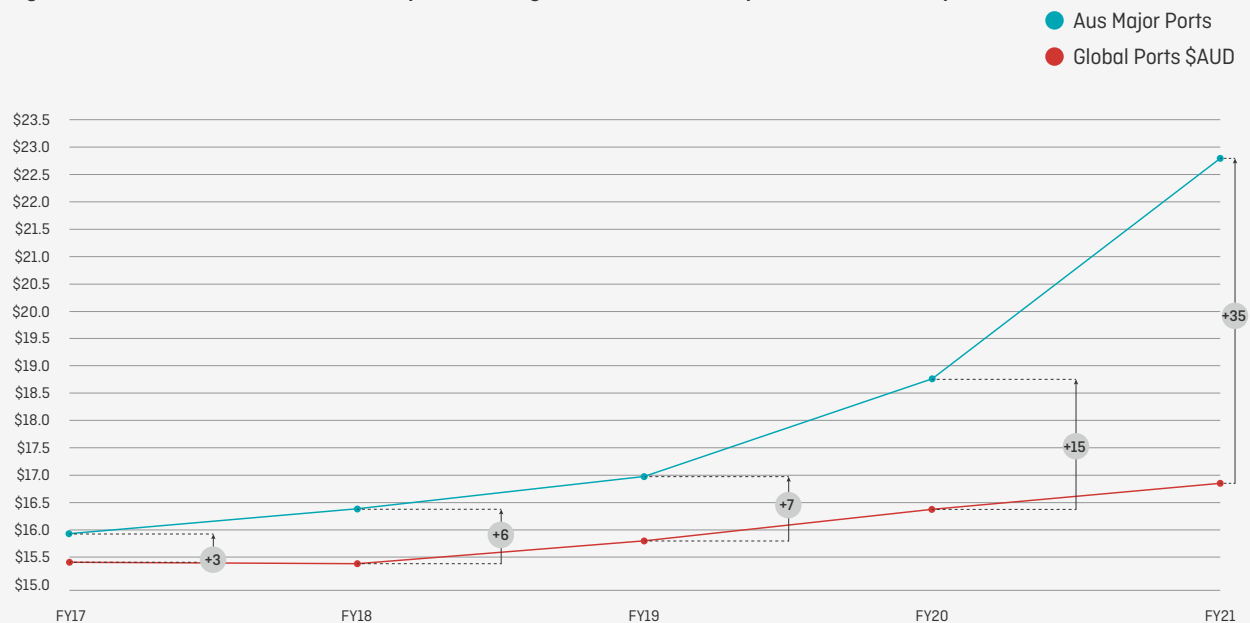
Table 1: Airports Aeronautical Revenue Per Passenger<sup>9</sup>

Australia (FY22)

Airport	\$(AUD)	% vs FY17
Brisbane (BNE)	\$19.7	41%
Melbourne (MEL)	\$18.5	33%
Perth (PER)	\$19.6	12%
Sydney (SYD)	\$28.8	44%
Average	\$21.70	32%

Numbers are adjusted for inflation to FY22.

Figure 3: Total Aeronautical Revenue per Passenger of Australian Airports vs Global Airports<sup>10</sup>



9 CCC Airport Monitoring Report 2021-22, dated 14 August 2023, pg 47. Link [here](#). 10 ACCC Airport Monitoring Report 2021-22. Link [here](#). And Airport Council International: Airport Economics 2023 Report. Link [here](#). 11 Australian Airports Association media release “Latest ACCC Report confirms Australian airports still in recovery” dated 14 August 2023. Link [here](#). 12 At October 2023

## The Current Regulatory Regime

The economic regulation of Australian airports is one of the most light-handed in the world.

The regulatory framework is established under the *Airports Act 1996* [Cth] and consists of the National Access Regime, periodic inquiries by the Productivity Commission and annual price monitoring by the ACCC.

The regulatory regime in Australia provides little oversight of the monitored airports and no oversight of smaller airports.

Compared to other monopoly providers in Australia, the regulatory framework for airports is very limited.

Figure 4 provides an overview of the regulatory regime that applies to Australian airports compared with other monopoly providers in Australia.

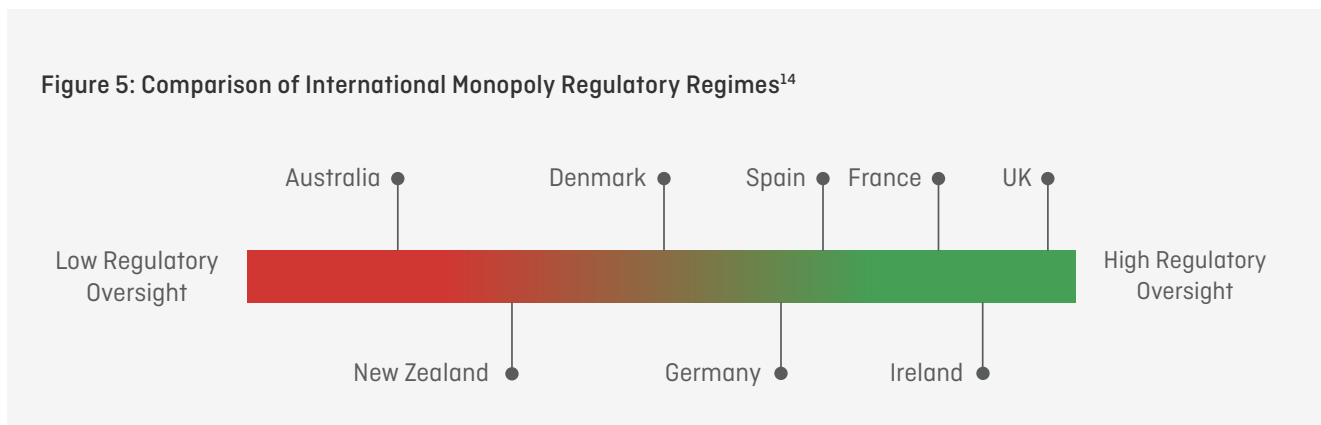
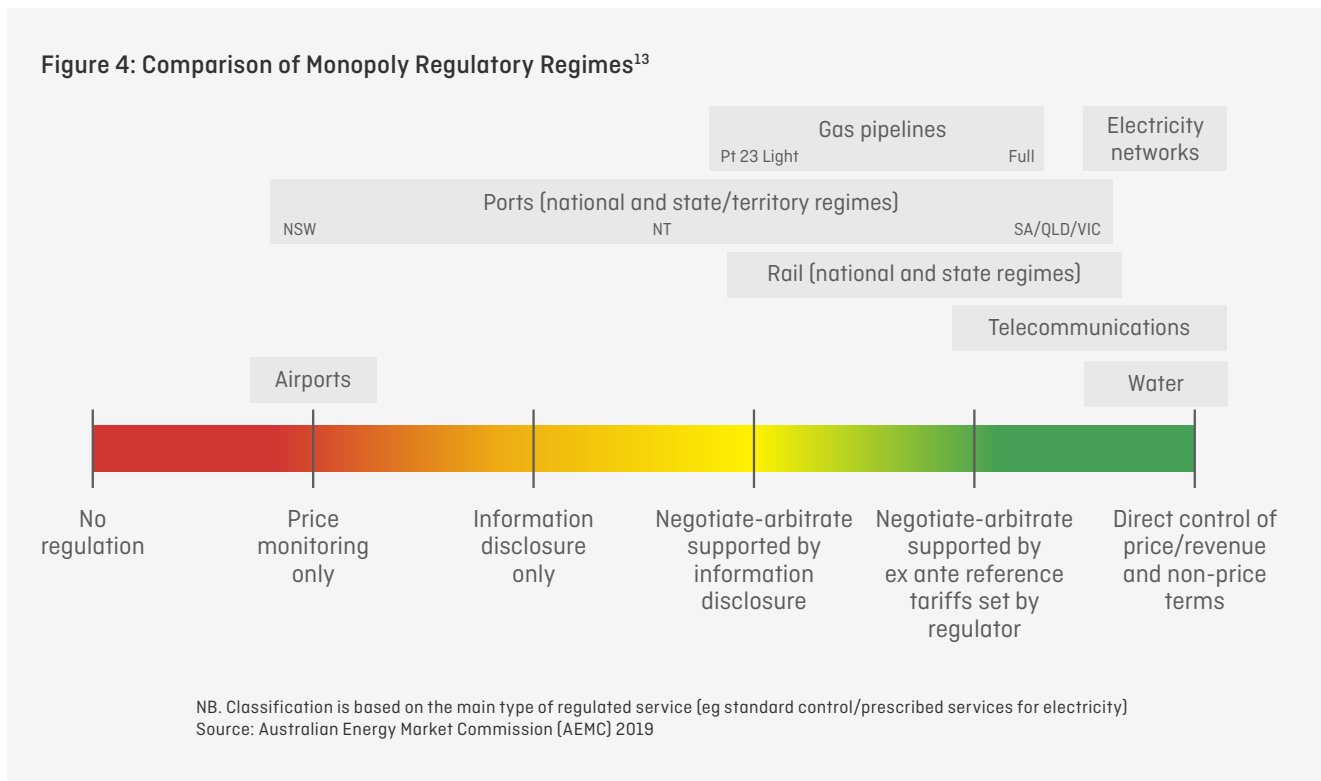
As demonstrated by Figure 4, none of the reforms sought by airlines transition the regulations beyond the current light-handed regime. Claims that dispute resolution mechanisms constitute ‘heavy’ regulation are inaccurate.

The regulatory regime that applies to Australian airports is also out of step with international standards.

Figure 5 provides an overview of the regulatory regime that applies to Australian airports compared with other airports around the world.

In its present form, the existing regulatory regime is deficient. In its June 2022 Airport Monitoring Report, the ACCC stated: “The current light-handed regulatory regime is not working well enough to effectively protect Australian businesses and consumers from the exercise of monopoly power.”<sup>15</sup>

The limitations of each aspect of the current regulatory framework are addressed below.



13 A4ANZ Submission to the Aviation White Paper dated 17 March 2023, pg 22. Link [here](#). 14 UK: Single till, pricing control, imposed penalties, information disclosure and price monitoring. Ireland and France: Single till, pricing control, information disclosure and price monitoring. Spain and Germany: Dual till, pricing control, dispute resolution, information disclosure and price monitoring. Denmark: Dual till, pricing control, negotiate and arbitrate, information disclosure and price monitoring. NZ: Dual till, consult and notify, information disclosure and price monitoring. Australia: Dual till and price monitoring. 15 ACCC Airport Monitoring Report 2020-2021, dated 6 June 2022, pg 6. Link [here](#).

## Declaration – Part IIIA of the Competition and Consumer Act 2010 (Cth)

To the extent an airport is declared for the purposes of Part IIIA of the *Competition and Consumer Act 2010* (CCA), the negotiation of agreements is then subject to the National Access Regime, including a right of arbitration before the ACCC, if negotiations fail.

This is intended to be a mechanism to resolve disputes but does not constitute a credible threat or an effective means of dispute resolution.

In its submission in response to draft report of Productivity Commission Inquiry into the Economic Regulation of Airports dated March 2019, the ACCC indicated: “While this framework may have constrained airport behaviour in the past because of the threat of regulation, there are good reasons to consider that it is no longer posing the same threat to airports today, and will be less credible as a threat in future.”<sup>16</sup>

The objective of efficient dispute resolution is to be expedient, commercially reasonable and accessible, to enable parties to effectively and economically resolve disputes and return to constructive relations. Declaration does not meet any of these criteria.

The ACCC describes the process as “lengthy and unwieldy”.<sup>17</sup> While airlines do not assert that declaration should be ‘easy’, the current declaration criteria and

process represent unreasonably prohibitive hurdles. Figure 6 details the multiple phases of the process.

There is only one example of such an application by an airline in Australia, being Virgin Blue with respect to certain Sydney Airport services in 2002, and this resulted in three years of litigation. A three-year process is not an effective circuit breaker.

In circumstances where disputes are common between airlines and airports, the absence of any other example of an airline pursuing a declaration application doesn’t suggest a working system but instead the impracticality of the process. A4ANZ has confirmed that its member airlines have on multiple occasions considered declaration, even going as far as engaging legal counsel, yet ultimately all were abandoned due to the associated difficulty, cost and uncertainty.<sup>18</sup>

Since the Virgin Blue case, the declaration process has become even more costly and uncertain. A4ANZ has made detailed submissions to the Productivity Commission, supported by legal advice, outlining how the amendments to the CCA in 2017 make declaration more difficult and therefore even less of a credible threat to airports.<sup>19</sup> The Qantas Group supports these submissions.

Airports are acutely aware that any attempt at declaration will be costly, lengthy and without certainty of success, making the credibility of the threat of declaration negligible and further reducing the bargaining power of airlines. Furthermore, declaring smaller airports remains impossible as the national significance test cannot be met.

Figure 6: Declaration Process and Timing

Stage	Description	Decision maker	Timing
1	Prepare application to National Competition Council (NCC) for declaration of an infrastructure service.	Applicant	3 months+
2	Application made to NCC for declaration of an infrastructure service. NCC assesses the application against the declaration criteria in s.44CA and recommends to Minister to declare or not to declare the infrastructure service. Submissions sought from interested third parties. NCC produces a draft recommendation and allows the applicant and interested parties an opportunity to make further comments before making a final recommendation.	NCC	180 days+ (plus possible extensions)
3	Minister decides to declare or not to declare the infrastructure service and must publish his or her decision. Minister may also invite submissions and consider any other relevant matters. Where no decision is published within the relevant time period, Minister is taken to have adopted the recommendation of the NCC.	Cth Minister (Federal Treasurer)	60 days after receiving NCC recommendation
4	Depending on the Minister’s decision, original applicant or the service provider may request a review by the Australian Competition Tribunal within 21 days. Tribunal reconsiders matter based on information taken into account by the Minister. Tribunal can request further information it considers reasonable and appropriate to make a decision (see ss.44K, 44ZZOAA and 44ZZOAAA). Tribunal may affirm or set aside the original decision.	Tribunal	180 days (plus possible extensions)
5	Judicial review of declaration matters (legal reasoning and/or procedure) is possible at any stage during declaration process.	Full Federal Court/ High Court	No statutory timeframe e.g. 8–12 months

16 ACCC submission in response to draft report of Productivity Commission Inquiry into the Economic Regulation of Airports, dated March 2019, pg 2. Link [here](#). 17 ACCC submission in response to draft report of Productivity Commission Inquiry into the Economic Regulation of Airports, dated March 2019, pg 3. Link [here](#). 18 A4ANZ submission to the Productivity Commission Inquiry into the Economic Regulation of Airports, dated September 2018, pg 33. Link [here](#). 19 A4ANZ submission to the Productivity Commission Inquiry into the Economic Regulation of Airports, dated September 2018, pg 33. Link [here](#).



## Productivity Commission Reviews

The Productivity Commission released its most recent report on the Economic Regulation of Airports in 2019 (the Productivity Commission's 2019 Report). The findings were inconsistent with positions of the ACCC, at odds with commercial practice and a missed opportunity to direct meaningful change on this critical matter.

In rejecting the need for further regulation, the Productivity Commission's 2019 Report erred in several critical respects.

### Abuse of Market Power

While the Productivity Commission found some "performance indicators could present cause for concern",<sup>20</sup> it dismissed the submissions of multiple independent experts and sector participants on the systematic abuse of market power by monopoly airports.

Significantly, the Productivity Commission stated: It "would not hesitate to recommend regulatory changes, including price regulation, if airports were found to have systematically exercised their market power."<sup>21</sup>

Subsequently, in 2022, the Supreme Court of Western Australia confirmed what the Productivity Commission ignored, stating that, in that example, the airport "possesses, and has likely exercised, substantial market power."<sup>22</sup>

By the Productivity Commission's own test, the time has come for change.

### Dispute Resolution

The Productivity Commission raised concerns regarding the effect of a dispute resolution model (in that context, an arbitrate-negotiate model). None are insurmountable and are outweighed by the benefit. They are addressed in turn below.

#### Declaration – Part IIIA of the Competition and Consumer Act 2010 (Cth)

The Productivity Commission stated that a form of dispute resolution is not required because regulatory intervention via a declaration under the National Access Regime is a viable option for airlines.<sup>23</sup>

As outlined above, declaration is not a credible threat or an effective means of dispute resolution, leaving litigation as the only option.

#### Countervailing Market Power is Overstated

One of the Productivity Commission's key reasons for resisting any reform was a view that airlines can exercise countervailing market power.

To the extent that there is any countervailing power, the Productivity Commission significantly overstates it and how effectively it might be wielded.

The Productivity Commission asserted without any evidence that airlines can exercise power by reducing or removing services from an airport.<sup>24</sup>

The Productivity Commission further stated that an alternative dispute resolution to declaration would inherently favour airlines due to the countervailing power of airlines. "If the airport is not satisfied with an arbitrated outcome, it has no choice — it must provide services at the arbitrated price. An airline that is not satisfied with an arbitrated outcome could change (even at the margin) parts of its operations, including its aircraft types and schedules."<sup>25</sup>

This argument oversimplifies the commercial realities of operating an airline. Airlines have no effective choice over which airport to use when most regions are serviced by a single airport.

Even when faced with unreasonable airport charges, withdrawal or reduction of services from an airport is not commercially viable for an airline as it detrimentally impacts the airline's customer proposition and profitability. Airlines operate an interconnected network and even a modest variation can have a significant knock-on effect on customers, the broader network and cause reputational damage.

In addition to being damaging, the Qantas Group's experience demonstrates that such tactics are ultimately ineffective as airports can readily backfill slots with other airlines. Where airports are capacity constrained or serviced by multiple airlines (as most airports in Australia are), there is virtually no threat of an airline withdrawing in any meaningful way. For example, when Virgin ceased Tiger operations in 2020, Tiger's capacity on routes from the Gold Coast to Melbourne and Sydney was rapidly filled by other domestic airlines.

The Productivity Commission acknowledged this, finding that "An airline's threat to withdraw or substantially reduce services at an airport is even less credible when the airline has competitors that can meet any gap in demand for the airport's services."<sup>26</sup>

The Qantas Group estimates that if it withdrew services, it would incur losses of up to 10 times larger than an airport, even in circumstances where an airport was unable to immediately backfill the withdrawn service.<sup>27</sup> Further, the loss of connectivity, revenue, the negative customer impact, and the redundancy of assets and investment such as lounges and crew bases, would have a severely detrimental effect on an airline such that airlines cannot typically afford to withdraw services.

The Productivity Commission also suggested that an airline can refuse to pay charges at the level determined by an airport when an agreement expires as a form of countervailing power.<sup>28</sup> This should not be considered a normal bargaining tactic in a functional

20 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 2. Link [here](#). 21 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 2. Link [here](#). 22 Perth Airport Pty Ltd v Qantas Airways Ltd [No. 3][2022], 18 February 2022, pg 167. 23 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 25. Link [here](#). 24 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 14. Link [here](#). 25 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 26. Link [here](#). 26 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 9. Link [here](#). 27 Qantas Group Submission to the Productivity Commission Draft Report, dated 2019, pg 19. Link [here](#). 28 Productivity Commission. Draft Report – Economic Regulation of Airports – Productivity Commission Inquiry Report February 2019, pg 119. Link [here](#).

commercial relationship. Where airlines (including Qantas) have on rare occasions resorted to this, it demonstrates a lack of viable options within the regulatory framework, not evidence of countervailing power.

The Productivity Commission found that airports are incentivised to reach agreements with airlines because airlines can pay existing (or sometimes lower) charges while continuing to access airport services in the intervening period between an agreement expiring and a new agreement being reached.<sup>29</sup> This ignores the possibility that the fair and reasonable price might be lower than the expiring agreement (for example due to depreciation, investment profile of the airport, reduction in interest rates or increases in passenger numbers). It also ignores the tactics and threats airports employ to force a new agreement, such as withdrawing access to lounges and other infrastructure. Airports have also used this as a trigger for legal action.

Ultimately, any countervailing power that an airline might have differs across airports depending on the specific circumstances of the airline and airport in question. It does not amount to a general finding that airlines have and can exercise countervailing power in a way that allows them to effectively counter the conduct of monopoly airports.

In any event, the Productivity Commission itself acknowledges that “it does not follow that regulation is less warranted because airlines have countervailing power. Countervailing power is not helpful from the consumer’s perspective.”<sup>30</sup>

#### Risk of Underinvestment

The Productivity Commission found that “Providing airlines with access to arbitration without the checks and balances of the National Access Regime would distort airports’ incentives to make investments.”<sup>31</sup>

This assertion was made without supporting evidence and the Qantas Group rejects it. It ignores that airlines also need to make significant investment and the impact that unreasonable airport pricing has on downstream users. It also ignores that Australia’s airports are viewed as high returning and very stable investments by financial markets. Australian airports have consistently attracted significant interest from investors both locally and from overseas. In the five years following the declaration of Sydney Airport in 2002, its dividends remained strong every year (including throughout the global financial crisis).

#### Effect on Passengers

The Productivity Commission found that passengers may be worse off and competition reduced if dispute resolution was introduced.<sup>32</sup>

It is counter-intuitive that a process that avoids protracted litigation and delivers pricing for monopoly

assets that is independently verified as fair and reasonable could reduce competition. The expeditious resolution of disputes would enhance competition and benefit consumers by facilitating airline investment, the opening of new routes, economic growth and driving down airfares.

For example, there has been limited terminal investment during Perth Airport’s lengthy dispute with the Qantas Group, which directly impacted Qantas’ ability to start new international routes for a number of years. If there were a means of resolving the dispute expeditiously, that investment would have occurred earlier, facilitating new routes, better consumer outcomes and economic growth.

#### Excessive profits

The Productivity Commission ignored the multiple sources of economic evidence submitted regarding the excessive returns of monopoly airports.

As outlined above, the resilience of airport profits has since been demonstrated by continued profitability of the four monitored airports even through the COVID-19 pandemic when passenger movements plummeted.

#### ACCC Monitoring

While the price monitoring performed by the ACCC is intended to identify abuses of market power by monopoly infrastructure providers, the limited nature of the information provided circumvents this objective. The monitoring only relates to four airports, is not disaggregated, lacks multiple useful indicators and service quality is not adequately assessed to ensure it is at a standard expected by both consumers and airlines.

The ACCC reports annually on monitored airports following the production of relatively limited information from airports. This contrasts with the quarterly ACCC reporting and much more detailed information required of airlines by the now reinstated ACCC domestic airline monitoring.

The Productivity Commission’s 2019 Report acknowledged that data collected for the ACCC’s monitoring of airports is insufficient to verify if monopoly airports are exercising their market power: “Separate reporting is needed to determine whether aeronautical charges are the result of an airport exercising its market power, or the higher cost of providing international services.”<sup>33</sup>

The Productivity Commission recommended that the ACCC’s monitoring be strengthened, including requiring airports to provide more detailed information on aeronautical, car parking and landside services.

This recommendation was accepted in principle by the Government.

In May 2023, the ACCC made recommendations to enhance its existing monitoring regime by requiring

29 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92. Overview and Recommendations, dated 21 June 2019, pg 13. Link [here](#). 30 Productivity Commission. Draft Report - Economic Regulation of Airports – Productivity Commission Inquiry Report February 2019, pg 101. Link [here](#). 31 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 27. Link [here](#). 32 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 27. Link [here](#). 33 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92. Overview and Recommendations, dated 21 June 2019, pg 2. Link [here](#).

monitored airports to provide certain disaggregated information. This advice was repeated in the ACCC's Airport Monitoring Report released in August 2023.

Without transparent information from airports, regulators are constrained from readily detecting and independently verifying abuses of market power. The Qantas Group supports the prompt adoption and implementation of these recommendations by the Government and welcomes any reform that enables both the ACCC and the Productivity Commission to undertake thorough and informed evaluations of airport conduct.

However, as the ACCC has consistently held,<sup>34</sup> monitoring on its own is not regulation and while transparency is an important step, it is only part of the solution. In its August 2023 Airport Monitoring Report the ACCC stated: "Typically, monitoring is limited in its ability to address behaviour that is detrimental to the market and consumers, particularly as a longer-term measure where the threat of regulation is diminished. Monitoring does not directly restrict airports from increasing prices or allowing service quality to decline. It also does not provide the ACCC with the ability to intervene in airports' setting of terms and conditions of access to airports' infrastructure."<sup>35</sup>

While monitoring provides visibility and an important snapshot of limited indicators at a point in time, on its own it is inadequate. It does not address the key concerns of airport users, imposes no genuine restraint on the behaviour of airports, and does not provide sector participants with a timely, effective and efficient way to resolve disputes.

Even if implemented, insufficient time will have passed to determine how effective additional reporting is in delivering increased transparency and accountability before the Productivity Commission's next inquiry.

## Cross-Ownership

The *Airports Act 1996* (Cth) imposes a 15 per cent restriction on the cross-ownership of any pair of Australia's four monitored airports but does not restrict cross-ownership at other airports. This restriction was imposed in 1997 and the landscape of the Australian aviation industry has significantly shifted since that time.

With the sale of Sydney Airport in 2022, none of the Australian airports are publicly traded assets on the Australian Stock Exchange. Since privatisation, there has been a growing concentration of ownership of Australian airport assets among a select group of major institutional investors. Today these investors own a 15 per cent or higher stake in at least two capital city airports.

For example:

- IFM has an ownership stake in Sydney, Melbourne, Brisbane, Adelaide and Darwin Airports;
- The Future Fund has interests in both Melbourne and Perth Airport;
- Netherlands based Royal Schiphol Group are partial owners of both Brisbane and Hobart Airport; and
- The largest and second largest airports in the Northern Territory, Darwin Airport and Alice Springs Airport, are owned by the same investment funds.

Perth, Brisbane and Gold Coast airports will each undergo shareholder transactions this year which will potentially further increase the growing concentration of ownership of Australian airport assets among a select group of major institutional investors.

Current cross-ownership is shown in Figure 7.

There are no restrictions on effective management control (where an entity manages control on behalf of the owner) and no transparency over whether entities with effective management control over Australian airports exceed the 15 per cent threshold, effectively circumventing the intent of the restriction.

This cross-ownership of airports compounds existing and persistent monopolistic behaviour by facilitating the sharing and leveraging of data between commonly owned airports to unjustifiably increase pricing and impose unreasonable terms. It is not unusual for commonly owned airports to align commercial terms agreed with the Qantas Group. The Qantas Group has been informed on multiple occasions that confidential commercial agreements will be compared, and any revised terms will form the new baseline for commonly owned airports.

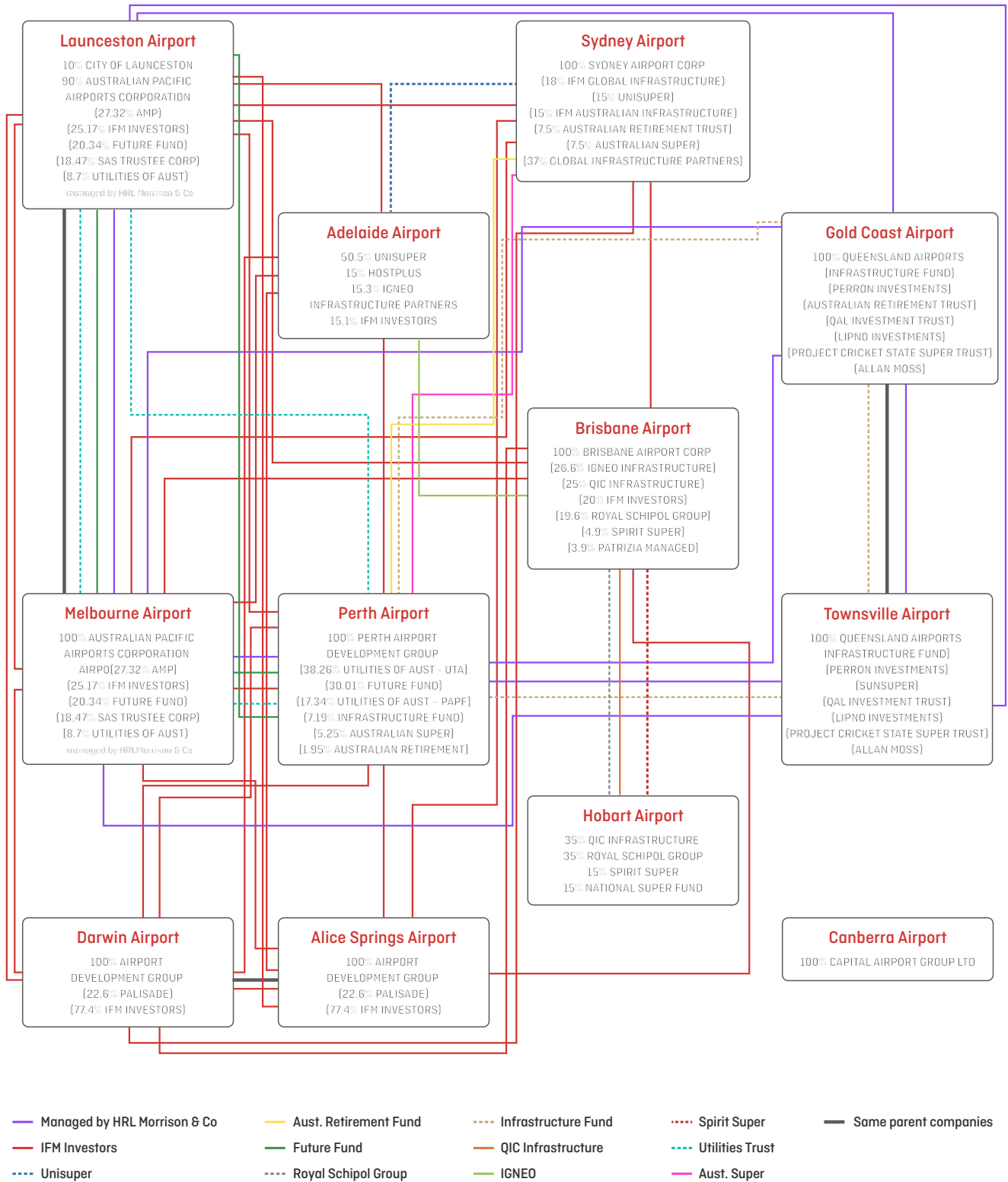
The Government's recent review of the *Airports (Ownership — Interest in Shares) Regulations 1996* (Cth) (arising out of a sunset provision) did not address the issue of increased consolidation of ownership of airports across Australia and was a missed opportunity.

These concerns could be addressed through strengthening the airport cross-ownership and control rules to:

- Extend the 15 per cent rule to airports beyond the four monitored airports, and include effective management control on behalf of owners; and
- Require airports to implement appropriate governance to mitigate the risks caused by cross-ownership (for example, adopting ring fencing to protect the confidentiality of airline information and pricing by port).

<sup>34</sup> ACCC, "Airport profits mostly up, but service also improves," Media Release, dated 25 February 2019. Link [here](#). <sup>35</sup> ACCC Airport Monitoring Report 2021-22 dated 14 August 2023, pg 24. Link [here](#).

Figure 7: Core Regulated Airports Ownership Map (September 2023)



Notes: Airport Development Group also owns Tennant Creek Airport. Queensland Airports also owns Longreach and Mount Isa. IFM lists a 3.19% share in Per, not on Per Airport Website.  
 Data From Current Publicly Available Annual Airport/investment Group Reports & Capa Database



## Airports Behaving Badly

Since the Productivity Commission's 2019 Report, there has been no change to the problems identified by airlines and the ensuing detrimental impact on consumers. The tactics employed by airports are intended to require the Qantas Group to accept unreasonable terms to protect its operations and customers. Before an agreement is executed, airports routinely require the Qantas Group to enter confidentiality agreements preventing disclosure of any part of negotiations or terms, effectively enabling the conduct to continue without risk of censure or additional regulation. The examples below are a subset of the totality of the problem.

### Unfair Terms

Unfair terms within standard conditions of use are prevalent at many airports.

#### Canberra Airport

In 2021, following the expiration of the agreement with Qantas, Canberra Airport threatened to have Qantas charged with trespass if it continued to use the airport without agreeing to their standard conditions of use. These standard conditions of use include provisions such as the ability for Canberra Airport to change pricing at any time and for any reason without consent, and the right to impound or sell aircraft upon non-payment or late payment of debt regardless of the amount.

#### Sydney Airport

Sydney Airport's standard conditions of use include that they are not responsible to pay any losses, even if the airport is closed and they do not provide the promised services, including if someone is injured as a result of the closure.

### Gold Plating

Gold plating remains a problem at many airports. Recent examples include an inefficient terminal expansion that cost double what was required, as well as over-priced and unnecessary amenities and forecourt upgrades at some airports. In addition, cost control has become a systemic issue with many projects being priced at up to twice what could be supported with reasonable benchmarks and some projects experiencing material cost blow outs without apparent attempts to mitigate. The Qantas Group is willing to provide more information upon request.

### Lack of Good Faith Negotiations

#### Hobart Airport

In 2023, Hobart Airport attempted to impose fixed charges on the Qantas Group under the *Aerodrome Fees Act 2002* (Tas) and threatened to sue the Qantas Group if it did not comply. Under the *Aerodrome Fees Act 2002* (Tas) the airport is entitled to set charges by listing them in the Government gazette. Once gazetted, the airport can recover those charges from any airline operating to the airport. The gazettal process requires no consultation, reasonableness or transparency. An airport simply sets its fees and then collects.

This is a deliberate circumvention of the intention of the *Aerodrome Fees Act 2002* (Tas). The Act was explicitly designed to support smaller, council-run airports set fees for general aviation, not RPT operations.<sup>36</sup> By using the *Aerodrome Fees Act 2002* (Tas) in this manner, Hobart Airport is effectively circumventing the negotiation process and ignoring the APPs. This conduct places the Tasmanian Government, as the entity making the gazettal, in the role of arbiter on airport pricing, without any process, policy or transparency as to how that decision is made.

### Lack of Transparency

#### Sydney Airport

A Joint User Hydrant Installation ("JUHI") refers to fuel infrastructure that is provided at an airport to allow for the safe storage and provision of fuel services to support daily airline operations. JUHIs have typically been owned and operated by consortiums represented by major fuel companies. In recent years, JUHIs have been purchased by the airport at the expiry of relevant operating leases. In all cases, the sale of the JUHI to an airport has been followed by an immediate and opaque increase in fuel throughput charges. At Sydney Airport, the fuel throughput charge has more than doubled in the three years since the airport purchased the JUHI in 2020.

The Qantas Group and its fuel suppliers have requested cost-based detail to support the underlying charge on multiple occasions. In 2020, the Qantas Group informed the airport that we believe they are earning a return on

<sup>36</sup> Speech on Aerodrome Fees Bill 2022 (No. 7), Paul Lennon. Link [here](#).

investment of over 20 per cent per annum on this essential infrastructure. Sydney Airport has refused to provide any transparent cost-based build-up of pricing for critical fuel infrastructure.

### **Operational Threats**

The Qantas Group is currently negotiating with multiple airports for renewed terms for expired agreements. In a number of instances, airports have been content to let agreements expire while concurrently making serious threats to our operations that would adversely impact our customers. These have included threats to ongoing lounge access as well as to various aspects of Qantas Group operations. In each case the airport has expressly linked those threats to commercial demands made by the airport.



## Why Should the Government Step In?

“Transport infrastructure — like ports, rail, and airports — is an input for businesses across the economy. If it is used efficiently, the benefits are felt throughout the economy.

If it is used inefficiently, the extra costs are passed on to all those businesses that rely on it, right along the supply chain. Our industries become less competitive and the economy suffers.”<sup>38</sup>

Rod Sims, former ACCC Chair

Given the economic significance of access to monopoly airport assets, failure to reform and promote both efficiency and competition will prevent economic opportunities. If airlines and airports are in a continuous cycle of disputes, they are prevented from realising economic benefits such as the sustainable development of those assets, the creation of new routes and more jobs. Efficient and commercial conduct, supported by reasonable intervention within the existing light-handed regulatory regime, will produce better outcomes for the entire economy and ultimately the travelling public.

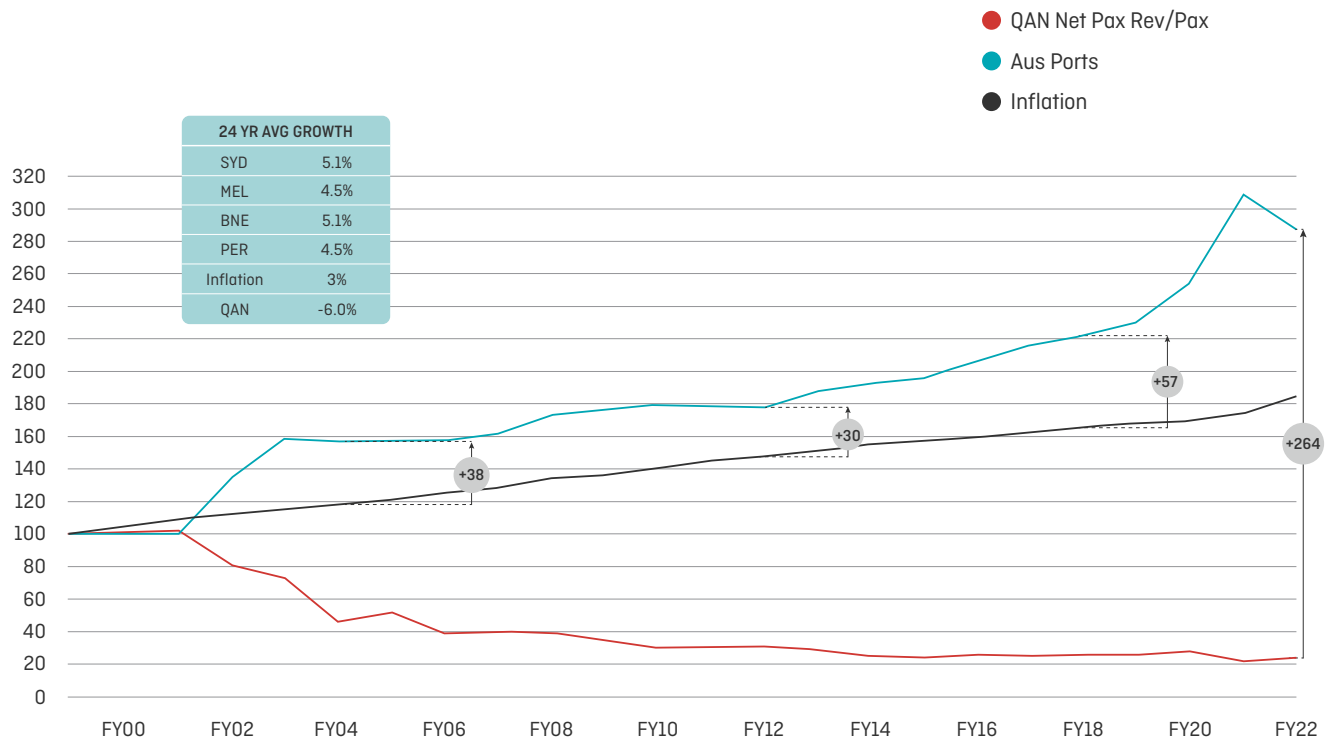
Aviation is a low margin industry. Airport charges represent some of its most significant input costs. While airlines operating in a competitive sector are required to continually transform their cost base, the charges imposed by Australian airports continue to outpace the rate at which airlines can absorb them. As airport charges become an increasing share of the total cost, the ability of airlines to pass on cost savings will diminish, reversing the long-term trend of reducing airfares.

As demonstrated in Figure 8, the rate of aeronautical revenue per passenger growth for Australian airports is considerably above inflation and 264 per cent higher than the Qantas Group. The downward trajectory of the Qantas Group’s revenue per passenger and growing divide with airport growth demonstrates the inevitability of a significant impact on airfares.

Reducing airport charges will enable airlines to continue to become more efficient and competitive, place downward pressure on airfare pricing for consumers and generate a broad benefit to the economy through productivity and more efficient supply chains.

The suggestion that the reduction of airport charges would simply transfer revenue from airports to airlines ignores the reality of the competitive environment in Australia and the long-term trend of reducing airfares.

Figure 8: Aeronautical Revenue Per Passenger of the Qantas Group vs Australian Airports<sup>39</sup>



38 Speech on “Competition and regulating monopolies: some perspectives from the ACCC”. Rod Sims, dated 15 November 2011. Link [here](#). 39 ACCC Airport Monitoring Report 2021-22, dated 14 August 2023. Link [here](#). QA published FY results (net pax rev adjusted for inflation to FY22). Link [here](#).

## The Solution

### Recommendation 1: Dispute Resolution

#### Access to binding dispute resolution by an independent expert

Access to an independent and binding form of dispute resolution is key to delivering meaningful reform.

Disputes between airports and Australian airlines are now so commonplace as to be the dominant feature of many of the commercial relationships. As demonstrated by the examples above, they range from everyday issues that would quickly be resolved in a normal competitive landscape, to substantial issues that could fundamentally undermine the commerciality viability of an airline.

The Productivity Commission has referred to such airport tactics as something airlines should expect and accept: “A contested commercial negotiation process is not unique to aviation and occurs in other industries.”<sup>40</sup>

The Qantas Group rejects the assessment that the reported pattern of behaviour represents normal or acceptable commercial behaviour. The Qantas Group currently has over 3,000 suppliers of varying size and negotiating leverage — from aircraft manufacturers to bottled water providers. Our experience is that the unreasonableness and the volume and magnitude of disputes is unique to airports.

Presently the only viable mechanism to resolve these intractable disputes is to commence costly and time-consuming litigation. As litigation is an option of last resort, negotiations are inevitably protracted and economic opportunities fall away in the intervening period. Stalemates are common, extending for months if not years, fracturing commercial relationships and compromising commercial opportunities. While this situation is not ideal for any of the sector participants, the consequences are largely borne by airlines, consumers and the broader economy.

The 2019 litigation between Perth Airport and the Qantas Group demonstrates the urgent need for more efficient dispute resolution. In this example, it took around four and a half years from the time negotiations commenced to judgement. Even then, the judgement relates to only five months of pricing and ultimately neither party was successful on their full suite of claims.

While it is positive that the parties are working to resolve this issue, some six years later, the cost of both parties is in the many millions, and the cost to the broader economy is much higher. As stated above, during the period of the dispute, there was limited investment in the relevant terminals and the Qantas Group was unable to launch a number of proposed routes.

This is by no means an isolated incident of airports and airlines reaching a stalemate and operating under the threat of litigation for an extended period.

Airports have broadly rejected the concept of binding dispute resolution, even though the principle is included in the APPs.

It is notable that dispute resolution terms do exist in a number of airports’ standard conditions of use. These standard conditions of use are generally unreasonably one-sided in the airport’s favour. For example, like Canberra Airport, Sydney Airport’s standard conditions of use allow them to change pricing at any time and for any reason on 21 days’ notice and give the airport the right to impound aircraft upon non-payment or late payment regardless of amount.<sup>41</sup>

It is unacceptable that airports only welcome dispute resolution clauses in favour of litigation when the disputes are contractually limited to their own one-sided terms, but not with respect to enforcing the APPs which are intended to be reasonable and proportionate between the parties.

#### Benefits of Dispute Resolution

Independent binding dispute resolution is a standard feature in a broad range of industries because it delivers tangible benefits, including:

- Encouraging parties to come together to reasonably resolve disputes before a more formal process is required;
- It is more cost-effective than litigation;
- Timeframes can be specified to guarantee timely resolution, offering a significant improvement to the uncertainty and variability of litigation;
- The form and terms of dispute resolution can be framed using the body of evidence and precedent available to be reasonable, prevent unintended consequences and to ensure positive outcomes for consumers; and
- It is possible to agree that disputes remain confidential and for an appropriately qualified expert to be appointed where a dispute involves highly technical subject matters.

Having access to a process that expedites resolution and facilitates the return to productive commercial arrangements, without having to resort to litigation, will enable airlines and airports to focus on value creation for the industry and consumers.

The unsustainable volume of litigation or threatened litigation demonstrates a fundamentally broken regime. It cannot be considered an acceptable policy outcome that litigation is the only option available to this critical sector.

40 Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, dated 21 June 2019, pg 135. Link [here](#).

41 Sydney Airport Conditions of Use Version 4.1, clauses 8 and 9. Link [here](#).



### Proposed Framework for Dispute Resolution

The Qantas Group acknowledges and endorses the Government's desire that airports and airlines work together to achieve the right outcomes.

In its response to Productivity Commission's 2019 Report, the then Government welcomed interest by some airlines and airports in working together to establish principles that could be of assistance in guiding negotiations and achieving mutually satisfactory service contract outcomes.<sup>42</sup>

Following the Productivity Commission's 2019 Report, airlines made good faith attempts to work with airports on a voluntary code of conduct to govern commercial negotiations, including how to resolve disputes. In 2022 A4ANZ prepared a Voluntary Aviation Industry Code of Conduct. This was rejected by airports.

The dispute resolution process outlined in the proposed Code of Conduct remains an appropriate framework and could be adopted by Government. The dispute resolution process from the Code of Conduct is provided as Annexure B to this submission.

### Recommendation 2: Mandating the Aeronautical Pricing Principles

#### Legislate the APPs

The APPs have been in place since 2002, developed by the Department of Infrastructure and Transport to set the Government's expectations around how price-monitored airports and their customers should conduct negotiations in the context of a light-handed regulatory regime.

Successive Governments over this period have retained a largely consistent position on the APPs, periodically adopting updates to them in response to recommendations by the Productivity Commission. In its response to the Productivity Commission's 2019 Report, the Government confirmed its continued endorsement of the APPs stating "The Aeronautical Pricing Principles set an important framework for establishing prices, service delivery and the conduct of commercial negotiations at airports [and the Australian Government] expects all airports and airport users to have regard to the Aeronautical Pricing Principles when negotiating future airport services and to be cognisant of their legal obligations."<sup>43</sup>

In addition to providing the principles for efficient negotiation by sector participants, the APPs inform the Productivity Commission and the ACCC in their reviews of the regulatory framework.

Notwithstanding the continued endorsement of the APPs by successive Governments and the fundamental role they are intended to play, they have never been formally enshrined in legislation and are unenforceable. Despite the Government's stated intent that the APPs

should act as a "guide for the conduct of all airports, whether price monitored or not",<sup>44</sup> the APPs do not apply to other airports. The most recent version exists only as an attachment to the Department of Infrastructure and Transport's submission to the Productivity Commission's inquiry dated 2011.

The unenforceability of the APPs undermines their intended objective. The practical reality is that while airports may publicly support the APPs as an appropriate framework for negotiating prices and service levels, in practice they typically ignore them, as demonstrated in the Qantas Group's dispute with Perth Airport.

In its June 2022 Airport Monitoring Report, the ACCC recognised "the Australian Government's Aeronautical Pricing Principles were designed to assist airlines in negotiating reasonable prices with airports that have substantial market power. However, the APPs are not enforceable and are currently insufficiently assisting airlines in their negotiations."<sup>45</sup>

In the absence of enforceable principles, airports continue to seek exorbitant increases to aeronautical charges without reference to the APPs. This has only increased in the post-COVID environment as airports seek to recover lost profits. In its Airline Monitoring Report dated September 2021, the ACCC confirmed this practice is inconsistent with the APPs.<sup>46</sup>

The outcome is inevitable stalemates and protracted, damaging disputes between airports and airlines, with no form of dispute resolution other than superior court litigation that can only consider past-periods (not future pricing) and which is drawn-out and costly. This creates uncertainty for both the airport and airline, forcing both to operate and manage cash-flow in an environment where the actual costs are unknown.

Following the rejection by airports of a Voluntary Aviation Industry Code of Conduct in 2022, which proposed to enshrine the APPs, it is reasonable for the Government to move beyond relying on the goodwill of the sector participants to operate within the APPs.

Enforceability would provide certainty to sector participants and would support commercial discipline in negotiations and drive greater transparency, ensuring the objectives of the APPs are met by aligning the practices of all parties with the principles. Enforcement must be accompanied by the right for binding dispute resolution in order to be effective and facilitate outcomes when the APPs are breached.

Overall, the APPs are fit-for-purpose and when applied by airports, produce their intended outcomes. However, some clarifications may be required, including in relation to their application to all airports to ensure consistency.

42 Australian Government response to the Productivity Commission Inquiry into the Economic Regulation of Airports, announced 11 December 2019, pg 1. Link [here](#).

43 Australian Government response to the Productivity Commission Inquiry into the Economic Regulation of Airports, announced 11 December 2019, pg 7. Link [here](#).

44 The Hon. Peter Costello. 2007. Media Release: Productivity Commission Report – Review of Price Regulation of Airport Services dated 30 April 2007. Link [here](#).

45 ACCC Airport Monitoring Report 2020-2021, dated 6 June 2022, pg 8. Link [here](#). 46 ACCC Airline Competition in Australia, dated 29 September 2021, pg 6. Link [here](#).

## Questions

**What measures should be taken to ensure Australian aviation markets operate efficiently, improve competition settings, and deliver optimal consumer outcomes?**

Airports are a key part of Australia's national infrastructure and it is critical that they operate efficiently, competitively and deliver optimal customer outcomes.

As outlined above, a credible review of the competition and the policy framework of Australian aviation must include airport reform within the existing light-handed regime. To promote this the policy priorities should be:

- A tailored dispute resolution mechanism to allow for the timely, efficient, and cost-effective resolution of intractable disputes (compared to multi-year court proceedings); and
- Mandating the APPs.

**Are the Aeronautical Pricing Principles fit-for-purpose? How could they be improved?**

The APPs are broadly fit-for-purpose and when applied by airports, produce their intended outcomes. However, they are not consistently applied.

As a normal part of transition from principles to legislation, the principles would necessarily need to be converted to legislative language and some clarifications are warranted to give them their full effect, including extending their application to all airports.

**Should the Australian Government mandate use of the Aeronautical Pricing Principles? Why or why not?**

The Qantas Group strongly supports mandating the APPs. Our detailed views on the APPs are provided under "Recommendation 2" above.



## **CHAPTER 5**

Regional and remote aviation services

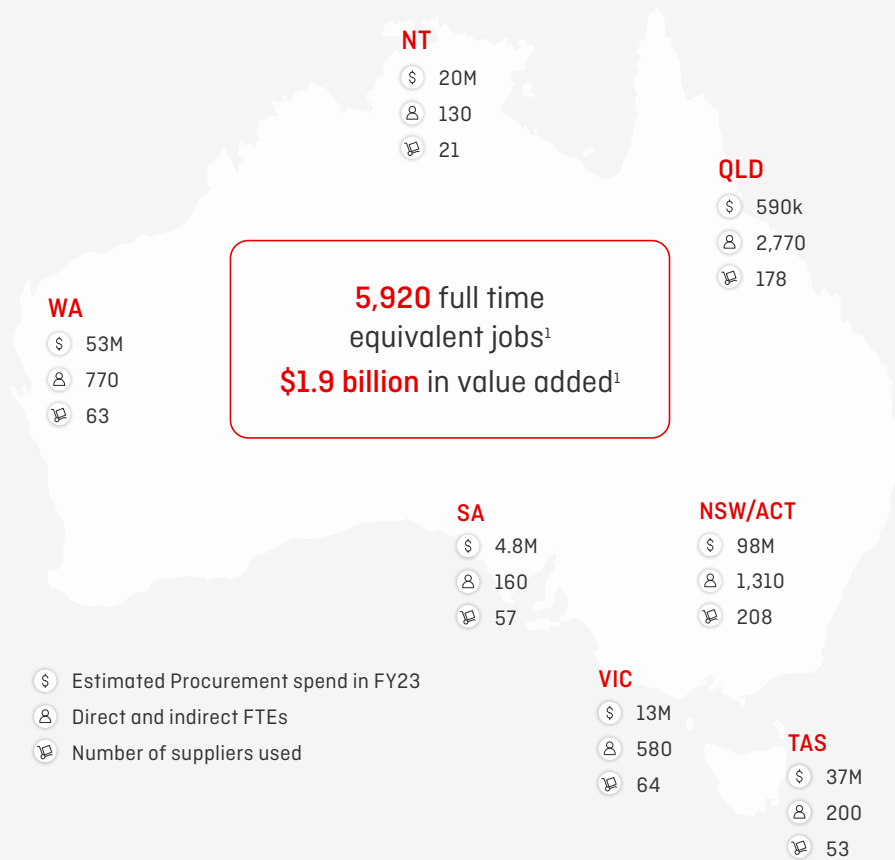
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## Key points in this chapter:

- The Qantas Group is committed to supporting regional Australia and is a significant contributor to regional economies.
- Australia's geography means aviation is critical to servicing the needs of regional and remote communities. It provides access to key services and tourism and connects regionally based businesses to domestic and international markets.
- There are unique opportunities for job creation and economic growth for regional Australia arising out of decarbonisation and the production of sustainable aviation fuel.
- Regional aviation faces significant challenges. Regional operations cost airlines significantly more than other operations. Airport charges make up a significant and increasing portion of this cost, placing pressure on marginal routes.
- The Qantas Group supports Government investment and initiatives that preserve and enhance connectivity with regional communities, without imposing unsustainable cost. Where changes are proposed, the network and service consequences for regional Australia must be considered.



# The Qantas Group's contribution to regional Australia



## Supporting the regions

- 640+ regional suppliers** across Australia<sup>2</sup>
  - **460+** small business suppliers<sup>2</sup>
  - **\$800 million+** spend<sup>2</sup>
- \$10 million** Qantas Regional Grants Program
- 1.4 million bottles** of Australian wine purchased from around 200 regional wineries

## Contribution to tourism

- \$5.5 billion** in facilitated tourism, up 25%<sup>3</sup>
- 46,000** full time equivalent jobs, up 26%<sup>3</sup>
- \$14 million** promoting regional tourism<sup>2</sup>
- 28** tourism partners<sup>2</sup>

## Dedicated regional fleet<sup>4</sup>

- 50** Bombardier Dash 8      **17** 717-200
- 13** A320-200      **18** Fokker F100

## Connecting communities & supply chains

### NETWORK & FREIGHT

- 15 million+** passengers<sup>2</sup>
- 57** regional destinations
- 116** regional routes that connect to regional hubs
- 22,500** tonnes carried through regional routes, nearly 20% of domestic volume
- 16 discounted routes** under the Qantas Residents Fare program
  - **\$35 million** invested<sup>2</sup>

## Qantas Pilot Academy

- Increase Australian GDP** by up to **\$600 million<sup>5</sup>**
- Generate up to **392** full time equivalent jobs<sup>6</sup>
- 290+** graduates since 2020
- 50** scholarships to female and First Nations students worth **\$1.5 million**

1 FY23. Includes direct and indirect contribution. Deloitte Access Economics Report. 2 FY23. 3 FY23, increase since FY19. Includes direct and indirect contribution. Deloitte Access Economics Report. 4 At 30 June 2023, including 717s held for sale. 5 Between 2019–2020 and 2032–2033. Deloitte Access Economics Report. 6 On average, over the period between 2019–2020 and 2032–2033. Deloitte Access Economics Report.

## The Qantas Group in Regional Australia

The Qantas Group was founded in outback Queensland in 1920. Regional Australia remains a critical part of our business.

### Regional Network

The Qantas Group serves 57 regional destinations on 116 routes and flew more than 15 million passengers across our regional network in financial year 2023.

QantasLink is Australia's largest regional airline and the only Australian airline connecting all States and Territories.

The Qantas Group's regional network has expanded since the COVID-19 pandemic, and we now service 14 additional regional routes and eight new regional ports (Broken Hill, Burnie, Busselton, Griffith, Merimbula, Miles, Mount Gambier and Orange).

### Economic Contribution to Regional Australia FY23

Deloitte Access Economics' analysis of the Qantas Group's economic contribution of the regional Australia in financial year 2023 is provided at Annexure A to this submission.

The activities of the Qantas Group in regional Australia contributed 5,920 full time equivalent jobs and A\$1.9 billion in total added value.

The Qantas Group's role in facilitating tourism activity in regional Australia is estimated to contribute 46,500 full time equivalent jobs and A\$5.4 billion in value added to regional Australia. This represents around 37 per cent of the total value of tourism activity facilitated by the Qantas Group and 38 per cent of the associated employment.

The Qantas Group spent over A\$800 million procuring goods and services from over 640 businesses in regional Australia, the majority of which are small businesses.

Overall, since financial year 2019 (and notwithstanding the COVID-19 pandemic) the Qantas Group's economic contribution toward regional Australia has grown by 14 per cent.

### Qantas Resident Fares

In 2017, Qantas introduced the Discounted Fares for Residents program to improve airfare affordability for residents living in certain regional postcodes in Queensland, Western Australia and the Northern Territory.

Eligible residents from communities, including Cloncurry, Moranbah, Mount Isa, Longreach, Barcaldine, Blackall, Broome, Kalgoorlie, Karratha, Port Hedland, Newman, Paraburdoo and Alice Springs, can access year-round discounts of at least 20 per cent of the Qantas base fare to their nearest capital city.

In financial year 2023, the Qantas Group invested more than A\$35 million in this program, with almost 65,000 return trips taken. Efforts to increase awareness of the program are ongoing.

Since December 2022, Alice Springs residents are now eligible for discounted return flights to Adelaide as well as Darwin under this program.

The Qantas Group also offers at least two dedicated resident fare sales every year and supports various other resident fare programs including the Lord Howe Island Residents' fares and the Queensland Government Local Fares Scheme.

### Qantas Regional Grants

The Qantas Group's Regional Grants program supports not-for-profit groups and projects directly benefiting regional Australia. The program has doubled in value since before the COVID-19 pandemic and is now worth A\$10 million over five years. Further details of the program are available on our [website](#).

In financial year 2023, the Qantas Group made grants to 32 organisations from every State and Territory in Australia from a record 1,600 applications, almost 40 per cent more than when the program first launched. Grant recipients receive a combination of flights, cash and marketing support.

### Qantas Group Regional Fleet

The Qantas Group has a substantial regional fleet of 50 Bombardier Dash 8 family turboprop aircraft, 17 Boeing 717 aircraft, 18 Fokker F100s, 13 A320-200 aircraft, as well as a fleet of up to 30 Embraer E190 on wet-lease from Alliance Airlines.

The current fleet of B717 aircraft is in the process of being retired and will be replaced by new Airbus A220-300 aircraft over the next three to four years. The A220 aircraft also offer longer-range capability allowing for more point-to-point flying within our regional network across Australia.

Renewable energy technology for the turboprop fleet is still in its infancy, with electric, hybrid-electric and hydrogen powered aircraft (ranging in seat capacity from four to nine seats up to 50 to 70 seats) in various stages of development.

The Qantas Group closely monitors new technologies and the potential capability and timing of new aircraft. We expect new technology aircraft to be available by the mid-2030s. In the interim period and as a bridge to new technology, Qantas will likely replace its older Bombardier Dash 8 turboprop aircraft with existing technology aircraft.

While the technical development of new aircraft concepts could be achieved in the next few decades, there are economic and commercial constraints that may delay or prevent their implementation at scale.

Even if zero-emission aircraft are widely adopted by the industry, their impact on reducing overall sector emissions will still be limited, given the emissions profile of the routes and flights on which they will be deployed. A4ANZ's Roadmap for Sustainable Flying — Net Zero by 2050 estimates that total emissions reductions from zero emission aircraft will be around four per cent by 2050.<sup>1</sup>

<sup>1</sup> A4ANZ An Australian Roadmap for Sustainable Flying – Reaching Net Zero by 2050, pg 44. Link [here](#).

On this basis, sustainable aviation fuel remains the single biggest (and likely, the fastest) facilitator of the Australian aviation sector reaching net zero by 2050 and should be the Government’s policy priority.

### Regional Airfares and Connectivity

The Qantas Group acknowledges that airfares are an important and high-profile issue and that connectivity by air is critical for remote and regional Australia.

Regional aviation in Australia is operationally and commercially difficult. Vast distances, high input costs, small populations and irregular demand patterns place pressure on the commercial viability of air services.

The Qantas Group acknowledges community concerns about regional airfares. While fares in peak periods or at the last minute when availability has been exhausted can be high, most regional fares are purchased in our lowest fare classes. The highest fare ‘buckets’ represent a minority of the retail fares sold. BITRE data shows that, in real terms, all fare categories are lower now than they were in 2003.

In 2019, the Senate Rural and Regional Affairs and Transport References Committee recommended that the Productivity Commission undertake a public inquiry into regional airfares. The Qantas Group is broadly supportive of this recommendation, as outlined in Chapter 1 [A competitive aviation sector] of this submission.

#### Why is regional flying more expensive for airlines?

As set out in Chapter 1 [A competitive aviation sector], a number of the Qantas Group’s regional services provide marginal returns, reflecting the market dynamics associated with small populations and highly directional travel, as well as high input costs.

One of the main challenges with regional connectivity is economies of scale. Fixed costs are spread across fewer passengers. For example, the same number of pilots are required regardless of whether you are operating Sydney to Melbourne on a 260-seat jet, or Brisbane to Bundaberg on a 74-seat turboprop.

Regional operations (turboprop) cost the Qantas Group around 100 per cent more than mainline domestic 737 flying, and close to 150 per cent more than international operations. The major costs are labour, airport charges and fuel.

#### Airport charges

Airport charges make up a significant and growing portion of the price of airfares.

As outlined in Figure 1 in Chapter 1 [A competitive aviation sector], for Qantas Group turboprop operations in financial year 2023, airport charges are second only to labour and equal to fuel, even though fuel is now around 50 per cent higher than pre-COVID levels.

Fourteen of the fifteen most expensive airports in Australia to which Qantas operates are regional airports in Queensland and Western Australia.

These high charges flow directly into the price of travel and the commercial viability of regional air services.

As set out in Table 1 below, Passenger Service and Security Charges charged by airports to airlines per arriving and departing passenger are also generally much higher in regional ports than capital city ports.

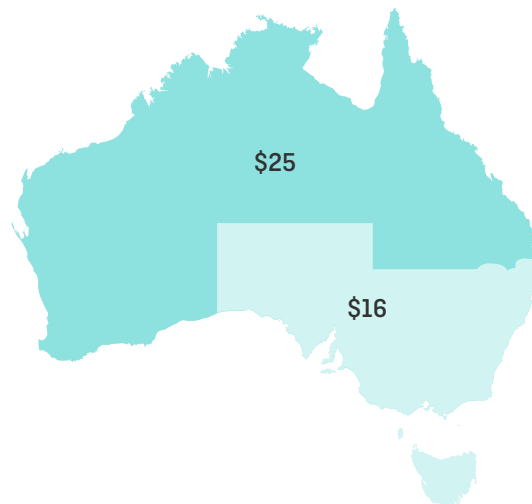
**Table 1: Comparison of Passenger Service and Security Charges**

Airport	Passenger Service Charges	Actual Security Charges
Sydney	\$10.29 + GST	\$1.13 + GST
Melbourne	\$5.99 + GST	\$0.71+ GST
Brisbane	\$11.37 + GST	\$2.80+ GST
Mount Isa	\$23.45 + GST	\$7.45+ GST
Rockhampton	\$17.03 + GST	\$6.93+ GST
Bundaberg	\$22.42 + GST	\$20.25 + GST
Port Hedland	\$30.13 + GST	\$8.00+ GST
Armidale	\$15.23 + GST	\$23.28 + GST
Norfolk Island	\$75.00 + GST	\$500 per departing flight + GST

There is also a wide variation in regional airport charges, particularly between southern and northern Australia.

When comparing regional airports in Australia with fewer than 500,000 passengers per year, the average cost per passenger (excluding security) at airports in northern regions of Australia (Queensland, Northern Territory and Western Australia) is more than 55 per cent higher than elsewhere.

**Figure 1: Northern vs Southern Australian Regional Airports – Average Cost Per Passenger**



## Fuel

Fuel is more expensive at regional ports but the extent of this difference compared to metropolitan centres varies by port according to the cost of logistics.

Factors contributing to the high cost of fuel in regional Australia include:

- Monopoly suppliers, who either own or have exclusive access to the fuel supply infrastructure;
- Truck transport rather than pipeline access;
- The division of fixed costs by a smaller volume;
- Shortage of labour at some ports resulting in higher costs to employ airfield operators; and
- Limited redundancy in supply infrastructure so any quality issues can lead to fuel shortages.

Government incentives to take on more fuel at regional ports would drive down costs. The introduction and availability of sustainable aviation fuel at regional ports would drive this.

## Regional Infrastructure

As a result of new security requirements and in response to the economic impact of COVID-19, the Government provided funding under the Regional Aviation Security Infrastructure program (RASI Program) to eligible regional airports.

The purpose of the RASI Program was to reduce the cost of upgrading security equipment which is passed on from the airport to the airlines. This facilitated improved security outcomes without imposing additional cost burden onto regional routes.

The RASI Program ended on 30 June 2023. As a result of the 40 Seat Rule, regional airports are now managing distinct security processes, undermining the significant capital investment by the Government to support regional airports through the RASI Program and placing upward pressure on already high airport charges.

The Qantas Group's position on the 40 Seat Rule and the impact to regional airports is outlined in more detail in Chapter 8 (Fit-for-purpose agencies and regulations) of this submission.

## Connectivity with Sydney Basin

In addition to enabling and preserving connectivity with regional communities, access must also be provided at the right times.

Sydney Airport's regional access regime provides access during morning and afternoon peak periods, allowing customers to travel for critical appointments in Sydney or regional cities and fly home the same day.

This is supported by the extensive Qantas Group network, which facilitates efficient connections between regional flights to or from Sydney and flights between Sydney and the rest of Australia. This ultimately supports regional

tourism destinations as well as outbound connections for business and leisure travel by Australians from regional New South Wales.

The Qantas Group supports the continuation of the airport charges price cap for regional New South Wales flights into Sydney. With continued increases in airport charges across airports including Sydney, the capped pricing ensures price certainty for services into regional New South Wales.

In its submission to the review of the *Sydney Airport Demand Management Act 1997* (Cth), the Qantas Group identified several opportunities to improve airline services to regional communities in New South Wales while more effectively using the airport's capacity.

## Cabotage

Some stakeholders have suggested that the introduction of cabotage would improve connectivity in regional and remote Australia and reduce airfares. The Qantas Group considers such an introduction would have significant adverse consequences for Australia's workforce and broader economic interests, particularly with respect to regional Australia. Cabotage is addressed in further detail in Chapter 1 (A competitive aviation sector).

## Questions

**Traditionally, where intra-State aviation services have been subsidised, costs have been carried by State and Territory Governments. Does this remain the best structure?**

To determine the best structure for subsidising intra-State aviation services, a combination of State and Territory Government involvement together with national coordination would be beneficial. This approach could include:

- National oversight and coordination to ensure that overall aviation safety, security, and environmental standards are met;
- State and Territory Governments retaining responsibility for tailoring and implementing subsidies to meet local needs and priorities;
- Collaboration between different levels of Government to share resources and expertise and avoid duplication;
- Regular assessments of the effectiveness and equity of subsidy programs to ensure that they are achieving their intended outcomes; and
- Consultation with First Nations communities about how to best support their needs.

Ultimately, the structure should aim to balance the advantages of local knowledge and responsiveness with the need for national consistency and coordination, particularly in areas of safety, sustainability and overall aviation connectivity.



**What opportunities do emerging aviation technologies present for regional and remote Australia?**

While small capacity electric and hydrogen fixed-wing aircraft may be available from around 2030, it may take a longer period for this mode of travel to be normalised.

Smaller autonomous vehicles, drones and other emerging technology have the potential to increase connectivity, including by connecting regional passengers into existing regional airports for onward travel on larger aircraft.

**SBAS**

As discussed in Chapter 8 (Fit-for-purpose agencies and regulations), SBAS technology will not significantly reduce diversions and delays at smaller regional aerodromes. It offers only marginal benefits over current global navigation satellite system-based infrastructure, which is already able to provide accurate straight-in approach capability at regional aerodromes in Australia, including during disruptive weather.

Digital control towers provide broader benefits and should be the investment priority.

**What are specific issues experienced by the regional and remote aviation sector in the context of decarbonisation?**

The decarbonisation of regional and remote aviation will depend on the same policy settings and levers aimed at reducing emissions from the broader sector. However, regional airports may have some earlier opportunities to reduce Scope 3 emissions from airlines with the medium to long-term introduction of electric and hydrogen powered low-emissions aircraft.

Investment targeted at scaling a domestic sustainable aviation fuel industry will present economic benefits for rural and regional Australia. There are unique opportunities for job creation and economic growth for the regions where agricultural by-products can be directed toward sustainable aviation fuel production. Ensuring that rural and regional airports have equitable access to supplies of sustainable aviation fuel will be important to ensure reliable and consistent decarbonisation across airline networks.

Further detail on the Qantas Group’s proposals to decarbonise the aviation sector are outlined in Chapter 6 (Maximising aviation’s contribution to net zero) of this submission.

**What opportunities are there to develop domestic bioenergy feedstock production and collection in Australia’s regions, and what policy settings from Government would support this?**

As outlined in Chapter 6 (Maximising aviation’s contribution to net zero) of this submission, there are significant economic opportunities for regional Australia through the decarbonisation of the aviation sector.

In particular, the establishment and scaling up of a domestic sustainable aviation fuel industry would bring considerable benefits to local communities through

job creation. Australia’s regions are uniquely placed to capitalise on the sectors’ need for a domestic supply of renewable fuels, with a potentially pivotal role to be played by agricultural feedstocks. For example, in Queensland the sugar industry has indicated a strong interest in participating in the domestic fuels market — with the ability to leverage existing infrastructure, capital, technology and feedstocks.

The resources sector, a significant employer in regions across Australia, could also reap economic benefits from increased investment in sustainable aviation fuel production and technology — with hydrogen and other waste products feedstock inputs for renewable fuels.

Building a domestic sustainable aviation fuel industry represents a significant opportunity for jobs and economic growth for regional Australia and the economy. It will help bridge a significant gap in Australia’s energy independence and resilience. As overseas examples show, achieving these objectives will require partnership between Government and industry and will rely on the implementation of supportive policy settings and sector-wide incentives.

**What are the challenges faced by regional and remote aviation and airports posed by our changing climate?**

Global warming is a shared challenge and one that requires action from all in the aviation sector — including airlines and airports. Climate change has been identified as a material business risk to the Qantas Group. This risk is being managed through scenario analyses, governance, technology, operational and market-based controls.

Climate risk assessments are conducted to account for challenges posed by changing climates, including physical risk assessments of our operations and the airports we fly to. The Qantas Group has evaluated weather impacts on assets and operations at airports across Australia and the globe, using historical data on delays and cancellations, weather and climate data and regional and global climate model projections.

Further detail on the Qantas Group’s approach to climate risk including the findings of scenario analyses, transitional risk assessment, physical risk assessment and mitigations and opportunities is outlined in Chapter 6 (Maximising aviation’s contribution to net zero) of this submission.



## **CHAPTER 6**

Maximising aviation's contribution to net zero



## Key points in this chapter:

- The aviation industry has been at the forefront of the global corporate response to climate change and was the first industry to voluntarily commit to emission reduction targets.
- Aviation’s transition to net zero needs to be underpinned by effective and supportive Government policies and frameworks to ensure integrity and confidence in the industry’s decarbonisation pathway.
- Sustainable Aviation Fuel (SAF) is the backbone of aviation decarbonisation and the establishment of a domestic SAF industry is the highest priority for the sector in achieving net zero.
- SAF represents a strategic opportunity for Australia to drive economic growth, create tens of thousands green jobs, secure Australia’s domestic fuel security and decarbonise aviation.
- A suite of policy measures tailored to the Australian market are needed to support the establishment of a domestic SAF industry. Key policy recommendations include:
  - Establishing a mandate to blend an increasing portion of SAF into the jet fuel supply;
  - Providing capital support to develop initial facilities, with allocations connected to successful completion of project milestones;
  - Implementing a production incentive linked to the carbon reduction from fuel to allow domestic producers to compete with facilities based in countries with more mature industries;
  - Reducing the tax burden for initial producers entering the market, recognising the limited taxation for fuels produced in other competing countries; and
  - Supporting the development of enablers for a domestic industry by:
    - » Developing a lifecycle analysis framework tailored for SAF produced in Australia, recognising the emissions intensity of domestic feedstocks, and ensuring the impact from measures to further reduce emissions are evaluated (including carbon capture, the use of renewable electricity, regenerative agriculture);
    - » Ensuring permits and other development factors are fast-tracked for evaluation to allow producers to make rapid no/go decisions; and
    - » Assessing feedstock supply chain challenges as they arrive, and support workforce transition.
- The appropriateness of the current ‘carbon neutrality’ assumption for biogenic-derived fuels under the National Greenhouse and Energy Reporting Scheme (NGERS) should be evaluated to ensure the difference in lifecycle emissions among biofuels is accounted for.
- High-quality carbon offsetting using high-integrity credits will continue to be an important pillar of aviation’s path to net zero. Increasing transparency and standardisation of integrity expectations among carbon markets is vital for ensuring a long-term, reliable supply of high-quality credits.
- Clear opportunities exist to accelerate progress toward a circular economy, achieve Federal and State Government waste targets and improve how recycled waste is managed.

## Overview

Aviation currently contributes two to three per cent of total global greenhouse gas (GHG) emissions. Following the recovery from the COVID-19 pandemic, its share of global GHG emissions is expected to increase — especially as easier-to-abate sectors decarbonise in the coming years.

The main driver of this is the aviation industry's limited near-term options to significantly reduce emissions, coupled with strong demand for connectivity and tourism. If no additional action is taken to reduce aviation emissions, it is estimated that the sector could be responsible for 22 per cent of global emissions by 2050.<sup>1</sup> For a nation geographically dependent on aviation, managing the transition of the aviation industry to a sustainable future is critical.

In 2019, the Qantas Group was one of the first airlines to commit to net zero emissions by 2050, and in 2022, as part of our [Climate Action Plan](#), we released an interim target of a 25 per cent reduction in net emissions by 2030.<sup>2</sup>

The aviation sector has four key decarbonisation levers:

- Deployment of SAF;
- Economic or market-based measures (i.e. carbon offsetting);
- Operational efficiencies through the optimisation of flight paths, air traffic management, and operations; and
- Technology-based efficiency gains from improvements in engine and aircraft technology, and the future potential development of hydrogen and electric powered aircraft.

Even as zero-emission electric and hydrogen propulsion technologies gradually progress, energy density, safety and operation limitations mean it is expected that 70–80 per cent of emission reductions in aviation will need to come from SAF and efficiency enhancements. This is particularly the case for Australia, with its long domestic flight sectors and long-haul international routes.

Realising the full economic opportunity of aviation's decarbonisation transition will require sustained and cooperative action by the entire global aviation value chain, Governments and investors.

The Qantas Group engaged global consulting firm, ICF, to prepare a report setting out the role of SAF in Australia, an evaluation of potential SAF policies in Australia, and policies recommended for further evaluation and implementation. In formulating the report and its policy recommendations, ICF consulted with key Government stakeholders including:

- The Department of Infrastructure, Transport, Regional Development, Communications and the Arts;
- The Department of Climate Change, Energy, the Environment and Water;
- The Treasury;
- The Department of Prime Minister and Cabinet; and
- The Climate Change Authority.

The ICF Report is included as Annexure C to this submission.



<sup>1</sup> Energy Transition Commission, Making Net Zero Possible, July 2022. Link [here](#). <sup>2</sup> 25 per cent reduction in net emissions from 2019 levels.



## Sustainable Aviation Fuel

Australia's energy landscape is highly reliant on liquid hydrocarbon fuels, accounting for 52 per cent of our total energy consumption pre-COVID.<sup>3</sup>

While electrification offers an important solution for much of this demand, key sectors such as aviation, agriculture, heavy transport, mining, and manufacturing — which consume over 35 per cent of liquid fuels<sup>4</sup> — will require an alternative, more adaptable solution to ensure Australia can meet its national decarbonisation ambition.

Decarbonisation of these sectors will be reliant upon a shifting portfolio of technologies, including renewable hydrocarbon fuels. Renewable hydrocarbon fuels represent a near and long-term decarbonisation solution that can drive emission reduction in sectors where other abatement options are not viable.

As a renewable hydrocarbon fuel, SAF can be derived from sustainable biological sources (Biogenic SAF), like energy crops and waste, and on-biological sources (Power to Liquid), like green hydrogen as set out in Figure 1 below.

The decarbonisation potential of SAFs is significant for four primary reasons:

- It is deployable now, working in existing turbine engines

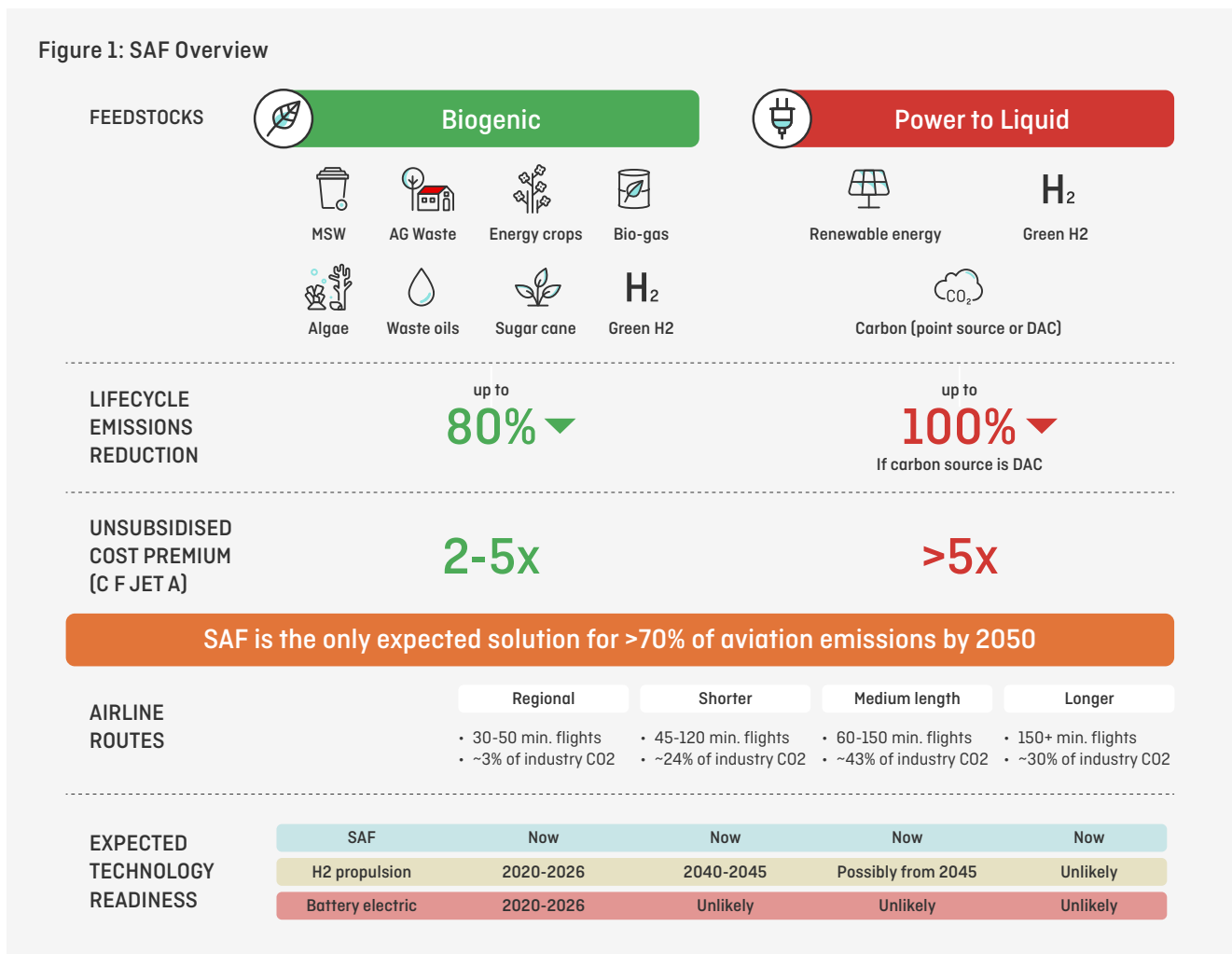
and distribution infrastructure with blending rates of up to 50 per cent, with this expected to increase to 100 per cent by 2030;

- It offers CO<sub>2</sub>e emissions reductions of up to 80 per cent for biogenic pathways and 100 per cent for power-to-liquids (synthetic) pathways;
- Every SAF facility will also produce renewable diesel, naphtha and other co-products needed for decarbonisation of hard-to-abate or transitioning sectors; and
- Hydrogen is a necessary input in refining and SAF production can act as an early demand market to help scale green hydrogen production to meet the decarbonisation needs of other sectors.

The Government has recognised that an orderly energy and climate transition is critical to the trajectory of Australia's economic development, and that an important aspect of this is adopting practices and technologies that limit emissions.<sup>5</sup>

Developing a local SAF industry aligns with this ambition and should receive the greatest emphasis in the Government's Transport and Infrastructure Net Zero Roadmap and Action Plan for the reasons outlined below.

Figure 1: SAF Overview



3 Australian Government, Liquid Fuel Security Review, April 2019. 4 Australian Government, Liquid Fuel Security Review, April 2019. 5 Jim Chalmers, The Monthly: Capitalism after the crises, February 2023.

### SAF industry is critical to achieving Australia’s decarbonisation targets

SAF is essential to reduce emissions from aviation, with IATA estimating that SAF will contribute 65 per cent of the decarbonisation required for net zero by 2050.<sup>6</sup>

Beyond environmental benefits, SAF offers significant economic opportunity for an efficient transition. By producing valuable co-products, such as renewable diesel and utilising existing infrastructure and equipment, SAF production can help reduce transition costs through economic growth.

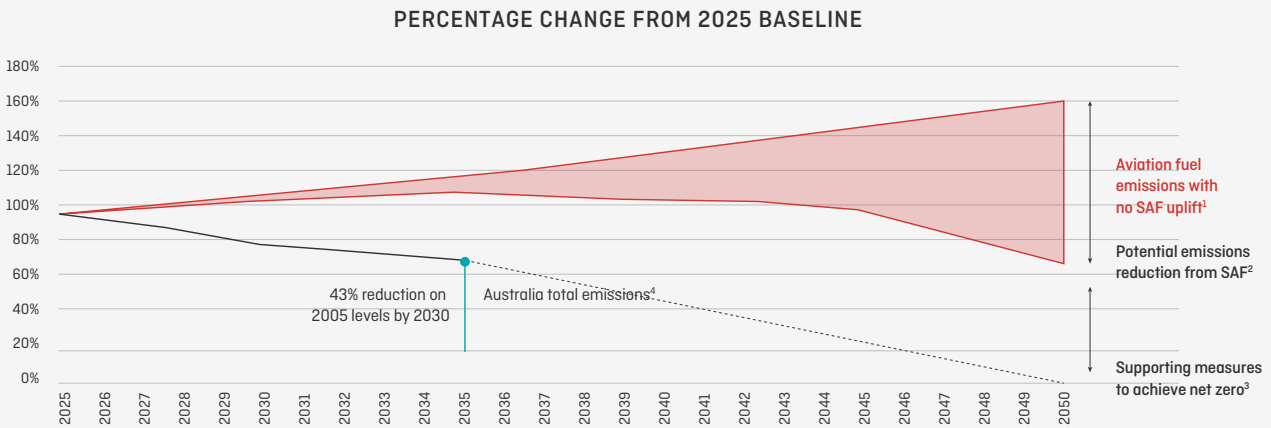
Australia’s annual aviation fuel demand is projected to reach around 11 billion litres by 2030 and 18 billion litres by 2050, indicating a growing demand for this greener fuel both domestically and in the Asia Pacific region.

As outlined in detail in their Report at Annexure C, ICF modelled a range of SAF uptake scenarios and the impact on aviation emissions. Increased uptake bends the emission curve down, bringing the net zero target within reach, as outlined in Figure 2 below.

The SAF industry’s ability to support decarbonisation across several hard-to-abate sectors will help catalyse emissions reductions across sectors representing more than 80 per cent of Australia’s 2030 emissions — including mining, agriculture, waste management, and energy.

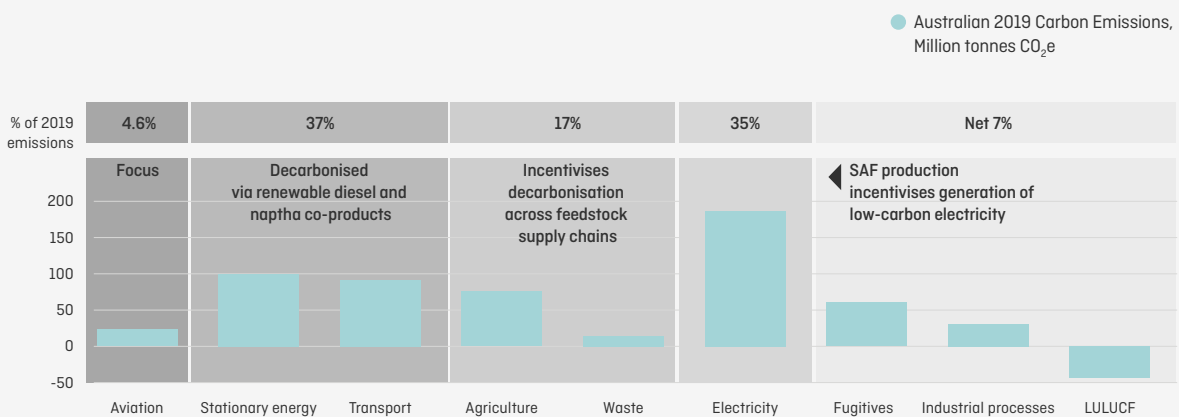
Figure 3 below highlights how SAF production in Australia can facilitate this broader economic transition.

Figure 2: Modelling SAF Uptake



Notes: (1) Aviation emissions include domestic and international travel, and do not include abatement from SAF or Safeguard. Forecast is based on CSIRO Sustainable Aviation Fuel Roadmap. (2) High case aligned to EU SAF Mandate. (3) Supporting measures include carbon removals and/or accelerated use of H2/ electric aircraft. Australia total emissions from DCCEEW 2022, additional measures scenario

Figure 3: SAF Contribution to Energy Transition



Notes: Aviation emissions include domestic and international travel. Total emissions from <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf>

<sup>6</sup> Net zero 2050: sustainable aviation fuels (iata.org). Link [here](#).

**SAF can play a critical role in guaranteeing greater energy security and resilience for Australia**

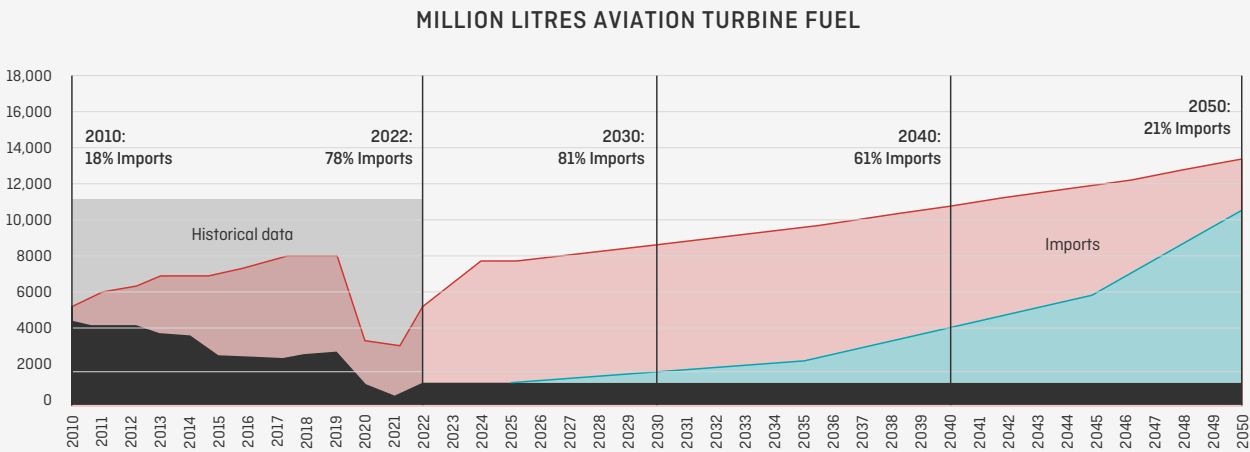
The Government has recognised the need for greater fuel security, committing up to A\$2.05 billion through the Fuel Security Service Payments (FSSP) scheme and allocating funding to fast-track refinery upgrades. While these measures preserve existing capacity, they do not mitigate the long-term challenges for aviation.

Domestic refining is required to avoid a greater portion of imports and reliance on international supply chains. Building an Australian SAF industry could reverse a decade-long decline in domestic production, meaningfully supporting energy resilience and fuel security. New SAF refining capacity requires time to construct, meaning the reliance on imports will increase in 2024–2025 before capacity comes online, per the recommendations of ICF’s analysis. However, policies which support the scaling

of a domestic SAF industry offer a long-term solution to the challenge of reducing Australia’s reliance on fuel importation — with levels proposed in ICF’s Report reducing aviation fuel imports from a peak of 80 per cent in the 2020s to 61 per cent in 2040 and just 21 per cent in 2050. Figure 4 below further demonstrates this.

Decreasing reliance on fossil fuels through SAF also presents an important opportunity for Australia to enhance Defence operational independence and resilience. Under normal circumstances, Defence makes up around three per cent of Australia’s national demand for jet fuel.<sup>7</sup> As SAF is a drop-in fuel and compatible with existing engines, a domestic SAF industry has the potential to reduce Defence reliance on overseas supply of liquid fuels — which are highly volatile and exposed to external shocks — and embed fuel security through sovereign SAF production.

**Figure 4: Domestic Production vs Imports**



Notes: Assuming domestic production stabilises at 2022 level. Jet fuel demand from CSIRO Sustainable Aviation Fuel Roadmap. SAF Production assuming recommended scenario.

**A domestic SAF industry offers a significant economic and strategic opportunity for Australia**

Analysis conducted by ICF assessed four sources of value — including the direct contribution to employment within the facilities, construction value, the impact of the collection, processing and logistics for feedstocks, and the value sustained in by decarbonising the aviation sector. If SAF production achieves the volumes assessed in this Report, the annual Gross Value Add (GVA) of a

domestic SAF industry is estimated at \$1,780M by 2030, increasing to \$13,100M in 2040, as set out in Figure 5.

This value creation is driven by the considerable number of jobs created by a SAF industry, many of which would be generated in regional communities. If the recommendations outlined in the ICF Report are pursued, SAF production is forecast to create or sustain over 70,000 jobs by 2040, as set out in Figure 6.

<sup>7</sup> Liquid Fuel Security Interim Report, April 2019. Link [here](#).

Figure 5: Value Created by a Domestic SAF Industry

**DEVELOPING A DOMESTIC SAF INDUSTRY CREATES SIGNIFICANT ADDITIONAL VALUE IN THE ENERGY, CONSTRUCTION, AGRICULTURE, AND WASTE MANAGEMENT SECTORS**

Annual Gross Value Add, 2040, Recommended Scenario. Radius is proportional to GVA.

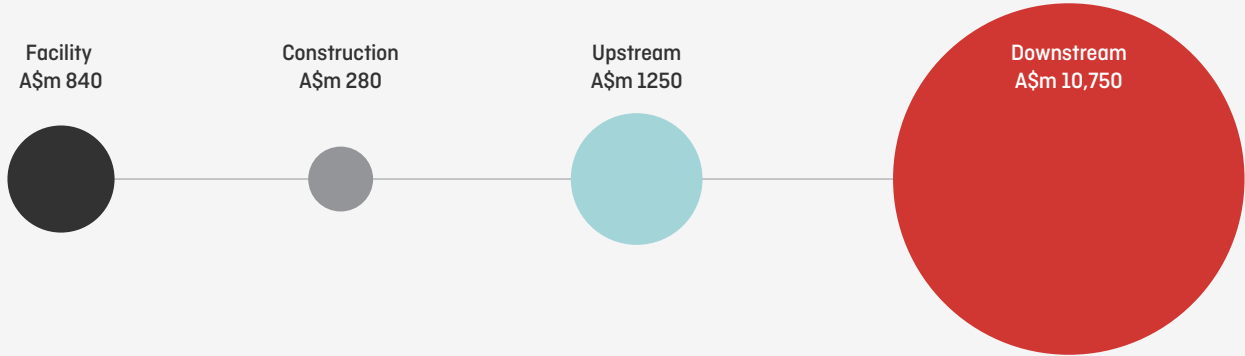
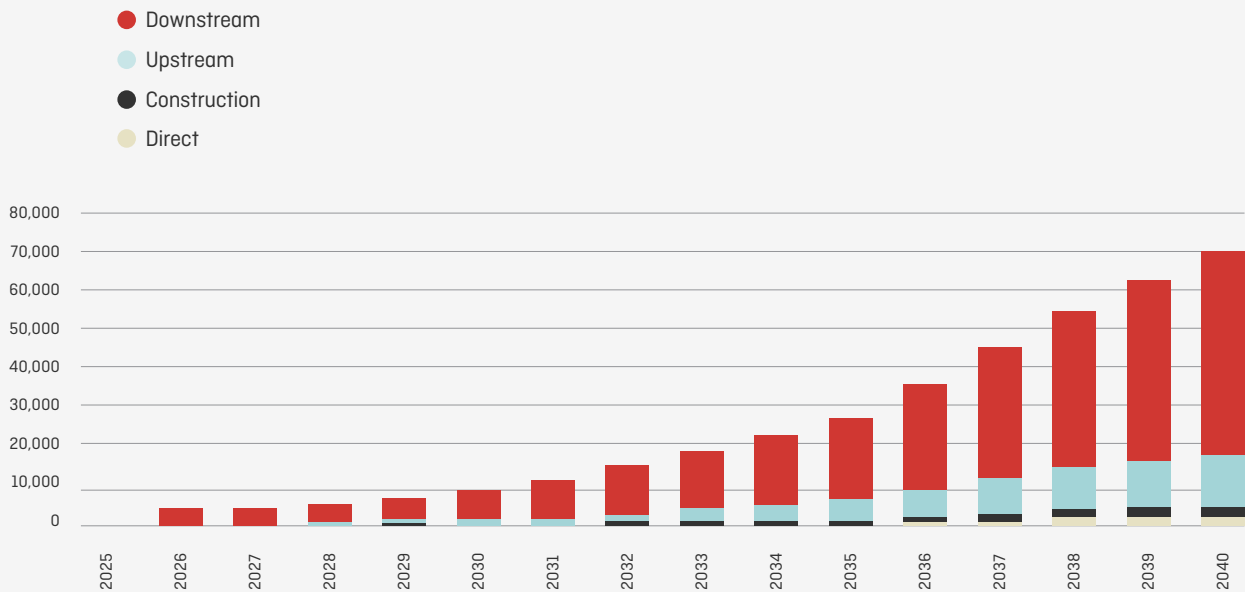


Figure 6: Jobs Created by a Domestic SAF Industry

**SAF PRODUCTION IS FORECAST TO CREATE OR SUSTAIN OVER 70,000 JOBS BY 2040**

FTE Jobs Created, Recommended Scenario



Sources: ICF analysis, assuming the recommended scenario. Direct jobs include those to operate facilities, and construction jobs are pro-rated over facility lifetimes. Upstream jobs include those in collection and logistics for feedstocks, while downstream include the decarbonised aviation jobs



**Challenges in developing an Australian SAF production industry exist, but can be overcome through industry and Government collaboration**

As the market for renewable hydrocarbon fuels is in its infancy, it cannot compete on price alone against the mature, entrenched fossil fuel industry. The cost of production for all SAF technologies is at least several times the cost of production for fossil fuels, due to the differences in (1) scale, with SAF at the early stages of commercialisation, and (2) technical difficulty, with many SAF technologies requiring complex processes to convert sustainable feedstocks into liquid hydrocarbons. The aviation industry can only absorb or pass through very limited incremental costs for SAF.

Given these challenges, efforts to progress a domestic SAF capability by industry alone will not be enough. Partnership with Government will be key to progressing this strategic national opportunity.

The Qantas Group has established an A\$400 million climate fund to provide direct investments in climate projects and technologies, as we work towards our emissions reduction targets. The fund includes the ~A\$290 million partnership established last year between Qantas and Airbus to accelerate a domestic SAF industry in Australia.

The Qantas Group has also launched a SAF Coalition to pioneer the reduction of emissions associated with a corporate’s business-related travel using SAF, as well as to support SAF industry development in Australia by

contributing towards the “green premium” associated with SAF.

Figure 7 summarises the steps and investment Qantas has taken to date to progress a local SAF industry.

The Government has acknowledged its critical role in assisting the establishment of new markets and providing clear policy objectives to support Australia’s net zero transformation and has taken positive steps to progress a domestic SAF industry, including through the establishment of the Jet Zero Council. While this indicates positive momentum, immediate policy action is needed to address the challenges if Australia is to take up the economic, social and environmental benefits of SAF.

**Delayed investment in a domestic SAF industry will increase cost of living pressures over time**

The global aviation industry is committed to transitioning to SAF, backed by international mandates and incentives. Australia is at an important juncture, with the continued sole reliance on fossil aviation fuel increasingly untenable in a decarbonising sector and global economy. In this context, development of policy to support a domestic SAF industry will have an important role to play in managing the economic and cost of living impacts of the energy transition, including:

- Reducing Australia’s reliance on imported liquid fuels, which are highly susceptible to global market fluctuations, geopolitical tensions, and supply chain disruptions;

Figure 7: Qantas Group Initiatives

Jan 18	Nov 19	Dec 21	Mar 22	Jun 22	Nov 22	Mar 23	May 23
<b>Biofuel flight</b>	<b>Domestic SAF investment</b>	<b>London SAF purchase</b>	<b>California SAF purchase</b>	<b>\$US200m Investment partnership</b>	<b>SAF Coalition</b>	<b>First investment in SAF facility</b>	<b>A\$400m Climate Fund and call for mandate</b>
Qantas partners with Agrisoma to embark on the world's first dedicated biofuel flight between Australia and the United States	Qantas becomes the first Australian airline to commit funds towards SAF, with an initial A\$50 million commitment towards viable domestic SAF opportunities	Qantas agrees to purchase and uplift up to 10ML of neat SAF per year out of London Heathrow on an ongoing basis, comprising 15% of Group LHR fuel uplift	Qantas secures further SAF supply by agreeing to purchase nearly 20ML of blended SAF per year produced in California, to be uplifted from LAX and SFO from 2025	Qantas and Airbus launch a partnership to jointly invest up to US\$200m in projects to catalyse an Australian SAF industry	Qantas launched program with 5 founding members to share cost premium of SAF with corporate customers, while passing on emissions reductions	Qantas, Airbus and QLD Government jointly invest into QLD biofuel production facility being developed by Jet Zero Australia in partnership with LanzaJet	Qantas establishes A\$400m fund to provide direct investments in sustainability projects and technologies, and calls for SAF mandate to kickstart local production

- Reducing long-term reliance on fossil fuels facing higher costs and reduced availability, as carbon emissions associated costs rise and investments shift away from these energy sources;
- Creating opportunities for innovation, job creation, and domestic value addition, ensuring Australia actively benefits from the global energy shift through economic growth and diversification; and
- Ensuring the continued competitiveness of the Australian aviation and tourism sector in a carbon-constrained global economy.

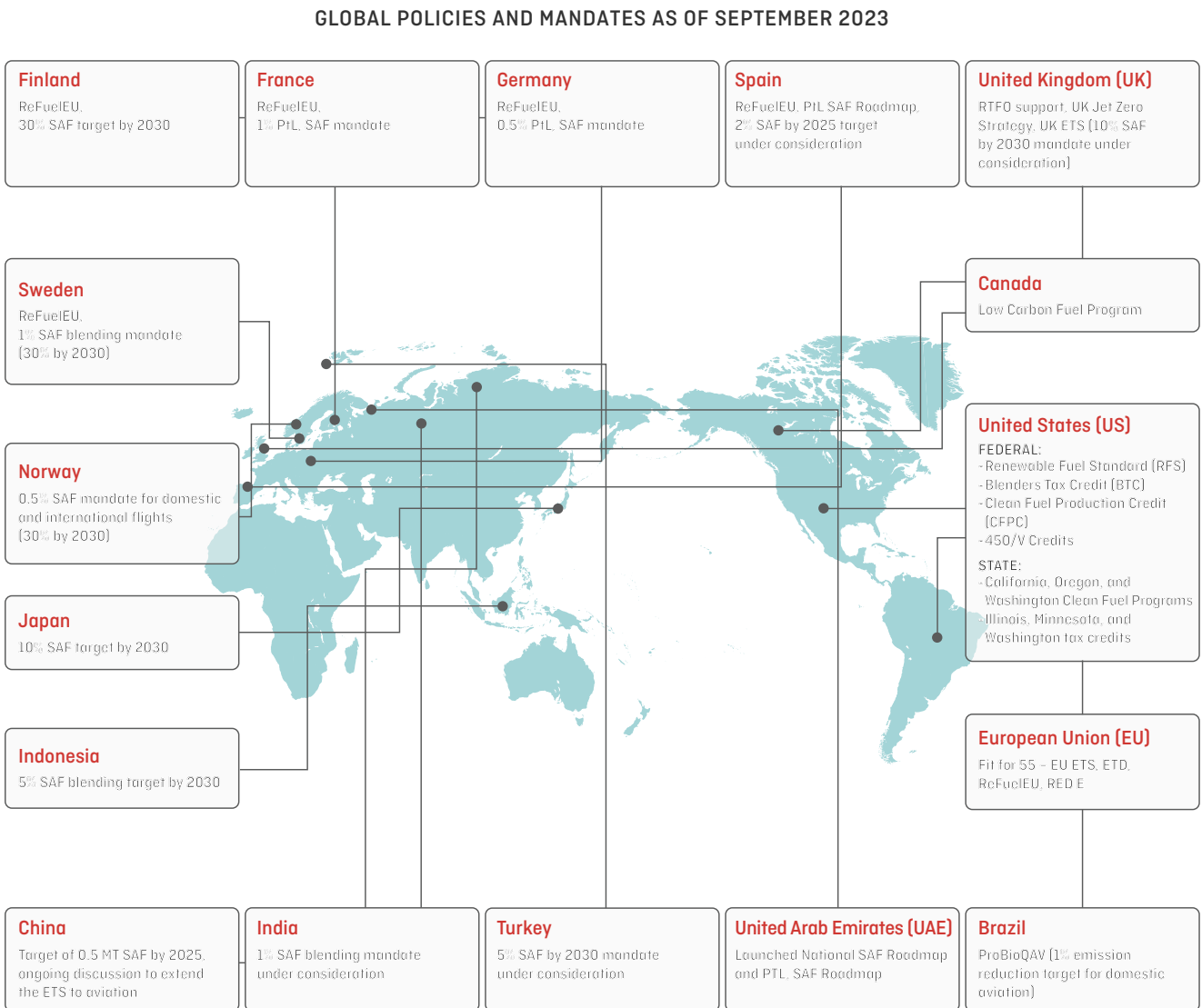
While supporting domestic SAF production does not come without cost, in the current global context, this should be viewed as a critical strategic opportunity to not only effectively manage but capitalise on the global energy transition.

## Supportive Policy Settings

While the economic, environmental and social benefit of SAF is well understood, this does not provide the certainty and stability required for investment.

The global SAF landscape is progressing rapidly, with jurisdictions like the United States, the United Kingdom, the European Union and Japan significantly ramping up policy support for renewable fuels. These jurisdictions have set ambitious renewable hydrocarbon fuel mandates and targets, attracting substantial investment and project development. Australia has an opportunity to leverage this global momentum and draw on best practice from other countries but must act now. ICF’s Report at Annexure C provides detailed analysis of policy settings adopted by other nations and a summary is reflected in Figure 8 below.

Figure 8: Global SAF Policies



Source: ICF Analysis

A supportive policy framework is critical to drive the establishment of a competitive SAF and renewable fuels industry in Australia. Policy over a longer duration is essential to address investor uncertainty and cover the long timeframes that SAF facilities operate.

The Government has recognised the need for industry policy to be recast and modernised to maximise our national advantages in a new age of net zero.<sup>8</sup> In the absence of policy support for SAF, we risk exporting our valuable feedstocks, only to import them back as value-added products, increasing the cost of decarbonisation while missing out on the opportunity to build sustainable jobs, new revenue streams, and greater fuel security. This could place Australia's national decarbonisation targets at risk.

Australia can examine international regimes and leverage the best policy frameworks. On behalf of Qantas and Airbus, ICF modelled several policy scenarios that could be implemented to accelerate a domestic SAF industry and has identified a recommended list of measures that would be most appropriate in the Australian context. The Qantas Group endorses the policy recommendations contained in Chapter 4 of the ICF Report and encourages the Government to consider these as a matter of priority.

Based on ICF's analysis, the most effective set of policies are a combination of both mandatory and market-based mechanisms to drive demand and bridge the green premium over traditional fossil fuels. Most countries have a range of demand mechanisms (mandates in the United Kingdom, the European Union and Grand Challenge in the United States), complemented with supply mechanisms, (the *Inflation Reduction Act* (IRA) in the United States, revenue support in the United Kingdom and ETS Fund in the European Union). These combinations are both more effective than isolated policies and provide a measure of policy redundancy by mitigating the impact for investors if one of the policies is removed or altered.

The Qantas Group recommends that the Government investigate the following policies to support and accelerate SAF scale-up:

- **Mandates:** SAF specific mandates are emerging as a leading tool across major international jurisdictions to drive the supply and uptake of SAF. For example, the European Union has implemented a SAF mandate as a part of its Refuel EU policy framework, requiring fuel suppliers to increase SAF blends in aviation fuel supply to two per cent in 2025, six per cent in 2030, 20 per cent in 2035 and 70 per cent in 2050. The European Union has also implemented a PtL sub-mandate of 1.2 per cent in 2030, increasing to 35 per cent in 2050. The United Kingdom has proposed a similar mandate requiring 10 per cent SAF by 2030 and Japan recently announced a 2030 10 per cent SAF mandate for all international flights operating out of Japan.

As outlined in greater detail in ICF's Report in Annexure C, Government should consider establishing a mandate requiring fuel suppliers to blend an increasing portion of SAF into the jet fuel supply. This should:

- Increase at a rate appropriate to the support provided to ensure supply can scale to meet demand. This analysis proposes to start in 2026 at 1.5 per cent, increasing to five per cent in 2030, 12 per cent in 2035 and 28 per cent in 2040;
- The level should be evaluated at 5-year intervals to ensure it remains appropriate to the market and technology dynamics;
- The minimum sustainability criteria should ensure a meaningful emissions reduction. This analysis proposes a minimum GHG reduction of 50 per cent;
- Implement a buy-out price of A\$4–5 per litre to provide protection for customers. A buy-out mechanism places an effective price cap on the cost of SAF for consumers; and
- Implement a suitable reporting and evaluation scheme to ensure the emissions reduction is evaluated across the value chain, allowing customers to correctly account for the emissions reduction.

- **Price Support:** This support generally takes the form of tax incentives and credits, such as currently occurs under the Hydrogen Headstart program. Typically, these are structured based on the quantity of SAF that is produced, blended, or used beyond a predetermined lifecycle emissions savings threshold. The more significant the emissions reduction per unit that exceeds this threshold, the more substantial the tax credit.

This strategy aims to stimulate SAF production using technologies with higher GHG reduction potential, directing investment towards the most efficient technologies. These tax incentives can immediately impact SAF costs and can be adjusted as SAF production scales up. The leading example is the United States' IRA, which offers SAF-specific blender's tax credits (BTC) linked to Carbon Intensity (CI) scores. Under this regime, the maximum credit is US\$1.75 per US gallon of SAF produced. Federal IRA subsidies can be combined with various State schemes, like the Washington SAF BTC, which provides an additional maximum credit of US\$2 per US gallon. Schemes like this are significant for two reasons:

1. They offer greater price and investment certainty for producers and investors, attracting international technology and investment to the subsidised jurisdiction; and
2. They help reduce the green-premium cost burden for renewable fuels on end consumers, thereby driving increased demand and ensuring an equitable transition. This helps to ensure essential services, such as aviation, do not become prohibitively expensive for the Australian public.

<sup>8</sup> Treasurer Jim Chalmers, Keynote address to the Economic and Social Outlook Conference, Melbourne – 2 November 2023 – Energy, the economy and this defining decade. Link [here](#).

As outlined in greater detail in ICF's Report at Annexure C, the Government should consider the provision of capital to support the development of initial facilities and a skilled workforce in Australia. A grant pool of A\$1,500M has been estimated to be sufficient for initial facilities. Allocation should be connected to the successful completion of project milestones and potentially modulated to support projects with greater potential to reduce emissions intensity and scale using Australian feedstocks.

Government should also consider revenue support measures to ensure Australian facilities compete against refineries based in other countries that have already achieved scale and can leverage developed domestic infrastructure, workforce and policies:

- This should be linked to the CI of the SAF produced to provide greater support for more sustainable production;
  - Revenue support of A\$0.03 per litre per CI point below 50 per cent should be implemented to provide greater certainty for investment and incentivise greater emissions reductions; and
  - Support should be linked to the facility commissioning date and run for the first 10 years of operation, with a link to inflation to ensure clarity for investors.
- **Cap and trade mechanisms:** These represent a hybrid of the previously discussed methods, driving the supply and demand of renewable fuels while offering a market-based trading mechanism to close the price gap with traditional fossil fuels. A leading example is the California Low Carbon Fuel Standards (LCFS). The LCFS imposes progressively stricter carbon emission limits per unit of energy for various fuels and energy types, such as diesel and aviation fuel. Producers whose fuels exceed these limits must buy credits from those whose fuels achieve lower-than-standard emissions. These credits provide an additional revenue stream for low carbon fuel producers, simultaneously increasing the cost of high-carbon-intensity fuels. The cumulative effect encourages the shift towards lower carbon fuels, although this transition's final cost is borne by the end consumer. It is important to design cap-and-trade mechanisms carefully to prevent perverse economic consequences, such as over-incentivising a particular type of renewable fuel at the cost of other vital transition fuels using SAF, as well as to support SAF industry development in Australia by contributing towards the "green premium" associated with SAF.
- **Feedstock policy support:** For effective policy support, it is crucial to examine the entire supply chain of renewable hydrocarbon fuels. While the main mechanisms are policies aimed at production and demand stages, those that de-risk and incentivise the supply of critical feedstocks also play a vital role in scaling up renewable fuel and SAF production. This is particularly true for biogenic fuels, where feedstock

aggregation and supply certainty present significant challenges. The design of policies targeted at making feedstocks available for renewable fuel production typically varies based on the feedstock and production pathway. However, there are two important examples for Australia that would substantially influence the sector:

- **Landfill diversion credits:** Changing the existing gate fees for municipal solid waste streams capable of being converted into renewable fuels to a diversion credit can motivate the redirection of these resources from landfill towards renewable fuel production; and
  - **Sugar cane bagasse diversion:** Rethinking current incentives that encourage sugar mills to use waste bagasse for electricity and heat production could redirect this valuable resource towards SAF production while at the same time motivating mills to transition to more appropriate renewable energy sources.
- **Market-Based Accounting Framework:** Renewable hydrocarbon fuels, being 'drop-in' fuels, benefit from leveraging existing distribution infrastructure, significantly reducing supply barriers and costs. This is particularly crucial for aviation, where physical delivery to specific locations may increase CI due to transport emissions. The Qantas Group suggests that the Government consider international accounting frameworks as it develops a 'book and claim' model. This would account for physical fuel delivery and the associated environmental attributes of renewable fuels, especially vital for aviation. A book and claim framework would allow for more precise tracking and reporting of renewable fuel use and emissions in complex, multi-user supply chains.

## National Greenhouse and Energy Reporting Scheme (NGERS)

The Qantas Group welcomes the Climate Change Authority's (CCA) review of the NGERS and commends the recent inclusion of renewable kerosene and renewable diesel as recognised fuels under NGERS.

However, the current 'carbon neutral' label for these fuels under NGERS overlooks the significant differences in lifecycle emissions among biofuels due to upstream emissions impacts, such as induced land use change. As the primary policy is to incentivise industrial decarbonisation and given the linkage of NGERS with the Safeguard Mechanism, this discrepancy is concerning and a risk that should be rectified.

The Qantas Group recognises that, in line with UNFCCC and IPCC guidelines, emissions reported under NGERS do not include those from agriculture, land use change, and forestry, which are separately reported under National Accounts. However, this creates a discrepancy between the objective of NGERS to accurately account for emissions in national GHG accounts and the Safeguard



Mechanism, which aims to incentivise decarbonisation. While the carbon neutrality approach might be appropriate for National Accounts, it could lead to inconsistencies when incentivising decarbonisation through the Safeguard Mechanism. This divergence results in biofuels with higher lifecycle emissions receiving the same emissions reduction benefit as more sustainable alternatives. Such an outcome would contradict the Government’s national emissions ambitions and the Qantas Group’s ambition for high-integrity SAF at a fair price.

The Qantas Group encourages the Government to consider these limitations when proposing further reforms to NGERs, the Safeguard Mechanism and complementary policy measures. Given the limitations with NGERs, this may require additional policy levers, such as mandates and low carbon fuel standards tied to lifecycle CI measures, with the European Union and proposed United Kingdom SAF mandates serving as leading examples.

Future reforms should align with global standards for renewable fuels and SAF emissions accounting, like the ICAO’s CORSIA and the United States Department of Energy GREET model. These systems set specific lifecycle emissions factors for both biogenic and non-biogenic renewable fuels and SAF, providing a more accurate representation of their environmental impact and incentivising the use of lower carbon renewable fuels.

In Australia, these reforms are needed to:

- Allow end-users to fully benefit from the emission reduction value of their chosen fuels for Safeguard Mechanism obligations; and
- Reflect the true emissions profiles of different biofuels, thereby promoting those with lower lifecycle emissions and enhancing decarbonisation efforts.

## Carbon Offsetting

High quality carbon offsetting using high-integrity credits will continue to be an important pillar in aviation’s path to net zero, addressing emissions that can’t be reduced directly through low-carbon solutions.

The Qantas Group has been investing in carbon offsetting projects since 2007, with three million tonnes of carbon offset through various Group, customer and corporate initiatives.

The Qantas Group welcomed the Chubb Review and its 16 recommendations towards safeguarding the integrity of Australia’s carbon markets and the Australian Carbon Credit Unit (ACCU) regime. The review’s conclusion — that the ACCU market is ‘fundamentally sound’ — assures major procurers of carbon offsets that Australian credits invested in and retired against voluntary and compliance targets have integrity and are legitimate decarbonisation levers.

The regulation of carbon offsets will continue to evolve as markets mature and compliance and voluntary regimes in Australia and internationally converge.

Integrity will remain a key factor in future procurement, and evolving integrity expectations will be embedded in the Qantas Group’s investment and sourcing activities. The Qantas Group favours credits with no negative social or environmental impacts which also deliver positive co-benefits for nature, First Nations people and communities.

The Qantas Group has sought to define its criteria for high-quality and high-integrity credits. We employ enhanced due diligence and assurance measures surpassing standard market practices. By adopting a set of Investment Principles for carbon offsetting, the Qantas Group aims to foster climate, environmental, and social benefits, stimulate the investment and supply of quality carbon credits in the marketplace, and support the development of innovative methodologies for carbon abatement.

Increasing transparency and standardisation of integrity expectations among carbon markets is vital for ensuring a long-term, reliable supply of high-quality credits. The Qantas Group welcomes uniform disclosure standards contemplated across current regulatory proposals as mechanisms to introduce valuable standardisation to reporting. The recent introduction of The Core Carbon Principles by the Integrity Council for the Voluntary Carbon Market represents a significant move in this direction.

It is also essential to recognise the role of carbon offsets within an organisation’s mitigation hierarchy to ensure the long-term viability of this practice in achieving climate ambitions. While carbon offsetting remains a crucial tool for many hard-to-abate sectors (including aviation), investments in direct decarbonisation technologies should be prioritised, where possible.

### Use of International Units in Safeguard Mechanism

The Qantas Group welcomes the Government’s commitment to review the Safeguard Mechanism scheme in 2026–2027 to consider allowing the use of international units.

The reformed Safeguard Mechanism should be structured in such a way that it can allow for the future inclusion of international units to partially meet compliance obligations. As part of the Paris Agreement Article 6 framework, linkages between carbon markets are estimated to have the potential to halve the total cost of meeting global emissions targets, or alternatively, linkages could result in the doubling of emissions abatement for the same cost.<sup>9</sup> The Qantas Group supports these developments, recognising that they will enable increased ambition in reducing global emissions.

Allowing international units into the scheme places more importance on the integrity of international mitigation activities. There are varying levels of carbon credit quality due to a range of factors not limited to project additionality, abatement permanence and human rights. The Qantas Group, in partnership with its suppliers, conducts due diligence on all projects that it invests in. The Qantas Group recommends that appropriate

<sup>9</sup> IETA Report, Modelling of the Economics of Article 6 – A Capstone Report, 2023. Link [here](#).

safeguards be put in place to ensure that only units deemed to be of high quality can contribute towards Australia’s emissions reduction efforts.

**CORSIA – Compliance Procedures and Possible Opportunities for Advocacy**

The Qantas Group is actively monitoring the shifting standards and vintages approved for CORSIA eligibility. The nine offset standards approved during the pilot phase (2021–2023) are included in the Qantas Group’s procurement policy, and clarity on CORSIA eligible credits for Phase 1 will be a critical part of the Qantas’ Group’s offset strategy. The Qantas Group is aware the Technical Assessment Board has delayed its determination on the eligibility of key registries for Phase 1 of CORSIA and awaits the outcomes.

As the CORSIA scheme matures, the Qantas Group maintains ongoing monitoring and oversight of compliance costs and obligations as part of a long-term approach to disciplined capital allocation. Greater clarity and ongoing, timely transparency on key elements of the scheme would provide enhanced certainty for the aviation sector. The Government should consider:

- Clarifying the role Australia and Australian industry have in the CORSIA review process given existing

uncertainty on the inclusion of participating States and potential material impacts on baseline for Phase 2 – namely China and India;

- Seeking improved visibility and aligned timelines of the final ICAO sector growth factor to the CORSIA Monitoring, Reporting and Verification Cycle; and
- Updating industry on the potential implications of EU-ETS alignment with CORSIA, and possible regulatory landscape.

As international frameworks for SAF accounting mature, the Qantas Group would welcome engagement with the Government and ICAO on the interplay between SAF procurement and the acquittal of the Qantas Group’s CORSIA liabilities.

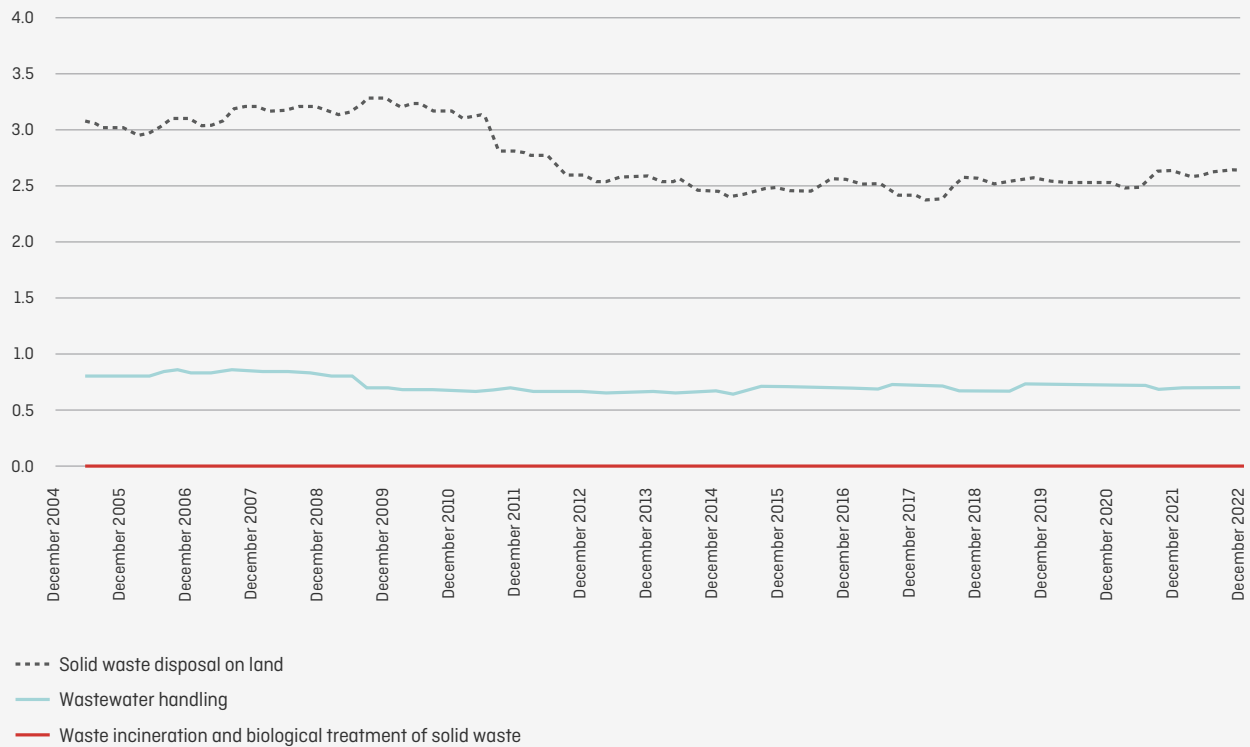
**Waste**

Reducing waste is an important part of minimising the aviation industry’s impact on the environment.

Waste generates approximately three per cent of direct GHG emissions in Australia. Emissions from waste increased about one per cent over the year to December 2022 – see Figure 9 below. Two thirds of all waste generated in Australia is originated from businesses and the remaining one third from households.

Figure 9: Waste Emissions<sup>10</sup>

WASTE EMISSIONS, ACTUAL, BY SUB-SECTOR, BY QUARTER, JUNE 2005 TO DECEMBER 2022



10 Department of Climate Change, Energy, the Environment and Water – Quarterly Update of Australia’s National Greenhouse Gas Inventory: December 2022. Link [here](#).

The National Waste Policy Action Plan 2019 (NWPAP) sets out seven national targets to guide investment and efforts in Australia to reduce waste and support more sustainable resource use to 2030.<sup>11</sup> With the implementation of the NWPAP targets, up to 10 per cent of Australia’s emissions could be abated, mainly through energy recovery and reducing landfill gas.

The Qantas Group is committed to reducing waste and has set targets of zero single-use plastics by 2027 and zero general waste to landfill by 2030. Significant steps have been made toward achieving these targets, including the removal of over 197 million single-use plastics since 2019 and the expansion of recovery and recycling initiatives across domestic operations. In financial year 2023, the Qantas Group diverted over 2,840 tonnes of waste from landfill with collections in place for materials including paper and cardboard, mixed recycling, organic waste, metals, timber and electronic waste.

However, the aviation industry in Australia experiences multiple challenges in achieving waste and plastic reduction targets and supporting a circular economy including:

- The limited availability of infrastructure for recycling and onshore material processing;
- Federal and State quarantine requirements;
- Variations in State-based waste and recycling standards and regulation;
- Lack of harmonisation for single-use plastic bans and extended producer responsibility schemes; and
- The availability of scalable solutions and alternatives.

### Challenges in the waste industry

The complexity of the waste ecosystem and extension across political and geographic borders remain key challenges in achieving an effective circular economy. These challenges are attributable to a number of factors, including:

- Limited onshore processing capacity for recoverable waste and lack of investment in infrastructure;
- Inconsistencies in waste classification systems and regulations across jurisdictions;
- Impact on business and individual’s confidence on Australia’s recycling system due to media reports on items being stockpiled rather than recycled;
- Disconnected data sources;
- Lack of end-markets for recyclable products; and
- High rates of recyclable packaging material go straight to landfill rather than being recycled.

Opportunities to accelerate progress toward a circular economy, achieve Federal and State waste targets and improve how recycled waste is managed include (but are not limited to):

- Investment in infrastructure, innovation and domestic

processing facilities to provide access to recovery pathways for waste materials and the manufacture of recycled products within Australia;

- Harmonising, improving and strengthening waste management planning, regulations and procurement practices to increase business confidence in long-term waste initiatives;
- Consolidating and standardising data to facilitate waste generation measurement, resource efficiency improvement, logistics optimisation and customer service enhancement;
- Government financial assistance to waste industry operators to support the upgrade of infrastructure and ensure the delivery of recyclable items that meet market expectations, which may be associated with a higher quality of recycled products;
- Further technology investment to provide reliable methods for capturing and validating data from source separation to disposal; and
- Stronger incentives to separate recyclable material from general waste and increase circularity in their disposal and recycling practices. Incentives may include additional rebates to improve collection and sorting, and penalties to discourage disposal of recyclable waste.

### Accelerating Progress in Waste Management

There are several measures that would enhance the ability of the aviation sector to significantly reduce waste to landfill and accelerate progress to Federal and State waste targets. These include:

#### Reviewing the current standards and requirements for biosecurity waste that apply to the aviation industry to identify opportunities to recover low-risk materials in favour of recycling and reuse.

Approximately 58 per cent of Qantas Group waste reported in financial year 2023 was generated through catering and in-flight operations, with a significant proportion of this disposed as quarantine waste. In New Zealand, collaborative efforts between Government and the airline sector under ‘Project Green’ have enabled unused items from international flights (typically classified as quarantine waste) to be triaged for reuse. A similar opportunity exists in Australia to recover valuable, low-risk materials in this waste stream through a national assessment of biosecurity requirements, which would see some waste items from inbound international flights reclassified.

#### Harmonising State and Territory based Container Deposit Schemes (CDS) to provide businesses that operate across borders with a standardised framework.

The emergence of different CDS among States and Territories has resulted in the proliferation of schemes with varying policy objectives. These differences increase cost and onus on manufacturers and suppliers to manage

<sup>11</sup> The Department of Climate Change, Energy, the Environment and Water – National Waste Policy Plan 2019. Link [here](#).

the 'export' of products between jurisdictions with a supplier operating across borders. A national scheme or greater harmonisation of existing schemes may improve program efficiency and greater success in achieving broader scheme goals. The Qantas Group recommends the Government pursue a national framework for CDS underpinned by a consistent approach and cross-jurisdictional oversight.

**Harmonising State and Territory single-use plastic (SUP) bans to provide clear directives to industry to mitigate adverse impacts.**

The discrepancies between the various State and Territory SUP bans have led to significant complexity for industry, particularly for airlines due to their cross-border operations. For example, Tasmania and the Northern Territory SUP bans are limited to single-use plastic bags, while other States list plastic stirrers, straws, cutlery, expanded polystyrene, coffee cups and cutlery. The Qantas Group recommends the development of a clear and consistent definition of SUP to ensure consistency and resolve industry uncertainty.

**Standardising approaches to compostable package disposal in organics waste treatment streams, with consistent acceptance criteria and a clear directive to industry to provide confidence on recovery opportunities.**

Current waste acceptance criteria vary across jurisdictions according to each local collection service, creating confusion for consumers on appropriate disposal practices and in some cases leading to contamination of organic materials in the compost process. A standardised disposal pathway and education program on how to recycle correctly is required to achieve high-quality end products. The Qantas Group recommends the Government provide a directive on the plan to standardise acceptance criteria to ensure that adverse effects from the introduction of compostable packaging can be mitigated.

**Developing policy regarding the use of municipal solid waste streams for conversion to bioenergy, including as a source of SAF.**

Bioenergy technologies can provide flexible, renewable energy from organic waste, and can support significant emissions reduction by diverting organic waste from landfills. With the introduction of policy, and incentives to further the commercial application of bioenergy technologies, Australia could facilitate the expansion of a domestic bioenergy sector.

## Operational and Fleet Efficiency

As the aviation industry transitions towards a net zero future, there is a strong need to explore innovative aircraft technologies and more efficient operations.

Airlines are already investing heavily in mitigating emissions by replacing current fleets with significantly more fuel-efficient aircraft.

Modernising our fleet with new, more efficient aircraft is a key aspect of meeting our climate targets. The Qantas Group has committed to improve fuel efficiency by an average of 1.5 per cent per annum to 2030 and will do this by:

- Focusing on flying and engineering practices;
- Investing in fuel efficient aircraft;
- Supporting broader airspace design and management initiatives requiring industry-wide collaboration; and
- Continuing to reduce fuel burn through efficient flight planning and airport operations.

The Qantas Group recently announced a multi-billion fleet investment that will see the Group take delivery of an aircraft every three weeks on average for the next few years. These next-generation aircraft reflect fuel efficiency improvements of up to 28 per cent.<sup>12</sup>

Opportunities for more efficient operations are addressed in Chapter 7 (Airport development planning processes and consultation mechanisms) of this submission.

The Qantas Group would welcome further collaboration with the Government to drive improvements in operational efficiency.

## Electrification and Hydrogen Powered Aviation

While SAF remains the highest priority in facilitating the aviation industry's path to net zero, electrification and hydrogen-powered aircraft form an important part of the suite of solutions that should be explored in the longer-term.

Most projections see a combination of battery electric, hydrogen and SAF-powered flights possible by 2050. However, the role of electric and hydrogen propulsion is often overstated in the short and medium term.

Even the most ambitious projections of its development still see the feasibility of electric and hydrogen propulsion limited to commuter and some regional flights – which represent around three to four per cent of emissions in the aviation industry. This largely due to airport, aircraft and fuel logistic infrastructure constraints around using hydrogen as a propulsion source and its lack of energy density, as well as the weight and operational limitations of batteries.

Globally, the routes and flights that would be suitable for alternative propulsion technology would only cover 20–30 per cent of current aviation emissions, leaving 70–80 per cent of emissions reduction reliant on SAF and efficiency improvements by 2050. In Australia, given longer average domestic sector lengths, the potential contribution is expected to be approximately 4 per cent to total sector emissions reductions by 2050.<sup>13</sup>

<sup>12</sup> Qantas Media Release. Link [here](#). <sup>13</sup> A4ANZ An Australian Roadmap for Sustainable Flying –Reaching Net Zero by 2050, pg 44. Link [here](#).



## Questions

**How can Government work with industry to ensure a strong and sustainable aviation sector that supports emissions reduction targets while growing jobs and innovation?**

The Government has established the Australian Jet Zero Council to bring together relevant stakeholders and lead efforts to deliver net zero in aviation. The Qantas Group considers this an important forum to coordinate industry and Government action to help the sector decarbonise.

While the establishment of the Jet Zero Council indicates positive momentum, it is important that the forum is used to implement immediate policy action to address the key challenges of SAF.

The Qantas Group recommends that the National Reconstruction Fund or Powering the Regions Fund be used to facilitate the implementation of the capital support and productive incentive policy recommendations outlined in this Chapter.

As SAF production presents a significant employment and skills opportunity in Australia's net zero transformation, the Qantas Group also recommends that SAF — as a potential new green industry — be a focus of the Net Zero Authority once it is legislated. If the recommendations outlined in the ICF Report are pursued, SAF production is forecast to create or sustain over 70,000 jobs by 2040, demonstrating its potential in growing and supporting regional communities.

**Given there are a number of measures that industry and Government could pursue to help achieve net zero by 2050 in aviation, are there specific measures that more emphasis and support should be given to?**

**What should be included in relation to aviation in the Australian Government's Transport and Infrastructure Net Zero Roadmap and Action Plan (including for sectors such as GA and airports)?**

SAF is the backbone of aviation decarbonisation and the establishment of a domestic SAF industry is the highest priority for the sector in achieving net zero.

The Qantas Group's views on the importance of, and need to prioritise, SAF are outlined in detail in the section 'Sustainable Aviation Fuel' above.

While electrification and hydrogen-powered aircraft form an important part of the suite of solutions to decarbonise aviation, these should be explored in the longer-term given current technological and logistic limitations.

**How can the Australian Government ensure all emitters in the aviation sector play a role in meeting Australia's emissions reduction targets?**

Climate change is a shared challenge that requires action from all in the aviation sector — including airlines, airports and suppliers.

As CORSIA enters the mandatory phase, all airlines will be captured and share collective responsibility to reduce

emissions in-line with baselines required under the scheme. Similarly, large emitters across the economy will face compliance requirements under the Safeguard Mechanism and help achieve Australia's emissions reduction targets. While certain parts of the aviation supply chain may not qualify as a facility under the regime, investment in renewable fuels infrastructure, electrification of facilities and ground equipment and other measures should be prioritised to ensure a uniform approach to climate action.

**What are the benefits and risks associated with updating the NGER scheme and/or other policy mechanisms to enable unique claims on SAF sourced through common infrastructure? How can risks be managed?**

The Qantas Group's views on the NGERs are outlined in detail in the section 'National Greenhouse and Energy Reporting Scheme (NGERS)' above.

**What types of arrangements are necessary to support industry confidence in the quality of standards and sustainability certification of SAF?**

Considerable investment has been made in building the foundations for SAF production. Research programs have developed viable technologies and extensive certification efforts have demonstrated that SAF production is safe and can be used with existing aircraft, airport and transport infrastructure. Over 450,000 aircraft have already flown using a blend of SAF.

The Qantas Group is working, through the Jet Zero Council, on proposals for SAF accounting measures, including preferred arrangements for voluntary consumer purchasing. The key objective for airlines is to unlock demand for SAF by providing a verified and effective means for aviation customers to purchase SAF, which in turn will accelerate the development of a domestic industry and enable corporates and organisation to tackle aviation-related emissions and be recognised for mitigation efforts.

Central to ensuring industry confidence in SAF and its tool in decarbonisation will be:

- Acceptance of a 'book and claim' custody approach, which will be critical in underpinning SAF purchasing as the industry scales;
- The acceptance of verified and transparent registries to operate a trust market for SAF certificates (including the issuance, transfer and retirement of certificates); and
- Establishing standard accounting and reporting guidelines to provide businesses with certainty and allow SAF to be included as emissions abatement in climate disclosures.

The Qantas Group will continue to work with Government in direct consultation and through the Jet Zero Council as these frameworks mature and their implementation to the Australian market progresses.

**Should policy and regulatory settings be refined to support development of domestic SAF production capability and industry take-up of SAF?**

A supportive policy framework — which addresses both the demand and supply challenges of SAF — is critical to drive the establishment of a competitive SAF and renewable fuels industry in Australia. Policy over a longer duration is essential to address investor uncertainty and cover the long timeframes that SAF facilities operate.

The Qantas Group's views on the policy settings needed to support a domestic SAF industry are outlined in the section 'Supportive Policy Settings' and in detail in the ICF Report contained in Annexure C.

**What are the current and future challenges in developing an Australian SAF production industry, including challenges associated with growing, refining and consuming feedstock?**

As the market for renewable hydrocarbon fuels is in its infancy, it cannot compete on price alone against the mature, entrenched fossil fuel industry.

The cost of production for all SAF technologies is at least several times the cost of production for fossil fuels, due to the differences in (1) scale, with SAF at the early stages of commercialisation, and (2) technical difficulty, with many SAF technologies requiring complex processes to convert sustainable feedstocks into liquid hydrocarbons. The aviation industry can only absorb or pass through very limited incremental costs for SAF.

Domestic feedstock has often been raised as a potential challenge to the scalability of SAF. However, as outlined in ICF's Report, 20–40 per cent of Australian jet fuel demand could be met through domestic biogenic feedstock, with additional potential from hydrogen.<sup>14</sup>

**How can policy and regulatory settings support research and development and subsequent investment in emerging low and zero emission technologies and related infrastructure?**

**What information and guidance is needed to support regional aviation's net zero transition in the context of these emerging technologies?**

SAF production combines several green technologies, catalysing the Australian low-carbon industry. Synthetic SAF, which has the potential to reduce emissions by up to 100 per cent, can provide a market for green hydrogen and a source of value for carbon capture.

The Qantas Group's views on other emerging low and zero emission technologies are outlined in the section 'Electrification and Hydrogen Powered Aviation' above.

<sup>14</sup> Page 20 of the ICF Report.



## CHAPTER 7

Airport development planning processes  
and consultation mechanisms

## Key points in this chapter:

### Noise

- A balanced approach to aircraft noise is required which gives due consideration to the higher emissions and environmental impact resulting from inefficient flight paths and procedures.
- Government should incentivise industry to invest in quieter and cleaner aircraft.
- Minor amendments to the *Sydney Airport Curfew Act 1995* (Cth) are needed to deal with the increasing demand for overnight freight movements.

### Flight Path and Airspace Planning

- Where possible, it is preferable to facilitate more fuel-efficient and less emission intensive flying through flight paths, air traffic management frameworks and resourcing.
- A comprehensive review of the Sydney Basin flight paths would deliver operational benefits and reduce related emissions.
- A broader introduction of Required Navigation Performance — Authorisation Required (RNP-AR) arrivals to Sydney and expanded use in Brisbane would improve community noise outcomes and operational efficiency.

### Community Consultation

- A review of the community consultation process with respect to development and noise is needed to ensure the process is clearly defined and has a definitive end point.

### Efficient Airport Planning

- A national register for Airport Master Plans and Major Development Plans and strengthening the guidelines within the *Airports Act 1996* (Cth) would improve the consultation process and increase transparency.
- The current monetary threshold of A\$25 million for Major Development Plans should be maintained.
- The PFAS Investigation Program at Australian airports should be expanded to identify the source and responsibility for PFAS contamination.



## Noise

The Qantas Group acknowledges community concerns about aircraft noise and continues to pursue efficiencies and implement the latest innovations in flight planning and air traffic management to mitigate its effect. Our aim is to optimise the flow of air traffic, reduce emissions and ensure that Australia’s airspace remains safe, secure and efficient.

It is critical that the impact of noise mitigation initiatives on efficiency and emissions reduction are quantified and properly understood. Noise concerns and mitigations often result in inefficient flight paths and operating procedures that result in increased track miles, higher fuel burn and emissions, which work directly against the sustainability objectives of the industry and the broader community.

### The Qantas Group’s Approach

The Qantas Group is committed to actively managing its noise emissions. As Australia is an ICAO contracting state, the Qantas Group must consider noise around airports within the framework of ICAO’s ‘Balanced Approach to Aircraft Noise Management’.

This consists of identifying noise at an airport and analysing the measures available to reduce it as follows:

- Reduction at source;
- Land-use planning and management;

- Noise abatement operational procedures; and
- Aircraft operating restrictions.

The overriding objective is to address local noise issues in the most cost-effective manner, without implementing undue operating restrictions.

The Qantas Group supports continued alignment with international standards for aircraft noise.

### Reduction at source

All Qantas Group aircraft meet or exceed ICAO’s aircraft noise standards.

The most effective way of reducing aircraft noise at the source is continual renewal of aircraft fleet types. Modern aircraft are markedly quieter than prior generations, and investment in new aircraft will continue to play a significant role in management of aircraft noise.

The Qantas Group has a major fleet renewal program in place, with deliveries already underway and continuing for at least the next decade. These state-of-the-art aircraft include the Airbus A320NEO family, the Airbus A220-300, the Boeing 787-9, 787-10 and the Airbus A350-1000 and will deliver a range of benefits such as lower emissions and improved mechanical reliability, and importantly, up to a 50 per cent reduction in noise footprint.

Figure 1 below, prepared by Airbus, compares the noise footprint of the A321 versus the A321 NEO over Sydney Airport.

Figure 1: 50 per cent Reduction in Noise Footprint



Qantas has also commenced the retirement of the older B717 fleet, with the first aircraft exiting service in June 2023 after 19 years of flying.

Given the role of technology in addressing noise, and the high capital cost of fleet renewal, the Qantas Group supports incentives for industry to invest in quieter and cleaner aircraft, such as:

- A noise dividend, whereby flying quieter aircraft could facilitate increased movements and avoid of operating restrictions without increasing the overall noise burden on the community; and
- Investment allowances and improved accelerated depreciation concessions.

#### Land-use planning and management

Effective land-use planning and appropriate zoning is critical, particularly for greenfield sites, to ensure that noise impacted residences are minimised and balanced with community needs for commercial aviation and freight growth. Once developed, residential areas are unlikely to be relocated or re-zoned and, it is therefore important to take an early and realistic view of the potential impacts.

Effective land-use planning also ensures that development around airports supports the requirements of aviation operations. Failure to ensure coordinated airport planning will incrementally decrease the usefulness, efficiency and value of airport sites. Subsequent variations to matters such as noise sharing arrangements, movement caps, curfews and aircraft approaches can impose a significant economic impact on airports, airlines and the broader community.

The Qantas Group supports the principles outlined in the National Airports Safeguarding Framework (NASF) regarding noise, as well as other benefits to aviation including turbulence and wind shear. Inappropriate development around airports can have safety, operational and efficiency implications for airlines with flow on effects for the viability of airports in terms of ability to provide the economic benefits to the areas they service.

Increased implementation of NASF mechanisms by relevant authorities as airports develop their Major Development Plans is critical to prevent negative implications on sector users. This should occur at an early stage of development in order to prevent unintended impacts and subsequent restrictions being placed on both airports and airlines. Given the relatively long lead time for these developments, unintended impacts can eventuate many years from initial development planning.

The Qantas Group supports increased collaboration between all levels of Government to ensure implementation of NASF principles in planning decisions.

#### Noise Abatement Operational Procedures

Aircraft manufacturers design aircraft, and airlines implement policies, to ensure aircraft operate in the most

efficient manner possible. This typically coincides with quieter operations and reduced emissions.

Noise abatement operational procedures are procedures which mitigate noise and include preferred flight tracks, runway nominations, tracking procedures and operation of the aircraft to minimise the impact of noise.

Some of the procedures used by the Qantas Group include:

- Noise Abatement Departure Procedures, which include a combination of utilising runway directions when weather conditions permit and tracking the aircraft in specified directions over the ground after take-off to minimise the impact of noise during departure. Additionally, continuous climb procedures are utilised to minimise the time the aircraft is at a lower altitude during departure;
- Noise Abatement Approach Procedures, which include Continuous Descent Operations where an aircraft descends continuously toward the runway at a lower (and subsequently quieter) engine power setting, without having a requirement to temporarily level off which requires additional engine power. Additionally, flight paths for the arrival are designed to manoeuvre around residential areas;
- Reduced Thrust Take-off, which means using advanced aircraft performance software to calculate the minimum amount of engine power required for the aircraft to be able to take off, as opposed to using the maximum available power, thereby reducing the noise produced by the engines;
- Minimum use of reverse thrust on engines after landing, depending on the available length of the runway. Often, with more runway length available than the minimum distance required for the aircraft to stop after landing, there is no requirement to decelerate and stop the aircraft as soon as possible. By allowing the aircraft to decelerate at a slower rate after landing, reverse engine thrust is not required, removing the requirement for the engines to provide increased reverse power;
- Single Engine Taxi In, which involves shutting one of the aircrafts two engines down after landing and taxiing to the airport terminal using one engine only. This effectively halves the amount of noise the aircraft is making whilst taxiing on the ground; and
- Participation in trial procedures at Brisbane Airport in order to develop innovative new ways of reducing noise impacts. Some examples include taking off from different parts of the runway that are further away from residential areas, as well as changing aircraft configurations and flap settings such that the aircraft can climb at a steeper angle after take off.

Sometimes the application of noise abatement operational procedures results in additional emissions, so the noise benefit must be carefully balanced with the impact to emission reduction targets. Some examples of this trade-off include:

- Noise Abatement Departure Procedure where take off is required in a certain direction in order to avoid residential areas. Often this requires taking off with a tailwind instead of the preferred option of departing into wind for performance and efficiency benefits. The tailwind component requires a higher engine power setting for the aircraft to be able to take off, resulting in increased emissions;
- Noise Abatement Approach Procedures often require the aircraft to track or manoeuvre laterally across the ground around residential areas to avoid the aircraft flying over them. This results in a greater distance the aircraft needs to fly in order to make its way to the landing runway and being airborne for a longer period, resulting in increased emissions for the flight than if the aircraft was able to fly a shorter, more efficient route to the runway. For example, Airservices estimates that manoeuvring aircraft over water at Brisbane Airport to minimise noise adds 37 nautical miles per flight and creates an additional 700 kilograms of carbon emissions per flight;<sup>1</sup> and
- Requirements to use ‘full length’ departures in the Brisbane trial, where the aircraft is required to take off from the far end of the runway results in a significant increase in taxi time for the aircraft and subsequently more emissions.

The Qantas Group welcomes continued opportunity to explore with the Government and the broader community any procedures which balance noise considerations with operational requirements and sustainability targets.

#### Aircraft Operating Restrictions

The Sydney Airport Long Term Operating Plan (LTOP) is a program which manages the aircraft noise associated with Sydney Airport. This plan was developed in the 1990s and there has been at least one complete refresh of airline fleets since that time, with another now underway. Notwithstanding this, there is no recognition of the actual aircraft noise footprint of aircraft since the LTOP was introduced and Qantas Group supports its review and modernisation.

The Qantas Group supports the Green Paper’s view that additional restrictions or curfews are not warranted and agrees that there should not be any significant change to the underlying curfew principles. The Qantas Group strongly supports the Government’s commitment to ensuring Western Sydney Airport will be curfew-free.

Balancing curfew requirements with the needs of the community and the broader aviation ecosystem can be challenging and community concerns about noise must be carefully considered.

Curfews reduce operational and commercial flexibility to grow and develop a variety of destinations and markets. They can be disadvantageous to many airports, including rapidly growing regional airports, by curtailing and inhibiting opportunities for further dispersion, growth and development of air services, tourism and other economic benefits.

The introduction of curfews across additional airports would reduce airline network efficiency and growth in capacity through higher aircraft utilisation, and drive duplication of infrastructure, likely leading to worse noise and environment outcomes.

The Qantas Group has long advocated for minor amendments to the *Sydney Airport Curfew Act 1995* (Cth) to deal with:

- The increasing demand for overnight freight movements, particularly given the curfew-free Western Sydney Airport is not scheduled to open until 2026; and
- Practical measures to deal with extraordinary weather and infrastructure events.

The Qantas Group operates to 14 domestic freight destinations across six States, directly connecting 14 international destinations with a dedicated freighter network. This is performed by dedicated freighters and complemented by belly space in passenger aircraft. The belly space of passenger aircraft on its own is insufficient to meet freight demand. For example, one A321P2F carries the equivalent of the belly space of around 14 narrow-body passenger aircraft.

Overnight freight is critical to the economy of New South Wales and the overall logistic freight infrastructure and network in Australia. It provides critical regional-to-city and regional-to-regional connectivity for express delivery, particularly next day delivery. Freight is generally lodged by customers during the day, delivered to the airport at the end of the retail day and flown overnight, and delivered by van the following day. This speed is particularly critical for supplies such as perishables, pharmaceuticals, medical equipment and human organs for transplant.

Overnight flying also reduces congestion during the peak daytime hours when passengers generally fly.

The demand for domestic overnight air freight in Australia has fundamentally changed over recent years. Qantas Freight overnight freighter volumes have increased by 22 per cent from a national perspective since financial year 2019 and 28 per cent in and out of Sydney Airport between financial years 2019 and 2023. Research conducted by Australia Post Group shows that e-commerce is continuing to grow, with 4.3 per cent more households shopping online in the first quarter of financial year 2024 compared to the previous quarter.<sup>2</sup>

Given Sydney Airport services Australia’s largest city and is a critical domestic freight market, this demand cannot be met without some flexibility with respect to the curfew, particularly before Western Sydney Airport opens in 2026.

The current restrictions on aircraft permitted to conduct critical overnight express freighter operations into Sydney Airport are antiquated. At present, the only aircraft permitted to operate these services is the British Aerospace 146 (BAE-146), which was designed in the 1970s, manufactured in the early 1980s and ceased production in 1993. The aircraft has resultant

<sup>1</sup> Article: Brisbane flight path changes push more aircraft out to sea. By Robyn Ironside, The Australian, 17 October 2023.

<sup>2</sup> Australia Post Inside Australian Online Shopping Quarterly Update July-September 2023, dated 11 October 2023. Link [here](#).



reliability constraints and as a smaller aircraft type, is particularly impacted by pilot shortages. For example, over the past six months, 82 per cent of freight services across the Qantas Freight domestic network that have been cancelled due to crew resourcing challenges were BAE-146.

Aircraft technology has significantly advanced in the past 30 years and freight aircraft are now markedly quieter than the BAE-146. Qantas Freight is currently modernising and simplifying its dedicated short-to-medium haul freighter fleet from six aircraft types to two, namely Airbus A321P2F and A330P2F aircraft, which both offer increased efficiency, greater capacity and improved sustainability outcomes.

In terms of noise, the A321P2F and A330P2F aircraft are both Chapter 4 noise compliant (the strictest noise level set by ICAO). In contrast, the BAE-146 is Chapter 3 noise compliant, which is the standard that was introduced in 1977 and superseded by Chapter 4 in 2006.

The A321P2F delivers a similar noise footprint to the BAE-146, but it has more than double the payload and a longer range. Figure 2 below, prepared by Airservices, compares the noise footprint of the A321P2F versus the BAE-146 over Sydney Airport.

Additionally, the A321P2F and A330P2F aircraft offer significant operational efficiencies. They can carry 12 tonnes and 32 tonnes more freight per movement respectively than a BAE-146, reducing the number of total flights required to meet Australian domestic freight demand. Further, BAE-146 aircraft do not have the range

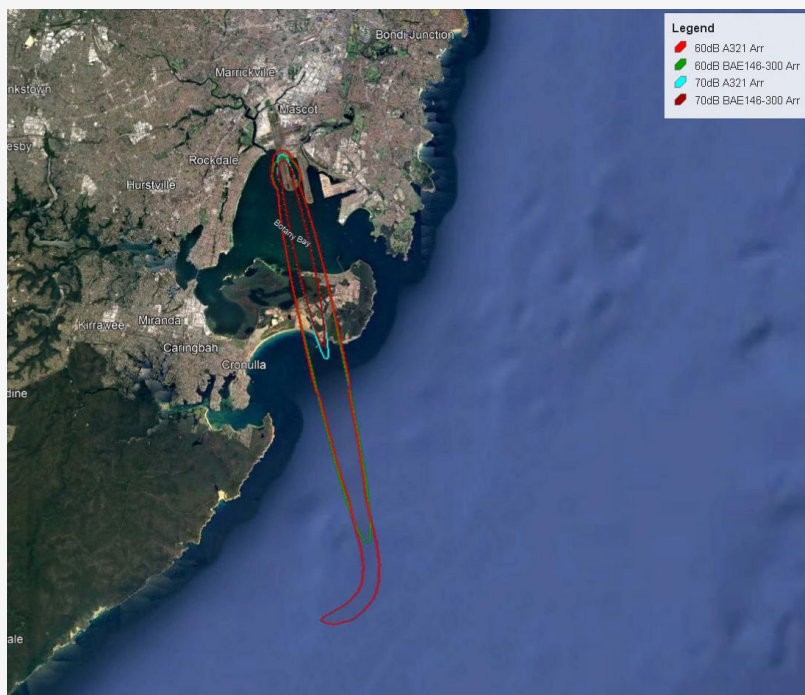
to complete all required routes. For example, an A321P2F can fly Sydney to Perth direct and a BAE-146 cannot. To complete the same route would require two BAE-146 aircraft carrying freight via Melbourne and transferring to an A321P2F onwards to Perth.

In addition to lowering emissions through more direct flying, the A321P2F delivers a substantial emission improvement over the BAE-146. Based on the fuel burn per aircraft and accounting for capacity differences, the Qantas Group estimates that the A321P2F reduces emissions per tonne of capacity by at least 33 per cent (subject to the aircraft variants) compared to a BAE-146.

On this basis, there is scope to review and modify certain aspects of the curfew to deliver additional flexibility and improved productivity per movement, while still meeting the original policy objectives and reducing noise.

Rather than referring to specific aircraft, Section 13 of the *Sydney Airport Curfew Act 1995* (Cth) (which refers to “BAE-146 and DC9 Aircraft used for freight”) should be amended to include noise criteria which would allow additional aircraft types to be utilised for overnight freight operations. The noise criteria could also be amended from time to time as technology and noise compliance standards evolve to ensure continuously improved outcomes. The result of this reform would be that all operating aircraft would feature a narrower noise footprint than the currently allowable BAE-146, emissions intensity per tonne of freight would reduce, and productivity would increase per aircraft movement.

Figure 2: Noise Footprint of A321P2F vs BAE-146



**60 & 70 dB (A) Contour Arrival slide**

**Inputs and assumptions**

- Modelled with AEDT v3e
- Standard arrival and departure profiles used
- Stage length 1 for departures (i.e. distance to destination <500NM)
- Base results for comparison purposes only, with no further attempt to calibrate outputs with measured data



This view was supported by the Productivity Commission’s findings in their 2019 inquiry into the Economic Regulation of Airports. The report found that alternative types of freight aircraft should be allowed to operate during the curfew, provided aircraft noise and the number of movements are not increased above current levels.<sup>3</sup> The Productivity Commission also found that the Sydney Airport curfew was inefficient, exacerbates unexpected delays and leads to more noise, failing the needs of the community and the aviation industry more broadly.<sup>4</sup>

If the Government is not minded to make a permanent amendment, some additional flexibility could be provided to meet demand for the period until Western Sydney Airport opens in 2026.

The Harris Review considered options for recovery for events such as weather, aircraft serviceability, security, safety, airport infrastructure constraints and force majeure. The Qantas Group supports amending the Curfew Dispensation Guidelines at Sydney Airport to facilitate recovery and better serve air travellers and the community at large.

## Questions

**Do you have comments on how the operation and effectiveness of the Noise Complaints Information Service could be improved?**

The use of parameters (distance from aerodrome and flight altitude) to define whether a case is recorded, investigated and reported on would ensure complaints are efficiently and appropriately prioritised.

**How could the Australian Noise Exposure Forecast (ANEF), and use of the ANEF in Government planning processes, be improved?**

While the ANEF system goes some way to providing an effective tool for planning purposes, it does not clearly articulate the impacts of aircraft noise around an airport.

This modelling is limited for two reasons, firstly as noise impacts vary on a personal level, and secondly, because the ANEF is an annual average figure, and actual daily impacts may vary greatly from the average.

In order to use the ANEF system for planning purposes, it must be supplemented with information that provides a more realistic representation of aircraft noise effects.

**What are appropriate, modern noise metrics that should be used to communicate aircraft noise impacts?**

‘A-weighted decibels’ (dBA) is the best available measurement of aviation noise, together with the use of Sound Exposure Level (SEL) footprint information.

**How can Governments better communicate with potential purchasers of properties which will be affected by aircraft noise in the future?**

The Qantas Group supports transparent measures to highlight noise implications to potential purchasers.

We are broadly supportive of obligations to place information on the title of noise-affected residences and for noise be included as a consideration in the sales process of any noise-affected residence and developers in the case of greenfield sites.

**How can new and different types of noise impacts from projected growth in drone use best be managed?**

Noise is just one impact of new technologies, which may extend beyond the boundaries of an airport.

Unmanned aerial systems and electric vertical take-off and landing aircraft introduce opportunities for the sector but represent challenges in terms of airspace, infrastructure planning and safety. A nationally harmonised airspace operational concept that accounts for new airspace users will ultimately be required to ensure the continued safe, efficient, fair and sustainable use of airspace.

**What can be done to proactively mitigate noise impacts by better informing residents and land-use planners?**

The Government has introduced the Brisbane Airport Community Airspace Advisory Board to better manage the question of aircraft noise in Brisbane and the Qantas Group welcomes the opportunity to provide specialist input to this forum.

The Qantas Group considers this an important forum to understand community concerns and to be able to inform and provide expertise on the technical drivers behind flight path planning, the impact of inefficient flying and initiatives to reduce noise.

**What else can airlines and airports do to support better management of aircraft noise?**

The Qantas Group’s approach to aircraft noise management is outlined in detail in the section ‘Noise’ above.

The most effective way of reducing aircraft noise at the source is continual renewal of aircraft fleet types. The Qantas Group’s significant investment in fleet will deliver up to a 50 per cent reduction in noise footprint and is an important contribution towards noise reduction.

As stated above, noise implications as set out in the National Airports Safeguarding Framework guidelines must be included in airport Major Development Plans to inform community expectations at an early stage of development and prevent unintended impacts and restrictions being placed on both airports and airlines at a later date.

**What can be done to facilitate increased adoption and implementation of the National Airports Safeguarding Framework principles for land planning to optimise land-use activity and reduce community impacts?**

Government agencies at all levels should maintain a record of proposed land-use for aviation, then

<sup>3</sup> Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, pg 2. Link [here](#). <sup>4</sup> Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, pg 29-32. Link [here](#).

actively manage public awareness on a continuing basis because there is routinely a long time between initial announcements of land-use and eventual implementation, for example Western Sydney Airport.

**Could governance arrangements for the Aircraft Noise Ombudsman be improved to provide greater independence, including publishing its findings and reports?**

The Aircraft Noise Ombudsman has observed that increased complaints occur when flight paths change, and these are typically associated with new aviation projects such as new runways. Airservices is responsible for creating flight paths to new runways. Accordingly, a direct reporting line to the Minister may be more appropriate to ensure that airport and runway design, land use and flight path design can be represented.

**Flight Path and Airspace Planning**

**Efficient Flying**

Safety is the Qantas Group’s number one priority and the overriding priority for the design of flight paths.

While noise is an important consideration, the Qantas Group is also committed to optimising flight operations through the most efficient flight paths. The Qantas Group’s Climate Action Plan sets interim 2030 targets towards net zero, and this includes fuel efficiency of an average of 1.5 per cent per year by 2030.

While there are times when inefficient flying is unavoidable, for example where adverse weather means a longer flight path is required to maintain safe operations, inefficient flight paths result in much higher fuel burn and significantly increased emissions. Even seemingly modest changes to flight paths result in a significant increase.

Figure 3 is a real-world example of the additional carbon emissions caused by a Traffic Information Broadcast by Aircraft (TIBA) event affecting Qantas Group flights in June 2023. All aircraft were required to fly a longer route to avoid uncontrolled airspace and this generated over 450,000 additional kilograms of emissions.

Given the millions of flights taken each year, there is a cumulative environmental impact of inefficient flight paths.

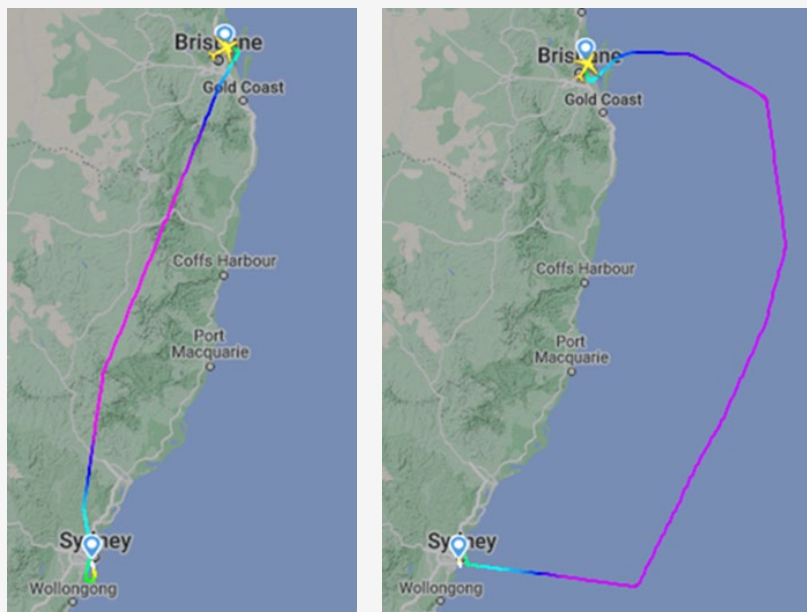
Some of the initiatives the Qantas Group has implemented to promote efficient flying include:

- Continual enhancement of airline operational fuel efficiency standard operating procedures and practices;
- Sophisticated applications which provide real time data on efficiencies and emissions on individual flights, enhancing day to day flight planning;
- Utilising FlightPulse, an analytical tool developed by Qantas and GE Aviation Digital which demonstrates the benefits associated with safely delivering operational efficiency, as a key pilot interface; and
- Rolling out ‘Constellation’, a flight planning system which enhances individual flight routes and altitudes based on actual weather and wind conditions to maximise efficiency.

The above initiatives have already reduced the Qantas Group’s carbon footprint by tens of millions of kilograms per year.

Where possible, facilitating more fuel-efficient and less emission intensive flying through flight paths, air traffic management frameworks and resourcing should be preferred. Without a systemic change in approach, this issue will only compound as the global fleet grows to meet demand and population growth.

Figure 3: TIBA Event 29 June 2023



- QF507 usual route compared to 29 June
- Byron airspace enacted TIBA from 0600–1330
- 107 Qantas Group Flights impacted
- Required re-routing accounted for approximately 469,670 kilograms of additional emissions

## Flight Path Design Principles

The Qantas Group supports Airservices' 'Flight Path Design Principles', including the key principles of Safety, Noise and Community, Efficiency and Environmental and Operational. As previously noted, where possible, more fuel-efficient and less emission intensive flight paths should be preferred.

Noise is an important consideration, but it should not have a disproportionate impact on Flight Path Design Principles, particularly given the significant environmental impact of additional emissions on sustainability targets.

## Community Engagement Standard

The Qantas Group supports appropriate community engagement in the design of flight paths.

Airservices has released its Community Engagement Standard and is expecting to spend A\$2 million per year on consultation, which will form part of the new pricing agreement with industry. Airservices should set clear and measurable targets associated with this spend to ensure it is achieving its aims.

The current timelines to engage are appropriate, but there is potential for this timeframe to be reset for every design iteration, even if the changes are moderate. This can create an open-ended consultation process without a clear end point. This should be revisited to ensure the duration of the consultation process is definitive and certain.

## Sydney Basin

The Sydney Basin presents several challenges for air traffic management, including:

- Complexities associated with long-standing noise sharing at Sydney Kingsford Smith Airport mean that there are inefficiencies associated with flight paths aimed at providing more equitable noise outcomes to the community which in fact introduce negative environmental and noise impacts by inefficient flying;
- The busy Defence aerodrome (Richmond), two civilian Class D aerodromes (Bankstown and Camden) and a very busy small recreation and General Aviation aircraft aerodrome (Wedderburn); and
- The development of Western Sydney Airport which will come online with a single runway operation in 2026 and expand over the decades to include a second parallel runway.

While aiming to support all operations in the Sydney Basin, the airspace structure and flight paths are currently overly complex, inefficient and considerably below best practice.

The flight path design process for Western Sydney Airport has been compromised by the requirement not to encroach on flight paths for Kingsford Smith Airport. The Qantas Group considers it a missed opportunity to not review the Sydney Basin flightpaths holistically.

The Qantas Group has already identified inefficiencies with the Western Sydney Airport flight paths which will negatively impact on the operations of the new airport and have broader environmental impacts. For example, city pair analysis shows significant additional track miles for the Melbourne and Auckland routes when compared to Kingsford Smith Airport.

While a review of the Sydney Basin will be completed when the second parallel runway is constructed at Western Sydney Airport, this is not scheduled until passenger numbers reach 37 million per annum which is projected to occur in around 25 years. A comprehensive review of the Sydney Basin flight paths now would deliver significant operational benefits, improve fuel efficiency and reduce related emissions.

## Required Navigation Performance – Authorisation Required (RNP-AR)

Sydney Basin does not have RNP-AR procedures. Air traffic control in Sydney uses radar vectoring for arriving aircraft. The intention is to share noise and to more effectively manage the unique environment in Sydney resulting from the LTOP.

While QantasLink Dash 8 aircraft have the requisite technology, in Brisbane they are not able to participate in the full availability of more efficient and accurate RNP-AR procedures available due to the required flight path and noise impact raised as part of community consultation.

Since the introduction of RNP-AR Australia has seen marked improvements in safety and efficiency while delivering requisite environmental benefits. In many cases this has also resulted in improved noise outcomes for the community due to the ability to design flight paths that overfly less populated areas. Utilising RNP-AR, particularly for aircraft arriving in Sydney on runways 34L and 34R, would result in a significant reduction in community impact by allowing operators to avoid populous areas as well as operating on more efficient flight paths.

The Qantas Group supports the introduction of RNP-AR arrivals to Sydney and expansion of RNP-AR in Brisbane to improve community noise outcomes and operational safety and efficiency and seeks the Government's support to engage with Airservices to develop procedures to deliver this.

## Questions

**Are there opportunities to improve transparency by publishing information about other decisions made by CASA, Airservices or airports around flight paths, and how aircraft approach and depart airports?**

The Qantas Group considers the current arrangements are fit-for-purpose.

### How can the flight path design principles be improved?

A more detailed outline of the Qantas Group's position on flight path principles is provided in the section 'Flight Path and Airspace Planning' above. The key areas for improvement are:

- Efficient flying: Structuring the flight path and air traffic management frameworks and resourcing to facilitate more fuel-efficient and less emissions intensive flying;
- A wholistic review of the Sydney Basin flight paths and air traffic management to deliver significant operational benefits, improve fuel efficiency and reduce related emissions; and
- The broader introduction of RNP-AR.

### How can the existing consultation framework be improved to facilitate efficient planning and development, while preventing environmental harm and ensuring continued access for aviation users?

One of the key challenges for industry is the uncertain nature of the process.

The current timelines to engage (up to 12 weeks for a level 1 change) are appropriate, however this can be reset for every design iteration, even if moderate.

The result can be an ongoing consultation process without a clear end point. This should be revisited to ensure the consultation process is definitive and certain for all stakeholders.

### Are Community Aviation Consultation Groups (CACG) working for the community? What are good aspects, and what can be improved?

The Qantas Group understands the importance of noise impacts to the community and supports the current CACG process.

Broader discussion and understanding of the balances and trade-offs between noise and emissions (often directly opposing) is essential to this process.

## Efficient Airport Planning

### Airport Master Plans and Major Development Plans

Airport Master Plans (MPs) and Major Development Plans (MDPs) set out an airport's long-term strategic vision and plans for key developments and form a key communication tool between an airport and its stakeholders. They inform airlines and the broader community of the planning principles, strategies and developments that an airport proposes. Airlines rely on these documents to understand future amenities and services for customers. As airport developments are predominately funded by airport users, these documents also inform airlines of the investment proposals that may drive future costs.

### Transparency and Process

In accordance with the *Airports Act 1996* (Cth), both MPs and MDPs must be released by airports as preliminary

drafts for public consultation prior to being submitted to the Minister for approval. However, there is a general lack of transparency which has resulted in downstream issues and the process could be streamlined and improved.

An airport is only required to notify relevant stakeholders of an MP or MDP by publishing a notice in any newspaper within the State it operates and then posting the documents on their website. This is an outdated means of notification for such critical documentation and requires interested parties to regularly check the websites of individual airports to stay informed. As a result, stakeholders will not necessarily know a consultation process is underway.

Although the *Airports Act 1996* (Cth) provides guidelines around the types and form of consultation, the guidelines state that they are "not intended to be prescriptive nor exhaustive". In the absence of detail, consultation processes are determined by airports and are inconsistent.

There is no transparency over the final form of the MPs and MDPs that are submitted to the Minister until they are approved. There are frequently substantial changes from the preliminary drafts provided at consultation phase and there is no consultation on these changes. There are also examples where the approval given by the Minister differs from the submitted documents without a reason being given.

There is also a lack of transparency about how an airport has considered feedback received during the consultation phase. It is very common for Qantas Group to provide feedback, for concerns to not be addressed and to never receive guidance on why.

Shortcomings in the consultation process have led to instances of restrictions being applied after MDPs are approved and construction is complete. For example, the new runway at Brisbane Airport opened in 2020. In 2022, the Brisbane Airport Post Implementation Review Advisory Forum (an independent advisory body established by the Government to provide advice to Airservices) implemented restrictions to the use of infrastructure approved in the MDP in the form of a year-long trial to remove intersection departures for aircraft departing on the new parallel runway. This trial is still in place 19 months later. These restrictions don't provide a material noise benefit and the Qantas Group estimates it will increase emissions by over 600,000 kilograms per year.

The cost of construction of this infrastructure is recovered by the airport through charging airlines. In this instance, this means airlines are paying for infrastructure they are prevented from using. There are obvious inefficiencies, broad cost implications and environmental impact when restrictions are imposed after approval and construction. Further, the risk of future changes creates significant uncertainty over future investment.

Once approved, there is also a general lack of visibility of the progress of projects. Stakeholders are not informed if



an airport is unlikely to meet an approved timeframe or if there is a request for an extension of time. For example, in 2015 Sydney Airport received approval to construct a hotel and a carpark. Through monitoring documents posted on Sydney Airport’s website, the Qantas Group is aware that in June 2021 a variation was approved, and in October 2021 the date to substantially complete the project was extended to March 2024. As construction has not commenced, it appears highly unlikely that either will be substantially complete by March 2024. We are not aware if a further extension will be sought or the intention for either of these projects, and Sydney Airport has only advised that both are under review.

The lack of transparency and inefficient process could be addressed by the following reforms:

- Strengthening the guidelines within the *Airports Act 1996* (Cth) to:
  - Set out a comprehensive and clear process for community and stakeholder consultation;
  - Require an airport’s submission to the Minister to detail the feedback received in the consultation phase, how such feedback has been considered and/or addressed and with a right of response from critical stakeholders; and
  - Require that any significant variations from the preliminary drafts to be subject to further consultation; and
- A national register to inform when MDPs and MPs are available for consultation and provide key details of approved documents, such as the validity period. This would be a simple, cost-efficient measure.

The Green Paper notes that there is currently no requirement for an airport to consider the emission implications of airport development or how access to people with disability will be ensured. Given the criticality of both issues, the Qantas Group supports reform in this regard.

While the process of submitting an MP or MDP can be costly and time consuming, it is appropriate given the economic significance, criticality and potential community and environmental impacts of the projects in question, and only arises every five to eight years (depending on the airport). If the consultation guidelines and framework are strengthened, it will enhance collaboration on airport planning which should improve subsequent MPs and MDPs and other planning activities, delivering cost efficiency.

### Monetary Thresholds

The current monetary threshold of A\$25 million for an MDP is appropriate. This is an important trigger to ensure there is appropriate consultation with stakeholders and appropriate controls can be implemented. An MDP includes the requirement to consult on environment, traffic and wind impact (among other things). While airports may argue this goes beyond planning provisions for similar development off-airport, developments in and

around airports can have unintended consequences on aeronautical operations. If the monetary threshold was removed or increased to A\$50M, there is a high risk that negative impacts including indirect impacts would go unassessed and unmitigated. For example:

- It is common that development projects requiring an MDP will indirectly impact aeronautical operations by generating additional traffic in and around the airport. It is also common that airports recognise roads as primarily an aeronautical asset and that increasing traffic volumes drive a requirement for them to further invest in road infrastructure. In most cases the airports seek to recover this cost from airlines and ultimately flying customers.
- Wind turbulence can have a significant impact on the safety of the runway. The requirement to complete an MDP ensures that wind modelling is completed and that any negative impact on the runway system can be mitigated through the design process.

In 2018, the threshold was raised to the current A\$25 million to account for the increase in construction costs since the initial threshold of A\$20 million was set in 2007. This represented a 25 per cent increase over 11 years. An increase from A\$25 million to A\$50 million would represent a further 100 per cent increase in only five years.

The *Airports Act 1996 – Airports Amendment Act 2018 Guidelines* (Cth) also provides the Minister with the ability to increase the threshold every three years as required and specifies what items should be included and excluded when considering the cost of construction. This mechanism provides suitable protection against any rising construction costs. In 2021, the option to increase the threshold was not taken.

If the thresholds were to be increased, new and additional measures would need to be introduced to ensure critical matters such as traffic and wind are still assessed.

### The dual till model

The Green Paper states that “The long-held, bipartisan policy enabling airports to draw income from non-aviation, commercial development has been accepted by past Governments as a way to enable investment in aviation infrastructure and has largely been successful.”

The Qantas Group disputes that the dual till model in Australia has been largely successful. The dual till model results in higher aeronautical charges and effectively enables monopoly airports to charge unregulated rents for non-aeronautical assets such as car parking, retail and lounges. Revenue from non-aeronautical assets is not drawn on by monopoly airports to facilitate investment in aviation infrastructure, rather it facilitates the super-profits of monopoly airports.

The Qantas Group’s position on the economic regulation of airports, including the profitability of airports, is outlined in detail in detail in Chapter 4 (Economic regulation of Australian airports) of this submission.

### Coordination of freight on and off airports

The Qantas Group supports initiatives to better coordinate freight activities on and off the airport. The National Freight and Supply Chain Strategy aims to facilitate improved coordination and the Qantas Group welcomes further engagement with the Government as part of its ongoing review process.

The Qantas Group supports the sharing of non-commercially sensitive data within the freight community to improve processes. Digital technology advances and investment in platforms which facilitate the real-time flow of information and updates, such as the National Freight Data Hub, will allow freight stakeholders both on and off airport to more efficiently coordinate the movement of freight and respond better to operational issues. The European Cargo community has already established a collaborative hub to better align stakeholders with airport activities. It is essential that any platform is a 'single record' aligned with international data sharing standards, including IATA's One Record.

Airports also have existing processes in place to coordinate their operations (for example, that enable other airports to track delays which may impact their own operations) and these could be leveraged to activities beyond the airport such as freight.

Incompatible land-use around airports can impact freight operations and growth opportunities. The area around Sydney Airport is already congested which prevents significant expansion. Aligning land-use planning around airports, particularly newer airports such as Western Sydney Airport, will lead to greater freight movement efficiencies.

Additionally, aligning Government and Departmental resources to demand will also promote efficiency in the freight market. Many key Departmental officers associated with cargo operations are only available during traditional working hours. With varied resourcing and advances in technology and a risk-based approach to clearance activity (discussed in more detail in Chapter 8 (Fit-for-purpose agencies and regulations) of this submission), the Qantas Group contends that the process could be expedited to allow export and domestic freight to be cleared and delivered more efficiently.

### Environmental Regulation at Airports

The Qantas Group welcomes the Australian Government's efforts to conduct a nation-wide PFAS Investigation Program at Australian airports. However, the PFAS Airports Investigation Program in its current form is focused on identifying the extent and nature of PFAS impacts across Australian airports and does not seek to identify the source of PFAS contamination, determine responsibility for PFAS contamination or remediate source zones of PFAS contamination.

Without identifying, understanding or remediating the source zones of contamination, the program will

be ineffective at managing and/or reducing the off-site migration of PFAS due to the well documented ineffectiveness of management measures at preventing PFAS from mobilising into the environment. Regulation and remediation of source zone areas is required for the program to be effective.

Occupiers of impacted sites should not be unfairly burdened with remediation costs to implement PFAS management solutions for contamination not caused by them.

### Questions

**How could the Australian Government improve regulation to facilitate efficient planning and development while preventing environmental harm and protecting airports for aviation use?**

The Qantas Group recognises the value of a robust regulatory process for planning and development projects at Australian airports and appreciates the complexity associated with achieving a more efficient development process that also maintains a focus on preventing environmental harm. While there are instances where these objectives conflict with one another, the Qantas Group has identified several opportunities that the Government may wish to consider to simultaneously improve environmental performance and facilitate a more efficient planning and development process across Australian airports, including:

- The planning and development approvals and permitting process varies significantly from one airport to another. The *Airports (Environmental Protection) Relations 1997 (Cth)* (the Regulations) do not provide explicit requirements. This has led to airports developing their own policies, contaminated sites strategies, incident reporting and escalation processes. This creates confusion for operators that are operating across multiple ports, inefficiencies and increases the risk of non-compliance. Harmonising the planning and development process at Australian airports would significantly improve transparency and facilitate a more consistent and efficient planning and development process for airports tenants. The Government may wish to consider engaging with airports to discuss opportunities to develop a nationally consistent approach to simplify, streamline and harmonise the planning and development process;
- The Regulations include limits for pollutants in soil and water. This approach is inconsistent with the risk-based approach outlined with the National Environmental Protection (Assessment of Site Contamination) Measure as amended in 2013 (NEPM). The NEPM does not include limits for pollutants in soil and water, but instead includes investigation levels and screening levels which trigger the requirement for further investigation. The risk-based approach outlined within the NEPM also supports the development

of site-specific assessment criteria and favours a more proportional approach to contamination management. Transitioning away from the use of limits towards the application of screening levels would provide a framework that is sufficiently preventative of environmental harm whilst also supporting development practices more aligned with the principles of ecologically sustainable development;

- Currently there are no standards, screening criteria or guidelines that support the reuse of soil, surface water and groundwater on-site. Consistent with the principles of a circular economy, the Government may wish to consider engaging with airports to derive site-specific reuse suitability criteria for building materials, soil, surface water and groundwater. Such criteria would enable the principles of circular economy and ecologically sustainable development to be embedded with a development project at the design phase, ensure that adequate controls are in place to prevent environmental harm, assist the aviation industry to achieve its sustainability targets and enable a more transparent planning and development process across Australian airports. An example of a possible framework which may be suitably adapted to Australian airports is the New South Wales Environment Protection Authority Resource Recovery Orders and Exemptions, which clearly outline individual testing requirements for material reuse to support the principles of ecologically sustainability development without increasing the risk of land contamination; and
- Preventing environmental harm through efficient and proactive planning and development goes beyond just regulation. Government should encourage airports to work with airline tenants from the early planning and development stages to best incorporate key infrastructure to reduce potential future environmental harm as well as utilising airport space more effectively for aviation use.

With the Regulations sunseting in 2025, the Qantas Group looks forward to participating in a broader consultation process in due course.

**Is a monetary threshold still an appropriate mechanism for determining a 'major airport development' requiring a Major Development Plan (MDP)? What other significance tests could the Australian Government consider?**

The Qantas Group supports maintaining the current monetary thresholds. We believe the current legislation provides suitable protection against rising construction costs and if the monetary threshold was removed or increased, there is a high risk that negative impacts would go unassessed and unmitigated. This point is addressed in more detail under the heading 'Airport Master Plans and Major Development Plans' above.

**Do current master planning processes adequately account for climate risks and if not, how could they be improved?**

Global warming is a shared challenge and one that requires action from all in the sector, including airports. Climate change has been identified as a material business risk to the Qantas Group and we are investing accordingly.

It is unclear how airports are actively accounting for climate related risks rather than just transferring these on to users of the airport.

While high level targets and overarching sustainability comments are often made in MDPs and MPs, there is no disclosure of how these are going to be tracked or met.

Sustainability targets and the risk posed by climate changed should be accounted for in planning documents as critical and capital intensive as MDPs and MPs, and there should be a mechanism to track progress against targets.

**Do the current master planning processes support all airport users, including general aviation?**

The lack of transparency in the MDP and MP process does not adequately support all airport users and all interested stakeholders would benefit from the reforms described in more detail under the heading 'Airport Master Plans and Major Development Plans' above.





## CHAPTER 8

Fit-for-purpose agencies and regulations



## Key points in this chapter:

### Role of Government Agencies

- Inter-agency responsibilities should be clearly delineated with a focus on greater cross-Departmental synergy.
- A single whole-of-border security agency, working under a single piece of border legislation, would provide enhanced efficiency.

### Cost Recovery

- Any additional cost to industry arising out of a review of the charging methodology for CASA should be minimised.
- The performance of Airservices should be tracked and reported against clear targets to ensure benefits are being delivered for the proposed increase to fees.
- The aviation security regulatory framework should be designed and implemented based on threat and risk principles, with due consideration to escalating costs of security measures.
- The responsibility for the cost of security should be aligned with the entity responsible for the desired strategic outcomes.
- The Passenger Movement Charge should be utilised to fund aviation-specific initiatives rather than forming part of general revenue.

### Safety Regulations:

- Increased transparency and industry input to regulations would ensure an outcome-based approach to safety regulation.
- Increased mutual recognition and international alignment would facilitate operational and sustainability initiatives across industry.
- Increased consultation between CASA, Airservices and industry would facilitate more accurate airspace risk assessment and monitoring.

### Airspace Regulations

- Where deemed necessary, the introduction of low-level Class E airspace as part of a graduated model would increase safety assurance within the air traffic management environment.
- The fast-tracking of digital control towers and OneSKY would deliver significant efficiencies.
- Aircraft owners should be encouraged to upgrade avionics to incorporate ADS-B through continued Government subsidies.

### Security Regulations

- An aviation maturity model, where mature and capable aviation industry participants operate under a Security Management System is a preferable outcome to a traditional compliance-based framework.
- The *Aviation Transport Security Act 2004* (Cth) should be amended to provide power to the Department of Home Affairs to grant on request an alternative method of compliance and to vary a regulatory requirement with a specific Aviation Industry Participant (AIP) or class of AIP.

### Background Screening

- Individual biometric identity should be included on the MyGov platform, or as part of the Digital ID system, for use in Aviation Security Identification Card (ASIC) applications and airport access control.
- The background checking regime should be 'live' rather than a point-in-time.
- A working with children background check should be included for all ASIC applicants.

### Security Screening

- A single national Screening Authority should be established.
- The 40 Seat Rule should be abolished and all Regular Public Transport operations (regardless of aircraft size or propulsion or airport) should be a Screened Air Service.

### Passenger Facilitation

- Cross-functional working groups should be established as an interim measure until a single whole-of-border agency is formed.
- The existing border legislation should be reviewed to allow seamless travel for crew and passengers.
- The inbound passenger card should be removed.
- Digital travel credentials should be established.

## Role of Government Agencies

The Qantas Group appreciates the opportunity to comment on the existing framework and the roles and responsibilities of the multiple Government agencies with oversight of aviation.

There is an opportunity to clarify responsibilities, improve processes and optimise interactions between Government agencies.

### Safety and Airspace

Closer collaboration between CASA and Airservices on future growth and the associated overlay of safety requirements is required to facilitate appropriate prioritisation of infrastructure spend and agency resourcing.

A clear delineation of responsibility for safety oversight and direction between agencies is also essential to ensure a risk-based approach to safety regulations. There is currently a lack of clarity around the allocation of responsibilities on some issues between CASA and Airservices and a need for greater cross-Departmental synergy.

For example, in June 2022 an industry submission was made to CASA to increase the crosswind limitation at Sydney Airport (which drives the requirement to reduce to single runway operations) from 20 knots to 25 knots. Increasing parallel runway operations drives significant operational efficiency and cost savings and relieves delays and cancellations caused by single runway operations, while maintaining safe operations. In this case, neither agency considered the decision entirely within its remit, and there was no clear process to facilitate a joint decision. The result was no decision was taken and the question remains unresolved.

Future challenges in Australian aviation will require Airservices as the air navigation service provider to continue to focus on safety and efficiency with an emphasis on sustainability. In that context, the Qantas Group supports additional CASA regulatory oversight of Airservices to ensure air traffic management in Australia continues to achieve the highest safety standards as well as supporting industry efficiency and sustainability targets.

### Australian Transport Safety Bureau (ATSB) Risk-Based Approach to Investigations

The Qantas Group supports a risk-based approach to regulation, safety management and investigation and supports the Green Paper's assessment that widening the remit of the ATSB is not required.

In 2022, the *Transport Safety Investigation Regulations* were amended to move the ATSB away from a purely prescriptive to a risk-based and outcome-focused approach. This has been an important transition which facilitates learning for the industry as a whole and a more efficient focus on new and emerging safety risks.

With the projected increase in eVTOL and advanced air mobility technology which will inevitably change the aviation risk landscape, risk-based allocation of resourcing to ATSB investigations is essential.

### Border Agencies

There is some duplication and inconsistency between the Australian Border Force (ABF), the Department of Immigration & Citizenship and the border functions of the Department of Agriculture, Fisheries and Forestry (DAFF).

Merging these responsibilities into a single whole-of-border agency, operating under a single piece of legislation, would offer a range of benefits, including:

- Streamlining processes;
- Removing many day-to-day blockages;
- Creating a coordinated vision for the future;
- Removing the siloed operation of separate Departments with respect to policy development and technology research;
- Minimising bottle necks and delays to whole-of-border solutions; and
- Better aligning the border and trade outcomes desired by Government and industry.

There currently remains a disconnect between border agencies which has the potential to adversely affect efficiency.

For example, earlier this year the ABF provided industry with a draft Simplified Trade System outlining the potential introduction of 'post clearance of goods'. Under the proposal, the ABF will risk assess the supply chain and compliance history of parties and where deemed acceptable, importers can gain access to their goods upon importation and can process the required import declarations, in bulk, at a later time. If implemented, this will facilitate speed to market, which is particularly important for the importation of aviation equipment and aircraft parts. Unfortunately, there is no corresponding work being undertaken by the DAFF. Without alignment and support of all relevant Government agencies, the benefit is materially reduced.

A further example is the ABF's 'Trusted Trader' program. This is a free and voluntary program administered by the ABF to accredit businesses who can then access simplified customs processes. This program affords accredited businesses with limited risk-based concessions and includes the appointment of an ABF account manager as a single point of contact on border matters to:

- Improve compliance;
- Where appropriate, resolve any border clearance issues impacting supply chain or trade compliance; and
- Internally connect the right people across the ABF.

However, again there is no alignment or similar program within the DAFF, reducing the benefit of these improvements.

It is common for there to be issues that involve both the ABF and the DAFF, yet there is no appropriate mechanism to engage both agencies. For example, the ABF account manager may resolve a regulatory process involving their jurisdiction, however there is no process for them to refer the matter to the related area within the DAFF as there is no DAFF ‘account manager’ or similar.

On the passenger side, currently the ABF are working on ‘Future Travel Initiatives’ and the DAFF are separately trialling pre-arrival baggage screening (via the Biosecurity Operations Division). An overarching program within a single whole-of-border agency would provide enhanced benefits through sharing of resources, expertise and funding.

In the biosecurity area there is also a need for a whole-of-border agency approach to implement a ‘green lane’.

The Qantas Group is a large importer of civil aviation aircraft parts, processing around 40,000 import transactions per year in connection with the servicing of aircraft. These parts are IATA compliant which means they must be of a high standard of cleanliness and suitable for immediate use.

Rather than a ‘one size fits all’ approach to inspections, certain low-risk parts could be fast-tracked under the regulation of a single agency. For example, car tyres are earmarked for inspection due to their open design resulting in the possibility of insect infestation. Aircraft tyres are a sealed design making insect infestation highly improbable, but both are treated the same.

The ‘one size fits all’ approach, absence of a green lane and requirement to inspect parts that are already certified to IATA standards often means a delay in delivery of time-sensitive components, impacting airline operations.

#### Case Study: Inefficient processing of parts

In 2023, a Qantas Group aircraft was in Melbourne awaiting an oxygen bottle to clear importation. The aircraft was due to leave Melbourne on 9 September with 220 passengers booked.

The timeline of the importation of the oxygen bottle was:

- 4 September: Oxygen bottle arrived in Australia.
- 4 September: Customs declaration completed by Qantas’ Customs Broker.
- 4 September: The declaration was flagged for biosecurity processing.
- 6 September: Inspection of the cylinder booked for 11 September.
- 7 September: Qantas flagged the urgent nature of inspection through multiple channels.
- 8 September: Inspection completed. There were no issues with the part and it was cleared.

## Questions

**Do you have concerns with current arrangements of roles and responsibilities within the Australian Government? Are there opportunities to improve these arrangements?**

As set out above, the Qantas Group considers there is a need for a clear delineation of responsibility between CASA and Airservices for safety oversight to ensure a risk-based approach to safety regulations.

In respect to security, the Qantas Group experiences frequent duplication and inconsistency between relevant Government agencies and recommends the establishment of a single whole-of-border agency, working under a single piece of border legislation.

## Agency Funding and Cost Recovery

Removing cost from the aviation ecosystem is difficult and every participant has a role to play. Attention should be given to ways to reduce the cost of providing services while preserving and improving service continuity, security, efficiency and safety. Continuing demands on the performance of critical safety regulatory, service and investigation functions will continue to place funding pressure on Government and industry.

### CASA

The Qantas Group supports a review of CASA’s charging methodology, which is currently undertaken by way of a fuel excise.

Any new funding regime:

- Should minimise the imposition of additional costs to industry;
- Should not involve the domestic industry subsidising any lost costs from international flying;
- Should not require existing airlines to subsidise the regulation of eVTOL (drone) aircraft. Instead, CASA should impose fees on commercial drone operators, particularly as the market for commercial drone operations grows;
- Must remain cognisant of the need to stimulate demand in the Australian aviation industry and the implications of any additional levies or charges for demand; and
- Should include appropriate legislative or regulatory measures to prevent airports from passing on the cost to airlines (which will ultimately flow to passengers) and potentially applying an additional margin.

A series of the options or models under consideration would be required for industry to provide more detailed feedback. However, the following are potential options:

- International models, which use per passenger or aircraft charges, such as that adopted in New Zealand. The Qantas Group supports a model based on a per passenger charge on domestic and international services as a more reasonable allocation than a model based on aircraft take-off weight basis;

- Introduction of a landing fee on domestic and international operators. In the long-term, the Qantas Group conditionally supports such an option, however an appropriate split of costs between international and domestic operations is critical; and
- Payment of an aircraft registration fee to simplify charging for airlines and General Aviation. The Qantas Group is broadly supportive of such a model provided it would result in no additional cost to airlines. This would likely lead to easier identification and increased visibility of other General Aviation operators.

**Airservices**

Airservices is funded by airspace users through air navigation charges. These charges cover the cost of services provided by Airservices including air traffic controllers and maintaining infrastructure.

There is an ACCC process currently underway to review Airservices’ proposal for increased fees, including a six per cent increase over the next three years. The proposal is not accompanied by a clear outline of the benefits it is proposed to deliver.

The Qantas Group is concerned by the proposed increase in fees in circumstances where Airservices

has not delivered the OneSky program, has not provided consistent services and was responsible for close to 20 per cent of delays at the country’s four biggest airports in financial year 2023.<sup>1</sup> There should be a requirement for Airservices to track and report on performance against clear targets to ensure benefits are delivered for the increased cost.

The inconsistency of service is demonstrated by the concerning increase in Traffic Information Broadcast by Aircraft (TIBA) events. A TIBA event occurs when usual air traffic control services are unavailable, and pilots are responsible for self-separating their aircraft from other aircraft in airspace by broadcasting their whereabouts. This was once an extremely rare event (almost unheard of in Australian airspace) and typically only in a crisis or other short-term outages (for example, fire alarms in control centres) or occasionally longer outages associated with protected industrial action (most recently in 2008).

Generally, it is used in countries with significant challenges providing air traffic control (for example, Afghanistan or in remote areas).

Between October 2022 and September 2023, there were 236 TIBA events affecting 1,392 Qantas Group flights, as detailed in Figure 1 below.

Figure 1: TIBA events Qantas Group flights FY23



<sup>1</sup> Airservices Australia Australian Aviation Network Overview Financial Year 2023. Link [here](#).



For safety reasons, the Qantas Group will only operate in TIBA airspace when there are no other options or with appropriate additional procedures to manage the operation. Accordingly, TIBA events significantly impact operations, causing delays, cancellations, re-routes and procedures by flight crew to manage the temporary outages. Further, where pilots are forced to fly around uncontrolled airspace, this significantly increases fuel burn and emissions. The Qantas Group experienced more than 100 delays and 10 flight cancellations in one day in June 2023 after airspace near Brisbane was closed due to an insufficient number of controllers.

This issue extends beyond the Qantas Group to the broader industry. A survey of 5,500 members by the Australian Federation of Air Pilots found almost a third were experiencing delays several times a month because of airspace restrictions.<sup>2</sup>

Airservices has embarked on a rectification program called PACE — Performance and Customer Experience. The Qantas Group appreciates this focus on rectifying the significant amount of service variations that have occurred since 2021.

To date, set targets have not been met in full, particularly regarding the volume of TIBA events and rectification timelines in the Byron and Coral air traffic control groups.

It is critical that PACE delivers:

- A return to service levels with no TIBA events;
- Air traffic control tower hours as outlined in ERSA (Enroute Supplement Australia) and GDP (Ground Delay Program); and
- Airport acceptance rates unencumbered by staffing constraints.

### **Border security and biosecurity**

The development of security regulations should be based on identifying and managing current and emerging threat and risk. Notwithstanding this, it is important that consideration is given to the escalating costs of security measures, particularly those mandated by the Government.

In circumstances where the security infrastructure at airports is recognised as part of Australia’s critical national infrastructure and a secure aviation environment brings broader economic benefits to the general community, the Qantas Group is concerned by the trend of airlines bearing the costs of security measures which are more appropriately covered, partly or entirely, by Government. Present arrangements require the aviation industry to fund almost the entire security infrastructure at Australian airports.

In keeping with Government policy in other key areas of national security and critical infrastructure, the cost of

specific areas of security should be funded by the entity responsible for delivering the desired strategic outcome of the security.

The aviation industry should remain responsible for the provision and funding of protective security measures for their operations.

While airport operators install and manage security requirements, they recover their costs from airlines. The scope of costs for security screening varies significantly between airports. A standard mandated security charge would provide greater certainty and transparency to the industry.

Currently, airlines only recover some of their security costs from passengers through charges levied on airfares. Placing the responsibility of most security costs on airlines, particularly given the ongoing increases to security costs, will ultimately have a detrimental impact on the long-term trend of airfares.

In order to more appropriately divide security costs, the monies raised by the Passenger Movement Charge (which will increase from A\$60 to A\$70 per passenger from July 2024) should be returned to the aviation sector, including to fund aviation security measures such as a single screening authority and improved passenger facilitation, rather than being distributed into consolidated revenue.

In addition, the Government could provide financial incentives to the aviation industry to acquire and maintain a leading-edge security capability, notably in relation to expensive specialised security equipment. Given all tested and approved aviation security screening equipment is manufactured overseas, the Government could indirectly assist industry with tax and import incentives and/or exemptions to incentivise airlines and airports to invest in the most current technologies available, facilitating better security outcomes.

## **Questions**

**What should the Australian Government consider when determining cost recovery arrangements to ensure a safe, equitable and accessible aviation system?**

### **Safety**

The Qantas Group supports a review into the charging methodology for CASA, noting the important role this agency plays. We look forward to further consultation with the Government when the models under consideration are available.

We have outlined potential options for cost recovery above. It is critical that any new funding regime should minimise additional cost to industry.

<sup>2</sup> Article: Flying blind: Pilots slam chronic shortage of air traffic controllers. By Robyn Ironside, The Australian, 14th July 2023.

## Airspace

As outlined above, the Qantas Group is concerned by the proposed increase in Airservices' fees given the delays to the OneSky program and inconsistent services provided, and the substantial cost burden this has placed on airlines.

There should be a requirement for Airservices to track and report on their performance against clear targets to ensure benefits are being delivered for the increased cost.

## Security

The aviation security regulatory framework should be designed and implemented based on threat and risk principles, whilst considering the escalating costs of security measures.

The cost of specific areas of security should be funded by the entity responsible for delivering the desired strategic outcome of the security.

The Passenger Movement Charge should fund aviation-specific requirements including a single screening authority and improved passenger facilitation.

## Safety Regulation

Safety is the Qantas Group's first priority.

The Qantas Group supports a risk-based and outcome-focused regulatory philosophy. This approach to regulation apportions a greater responsibility for safety outcomes to industry by being less prescriptive and allows industry to apply a risk-based, systemic approach. This facilitates a greater level of flexibility and efficiency while maintaining the highest levels of safety and is supported by ICAO's standards and recommended practices of international aviation authorities.

The Qantas Group supports CASA's move away from a purely prescriptive approach towards a risk-based and outcome-focused approach. We also support reforms to align Australian regulation with international standards, particularly EASA, FAA and CAA (New Zealand) policies and positions.

### Airspace Risk Modelling System (ARMS)

ARMS is a risk management tool developed by CASA which uses algorithms and other data to assess airspace risk.

The outcomes produced by ARMS frequently do not align with industry's assessment. For example, ARMS has produced assessments that no change is required to specific airports and regions where aircraft operators have identified that remodelling the designation of airspace would mitigate growing challenges with airspace congestion. While these operations remain safe, there is opportunity to improve efficiency and safety outcomes.

It is unclear what metrics are used by ARMS to determine risk. The output of ARMS would be enhanced by increased engagement and input from industry into the metrics.

## Data Sharing Initiative

The Qantas Group does not support the data sharing initiative proposed in the Green Paper. While initiatives to improve safety through collaboration and transparency between industry and Government are welcome, Qantas does not consider that the proposal will deliver material safety benefits that would outweigh concerns about the confidentiality and security of data in circumstances where the current system of data sharing with CASA and the ATSB is aligned with ICAO principles and remains fit-for-purpose.

## CASA Reforms

CASA's current approach to the consultation, transition and implementation of the flight operations sections of the *Civil Aviation Safety Regulations* represents a significant improvement over the previous industry consultation methods. The framework of having senior industry representatives reporting via an independent chair to the Director of Aviation Safety, with dedicated Technical Working Groups has facilitated the current progress.

The Qantas Group supports CASA reducing its targeted response times to industry for submissions, applications and proposed changes. This will deliver efficiencies, safety improvements and cost saving initiatives sooner.

CASA and industry would also benefit from the increased use of outcome-based compliance wherever possible. This would enable mature operators with enhanced capabilities to use those enhanced capabilities to identify and manage risks in a safer, more flexible and more efficient way, without preventing smaller operators from using a prescriptive compliance option. It would also enable CASA to more appropriately focus on the processes used to manage those risks.

Some important outcome-based pathways already exist such as alternate airport planning, fuel policies, training and checking systems for flight and cabin crew and fatigue risk management systems. Despite this, at times, CASA has continued to apply a prescriptive approach which prevents mature operators from fully utilising these pathways. This contrasts with the approach of EASA and FAA who are actively supporting performance-based outcomes to reduce cost, excess fuel carriage and emissions, while better managing actual rather than theoretical risks. This enhancement could be delivered by airlines with appropriate capabilities and maturity collaborating more closely with CASA on the management and oversight of performance-based compliance.

The Qantas Group participated in a recent CASA review of Part 172 legislation for Air Traffic Service Providers and supports the key aims of this review, including clarifying accountable manager and key personnel requirements and the numbers of suitably trained and qualified personnel. It is hoped that the changes envisaged will begin to address the high number of services variations that have been implemented by Airservices in the past year, which have had significant operational implications.

## Mutual Recognition and International Alignment

The aviation sector is highly regulated and operates within a complex global bilateral framework. The Qantas Group supports the Government's commitment to increasing mutual recognition and other arrangements with international aviation authorities and welcomes its involvement in various international forums including the ICAO Council, FAA-EASA International Safety Conference and the National Aviation Authority (NAA) Network.

The move towards ICAO standards and recommended practices in the recent transition of flight operations regulations to CASR Parts 119 and 121 is welcome, however ongoing and continual engagement with industry to ensure an outcome-based approach to regulation will be required. For example, there have been examples of the Australian regulations contradicting aircraft manufacturer instructions which have resulted in operational inefficiency.

### Mutual Recognition Agreements

The Qantas Group is a beneficiary of many bilateral and technical agreements where international aeronautical authorities mutually recognise the other's aviation regulations.

The Bilateral Aviation Safety Agreement (BASA) with the United States for the promotion of safety and airworthiness certification is utilised by airlines on a daily basis for the import and export of aircraft and aeronautical products and automatic acceptance of design approvals for modifications, repairs and product maintenance. Some of these benefits are also available under the technical agreements with Singapore and more recently Japan, including through the automatic acceptance of products and design approvals.

Nevertheless, there are many engineering, maintenance and operational constraints and limitations in the existing agreements and a need for additional agreements, especially with the European Union and the United Kingdom.

There are multiple unresolved issues in relation to acceptance of repaired parts from the United Kingdom since its separation from the European Union. Acceptance of design approvals issued by the EASA approved design organisations are subject to very complex criteria. This arises out of regulations that pre-date the concept of regulated product and part design organisations and accordingly does not factor in the safety benefits of design approvals issued by organisations approved under a strict quality and design assurance management system.

BASA also does not cover provisions for aircraft maintenance and many aircraft operators within Australia would benefit from some form of flexibility in this area.

The Qantas Group recommends that existing bilateral and technical agreements are updated and new agreements, particularly with the European Union, United Kingdom,

United States and Canada, are negotiated to include mutual recognition of design, production and maintenance services for aircraft and aeronautical products. The recognition of qualifications, licence and other approval arrangements of individuals and organisations involved in design, production and maintenance of aircraft and aeronautical products should also be considered.

Achieving a high level of recognition across a broad spectrum of Australian and international approvals would provide the Australian aviation industry with much needed access to international markets to export its products and services and also provide flexibility to manage its needs in relation to aircraft operation both domestically and internationally.

The regulator-to-regulator agreement with New Zealand pursuant to the Operational Arrangement Between the Civil Aviation Safety Authority of Australia and the Civil Aviation Authority of New Zealand in Relation to Mutual Recognition of Air Operator Certificates (ANZA Mutual Recognition Agreement) is delivering efficiencies and benefits.

The Qantas Group supports the continued implementation of the principles contained in the ANZA Mutual Recognition Agreement to reduce friction and regulatory duplication for Australian and New Zealand operators, according to the mutual recognition principles in the agreement. For example, the selective application by New Zealand of elements of the domestic regulatory rules regarding fuel and flight planning requirements conflict with CASA regulations. These requirements should not apply to Australian and New Zealand operators.

## Questions

**Do you have any suggestions to improve current reform processes?**

Qantas recognises the important role of CASA in maintaining the high safety standards of Australia's aviation industry and supports opportunities to improve its efficacy and efficiency.

As outlined above, the key policy priority for CASA reform should be transitioning the regulatory landscape away from a purely prescriptive approach towards risk-based and outcome-focused regulation, more closely aligned with international standards.

## Airspace Regulation

Effective air traffic control systems and airspace management are critical for safe and efficient operations.

### International Consistency

The Qantas Group supports ongoing awareness and alignment with international standards where appropriate, including ICAO as the basis for airspace classification. CASA and Airservices should limit modifications to international standards and procedures to subjectively account for Australian conditions.

The Qantas Group supports ICAO’s Global Air Navigation Plan and considers that airspace review based on practices such as Performance Based Navigation, Continuous Climb Operations and Continuous Descent Operations will ensure Australian airspace develops in accordance with global best practice.

**Uncontrolled airspace**

The number of jet aircraft operating to aerodromes without air traffic control services, such as Ballina, Wagga Wagga, the Pilbara region and Mildura, have markedly increased over the last decade. This has resulted in increased interaction with General Aviation aircraft which differ in many respects, including aircraft speed, avionics equipment and awareness and familiarity with radio telephony procedures. With low traffic levels, safe operation is maintained when aircraft transition from controlled airspace (Classes C and E) into uncontrolled airspace (Class G).

While these operations remain safe, there is opportunity to improve safety outcomes through remodelling the designation of airspace. Where deemed necessary and where surveillance exists through ADS-B and/or Secondary Surveillance Radar, Class E airspace should be introduced in lower airspace to provide air traffic services to Regular Public Transport services. This could be efficiently introduced with little cost to Airservices and without reducing airspace access.

**Technology**

**Digital control towers**

A digital control tower refers to air traffic control being provided from a remote location, not from a traditional air traffic control tower at an airport. The required information comes from airport cameras and sensors rather than from an out-of-window view and is relayed to remotely located air traffic controllers.



With the cost of air traffic management infrastructure and resources increasing, the introduction of digital control towers is a cost-efficient option which retains safe and efficient operations.

Digital control towers have multiple benefits, including:

- The centralisation of air traffic control tower services to a single facility providing services for multiple locations around the country, reducing overheads and the cost of deploying staff to these locations;
- Facilitating multi-skilled controllers with capability to monitor different airports;
- More closely aligning CASA with international standards;
- Enhanced capability including on screen labelling of aircraft, improved low visibility operations and full integration with the OneSky system to improve the orderly flow of traffic; and
- Enhanced air traffic services and safety benefits at regional and remote aerodromes that have seen significant increases in traffic density and mix.

As outlined above, there have been significant traffic increases in certain regions that are currently not serviced by an air traffic control tower. Digital control towers at these locations would markedly improve efficiency and mitigate future risk as traffic grows. For airports with an existing control tower that is reaching end of life, transition to a digital control tower would reduce the replacement costs and introduce new safety and efficiency benefits.

The *Civil Aviation Safety Regulations* currently limit broad use of digital control towers. The standards and procedures for control towers in these regulations are based upon traditional control tower infrastructure and they need to be updated to accommodate digital control towers.

Pre-COVID, Airservices commenced a project that sought to build capability of digital control towers for either primary service or for contingency purposes. Airservices paused this program during the COVID-19 pandemic. The Qantas Group supports its resumption at the earliest opportunity.

**Satellite Based Augmentation System (SBAS)**

SBAS is a signal system which uses a network of ground station infrastructure to provide correction data to satellite signals to improve the accuracy, integrity and availability of global navigation satellite system (GNSS) based position data. This includes the availability of more accurate instrument approaches to runways for appropriately equipped and upgraded aircraft.

The Qantas Group acknowledges the Government’s investment in SBAS technology through the SouthPAN initiative, as well as the benefits and applications across multiple sectors including transport, agriculture and resources.



While this technology will not significantly reduce diversions and delays at smaller regional aerodromes, and has only marginal benefits from current GNSS based infrastructure during disruptive weather, digital control towers provide broader benefits and should be an investment priority for Government.

**Automatic Dependent Surveillance – Broadcast (ADS-B)**

ADS-B is a system onboard an aircraft which broadcasts the location of the aircraft and can detect the location of other aircraft in the vicinity. This information can be used by other aircraft to confirm an aircraft’s position without the need for Secondary Surveillance Radar, which is previous generation technology using ground-based infrastructure to identify aircraft. ADS-B can be used for collision avoidance as well as visibility of aircraft position and movement information by air traffic control.

ADS-B is a cost effective and globally accepted standard for providing high fidelity surveillance for air traffic control and delivers significant safety enhancements. The Qantas Group supports the transition to an airspace model dependent on ADS-B.

ADS-B EC is a lower cost, portable device designed to facilitate accessibility of the technology to smaller General Aviation operators. While it provides safety benefits to assist with localised aircraft separation in the short-term, as the ADS-B EC signal is not able to be detected by air traffic control, the emphasis should be on investment in full ADS-B capability to enhance future airspace capabilities, particularly given the projected increase in eVTOL and AAM technology.

While ADS-B is mandatory for aircraft operating under instrument flight rules, it is currently not mandatory for all aircraft in certain airspaces under current Australian regulations. There has been limited take-up by aircraft operating under visual flight rules, largely due to the increased cost burden experienced by smaller General Aviation operators. Given the significant growth in commercial aircraft operating to the same aerodromes as aircraft operating under visual flight rules, there is an increasing concentration of aircraft operating in uncontrolled airspace without ADS-B, relying on Secondary Surveillance Radar.

In addition to providing a significant safety and technology uplift, ADS-B is an appropriate platform to enable remotely piloted aircraft systems such as drones to be integrated into the air traffic management environment in the future.

ADS-B is also more cost effective than Secondary Surveillance Radar which requires investment in and maintenance of ground-based infrastructure.

The Qantas Group welcomes attempts to increase ADS-B usage for small operators and realise improved safety benefits through various Government subsidy program.

Other benefits from these subsidy programs include:

- Stimulating growth in aircraft maintenance and other related industries as aircraft are fitted with ADS-B; and
- Extending the lead time for when a traditional or digital air traffic control tower is required to be built at specific locations.

Future subsidy programs should account for the variability of installation options across different aircraft types and the complexity associated with existing installations. Funding from Government should be applied on a per airframe basis rather than on an operator basis. This should be at a fixed amount that subsidises the initial fitting or expansion of current capability.

Subsidy programs should be considered in conjunction with increased ADS-B ground infrastructure to increase the existing coverage and linked to reducing other retiring ground infrastructure, including Secondary Surveillance Radar.

**OneSKY**

OneSKy is a partnership between Airservices and the Department of Defence to replace existing air traffic management systems with an integrated system known as the Civil Military Air Traffic Management System.

The OneSky program has been running for almost a decade with multiple delays to its delivery schedule. The program would benefit from additional oversight to monitor the OneSky delivery schedule and ensure its benefits are delivered at the earliest opportunity.

The introduction of flight path efficiencies is already producing benefit, for example User Preferred Routes (which are flight paths that utilise the most efficient wind patterns in airspace over land) and the beginnings of Continuous Descent Operations (an operation in which an arriving aircraft descends continuously, to the greatest possible extent, by employing minimum engine thrust). User Preferred Routes save at least 100 kilograms of fuel per flight.

Full implementation of OneSky is required to access the following benefits:

- Alignment between defence and civil airspace management to reduce associated impacts on arrival rates at key airports when there is military activity or poor weather;
- Common and integrated management of large areas of military airspace. While the Qantas Group appreciates efforts to provide access, civil and defence air traffic control are currently managed separately, creating sub-optimal processes to manage traffic between the two;
- Simplified and flexible airspace sectors so that air traffic control staff can transition between sectors seamlessly. Currently, air traffic controllers are endorsed for particular airspace sectors and there is significant training required to transition between sectors due to different procedures, which is a key resourcing issue facing Airservices; and

- Optimised flight paths for flights between Sydney and Asia. The current airspace boundary between the Brisbane and Melbourne Flight Information Regions creates co-ordination challenges for air traffic control resulting in sub-optimal routes.

### Emission Reduction

The Qantas Group disagrees with the Green Paper’s assertion that further emission reductions through air traffic management have largely been realised.

Airservices’ Environmental Strategy is targeting a 10 per cent reduction in emissions per flight in Australian airspace by 2030.<sup>3</sup>

Even a modest reduction in flight times has on a cumulative basis a substantial impact on emission reduction.

**If Qantas Group flights between Brisbane and Melbourne, and Brisbane and Sydney, were each reduced by one minute, this would reduce emissions by over 3 million kilograms each year.**

Specific air traffic management initiatives that would deliver further benefit include:

- Addressing the prevalence of TIBA events;
- Minimising limitations of User Preferred Routes;
- Balanced assessments of noise abatement operation procedures against noise benefits, particularly where noise benefits are marginal. For example, requirements to use full runway length departures increase taxi times of aircraft for negligible noise benefit;
- Parallel Runway Monitoring (which is a method to observe aircraft on final approach that allows shorter spacing between aircraft and increased efficiency) at Sydney Kingsford Smith Airport would improve arrival rates in poor weather, reducing congestion and delays. This is presently not implemented due to shortages in staff and systems;
- The increased availability of Required Navigation Performance — Authorisation (RNP-AR) flight paths to equipped aircraft as outlined in more detail in Chapter 7 (Airport development planning processes and consultation mechanisms);
- Expansion of Continuous Descent Operations and Continuous Climb Operations, using less thrust and less fuel; and
- The introduction of enhanced holding predictability to reduce holding times. For example, Long Range Air Traffic Flow Management (which manages the timing of a long haul flight to its destination to enable sequencing on the runway without a holding pattern) is a viable option in the Australian airspace structure, particularly given Airservices is the sole provider of the large enroute airspace in Australia.

<sup>3</sup> Airservices Environmental Sustainability Strategy 2021-2016, pg 4. Link [here](#).

## Questions

**What should the Australian Government consider in adopting technology to fully utilise airspace and ensure access for different parts of the sector?**

The Government should consider:

- The introduction of low-level Class E airspace as part of a graduated model to increase safety assurance within the air traffic management environment;
- Incentivising a broader uptake of ADS-B by way of an assistance package to industry to encourage aircraft owners to upgrade avionics to incorporate ADS-B;
- Fast-tracking the implementation of digital control towers and OneSKY; and
- Space based VHF and ADS-B technology to maximise surveillance and communication for all airspace users in Australia and reduce reliance on ground-based infrastructure.

## Security Regulation

The Qantas Group welcomes the Government’s acknowledgement of the many challenges facing the aviation environment and the need to manage an evolving range of threats.

The security of commercial aviation is a critical element of Australia’s national security and forms part of its critical infrastructure. In the prevailing threat environment, there are substantial security risks requiring a range of complementary measures to be applied by Government and industry to ensure the safe and secure operation of aircraft, airports, associated infrastructure and data.

The current aviation security regulatory framework is based on a layered approach. This is consistent with ICAO’s practices and that of regulators worldwide. A layered approach recognises that any single security layer, considered in isolation, is unlikely to be completely effective. The existence of multiple layers of security means that should a single layer of security become ineffective, the subsequent layers should act to prevent a serious incident from occurring.

However, many additional layers have been added to the framework over the years without consideration in all cases to which layers, if any, can be removed. In some cases, there have been multiple layers introduced simultaneously within short timeframes, often resulting in significant and unnecessary additional costs to industry.

The current Australian aviation security regulatory framework is primarily prescriptive with a significant focus on prosecution after the fact. The Qantas Group welcomes regulatory change that moves away from an ‘abundance of caution’ philosophy toward a proportional risk assessment system. Regulatory change, including any enhanced security obligations, must be flexible and proportionate to the risk, allowing airlines and the broader

industry to be agile in planning for and responding to emerging threats and to appropriately prioritise finite resources. A balanced and tailored approach to industry and Government engagement that incorporates risk, exposure and operational need rather than a uniform ‘one-size-fits-all’ solution will deliver more practical, risk-based and integrated security outcomes.

CASA has heavily invested in implementing and managing a performance-based Safety Management System approach, rather than a more prescriptive compliance-based method of regulation. The Qantas Group encourages the Government to institute an aviation maturity model, whereby mature and capable aviation industry participants would operate under a Security Management System approach (including cyber security) rather than the traditional prescriptive, compliance-based approach.

### Aviation security policy and regulation

#### The Aviation Transport Security Act 2004 (Cth) and the Aviation Transport Security Regulations 2005 (Cth)

The aviation security regulatory framework was reviewed in 1998 with a view to removing all security related content from the then *Air Navigation Act 1920* (Cth) and *Air Navigation Regulations 1947* (Cth) (as well as other pieces of legislation) and combining all requirements into a single aviation security Act and Regulations. That project was almost complete when the events of 11 September 2001 paused the work.

In parallel, the first security related regulations relating to the maritime mode were underway. In 2003, the *Maritime Transport and Offshore Facilities Security Act 2003* (Cth) and *Maritime Transport and Offshore Facilities Security Regulations 2003* (Cth) (the Maritime Act and Regulations) were drafted and implemented.

In 2004, the *Aviation Transport Security Act 2004* (Cth) (ATSA) and the *Aviation Transport Security Regulations 2005* (Cth) (ATSR) delivered a single aviation regulation framework. Notwithstanding significant concerns raised by industry at the time, most of the drafting of the ATSA and some sections of the ATSR mirror the style and content of the Maritime Act and Regulations. As a result, the aviation regulations contain significant administrative requirements unrelated to any aviation security outcome.

There is no benefit to either the aviation or maritime sectors or the general public by the respective instruments ‘looking and feeling’ the same. Each should have tailored legislation to fit the sector’s threat and risk environment.

The current regulations (including approved statements contained within the Transport Security Program, the Regulated Air Cargo Agent Security Program and the Known Consignor Security Program) do not have enough flexibility to accommodate emergencies or circumstances not contemplated when the regulations were drafted. Without flexibility, the regulatory framework

results in unnecessary complexity and costs for both the Department of Home Affairs and industry, and on occasions, results in industry being unable to meet its compliance obligations.

For example, if commercial aircraft operators are unable to arrange security screening of emergency personnel at short notice, there is no flexibility to enable the Government to waive this requirement to facilitate urgent transport of emergency personnel and equipment. In the past, this has delayed the Qantas Group in being able to support emergency aircraft and cargo capacity for drought relief and bushfire responses.

This lack of flexibility was highlighted during the COVID-19 pandemic. For example, the Qantas Group was unable to acquit certain training obligations as relevant employees were in lockdown and faced regulatory challenges obtaining a concession.

Several jurisdictions have similar provisions within their legislation to grant an alternative method of compliance or operation, including CASA, the New Zealand Civil Aviation Authority and the United States Transportation Security Administration.

This change could be implemented in Australia through a single overarching provision being added to the ATSR, which is preferable to inserting specific provisions within the numerous individual regulations. A single overarching provision approach would simplify the process for Government and industry to deal with anomalies, emergencies, unforeseen circumstances or where technology or other innovation has overtaken the existing regulatory processes and/or requirements.

Further, the ATSA and ATSR are drafted to capture all operators, known as AIPs, regardless of size, complexity or maturity. Given the wide diversity of AIPs regulated across Australia, the Qantas Group has never supported a ‘one size fits all’ approach. This stifles innovation and unnecessarily sets industry requirements at the lowest common denominator to accommodate the least advanced AIP. Prescriptive and rigid regulation often prevents a superior security outcome being implemented until regulation can catch up.

Such a mechanism would also allow the Department of Home Affairs to differentiate where appropriate between AIPs with mature operations and systems, adequate resources and compliance history, from those who do not meet these criteria. Under this framework, notices could be issued to permit specific AIP or a class of AIP to apply specific regulatory provisions (or not).

With these changes and embedding security management systems into governance and operations, the Department of Home Affairs could move to a more outcomes-focused systems approach to aviation security regulations.

The current regulatory settings were established in 2004 and are prescriptive regarding technology. They do not include the flexibility to cater for emerging

aviation technologies. To encourage the adoption of new technology and investment in Australia urgent reform is required to provide additional flexibility, including granting the Department of Home Affairs the power to grant, on request, an alternative method of compliance as well as to delay, temporarily suspend or permanently suspend a regulatory requirement with a specific AIP or class of AIP.

Notwithstanding the above, the Qantas Group recognises that a small portion of the regulatory framework must remain prescriptive, including:

- The technical requirements surrounding the screening of passengers and their baggage (both checked and carry-on) and any associated screening equipment;
- Requirements surrounding the examination of air cargo and any associated equipment;
- The contents of an internationally recognised air cargo security declaration to accompany cleared air cargo; and
- The identification requirements and submission to background checking to be considered for the issue of an ASIC.

**Security of Critical Infrastructure Act 2018 (Cth)**

The Qantas Group supports further consideration of whether the *Security of Critical Infrastructure Act 2018* (Cth) (SOCi Act) should extend to the supply chain of Critical National Infrastructure (CNI) (as defined in the SOCi Act), to the extent that a particular supply chain may have a material impact on the resilience of CNI. Supply chain entities, who are often less mature, can present significant risk to CNI organisations.

In the case of cyber, an accreditation model or set of minimum standards may lift and drive better cyber resilience for suppliers who provide goods or services to CNI asset holders, particularly where the supply chain is a material component of the resilience or continued operation of the CNI following a cyber incident.

To avoid duplication and any compliance burden which does not drive enhanced security outcomes, any change in scope of the SOCi Act should only occur after industry engagement and consideration of harmonisation of regulation. Mandatory reporting obligations should be streamlined to a single regulator notification if the SOCi Act is extended to data, so that entities can focus on containment and their cyber security resilience response.

**‘All Hazards’ Regulatory Approach**

With the introduction of the SOCi Act, the Government has moved to an ‘all hazards’ approach to security regulation including aviation security (physical), cyber security and supply chain security. The Qantas Group agrees this is appropriate provided it is risk-based, recognises the security maturity of an entity and drives the right outcome for Australia in uplifting the security posture of all entities and their supply chain (without adding an unnecessary compliance burden to mature entities and regulatory duplication).



The aviation sector is still subject to known and emerging threats that fall under the umbrella of Acts of Unlawful Interference.

Terrorist groups and radicalised individuals have a presence in most Qantas Group ports and retain the intent to conduct attacks against Western and host Government targets.

In Western countries, including Australia and Southeast Asia, the primary terrorist threat now comes from individual or small independent cells, with the most likely attack in the form of unsophisticated opportunistic strikes against ‘soft’ targets. Terrorism dynamics are different in Africa, the Middle East and South Asia.

Continuous improvements to aviation security over the past 20 years have meant that most terrorist group capabilities are probably insufficient to overcome the multiple layers of protection inherent in international aviation security standards. The landside areas of an airport are the most likely attack scenario for the aviation sector. Focusing on aviation security controls remains vital to protecting the sector from terrorism threats, which continue to evolve.

An ‘all hazards’ approach to security regulation should not be to the detriment of traditional aviation security matters, especially acts of unlawful interference. The focus in aviation security legislative change in recent years has appropriately been on cyber and organised crime, but continued focus is required on maintaining and aligning closely with global industry advancements, including ICAO standards and recommended practices.

As set out above, the Qantas Group supports further consideration of the SOCi Act extending to the supply chain of CNI. We particularly welcome further consideration of critical infrastructure supply chain risks in cybersecurity, as part of the Government’s 2023–2030 Australian Cyber Security Strategy.



## Background Screening

Trusted insiders are a recognised threat to aviation. There have been a number of instances where trusted insiders have planned and, in some cases successfully carried out, attacks against the industry or their employer or used their position for other unlawful activity.

There are three recognised drivers of insider risk:

- A lack of awareness of policies and procedures that create risk;
- A complacent approach to policies and procedures causing potential security risks; and
- Acts that are malicious and intentional in nature to cause damage and/or harm.

The Qantas Group would welcome the opportunity to work with Government to establish effective aviation trusted insiders management programs to mitigate trusted insider threats, including by way of the ATSA, ATSR and the SOCI Acts.

## Identity Checks

The Qantas Group notes the Government's efforts currently underway with respect to biometric identification. We encourage Government to fast track biometric identity in the established MyGov platform to facilitate a more streamlined and simplified ASIC application process and a networked airport access control system.

Rather than re-establishing identity every two years, once an aviation worker has passed a background check, properly biometrically enrolled aviation workers would only need to undertake a renewal. This would allow Government to extend the current two-year expiry to a five-year expiry without any additional security risk, reducing costs and increasing efficiency.

The Qantas Group also recognises and strongly supports the work underway to incorporate a 'live' rather than a 'point in time' background checking system. Combined with a biometric token in an ASIC, this will significantly enhance the current airport access control processes, tightening existing gaps in the unescorted workforce operating within restricted areas at airports and improve ASIC security.

Airport access control systems should have made significant progress to being biometrically based by 2030.

Associated with the issue of an ASIC and biometrically anchoring a person's identity, the Qantas Group supports a further change to the background checking regime to include a Working with Children Check. Many aviation workers interact with children when they travel through airports and on aircraft.

Currently each State administers their own Working with Children Check, with differing rules and requirements. To simplify this check, especially for those aviation workers that travel interstate, such as engineers, flight and cabin crew, a Federally based check as part of the ASIC check, would provide a significant enhancement and close a potential gap in the background checking process.

## Questions

### Do you support the Australian Government introducing enhanced security obligations?

The Qantas Group welcomes security enhancements based on a proportional risk assessment system. Regulation must be flexible and proportionate to the risk.

The Qantas Group proposes the following key reforms:

- For the Department of Home Affairs to institute an aviation maturity model, whereby mature and capable aviation industry participants would operate under a Security Management System rather than a traditional compliance-based framework;
- Amendment of the ATSA to provide a power to the Department of Home Affairs to grant, on request, an alternative method of compliance as well as to delay, temporarily suspend or permanently suspend a regulatory requirement with a specific AIP or class of AIP;
- Inclusion of individual biometric identity on the MyGov platform and or under the Digital ID system for use in ASIC applications and airport access control;
- A 'live' rather than a point-in-time background checking regime; and
- Implementation of a simplified Working with Children Check for all ASIC applicants.

## Security Screening

### The 40 Seat Rule

In 2017, with a view to uplifting security settings at Australian airports, an airport categorisation model was implemented under the ATSR dividing airports into 'Designated Airports' and a hierarchy of three tiers of airports. Designated Airports, Tier 1 and Tier 2 airports are all required to perform security screening under the ATSR. Tier 3 airports are not required to perform security screening under the ATSR.

In the case of Tier 2 airports, the aircraft services that are subject to security screening under the ATSR (a Screened Air Service) was amended from a threshold of any aircraft with a 20,000 kilogram maximum take-off weight to any aircraft with 40 or more seats (the 40 Seat Rule). Tier 2 airports have flexibility under the ATSR to implement security screening on all aircraft notwithstanding the 40 Seat Rule.

Following these new security requirements and in response to the economic impact of COVID-19, the then Government provided funding under the Regional Aviation Security Infrastructure program (RASI Program) to eligible regional airports. The purpose of the RASI Program was to reduce the cost of upgrading security equipment to meet the new requirements for Tier 2 airports, and to support the operating costs of security screening which is passed on from the airport to the airlines (and, at least in part, to passengers).

The Qantas Group considers All Regular Public Transport operations (regardless of aircraft size or propulsion) departing from any airport should be Screened Air Services for the purpose of the ATSR. As an interim step, the Qantas Group recommends that all Regular Public Transport operations (regardless of aircraft size or propulsion) departing from Designated, Tier 1 or Tier 2 airports should be a Screened Air Service for the purposes of the ATSR.

**Current Status of Security Screening at Tier 2 Airports**

Except for three Dash-8-200 aircraft, the aircraft in the Qantas Dash-8 fleet servicing regional airports have over 40 seats and are a Screened Air Service. Conversely, the Regional Express regional fleet of SAAB 340s are all 36 seats and security screening is optional for airports pursuant the ATSR.

The management of distinct classes of security screening imposes a significant operational and financial burden on regional airports. Some do not have the resources or infrastructure to separate screened and unscreened passengers. Accordingly, all Tier 2 airports used funding from the RASI Program to screen all passengers, regardless of the whether the applicable aircraft met the 40 Seat Rule. Many are timing Regional Express and Qantas Group flights to depart in close succession to facilitate security screening of all passengers together and streamline processes.

As the RASI Program expired on 30 June 2023, some regional airports ceased security screening of aircraft with less than 40 seats. In some cases, airports have elected to invest in additional infrastructure to accommodate the unscreened passengers. Other regional airports are continuing to screen all aircraft in accordance with the flexibility provided under the ATSR, and may either increase the charges to the Qantas Group to cover the increased cost, or pass the cost through to both the Qantas Group and Regional Express as applicable.

This year Wyalla Airport announced that it would continue to screen all passengers regardless of the 40 Seat Rule and pass through the cost to operating airlines.

**Detrimental Impact of the 40 Seat Rule**

Differentiating security requirements for passengers in the same airport based on whether they are travelling on aircraft with 36 seats as opposed to 40 seats weakens airport security:

- It increases the risk of mixing unscreened and screened passengers on the airport tarmac;
- It significantly reduces the passengers, baggage and cargo subject to security screening and examination;
- It increases the risk of prohibited items and weapons airside at Tier 2 airports and arriving into higher risk Designated Airports and Tier 1 airports via unscreened passengers; and
- It is a well-publicised security loophole which could potentially be exploited by security threats.

The Qantas Group estimates that there are over 250,000 passengers per year flying from regional centres into major cities on unscreened air services from Tier 2 ports under the 40 Seat Rule.

The 40 Seat Rule undermines the significant capital investment by the Government to support regional airports through the RASI Program by imposing a regulatory burden that requires additional unfunded infrastructure and the management of distinct security processes. The removal of the 40 Seat Rule will simplify security requirements and provide certainty to regional airports regardless of passenger fluctuation or an airline’s choice of aircraft.

A policy that imposes security charges on one carrier and not another operating from the same airport to the same destination results in a competitive distortion. The Qantas Group fully supports regional airports passing on the cost of security screening to airlines and not ratepayers, however considers it should apply to all aircraft operating to Tier 2 airports, spreading the per passenger cost of security screening on an equitable basis across all operating airlines.

The previous Government commissioned an Independent Review into Australia’s Aviation and Maritime Security Settings (the Review) in 2021. The Review recommended that all aircraft departing an airport where screening is conducted and screening equipment is in place (a Designated Airport and Tier 1 and Tier 2 airports) be designated as a Screened Air Service and determined it would benefit both the relevant airports and Australia’s aviation security network.

This policy change will ensure a simplified, single, nationwide, closed aviation network, with all passengers, baggage and air cargo screened to the highest standard with the most up to date technology available. A single closed network would also unlock opportunities and efficiencies for all passengers, baggage and cargo that have connections, especially those originating from regional airports or those making international departures.

**A single screening authority**

The Qantas Group supports establishing the Department of Home Affairs (or other appropriate Government agency) to become the nation’s single Screening Authority, to establish, manage and perform all screening functions across passenger, baggage and cargo operations.

A single national Screening Authority would mirror similar frameworks in New Zealand (AVSEC), the United States (Transportation Security Administration) and Canada (CATSA) rather than passenger and baggage screening and cargo examination being provided by private commercial operators, responsible to primarily private corporations or local council airport owners.

By Government managing and providing the passenger and baggage screening and cargo examination functions, Government could establish federal screening officers

able to operate across all States and Territories within a simpler legislative framework around roles, responsibilities and powers. It would also enable Government to implement greater powers to these officers in times of increased threat.

These policy changes would ensure a substantial uplift in security outcome and security reliability, positively protect critical aviation infrastructure, improve the value proposition from leveraging the economies of scale, improve Government oversight, minimise the existing training and labour resourcing issues across the sector, and assist the Government in managing and transitioning towards net zero emissions in this activity.

## Questions

**Do you have any comments about current security screening arrangements?**

The Qantas Group supports establishing the Department of Home Affairs (or other appropriate Government agency) to become the nation's single Screening Authority, to establish, manage and perform all screening functions across passenger, baggage and cargo operations.

The Qantas Group considers that the 40 Seat Rule should be abolished and all Regular Public Transport operations (regardless of aircraft size or propulsion) departing from a Designated Airport, Tier 1, Tier 2 or Tier 3 airport should be a Screened Air Service for the purposes of the ATSR.

## Passenger Facilitation

The Australian Government has been a world leader in streamlining passenger border processing. However, in recent years other nations have progressively advanced, particularly through continued efforts during the COVID-19 pandemic with industry and suppliers. This has delivered significant technology improvements internationally with dual benefits of streamlining and strengthening the security of passenger facilitation.

Australian airlines have also introduced passenger facilitation initiatives, such as automated bag drops and online check-in. The Qantas Group is investing in baggage tracking technology which will enable real-time tracking of baggage.

However, further significant reform will be required as technology continues to advance. For Australia to realise the economic prosperity that enhanced border technologies will deliver, as an interim step to a single whole-of-border agency and single whole-of-border legislation, the key items below should form part of a prioritised reform agenda.

### Cross-functional working groups

There are existing cross-functional working groups made up of Government agencies, industry groups and suppliers. These groups can be utilised to identify a roadmap for delivery of key technologies including biometrics, digital credentials and baggage screening.

Currently there are multiple initiatives within different Government agencies, inconsistent engagement with industry and limited cross-functional dialogue. Delivery of seamless facilitation improvements which utilise new technologies will require identifying:

- The stage of maturity for each of the products and its interoperability;
- The optimal phases of delivery to create a benefit for each stakeholder in the travel journey; and
- Implementation options that enable industry partners to plan and prioritise based on the constraints or ability within their own environment.

Without adequate collaboration and coordination, there is a risk of fragmented technologies, process and deliveries, resulting in increased costs and resourcing.

### The Digital ID System

The Australian Government Digital ID System (AGDIS) regime could be extended beyond online interactions and transactions to streamline passenger movement and improve aviation security.

The Government proposes to roll out the AGDIS in four phases, initially focusing on the use of digital identity in Commonwealth and State and Territory services. The Qantas Group would like to see the Government set out a clear timeline for phases three and four, when it is set to be extended to private sector services.

The Qantas Group supports a coordinated rollout of the system and considers that once there is private sector access, industries such as aviation and transport will no longer be obliged to retain full identify documentation for their activities and functions.

Any delay to extending the system to industry could result in less voluntary take up, particularly as private digital ID alternatives enter the market. For example, ConnectID (an identity-as-a-service aimed at helping customers confirm their identity) will soon be offered by 'the big 4' banks to certain customers.

In the Government's response to the Privacy Act Review it agreed to undertake a review of all legal provisions requiring retention of personal information such as passport data, subject to further consultation to determine the appropriate scope and scale of a review.

The Green Paper references the need to "move to contactless processes where possible". The Qantas Group agrees that consideration should be given to how the Digital ID system could be fully scaled. Use of the Digital ID system for identity tokens from booking to boarding (that is, beyond initial online applications and transactions) could streamline passenger movement and improve aviation security (including data security) outcomes.

### Passenger Movement Charge

To ensure the development of passenger facilitation technology is of the standard that Australia is

renowned for, funding should be delivered for cross-functional and cross-agency deliveries. The allocation of a percentage of the Passenger Movement Charge to the development and implementation of new technologies for passenger facilitation could fund the roadmap.

### Legislation and regulations

It is imperative that legislation and regulations are reviewed to identify those that are obsolete or represent barriers to seamless travel.

For example, there is a requirement in the *Migration Regulations 1994* (Cth) that airline crew operating on turnaround flights, such as New Zealand – Australia – New Zealand, typically with only two hours on the ground, present to a clearance authority when they land. Crew are already subject to stringent, ongoing security checks and should benefit from a similar process as passengers eligible to transit without visa.

On international flights into Australia where the flight has an onward domestic leg with the same flight number, passengers are able to clear immigration at the final Australian international airport, however, the same provision does not apply if there is a change of flight number when the flight is still a domestic leg of an international flight.

For example, QF 10 London – Perth – Melbourne passengers have the benefit of transiting in Perth and being cleared in Melbourne. However, if a passenger on the same QF10 London – Perth changes in Perth to travel on QF6 Perth – Sydney, they must clear immigration in Perth with their bags, recheck in for the QF6 flight and clear back through immigration.

Passengers on a domestic leg of an international flight also require an 'Orange D' sticker to be manually added to their boarding pass with their form of identification handwritten onto the sticker by airline staff. The requirement for noting the form of identification inhibits the use of digital solutions to replace the sticker and delivery of self-service.

As regulatory changes can have protracted timeframes, a regulatory framework, mechanism or instrument that empowers Government to suspend, alter or change regulations to support trials should be implemented. This framework would support the Government and industry to test and trial key technological and process changes with the view to ensuring they are fit-for-purpose and expediting the delivery of a viable product.

The inbound passenger card should be removed and replaced with a streamlined digital declaration. As evidenced with the removal of the outbound passenger card, there are alternate ways for Government to source statistical and passenger information and a digital declaration should be introduced containing only the baseline customs and biosecurity requirements.

The delivery of this option could unlock other key initiatives such as international to domestic baggage transfer, collection and delivery of baggage to

homes, hotels, trains, cruises or tours. These options already exist in many countries, for example Germany and Switzerland, and the capability to interline passengers and baggage with trains and hotels has been functionally available from software suppliers for several years.

Security screening in one country can assist with the delivery of the above interline baggage products and would also deliver benefits for biosecurity. The current arrivals baggage screening trials being conducted in Brisbane and Melbourne should be a pre-cursor to further collaboration on how digitisation, artificial intelligence and offshore screening translates to a more seamless baggage transfer or arrival process.

Biometric solutions for utilisation by passengers throughout planning, booking and travel are essential. Biometric technology is well advanced and should no longer be considered as in a development and test phase. A solution should include the ability for passengers to access their biometric data already held by various Government platforms and, via an endorsed application, share same to airlines and industry operated touchpoints. Delivery of biometric solutions should remove the regulatory requirement for airlines to conduct passport data or conduct face to boarding pass checks.

The application of biometrics will be normalised in the travel industry in the near term and there will be a need for Government to focus on digital travel credentials (DTC) to reach the same status. By 2040, the Qantas Group anticipates:

- DTC will be established and standard as part of passport application/renewal;
- Australia will have multinational agreements for acceptance of DTC;
- Australian digital credentials will encompass health and immunisation status; and
- Passengers will share their biometrics and DTC directly with Government agencies to receive entry approval credentials that can then be shared with airlines.

By 2050, the Qantas Group anticipates that airlines will no longer be responsible for collecting, storing, sharing or interpreting passengers personal and regulatory information. The normalisation of biometrics and DTC will result in identity and admissibility being a shared responsibility between the passenger and Governments with airlines being the recipient, via standardised messaging and platforms that are already being developed and agreed in ICAO and IATA. This redirection of responsibility will necessitate a review and change to existing legislation that currently holds airlines responsible for proof of identity, damaged or fraudulent passports, travel authorities and visas, and carriage of inadmissible and deportees.

Recent examples of progression are:

- From 2024, at Singapore airports, biometrics will be used in place of passports to create a single token of authentication, to be used at various



automated touchpoints from bag-drop to immigration and boarding;

- The US Customs and Border Protection’s Global Entry program has launched the Global Entry Mobile App at seven airports, which will allow arriving travellers to verify their identity by taking a selfie on their phones. This photo will then be cross-referenced to a photo gallery and verified through facial biometrics; and
- IATA has been driving the development of ‘One ID’, on the basis that an end-to-end biometric passenger process will unlock greater levels of security, seamlessness and efficiency for airlines, airports and passengers.

As with biometric technology, there are multiple established and emerging industry providers that are well positioned to deliver the technology and integration required to deliver DTC. ICAO and IATA are already establishing standards that will enable Government to select accredited process or apply their own accreditation and endorsement process to ensure the integrity, security and privacy of the DTC.

### Seamless Trans-Tasman Travel

The Qantas Group supports the potential for Trans-Tasman travellers to enter and depart Australia from domestic terminals.

Governance and regulatory environments in both countries are increasingly aligned, and there is close collaboration between Governments and agencies on border and travel issues.

The two countries are intrinsically linked and improving seamless travel across the Tasman offers social, economic and legislative benefit for both economies. This could be achieved through:

- Streamlined, simplified journeys;
- Fewer touchpoints and queues;
- Removal of duplication of processes;
- Reduced costs; and
- Reduced turnaround times.

Successful international examples of seamless travel arrangements include the United States preclearance process and European Union Schengen Agreement.

### Questions

**Are there any specific initiatives that should be supported globally, regionally and nationally to continue improvement in international passenger facilitation?**

The immediate initiatives supported by the Qantas Group are:

- Establishment of cross-functional working groups until a single whole-of-border agency is established;
- Reviewing existing border legislation to allow seamless travel for crew and passengers;

- Removal of inbound passenger card; and
- Establishing digital travel credentials.

The Qantas Group notes that it is important that the Government works with its foreign counterparts to pursue interoperable legislative frameworks and positive security outcomes.

The Qantas Group understands that real-time and remote biometric identification systems, such as facial recognition, are set to be banned under the European Union’s proposed *Artificial Intelligence Act*. Post remote biometric identification systems will also be banned, except with pre-judicial authorisation that any use is strictly necessary for a targeted search connected to a specific serious criminal offence.

These bans could mean that passenger movement and processing through European ports is materially out of step with other ports, resulting in poorer passenger experience, less efficiency for carriers and constrained security outcomes. While passenger and worker privacy should continue to be prioritised in technology legislative reforms, it should not supersede positive security and safety outcomes. Privacy safeguards in legislation should also be proportionate, so that they do not stifle innovation in the aviation industry.

**How can Government optimise partnerships with industry to streamline the movement of passengers and modernise the border, while also enhancing security?**

Government should invest equally with industry on research and development with respect to improving security outcomes, whilst reducing the duplication on security measures and activities. This would also reduce costs and emissions to both Government and industry.

For example, Governments could invest in technology and arrangements to screen passengers, baggage and cargo



once (to approved standards with approved technology) and using and sharing that information digitally with upstream airports/authorities or receiving it from downstream airport/authorities.

Government should focus efforts on the establishment of one-stop security arrangements to better facilitate the movement of passengers and trade to reduce duplication, lower costs and emission footprints.

Government could establish a specific group within the Department of Home Affairs to undertake research activities, coordinate with other relevant agencies (in Australia and overseas) and specifically coordinate where the ABF's border functions and Home Affairs' aviation security functions can complement and support each other's outcomes.

Research and development in future security planning is of critical importance as it facilitates strategies which allow the best opportunities to leverage emerging and cutting-edge technology in a planned and measured way, rather than reacting to emerging situations.

## Air Cargo Facilitation

The Qantas Group broadly supports the Government's Simplified Trade System agenda, particularly the simplification and digitisation of trade processes and regulatory reform that collectively seeks to improve productivity across supply chains.

In respect to the ABF and the DAFF's re-engineering of its cargo intervention model, there are potential adverse impacts to the efficient facilitation of legitimate cargo into Australia.

Our understanding of the proposed model is that the ABF and the DAFF will inspect cargo at a purpose-built facility (known as a Joint Examination Facility) located airside before receipt of cargo by the operator of the cargo terminal. Air cargo containers of interest (excluding air courier containers) will be physically examined and inspected. Containers will be broken down and/or unpacked, examined and repacked before being provided to the operator of the relevant cargo terminal.

This proposal is a major shift to the way in which the ABF and DAFF currently review cargo. The current model of intervention occurs at a freight forwarder depot off-airport and under the control and management of the freight forwarders.

Issues that could arise with this proposed model include:

- Liability for cargo that is damaged during the intervention process while under the control of the ABF and the DAFF;
- Congestion and potential delays in processing cargo through the Joint Examination Facility and the consequential impacts on industry; and
- Cost recovery for this new level of intervention in an environment.

While the Qantas Group supports the Government's objective to bolster and enhance border and biosecurity integrity, this should not result in increased costs to the supply chain and the facilitation of cargo across borders.

Advanced detection technologies to enable examination at container level are currently not available and are up to eight years away. Once available, this will provide a more seamless intervention process. The Qantas Group supports a transition to a new intervention model when this technology is available.

## Questions

**In the air cargo environment, how could industry and Government better work together to leverage advances in technology as well as industry investments in infrastructure and technology to streamline movement of cargo?**

The Qantas Group supports leveraging digital technology advances and investment in platforms, such as the National Freight Data Hub, to facilitate the real-time flow of information and updates to freight stakeholders both on and off airport. The sharing of non-commercially sensitive data within the freight community will improve processes, more efficiently coordinate the movement of freight and facilitate better responses to operational issues that arise. The European Cargo community have already established a collaborative hub to better align stakeholders with airport activities.



## CHAPTER 9

Future industry workforce

## Key points in this chapter:

- The Qantas Group is the largest aviation employer in Australia and employs over 27,000 people across 27 countries.<sup>1</sup> Our people are our greatest asset and are critical to the Group’s success.
- The Qantas Group is committed to working closely with its employees and unions to achieve outcomes that are sustainable and benefit everyone.
- Over the next decade, we expect to create over 8,500 new highly skilled jobs in Australia driven by investment in new aircraft and increased flying to meet long-term demand.
- The Qantas Group is the largest investor in aviation skills in Australia, spending over \$100 million each year.
- The global aviation industry faces workforce challenges to meet demand for skilled labour, particularly with respect to pilots and engineers. Significant forward-planning, investment and collaboration between Government and industry, including in relation to migration settings, will be required to address the issue.
- Policy priorities include:
  - Streamlining the processes for recognition of overseas qualifications;
  - Amending the skilled migration restrictions on regional areas and age, and regularly updating the occupations list;
  - Expanding funding for training and training allowances for employers to upskill the industry;
  - Initiatives to reduce the high cost of obtaining aviation qualifications, including through the VET student loan program;
  - Simplifying licencing requirements by aligning qualification frameworks;
  - Scholarships for underrepresented students to support certification in aviation related disciplines;
  - Developing a coordinated approach to aviation engineering apprentice programs, particularly for underrepresented students; and
  - Further investment in establishing a national mentoring program and partnering with organisations to provide funding for additional development activities.

The Qantas Group expects to create:



**8,500**

new onshore jobs  
over the next 10 years

**4,500**

Cabin Crew

**1,600**

Pilots

**800**

Engineers

**1,600**

other operational roles

<sup>1</sup> Total number of employees of wholly-owned entities of the Qantas Group, as well as Jetstar Asia Airways Pte Ltd, and majority-owned entities Holiday Tours, Travel Ltd and Taylor Fry Holdings Pty Ltd and Trip A Deal Pty Ltd. As at 30 June 2023.



## Workforce Challenges

It is widely acknowledged that there are global challenges meeting the demand for skilled labour in the aviation industry. After the grounding of airlines across the world during the COVID-19 pandemic, many skilled professionals left the industry. The Green Paper estimates this to be approximately one third of Australia's aviation workforce. With the return of demand, there is strong competition to rebuild workforces, a challenge which is compounded by high levels of employment across the economy and training requirements.

It is likely that the aviation industry will continue to face skilled labour challenges over the short to medium term. Boeing's 2023 Pilot and Technician Outlook projects that 649,000 new pilots, 690,000 new maintenance technicians, and 938,000 new cabin crew members will be needed to fly and maintain the global commercial aviation fleet over the next 20 years.<sup>2</sup> Educational outreach and career pathway programs will be essential to inspiring and recruiting the next generation of aviation workers, particularly as many pilots, engineers and cabin crew members will reach retirement age over the next decade.

### Pilot Shortages

One of the key challenges for airlines around the world is satisfying the demand for pilots.

Oliver Wyman projects that the demand for pilots will outstrip supply in most regions across the world between 2022 and 2024 and will continue to worsen over the next decade to a shortage of nearly 80,000 pilots by 2032.<sup>3</sup>

The Qantas Group's significant fleet expansion is driving demand for new pilots. We estimate the Qantas Group will require around 4,000 pilots over the next 10 years and almost 1,000 pilots between now and financial year 2025.

This includes new jobs due to fleet expansion and attrition (noting that the mandatory retirement age for pilots operating international aircraft is 65 years, and all pilots must also pass annual medical tests).

The fleet expansion means that our pilots are regularly being promoted to larger aircraft, with approximately 12 per cent of QantasLink pilots moving within the Qantas Group each year.

This movement drives an ongoing need to recruit pilots across all aircraft types and in turn, a requirement for simulator instructors to train such pilots. The training load for this movement of pilots is substantial and is projected to be around double the current requirement in some years over the next decade.

Supporting the training and qualification of a pipeline of new pilots is only part of the solution. An airline requires a mix of experience levels to meet safety management policies and ensure there are pilots with the requisite hours to be internally promoted as opportunities become available. The demand cannot be met by only recruiting newly graduated pilots.

The Qantas Group remains an employer of choice for pilots in Australia for a range of reasons, including the career progression opportunities provided within the Group on different aircraft types and flying missions, and typically higher rates of pay and conditions. Notwithstanding this and our significant investment in training, the Group faces challenges maintaining its talent pipeline. There are not enough new Commercial Pilot Licences being issued to sustain the needs of the broader Australian domestic aviation industry and the numbers are declining. According to CASA, in financial year 2020 there were 1,343 such licences issued and only 943 in financial year 2022.<sup>4</sup>

### Pilot Qualifications and Ongoing Training

Students who graduate from the Qantas Pilot Academy qualify for the following CASA licences and ratings:

- A Commercial Pilots Licence;
- An Airline Transport Pilots Licence (Theory component);
- A Multi-Engine Command Instrument rating; and
- A Multi-Crew Cooperation.

The course takes 55 weeks (subject to weather).

Depending on the airline within the Qantas Group, the entry level for a pilot is either Second Officer (who provide support on longer flights but don't conduct take-offs and landings), or First Officer. The Qantas Group does not hire external recruits into the role of Captain (which is senior to the role of First Officer). Captains must be promoted from existing First Officers within the Group.

After qualification, there is extensive training conducted throughout the career of a pilot. Each year, pilots must complete multiple checks to maintain their licenses, including a minimum of four simulator sessions, line flight observation from the training department and an assessment on cabin emergency procedures.

When pilots are promoted or transition to another aircraft type, further training is required which can take up to five months, made up of both ground training (where pilots are not flying for the Group) and line training on aircraft.

<sup>2</sup> Media release: Boeing Forecast dated 25 July 2023. Link [here](#). <sup>3</sup> Article: The Airline Pilot Shortage Will get Worse by Geoff Murray and Rory Heilakka. Link [here](#).

<sup>4</sup> Civil Aviation Safety Authority Annual Report 2021-2022, pg 164. Link [here](#).

Suggestions that the Qantas Group is 'poaching pilots' from another regional airline are entirely inaccurate. The Qantas Group advertises for pilot positions and any eligible pilot may apply. Like any other employee, pilots are entitled to change employers subject to the terms of their contracts.

In an environment where there are known shortages, and pilots tend to be promoted to larger aircraft types, there are challenges recruiting experienced pilots for smaller aircraft such as turboprops. This is a global, industry-wide dynamic.

### Engineering Shortages

Over the next decade, the Qantas Group estimates that it will need around 200 new engineering recruits every year to meet its requirements. That number exceeds the current national supply of new aviation engineers each year.

A fully licensed aircraft maintenance engineer typically takes a minimum of five years of practical and classroom training.

As the Green Paper observes, the number of engineering apprentices is declining, as is the number of licences being issued.

### The Qantas Group's Approach

The Qantas Group recognises the challenges in meeting the demand for skilled labour in the aviation industry and has invested in training to forward plan, create a long-term pipeline of talent and develop Australia as a training hub for the broader region.

The Qantas Group also recognises the importance of inclusivity, diversity and equality in the workplace to attract and retain personnel to the aviation industry. We are committed to fostering a culture in which inclusion and diversity is valued and providing a workplace that is safe and respectful.



### Training

#### The Qantas Pilot Academy

In 2020, the Qantas Pilot Academy opened in Toowoomba, Queensland, with the capacity to train up to 250 pilots each year.

Over 290 pilots have already graduated, with a further 1,000 pilots expected to graduate over the next five years.

The Qantas Pilot Academy is building a long-term potential pilot workforce for the Qantas Group, but it is also helping the broader industry meet the increasing need for skilled aviators. To date, a significant proportion of graduates have joined the Qantas Group and the remainder have entered the broader aviation industry, including General Aviation.

#### The Economic Contribution of the Qantas Pilot Academy

Deloitte Access Economics' analysis of the economic contribution of the Qantas Pilot Academy is provided at Annexure D to this submission.

The Qantas Pilot Academy is projected to increase Australian GDP by over A\$250 million and up to as much as A\$603 million and to generate on average between 164 and 392 additional full time equivalent jobs each year.<sup>5</sup>

The Qantas Pilot Academy also has a significant economic contribution in its own right, currently employing 92 full time equivalent jobs and with an expected annual operating expenditure of A\$15 million once at full capacity.

#### The Qantas Engineering Academy

In June 2023, the Qantas Group announced two locations for the Qantas Engineering Academy, with trainees able to choose to study in either Brisbane or Melbourne — cities that both have a considerable engineering presence for the Group.

The Qantas Engineering Academy will train up to 300 engineers a year across both sites from 2025 and has already received over 1,600 expressions of interest from potential students.



<sup>5</sup> Between 2019–20 and 2032–33.

The Qantas Engineering Academy will support both growth and attrition as current engineers retire.

### Qantas Flight Training Centre

In May 2023, the Qantas Group announced a new flight training centre in Sydney, which will train 4,500 pilots and cabin crew each year from 2024.

The purpose-built facility near Sydney Airport will house up to eight full motion simulators and will also have flight training devices, aircraft cabin mock-ups with emergency procedures equipment, and classroom and training facilities, and represents a major investment in skills and jobs.

This is in addition to Qantas' pilot training facility at Brisbane Airport which opened in 2022 and has capacity to train up to 900 pilots per year.

### New training facility at Mascot

The Qantas Group opened the Longreach Centre of Service Excellence in 2022. It is used to train cabin crew across the Qantas Group and includes four cabin pods (simulating actual aircraft interiors), service rooms and 13 training rooms for theory-based training on business, service and safety.

### Future Talent

The Qantas Group has a range of initiatives and programs to attract future talent to the aviation industry, including:

- The Qantas and Jetstar Graduate Programs;
- Partnership with CareerTrackers to provide First Nations university students with the opportunity to undertake a paid internship at Qantas;
- Partnerships with schools to create aviation work experience weeks and a paid intern program;
- The Qantas Group Future Pilot Program which provides students graduating from the Qantas Pilot Academy with the opportunity to be mentored by Qantas Group pilots; and
- The Qantas Group Aviation Career Enrichment Program which partners with multiple universities to support students in preparation for a future career in aviation.

### Attraction and Retention

The Qantas Group is committed to being an employer of choice with a strong employee value proposition, which prioritises talent. This commitment is reflected in the demand for our roles. In financial year 2023, we received over 170,000 applications for nearly 7,200 roles across the Group, with cabin crew a major driver.

### 27,000 employees across 27 countries

- Highest paying airline in Australia
- Average non-executive salary above \$100,000 p/a
- Average tenure 10+ years<sup>6</sup>
- 44 per cent employed for 10+ years<sup>6</sup>
- In addition to competitive salaries, we are focused on sharing the benefits of recovery after the pandemic with our employees

In addition to competitive salaries, we are focused on sharing the benefits of recovery after the COVID-19 pandemic with our employees. Many of our employees are now shareholders in Qantas for the first time as a result of our Recovery and Retention Program.

### In FY23, +20,000 will share in \$340 million of bonuses

- 1,000 Qantas shares
- \$5,000 boost payment
- \$120 million wage increases as part of a \$4 billion annual payroll
- Enhanced staff travel benefits

While skilled professionals leaving the industry during the COVID-19 pandemic had an impact on attrition, the rolling 12-month attrition rate for the Qantas Group has normalised, reaching eight per cent as at 30 June 2023.

### Leadership Program

We are continuing to invest in our leaders' professional development through a range of programs.

Our inclusive leadership development program is currently being rolled out to those in leadership roles – approximately 7,500 leaders, including 5,500 frontline leaders in our daily operations.

### Flexibility

The Qantas Group appreciates that flexibility means different things to different people and we are committed to providing a range of flexible work practices.

Across the Group, our roles and work environments allow for different types of flexibility. We have implemented a 'Flexible Working Arrangements Policy' with multiple flexibility options available to employees such as part time, variable working hours and working from home.

We recognise that the nature of shift work poses additional challenges for our people to utilise flexible work arrangements. This is an area we realise is important for maintaining our inclusive culture. Many of our workgroups have specific flexibility provisions in their industrial instruments, for example:

<sup>6</sup> At 30 June 2023.



- Carer’s and flexible line rosters for our mainline pilots (enabling pilots to work reduced hours and specific days) to assist those with caring responsibilities;
- Ability for licenced aircraft maintenance engineers to agree on part time (reduced hours) arrangements; and
- Part time and roster preference for our cabin crew (enabling various part time hours, for example 50 per cent or 75 per cent, roster preferences for days and lengths of trips, and flexibility in the roster through trip swaps).

We are committed to continuing to work on ways to improve this, including identifying how roster swapping or bidding can be enhanced and administered fairly across our networks.

**Respect at Work**

A safe and inclusive workplace culture is critical to attracting and retaining diversity in the aviation sector.

The Qantas Group has a robust Code of Conduct and Standards of Conduct Policy, which outlines principles and values that underpin our organisation and the minimum standards we expect to be upheld by all employees.

In 2018, the Qantas Group conducted an independent review led by Elizabeth Broderick, former Sex Discrimination Commissioner. In accepting the recommendations of that review, we have put in place a program called Respect@Work. This program is currently being rolled out across the Qantas Group with initiatives aimed at creating a safe and inclusive workplace for our employees.

**Women in Aviation**

The promotion of women in aviation is critical to meeting future industry workforce needs though increased labour force participation, building a sustainable talent pipeline and fostering diversity of thought and skills in the workplace.



**Gender Balance**

The Qantas Group has committed to reaching a 42 per cent representation of women in senior leadership by 2024 (currently 39.1 per cent).

We approach our gender diversity targets by:

- Strategically managing transformation activity to protect key female talent;
- Identifying and promoting female talent; and
- Targeted external recruitment to attract female talent.

While the Qantas Group is above the global average in terms of female pilot representation<sup>7</sup>, it remains a key focus and we know there is more work to do. Our target is 40 per cent intake of female cadet pilots by 2028 (with an incremental three per cent increase year on year).

In March 2023, we relaunched our scholarship program for the Qantas Group Pilot Academy to provide 50 scholarships to female and First Nations students. This is a A\$1.5 million investment over five years.

Achieving gender balance in an industry with long lead times to develop the requisite technical skills requires engagement with underrepresented students in high school and university to foster an early interest in the aviation industry.

In September 2023, Qantas hosted a ‘Girls in Aviation’ event with over 100 primary school children. This initiative was started by the non-profit organisation Women in Aviation International and encourages the advancement of women in all aviation career fields by encouraging girls to pursue a future career in aviation.

We continue to advocate for enhanced gender inclusion as a Member of the International Air Transport Association (IATA) “25by2025”, a Founding Member of the Champions of Change Coalition and as a sponsor of the Chief Executive Women’s network.



<sup>7</sup> Media release: ICAO releases new data on status of global aviation gender equality dated 27 April 2023. Link [here](#).



## Pay Equity

Addressing pay equity by increasing representation of women in leadership and under-represented roles is critical. The Qantas Group reviews the equity of an offer to an individual in comparison to the current remuneration of their peers, with consideration of relativities, experience and median pay, as well as a centralised review of all pay offers.

Removing barriers to female participation in the workforce requires ongoing policy development and monitoring of systems. Some of our initiatives include:

- Increased parental leave entitlements;
- Enhancing our employee support for employees transitioning to and from parental leave;
- Providing coaching for women in senior positions and in underrepresented areas returning to work following parental leave; and
- Establishing a women’s network known as Altitude.

## First Nations

The Qantas Group committed to and met a First Nations representative target of 1.4 per cent in financial year 2023.

In June 2023, the Qantas Group employed 330 individuals who identify as First Nations across our business, which is a 63 per cent increase compared to the same time last year (203 as at June 2022).

Our target for financial year 2024 is 1.5 per cent. We aim to focus on recruitment of First Nations talent into corporate roles to meet this target.

The Qantas Group has a whole of Group employment strategy which focuses on sustainable careers for First Nations people, including removing barriers for First Nations candidates to apply, reviewing and relaunching pathway programs and employment-related partnerships and establishing Daramu, our First Nations employee network.

We are rolling out a cultural learning strategy which includes implementing First Nations Cultural Confidence training for all layers of leadership and 10,000 customer-facing employees and implementing culturally inclusive service training for all customer facing employees.

The Qantas Group has partnerships with Australian Indigenous Education Foundation, Jawun, CareerTrackers, Maxima, Clontarf Foundation, and Australian Indigenous Education Foundation.

## LGBTQI+ Inclusion

The Qantas Group is a long-term and proud supporter of LGBTQI+ people, allies and the broader LGBTQI+ community.

The Illuminate network is our employee network for LGBTQI+ employees and their allies and aims to support a workplace inclusive of everyone.

Some recent initiatives include extending our support of the Sydney Gay and Lesbian Mardi Gras to WorldPride 2023, marking key days of significance such as the International Day Against Homophobia, Biphobia and Transphobia, and updating our ‘Better Together LGBTQI+’ inclusion training.

## Accessibility

In July 2023, the Qantas Group launched its Access and Inclusion Plan which outlines our commitment to access and inclusion for our customers and employees with a disability. One of the four pillars of this plan is sustainable careers to support people with disability to build their careers within the Qantas Group. Further details are outlined in Chapter 3 (Disability access) of this submission.

## Proposed Reforms

Building a strong and diverse aviation workforce and developing a pipeline of aviation talent will take a concerted effort from both industry and Government. Efforts should focus on supporting a healthy aviation ecosystem across related industries and General Aviation.

We have outlined a series of reforms below to support industry efforts to attract skilled aviation personnel, promote aviation skills and training pathways, and remove some of the barriers that exist for new employees.

### Skilled Migration

Investment by industry in training and skills needs to be coupled with appropriate settings for skilled migration to ensure that there is appropriate and streamlined access to skilled visas in circumstances where the skills aren’t available in the Australian labour market.

It is critical that Australia remains a first-choice country for migrants to study, work and build their future, particularly where newly qualified candidates are insufficient to meet overall demand.

The Qantas Group welcomes proposals for a permanent pathway for all workers on a Temporary Skills Shortage visa by the end of 2023. The absence of a pathway to date has presented significant challenges particularly for aircraft maintenance engineers and pilots, as candidates are often unwilling to commit to an arrangement that is only guaranteed for two years without a permanent pathway available.

The Government’s increase of the annual migration cap for financial year 2022–2023 and the Government’s roadmap to boost Australia’s tech workforce to achieve 1.2 million tech-related jobs by 2030 are welcome initiatives.

The Qantas Group also supports the key action in the Government’s Employment White Paper to reform the migration system.

### Regional caveats

This caveat applies to ‘Aeroplane Pilots and Flying Instructors’ and requires the visa holder to live and work in a regional area. While such candidates would conduct regional flying and support regional operations, most of these roles are based in major ports where the density of flying originates and there are economies of scale.

The Qantas Group bases its pilots in Sydney, Melbourne, Brisbane, Cairns, Perth and Adelaide. With our network, it would be cost prohibitive to base pilots in multiple smaller locations.

The Qantas Group has made significant investments that cannot easily be transferred. For example, the Group’s two new flight training centres referred to above are based in Mascot and Brisbane, and accordingly all simulator instructors for those facilities will need to be based in those areas.

This caveat largely prevents the Qantas Group utilising this visa pathway. If removed together with the age caveat below, it would provide significant and immediate relief to pilot shortages.

### Age caveats

Currently, Permanent Residency applicants must be under age 45 years unless an exemption is granted.

Skilled candidates in pilot and simulator instructor roles are often over the age cap of 45 due to the extensive flying experience required.

This caveat significantly restricts the available talent pool.

### Cost

The costs associated with bringing a skilled visa holder on a short-term skilled visa are high. For example, a two-year visa for an unaccompanied Aircraft Maintenance Engineer is an upfront fee of A\$5,500 (or if accompanied by a spouse and children, this is increased to A\$7,676), plus professional fees. This is not recoverable by a business if the visa holder decides to leave their employment prior to the two-year period. A subsequent application for a further two-year visa attracts fringe benefits tax payable by the business which makes it more expensive than occupations where a four-year visa is available upfront.

### Occupation Lists

The Government’s Employment White Paper has highlighted the need to reform the occupation lists, and the Qantas Group supports this reform.

The list of occupations that can apply for a two-year Temporary Skills Shortage visa was last updated in 2019. The landscape has shifted in that time and accordingly, it is not reflective of the occupations that businesses are currently experiencing shortages with. Occupations should be updated annually to ensure the list remains current, reflects emerging occupations and future occupation trends.

Further, there are currently two occupation lists, being the list for the two-year Temporary Skills Shortage visa and the list for the four-year visa which has a pathway to permanent residency. The Qantas Group supports consolidating all occupations into a single list with a four-year visa available plus a pathway to permanent residency.

### Labour Market Testing

Even where a skill shortage has been identified and the occupation is included on the occupation list, an employer is still required to advertise on three nationally available platforms for 28 days before making an offer to a candidate.

Requiring advertising through methods and websites which are not necessarily relevant to the skills or occupation is not genuinely testing the market, particularly for large employers with a dedicated talent acquisition team already actively sourcing these skills. This creates delays that can mean a candidate has accepted another role prior to receiving an offer from the Qantas Group.

### Recognition of Overseas Qualifications

Permanent Residency Skills Assessment Authorities (who assess overseas qualifications) have extended backlogs, inconsistent processes and unworkable timeframes, creating significant obstacles for employers. For example, processing times for VETASSESS over the last 12–18 months have often been over six months. They have paused accepting new applications for seven trade occupations whilst they clear the backlog.

Addressing these backlogs would assist with streamlining the process.

### Labour Agreement

If the skilled migration settings are updated appropriately, it will reduce business reliance on the labour agreement process.

The current process is time consuming and could be materially streamlined, with unnecessary duplications removed. For example, it should not be necessary to prove a skills shortage when an occupation is included on the occupation list, nor should pilots who are already required by CASA to have English competency be required to complete further English examinations as part of the labour agreement process.

The consultation process could also be expedited by requiring all feedback to be provided concurrently to all interested stakeholders.

### Training

The Qantas Group supports additional investment in training initiatives, such as:

- Expanding the funding available for training and training allowances for employers to train and upskill the industry, particularly with respect to technical trades;

- Increasing the investment from State-based TAFEs into training facilities, staff and technology; and
- Working with industry to promote training pathways, particularly engineering, for greater awareness and interest.

### Engineering

The Qantas Group supports the review by the Manufacturing Industry Skills Alliance of both the Certificate IV and Diploma of Aeroskills, which are relevant to the engineering workforce, to simplify and align the qualifications with the CASA curriculum-based program.

We also support the continued inclusion of Aircraft Maintenance Engineer disciplines on the Government's Apprenticeship Priority List.

### Pilots

As noted in the Green Paper, the cost of qualifying as a pilot is high.

The tuition fee for aviation students training with the Qantas Group Pilot Academy is approximately A\$136,000 (which is generally consistent with the cost across different training institutions in Australia for the same qualifications). This is a significant undertaking for any student and can be a barrier for entry.

The cost for training pilots is significantly higher than many vocations due to the nature of the equipment, facilities and labour required. The Qantas Pilot Academy is a purpose-built facility with 23 aircraft, a simulator and two flight training devices. It employs 32 flying instructors, six simulator instructors and seven ground school instructors. Fuel is also a significant expense.

Students can apply for a Commonwealth Government Vocational Education and Training (VET) loan for tuition fees. The loan is indexed annually and is repaid by the student once they earn over a set threshold. There is also a one-off 20 per cent levy added by the Government, which takes the overall cost for the Qantas Group Pilot Academy to around A\$163,000 (not accounting for annual indexing).

According to the National Skills Commission, the average price for a VET eligible course in Australia is A\$7,700,<sup>8</sup> demonstrating the disproportionate impact the 20 per cent levy has on pilot qualifications.

Furthermore, the maximum amount a student can apply for a VET loan (across any number of courses) is A\$160,000 which is less than the cost of pilot qualification. If a student has studied before and received a VET loan, this would further erode the amount available.

The State Governments of Victoria and New South Wales provide certain incentives which effectively mean that pilot students in those States do not pay the one-off 20 per cent levy. This is not available in Queensland, where the Qantas Pilot Academy is based, putting it at a comparative disadvantage for prospective students.

The Qantas Group supports:

- Initiatives to subsidise the cost of pilot qualifications for students;
- The removal the 20 per cent one-off levy for pilot students across all jurisdictions; and
- Increasing the financial cap for VET loans above A\$160,000.

## Licencing requirements

### Engineering

Simplifying licencing requirements by aligning qualification frameworks would deliver immediate benefit.

The Australian Qualification Framework (AQF) specifies the standards required to qualify for an engineering qualification, but CASA has significantly different requirements. AQF qualifications are aligned to the national skills framework and are competency based whilst CASA licencing is aligned to meet the international IATA framework and are curriculum based. AQF qualifications for units of competency are also not aligned with the CASA basics exams. This means that even once engineers are qualified pursuant to the AQF, there are additional and separate qualifications needed to meet CASA requirements.

The separation between the two creates significant rework, inefficiencies and business impact.

Additionally, some aspects of the theory examinations for aircraft type courses required by the CASA regulations are out of step with industry practice. For example, certain theory exams are closed book whereas in practice, engineers are encouraged to refer to operating manuals rather than rely on memory.

### Flight Examiners

Since July 2022, CASA has allowed experienced industry examiners to apply for approval to conduct flight examiner proficiency checks, which the Qantas Group supports. This reform has delivered genuine benefit and efficiency by enabling the highest qualified instructors to check and create new Type Rated Examiners.

## International Recognition

### Engineering

For engineering qualifications, there is inflexibility in recognising overseas qualifications.

CASA does not recognise qualifications from any other country other than New Zealand. As New Zealand recognises other jurisdictions, a Licenced Aircraft Maintenance Engineer from South Africa can travel to New Zealand to get their training recognised after which CASA will also immediately recognise the qualification.

CASA regulations are aligned to those in Europe, the United Kingdom, Singapore and many other countries, and recognising these qualifications does not present a risk to safety or performance.

<sup>8</sup> National Skills Commission website. Link [here](#).

Where there is regulatory alignment, recognising qualifications will attract skilled migrants quickly and efficiently and reduce the cost and time burden on aviation organisations.

### National Skills Passport

The Qantas Group supports the Government’s proposed National Skills Passport and recognises the efficiency opportunities this presents for many industries.

Once the passport is developed, the Qantas Group would support future enhancements, such as capturing equivalent international qualifications.

### Underrepresentation

The Next Phase Strategic Action Plan for the Women in Aviation Initiative has now been released and the Qantas Group welcomes the continuation of the investment until 2026.

Further areas for potential investment for underrepresented groups could include:

- Facilitating clearly communicated pathways to qualifications from school level to university;
- Scholarships for female and First Nations students to support certification through pilot training programs;
- Scholarships for female and First Nations students to support studies and formal qualifications in aviation related disciplines;
- Support for First Nations students through school with a focus on numeracy and literacy skills;
- Developing a coordinated approach to aviation engineering apprentice programs, with support for female students leaving high school to complete an apprenticeship, including scholarships and additional support with applications, training, development, mentoring and coaching;
- Further investment in establishing a national mentoring program and partnering with organisations such as Superstars of STEM, Stars (Female First Nations Students) Royal Aeronautical Society of Australia’s Cool Aeronautics programs to provide funding for additional development and networking activity;
- Running Females in Aviation STEM programs online, in high schools and holiday programs to attract females into aviation STEM programs; and
- Funding for underrepresented workgroups to support organisations such as Indigenous technology not-for-profit Indigitek, Women in Technology and Australian Women in Security to create a stronger pipeline of talent for First Nations and women in technology and cyber.

## Questions

### Can alignment of training with regulatory and licencing requirements be improved?

For engineering qualifications, alignment of the Australian Qualification Framework with CASA would deliver significant benefit, as outlined in more detail under the heading ‘Licencing Requirements’ above.

### How can Government policy enable industry to support the net zero economy and the future skills, training, and workforce needs that entails (including future fuels)?

Jobs and Skills Australia recently published a capacity study which outlined the workforce needs required for Australia’s transition to a clean energy economy. With sustainable aviation fuel a core part of the Qantas Group’s decarbonisation strategy, policies which support the scaling up of this sector domestically will deliver corresponding employment opportunities for aviation.

With a steadily growing pipeline of investment in bioenergy projects across Australia, more opportunities will exist for skilled employment, particularly across regional areas. Bioenergy investment could benefit rural and regional communities, with a focus on agriculture-derived feedstocks and enabling diversified revenue streams for the sector.

Bioenergy Australia’s recent submission on Queensland’s Liquid Fuels Strategy suggests that the development of a sustainable aviation fuel industry in Australia could alone create approximately 8,000 new jobs and an addition A\$2.8 billion GDP per annum. Similarly, Australia’s Bioenergy Roadmap (ARENA, November 2021) outlines how Australia’s bioenergy sector as a whole could contribute A\$10 billion in extra GDP per annum and 26,200 new jobs (primarily in the regions) by 2030.<sup>9</sup>

### How should Governments and industry prepare Australian workers for the new skills required for the technological transition and net zero fuels?

Australia has prospered from using its strong natural resources to develop economic opportunities in carbon intensive industries and agriculture. Reliance on these resources has led to a concentration of economic activity in these sectors.

The global transition towards net zero emissions creates an opportunity to redefine and diversify the industries and skills of Australia’s economy through the adoption of innovative and new emissions reduction technologies.

For aviation, building a domestic sustainable aviation fuel industry will provide a unique regional economic development opportunity and secure greater liquid

<sup>9</sup> Australian Renewable Energy Agency “Australia’s Bioenergy Roadmap” dated November 2021. Link [here](#).



fuel security for Australia. A domestic sustainable aviation fuel industry would also generate export market opportunities into Asia and the Pacific, further accelerating the job growth potential of this industry, particularly in our regional communities.

Frontier Economics found that a local SAF industry could create more than 7,400 jobs by 2030, 15,600 jobs by 2050 and contribute A\$2.8 billion in GDP per year by 2030 and up to A\$7.6 billion in GDP per year by 2050.<sup>10</sup>

Overseas examples show that creating a local sustainable aviation fuel industry relies on the implementation of supportive policy settings and sector-wide incentives.

Further detail on the economic opportunities and associated challenges for the Australian aviation sector in transitioning to net zero are included in Chapter 6 [Maximising aviation's contribution to net zero] of this submission.

**Would an analysis of future skills and workforce needs help position the aviation industry to pre-emptively respond to emerging needs?**

There is already a significant body of information that provides this insight including on a global level, including analysis from ICAO and IATA. While an assessment of local or Asia Pacific future skills and workforce needs would be useful, emerging needs are already well known by the industry and resources would be better deployed elsewhere.

**What role can reform to skilled migration pathways play in addressing immediate aviation personnel shortages?**

It is critical that investment in training is matched by an appropriate skilled migration setting where there are skills shortages. Some proposed reforms to the skilled migration settings are outlined under the heading 'Skilled Migration' above, including removing regional and age caveats, an ongoing and regular review of occupation lists, consideration to the cost of visas, streamlining the process for labour market testing and labour agreements, and increased recognition of overseas qualifications.

**Are there opportunities to improve recognition of overseas training qualifications?**

There is an opportunity for CASA to deliver efficiencies by recognising engineering qualifications from additional countries where the regulations align, as outlined in more detail under the heading 'Licencing Requirements' above.

Permanent Residency Skills Assessment Authorities who assess overseas qualifications have extended backlogs, inconsistent processes and unworkable timeframes, as outlined in more detail under the heading 'Skilled Migration' above. A review to streamline these processes would facilitate a streamlined assessment of overseas qualifications.

<sup>10</sup> A4ANZ 2022-2023 Policy Priorities, pg 5. Link [here](#).



# CHAPTER 10

International aviation

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## Key points in this chapter:

- International aviation plays a critical role in Australia, maintaining connectivity and trade links with the rest of the world and attracting visitors from abroad to our shores.
- Following the effective grounding of international travel during the COVID-19 pandemic, international capacity has rebounded as expected, and is on track to reach and exceed pre-COVID levels in 2024.
- Successive Australian Governments have sought to negotiate agreements that balance Australia's national interests, expand Australian airlines' access to the world, allow foreign carriers increased access to Australia, provide opportunities for trade and tourism and deliver connectivity and competition benefits for passengers.
- The Qantas Group broadly supports the continuation of the current policy settings, including the negotiation of 'capacity ahead of demand' and negotiating 'Open Skies' style agreements where it is in the national interest.
- Australia should continue to play a role in shaping the international aviation regulatory framework through engagement with ICAO and regional neighbours to develop safety, security, health and sustainability policies.
- There is an urgent need for the border agencies, airports and airlines to jointly explore opportunities for innovative, technology-led solutions and options for new and existing ports to increase efficiency and reduce the cost to serve at both capital city and secondary ports.
- The *Qantas Sale Act 1992* (Cth) imposes requirements on the Qantas Group that do not apply to any other Australian airline. While we understand the historical basis for this, these settings place the Qantas Group at a structural disadvantage.

## The Current Status of International Aviation in Australia

The closure of Australia’s international borders during the COVID-19 pandemic was a seismic shock for the industry, with international services largely grounded for nearly two years. This did significant damage to supply chains and the broader aviation ecosystem, the effects of which are still washing through.

Since international borders fully reopened in early 2022, international capacity has rebounded, ensuring continued growth for Australian business, trade and tourism.

International capacity has doubled in the past year and new flights are being added regularly by the 56 international airlines serving Australia. In the 12 months from July 2023, an additional 6.6 million one-way seats have been published on international routes from Australia, bringing the total one-way international seats published on international routes from Australia to around 27.5 million for the 2024 calendar year. Figure 1 below shows the outlook for the return of international capacity.

The recovery of international travel has not been uniform and has varied across regions. While the Asia Pacific initially lagged with the extended closure of some countries’ borders — particularly China — this has now largely corrected and the region continues to experience high demand, though IATA has questioned whether this is likely to be sustained.<sup>2</sup>

The Qantas Group expects to reach 100 per cent of its pre-COVID international capacity levels by March 2024 and has announced additional flying taking it beyond that level from July 2024<sup>3</sup> onwards. These additional services will offer customers more choice to popular destinations across Asia, the United States and South Africa.

The recently announced Perth-Paris<sup>4</sup> and Sydney-Osaka (Kansai)<sup>5</sup> services by Qantas and Jetstar respectively will further boost the return of international capacity and provide customers with new direct options for travel.

Qantas is flying direct to where outbound travellers want to go, with the network covering the top ten outbound destinations.<sup>6</sup> This includes delivering differentiated long-haul point-to-point routes, such as Perth-London and Perth-Rome, underpinned by the Boeing 787-9, configured with fewer seats than our competitors and made specifically for longer missions.

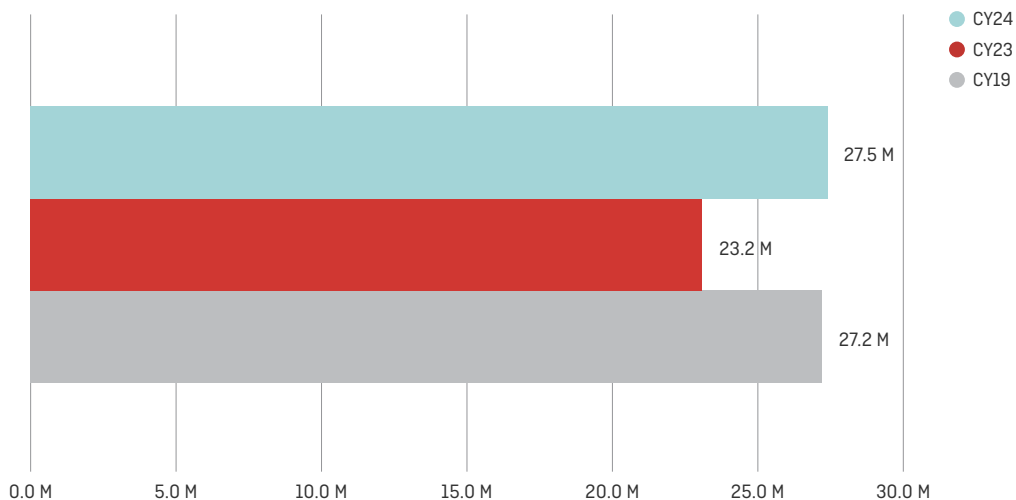
From late 2025, the new Airbus A350-1000s and Project Sunrise will make any city in the world including New York and London just one flight away from Australia. These will be the longest air routes in the world and will leverage Qantas’ many decades of experience in endurance flying.

Over the past 30 years, Australia has been at the forefront of international market deregulation and liberalisation, privatising Qantas and major airports and removing impediments to competition. This approach has delivered more flights, lower prices and more innovation, and has helped facilitate substantial growth for Australia’s visitor economy.

The vast majority of international airlines Qantas competes with have significantly lower cost bases, chiefly due to the price of labour in their home markets. Others are sovereign owned or supported, meaning they do not necessarily have to return a profit but rather are seen as strategic assets for their country of origin. This has driven the Qantas Group to keep innovating, including through direct routes like Perth-Paris, and restructuring to improve our competitiveness.

Globally, the response to these pressures (with the approval of regulators) has driven consolidation and alliances (including through equity) to address and overcome — to the extent possible — the lack of a level playing field. It is necessary to ensure that Australian airlines have similar opportunities to their international competitors, allowing the maintenance of an effective presence in international markets and ability to play a central, enabling role in the national economy.

Figure 1: Outlook for the return of international capacity<sup>1</sup>



<sup>1</sup> CY24 based on published schedules until Sep 24 (as at 13 Nov 23) and market information, in line with IATA estimates and easing border restrictions. <sup>2</sup> International Air Transport Association, 29 September 2023. <sup>3</sup> Qantas Media Release. Link [here](#). <sup>4</sup> Qantas Media Release. Link [here](#). <sup>5</sup> Jetstar Media Release. Link [here](#). <sup>6</sup> In 2019, based on DDS –IATA passenger data.



## Bilateral settings

### Historical Context

Historically, Governments around the world have been heavily involved in international aviation markets. Access to routes was highly regulated and tightly controlled, with most governments owning a national ‘flag carrier’.

The Chicago Convention established the rules under which international aviation operates and determined that no scheduled international air service may be operated over or into the territory of a contracting State without their express permission. This means that before an airline can operate international services to another country, the departing country’s Government must first negotiate a treaty-level agreement with the destination country’s Government. These treaties are known as bilateral air services agreements.

In the years following its creation, ICAO developed a series of traffic rights, known as freedoms of the air. These freedoms continue to form the basis of the rights exchanged in air services negotiations today. To allow international aviation to grow and to expand their home carriers’ access to new and emerging markets, Governments must continually negotiate new treaties.

As a result, international aviation is regulated by a complex web of more than 3000 bilateral air services agreements. The Australian Government has negotiated more than 100 bilateral air services agreements and associated arrangements allowing airlines to offer the services that they do today.

This type of trade arrangement does not exist in any other sector and reflects the history and complexity of these rights. The bilateral agreements of each country are informed by their relative bargaining power and the rights that are available to trade.

### Australia’s Approach

Successive Australian Governments have sought to negotiate agreements that balance Australia’s national interests, expand Australian airlines’ access to the world, allow foreign carriers increased access to Australia, provide opportunities for trade and tourism and deliver connectivity and competition benefits for passengers.

Australia has a number of ‘Open Skies’ agreements with its key trading partners, including the United States, New Zealand, China, the United Kingdom, Singapore, India, Japan and Switzerland, and highly liberal arrangements with most other key trading nations relevant to Australia.

After a COVID-related hiatus, the program of bilateral engagement on air services agreements is ramping up again. This is critical. While the bilateral system has limitations, it has effectively delivered growth and will continue to do so while the Australian Government explores opportunities for expanded liberalisation.

Sequenced case-by-case negotiations, which balance benefits and opportunities, and focus on reciprocity,

will enable the progressive liberalisation of air services arrangements that expand Australian airlines’ access to the world and allow foreign carriers to increase their access to Australia.

Australia’s long-standing approach to negotiating bilateral air services agreements delivered significant growth in capacity in the decade prior to 2020. Australia’s top seven source countries for visitor arrivals in July 2023,<sup>7</sup> representing over half of international passengers and flights coming into Australia, are covered by open capacity agreements. A significant amount of capacity is available under many of Australia’s current bilateral air services agreements and is not being used by Australian or foreign airlines.<sup>8</sup>

The Qantas Group broadly supports the continuation of the current policy settings, including the negotiation of ‘capacity ahead of demand’ and negotiating ‘Open Skies’ style agreements where it is in the national interest.

The Qantas Group notes that negotiating Governments often place considerable importance on their home carriers’ significant national employment, investment and strategic importance, as well as factors such as high levels of government ownership and support for the applying carrier, and the ability for their home carriers to compete on a level playing field.

## Foreign investment in Australia’s international airlines

The *Qantas Sale Act 1992* [Cth] imposes restrictions on the Qantas Group that do not apply to any other Australian airline, including that foreign persons are not permitted to hold relevant interests above 49 per cent of the issued share capital of Qantas Airways Limited. This effectively limits the Qantas Group’s access to offshore capital — a limitation that does not apply to its wholly or majority foreign owned domestic and international competitors.

While the Qantas Group understands the strong public interest in Qantas remaining majority Australian owned, the *Qantas Sale Act 1992* [Cth] places the Qantas Group at a structural disadvantage compared to its competitors.

These restrictions remain an important consideration to the broader topics of competition and international aviation policy settings.

## International Engagement

Australia’s continued active participation in the international aviation regulatory environment, both through ICAO and in the Asia Pacific region, will be critical to promote improved safety, security, health, sustainability and connectivity outcomes.

A global scheme for the treatment of international aviation emissions is necessary to prevent the duplication of regional and individual schemes to international flights, with their associated competitive distortions. In addition, as set out in Chapter 5 (Maximising aviation’s

<sup>7</sup> Department of Infrastructure submission to the CBASA inquiry. <sup>8</sup> Department of Infrastructure, Transport, regional Development, Communications and the Arts website. Link [here](#) and [here](#).

contribution to net zero), consideration should be given to the development of a regional approach to SAF, particularly given the limited production capacity of the Pacific Islands.

The Qantas Group has a close and continuing association with Pacific Island nations, with its airlines operating between Australia and the Cook Islands, Fiji, New Caledonia, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste and Tonga. These services have contributed to growing people-to-people links across this strategically critical region and with Australia.

The provision of safe, efficient and reliable air services is crucial to the economic development of all South Pacific nations. Practical support by Australia to assist in this regard will remain a vital regional need for the foreseeable future.

## International airport designation and development

The Qantas Group accepts that growth of the aviation sector has put pressure on Australia's security and biosecurity arrangements.

The Qantas Group supports recent initiatives to meet growth at existing airports and welcomes further support for airlines that wish to operate international services to and from secondary airports. These secondary airports will provide opportunities to expand operations and improve tourism into the regions.

Qantas welcomes the July 2023 commitment by the Prime Ministers of Australia and New Zealand to revitalise the joint working group on initiatives to move closer towards seamless travel across the Tasman by reducing the remaining barriers to ensure that people and goods can move more easily between the two countries. Real benefit in the short-term will be through improvements in border processing through the implementation of digital technology and the reduction of Tasman taxes and charges. Current settings are not delivering on the potential of the Single Aviation Market.

## Questions

**Are there other issues or concerns associated with the Australian Government's approach to negotiating aviation bilateral agreements that you wish to highlight?**

**What opportunities exist to improve the approach to international negotiations?**

As set out above, the Qantas Group welcomes the recommencement of a program of bilateral engagement on air services agreements following a COVID-related hiatus.

The Qantas Group notes the considerable attention that the Government's approach to bilateral negotiations has recently received. This debate was largely shaped by the temporary spike in international airfares during the post-COVID restart and should not shift Australia's fundamentally sound approach of negotiating capacity and seeking opportunities for liberalisation in accordance with the national interest.

While there has been long-standing acknowledgement that air services negotiations cannot be conducted effectively in full public view, the Qantas Group notes recent calls for increased transparency of the Australian Government's approach to international negotiations and assessment of the national interest.

National interest is a concept with broad application in all State-to-State engagement and is necessarily fluid and sometimes sensitive. Relevant considerations for the aviation sector might include the 'beyond' rights on offer, the ability to code share, freight rights, access to ground handling, airports and the ability to sell freely, rights of domestic domiciled airlines and their interests internationally. National interest can also take into account policy areas that are not directly covered by the bilateral agreements themselves.

The Qantas Group considers that the current approach to determining the national interest provides the Government with the appropriate flexibility to balance a range of factors in determining aviation policy, particularly given many key markets are already covered by 'Open Skies' agreements.



The Qantas Group notes the Green Paper's proposal that consideration be given to increasing the level of capacity ahead of demand and removing airport specific limitations. It is important that change to deliver the interests of one part of sector does not have the unintended consequence of disrupting the balance of competing interests that are managed within the policy framework with negative consequences for the broader Australian economy.

The policy settings must ensure that all players can participate in the market on equal terms. A progressive approach to liberalisation which focuses on sequenced case-by-case negotiations and reciprocity, is best placed to maximise the benefits and opportunities for Australia.

**Are there problems or potential improvements related to the Australian Government's approach to managing foreign investment in Australian international airlines?**

Qantas notes that the Government proposes to maintain the current settings for foreign investment in Australian international airlines under the *Air Navigation Act 1920* (Cth), the *Qantas Sale Act 1992* (Cth), and the *Foreign Acquisitions and Takeovers Act 1975* (Cth).

The limitations of the *Qantas Sale Act 1992* (Cth) place the Qantas Group at a structural disadvantage compared to its competitors. We encourage the Government to remain cognisant of the implications of these settings when considering the broader policy environment.

**What areas should Australia target through its international aviation programs? Are there opportunities for improvement and where would the greatest benefits be achieved?**

The Qantas Group welcomes ongoing and detailed engagement with ICAO on a range of sustainability and decarbonisation issues, including emerging challenges of CORSIA as it matures.

While the CORSIA program sets an essential framework to monitor, report and address some carbon emissions, greater clarity and ongoing, timely transparency on key elements of the scheme would provide enhanced certainty for the Qantas Group and the broader domestic and international aviation sector.

International cooperation in scaling the uptake and production of SAF will be a continuing focus for the Qantas Group, particularly in the Australia-Pacific region which has the potential to be a key renewable fuels player.

Several governments have introduced policies or established market signals to indicate their respective strategies in expanding regional SAF industries, and CSIRO's benchmarking of key Asia Pacific neighbours in the Sustainable Aviation Fuel Roadmap on their capacity for SAF development is instructive in assessing the region for future investment and partnership opportunities.

Regional Asia Pacific countries like Singapore, New Zealand and Japan are studying their own stimulatory responses and it is vital that Australia does too, opening opportunities for economic and technology cooperation between States and enabling Australia to become a critical producer of fuels for

the region. As outlined in Chapter 5 (Maximising aviation's contribution to net zero), the introduction of a progressive SAF blending mandate and a supportive financial incentive policy framework is essential to position Australia as a leader in the region and increase demand for SAF by reducing its cost compared to traditional jet fuel.

The Qantas Group would support the Government increasing its support of safety administration and air traffic management activities in neighbouring countries, particularly in Indonesia, Papua New Guinea and the South Pacific.

The Government could provide a greater support and assistance role within the Asia Pacific region to regional safety, and regulatory initiatives, for example the Pacific Aviation Safety Office, and in providing regional National Aviation Authorities for engineering, maintenance and also regulatory, technical and operational support.

Given the increasing likelihood of pandemic threats, there is also a role for increased Government coordination on health, including in relation to critical ongoing monitoring. The success of preparations for the next pandemic relies on the strength of countries' systems for detecting and responding to outbreaks. The global impact of an emerging or novel disease can be moderated by early detection and intervention.

**What issues should be considered in changing the Framework for the Provision of Border Services at New and Redeveloping International Ports?**

The Qantas Group is pleased that the Green Paper is considering changes to the New and Redeveloping International Ports Framework to consider the pressures on border services and concerns over security and biosecurity risks. There is a critical role for Government agencies to provide the future strategy and central supporting systems (for example, biometric databases) that offer a suite of options for airports to achieve compliance and increased efficiency.

The Qantas Group considers that the border agencies, airports and airlines need to jointly explore opportunities for innovative, technology-led solutions and options for the future of these ports, such as digital inbound passenger declarations. These solutions can increase the efficiency of processing and reduce cost at both capital city and secondary ports. As set out in Chapter 8 (Fit-for-purpose agencies and regulations), Australia is beginning to lag the world in this regard and significant investment should be a priority.

As set out in Chapter 8 (Fit-for-purpose agencies and regulations), a comprehensive review of the existing cost recovery methods and funding models for the provision of border agency services, including a breakdown of how the revenue collected through the Passenger Movement Charge is allocated, should be undertaken. In the Qantas Group's view, full details of the costs recovered by the Passenger Movement Charge should also be made publicly available and these funds available for industry initiatives.





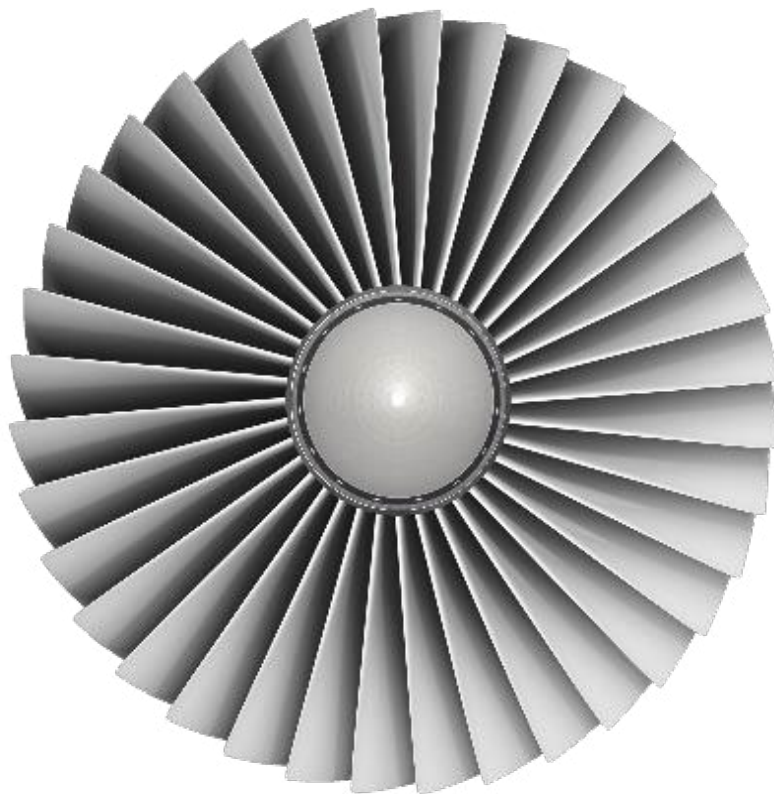
# ANNEXURES



# Annexure A

Deloitte Access Economics Report on the economic contribution of the Qantas Group to Australia

# Deloitte.



## **The economic contribution of Qantas Group to Australia**

The Qantas Group  
November 2023

**Deloitte**  
Access **Economics**

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# Executive summary

Deloitte Access Economics has measured the Qantas Group's contribution to the Australian economy in the 2022-23 financial year. In measuring the Qantas Group's contribution to the Australian Economy, the analysis determined the value of economic activity associated with the Group's operations. The findings are:

- Combining the direct and indirect economic contribution results, the total economic contribution of Qantas Group to the Australian economy was **50,700** full time equivalent (FTE) jobs and **\$14.1 billion** in value added for 2022-23.
- In addition to directly providing **22,260** FTE Australian jobs, Qantas Group indirectly contributed an estimated **28,400** FTE Australian jobs by procuring **\$17.1 billion** in goods and services required to meet its supply chain requirements.
- Overall value added economic contribution has increased by **10%** since 2018-19 while the total employment contribution has decreased by **8%**, with the latter reflecting a still recovering aviation workforce after the significant reduction in direct employment in response to the travel bans experienced during the COVID pandemic.
- Total FTE employment of the Qantas Group (including overseas employees) **fell by 31%** between 2018-19 and 2020-21 due to disruptions from the pandemic. From 2020-21 to 2022-23 employment **increased by 23%** as border restrictions eased.
- Total economic contribution of Qantas Group is equivalent to **0.6%** of gross domestic product (GDP) in Australia. Considering solely the direct contribution, the operations of the Qantas Group are equivalent to **0.4%** of GDP.

Table i Economic contribution of the Qantas Group

	Direct	Indirect	Total
<b>Value added (\$b)</b>	8.7	5.3	<b>14.1</b>
<b>Employment (FTE jobs)</b>	22,260	28,400	<b>50,700</b>
<b>Gross operating surplus (GOS) (\$b)</b>	4.4	2.6	<b>7.0</b>
<b>Labour income (\$b)</b>	4.3	2.8	<b>7.0</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

In addition to the economic contribution associated with its operations, the Qantas Group plays a vital role in facilitating tourism activity through the transportation of tourists to and around Australia. The Qantas Group also plays a role in marketing Australian tourism both internationally and domestically.

Combining the expenditure of both domestic and international tourists who travel on Qantas and Jetstar, the total value added to the Australian economy associated with the role of the Qantas Group in facilitating tourism in 2022-23 was estimated to be **\$14.9 billion** with this activity supporting **121,200** FTE jobs.

- Direct facilitated tourism contribution of the Qantas Group to the Australian economy was **79,200** FTE jobs and **\$7.3 billion** in value added for 2022-23.
- In addition, the indirect facilitated tourism contribution was an estimated **42,000** FTE jobs and **\$7.7 billion** in value added.
- Total economic contribution of the Qantas Group facilitated tourism is equivalent to **0.7%** of GDP in Australia.



Table ii Facilitated tourism contribution of the Qantas Group

	Domestic			International		
	Qantas	Jetstar	Total	Qantas	Jetstar	Total
<b>Value added (\$b)</b>	7.7	4.4	<b>12.1</b>	1.7	1.0	<b>2.7</b>
<b>Employment (FTE jobs)</b>	64,100	37,500	<b>101,700</b>	12,300	7,270	<b>19,600</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

### Contribution to regional Australia

The activities of the Qantas Group make a significant contribution to regional Australia. In this report regional Australia has been defined to encompass all regions outside of the capital cities including, therefore, the Gold Coast. This definition is consistent with Deloitte Access Economics prior report on the economic contribution of the Qantas Group in 2018-19.

Deloitte Access Economics estimates that the activities of the Qantas Group in regional Australia contributed **5,920 FTE jobs** and **\$1.9 billion in total value added** in 2022-23.

- Qantas Group operations in regional Australia directly contributed **\$1.0 billion in value added** and indirectly contributed **\$823 million in value added**.
- Qantas Group directly contributed **926 FTE jobs** in regional Australia and indirectly supported **5,000 FTE jobs** in upstream industries such as catering and airport support staff.

The role of the Qantas Group in facilitating tourism activity in regional Australia is estimated to contribute **46,500 FTE jobs** and **\$5.4 billion in value added** to regional Australia in 2022-23. This represents around 37% of the total value of tourism activity facilitated by the Qantas Group and 38% of the associated employment.

- Tourism activity in regional Australia facilitated by the Qantas Group directly contributed **\$2.3 billion** in value added and indirectly contributed **\$3.2 billion in indirect value added**.
- This facilitated tourism activity was estimated to directly contribute **24,900 FTE jobs** in regional Australia and indirectly contributed **21,600 FTE jobs** in upstream industries.

### Jetstar contribution to Australia

Deloitte Access Economics also estimated Jetstar's economic contribution to the Australian economy in 2022-23. This contribution is set out separately here but as Jetstar forms part of the Qantas Group, its economic contribution is included in the broader figures for the Qantas Group above. Combining the direct and indirect results, the total economic contribution of Jetstar to the Australian economy in 2022-23 was **8,500 FTE jobs** and **\$2.6 billion in value added**.

In addition to directly providing **4,120 FTE jobs**, Jetstar indirectly contributed to supporting employment of **4,380 FTE jobs** in the broader supply chain.

Table iii Economic contribution of Jetstar

	Direct	Indirect	Total
<b>Value added (\$b)</b>	1.6	1.0	<b>2.6</b>
<b>Employment (FTE)</b>	4,120	4,380	<b>8,500</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

In addition to the economic contribution, Jetstar plays a vital role in facilitating domestic and international tourism in Australia. The total value added to the Australian economy associated with the role of Jetstar in facilitating tourism in 2022-23 is estimated to be **\$5.4 billion** and **44,800 FTE jobs**.

## The economic contribution of Qantas Group to Australia

Table iv Facilitated tourism contribution of Jetstar

	Direct	Indirect	Total
<b>Value added (\$b)</b>	2.6	2.7	<b>5.4</b>
<b>Employment (FTE)</b>	28,800	15,900	<b>44,800</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

Jetstar also makes a significant contribution to regional Australia. In 2022-23, Jetstar's economic contribution to regional Australia was **\$635 million** in value added and **1,860 FTE jobs**, representing around 34% and 31% of the Qantas Group's regional contribution, respectively.

The facilitated tourism contribution of Jetstar in regional Australia is larger than the economic contribution associated with its operations of **\$2.2 billion** in value added (\$1.1 billion direct and \$1.1 billion indirect) and **20,100 FTE jobs** (11,900 direct and 8,230 indirect). This represents 41% of the total Qantas Group regional facilitated tourism contribution in terms of value added and around 43% of total FTE employment.

These figures (and those throughout this report) reflect the Qantas Group's activity and how this contributed to GDP and employment in 2022-23. They do not give any indication of how much smaller the economy would be in the absence of the Qantas Group's activities. Determining this would require determining how other entities – both within the aviation and tourism sectors and in other industries – would respond to the absence of the Qantas Group.

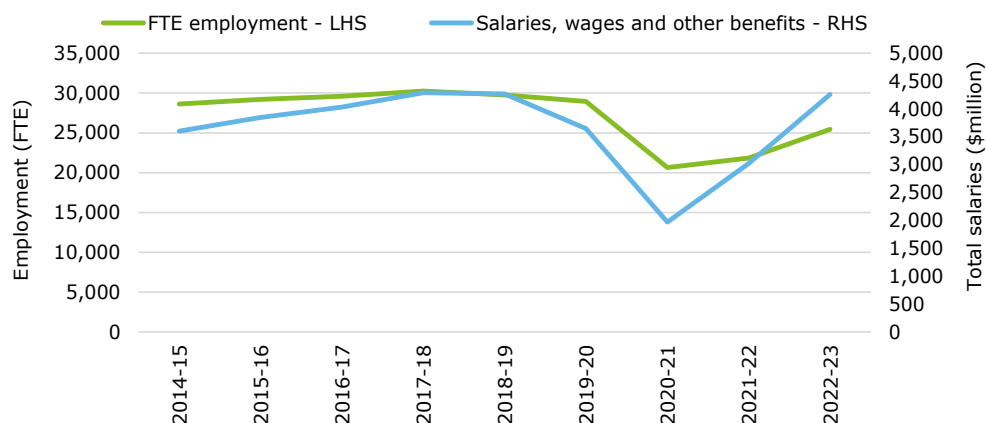
### Change in Qantas Group economic contribution since 2018-19

Since the previous Deloitte Access Economics report which reported the economic contribution in 2018-19, the total value added of the Qantas Group has increased by 10% while the total employment contribution fell by 8%, reflecting the impact of the COVID-19 pandemic.

The increase in the value added contribution of the Qantas Group is largely driven by an increase in gross operating surplus (GOS) while labour income (total salaries and benefits paid to Qantas employees) has remained relatively steady despite a large decline during COVID. On the other hand, total employment contribution has fallen driven by declines in both direct and indirect employment.

Total FTE employment of Qantas Group (including international employees) declined by 31% between 2018-19 and 2020-21 as the pandemic led to large scale disruptions and uncertainty for the aviation sector (Chart 1.1). Total FTE employment has since increased by 23% as international and domestic border restrictions have eased. Overall salaries, wages and other benefits fell during the pandemic but are now similar to 2018-19 levels. Salaries, wages and other benefits on a per FTE basis are now slightly higher than in 2018-19 which implies that wages per FTE have grown over this period.

Chart 1.1 Qantas Group FTE employment and total salaries, wages and benefits, 2014-15 to 2022-23



Source: Qantas Group, Deloitte Access Economics. Note: FTE employment includes international employees.

The facilitated tourism contribution of the Qantas Group has increased by 13% in terms of total value added and 14% for total employment between 2018-19 and 2022-23. These changes in the Qantas Group’s contribution reflect changes in the economic environment, in particular the COVID-19 pandemic which led to significant disruptions for the aviation and tourism sectors.

Since the pandemic there has been a strong recovery in domestic travel and increases in expenditure per domestic trip, although international activity remains below pre-pandemic levels. Between 2018-19 and 2022-23, Tourism Research Australia (TRA) figures show that total domestic overnight visitor expenditure has grown by 40% while international visitor expenditure has declined by approximately 29%.

The facilitated tourism contribution has increased due to strong domestic tourism activity driven by an increase in expenditure per night rather than an increase in visitors or visitor nights. On the other hand, the facilitated international tourism contribution has fallen reflecting the continuing recovery of both international trips and international visitor expenditure.

At a regional level the Qantas Group economic contribution has increased by 14% in value added terms while total employment is relatively steady (an increase of 1%). The smaller increase in total employment reflects the impact of the COVID pandemic which led to a decline in direct employment of the Qantas Group in regional areas.

The facilitated tourism activity in regional Australia has also risen since 2018-19 (by 25% for value added and 26% for employment) reflecting strong growth in domestic visitor activity in regional destinations given strong interest in regional destinations in recent years. This has more than offset a decline in international tourism activity in regional areas. Thus while the contribution of the Qantas Group itself to regional employment has been relatively steady, the Qantas Group has played an important role in facilitating regional tourism by transporting visitors to regional areas which has supported growth in employment in regional areas.

# 1 Economic contribution of the Qantas Group

Deloitte Access Economics has measured Qantas Group's contribution to the Australian economy in 2022-23. In measuring the Qantas Group's contribution to the Australian Economy, the analysis determined the value of economic activity associated with the Group's operations. The findings are:

- Combining the direct and indirect economic contribution results, the total economic contribution of Qantas Group to the Australian economy was **50,700 FTE jobs** and **\$14.1 billion** in value added for 2022-23.
- In addition to directly providing **22,260 FTE Australian jobs**, Qantas Group indirectly contributed an estimated **28,400 FTE Australian jobs** by procuring **\$17.1 billion** in goods and services required to meet its supply chain requirements.
- Qantas Group's overall economic contribution has increased by **10%** since 2018-19 while total employment contribution has decreased by **8%**, with the latter reflecting a still recovering aviation workforce after the significant reduction in direct employment in response to the travel bans experienced during the COVID pandemic.
- Total FTE employment of the Qantas Group (including overseas employees) **fell by 31%** between 2018-19 and 2020-21 due to disruptions from the pandemic. From 2020-21 to 2022-23 employment **increased by 23%** as border restrictions eased.
- Total economic contribution of the Qantas Group is equivalent to **0.6%** of GDP in Australia. Considering solely the direct contribution, the operations of the Qantas Group are equivalent to **0.4%** of GDP.

## 1.1 Economic contribution

### 1.1.1 Direct contribution

The direct economic contribution is estimated based on the returns to capital (i.e. gross operating surplus, or GOS) and labour income (i.e. employee wages and benefits) generated by the Qantas Group. Estimates of direct contribution were based on revenue, expenditure and employment data provided by the Qantas Group.

- Around 48% of the Qantas Group's direct value added flowed to employees, with the Group's labour income totalling \$3.2 billion and GOS \$3.4 billion. While the airline industry may appear capital intensive, this split of value added indicates a large share of the income contributed by the airline's activities flows to employees.
- Qantas Airlines makes the largest economic contribution with 76% of the Qantas Group's total value added, with Jetstar around 19% and Qantas Freight at 5%.
- New South Wales (NSW) receives the largest share of the Qantas Group's direct economic contribution, as Qantas headquarters and operations are based in Sydney and, thus, NSW attracts a large share of labour income and employment.



The economic contribution of Qantas Group to Australia

Table 1.1 Direct value added (\$m) and employment (FTE jobs) by state/territory

State	Qantas Airlines		Jetstar		Qantas Freight		Qantas Group	
	Value added	Employment	Value added	Employment	Value added	Employment	Value added	Employment
NSW	2,726	9,301	340	745	168	427	3,233	10,473
VIC	1,145	2,834	653	2,191	108	242	1,906	5,267
QLD	1,344	2,617	435	956	89	88	1,868	3,661
SA	293	469	87	222	23	37	403	728
WA	832	1,737	23	1	41	62	897	1,800
TAS	87	137	49	9	9	0	146	146
NT	90	50	17	0	7	7	114	57
ACT	126	128	8	0	6	0	140	128
<b>Australia</b>	<b>6,643</b>	<b>17,273</b>	<b>1,612</b>	<b>4,124</b>	<b>452</b>	<b>863</b>	<b>8,707</b>	<b>22,260</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

### 1.1.2 Indirect contribution

Indirect value added and employment captures the wages and GOS contributed by the Qantas Group to upstream sectors that produce inputs to the airline's operations, summarised in Table 1.2 below.

- Sydney attracts a high volume of tourists and transit flights, with NSW accounting for almost one-third of all Qantas' passengers nationwide.
- Victoria and Queensland also receive a large share of the Qantas Group's economic contribution. Victoria attracts a large share of the company's intermediate expenditure, as the Group demands a range of goods and services from the state due to its sizeable transport services industry and Queensland attracts a large share of passenger departures for the Group.

Table 1.2 Indirect value added (\$m) and employment (FTE jobs) by state/territory

State	Qantas Airlines		Jetstar		Qantas Freight		Qantas Group	
	Value added	Employment	Value added	Employment	Value added	Employment	Value added	Employment
NSW	1,330	7,910	320	1,440	130	600	1,780	9,940
VIC	1,120	6,260	310	1,400	90	400	1,530	8,060
QLD	740	4,220	190	800	80	340	1,010	5,350
SA	140	1,050	20	100	10	30	170	1,180
WA	520	2,330	150	510	50	180	710	3,020
TAS	30	280	10	20	2	5	40	310
NT	30	180	10	30	10	20	40	230
ACT	40	240	10	80	4	30	50	350
<b>Australia</b>	<b>3,960</b>	<b>22,500</b>	<b>1,020</b>	<b>4,380</b>	<b>370</b>	<b>1,600</b>	<b>5,350</b>	<b>28,400</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

### 1.1.3 Total contribution

Total economic contribution is the sum of direct and indirect contribution and is shown in Table 1.3.

- Since the last economic contribution study was completed in 2018-19, the total value added contribution of Qantas Group has risen by 10%, from \$13 billion in 2018-19 to \$14 billion in 2022-23.
- NSW represents around 40% of the total economic contribution reflecting both the large Qantas Group workforce and Sydney's status as a key gateway and destination.
- Overall, Qantas Airlines comprises around 75% of total value added and 78% of total employment, while Jetstar makes up 19% and 17% respectively and Qantas Freight 6% and 5% respectively. The total value added and employment depends on the size of the operations of each business area and the flow on effects to the broader state and territory economies.

Table 1.3 Total value added (\$m) and employment (FTE jobs) by state/territory

State	Qantas Airlines		Jetstar		Qantas Freight		Qantas Group	
	Value added	Employment	Value added	Employment	Value added	Employment	Value added	Employment
NSW	4,060	17,200	660	2,180	300	1,030	5,010	20,400
VIC	2,270	9,090	970	3,590	200	640	3,440	13,300
QLD	2,090	6,830	630	1,750	170	430	2,880	9,010
SA	430	1,520	110	330	30	60	580	1,910
WA	1,350	4,070	170	510	90	240	1,610	4,820
TAS	120	420	50	30	10	5	190	460
NT	120	230	20	30	10	30	160	290
ACT	160	370	20	80	10	30	190	470
<b>Australia</b>	<b>10,600</b>	<b>39,700</b>	<b>2,630</b>	<b>8,500</b>	<b>820</b>	<b>2,460</b>	<b>14,100</b>	<b>50,700</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

## 1.2 Facilitated tourism contribution of the Qantas Group

The Qantas Group also plays an important role in supporting tourism across Australia. Given Australia's size and the geographical dispersion of key tourist locations, Qantas plays an important role in facilitating both domestic and international tourism trips.

The approach to estimating the facilitated tourism contribution of the Qantas Group to Australia is based on passenger data from Qantas Group and the Bureau of Infrastructure, Transport and Regional Economics (BITRE). This is also supported by visitor expenditure data from Tourism Research Australia.

### 1.2.1 Direct tourism contribution

Facilitated tourism activity by the Qantas Group in 2022-23 is estimated to directly contribute \$5.8 billion through domestic tourists, and \$1.4 billion through international tourists. Queensland supported the most direct facilitated domestic tourism activity by Qantas at \$1.8 billion, with New South Wales supporting the most direct international facilitated tourist activity, at \$520 million.

The economic contribution of Qantas Group to Australia

Table 1.4 Direct value added of facilitated tourism by state/territory (\$m)

State	Domestic			International		
	Qantas	Jetstar	Total	Qantas	Jetstar	Total
NSW	630	410	1,030	310	210	520
VIC	540	470	1,020	180	110	290
QLD	1,030	800	1,830	200	120	330
SA	250	90	340	40	20	70
WA	890	80	970	110	60	170
TAS	80	180	260	10	10	20
NT	160	70	230	10	10	20
ACT	120	20	140	20	10	30
<b>Australia</b>	<b>3,710</b>	<b>2,130</b>	<b>5,840</b>	<b>900</b>	<b>550</b>	<b>1,450</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

Facilitated tourism activity by the Qantas Group is estimated to directly contribute 66,400 FTE jobs through domestic tourists, and a further 12,780 through international tourists.

Table 1.5 Direct employment contribution of facilitated tourism by state/territory (FTE jobs)

State	Domestic			International		
	Qantas	Jetstar	Total	Qantas	Jetstar	Total
NSW	6,210	4,020	10,200	2,530	1,640	4,170
VIC	6,930	6,020	12,960	1,760	1,010	2,780
QLD	11,200	8,760	20,000	1,830	1,100	2,900
SA	2,830	1,060	3,900	390	200	580
WA	11,400	1,080	12,500	1,140	610	1,740
TAS	1,080	2,320	3,400	130	60	190
NT	1,380	580	1,960	100	40	140
ACT	1,260	220	1,480	140	110	250
<b>Australia</b>	<b>42,350</b>	<b>24,070</b>	<b>66,400</b>	<b>8,010</b>	<b>4,770</b>	<b>12,780</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

### 1.2.2 Indirect tourism contribution

Facilitated tourism activity by the Qantas Group is estimated to indirectly contribute a further \$6.3 billion through domestic tourists, and \$1.3 billion through international tourists in 2022-23. The facilitated domestic and international tourism activity supported a further 42,000 FTE jobs across Australia.

Consistent with the direct contribution results, Queensland supported the most indirect facilitated domestic tourism activity by Qantas at \$2.0 billion, with New South Wales supporting the most indirect international facilitated tourist activity, at \$450 million.

The economic contribution of Qantas Group to Australia

Table 1.6 Indirect value added of facilitated tourism by state/territory (\$m)

State	Domestic			International		
	Qantas	Jetstar	Total	Qantas	Jetstar	Total
NSW	670	430	1,100	280	170	450
VIC	590	510	1,100	170	100	260
QLD	1,110	860	1,200	190	110	290
SA	280	100	380	40	20	60
WA	960	90	1,060	100	50	160
TAS	100	200	300	10	10	20
NT	160	70	230	10	5	20
ACT	130	20	160	20	10	30
<b>Australia</b>	<b>3,990</b>	<b>2,300</b>	<b>6,290</b>	<b>810</b>	<b>470</b>	<b>1,290</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

Table 1.7 Indirect employment contribution of facilitated tourism by state/territory (FTE jobs)

State	Domestic			International		
	Qantas	Jetstar	Total	Qantas	Jetstar	Total
NSW	3,350	2,170	5,520	1,400	870	2,260
VIC	2,960	2,570	5,530	840	480	1,310
QLD	6,230	4,850	11,100	1,040	610	1,640
SA	1,580	590	2,170	230	110	340
WA	4,880	460	5,350	520	270	790
TAS	1,050	2,260	3,300	130	60	190
NT	960	410	1,380	70	30	100
ACT	770	130	900	90	70	160
<b>Australia</b>	<b>21,800</b>	<b>13,400</b>	<b>35,200</b>	<b>4,310</b>	<b>2,495</b>	<b>6,800</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

### 1.2.3 Total tourism contribution

Overall, the facilitated tourism activity by the Qantas Group is estimated to have risen 13% from \$13.1 billion in 2018-19 to \$14.9 billion in 2022-23. Of this total, \$12.1 billion is attributable to domestic tourists and \$2.7 billion is attributable to international tourists.

The total economic contribution of tourism activity facilitated by the Qantas Group is equivalent 0.7% of GDP in Australia.

The facilitated tourism activity attributable to domestic tourists is greatest in Queensland for both Qantas and Jetstar, at \$2.1 billion and \$1.6 billion, respectively. This result reflects the popularity of Queensland as a holiday destination for Australian travellers. This is noticeably the case for Jetstar, with Queensland accounting for approximately 38% of the total value added associated with tourism expenditure facilitated by Jetstar. This compares to 28% for Qantas, reflecting a more widespread facilitated tourism contribution across Australian states and territories.

In terms of international tourists, New South Wales presents the greatest levels of facilitated tourism activity attributable to both Qantas and Jetstar, at \$590 million and \$380 million, respectively. This reflects the key role of the state as a tourism destination and gateway for international travellers.



The economic contribution of Qantas Group to Australia

Table 1.8 Total value added of facilitated tourism to tourism by state/territory (\$m)

State	Domestic			International		
	Qantas	Jetstar	Total	Qantas	Jetstar	Total
NSW	1,290	840	2,134	590	380	970
VIC	1,130	980	2,117	350	200	550
QLD	2,140	1,660	3,800	390	230	620
SA	520	200	718	80	40	120
WA	1,850	180	2,029	220	110	330
TAS	180	380	561	20	10	40
NT	320	140	458	30	10	40
ACT	260	40	302	30	30	60
<b>Australia</b>	<b>7,700</b>	<b>4,420</b>	<b>12,100</b>	<b>1,710</b>	<b>1,020</b>	<b>2,730</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

The expenditure of domestic and international tourists attributable to the Qantas Group contributed to the employment of approximately 121,300 employees across Australia in 2022-23. This is a 14% increase since 2018-19 when 106,000 FTE jobs were estimated to have been contributed. Consistent with the value added results, the majority of these employees are a result of passengers carried by Qantas (63%).

Table 1.9 Total employment contribution of facilitated tourism by state/territory (FTE jobs)

State	Domestic			International		
	Qantas	Jetstar	Total	Qantas	Jetstar	Total
NSW	9,550	6,190	15,700	3,920	2,500	6,430
VIC	9,890	8,590	18,500	2,600	1,490	4,090
QLD	17,470	13,610	31,100	2,860	1,710	4,570
SA	4,410	1,650	6,070	610	310	930
WA	16,300	1,550	17,800	1,660	880	2,530
TAS	2,130	4,570	6,710	260	120	380
NT	2,340	990	3,330	170	70	240
ACT	2,030	350	2,380	240	180	420
<b>Australia</b>	<b>64,130</b>	<b>37,520</b>	<b>101,700</b>	<b>12,310</b>	<b>7,270</b>	<b>19,600</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

## 2 Economic contribution of the Qantas Group in regional Australia

This chapter examines the economic contribution of the Qantas Group's operations in regional Australia. For the purposes of this study, regional Australia has been defined as encompassing all regions outside of the capital cities (e.g. Sydney, Melbourne, Brisbane, Canberra, Hobart, Adelaide, Darwin and Perth but includes the Gold Coast). This definition is consistent with Deloitte Access Economics prior report on the economic contribution of the Qantas Group in 2018-19.

The scope of the analysis in this chapter is limited to estimating the contribution of the operations by the Qantas Group in regional Australia and its role in facilitating tourism expenditure. It does not include any analysis of the broader social and economic role the Qantas Group plays in connecting regional communities or improving access to markets.

The analysis has been undertaken by drawing on both publicly available data as well as data from the Qantas Group. The Qantas Group provided detailed revenue, expenditure and employment figures for each airport it operates from in regional Australia.

The facilitated tourism analysis has been undertaken using route level market share data from Qantas and Jetstar in regional Australia, which can be used to estimate market shares for each airport using data from BITRE. Data on visitor nights and expenditure for regional areas from Tourism Research Australia is used to estimate the value of tourism expenditure in each region.

The economic contribution of the Qantas Group's operations in regional Australia has been estimated based on an assessment of the level of output that occurs in regional Australia, rather than where the income from the supply of goods and services ultimately accrues.<sup>1</sup> In other words, the analysis focuses on where the production occurs. In the case of suppliers of intermediate inputs, the value added is attributed to the regional destination where the output occurs, even if the business is headquartered elsewhere.

The direct economic contribution accruing to each region was estimated based on the gross operating surplus and labour income attributable to all regional airports that Qantas provides services to in regional Australia. In this respect, estimates of direct contribution were based on information from Qantas on salaries and benefits paid, the number of passengers carried and the airfares they pay as well as the level of operating expenditure.

The indirect contribution to regional areas in each state and territory was calculated using a two-stage process. The first stage involved estimating the flow-on activity associated with expenditure by the Qantas Group on intermediate inputs within each region. This involved applying a region-specific input-output table developed from the Deloitte Access Economics Regional Input-Output Model (DAE-RIOM) to estimate the *contribution of intermediate inputs that the Qantas Group purchased in each specific region*. The second stage involved estimating the contribution associated with the *supply of intermediate inputs to support activity by the Qantas Group in the rest of Australia*. The second stage was estimated based on the direction of inter-regional trade flows in the DAE-RIOM.

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<sup>1</sup> In national accounting terms the approach is consistent with measuring Gross Domestic Product (or in this case Gross Regional Product) rather than Gross National Income (or equivalently Gross Regional Income).

Qantas Group’s largest regional procurement is largely spent on aviation related items such as fuel, transport support services and storage activities including route navigation, landing fees, and security charges; and air and space transport activities. Spending in these areas has flow on benefits in upstream industries such as professional, scientific and technical services, which supply security or navigation services or travel agency, employment and other administrative services, which supply other travel services.

For an organisation as diverse as the Qantas Group there is no perfect way of determining the proportion of activity attributable to the operations of the Qantas Group in regional Australia. However, given the data available, the approach taken in this study provides the most appropriate basis for estimating the contribution of the Qantas Group and its operations to regional Australia. This approach is consistent with the approach taken in prior years.

### 2.1 Economic contribution to regional Australia

The economic contribution of the Qantas Group to regional Australia is shown in Table 2.1 below. The value added figures highlight the importance of regional activities to the Qantas Group’s broader operations. The \$1.0 billion in direct value added contributed by the Qantas Group’s regional operations constitutes approximately 12% of its national direct contribution. Similarly, the \$820 million in indirect value added contributed by the Qantas Group’s regional operations constitutes 17% of the indirect contribution made by its national operations.

The direct employment figures refer to the number of people directly employed by Qantas and Jetstar in regional Australia. It should be noted that the indirect employment contribution was larger than the direct employment contribution as there were 1,789 contractors and service providers employed by external organisations to support Qantas Group operations in airports in regional Australia. This includes baggage handling and ground support who are not included in the estimates of direct employment provided below as they are employed by separate organisations. Some flight crew servicing regional Australia may also be based in capital cities despite much of their work may be done in regional Australia.

Of the indirect value added, **\$390 million** was estimated to be attributable to the demand for intermediate inputs by the Qantas Group as a result of its operations in the region in which those operations occur. Meanwhile **\$430 million** was attributable to demand for intermediate inputs from regional suppliers by the Qantas Group to operations in other regions (both metropolitan and other regional areas), which would include intermediate inputs supplied from Regional Victoria to Regional NSW.

Compared to the previous figures from 2018-19, total value added has increased by around 14%, mostly driven by direct value added as the Qantas group increased its operations in regional areas. Total employment is relatively steady (up around 1%) reflecting a marginal increase in indirect employment as Qantas intermediate expenditure increased.

Table 2.1 Economic contribution of the Qantas Group’s operations in regional Australia

	Direct	Indirect	Total
<b>Value added (\$b)</b>	\$1.0	\$0.8	<b>\$1.9</b>
<b>Employment (FTE jobs)</b>	926	5,000	<b>5,920</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

### 2.1.1 Direct and indirect economic contribution in regional areas

Using the DAE-RIOM, Deloitte Access Economics estimated the contribution associated with Qantas Group operations in regional areas of each State (and the Northern Territory). The indirect value added and employment component was then adjusted upwards to account for intermediate inputs supplied to the rest of Australia by each region in the second stage of the analysis. The results are summarised in Table 2.2 below.

**Regional Queensland** captured the largest share of the Qantas Group’s regional operations, as the Qantas Group is estimated to contribute **2,770 jobs** and **\$990 million** in value added to regional Queensland. In fact, the state accounts for around half of the Qantas Group’s contribution to value added and employment in regional Australia. Regional Queensland includes major tourist destinations and airports including the Gold Coast, Sunshine Coast and the Cairns region.

**Regional Western Australia** also accounts for a relatively large share of regional activity. The Qantas Group is estimated to have contributed **770 jobs** and **\$350 million** in value added to regional Western Australia. Major regional airports in regional Western Australia include Karratha, Broome, Port Headland and Newman which attract a high volume of passenger traffic, in part due to their proximity to mining activity.

**Regional New South Wales** also receives a large share of Qantas Group’s regional economic contribution, where total activity contributed **1,310 jobs** and **\$260 million** in value added.

In the case of regional Victoria (and regional New South Wales) indirect value added and employment were substantially larger than direct value added and employment. This reflects the two-step process involved in estimating the indirect contribution from regional areas to the rest of Australia. Regional New South Wales accounts for a relatively large share of economic activity (including the procurement of goods and services) in regional Australia relative to its share of passengers. As a result, the direct contribution to regional NSW (which depends on passenger share) is smaller than the indirect contribution (which depends more on economic size).

In the case of Victoria, \$70 million of indirect value added is attributable to expenditure in areas outside regional Victoria creating demand for the region whereas only \$10 million in indirect value added is due to intermediate inputs purchased as a result of operations by the Qantas Group in regional Victoria. By comparison, in Queensland, the majority of indirect value added (\$240 million) is attributable to demand for intermediate inputs from operations in regional Queensland given the significant size of Qantas Group’s operations in regional Queensland.

Table 2.2 Value added contribution of the Qantas Group’s operations in regional areas

	Direct	Indirect	Total
Regional Queensland	614	380	990
Regional Western Australia	235	110	350
Regional New South Wales	90	170	260
Regional Northern Territory	43	20	70
Regional Tasmania	28	30	60
Regional Victoria	23	80	110
Regional South Australia	3	20	30
<b>Regional Australia</b>	<b>1,037</b>	<b>820</b>	<b>1,860</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.



Table 2.3 Employment contribution of the Qantas Group's operations in regional areas

	<b>Direct</b>	<b>Indirect</b>	<b>Total</b>
Regional Queensland	668	2,100	2,770
Regional Western Australia	4	770	770
Regional New South Wales	211	1,090	1,310
Regional Northern Territory	7	130	130
Regional Tasmania	-	200	200
Regional Victoria	36	550	580
Regional South Australia	-	160	160
<b>Regional Australia</b>	<b>926</b>	<b>5,000</b>	<b>5,920</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

## 2.2 Facilitated tourism contribution to regional Australia

In addition to supporting jobs and economic activity in regional areas through its operations, the Qantas Group also plays an instrumental role in supporting tourism in regional Australia. The approach to estimating the facilitated tourism contribution of the Qantas Group to regional Australia is based on data on passengers carried from the Qantas Group and visitor expenditure data from Tourism Research Australia.

Estimates of the share of domestic air travellers using Qantas Group aircraft were derived for each region based on data from Qantas on route level market shares and BITRE passenger data. For international travellers, estimates of market share by source country were mapped to the distribution of visitor nights by region and source country to estimate international visitor nights by region. Tourism expenditure was estimated by multiplying the number of visitor nights by expenditure per night for each region, based on data from Tourism Research Australia's National and International Visitor Surveys.<sup>2</sup>

In line with the approach used to estimate the economic contribution associated with Qantas Group's operations in regional Australia, a two-stage process was undertaken to estimate the indirect contribution of facilitated tourism in regional Australia. The estimates of indirect contribution provided include both the contribution of expenditure by tourists in a specific region on value added and employment in that region, and the contribution of expenditure by tourists in the rest of Australia on the demand for inputs from a specific region in regional Australia – for example when a tourist purchases a coffee in Melbourne, some of the milk used to produce that coffee is likely to come from regional Victoria.

Compared to the previous figures from 2018-19, total value added rose by around 25% and employment by 26% driven by an increase in facilitated domestic regional tourism activity which offset a decline in international regional tourism expenditure.

<sup>2</sup> The September 2022 and December 2022 International Visitor Survey data used a combination of survey and imputed data which has added uncertainty to the figures from these quarters.

Table 2.4 Facilitated tourism contribution of the Qantas Group in regional Australia

	Direct	Indirect	Total
<b>Value added (\$b)</b>	\$2.3	\$3.2	\$5.5
<b>Employment (FTE jobs)</b>	24,900	21,600	46,500

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

### 2.2.1 Facilitated tourism in regional areas of each state

The expenditure of tourists carried by Qantas Group was estimated to contribute **21,630 jobs** and **\$2.5 billion** in value added to regional Queensland (see Table 2.5 below). Indeed, regional Queensland accounts for almost half of the total facilitated tourism value added in regional Australia by the Qantas Group.

The expenditure of tourists carried by Qantas Group was also estimated to make a relatively large contribution to regional **Western Australia**, contributing **7,320 jobs** and **\$710 million** in value added. Tourism expenditure facilitated by the Qantas Group was estimated to contribute **7,730 jobs** and **\$1.1 billion** in value added to regional **New South Wales**.

Table 2.5 Facilitated tourism value added contribution for regional areas in each state/territory

	Direct	Indirect	Total
Regional Queensland	1,210	1,290	2,500
Regional Western Australia	370	340	710
Regional New South Wales	320	790	1,120
Regional Northern Territory	60	40	100
Regional Tasmania	70	130	200
Regional Victoria	190	470	660
Regional South Australia	30	120	160
<b>Regional Australia</b>	<b>2,260</b>	<b>3,190</b>	<b>5,450</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

Table 2.6 Facilitated tourism employment contribution for regional areas in each state/territory

	Direct	Indirect	Total
Regional Queensland	12,880	8,750	21,630
Regional Western Australia	4,780	2,530	7,320
Regional New South Wales	3,110	4,620	7,730
Regional Northern Territory	500	300	800
Regional Tasmania	860	1,650	2,500
Regional Victoria	2,360	2,860	5,210
Regional South Australia	360	940	1,300
<b>Regional Australia</b>	<b>24,900</b>	<b>21,600</b>	<b>46,500</b>

Source: Deloitte Access Economics. Note: Figures may not sum due to rounding.

# Appendix A: Estimating the economic contribution of the Qantas Group

## A.1 Background

Deloitte Access Economics was commissioned by the Qantas Group to examine the Qantas Group's contribution to the Australian economy. This report estimates the economic contribution of the Qantas Group at both the national, state and regional level in terms of value added and employment (FTE jobs). Results are also disaggregated across the Qantas Group's business units of Qantas, Jetstar and Qantas Freight.

Economic contribution studies provide a snapshot of the contribution of a firm or industry at a particular point in time. The analysis uses common financial measures, such as revenue and cost of goods sold, to estimate a firm's direct value added to the Australian economy. Direct value added is calculated using the income approach to GDP, which builds up the value of a firm or sector's output by adding the returns to capital (measured in terms of GOS/EBITDA) and the returns to labour (measured as wages paid). That is, it estimates the total income generated, net of costs, through the activities of the entity being modelled.

While revenue is more commonly reported in financial accounts, direct value added provides a more accurate assessment of a firm's contribution to the overall economy because it nets out the value that is created by upstream industries. The direct contribution, therefore, isolates the value *created* by the Qantas Group. This approach is consistent with the framework used by the Australian Bureau of Statistics (ABS) in compiling the *Australian National Accounts*.

In addition to this direct component, economic contribution studies consider the interlinkages with other sectors of the economy through expenditure on intermediate inputs. This expenditure drives the indirect contribution to value added and is determined through Deloitte Access Economics' Regional Input-Output Model (DAE-RIOM).

Measuring the indirect contribution involves measuring the indirect or flow-on contribution of the Qantas Group's activities. This is the value added generated in upstream sectors of the economy that produce inputs to the airline's operation. The flow-on contribution is based on the Qantas Group's expenditure in these industries and the profit and wages that are generated as a result. A more detailed description of the methodology of economic contribution studies is provided in Appendix B.

## A.2 Data provided by the Qantas Group

Qantas has provided Deloitte Access Economics with detailed profit and loss data for 2022-23. This data was disaggregated by the following business units:

- Qantas (incorporating domestic and international operations)
- Jetstar
- Qantas Loyalty
- Freight
- Corporate
- Unallocated/eliminated.

The revenue and expenditure numbers for Qantas Loyalty were aggregated with values from Qantas and are not analysed separately. While Qantas Loyalty generates substantial revenue through its own operations, the profitability of this business unit is determined primarily by demand for Qantas Points. This demand is closely tied to the overall performance of Qantas and it is, therefore, appropriate to aggregate these two business units.

The Corporate division's revenue and expenditure has been distributed across Qantas, Jetstar and Qantas Freight. The corporate division contributes to the organisation by providing strategic advice, managing finances and providing human resourcing support. While these functions are integral to any firm, the benefits and revenue associated with such services are accrued through other business units. As the revenue is accrued by these business units, the costs should also be distributed so as to accurately reflect the intermediate inputs required to generate revenue. As such, the costs of the corporate business unit have been distributed as per advice from Qantas, with 69% of costs being allocated to Qantas, Jetstar being allocated 23% and Freight 8%. Similarly, the expenditure of the Qantas Loyalty program has been allocated 97% to Qantas and 3% to Jetstar.

In determining the Qantas Group's indirect contribution to the Australian economy, expenditure on intermediate inputs has been allocated between expenditure occurring within Australia and that occurring internationally. The majority of the Qantas Group's expenditure on intermediate expenditure occurs in Australia, with approximately two thirds of its intermediate inputs sourced locally. The majority of the expenditure on inputs from outside Australia is attributable to jet fuel, sub-contracted aircraft expenses and commissions, and other selling costs.

### **A.3 Methodology for calculating economic contribution by state**

The economic contribution of the Qantas Group by state has been determined by distributing the GOS generated by the company in Australia by passenger departure data. This departure data was disaggregated by Qantas and Jetstar passengers and a weighted average of the two was used to distribute value added for Qantas Freight. The direct labour income was allocated to states based on their respective share of employment by business unit. Since direct value added includes both labour income and GOS, the relative share of states in direct value added will reflect a combination of their employment share and passenger share.

Similarly, the Qantas Group's expenditure on intermediate inputs is distributed by each state's estimated relevant industry share. For example, as NSW accounts for 36% of total activity in the transport and support services industry in Australia, this same share of the Qantas Group's expenditure on transport and support services is distributed to NSW. While this does not directly capture the geographical dispersion of the Qantas Group's activities (which would require more detailed purchase data), it is a relatively accurate approximation of this dispersion in lieu of this data.

The expenditure on intermediate inputs drives the indirect contribution for each state. In determining the contribution to value added and employment driven by the company's expenditure on intermediate inputs, Deloitte Access Economics has disaggregated the national Input-Output (IO) table for each individual state. This ensures that the industry structure of each state is accurately described, and the relevant economic activity is captured.



## Appendix B: Economic contribution approach

Economic contribution studies are intended to quantify measures, such as value added, exports, imports and employment associated with a given industry or firm, in a historical reference year. The economic contribution is a measure of the value of production by a firm or industry.

All direct, indirect and total contributions are reported in terms of GOS, labour income, value added and employment (with these terms defined in the table below).

Table B.1: Definitions of economic contribution estimates

Estimate	Definition
Gross operating surplus (GOS)	GOS represents the value of income generated by the entity's direct capital inputs, generally measured as the earnings before interest, tax, depreciation, and amortisation (EBITDA).
Labour income	Labour income is a subcomponent of value added. It represents the value of output generated by the entity's direct labour inputs, as measured by the income to labour.
Value added	Value added measures the value of output (i.e., goods and services) generated by the entity's factors of production (i.e., labour and capital) as measured in the income to those factors of production. The sum of value added across all entities in the economy equals GDP.
Employment (FTE)	Employment is a fundamentally different measure of activity to those above. It measures the number of workers (measured in FTE terms) that are employed by the entity, rather than the value of the workers' output.
Direct economic contribution	The direct economic contribution is a representation of the flow from labour and capital committed in the economic activity.
Indirect economic contribution	The indirect contribution is a measure of the demand for goods and services produced in other sectors as a result of demand generated by economic activity.
Total economic contribution	The total economic contribution to the economy is the sum of the direct and indirect economic contributions.

Source: Deloitte Access Economics.

### B.1 Definitional notes

When calculating the GOS for a typical for-profit firm or industry, income streams from government (such as transfers or production subsidies) are excluded as they are a transfer of public funds, not reflective of income generated by the activities of the firm or industry.

Similarly, value added is typically calculated as GOS, plus labour income net of subsidies under the ABS Australian System of National Accounts (ABS 2013):

*A subsidy on a product is a subsidy payable per unit of a good or service. An enterprise may regard a subsidy as little different from sales proceeds. However, in the national accounts, subsidies are regarded as transfer payments from general government, enabling enterprises to sell their output for less than would otherwise be the case.*

### B.2 Value added

The measures of economic activity provided by this contribution study are consistent with those provided by the ABS. For example, value added is the contribution the sector makes to total factor income and GDP.

There are a number of ways to measure GDP, including:

- **Expenditure approach**—Measures expenditure: of households, on investment, government and net exports and
- **Income approach**—Measures the income in an economy by measuring the payments of wages and profits to workers and owners.

Below is a discussion on measuring the value added by an industry using the income approach.

### B.3 Measuring the economic contribution—income approach

There are several commonly used measures of economic activity, each of which describes a different aspect of an industry’s economic contribution:

- **Value added** measures the value of output (i.e., goods and services) generated by the entity’s factors of production (i.e., labour and capital) as measured in the income to those factors of production. The sum of value added across all entities in the economy equals GDP. Given the relationship to GDP, the value added measure can be thought of as the increased contribution to welfare.

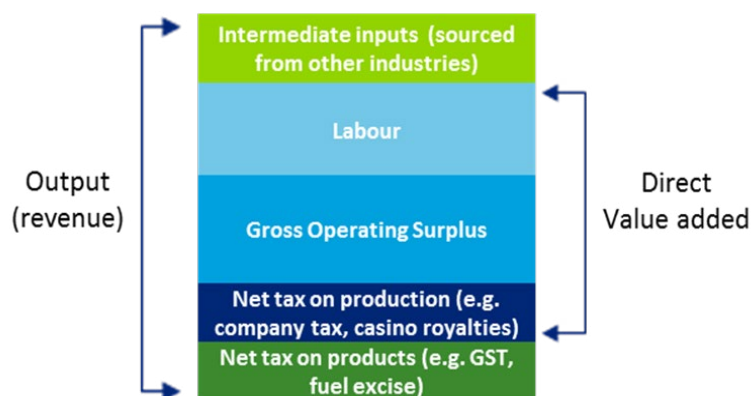
Value added is the sum of:

- GOS represents the value of income generated by the entity’s capital inputs, generally measured as the earnings before interest, tax, depreciation and amortisation (EBITDA).
- Tax on production, less subsidy provided for production. Note: Given the manner in which returns to capital before tax are calculated, company tax is not included or this would double-count that tax. In addition, it excludes goods and services tax, which is a tax on consumption (i.e., levied on households).
- Labour income is a subcomponent of value added. It represents the value of output generated by the entity’s direct labour inputs, as measured by the income to labour.

Figure B.1 shows the accounting framework used to evaluate economic activity, along with the components that make up *output*. Output is the sum of value added and the value of intermediate inputs used by the firm or industry.

The value of intermediate inputs can also be calculated directly by summing up expenses related to non-primary factor inputs.

Figure B.1 Economic activity accounting framework



Source: Deloitte Access Economics.

Contribution studies generally estimate employment contributed by a sector. Employment is a fundamentally different measure of activity to those above. It measures the number of workers that are employed by the entity, rather than the value of the workers’ output.

#### B.4 Direct and indirect contributions

The **direct** economic contribution is a representation of the flow of labour and capital in the entity.

The **indirect** contribution is a measure of the demand for goods and services produced in other sectors as a result of demand generated by the direct economic activity of the entity. Estimation of the indirect economic contribution is undertaken in an IO framework using ABS IO tables which report the inputs and outputs of specific sectors of the economy (ABS 2013).

The total economic contribution is the sum of the direct and indirect economic contributions.

##### Limitations of economic contribution studies

While describing the geographic origin of production inputs may be a guide to a firm or industry's linkages with the local economy, it should be recognised that these are the type of normal industry linkages that characterise all economic activities.

Unless there is unused capacity in the economy (such as unemployed labour), there may not be a strong relationship between a firm's economic contribution as measured by value added (or other static aggregates) and the welfare or living standard of the community. The use of labour and capital by demand created from the industry comes at an opportunity cost as it may reduce the amount of resources available to spend on other economic activities. This is not to say that the economic contribution, including employment, is not important. As stated by the Productivity Commission in the context of Australia's gambling industries: (Productivity Commission 1999):

*Value added trade and job creation arguments need to be considered in the context of the economy as a whole ... income from trade uses real resources, which could have been employed to generate benefits elsewhere. These arguments do not mean that jobs, trade and activity are unimportant in an economy. To the contrary they are critical to people's well-being. However, any particular industry's contribution to these benefits is much smaller than might at first be thought, because substitute industries could produce similar, though not equal gains.*

In a fundamental sense, economic contribution studies are simply historical accounting exercises. No 'what-if,' or counterfactual inferences—such as 'what would happen to living standards if the firm or industry disappeared?'—should be drawn from them.

The analysis—as discussed in the report—relies on a national IO table modelling framework and there are some limitations to this modelling framework. The analysis assumes that goods and services provided to the sector are produced by factors of production that are located completely within the state or region defined and that income flows do not leak to other states.

The IO framework and the derivation of the multipliers also assume that the relevant economic activity takes place within an unconstrained environment. That is, an increase in economic activity in one area of the economy does not increase prices and subsequently crowd out economic activity in another area of the economy. As a result, the modelled total and indirect contribution can be regarded as an upper-bound estimate of the contribution made by the supply of intermediate inputs.

Similarly, the IO framework does not account for further flow-on benefits as captured in a more dynamic modelling environment like a Computable General Equilibrium (CGE) model.

#### B.5 Input output analysis

IO tables are required to account for the intermediate flows between sectors. These tables measure the direct economic activity of every sector in the economy at the national level. Importantly, these tables allow intermediate inputs to be further broken down by source. These detailed intermediate flows can be used to derive the total change in economic activity associated with a given direct change in activity for a given sector.

A widely used measure of the spill-over of activity from one sector to another is captured by the ratio of the total to direct change in economic activity. The resulting estimate is typically referred to as 'the multiplier.' A multiplier greater than 1 implies some indirect activity, with higher multipliers indicating relatively larger indirect and total activity flowing from a given level of direct activity.

The IO matrix used for Australia is derived from the ABS 2019-20 IO tables. The industry classification used for IO tables is based on the Australian and New Zealand Standard Industrial Classification, with 114 sectors in the modelling framework.

# Appendix C: Facilitated tourism contribution

Noting the vital role the Qantas Group plays in facilitating Australia’s tourism industry, this analysis has also evaluated the economic contribution made through the Qantas Group’s role in facilitating both domestic and international tourism.

## C.1 Methodology for calculating the facilitated contribution of domestic tourism

Figure C.1 provides an overview of the process used to estimate the economic contribution of domestic tourism expenditure facilitated by the Qantas Group. In the first stage, market share information by route provided by the Qantas Group was matched to data on passenger numbers on each route from the Bureau of Infrastructure, Transport and Regional Economics (BITRE). This was used to calculate estimates of passenger numbers carried by Qantas and Jetstar on each route.

For the state and territory analysis, routes were aggregated to a state or territory level by attributing half the traffic on a route pair to each state. For example, 50% of traffic on the Sydney to Melbourne route was attributed to NSW and 50% to Victoria. This was then used to estimate a market share of all aviation related travel carried by Qantas and Jetstar by state, separately for both interstate and intrastate travel.

In the second stage, to calculate state level expenditure, information on average expenditure per night from the TRA’s National Visitor Survey was combined with other data on visitors travelling interstate and intrastate by air.

Figure C.1 Overview of methodology for estimating the domestic tourism contribution



Source: Deloitte Access Economics

In the third stage, estimates of market shares by state are multiplied by total tourism expenditure for air travellers (calculated in the second stage) to develop estimates of total tourism expenditure attributable to Qantas and Jetstar travel.

For the regional analysis, routes were aggregated to a regional level by aggregating passenger flows to each airport within the region. To calculate regional expenditure, information on average expenditure per night from TRA’s National Visitor Survey was combined with other data on visitor nights for those travelling by air.

This data is then subject to some further adjustments in the fourth stage to ensure it is consistent with the expenditure profile of airline travellers, noting that expenditure estimates are based on all domestic tourists not just airline travellers.

First, all expenditure on domestic airfares is excluded to avoid double-counting expenditure already included in the economic contribution of the Qantas Group.

Second, expenditure on vehicle maintenance and repairs is excluded on the basis that this is more likely to be incurred by those on driving holidays.

Finally, expenditure on fuel is reduced to the average amount per day incurred by international tourists as those travelling by air are expected to spend less on fuel than those travelling to a destination by car. These assumptions are likely to be conservative because it is likely that air travellers have a higher average expenditure per night than those travelling by car or bus.

The next stage involves adjusting tourism expenditure, which is recorded in purchaser prices to internal tourism consumption at basic prices by removing the impact of imports and net taxes on production and adjusting for imputed consumption. Finally, input-output modelling, which draws on the State Tourism Satellite Accounts published by Tourism Research Australia is used to estimate direct and indirect value added and employment.

### C.2 Methodology for calculating the facilitated contribution of international tourism

A similar procedure was used to estimate the economic contribution of international tourism facilitated by the Qantas Group. The various stages in this process are outlined in Figure C.2 below.

Estimating the market share of Qantas and Jetstar is more complicated in the case of international tourism. While BITRE has information on airline travel by route, this does not map neatly to country of origin for some countries and does not account for differences in the ratio of foreign to local residents carried by different airlines.

The market share of Qantas and Jetstar by country of origin was estimated by using airline share data by country of origin reported for short term visitor arrivals by the Australia Bureau of Statistics.

In the second stage, this data was multiplied by estimates of expenditure in Australia (excluding prepaid airfares) by country of origin for inbound tourist arrivals for each state and region from TRA. The resulting estimates reflect the total international tourism expenditure for each state attributable to tourists travelling on Qantas or Jetstar.

The next stage involves adjusting this expenditure to exclude expenditure on international and domestic airfares in Australia to avoid double counting any expenditure included as part of the economic contribution of the operations of the Qantas Group. As for the tourism expenditure, this was then converted to tourism consumption at basic prices and then converted to estimates of direct and indirect value added and employment using multipliers derived from the State Tourism Satellite Accounts.

Figure C.2 Overview of methodology for estimating the international tourism contribution



Source: Deloitte Access Economics



# Limitation of our work

## General use restriction

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# Annexure B

## Dispute resolution process from A4ANZ Voluntary Aviation Industry Code of Conduct

### A1. Negotiation

Upon receipt of a Dispute Notice (and issues paper) in accordance with **clause 35**:

- a. the recipient must reply in writing within 5 Business Days;
- b. the parties must seek to resolve the dispute within 10 Business Days of receipt of the dispute Notice, including by submitting the dispute for consideration and negotiation between Airline and Airport Company; and
- c. the parties may agree in writing to extend the period of negotiation referred to in **clause A1(b)** by a further period or periods of 5 Business Days.

### A2. Appointment of Adjudicator

a. If the dispute is not resolved during the negotiation period referred to in **clause A1**, then either party ('Referring Party') may give the other party a notice:

- i. electing to refer the dispute to expert determination and nominating one or more proposed experts with experience and expertise relevant to the subject matter of the dispute; or
  - ii. electing to refer the dispute to arbitration and nominating one or more candidates for Chairperson of a panel of 3 arbitrators who is a Senior Counsel or Queens Counsel of a State or Territory of Australia practising primarily in commercial matters.
- b. Within 5 Business Days of receipt of a notice under **clause A2(a)(i)**, the other party may give the Referring Party written notice:
- i. accepting one of the nominated experts;
  - ii. proposing one or more alternative experts with experience and expertise relevant to the subject matter of the dispute; or
  - iii. electing to refer the dispute to arbitration and nominating one or more candidates for Chairperson who is a Senior Counsel or Queens Counsel of a State or Territory of Australia practising primarily in commercial matters.

c. Within 5 Business Days of receipt of a notice under **clause A2(a)(ii)**, the other party may give the Referring Party written notice:

- i. accepting one of the nominated Chairpersons; or
- ii. proposing one or more alternative Chairpersons who is a Senior Counsel or Queens Counsel of a State or Territory of Australia practising primarily in commercial matters.

d. If no notice is provided in accordance with **clauses A2(b)** or **A2(c)** then the other party is deemed to have accepted the Referring Party's election and nomination (and the Referring Party is entitled to determine which nominee is appointed).

e. The parties must seek to agree on:

- i. an expert within 5 Business Days of a notice being given in accordance with **clause A2(b)(ii)**;
- ii. a Chairperson within 5 Business Days of a notice being given in accordance with **clauses A2(b)(iii)** or **A2(c)(ii)**.

f. If the parties are unable to reach agreement or either party believes that no agreement is likely to be reached in accordance with:

- i. **clause A2(e)(i)**, then either party may request the President of the Resolution Institute from time to time to nominate an expert satisfying the criteria set out in **clause A2(g)**; or
- ii. **clause A2(e)(ii)**, then either party may request the President of the Resolution Institute from time to time to nominate a Chairperson satisfying the criteria set out in **clause A2(h)**.

g. For the purposes of **clause A2(f)(i)**, the expert must:

- i. have experience and expertise relevant to the subject matter of the dispute;
- ii. be independent of each of the Parties (not being an officer, employee, agent, consultant or adviser to either of the Parties either at the date of the Dispute Notice or at any time within the previous 2 years) unless otherwise agreed by the Parties.

h. For the purposes of **clause A2(f)(ii)**, the Chairperson must:

- i. be a Senior Counsel or Queens Counsel of a State or Territory of Australia practising primarily in commercial matters; and
- ii. be independent of each of the Parties (not being an officer, employee, agent, consultant or adviser to either of the Parties either at the date of the Dispute Notice or at any time within the previous 2 years) unless otherwise agreed by the Parties.

i. The parties must appoint the expert or Chairperson (as applicable):

- i. within 5 Business Days of:
  - A. receipt of a notice in accordance with **clauses A2(b)(i)** or **A2(c)(i)**;
  - B. the date upon which there is deemed acceptance in accordance with **clause A2(d)**;
  - C. the date upon which the Parties agree in accordance with **clause A2(e)**;
- ii. as soon as reasonably practicable after the President of the Resolution Institute makes a nomination in accordance with **clause A2(f)**.

### A3. Panel of Arbitrators

- a. If the dispute is to be resolved by a panel of 3 arbitrators ('panel') in accordance with **clause A2**, the Chairperson must convene a preliminary conference of the parties within 5 Business Days of his or her appointment for the purpose of accepting his or her appointment and hearing submissions as to the nature of the dispute and appropriate nominees for the panel.
- b. Within 5 Business Days of the preliminary conference the Chairperson must notify the parties of two or more proposed nominees for appointment as arbitrators on the panel.
- c. Either party may provide written objections in respect of a nominee or nominees proposed by the Chairperson within 5 Business Days of receiving notification of the nominees under **clause A3(b)**.
- d. Taking into account any objections lodged under **clause A3(c)** and subject to **clause A3(e)**, the Chairperson shall appoint the other two members of the panel within 5 Business Days of the end of the period for objection under **clause A3(c)** and notify the parties in writing.
- e. A person shall not be appointed to the panel unless he or she appears to the Chairperson to be qualified for the appointment by virtue of his or her knowledge of, or experience in:
  - i. in the case of one panel member, industry, commerce or public administration; and
  - ii. in the case of the other panel member, economics.
- f. Within 5 Business Days of the appointment of the other two panel members, the Chairperson shall convene a second preliminary conference for the purpose of providing directions for the conduct of the arbitration.

### A4. Decision-making by panel

The determination of any question arising in a dispute by arbitration shall be made, unless otherwise agreed in writing by the parties, by a majority of all of the members of the panel. If the arbitrators cannot agree on a majority opinion on any question, the decision of the Chairperson shall prevail. Questions of procedure will be decided by the Chairperson.

### A5. Adjudicator's Powers

The Adjudicator must make a determination of the dispute that has been referred under clause 34 and will have the power to deal with any question that arises for determination including matters that were not the basis of the referral of the dispute. For the avoidance of doubt, in order to determine the dispute, the Adjudicator has the power to:

- a. require the Airport-Operator Company to provide access to all or part of the Aeronautical Services and Facilities to the Airline;
- b. require The Airline to accept, and pay for, access to all or part of the Aeronautical Services and Facilities;

- c. specify the terms and conditions on which the Airport-Operator Company will provide, and the Airline will acquire, all or part of the Aeronautical Services and Facilities; and require the Airport-Operator Company to extend Aeronautical Services and Facilities or undertake or allow building works at the Airport.

The parties undertake to and agree that that they will in all respects perform and carry into effect the Adjudicator's requirements and his or her determination and further agree to waive all of their rights to challenge the validity or efficacy of this Code of Conduct.

### A6. Limit on Adjudicator's powers

The Adjudicator must not make a determination that would cause the Airport-Operator Company to breach any statutory obligation or any written agreement between the Airport-Operator Company and another person which was in force before the Dispute Notice unless the Airline agrees to pay damages to the other person.

### A7. Basis of Decision

The Adjudicator must take into account in making a determination:

- a. each of the matters listed from time to time in section 44X(1) of the *Competition and Consumer Act 2010* as if the Aeronautical Services and Facilities were a service to which that section applied;
- b. the legitimate business interests of the Airline in relation to its operations at and investment in the Airport; and
- c. any other relevant matters which the Adjudicator believes should be taken into account.

### A8. Role of Adjudicator

The Adjudicator will act as an expert or as an arbitrator depending upon the appointment of the parties in accordance with **clauses A2** and **A3**. If the Adjudicator is appointed as an:

- a. expert, he or she must proceed in accordance with this **Appendix A** and the then current Rules for the Expert Determination of Commercial Disputes published by the Resolution Institute, except where inconsistent with the provisions of this **Appendix A**. The expert's decision shall be final and binding; or
- b. arbitrator, the panel must proceed in accordance with this **Appendix A** and the then current Resolution Institute Arbitration Rules, except where inconsistent with the provisions of this **Appendix A**.

### A9. Adjudicator Procedures

The Parties agree that the Adjudicator:

- a. will not be bound to observe the rules of evidence, unless agreed by the Parties;
- b. will take into consideration all submissions, documents, information and other material which the Parties provide;
- c. if appointed as an expert, will:
  - i. *act as speedily as a proper consideration of the*

*Dispute allows, having regard to the need to carefully and quickly inquire into and investigate the Dispute and all matters affecting the merits, and fair settlement of the Dispute;*

- ii. *determine the periods that are reasonably necessary for the fair and adequate presentation of the respective cases of the Parties and require that the cases be presented within those periods, provided that those periods are no longer than those set out in the then current Resolution Institute Arbitration Rules(subject to substituting '10 days' for each reference to longer periods);*
  - iii. *issue a draft determination within 10 Business Days after receipt of submissions, documents, information and other material which the Parties provide and give each Party 10 Business Days to make further written submissions prior to issuing a final determination; and*
  - iv. *use best endeavours to issue a final determination in writing, which will be legally binding on the Parties, no later than 10 Business Days after the period for responding to the draft determination ends;*
- d. if appointed as a panel of 3 arbitrators:
- i. *may request and appoint a relevant expert to assist with technical, economic and/or legal issues (such expert to be agreed between the Parties or appointed by the Adjudicator if the Parties cannot agree within 7 days of the request taking into account the parties previous objections);*
  - ii. *will act as speedily as a proper consideration of the dispute allows, having regard to the need to carefully and quickly inquire into and investigate the Dispute and all matters affecting the merits, and fair settlement of the dispute;*
  - iii. *will determine the periods that are reasonably necessary for the fair and adequate presentation of the respective cases of the Parties and require that the cases be presented within those periods, provided that those periods are no longer than those set out in the then current Resolution Institute Arbitration Rules( subject to substituting '10 days' for each reference to longer periods unless a Party objects in writing to the shortened timeframe in which case the Chairperson shall determine the appropriate timeframes);*
  - iv. *will issue a draft award within 20 Business Days after receipt of submissions, documents, information and other material which the Parties provide and give each party 10 Business Days to make further written submissions prior to issuing a final award; and*

v. *will use best endeavours to issue a final award in writing no later than 20 Business Days after the period for responding to the draft award ends; and*

e. will give written reasons for the determination.

#### **A10. Confidentiality**

- a. Subject to **clause A10(b)**, the Adjudicator and the Parties must:
  - i. *keep confidential all submissions, documents, information and other material disclosed during the determination of the dispute;*
  - ii. *not disclose any submissions, documents, information and other material except:*
    - A. to the other Party;
    - B. to its advisers;
    - C. to its insurers; or
    - D. if required by law; and
  - iii. *not use submissions, documents, information or other material obtained during the course of the dispute resolution process for a purpose other than the dispute resolution process.*
- b. Either Party may require the Adjudicator to prepare a public non-confidential version of the Adjudicator's determination. The public version of the Adjudicator's determination may refer to any submissions, documents, information or other material not subject to an express claim of confidentiality by a Party

#### **A11. Costs**

The Adjudicator may make a determination with regard to the payment of his or her costs and the Parties' legal costs, and the parties must abide by that determination. In making that determination the Adjudicator must have regard to whether referral of the dispute was vexatious, the subject matter of the dispute and the conduct of the Parties. If the Adjudicator is appointed as an expert and does not make a determination in relation to its costs or the Parties' standard (party-party) and indemnity (solicitor-own client) costs:

- a. in respect of the Adjudicator's costs, the Parties must each pay one half; and
- b. in respect of the Parties' standard (party-party) and indemnity (solicitor-own client) costs, the Parties must each bear their own costs.

#### **A12. Place of Adjudication**

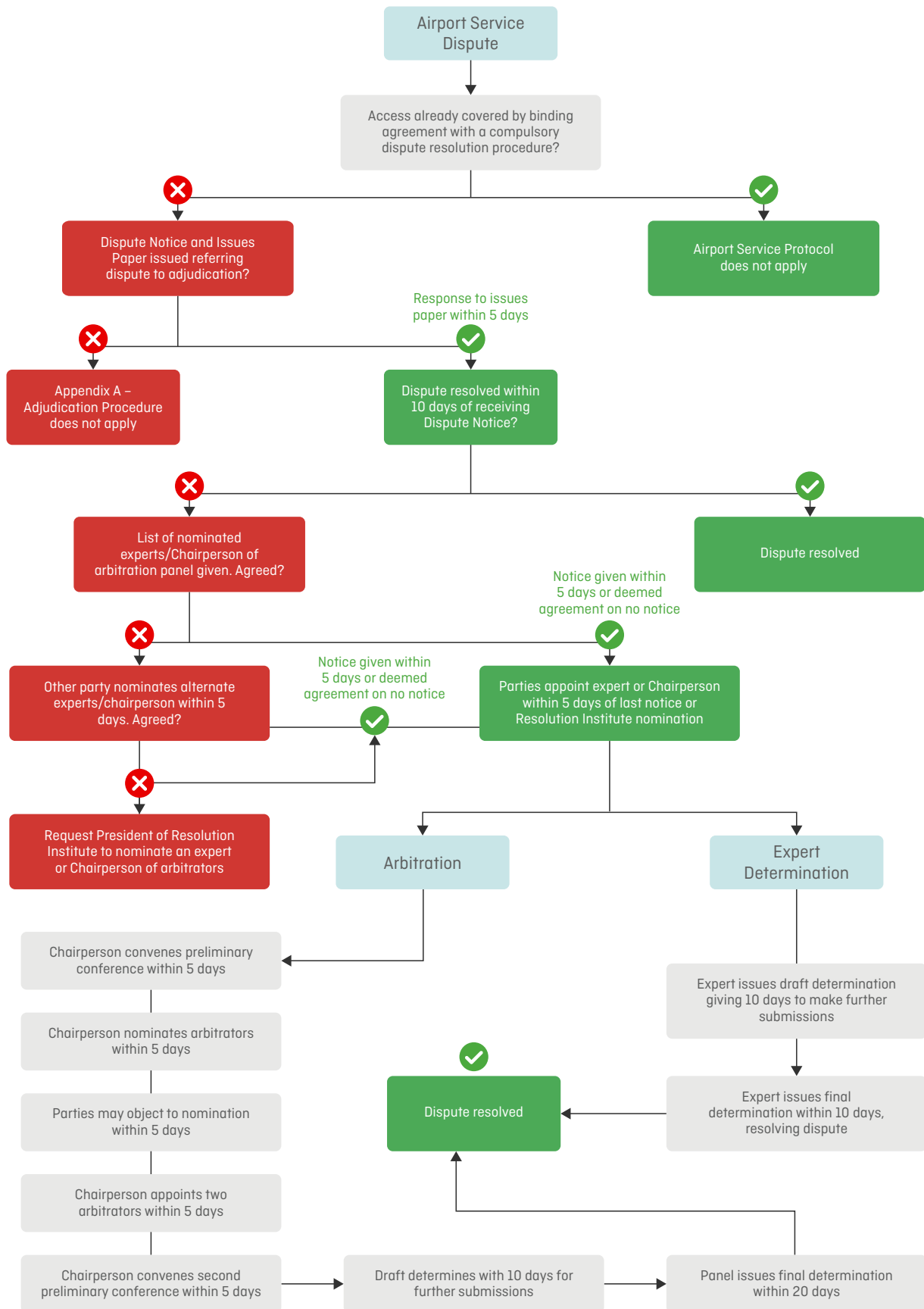
Unless otherwise agreed, arbitration or expert determination will take place in the city nearest to where the Airport is situated.

#### **A13. Legal Representation**

Each Party is entitled to legal representation during the Adjudication.



OUTLINE OF ADJUDICATION PROCEDURE  
(FOR GUIDANCE ONLY)



## Annexure C

ICF Report: Developing a SAF industry to decarbonise Australian aviation



# → Developing a SAF industry to decarbonise Australian aviation

November 2023



An ICF Report



**AIRBUS**

## Executive Summary

Aviation plays a critical role in Australia's economy, and developing pathways for its decarbonisation is crucial for the sector's continued viability. Before the COVID-19 pandemic, the sector directly employed over 90,000 people and contributed A\$20B to the economy<sup>1</sup>. According to estimates by the International Air Transport Association (IATA) an additional A\$37B is contributed through supply chain impacts and employee spending, and A\$49B of value from the tourism industry is supported, equivalent to 5.5% of GDP and over 700,000 jobs<sup>2</sup>.

However, the aviation sector faces significant headwinds to decarbonise by 2050. Australian aviation has increased from 2.0% of national emissions in 2005 to 4.6% in 2019<sup>3</sup>. This percentage could meaningfully increase as other sectors of the economy decarbonise, with some estimating that aviation emissions could grow to 22% of global emissions by 2050 if additional action is not taken.<sup>4</sup> The levers available to decarbonise aviation are limited and must overcome significant technical and economic challenges.

More efficient aircraft and operations have already reduced emissions intensity per passenger-kilometre by 54.3% in 2018 vs 1990<sup>5</sup>, but with Australian jet fuel demand expected to grow by a further 75% between 2023 and 2050, decarbonising the sector will ultimately require the energy used to be decarbonised. There are broadly three solutions in focus:

- **Electric:** As the energy density of battery continues to improve, electric aircraft are expected to operate commuter and some regional flights; however, these shorter routes represent just 3-4% of emissions from the aviation industry.
- **Hydrogen:** Hydrogen aircraft may be able to address a wider spectrum of markets, however the wholesale transition required for aircraft, airports, and fuel logistic infrastructure to use hydrogen will slow uptake and limit the impact from hydrogen before mid-century
- **SAF:** Sustainable aviation fuels will be the backbone of aviation decarbonisation. It is safe, technically viable and can be dropped-in for use with existing aircraft and infrastructure. IATA estimates that SAF will contribute 65% of the decarbonisation required for the aviation sector to achieve net zero by 2050.

SAF is critical to drive down aviation emissions. In 2040, the modelled central scenario would mitigate 9.4 million tonnes (MT) of CO<sub>2</sub> per year from Australian aviation, and over 50.7 MT CO<sub>2</sub>e in cumulative emissions. Every SAF facility will also produce renewable diesel and naphtha as co-products, supporting the decarbonisation of long-distance road transport, mining, and chemicals. In the same scenario, these co-products contribute an additional 3.7 MT emissions reduction per year by 2040, bringing the cumulative total emissions reduction to over 70 MT CO<sub>2</sub>e by 2040. The emissions reduction of SAF is measured across the full product life cycle, motivating emission reductions across the supply chain in waste management, agriculture, and energy, and

<sup>1</sup> [https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future-of-australias-aviation-sector\\_issues-paper-2020.pdf](https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future-of-australias-aviation-sector_issues-paper-2020.pdf)

<sup>2</sup> <https://www.iata.org/en/iata-repository/publications/economic-reports/australia-value-of-aviation/>. 2017 values, converted to AUD at 1.57 AUD/USD, and inflated to 2019 at 1.06% in 2018 and 2019.

<sup>3</sup> Note this includes both domestic and international aviation. While only domestic is currently included in the Australian NGER, international aviation has been included for completeness.

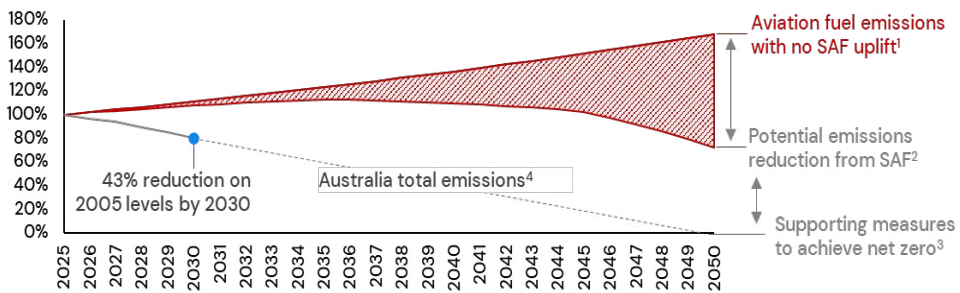
<sup>4</sup> <https://www.energy-transitions.org/>

<sup>5</sup> <https://aviationbenefits.org/environmental-efficiency/climate-action/waypoint-2050/>

accelerating the development of clean hydrogen production and carbon capture. Because of this, SAF's potential decarbonisation impact cuts across sectors that account for ~90% of Australia's total emissions.

### SAF offers considerable potential to reduce the emissions from aviation and make the national decarbonisation targets more achievable

Percentage change from 2025 baseline

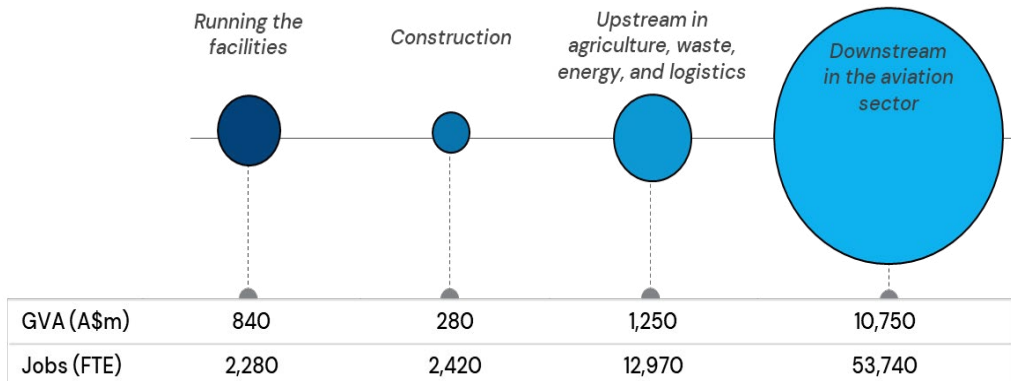


Notes: (1) Aviation emissions include domestic and international travel, and do not include abatement from SAF or Safeguard. Forecast is based on CSIRO Sustainable Aviation Fuel Roadmap. (2) High case aligned to EU SAF Mandate. (3) Supporting measures include carbon removals and/or accelerated use of H2/electric aircraft. (4) Australia total emissions from DCCEEW 2022, adjusted for 43% decrease vs 2005

Alongside decarbonising aviation, building a domestic SAF industry offers significant economic benefits. Based on the modelling outlined in this report, domestic SAF production has the potential to contribute approximately A\$13B in GDP per year by 2040, while supporting nearly 13,000 jobs in the feedstock supply chain and creating 5,000 new high-value jobs to construct and run the facilities.

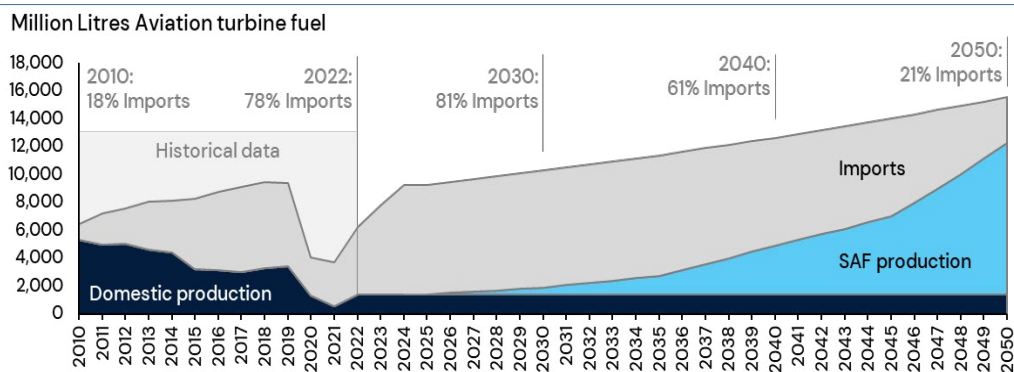
### Developing a domestic SAF industry creates significant additional value in the energy, construction, agriculture, and waste management sectors

Annual Gross Value Add and jobs in 2040, Recommended Scenario. Radius is proportional to GVA.



Finally, developing a domestic SAF industry represents a strategic move to reverse Australia's growing dependence on imported liquid fuels, strengthening the energy independence and security of Australia's economy. Australia has starkly increased reliance on imported jet fuel, growing from 18% imports in 2010 to 78% in 2022, with similar trends for diesel and petroleum. The SAF production levels in the proposed central scenario would reduce imports from a peak of over 90% in the 2020's to 61% in 2040, and just 21% in 2050.

### Building an Australian SAF industry could reverse a decade-long decline in domestic production, meaningfully supporting energy resilience



Notes: Assuming domestic production stabilises at 2022 level. Jet fuel demand from CSIRO Sustainable Aviation Fuel Roadmap. SAF Production assuming recommended scenario.

These benefits cannot be captured without policy to catalyse a domestic SAF industry. Decades of effort have progressed production technologies from research to commercial facilities, and over 500,000 flights have been operated using a blend of SAF, demonstrating the safety and practicality of the technology. However, the global SAF industry remains nascent, and has a substantial green premium compared to the mature fossil fuel market. International experience has shown the vital role for policy to de-risk initial facilities, level the playing field for producers and offtakers, and ensure supply increases to match demand. Without policy, the SAF industry will remain a footnote.

This report proposes a combination of supply and demand mechanisms, with both proving vital to building a viable domestic industry. A mandate is key to ensure equal demand and create a reliable market for SAF producers and investors. This analysis considered three scenarios for mandating minimum SAF supply as a percentage of total domestic jet fuel supply, with a central scenario of 1.5% in 2026, to 5% in 2030, and 28% by 2040. However, without additional support, Australian facilities will be uncompetitive against those overseas with longer experience of renewable fuel production. A combination of policies is most effective, with capital grants to de-risk the first facilities and production incentives to improve revenue certainty and reduce the impact to passengers. The policies suggested in this analysis would drive a gross value add of A\$12.3 billion against a policy cost of A\$4 billion over 16 years. Further, with the proposed policies and expected industry efficiency improvements, the impact on costs per flight are forecast to be relatively neutral, resulting in an increase of just 0.3% in \$/RTK between 2025 and 2040.



This document describes a detailed analysis undertaken to evaluate and prioritise policies to create a SAF industry in Australia. The first half describes why SAF is important for Australia, and how a domestic SAF industry could be developed. The second half provides the evidence base, describing the lessons that can be learnt from international policy developments, and then the method and assumptions used for the technical analysis.

Developing a domestic industry requires concerted efforts and patience, but will pay considerable dividends through job creation, energy security, and by accelerating decarbonisation across many of the hard-to-abate sectors of the Australian economy. We hope this report provides a blueprint for Government to consider as it continues to assess the critical role of SAF in decarbonising the Australian economy and establish the settings for a sustainable aviation sector.

### Policy recommendations

- Establish a mandate requiring fuel suppliers to blend an increasing portion of SAF into the jet fuel supply. This should:
  - Increase at a rate appropriate to the support provided to ensure supply can scale to meet demand. An illustrative requirement for 5% SAF by 2030 and 28% SAF by 2040 would drive estimated SAF use of 3.5 billion liters by 2040, reducing 9.4 million tonnes of CO<sub>2</sub> annually.
  - The level should be evaluated at 5-year intervals to ensure it remains appropriate to the market and technology dynamics. As the carbon accounting methodologies develop, consider adjusting the mandate to require an emissions reduction rather than volume.
  - The minimum sustainability criteria should ensure a meaningful emissions reduction. This analysis proposes a minimum GHG reduction of 50%.
  - A buy-out price should be implemented to provide some protection for customers. This analysis proposes a price of A\$ 4-5 /liter.
  - Implement a suitable Monitoring, Reporting, and Evaluation scheme to ensure the emissions reduction is evaluated across the value chain and customers can correctly account for the emissions reduction, particularly if the environmental attributes for compliance are separated from the physical jet fuel.
- Provide capital support to develop initial facilities and a skilled workforce in Australia.
  - A grant pool of A\$1,500m would de-risk the initial facilities. Allocation should be connected to the successful completion of project milestones, and potentially modulated to support projects with greater potential to reduce emissions intensity and scale using Australian feedstocks.
- Provide revenue support to ensure Australian facilities can compete against refineries based in other countries that can leverage existing infrastructure, workforce, and policies:
  - This should be linked to the Carbon Intensity (CI) of the SAF produced to provide greater support for more sustainable production. This analysis assessed revenue support of A\$ 0.03 per liter per CI point better than 50% (44.5 gCO<sub>2</sub>e/MJ). For example, this would be equivalent to A\$0.8/liter for SAF achieving an 80% emissions reduction.
  - The support should be provided linked to the facility commissioning date and run for the first 10 years of operation, with a link to inflation to ensure clarity for investors.
- Reduce the tax burden for initial producers entering the market, recognising the limited taxation for fuels produced in many competing countries.

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# 1 Introduction

## Purpose of this report

This report aims to support the development of effective sustainable aviation fuel (SAF) policies in Australia. It presents the results of a detailed analysis on the impact of policy on SAF costs, volumes, carbon reduced, jobs created, and the economic value added.

Developing an Australian Sustainable Aviation Fuel (SAF) industry presents an opportunity to drive economic growth, create green jobs, and decarbonise the aviation sector, enabling the continued connectivity and social benefits in a decarbonised society.

The Australian Government has established emissions reduction targets of 43 per cent below 2005 levels by 2030 and net zero emissions by 2050. The aviation industry is aligned to this ambition, with airlines including Qantas and Virgin Australia committed to achieving net zero by 2050<sup>6,7</sup>. Both airlines highlight the crucial role for SAF to achieve this target. This matches the global momentum established by the ICAO<sup>8</sup>, IATA<sup>9</sup>, and ACI<sup>10</sup> commitments to net zero carbon by 2050, representing the world's states, airlines, and airports, and including most of the overseas carriers that connect their home countries to Australia.

The Australian aviation industry has made considerable progress towards this ambition. Investments in fuel-efficient aircraft and operational improvements have driven down the emissions intensity of Australian aviation by 1.4% each year<sup>11</sup>, and the ICAO CORISIA scheme and reformed Safeguard Mechanism obligate airlines to abate increasing volumes of international and domestic emissions respectively.

However, if no additional action is taken, Australian aviation will fall short of its decarbonisation ambitions. The essential role for aviation to connect communities has driven robust demand, eclipsing efficiency improvements and driving domestic and international aviation emissions to increase by 20% and 40% respectively between 2010 and 2019, set against a 13.5% decrease in total Australian emissions over the same period<sup>12</sup>. The current high cost of SAF has prevented widespread uptake, and policy uncertainty due to government inaction has held-back investments in refining capacity which in turn keeps prices high, creating an intractable challenge that must be solved by policy.

Addressing this challenge will bring benefits far beyond aviation. The ARENA Australia Bioenergy Roadmap estimated potential for \$10 billion in additional annual GDP and 26,000 new jobs by 2030<sup>13</sup>, with SAF highlighted

<sup>6</sup> <https://www.qantas.com/content/dam/qantas/pdfs/about-us/environment/qantas-group-climate-action-plan.pdf>

<sup>7</sup> <https://www.virginaustralia.com/au/en/about-us/sustainability/emissions-management/>

<sup>8</sup> <https://www.icao.int/environmental-protection/Pages/LTAG.aspx>

<sup>9</sup> <https://www.iata.org/en/programs/environment/flynetzero/>

<sup>10</sup> <https://aci.aero/2021/06/08/net-zero-by-2050-aci-sets-global-long-term-carbon-goal-for-airports/>

<sup>11</sup> <https://www.infrastructure.gov.au/sites/default/files/documents/managing-the-carbon-footprint-of-australian-aviation.pdf>

<sup>12</sup> <https://www.dccceew.gov.au/climate-change/publications/national-greenhouse-accounts-2019/national-inventory-by-economic-sector-data-tables-and-methodology>

<sup>13</sup> <https://arena.gov.au/assets/2021/11/australia-bioenergy-roadmap-report.pdf>

as a key driver. These jobs and investments are made tangible in the proposals for the renewable fuel refineries at BP Kwinana, Ampol at Lytton, and JetZero in Queensland.

The development of domestic refining capacity would further reinforce energy security, stemming the increased reliance on imports and volatile markets. Between 2010 and 2019, jet fuel imports doubled from 30% of Australian consumption to 62%<sup>14</sup>, against a backdrop of c. 570,000 b/d refining capacity closed<sup>15</sup> (c. half of Australian oil demand). Every SAF facility will also produce Renewable Diesel and Naphtha, supporting energy security and decarbonisation across many other sectors, including Australian agriculture and mining.

The opportunities for SAF have been recognised by several other countries, with the United States, Canada, European Union, and United Kingdom leading the way by adapting and implementing policies to support domestic SAF production and markets. Australia has an opportunity to leverage this global momentum and draw on best practice from these other countries, but must act now.

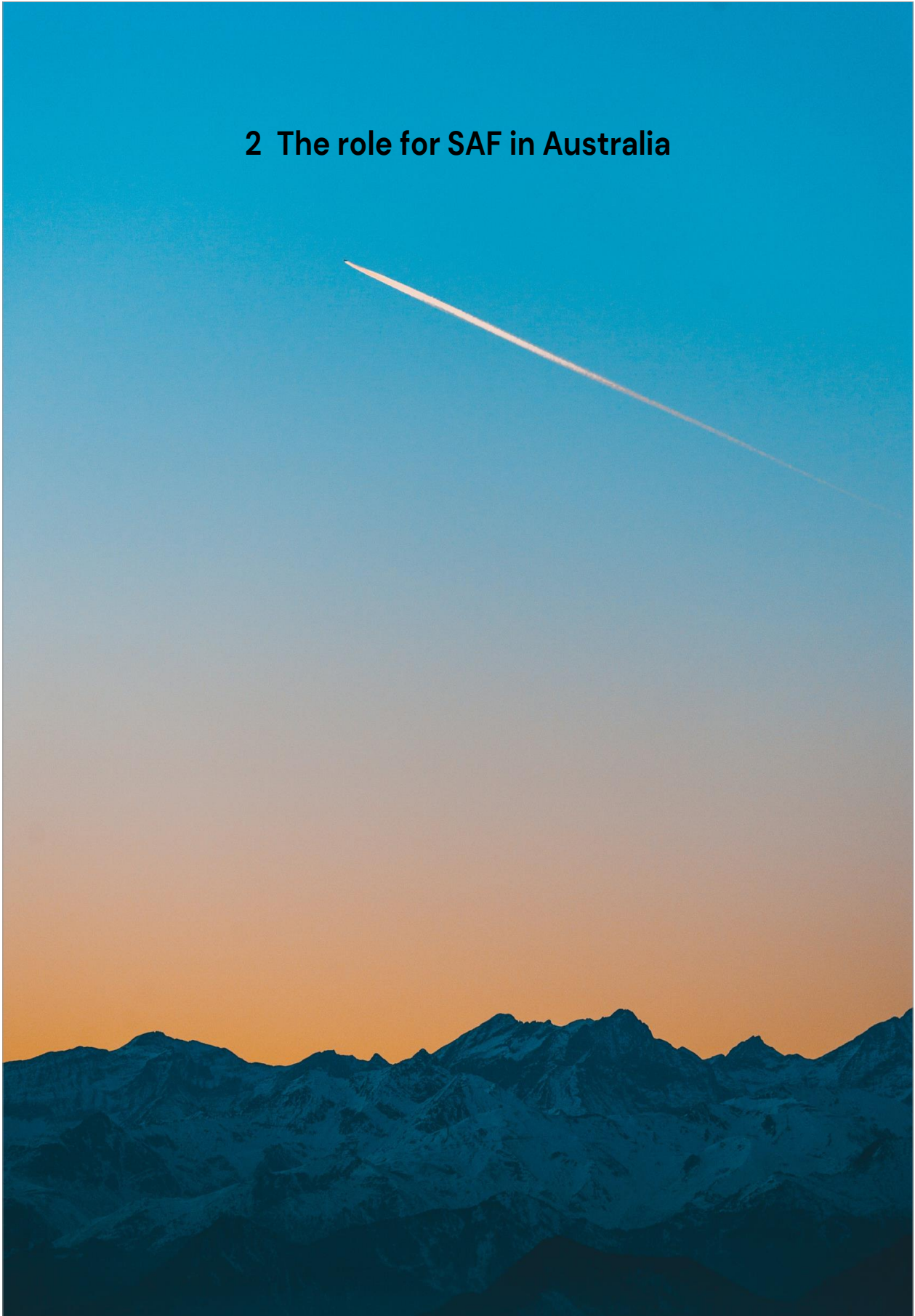
#### **Why implement SAF policy?**

- Sustainable Aviation Fuels are crucial for aviation to reduce emissions.
- The SAF industry cannot develop without policy support; policy is crucial to develop the technologies, attract investment, and build facilities. The US, EU, UK, and other countries have already developed and implemented policies to kick-start SAF production and demand in their countries.
- Catalyzing a domestic SAF refining industry will create high value jobs (many in rural locations), drive innovation, and meaningfully contribute to economic growth.
- The SAF produced will improve energy security and resilience by onshoring supply chains. The co-produced renewable diesel and naphtha will further support decarbonisation and energy resilience across many other hard-to-abate sectors, including Australian road transport, mining, agriculture and petrochemicals.
- SAF production combines several green technologies, catalyzing the Australian low-carbon industry. This includes providing a market for green hydrogen, a source of value for carbon capture, and supporting investment in renewable electricity.

<sup>14</sup> <https://www.energy.gov.au/publications/australian-petroleum-statistics-2019>

<sup>15</sup> <https://www.argusmedia.com/en/news/2227452-australia-approves-18bn-refinery-fuel-security-plan>

## 2 The role for SAF in Australia





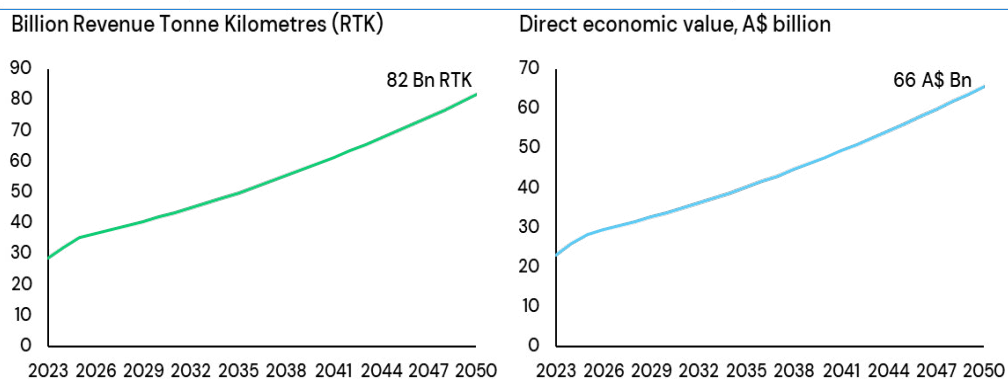
## 2.1 Creating economic value

Aviation underpins the Australian economy, connecting people, businesses, and supply chains. In 2019, 61 million people travelled by air domestically, and international passenger numbers increased by almost 75% over the past decade – highlighting the economic and social importance of the sector.

Prior to COVID-19, the sector directly employed over 90,000 people and contributed A\$ Bn 20 to the economy<sup>16</sup>. The catalytic impact of the sector is even more substantial, with IATA estimating<sup>17</sup> that an additional A\$ Bn 37 is contributed through supply chain impacts and employee spending, and A\$ Bn 49 of value from the tourism industry is supported, equivalent to 5.5% of GDP and over 700,000 jobs.

The value created by aviation will continue to increase as the industry grows. The CSIRO forecasts fuel consumption growth of 1.6x in 2050 vs 2025<sup>18</sup>, corresponding to an increase in activity of 2.3x<sup>19</sup>. Assuming the same value creation per tonne-kilometer, this suggests the direct value from aviation could increase to over 66 billion AUD by 2050, with further value induced across the supply chains and tourism sector.

### Continued growth in the Australian aviation industry will create increased direct economic value, with further catalysed value across the supply chain and tourism



Sources: Activity forecast based on CSIRO Sustainable Aviation Fuel Roadmap; economic value extrapolated based on DITRDC The Future of Australia's Aviation Sector

Developing a domestic SAF industry creates additional value and jobs across the value chain. This analysis has assessed four sources of value, including the direct contribution to employment within the facilities, construction value, the impact of the collection, processing, and logistics for feedstocks, and the value sustained in by decarbonising the aviation sector in a carbon constrained society. If SAF production achieves the volumes

<sup>16</sup> [https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future-of-australias-aviation-sector\\_issues-paper-2020.pdf](https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future-of-australias-aviation-sector_issues-paper-2020.pdf)

<sup>17</sup> <https://www.iata.org/en/iata-repository/publications/economic-reports/australia-value-of-aviation/>. 2017 values, converted to AUD at 1.57 AUD/USD, and inflated to 2019 at 1.06% in 2018 and 2019.

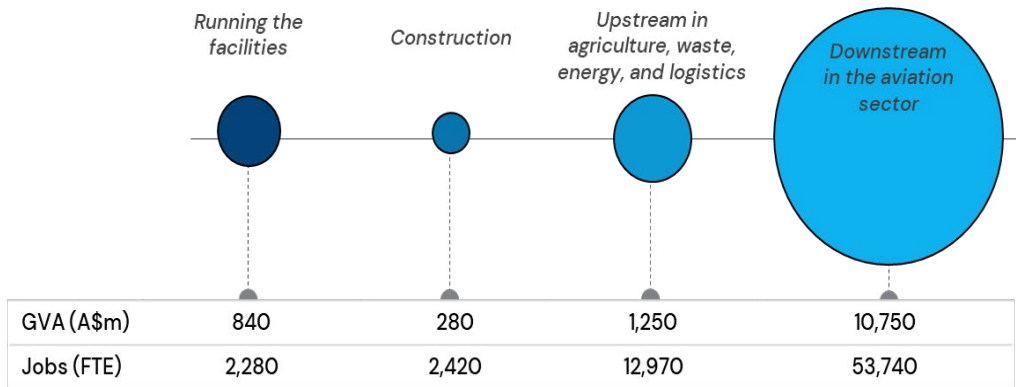
<sup>18</sup> <https://www.csiro.au/en/news/all/articles/2023/august/sustainable-aviation-industry-australia>

<sup>19</sup> Including reduction in fuel consumption intensity of 1.4% per year, in line with the rate achieved in Australia over the past decade.

assessed in this report, the annual Gross Value Add (GVA) is estimated at A\$m 1,780 by 2030, increasing to A\$m 13,100 in 2040.

### Developing a domestic SAF industry creates significant additional value in the energy, construction, agriculture, and waste management sectors

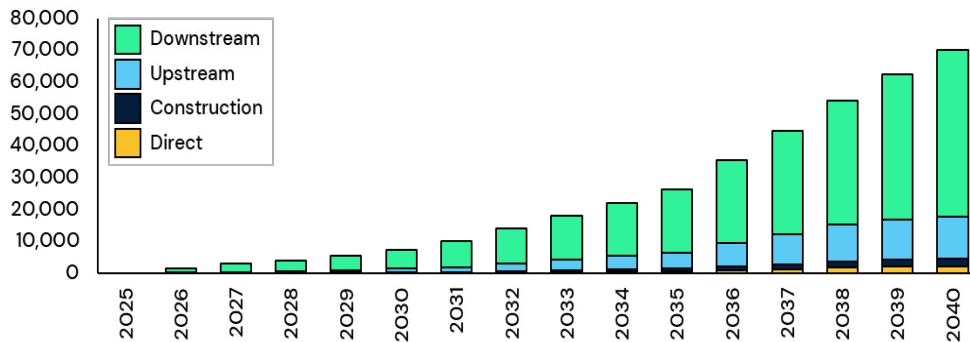
Annual Gross Value Add and jobs in 2040, Recommended Scenario. Radius is proportional to GVA.



This value creation is driven by the considerable number of jobs created by a SAF industry. Refining facilities create high-value jobs, and provide a transition path for the existing workforce. Building facilities is shown as a relatively small contribution, although has been pro-rated over the facility lifetimes; but as construction is naturally front-loaded, these jobs would provide a rapid impact from policy implementation. Upstream employment sustains roles across the agriculture, energy, and waste management sectors, and downstream ensures continued employment across the aviation industry. Many of these jobs would be created in rural communities, supporting the levelling-up of the Australian economy.

### SAF production is forecast to create or sustains over 70,000 jobs by 2040

FTE Jobs Created, Recommended Scenario



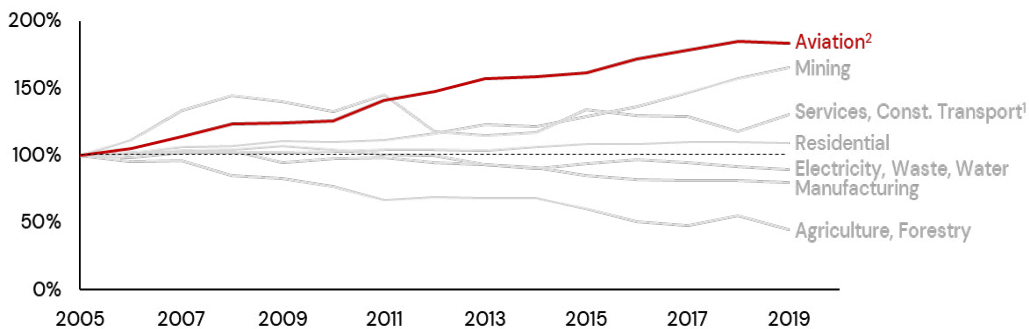
Sources: ICF analysis, assuming the recommended scenario. Direct jobs include those to operate facilities, and construction jobs are pro-rated over facility lifetimes. Upstream jobs include those in collection and logistics for feedstocks, while downstream includes the decarbonised aviation jobs

## 2.2 Driving down the emissions curve

In 2022, the Australian government legislated national greenhouse gas emission reduction targets, including a reduction of 43% by 2030 compared to 2005 levels, and net zero by 2050<sup>20</sup>. In the early years of the millennium, Australian emissions continued to increase with economic growth, reaching a peak in 2007 before gradually declining. By 2019, emissions had reduced 15.2% vs 2005 (529 Mt CO<sub>2</sub>e vs 624 Mt CO<sub>2</sub>e), so achieving the targets will require considerable acceleration to the rate of decline.

Virtually all the decrease was achieved in the Agriculture, Forestry, and Fishing sector (-113 Mt CO<sub>2</sub>e), but was slightly offset by the increases in Mining (+40 CO<sub>2</sub>e) and Transport & Construction (+15 Mt CO<sub>2</sub>e). The combined emissions from domestic and international aviation rapidly increasing with the strong demand for connectivity and tourism. Although new aircraft have decoupled the increase in emissions from the much greater increase in activity, net aviation emissions were still 80% higher in 2019 than in 2005.

### Emissions from International and Domestic aviation have increased by +80% since 2005–2019, driven by the rise in connectivity and tourism



Sources: <https://www.dcccew.gov.au/climate-change/publications/national-greenhouse-accounts-2019/national-inventory-by-economic-sector-data-tables-and-methodology>, <https://www.energy.gov.au/publications/australian-petroleum-statistics-2021>.

Notes: (1) Aviation has been subtracted from Transportation. (2) Only domestic aviation is included in the emissions inventory; international aviation has been added based on fuel consumption

Aviation has increased from 2.0% of national emissions in 2005 to 4.2% in 2019<sup>21</sup>. This percentage could meaningfully increase as other sectors of the Australian economy increasingly decarbonise, historically driven by initiatives such as Powering Australia, The Emissions Reduction Fund, the Renewable Energy Target Scheme, and others<sup>22</sup>. The Energy Transition Commission estimated that if no additional action is taken to reduce aviation emissions, the sector could be responsible for 22% of global emissions by 2050<sup>23</sup>.

<sup>20</sup> <https://www.dcccew.gov.au/climate-change/emissions-reduction/net-zero>

<sup>21</sup> Note this includes both domestic and international aviation. While only domestic is currently included in the Australian NGER, international aviation has been included for completeness.

<sup>22</sup> <https://www.dcccew.gov.au/climate-change/strategies>

<sup>23</sup> <https://www.energy-transitions.org/>

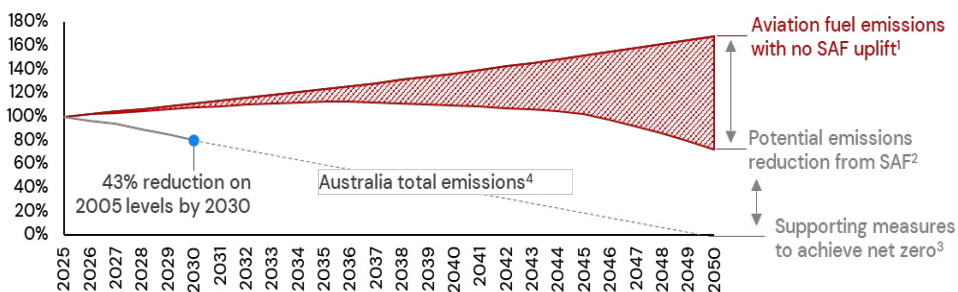
Sustainable Aviation Fuels (SAF) are essential to reduce emissions from aviation. More efficient aircraft and operations have already reduced emissions intensity per passenger-Kilometer by 54.3% in 2018 vs 1990<sup>24</sup>, but decarbonizing the sector will ultimately require the energy used to be decarbonised. The three solutions in focus include electric, hydrogen, and SAF.

As the energy density of battery continues to improve, electric aircraft will be able to operate commuter and some regional flights; however, these shorter routes represent just 3–4% of emissions from the aviation industry. Hydrogen aircraft may be able to address a wider spectrum of markets, although the wholesale transition required for aircraft, airports, and fuel logistic infrastructure to use hydrogen will limit the impact from hydrogen before mid-century.

SAF will be the backbone of aviation decarbonisation. IATA estimate that SAF will contribute 65% of the decarbonisation required for net zero by 2050<sup>25</sup>. In this report, a range of scenarios for SAF uptake were assessed, and the impact on aviation emissions has been illustrated below. This considerable impact bends the emission curve down, bringing the Net Zero target in reach.

### SAF offers considerable potential to reduce the emissions from aviation and make the national decarbonisation targets more achievable

Percentage change from 2025 baseline



Notes: (1) Aviation emissions include domestic and international travel, and do not include abatement from SAF or Safeguard. Forecast is based on CSIRO Sustainable Aviation Fuel Roadmap. (2) High case aligned to EU SAF Mandate. (3) Supporting measures include carbon removals and/or accelerated use of H2/electric aircraft. (4) Australia total emissions from DCCEEW 2022, adjusted for 43% decrease vs 2005

Catalyzing the SAF industry in Australia supports decarbonisation across several hard-to-abate sectors. Every SAF facility produces co-products of renewable diesel and naphtha, which are important to reduce emissions in heavy transport, agriculture, industry, and petrochemicals – particularly in applications where electrification is more challenging. The mining sector has already explored the use of renewable liquid fuels, with BHP trialing use at Yandi<sup>26</sup>, enabling emissions reduction for energy intensive operations in remote locations. Several countries already use renewable diesel to decarbonise long-distance trucking and other road transport,

<sup>24</sup> <https://aviationbenefits.org/environmental-efficiency/climate-action/waypoint-2050/>

<sup>25</sup> <https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---alternative-fuels/>

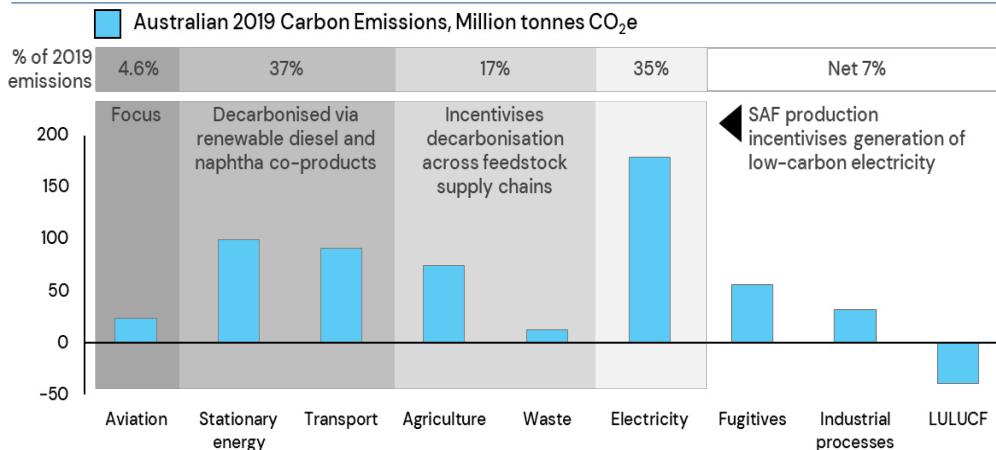
<sup>26</sup> <https://www.bhp.com/news/media-centre/releases/2023/02/bhp-trials-renewable-fuel-at-yandi>

including the UK, EU, and US. Emissions from these sectors are forecast to represent 44% of Australian emissions by 2030.

SAF production requires feedstocks such as waste vegetable oils, ethanol, municipal waste, and cellulosic materials. Developing the supply chains for SAF production drives improvements upstream, as the carbon intensity of the SAF is measured across the full lifecycle. This incentivizes producers to reduce emissions at every point in the supply chain, improving the management of land, wastes, and their supporting logistics. Programs in the US<sup>27</sup> have used renewable fuel production to support farmers to adopt no/low tilling, nutrient management, and cover cropping – with the SAF production bringing a measurement and incentive framework.

Electricity and hydrogen are important inputs for SAF production, creating a high-value market to support the supply growth created by programs such as Hydrogen Headstart<sup>28</sup>. This supports the continued decarbonisation of the electricity sector, which is forecast to contribute 18% to 2030 emissions.

### SAF production drives emission reductions through the value chain, including hard to abate sectors such as mining, long-distance road transport, agriculture, and others



The combined impact from SAF is to enable the decarbonisation of aviation, while catalysing emissions reductions across sectors representing 80%+ of Australian 2030 emissions – including many of the most challenging industries, such as mining, agriculture, waste management, and energy.

<sup>27</sup> <https://gevo.com/agriculture/regenerative-agriculture/>

<sup>28</sup> <https://arena.gov.au/funding/hydrogen-headstart/>



## 2.3 Ensuring energy security

While consumption of liquid fuels in Australia has increased, domestic production has declined with the closure of the Clyde, Kurnell, Bulwer, Kwinana, and Altona refineries since 2012. The remaining two refineries (Lytton and Geelong) are configured to focus on petrol production, compounding the reduction in domestic jet fuel refining capacity<sup>29</sup>. This has starkly increased the reliance on imported jet fuel, from 18% in 2010 to 78% in 2022. Diesel and petrol for on-road use follow a similar trend, and the import percentage may further increase as the recovery after the pandemic drives a resurgence in demand.

The decline in domestic production is a recognised concern, and the Australian government committed up to \$2.05 Bn AUD through the Fuel Security Service Payments (FSSP), which subsidizes oil refineries during periods of low profitability. In addition, the government committed \$302m to fast-track refinery upgrades and \$50.7m to implement and monitor the FSSP and stockholding obligations<sup>30</sup>. These schemes are important to preserve the existing capacity, but do not mitigate the long-term challenge for aviation. As the demand for jet turbine fuel increases, additional domestic refining capacity is required to avoid a greater portion of imports and reliance on international supply chains. The long asset life of refining infrastructure means that any substantial investment in new fossil infrastructure would be incompatible with Australia's climate targets, shifting the focus to opportunities for domestic production of renewable fuels.

Several facilities are already under evaluation, with BP investigating the potential to retrofit HEFA SAF Refining capacity at the Kwinana site<sup>31</sup>, which has been operating as an import terminal after the fossil refining plant was closed. Implementing policy is critical to ensure that this facility (and others under consideration<sup>32</sup>) is realized, and that there are demand-side measures to encourage the use of products within Australia, rather than export to higher-value international markets. Reinvigorating existing sites kick-starts capacity, efficiently sustaining existing infrastructure and sustaining jobs, although the market dynamics and technologies for renewable facilities results in smaller plant sizes that fossil fuel plants – for example, the SAF and RD capacity at Kwinana is likely to be c. 10,000 b/d<sup>33</sup> (600 ml/yr) compared to the previous 146,000 b/d of fossil capacity. This highlights the need for a meaningful shift in policy focus to build the additional infrastructure, expertise, and workforce to create a domestic SAF industry – this cannot be achieved with small tweaks to existing policies.

This evaluation recommends policies to drive SAF demand and supply at a level slightly below the leading markets, representing the time needed to accelerate the industry in Australia. However, even at this slower rate of deployment, the industry could have a meaningful impact on the reliance on imports, reversing the decade-long decline in domestic production. New SAF capacity requires time to construct, meaning that the reliance on imports will get more severe in 2024/5 before capacity can come online, but this represents a long-term solution to a challenge that cannot otherwise be easily alleviated. The levels proposed in this report would reduce imports from a peak over 80% in the 2020's to 61% in 2040, and just 21% in 2050.

<sup>29</sup> [https://australiainstitute.org.au/wp-content/uploads/2022/04/P1036-Over-a-barrel\\_liquid-fuel-security-WEB.pdf](https://australiainstitute.org.au/wp-content/uploads/2022/04/P1036-Over-a-barrel_liquid-fuel-security-WEB.pdf)

<sup>30</sup> <https://www.data.gov.uk/dataset/aaedb588-fc86-498f-acab-5fa1b261fdd5/crop-map-of-england-crome-2021>

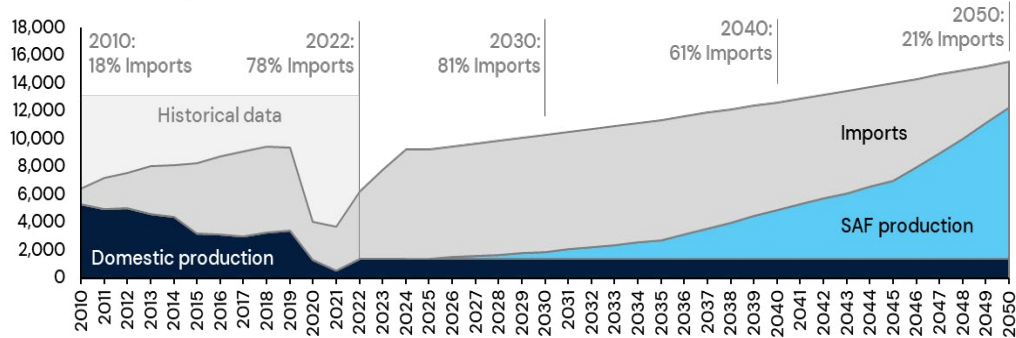
<sup>31</sup> [https://www.bp.com/en\\_au/australia/home/media/press-releases/biorefinery-plans-new-milestone.html](https://www.bp.com/en_au/australia/home/media/press-releases/biorefinery-plans-new-milestone.html)

<sup>32</sup> <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/agriculture/032323-eneos-explores-3-million-barrel-year-saf-renewable-diesel-output-in-australia>

<sup>33</sup> BP state that capacity will be c. 50,000 b/d across 5 facilities, so this assumes capacity is evenly distributed.

## Building an Australian SAF industry could reverse a decade-long decline in domestic production, meaningfully supporting energy resilience

Million Litres Aviation turbine fuel



Notes: Assuming domestic production stabilises at 2022 level. Jet fuel demand from CSIRO Sustainable Aviation Fuel Roadmap. SAF Production assuming recommended scenario.

The increasing reliance on imports also has a considerable impact on the trade surplus. The value of imported jet fuel increased from c. A\$m 1,500 in 2010 to A\$m 5,865 in 2022, with the increase accentuated by the high cost of fuel on the international markets in 2022. The import cost in 2023 will likely be higher with the increased volumes and the Saudi, Russia, and OPEC+ production cuts that have sustained high energy costs. As jet demand continues to increase, the spend on imports will also increase if no additional domestic capacity is constructed. Jet demand is forecast at 12,600 ML in 2040 and 15,500 ML in 2050, and if domestic production is sustained at just 1,400 ML the value of imports to meet demand are estimated at A\$ Bn 8.5 in 2040 and A\$ Bn 10.7 in 2050<sup>34</sup>. This compares to 8% and 10% respectively of the average trade surplus for the whole Australian economy of A\$ Bn 107 per year over 2019-2023<sup>35</sup>, representing a considerable potential drag on the economy and illustrating the stimulative impact that domestic SAF production could have across the economy.

<sup>34</sup> Assuming the average price of jet fuel between 2010 and 2022, which was equal to A\$ 0.8 per litre.

<sup>35</sup> <https://www.dfat.gov.au/trade/trade-and-investment-data-information-and-publications/trade-statistics/australias-trade-balance>. Note the surplus may increase as the Australian economy continues to grow, so this calculation is done for illustration only.

### **3 Evaluation of potential SAF policies in Australia**





### 3.1 Why is policy necessary to kick-start a SAF industry?

Since the first oil well was drilled in 1859, global fossil liquids production has grown to over 100 million barrels of oil every day. With growth and competitive pressures, the industry has become highly efficient, benefiting Australia with access to affordable energy. By comparison, liquid renewable fuels are in their infancy, depending on developing supply chains, early-stage technologies, and a limited workforce. Growing renewable fuels production will reduce costs as the systems reach maturity and more Australians become employed and experienced, and the growth will further reduce emissions and improve energy resilience. However, renewable fuels cannot compete on price alone against the large-scale, entrenched fossil industry.

Many stakeholders across the Australian economy value the additional benefits that renewable fuels provide, but this does not provide the certainty and stability required for investment. Each plant represents a considerable investment and must operate for several decades to be competitive. Policy has a key role to provide some certainty to the market over such long timescales and reduce the risk to an appropriate level.

First facilities are always more expensive as they sit at the peak of the learning curve for engineers, producers, construction, financiers, insurers, and many others across the supply chain. As knowledge and technologies develop, the industry will become more competitive, benefiting all consumers. However, these same benefits also reduce the competitiveness of the initial facilities, and the more rapidly the benefits accrue to consumers, the more quickly the initial facilities become obsolete. Consequently, no investors will back initial facilities on a stand-alone basis, and no industry will develop without additional measures to kick-start the market.

This is equally true for many of the renewable technologies Australia is adopting at scale today. The US Government catalyzed the solar photovoltaic industry with block-purchases in the 1970's, followed by feed-in tariff support in Japan, Germany, and state-sponsored manufacturing in China<sup>36</sup>. These interventions have allowed solar to scale to become the most affordable method to generate electricity today<sup>37</sup> - and without them, the technology would perhaps never have developed beyond a scientific curiosity.

Over the past decades, considerable investment has been made to build the foundation for SAF production. Research programs have developed viable technologies, and extensive certification efforts have demonstrated that SAF production is safe and can be used with existing aircraft, airport, and transport infrastructure; over 450,000 aircraft have already flown using a blend of SAF<sup>38</sup>. The transition to a commercial-scale industry is accelerating, with almost 20 billion liters of production capacity forecast to come online by 2030<sup>39</sup>.

The acceleration in SAF has been fueled by policies implemented in several countries. The US built on the existing Renewable Fuel Standard by implementing the Inflation Reduction Act in August 2022<sup>40</sup>, which strongly

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<sup>36</sup> <https://www.howsolargotcheap.com/>

<sup>37</sup> <https://www.iea.org/reports/renewables-2022/executive-summary>

<sup>38</sup> <https://www.iata.org/en/pressroom/2022-releases/2022-12-07-01/>

<sup>39</sup> <https://sustainabilitytogether.aero/resources/saf/saf-dashboard/>

<sup>40</sup> <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/>

incentivized investment in SAF. Complemented with multiple US state policies, the US has attracted almost half of all SAF investment. Also in 2022, the EU announced the Fit for 55 Policy Package<sup>41</sup>, which included proposals for demand and supply mechanisms to support SAF. These recently led to legislative approval for the implementation of a mandate to ensure SAF is blended into the EU jet fuel supply<sup>42</sup>. The UK is also developing a portfolio of measures, including a mandate, capital grants (The Advanced Fuel Fund), and a mechanism to improve revenue certainty for SAF production<sup>43</sup>. Other countries, including Japan, Singapore, South Korea, Canada, and others are also developing SAF policies, with overarching support from the international ICAO CORSIA framework<sup>44</sup>.

These efforts have built the foundations for a SAF industry, de-risking many technologies, frameworks, and production pathways. There is a window of opportunity for Australia to ride the momentum created, spurring the aviation industry to decarbonise and enable travel in a net zero society.

### 3.2 Principles for successful SAF policy in Australia

The complex policy landscape is described in Appendix A, and several trends for success can be observed across the leading countries:

- **A combination of mechanisms is required:** Every country with meaningful progress on SAF has adopted a combination of policies, with each addressing a different challenge. Most countries have a range of demand mechanisms (the mandate in the UK, EU, and Grand Challenge in the US), complemented with supply mechanisms (the IRA in the US, revenue support in the UK, and ETS fund in the EU). The EU and UK are further using the ETS to close the cost gap, while the US has adopted much more generous supply-side mechanisms to bring the SAF price closer to parity with fossil fuels. These combinations are both more effective than isolated policies, and also provide a measure of policy redundancy, mitigating the impact for investors if one of the policies is removed or altered.
- **Clear policy over longer durations:** Policy uncertainty holds back policy investment, with financiers waiting for clarity and enforcement before deploying the considerable value required. The impact can be seen in the UK, where no greenfield facilities have achieved FID despite the progress made on policy. Longevity of policy is also crucial given the long timeframes that SAF facilities will operate over, and the uncertainty over the renewal of the CFPC credits in the US IRA has been cited by several companies as a reason to avoid investment.
- **Grants to kick-start the market:** Every country developing SAF has made use of grant mechanisms to de-risk early facilities, including the IRA funds in the US, AFF in the UK, member-state funds in the EU, and GX fund in Japan.
- **Sustainability standards:** The US, EU, and UK have all established sustainability standards with a

<sup>41</sup> <https://www.consilium.europa.eu/en/policies/green-deal/fit-for-55-the-eu-plan-for-a-green-transition/>

<sup>42</sup> [https://www.europarl.europa.eu/doceo/document/TA-9-2023-0319\\_EN.html](https://www.europarl.europa.eu/doceo/document/TA-9-2023-0319_EN.html)

<sup>43</sup> <https://www.gov.uk/government/speeches/government-support-for-a-uk-saf-industry>

<sup>44</sup> <https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx>



higher floor level than CORSIA, by requiring higher GHG reductions. In the US, several policies (LCFS, BTC, CFPC) directly link the credit value to the CI of the fuel, and the UK has proposed a mechanism to increase the mandate value for fuels with a lower CI.

- **Market for co-products:** Every SAF facility produces a range of products, and the commercial case for SAF facilities typically leverages domestic value for the renewable diesel and naphtha produced. For example, renewable diesel can claim the RFS, LCFS, and BTC value in the US, and RED II compliance in the EU, and the RTFO in the UK, providing a meaningful contribution to the commercial case for a SAF facility. These existing renewable fuel industries also ensure access to a skilled workforce, and knowledgeable investors, insurers, and engineers. Attracting and building these skills may require additional time and value compared to more developed markets.

#### What policy is best to develop a SAF industry?

A portfolio of policy measures is important to develop a SAF industry – no single policy is sufficient.

Important elements include:

- **Ensuring fair demand:** The aviation industry is highly competitive, with passengers discriminating by price. Changes that impact the whole industry (e.g., fuel prices) can (to some extent) be passed through to consumers, but individual airlines have a very limited ability to pick-up discretionary costs. Policy is important to ensure that any additional cost to decarbonise is fairly distributed across carriers and there is little market distortion between the Australian airlines and foreign carriers.
- **Supporting supply to match demand:** Supply-side mechanisms are crucial, and serve several purposes:
  - **Supporting a domestic industry:** The Australian domestic SAF industry has not yet developed, and initial producers will face cost disadvantages compared to other countries with more mature industries. Supply-side policies can support initial producers to build the knowledge, skills, and expertise that can make the Australian industry competitive in the global market.
  - **Improving revenue certainty:** Demand mechanisms encourage production to be purchased but provide no certainty on price. If demand is saturated, then price may plummet, leaving producers unable to service debts. The result of low certainty is high margins to ensure adequate risk-adjusted returns, and very conservative investment to ensure scarce demand. Policies to ensure that at least some revenue is certain can have a significant benefit to encourage investment and reduce the returns required.
  - **Maintaining connectivity:** If considerable costs are passed through to customers, increasing numbers of people will be unable to afford flights, reducing connectivity and shrinking the Australian economy. By reducing the cost to offtakers and ultimately passengers, the impact to the economy can be reduced.
- **Alignment to other industries:** SAF has potential to accelerate multiple low-carbon industries, including hydrogen production, carbon capture, renewable electricity, low-carbon agriculture, and waste management. The SAF policy framework must be integrated with measures in these other industries to maximise benefits.

### 3.3 Evaluating potential policies

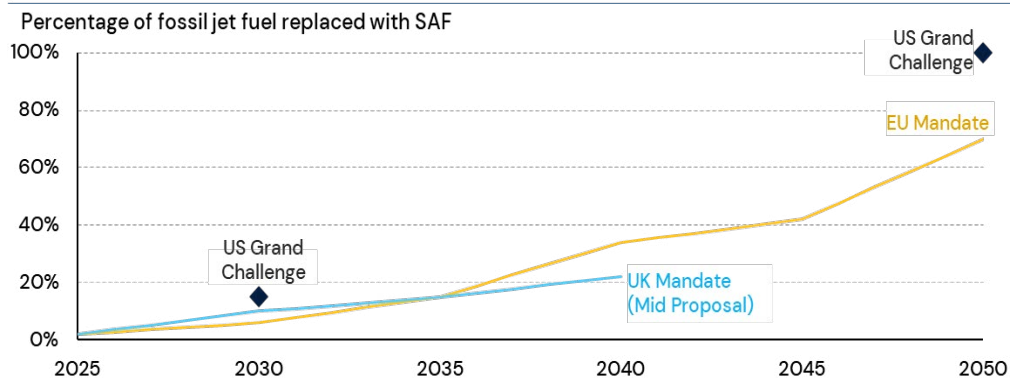
This analysis evaluated the appropriate level of demand, and the supportive policies required to ensure supply scaled to meet this level of demand. The results presented in the section are the outputs from a sophisticated analysis built by ICF to test the impact of different policies on the Australian SAF industry. The analysis mechanisms and assumptions are detailed in Appendix B.

#### 3.3.1 Evaluating the level of demand

Demand mechanisms are essential to ensure a level playing field for domestic and foreign carriers operating in Australia, creating the same regulatory exposure for all airlines. However, setting the mandate requires a careful balance of climate ambition against the ability of the refining industry to scale capacity, and the potential cost impact to airlines and passengers. If the mandate is set too high, then inadequate supply may require the obligated parties to pay non-compliance penalties, creating a cost with no climate benefit. If the mandate is set too low, then aviation may be unable to achieve climate ambitions, and the low growth of the market may fail to attract the investment required to develop the workforce and technologies necessary to bring costs down.

Policies implemented in other countries provide initial benchmarks. The legislated EU mandate and proposed UK Mandate (medium trajectory) are due to start with initial obligations in 2025, increasing to 6% and 10% respectively by 2030, and 34% and 22% by 2040. The EU mandate is volumetric, while the UK mandate includes a proposed mechanism to reward/punish SAF with a higher/lower carbon reduction compared to a baseline, meaning the UK mandate may be met with a slightly different volume to the obligated percentage<sup>45</sup>.

#### The EU and UK are implementing mandates to gradually scale SAF demand. The US Grand Challenge sets national goals for SAF production and use in 2030 and 2050



Notes: The EU mandate was implemented in September 2023. The UK consultation proposed several scenarios; the Medium trajectory has been illustrated, and a different level of ambition may be implemented. The US Grand Challenge sets a goal but is not a mandate.

The US has announced the SAF Grand Challenge, which establishes a 2030 target of 3 billion gallons SAF (c. 15%) and a 2050 target of 100% SAF (c. 35 billion gallons). While this target does not have non-compliance

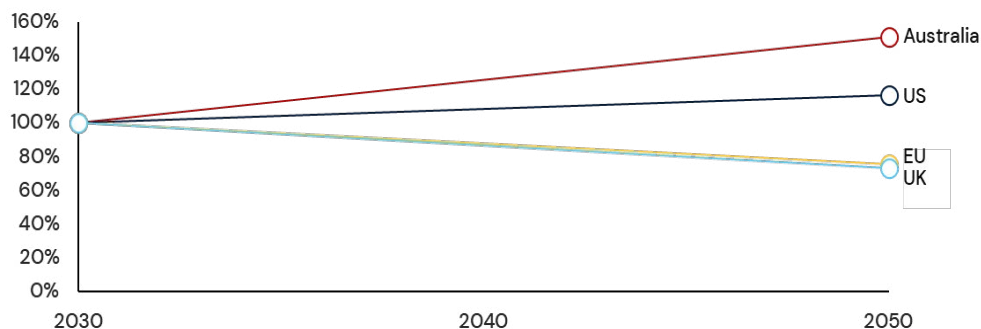
<sup>45</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1147350/pathway-to-net-zero-aviation-developing-the-uk-sustainable-aviation-fuel-mandate.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147350/pathway-to-net-zero-aviation-developing-the-uk-sustainable-aviation-fuel-mandate.pdf)

penalties, the US has provided the most generous supportive policies through a combination of state and federal incentives, tax credits, and grants. Several other countries and regions have announced SAF targets, including the recent pledge by The Association of Asia Pacific Airlines (AAPA) to strive for 5% SAF use by 2030<sup>46</sup>. These comparisons suggest that a range of 5%–15% is typical for 2030, and an increase to 25%–35% by 2040 is necessary to set a trajectory for net zero by 2050.

The EU and UK Mandates, and US 2050 target, are all based on replacing a percentage of jet fuel consumption with SAF. The underlying forecast for jet fuel consumption is crucial, as a faster increase or decline in total jet fuel consumption will have a meaningful impact on the volumes of SAF required, particularly over the decades-long timescales under evaluation. The following comparison highlights the faster rate of growth forecast in Australia<sup>47</sup>, compared to forecasts for the US<sup>48</sup>, EU<sup>49</sup>, and UK<sup>50</sup>. Note that both the UK and EU are forecasting an increase in aviation activity over the same period, however, the lower rate of activity growth is exceeded by the projected increases in aircraft efficiency and uptake of alternative fuels.

### The CSIRO forecasts a greater increase in jet fuel consumption than other countries, increasing the absolute increase for SAF to achieve similar % blends

Forecast percentage growth in jet fuel consumption 2030–2050



Sources: Australia demand from the CSIRO Sustainable Aviation Fuel Roadmap, US demand based on the Grand Challenge targets, EU demand from the Destination 2050 roadmap, UK Demand from the ICF analysis for SA: <https://www.sustainableaviation.co.uk/wp-content/uploads/2023/04/Sustainable-Aviation-SAF-Roadmap-Final.pdf>

In addition, the UK, EU, and US all have existing renewable fuel industries that are being leveraged to supply SAF. These vary greatly, with the US domestic production most developed, while by comparison the UK imports over 80% of renewable fuels to meet the requirement of the Renewable Transport Fuel Obligation (RTFO). However, the public and private sector experience developing and administering these programs provides a headstart. The CORSIA scheme developed through ICAO provides elements of the framework that Australia can adopt (e.g. including the Monitoring, Reporting, and Verification methodologies, and Sustainability Criteria), although the global scope of these would need significant tailoring to be appropriate for Australia.

<sup>46</sup> [https://www.aapairlines.org/wp-content/uploads/2023/11/AAPA\\_PR\\_Issue14\\_AP67\\_Resolutions\\_10Nov23.pdf](https://www.aapairlines.org/wp-content/uploads/2023/11/AAPA_PR_Issue14_AP67_Resolutions_10Nov23.pdf)

<sup>47</sup> <https://www.csiro.au/en/news/all/articles/2023/august/sustainable-aviation-industry-australia>

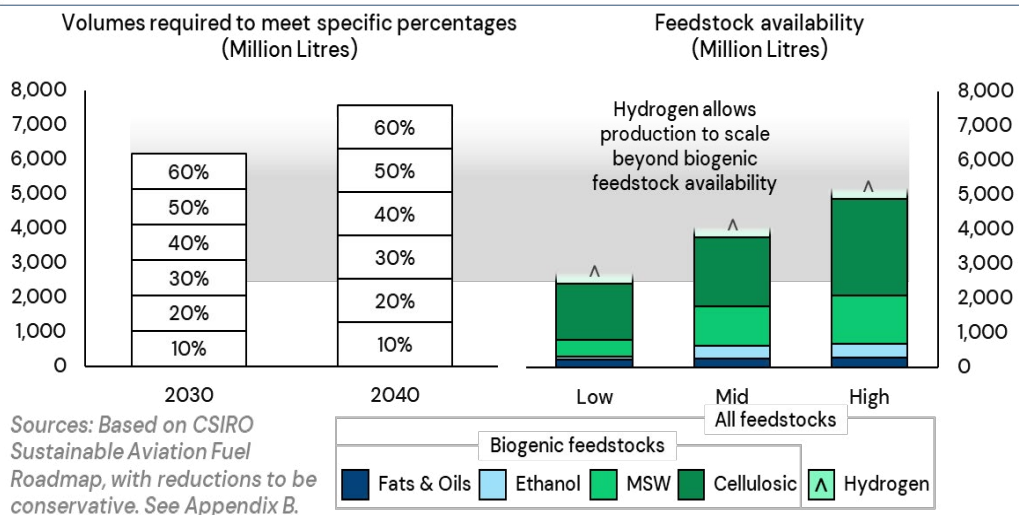
<sup>48</sup> <https://www.energy.gov/eere/bioenergy/sustainable-aviation-fuel-grand-challenge>

<sup>49</sup> <https://www.destination2050.eu/>

<sup>50</sup> <https://www.sustainableaviation.co.uk/wp-content/uploads/2023/04/Sustainable-Aviation-SAF-Roadmap-Final.pdf>

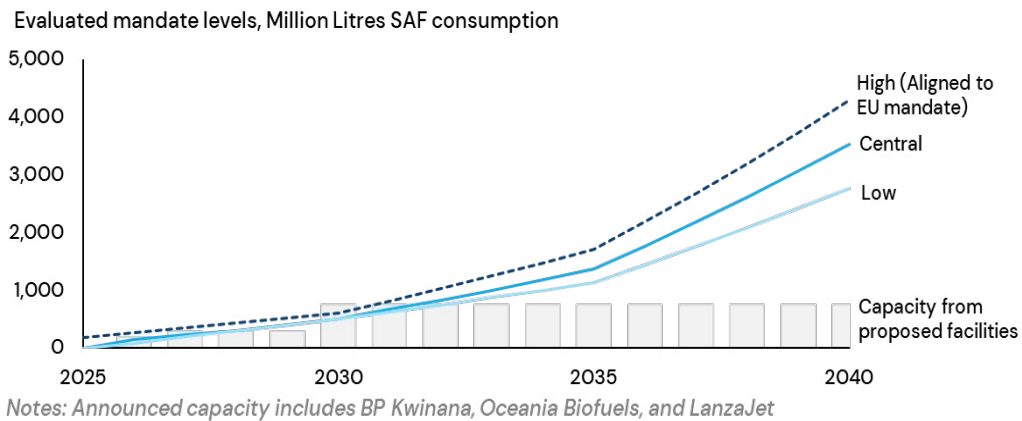
Alongside global benchmarks, the capacity of the Australian market to meet demand must be considered. The CSIRO Sustainable Aviation Fuel roadmap included a comprehensive feedstock assessment, which was complemented with ICF analysis to adjust specific feedstocks. Key adjustments include a slight increase in the MSW availability (reflecting ICF projections of generation, avoidance, recycling, and composition), and a meaningful decrease in the availability of agricultural residues to reflect the challenges to aggregate and store large volumes at a viable price-point (see Appendix B for more details). This analysis was used to estimate Low, Mid and High levels of biogenic feedstock availability, which would be augmented by SAF production using hydrogen and sustainable carbon sources. As shown below, this analysis shows that c. 20%–40% of Australian jet fuel demand could be met through domestic biogenic feedstocks, with additional potential from hydrogen. Some level of imports may also be important to augment or balance the market, for example when facilities are undergoing maintenance.

### Feedstock is sufficient to meet c. 20%–40% of demand through biogenic feedstocks, with further potential from Hydrogen, and supplementary imports



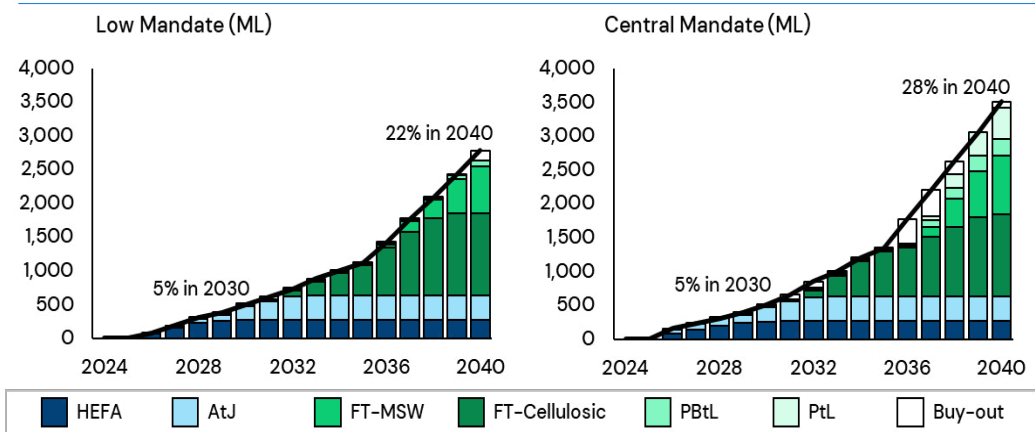
The international benchmarks were combined with the Australian market factors to design three potential levels of demand for analysis. All three levels focus on the present through 2040. The High level aligned to the EU mandate, providing context on a high level of ambition. The Central level starts in 2026, aligning to the announced commissioning for the Kwinana plant, and is set below the estimated production volume on the assumption that this facility will require 1-2 years to ramp up to full capacity. The central level of demand increases to 5% by 2030, below the US (15%), UK (10%), and EU (6%), which recognizes the years of work these countries have already dedicated to developing domestic industries and the slower ramp up that Australia will consequently be able to achieve. It then increases to 12% in 2035 and 28% in 2040, which is both within the estimated capacity of domestic feedstock availability and reflects the EU ramp up with a lag. The low level of demand starts similarly ramps to 5% in 2030, but increases at a very gradual rate (10% in 2035, 22% in 2040), representing a significantly lower level of climate ambition compared to benchmark countries.

### Three levels of mandate were evaluated, focusing on 2025–2040



The ICF analysis detailed in Appendix B was used to evaluate the capacity of the Australian market to meet the central and low levels of demand. In both scenarios, HEFA capacity (e.g. Kwinana and Ampol) meets demand over the first few years, with Alcohol-to-Jet (AtJ) production increasing through 2030. Demand in the latter decade is met through SAF produced from solid biomass, enabled by the cost reductions achieved as these technologies are proven out in the pioneering countries. The analysis considers the construction and commissioning timescales, and the typical ramp-rate for different technologies. The growth rate of the low demand level matches these factors, while supply fails to meet the central level of demand with no supportive policies. This results in some level of buy-out, particularly after the 2030 and 2035 inflection points.

### The more rapid ramp-up for the central mandate requires additional policy support to ensure supply meets demand



Avoiding buy-out is crucial, as this imposes a cost on the industry with no corresponding climate benefit. The rate of deployment can be accelerated through positive measures which (1) de-risk initial investments, (2)



attract international expertise and capital, (3) provide stability to make long-term growth in the market more attractive, and (4) are supported with efforts to facilitate permitting, development of supply chains, and workforce/technology improvements. In addition, it should be noted that the analysis is focused on domestic demand and supply dynamics, but in the absence of any domestic support it is highly likely that the majority of demand would be met by imported SAF from countries where the industry has received support and has other cost advantages.

The mandate levels in this analysis focused on a blend percentage that creates a volumetric requirement. This approach aligns to international case-studies, and simplifies the monitoring, reporting, and verification for compliance. However, a transition to a Carbon-Intensity linked mandate that requires a specific emissions reduction may align better to the long-term scheme objectives, and developing tailored carbon accounting methodologies for potential Australian pathways is a key recommendation to ensure the foundations are built.

This analysis recommends the following range of mandate levels for further analysis, alongside the evaluation of potential supply-side mechanisms to ensure domestic demand can scale in proportion. The details are given in the following table and are used to assess the impact of supply incentives in the following section.

		2026	2030	2035	2040
<i>Low scenario</i>					
Percentage	(%)	0.8%	5%	10%	22%
SAF volume	(ML)	80	510	1,140	2,780
<i>Central scenario</i>					
Percentage	(%)	1.5%	5%	12%	28%
SAF volume	(ML)	140	510	1,370	3,530
<i>High scenario</i>					
Percentage	(%)	2.0%	6%	15%	34%
SAF volume	(ML)	190	620	1,700	4,290

### 3.3.2 Policy support to ensure supply increases to match demand.

This section aims to provide guidance on the appropriate structure and magnitude of support by evaluating the economic impact from several packages of different incentives.

Policy support is essential to ensure that a domestic Australian SAF industry develops; otherwise, any domestic demand will likely be met with imports from countries that have supported the development of facilities, supply chains, and the workforce. While some measure of imports will be important to balance the market, imported fuels generate few jobs, negatively impact the trade balance, and accentuate Australia's reliance on other countries for energy. The optimum balance between domestic production and imports is driven by the value of domestic jobs, industry, and energy security, compared to the cost of policies necessary to attract the capital and resources to develop the industry.

Incentives distribute some of the green premium over larger sources of funding, reducing the cost to passengers and mitigating some of the economic and social cost from the reduction in connectivity. At the early stages of industry development, the green premium will be high but the national volumes will be low, resulting in a high cost for individual offtakes but a low aggregate cost. Spreading the green premium over a larger group has an important impact to incentivize initial offtakers. From the producer's perspective, the higher initial premium increases the severity of pricing risk and counterparty risk, and reducing the green premium for the offtaker greatly reduces these risks (the government is significantly more creditworthy than any airline), ensuring the market is attractive for producers to enter.

#### 3.3.2.1 Selecting policies for analysis

Different mechanisms incentivize different feedstocks, technologies, and approaches. Many of the initial renewable fuel policies were implemented in the 1970's and 2000's with a focus on energy security (following energy price shocks). Aligned with the objective of diversifying energy, these policies typically rewarded volumes blended and only had a basic system to ensure sustainability – for example the US Renewable Fuel Standard required set volumes of renewable fuel to be blended, with sub-requirements for different fuel categories. These sub-categories supported the more expensive but more sustainable fuels to develop without being cannibalized by cheaper but less sustainable alternatives. As the focus has shifted toward decarbonisation, many programs have strengthened the sustainability criteria. The EU RED II Annex IV that determines eligible SAF feedstocks is focused on waste-based feedstocks only and makes crop-based fuels ineligible. It also sets a minimum emissions reduction of 70%, which is far higher than the CORSIA floor of 10%. The US has also shifted towards emissions reduction, with the Inflation Reduction Act adjusting the Blenders Tax Credit from a volumetric incentive to have a component linked to the emissions reduction. The BTC will become a Clean Fuel Production Credit from 2025, which will be entirely based on emissions reduction. Across the complex SAF regulatory landscape, there are many other examples.

SAF policies can be grouped into three main categories: (A) Investment support mechanisms, such as capital grants, (C) Production support mechanisms based on volume, and (E) production support based on the tonnes of carbon reduced. Many hybrid mechanisms exist, with diverse properties. Each type is suited for different

objectives. Investment support de-risks new facilities, and have been used by every country developing a SAF industry, from the US to the UK and individual EU member states, such as France<sup>51</sup>. Production support aligns the reward to the objective, and ensures facilities are operated. Every mechanism is also used to provide greater reward for more sustainable facilities, either using a 'tranche' system based on feedstocks and/or emissions reductions (such as the US RFS and EU SAF support mechanism), or linked solely to the emission reduction (such as the US CFPA and California LCFS).

	Category	Type	Example from other countries
A	Investment support	Capital grants	US programs (IRA, BETO TIAs, DLA DPAs, USDA RDEP grants) UK AFF and GFGS EU Member State support
B	Hybrid of A & C	Loan guarantees, tax reductions, Investment tax Credits	US Programs (USDA 9003, USDA REAP for loans, ITC for RE)
C	Production support (Volume)	Incentives per volume produced	US RFS, US BTC (Historical) UK RTFO
D	Hybrid of C & E	Reward linked to volume & emissions	US BTC (IRA), EU Support Mechanism
E	Production support (Impact)	Incentives per volume of carbon reduced	US CFPC, CA LCFS

This analysis considers four main types of incentives, simplifying the multitude of options to illustrate the different impacts. These are designed to be illustrative, and any mechanism selected for further consideration would need to be tailored to the Australian resources, objectives, and legislation:

- Capital Grants.
- Tax Reductions.
- Production support based on liters produced.
- Production support based on emissions reduced.

### 3.3.2.2 International comparisons and funding sources

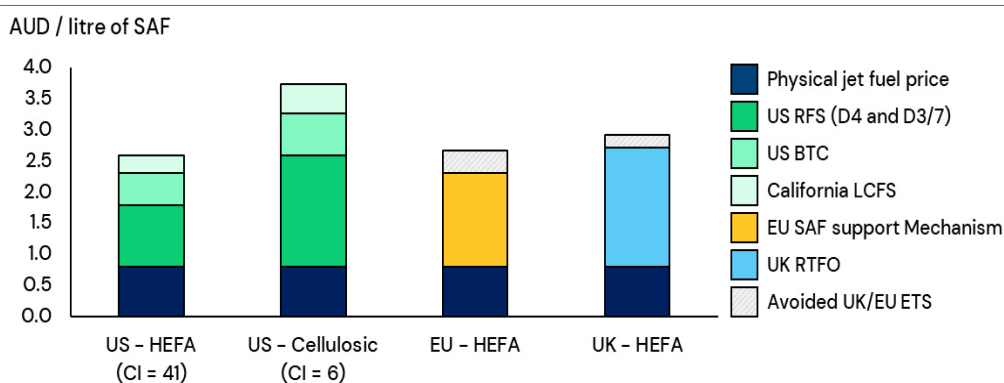
The US, EU, and UK SAF mechanisms provide context to the level of support required to build SAF industries in their respective regions. All four comparisons have implemented capital grants, but as these are on a case-by-case basis, this comparison focuses on production support mechanisms only. While demand in the US is based on voluntary efforts, the EU and UK are also implementing mandates.

Each region has different sustainability criteria, which influence the cost of production and the level of incentives required to create a viable market. In the US, SAF can be produced from a broad range of feedstocks and many producers use a blend of wastes, such as UCO (which are scarce but lower emissions) and virgin oils, such as soybean oil (which are more plentiful but have higher emissions). In the EU, only waste and residues can be used, which constrains the market and increases the cost of production. The UK is focusing on waste feedstocks plus a cap on the use of HEFA, which will further increase production costs but focus on lower-emission technologies.

<sup>51</sup> <https://www.bloomberg.com/news/articles/2023-06-16/france-grants-aid-to-help-build-1-billion-green-jet-fuel-plant?leadSource=uverify%20wall>

In the US, HEFA producers can access c. 1.8 AUD/l through the RFS, LCFS, and BTC<sup>52</sup>, and slightly greater value if using more sustainable feedstocks, as shown by the c. 3 AUD/l that cellulosic SAF producers can access. The EU support mechanism will allow airlines to access half of the cost premium for eligible HEFA SAF (increasing for other SAF with better sustainability attributes), which is funded from a pool of ETS credits, meaning the mechanism is ultimately financed by capital from the airlines. The UK RTFO scheme will be removed once the UK SAF mandate is implemented, but as the UK has announced the intention to implement a revenue stability mechanism, the RTFO has been shown as a guide.

### Policy mechanisms in the US, EU, and UK provide significant support to SAF production and reduce the cost impact to end customers



Notes: The US BTC is only available 2023/4 and then becomes the CFPC. Some US facilities may receive additional value from carbon capture credits and may achieve much lower CI than shown. The LCFS is a California state policy. The EU mechanism is funded by the ETS. The UK RTFO will be replaced by the mandate (SAF only) from 2025, supported by the revenue stability mechanism.

These policies are funded through a variety of mechanisms and timespans. Several schemes (the UK RTFO, US RFS, and LCFS) create a renewable fuel blending obligation across the on-road fuel pool, and while jet fuel is not obligated to blend renewable fuels, SAF producers are able to sell compliance credits to obligated parties. As all fuel providers are obligated to blend renewable fuels, the cost is assumed to be spread equally across the fuel pool, and the main source of funding is consumers filling up their cars, trucks, and other vehicles. For example, the most recent UK RTFO annual report in 2021 recorded a total cost of £1,975 million for all renewable fuels used in the UK, which was spread across the total on-road fuel consumption of 47.4 billion litres, giving an estimated cost of 4 pence per litre<sup>53</sup>. Although there was essentially no SAF use in the UK in 2021, ICF estimate that c 120 ML of SAF was uplifted in the UK in 2022. Comparing this as an illustration to the 2021 RTFO cost, 120 ML of SAF would have been 4.5% of UK renewable fuel use by volume, and add an additional of 0.3 pence per litre<sup>54</sup>, which is negligible compared to the cost of fuel (and the 52.95 pence per litre the UK levies as fuel duty<sup>55</sup>).

<sup>52</sup> As of Nov 2023. The value of the RFS and LCFS depends on the credit market conditions.

<sup>53</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1162619/rfo-annual-report-2021-web-version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1162619/rfo-annual-report-2021-web-version.pdf)

<sup>54</sup> Assuming SAF is 1.6x the cost of renewable road fuels, estimated as the buy out price for development fuels is 1.6x that of road fuels.

<sup>55</sup> <https://www.gov.uk/tax-on-shopping/fuel-duty>

By spreading the high unit cost over a large pool to minimize the cost impact, this approach has been important to kick-start the SAF industry in the UK, and in the US via somewhat similar dynamics in the RFS. However, as SAF use increases, the impact to customers would also increase, and it may become increasingly unpalatable for road users to fund the decarbonisation of aviation – particularly as electrification will shrink road fuel consumption and therefore increase the cost per litre. This rationale and outlook has led the UK to announce an intention to remove the eligibility for SAF in the RTFO after the SAF mandate is implemented and replace it with a revenue stability mechanism designed specifically for the sector. There is less discussion on adjustments to the US RFS, although California has proposed obligating intra-state aviation fuel use within the LCFS (which is currently funded by obligating transportation fuels, with aviation exempt but able to sell compliance credits from SAF use). This is encountering strong legal challenges and would only have a minor impact as just 6% of California aviation emissions are generated intra-state (the other 94% are inter-state or international)<sup>56</sup>, but illustrates the challenges that will strengthen for this funding approach as jet fuel (and SAF) consumption grows relative to on-road liquid fuels.

This analysis proposes that SAF incentives should be funded from the national tax base to align the cost, objectives, and benefits. The proposed SAF mandate allocates the majority of the decarbonisation cost with airlines and their customers, aligning with the polluter pays principle. The key purpose of incentives alongside the mandate is to ensure an Australian SAF production industry develops, and federal funding of these incentives aligns to the national benefits of job creation, GVA, and energy security.

Wider support also aligns to the broader value created by aviation. While passengers are the main beneficiary, their impact is multiplied many times over across the tourism, hospitality, and commercial sectors. Incentives that ensure connectivity is maintained represent an essential component of national infrastructure.

This approach is seen across the international regulatory framework, with the US IRA funded federally, and several UK and EU schemes drawing on central funding. Examples include the UK Advanced Fuel Fund<sup>57</sup>, the EU FLITE Consortium<sup>58</sup> to develop AtJ in the Bloc, France's support for SAF production<sup>59</sup>, and many others. Drawing on these examples and the developing best-practice trend, this analysis will focus on federally funded incentives.

### 3.3.2.3 Production costs

The cost and impact of incentives must be considered in context of the market cost for SAF. This analysis has been built around a detailed model of SAF production costs in Australia, which is described in detail in Annex B. This considers six different production approaches (HEFA, AtJ, FT with MSW, FT with cellulosic materials, hybrid biomass and hydrogen, and PtL). A detailed cost profile over each facility's lifetime has been built, considering 30+ cost and revenue line items, each tailored to the current cost and outlook in Australia.

<sup>56</sup> <https://theicct.org/wp-content/uploads/2023/01/ca-aviation-decarbonization-jan23.pdf>

<sup>57</sup> <https://www.gov.uk/government/publications/advanced-fuels-fund-competition-winners/advanced-fuels-fund-aff-competition-winners>

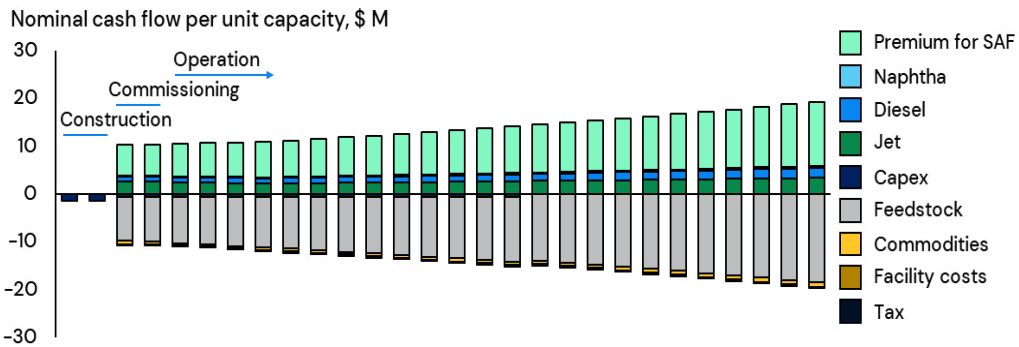
<sup>58</sup> <https://cordis.europa.eu/project/id/857839>

<sup>59</sup> <https://www.reuters.com/sustainability/frances-macron-vows-boost-sustainable-aviation-fuel-production-2023-06-16/>



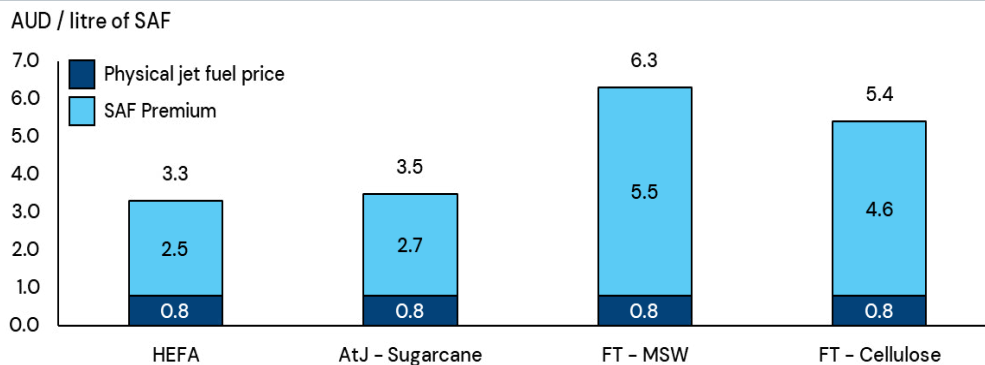
An illustrative cost profile for HEFA is shown below. While HEFA has the lowest capital costs and highest feedstocks costs per unit capacity, other pathways are inverted, with higher capital than feedstock costs. Modelling each in detail allows the different impact from different incentives to be assessed.

### The cash flow is built from 30+ revenue and cost line items over the facility life



The analysis iterates through 2024–2040, with cost reductions driven by better financing (in the short-term) as technical risks are reduced, and reduced capital costs (mid/long term) as each technology progresses down the learning curve. The feedstock cost is adjusted to reflect supply chain improvements (reducing costs) against increased demand (increasing costs). As these factors vary by deployed capacity, the future costs vary with the policies and scenarios assessed. However, there is more opportunity for the (currently more costly) solid biomass SAF pathways to reduce in price, as the technologies are still at relatively early stages of development, and later facilities will benefit from scale, technology improvements, and other learning effects.

### HEFA and AtJ are the most affordable pathways today, although the cost for other approaches will reduce faster as the technologies are developed

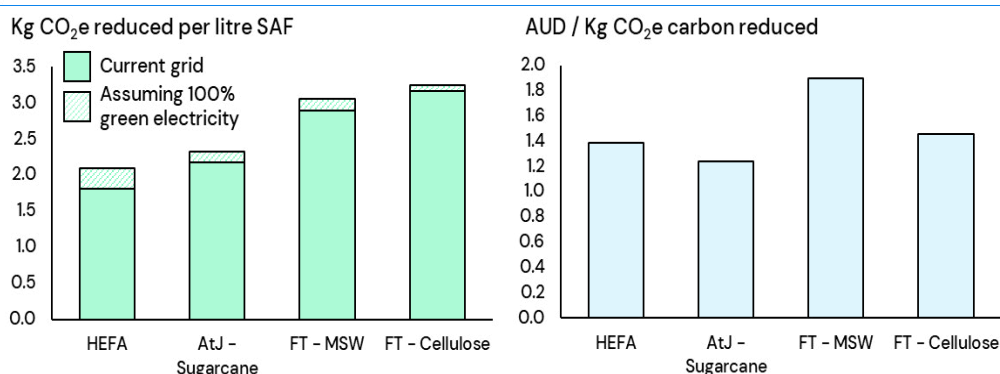


Notes: Assuming project is based in Australia and starts in 2024. These costs are averaged over the facility lifetime, so represent levelized costs. The cost includes a margin for producers and represents a market price assuming no surplus/scarcity dynamics or other market distortions.

### 3.3.2.4 Carbon reduction

The emissions reduction for each pathway varies with the feedstock, technology, and energy required. While HEFA and AtJ facilities are the least expensive per litre produced, both use some crops, which drive indirect land use emissions and consequently achieve lower emissions reductions over their lifecycle. The FT approach uses municipal or cellulosic waste materials, which can achieve greater emissions reductions, and are also more scalable, with nearly 300 petajoules of feedstock available, compared to 32 for the HEFA and AtJ<sup>60</sup>-sugarcane pathways<sup>61</sup>. While these pathways have been chosen as representations of the SAF industry, there are hundreds of potential combinations of feedstocks, pre-processing, and facilities, with great variability in cost and emissions reductions. A simple example can be seen in the analysis below, with the difference in emissions reduction for the current grid and a 100% green grid shown; incentivizing lower emissions from SAF encourages emissions reductions through the whole supply chain to bring down the SAF life-cycle emissions.

**While HEFA offers the lowest cost per litre, other technologies may offer lower costs per carbon reduction, particularly as technologies develop**



*Notes: Assuming project starts in 2024, levelized costs over facility lifetime.*

Recognising that SAF emissions reductions are responsive to policy, most international policy is evolving to incentivize lower emissions. The US Blenders Tax Credit has evolved from a value of US\$1.0 per gallon SAF, to a value of US\$1.25/gal SAF plus \$0.01 per percentage reduced below a 50% emissions reduction (up to a maximum of US\$1.75/gal for SAF with a 100% emissions reduction). From 2025, this tax credit will become the CFPC, which is completely linked to the emissions reduction. The value is set at \$1.75/gal SAF, multiplied by an emissions factor, which is linearly scaled between 0 at a baseline emissions factor of 50 KgCO<sub>2</sub>/mmbtu (approximately 50% reduction), and 1 for SAF with a 100% emission reduction. Complemented by other mechanisms, these policies are driving considerable investment in low carbon technologies across the SAF production value chain – from green hydrogen production and renewable electricity generation to carbon capture and regenerative agriculture.

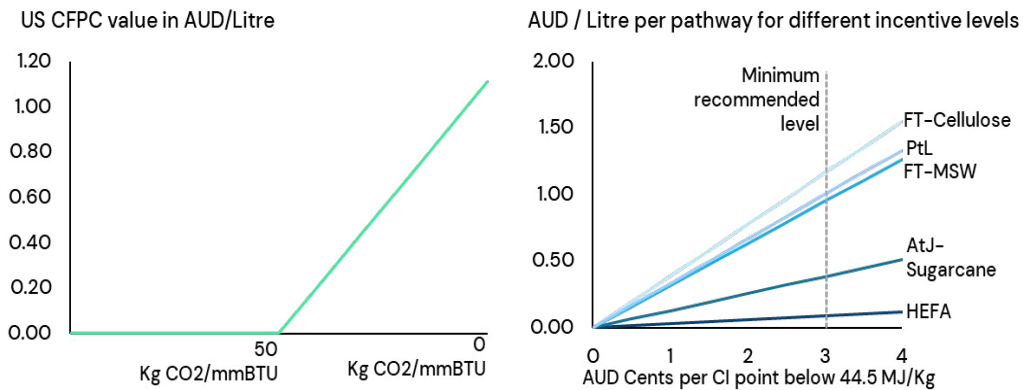
<sup>60</sup> The AtJ pathway can also be used for cellulosic ethanol, which could also access these larger volumes and emission reductions.

<sup>61</sup> Estimates based on the CSIRO analysis, with ICF adjustments. See appendix B for details.

### 3.3.2.5 Analysis of proposed incentive levels

This analysis proposes to use a similar incentive structure to the US Clean Fuel production Credit (CFPC), awarding value based on the emissions reduction below a baseline. This design is strongly supportive of SAF that generated a higher emissions reduction, supporting the mandate (which obligates volume). The value of the CFPC is set at \$1.75/gal for SAF that achieves a 100% emissions reduction, which is equivalent to approximately A\$1.20/litre. Assuming value is awarded per CI point reduced below 44.5 MJ/Kg (50% reduction), the impact for different levels has been shown below, with the minimum recommended level of A\$0.03 per CI point highlighted. As SAF produced in the US can claim the CFPC and then be exported, it is important for the Australian support to be set at a higher level to ensure domestic production is competitive. A\$0.03/l is equivalent to A\$1.34/L for SAF with a 100% emissions reduction, and approximately 20% higher than the US CFPC – although noting that as SAF produced and blended in the US can also claim the RFS and LCFS, this incentive is less than half the total US incentive stack.

#### Incentives linked to the Carbon Intensity drive emissions reductions, and support the transition to more scalable pathways

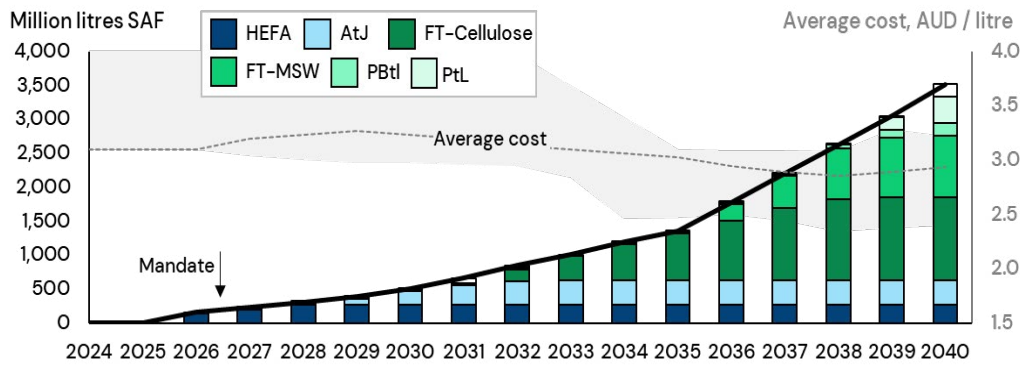


Notes: PtL does not have 100% emissions reduction due to use of residual grid electricity to balance increase electrolyser utilisation

Incentives have an important role steering industry to develop the technologies and facilities most suitable for the long-term development of a SAF industry in Australia. While technologies that can process cellulosic and municipal wastes are essential to the long-term development of an Australian industry, their low technology maturity results in a much higher price than other approaches, with a A\$2-3/litre gap between HEFA and these technologies. If early facilities are not supported, then early producers will hold-back as the technology cannot compete under a volume mandate, and Australia will be forced to rely on imports once the availability of HEFA and AtJ feedstocks becomes constrained. Establishing the CI-linked incentives brings forward the economic competitiveness of these facilities, ensuring they scale and bring down cost ahead of their requirement.

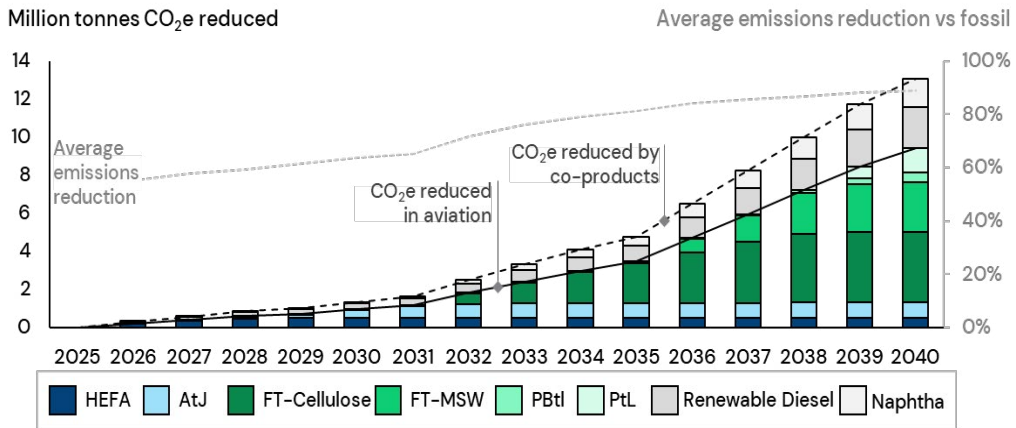
The impact of the proposed policies can be seen in the following assessment, with the mandate set to the recommended level (5% in 2030, scaling to 28% by 2040). Each capacity is added based on the least-cost approach, progressing through HEFA, AtJ, FT-cellulose, FT-MSW, PBtl and PtL. The average cost gradually decreases, with the CI-linked incentives ensuring supply increases to meet the mandated demand (limiting buy-out). These also bring forward the development of the advanced solid-biomass facilities, ensuring the cost continued to decrease even as these are added to the production mix.

**The proposed level of incentive is sufficient to make waste-based production cost competitive as the availability of HEFA/AtJ Sugarcane is reached**



With the transition to more sustainable feedstocks, the emissions reduction rapidly increases. While the initial crop-based HEFA and Sugarcane AtJ production reduces emissions by c. 55-65%, the advanced solid biomass and hydrogen technologies achieve an emissions reduction of 85%-100%, driving a disproportionate increase in the emissions reduced. The SAF facilities also produce RD and Naphtha as co-products, and as the SAF industry grows the greater volume of co-products also supports the emission reduction in the mining, long-haul trucking, chemicals, and other hard-to-abate downstream sectors.

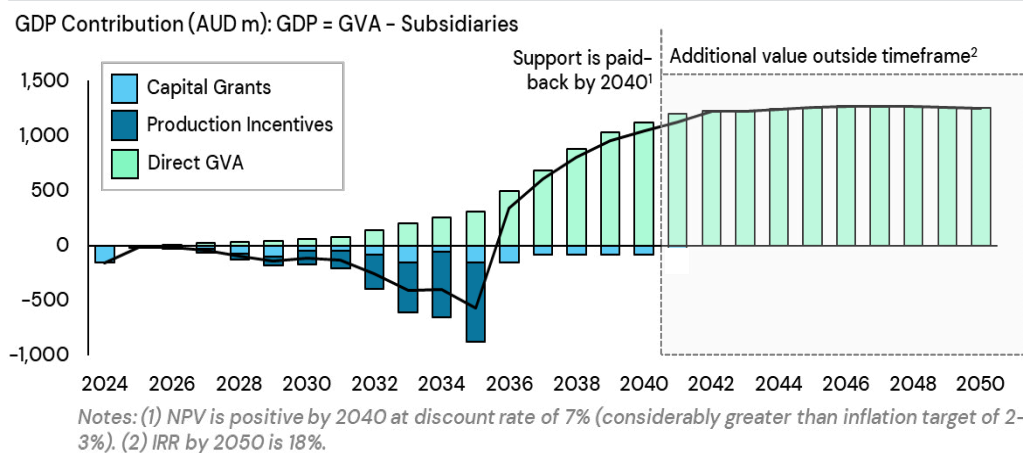
### Incentivising emissions reductions drives the industry to more sustainable feedstocks, increasing the abated tCO<sub>2</sub>e faster than the SAF volume growth



### 3.4 Economic evaluation

These incentives require an outlay for the government of A\$ 4 billion (A\$ 1.4B in grants and A\$ 2.6B in incentives) over the two decades to 2040 but are more than offset by the A\$12.3 billion of value sustained by the SAF industry development. The most tangible value is that created directly by employment at the facilities, which increase in-line with capacity. These are typically high-value jobs, and often located in rural regions to be close to the feedstock supply. In the central mandate scenario, these direct jobs pay-back the support by 2040 and continue to generate additional value through the lifetime of the facilities.

### Initial support catalyses the industry and is paid-back through the GVA generated through direct employment, which lasts 25+ years over each facilities lifetime

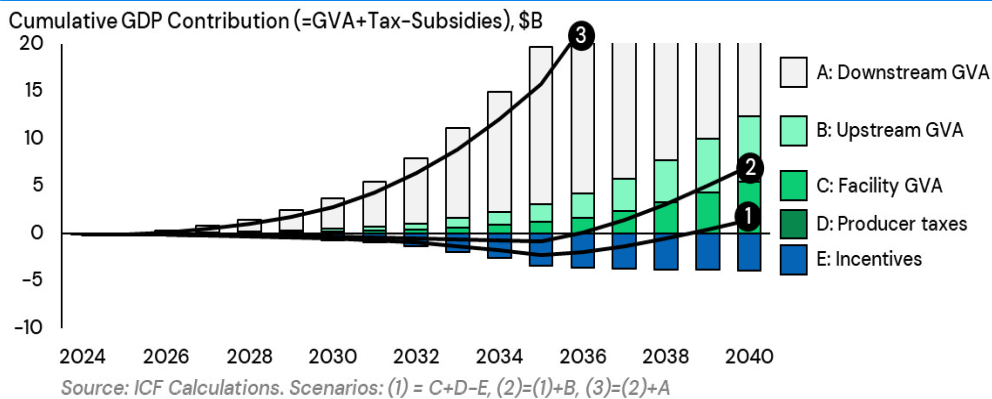




Developing a SAF industry creates significant value upstream (in the agricultural, waste, energy, and logistics sectors) and sustains value downstream in the aviation sector. The value upstream has been estimated by calculating the jobs and GVA catalysed by each facility, based on case-studies for each facility category that have been extrapolated to the industry. In the central mandate scenario, these jobs dwarf those created directly in the facility, with 4,700 direct jobs (2,300 in each facility, and 2400 pro-rated from construction) compared to 13,000 upstream jobs. These calculations are purposefully conservative, and compare to the ARENA bioenergy roadmap<sup>62</sup> estimating potential for bioenergy jobs equivalent to 26,200 by 2030 and 35,300 by 2050. While SAF is just one part of the bioeconomy, it is flagged by ARENA as a key industry, suggesting potential upside beyond the calculations presented here.

SAF creates downstream value by enabling the continued operation of the aviation industry in a carbon-constrained economy. The direct value of the aviation industry in 2023 is estimated at 23 billion AUD, estimated from calculations by DITRDC The Future of Australia’s Aviation Sector<sup>63</sup> and IATA<sup>64</sup> (adjusted for the pandemic). The value of the downstream GVA is estimated based on the portion of the industry’s direct value decarbonised – for example, by 2030, the aviation industry’s direct value is estimated at A\$ 33.7 Bn (growing rapidly as the industry continues to recover), the SAF decarbonises 3.3% of industry emissions (a 5% mandate, with 65% emissions reduction), giving a sustained value of A\$ 1.1 Bn. As this only included the direct value contribution, the true sustained value could be significantly greater; IATA estimate that the indirect value created by Australian aviation in the aviation supply chain and tourism from is 4.3x that of the direct value.

### The cumulative value created and sustained across the value chain is considerably greater than the cost of the incentives to create a domestic SAF industry



The value created directly by the facilities (categories C and D) is sufficient to offset the proposed incentives, and the additional downstream and upstream value creates several multiples of additional value. The benefit to cost ratio for (1), Direct value divided by incentive costs, is 1.35 by 2040, increasing to 3.1 for (2) once the

<sup>62</sup> <https://arena.gov.au/knowledge-bank/australias-bioenergy-roadmap-report/>

<sup>63</sup> [https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future-of-australias-aviation-sector\\_issues-paper-2020.pdf](https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future-of-australias-aviation-sector_issues-paper-2020.pdf)

<sup>64</sup> <https://www.iata.org/en/iata-repository/publications/economic-reports/australia--value-of-aviation/>

upstream value is included, and to 17.4 in scenario (3) with the downstream value included. There is considerable upside to the estimated value, across the following four dimensions:

- The value of decarbonizing other downstream sectors such as mining, trucking, and chemicals production from the co-produced renewable diesel and naphtha.
- The value created from the operation of the facilities beyond the 2040 analysis cutoff. Every facility will likely operate for 25+ years, sustaining employment and GVA long after the support has finished.
- The additional value sustained across the tourism industry, and the intangible value of social connectivity over the long distances separating many Australian cities.
- The additional energy security derived from a resurgent domestic liquid hydrocarbon sector, reversing the refining industries secular decline and the current reliance on imports for most jet fuel consumed.

Without incentives, few of these benefits would be achieved, as the mandate would likely be fulfilled by producers located overseas with access to support, developed infrastructure, and a workforce experienced in the design, construction, and operation of renewable fuel facilities.

### 3.4.1.1 Impact to passengers

Based on IEA projections for crude oil prices, SAF will still have a material premium over fossil jet fuel by 2040. However, the impact to passengers is expected to be relatively minor, mitigated by more efficient aircraft, operational improvements, continued reductions to the non-fuel component of flights, and the proposed SAF incentives. Combining these factors, the total cost per flight under the central scenario is expected to plateau, resulting in a 0.3% increase in costs per RTK by 2040.

There are some important uncertainties in these underlying assumptions, and while this analysis has strived to present a balanced evaluation, several factors could further reduce the price impact. Firstly, the IEA crude oil price projection used for this analysis forecasts a meaningful decline in price to 2050, increasing the relative cost of SAF. Several factors could potentially driving the cost of jet fuel higher, including:

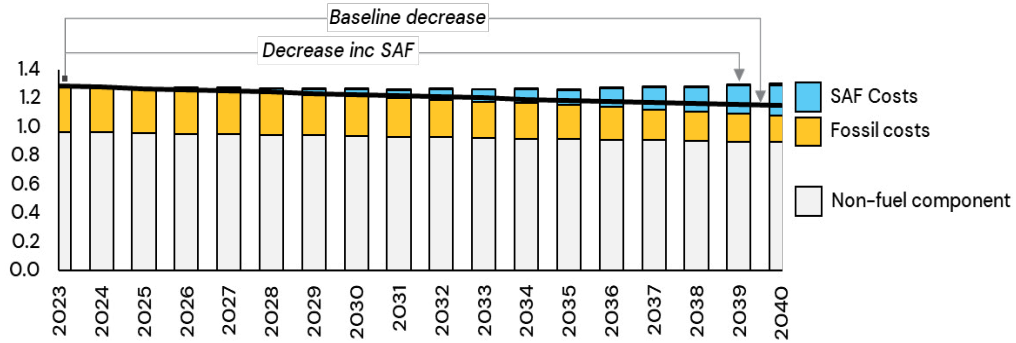
- Increased jet fuel premium as road transport electrifies, decreasing demand for higher margin road fuels and driving yield losses to produce a higher portion of jet fuel.
- Reduction in refining capacity and infrastructure investment as overall crude oil demand falls and oil companies endure headwinds for fossil fuel investments.
- Increased carbon related costs domestically and internationally, including the implementation of carbon border adjustment mechanisms.

The recommendations also include a suggested buy-out price, providing protection to customers by creating a ceiling for the potential compliance costs. Further, while operational efficiencies in aviation have averaged 1.4% per year historically, these efficiencies are not generally linear and are tied to new fleet orders and delivery dates.<sup>65</sup> Therefore, the annual cost impacts are likely to fluctuate, with government policy providing a critical level to stabilise cost impacts for the industry and consumers.

<sup>65</sup> <https://www.infrastructure.gov.au/sites/default/files/documents/managing-the-carbon-footprint-of-australian-aviation.pdf>

## The additional cost of SAF to the passenger is reduced through the incentives and increased aircraft efficiencies, minimising the inflationary impact

Total costs per RTK (AUD/RTK), excluding inflation.



Sources: Australian Government DITRDCA The Future of Australia's Aviation Sector 2020, Managing the Carbon Footprint of Australian Aviation 2017, ICAO the Cost of Achieving Net-Zero Carbon in Aviation, assuming 0.5% per year non-fuel efficiencies

This analysis shows that developing a SAF industry in Australia is feasible and affordable, but requires support to compete against potential importers and ensure the Australian infrastructure is built, the workforce is trained, and the feedstock supply chains are developed. The financial benefits significantly outweigh the costs, and the industry is critical to ensure Australians remain connected while meeting net zero ambitions. There is no time to waste!

### 3.5 Recommended policies for further evaluation

#### Policy recommendations

- Establish a mandate requiring fuel suppliers to blend an increasing portion of SAF into the jet fuel supply. This should:
  - Increase at a rate appropriate to the support provided to ensure supply can scale to meet demand. An illustrative requirement for 5% SAF by 2030 and 28% SAF by 2040 would drive estimated SAF use of 3.5 billion liters by 2040, reducing 9.4 million tonnes of CO<sub>2</sub> annually.
  - The level should be evaluated at 5-year intervals to ensure it remains appropriate to the market and technology dynamics.
  - The minimum sustainability criteria should ensure a meaningful emissions reduction. This analysis proposes a minimum GHG reduction of 50%.
  - A buy-out price should be implemented to provide some protection for customers. This analysis proposes a price of A\$ 4-5 /liter.
  - Implement a suitable Monitoring, Reporting, and Evaluation scheme to ensure the emissions reduction is evaluated across the value chain and customers can correctly account for the emissions reduction, particularly if the environmental attributes for compliance are separated from the physical jet fuel.
- Provide capital support to develop initial facilities and a skilled workforce in Australia.
  - A grant pool of A\$1,500m was estimated to be appropriate for initial facilities. Allocation should be connected to the successful completion of project milestones, and potentially modulated to support projects with greater potential to reduce emissions intensity and scale using Australian feedstocks.
- Provide revenue support to ensure Australian facilities can compete against refineries based in other countries that can leverage existing infrastructure, workforce, and policies:
  - This should be linked to the Carbon Intensity (CI) of the SAF produced to provide greater support for more sustainable production. This analysis assessed revenue support of A\$ 0.03 per liter per CI point below 50% (44.5 gCO<sub>2</sub>e/MJ). For example, this would be equivalent to A\$0.8/liter for SAF achieving an 80% emissions reduction.
  - The support should be provided linked to the facility commissioning date and run for the first 10 years of operation, with a link to inflation to ensure clarity for investors.
- Reduce the tax burden for initial producers entering the market, recognising the limited taxation for fuels produced in many competing countries.
- Support the development of enablers for a domestic industry:
  - Develop a lifecycle analysis framework tailored for SAF produced in Australia, recognising the emissions intensity of domestic feedstocks, and ensuring the impact from measures to further reduce emissions are evaluated (including carbon capture, the use of renewable electricity, regenerative agriculture, and similar).
  - Ensure permitting and other development factors are fast-tracked for evaluation to allow producers to make rapid go/no-go decisions.
  - Assess feedstock supply chain challenges as they arrive, and support workforce transition.

## 4 Appendix A: Global policy context





## 4.1 Introduction

The cost of production for all SAF technologies is at least several times the cost of production for fossil fuels, due to the differences in (1) scale, with SAF at the early stages of commercialisation, and (2) technical difficulty, with many SAF technologies requiring complex processes to convert sustainable feedstocks into liquid hydrocarbons. The aviation industry serves cost-sensitive customers and can only absorb or pass through very limited incremental costs for SAF without regulation. The importance of aviation to the Australian economy and connectivity makes it essential that policy is implemented to recognise and address the challenges.

The development of a SAF industry requires a nuanced approach, recognizing that the opportunities and challenges for SAF production can vary significantly from one state or region to another. Diverse factors such as climate, agricultural systems, available resources, and economic conditions will influence the feasibility of SAF production in each country. Additionally, political barriers, existing regulatory frameworks, and economic considerations will differ, making it clear that there is no universal approach to successful SAF policy implementation. Instead, a tailored and customized strategy that considers the unique circumstances and needs of each state or region is likely to be the most effective way to promote and support the growth of the SAF industry on a global scale.

To set the context for the opportunities and challenges for SAF policy in Australia, this section covers:

- Policy context
  - Global targets and market-based measures
  - Example policies
  - Case studies: The US, EU, UK, and emerging SAF policies in Japan
- SAF policy development framework
  - Policy effectiveness metrics
  - Stimulating growth of the SAF supply
  - Creating SAF demand
  - Enabling SAF markets

## 4.2 Policy context

### 4.2.1 Global targets through ICAO

Efforts to reduce global carbon emissions in the aviation industry have been driven by the International Civil Aviation Organization (ICAO), primarily through the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

- ICAO: In October 2022, the member states of ICAO adopted a collective long-term global aspirational goal (LTAG) of achieving net-zero carbon emissions from international aviation by 2050. This ambitious target signifies a shared commitment to significantly reduce and ultimately eliminate carbon emissions from the aviation sector to mitigate climate change impacts. To support the realization of this goal, member states also endorsed the new ICAO Assistance, Capacity-building, and Training for Sustainable Aviation Fuels (ACT-SAF) program. This program aims to facilitate the development and adoption of sustainable aviation fuels, contributing to the broader efforts to decarbonise the aviation industry and achieve the net-zero emissions objective by 2050.

- **CORSIA:** CORSIA is an ICAO initiative designed to achieve carbon-neutral growth in the global aviation sector from 2021 to 2035, with a baseline reference point set at 85% of the 2019 emission level. CORSIA is a widely adopted mechanism for international aviation to align with the goals of the Paris Agreement and mitigate climate change. Airlines operating between participating countries are required to report emissions data and purchase and cancel 'emissions units' to offset the increase in international CO<sub>2</sub> emissions between signatory countries covered by the scheme. Sustainable Aviation Fuels (SAFs) that meet CORSIA specifications, including a minimum greenhouse gas saving threshold of 10% against a fossil fuel baseline, can be used by airlines to reduce their CORSIA offsetting obligations. Reporting the use of SAFs and claiming associated emissions reductions will be governed by CORSIA's Standards and Recommended Practices (SARPs) and the accompanying Environmental Technical Manual (ETM). Furthermore, SAFs must demonstrate sustainability through the CORSIA Approved Sustainability Certification Scheme, such as the International Sustainability and Carbon Certification (ISCC) and the Roundtable on Sustainable Biomaterials (RSB), to be eligible for use within the program. Australia is a signatory to CORSIA, obligating the national airlines to comply with this policy.

#### Challenges for international SAF ambitions

The CORSIA program sets an essential framework to monitor, report, and address some carbon emissions, but falls short compared to ambitions across three dimensions:

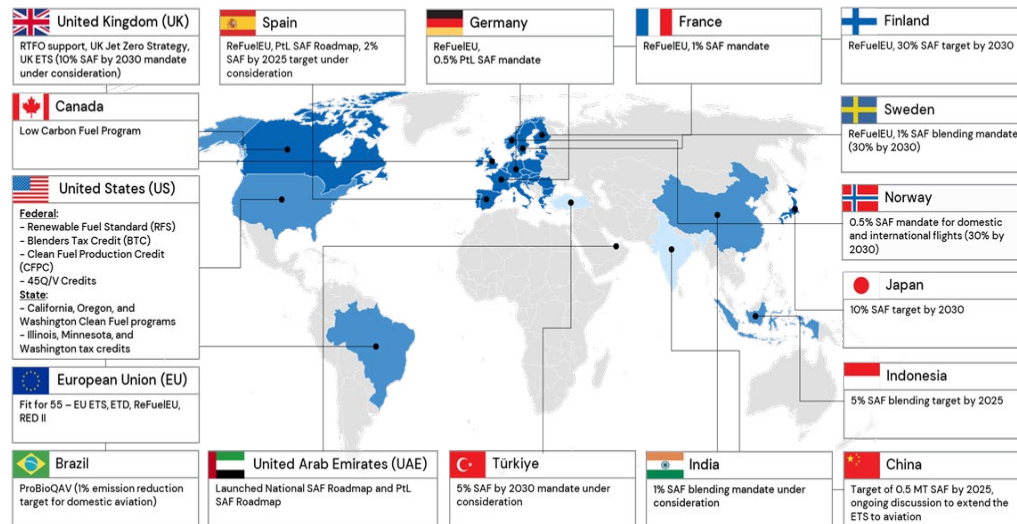
- **Level of ambitions:** The CORSIA program is designed only to ensure carbon-neutral growth from the 2019 baseline, leaving a gap to the net-zero by 2050 target. CORSIA only covers international emissions between signatory countries, so domestic and some international emissions are not covered.
- **Limited value:** CORSIA obligations can be met with offsets from a range of schemes, many of which trade at relatively low prices (\$10-\$40 USD/tco). This translates to just \$0.02-\$0.1 per litre SAF, which is significant below the SAF cost premium and therefore insufficient to drive uptake. The offsets purchased under CORSIA support other sectors to decarbonise, but do not help fund the develop of technologies to decarbonise aviation.
- **Timeline:** CORSIA has a relatively long timeline (to 2035), but this leaves a gap from 2036-2050 where the role of CORSIA is not clear.

#### 4.2.2 Example Policies

The global regulatory environment is a patchwork, with overlapping regulations in states, countries and internationally. Many countries are introducing SAF policies, with the US, EU, and the UK leading. These policies have typically been built by adjusting existing policies to decarbonise the road industry, although decarbonisation pressures are driving a resurgence, leading to the introduction of new policies specifically to decarbonise aviation. Alongside Australia, ICF is aware of ongoing policy discussions in many other countries, including Japan, Canada, Türkiye, India, Singapore, the UAE, and others.

## There are many SAF policies and mandates already in place or underway

### Global policies and mandates as of September 2023



Source: ICF Analysis

The following sections will provide a detailed overview of the policy mechanisms enacted and under consideration in the US, EU, UK, and Japan.

### 4.2.3 Case studies

#### 4.2.3.1 US SAF policies

##### Available policies in the US

- **Federal programs**
  - The SAF Grand Challenge establishes a 2030 target (3 billion gallons), and 2050 ambition to replace 100% of fossil jet fuel with SAF.
  - The Renewable Fuel Standard (RFS) – SAF typically claims RIN D4 credits
  - The Inflation Reduction Act (IRA)
    - SAF BTC (40B), 2023 to 2024
    - Clean Fuel Production Credit (CFPC - 45Z), 2025 to 2027
    - 45Q and 45V tax credit
- **State level programs**
  - California Low Carbon Fuel Standard (LCFS)
  - Low Carbon Fuels (LCF) programs in Washington and Oregon

The US is leading the SAF industry with both the highest level of ambition and the greatest policy support. The cross-government SAF Grand Challenge aims for 3 billion gallons SAF (c. 15%) by 2030, and full replacement of fossil fuels with SAF by 2050. The IRA combines with existing federal policy (the Renewable Fuel Standard, RFS) and state-level policies to put this within reach.

The RFS is the backbone of the US biofuel/SAF industry. This policy is a mandate on road fuel users and is predominately met using ethanol from maize/corn. The environmental attributes from SAF can be sold to obligated parties, but fossil jet fuel is not itself an obligated party; therefore this policy acts as an incentive for SAF producers, and is ultimately funded by road fuel consumers. Imported fuels are eligible. All biological-derived feedstocks are eligible as long as specific greenhouse gas (GHG) reductions are achieved (with different requirements for different RIN categories).

On August 2022, the US government announced the Inflation Reduction Act (IRA), which introduced specific incentives for SAF. The existing BTC has been modified and the level of support will be calculated based on the Carbon Intensity (CI) score of the SAF, which means more emission reductions will yield with higher incentives. The IRA will provide a two-phased approach to incentivize SAF:

- **The first phase, 2023 to 2024:** Starting from 1 Jan 2023, the SAF BTC will provide \$1.25/gal baseline incentive for SAF achieving minimum 50% emissions reduction. With increased emissions reduction \$0.01 incentive will be provided for each +1% emissions reduction, up to 100%, meaning that SAF demonstrating a 100% reduction will be eligible for the maximum incentive of \$1.75 per gallon. To be eligible for this incentives SAF must;
  - i. Meet the requirements of ASTM fuel standards,
  - ii. Be produced from eligible biomass material,
  - iii. Be certified as having a lifecycle GHG emissions reduction percentage of at least 50% in accordance with CORSIA or any similar methodology,
  - iv. Be blended and sold in the US
    - Fuel produced outside the U.S. qualifies if it is blended and sold in the US.
  
- **The second phase, 2025 to 2027:** The SAF BTC will transition to the Clean Fuel Production Credit (CFPC), also known as Section 45Z. The CFPC sets a baseline emissions factor for SAF at 50 KgCO<sub>2</sub>/mmbtu (approximately 50% reduction), scaling to \$1.75/gal for SAF with a 100% emission reduction, and does not appear to be capped so SAF with a negative CI could receive greater value.
  - i. The credit can only be earned for production of fuels in the U.S., so imported SAF is not eligible. However, the fuel does not need to be used in the U.S.
  - ii. The credit is earned by the producer of the qualifying fuel rather than the blender. This would be expected to impact how contracts need to be structured to enable the sharing of this value between seller and buyer of the fuel.
  
- Additionally, the IRA included two tax credits, the clean hydrogen production tax credit (45V) and the carbon capture and storage credit (45Q).
  - i. The 45V tax credit acts as a production tax credit (PTC) for the production of qualified clean hydrogen produced by a taxpayer at a qualified clean hydrogen production facility during a 10-year period beginning on the date such facility was placed in service. The base tax credit amount is set at \$.60 per kilogram of clean hydrogen but increases to \$3.00 per kilogram when the hydrogen's lifecycle carbon intensity measures between zero and 0.45 kilograms of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) per kilogram of hydrogen (H<sub>2</sub>).

- ii. The 45Q tax credit supports the construction of carbon capture facilities. Any carbon capture, direct air capture or carbon utilization project that begins construction prior to January 1, 2033, will qualify for the Section 45Q tax credit. The IRA extends carbon capture tax credits through 2033 but also lowers the requirements for additional carbon capture facilities to qualify. The base tax credit for carbon capture by industrial facilities and power plants equals \$85 per metric ton for CO<sub>2</sub> stored in geologic formations, \$60 per ton for the beneficial utilization of captured carbon emissions and \$60 per ton for CO<sub>2</sub> stored in oil and gas fields. Additionally, it provides \$130–180 per metric ton of CO<sub>2</sub> captured through Direct Air Capture (DAC).
- iii. These tax credits can not be claimed together, and cannot be claimed with the CFPC.

State policies complement the federal policies. These include the Low Carbon Fuel (LCF) programs like those in California, Oregon, and Washington, which are mandates to reduce the Carbon Intensity (CI) of the fuel pool. SAF is eligible but not mandated, so these policies also act as incentives for SAF producers, funded by customers using other fuels (e.g. road fuels in California as c. \$0.1/gal more expensive due to the policy)

There are new state incentives in development, and these are the most important and dynamic area following the passage of the IRA. To date there are three separate state incentives available in Illinois, Minnesota and Washington state:

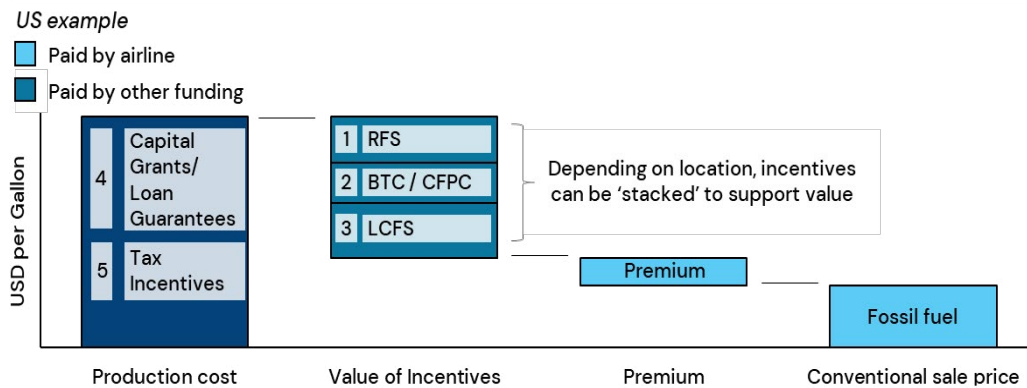
- **Washington bill SB 5447 promoting the alternative jet fuel industry in Washington:** This bill provides incentives available for purchases of SAF for flights departing Washington. It is equal to \$1 for each gallon of alternative jet fuel that has at least 50% less CO<sub>2</sub>e than conventional jet fuel and increases by \$0.02 for each additional 1% reduction in CO<sub>2</sub>e emissions beyond 50%.
- **Illinois Sustainable Aviation Fuel Purchase Credit:** This credit is available for every gallon of SAF sold to or used by an air carrier in Illinois. Airlines can claim a credit of \$1.50/gallon of SAF that achieves a 50% reduction in GHG emissions and is only available to airlines operating. The incentive is effective for ten years, from June 1, 2023 through June 1, 2033. By 2028, all fuel must be derived from domestic biomass resources.
- **Minnesota Sustainable Aviation Fuel Tax Credit:** The refundable tax credit provides \$1.50 per gallon of sustainable aviation fuel produced or blended in Minnesota and sold for use in planes departing Minnesota airports. It further provides a sales tax exemption for construction materials and supplies to support the construction of facilities that produce or blend SAF. The tax credit expires January 1, 2035.

The US also offers a series of grant/loan programs, which can be leveraged for the developing SAF technologies. The IRA included a \$244 million dedicated SAF grant funding through a new U.S. Department of Transportation program. The DOE and other agencies also offer loan guarantee and grant programs, although these can be challenging to access.

SAF in the US can claim multiple incentives, known as 'stacking'. As shown below, a producer could access over \$7/gal by selling the physical fuel, claiming the federal RFS and BTC, and selling into California to access the LCFS. This value stack makes the US the most economic region to purchase SAF, and has resulted in airlines focusing efforts on the geography. It has also attracted considerable investment and resources to develop SAF facilities in America, with ICF estimating that almost two thirds of all announced SAF capacity is located in the US.



## In the US, policy mechanism can be 'stacked', allowing producers to sell SAF close to parity with conventional fuels



### Challenges for SAF in the US

The main challenges for SAF in the US are threefold:

- **Timeline:** The SAF incentives under the IRA (BTC and CFPC) will expire in 2027. While they may be renewed, this creates significant policy uncertainty for a key source of revenue for US SAF producers.
- **Funding:** Most SAF support in the US (RFS, LCFS-programs) is funded by road fuel users. With slightly less than half of Americans flying in a typical year, this means many people who don't fly are funding the decarbonisation of the industry. Long-term scaling of the industry may be more challenging as the volume and therefore cost of SAF increases, and this challenge has already led to discussions in California on the possibility of obligating flights within the state within the LCFS.
- **Premium:** A premium of fossil fuel is still required to access SAF in the US, and with no firm demand-signal airlines may limit the additional cost by not scaling to the levels targeted by the Grand Challenges.

#### 4.2.3.2 EU SAF policies

##### Available Policies in the EU

- ReFuelEU Aviation
- Emission Trading System (ETS)
- Energy Taxation Directive (ETD)

In July 2021, the European Commission announced the Fit for 55 package which included a set of proposals to make the EU's climate, energy, land use, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55% by 2030, compared with 1990 levels. The package included a recast of the Renewable Energy Directive (RED II), to ensure the EU delivers on their new target by ensuring at least 32% of its energy consumption comes from renewable energy sources by 2030. This also includes a target of a minimum 40% share of RES in final energy consumption by 2030, accompanied by sectoral targets. It also included a proposal called the ReFuelEU Aviation, which introduced a set of policies to decarbonise aviation. The ReFuelEU proposal includes a SAF mandate to support the scaling up of the SAF industry, which will go into effect on January 1, 2025. This mandate applies to all airlines taking off from EU Airports and requires fuel suppliers to supply a minimum share of SAF at EU airports. To avoid European airlines facing a competitive disadvantage due to higher fuel costs pass-through to their customers, airlines will be allowed to claim allowances. A non-compliance penalty has been introduced to ensure mandates are followed across the industry. This mandate will scale-up the SAF requirement until 2050, as outlined in the table below.

Year	European Commission's proposal	
	Overall SAF Mandate	PtL SAF Sub-Mandate
2025	2%	0%
2030	6%	1.2% (increasing to 2% in 2032)
2035	20%	5%
2040	34%	10%
2045	42%	15%
2050	70%	35%

Feedstock applicable for SAF production is strictly regulated under the EU legislations. SAF are defined as 'drop-in' aviation fuels (fuels substitutable for conventional aviation fuel) that are either synthetic aviation fuels, advanced biofuels produced from feedstock such as agricultural or forestry residues, algae and bio-

waste, or biofuels produced from certain other feedstocks with 'high sustainability potential' (used cooking oil, inedible animal fats) that comply with the sustainability and greenhouse gas emissions criteria.

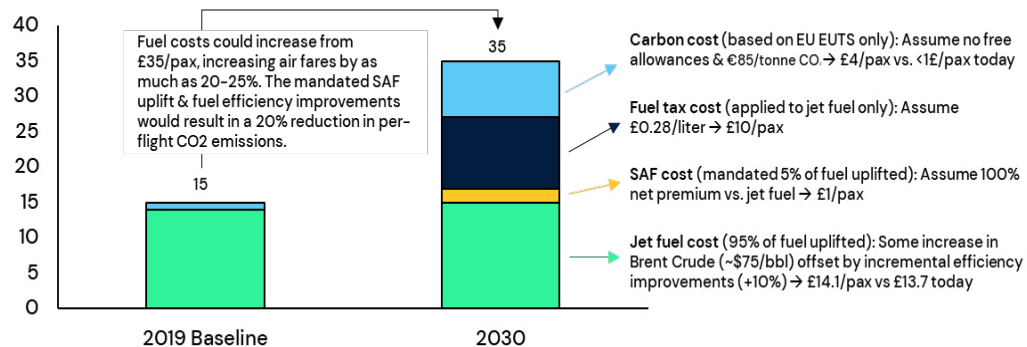
As a part of the Fit for 55 package, the Energy Taxation Directive (ETD) is also under revision. The EU ETD's aim is to align the taxation of energy products and remove outdated exemptions and reduced rates that currently encourage the use of fossil fuels. Aviation is not included in the original ETD, and there are legal and market distortion challenges to inclusion within the revised ETD. As the resulting finance would flow to governments rather than supporting SAF industry development, the ETD would have a greater impact by reducing aviation activity than by decarbonising flights.

In December 2022, the EU reached an agreement on the EU ETS Aviation reform which paves the way for a faster phase-out of free airline emissions allowances and introduces a system to monitor, report, and verify (MRV) non-CO<sub>2</sub> emissions as well as a "SAF allowances" pricing scheme. As a result of this reform, free emissions allowances for airlines covered by the EU ETS will be phased out by 2026 (a year earlier than originally planned), which is expected to increase operational costs of airlines substantially. Emission allowances will be phased out gradually starting from 25% reduction in 2024, continuing with 50% reduction in 2025 and finalizing with complete phase out by 2026. Airlines will also need to start reporting non-CO<sub>2</sub> effects starting from 2025.

SAF mandates, removal of ETS allowances, and the potential jet fuel tax could meaningfully increase operational costs to airlines. The ICF case study analysis on an intra-European flight suggests that the fuel costs (£/pax) could double by 2030, although most of this increase is driven by the ETS and potential ETD, with SAF contributing a minimal increase.

### Fuel costs may double for a typical short-haul flight in the EU by 2030 mainly as a result of the carbon costs, fuel tax and SAF

Cost of flying (£/pax) – Intra-EU example, fuel-related costs



Source: ICF analysis

The EU is also considering a scheme to support airlines with the premium for SAF by allocating offsetting the premium against a fund of 20 million ETS credits. The details are still in development, but this may have a meaningful impact to reduce the cost impact of the SAF mandate to airlines and ultimately passengers.

### Challenges for SAF in the EU

The EU policy framework is complex and aims to drive industry decarbonisation while striking a delicate balance between the polluter-pays principle and the cost to passengers, while imposing strict sustainability requirements. While aspirations are high, the framework is challenged by the following:

- **Pricing uncertainty:** While the mandate will establish a demand signal, they create no pricing clarity and therefore guarantee of revenue for SAF producers. This holds back investment, which in-turn creates a high likelihood of scarcity and the resulting high prices.
- **Focus on HEFA:** While not the intention of the policy, essentially all investment in the EU has been in HEFA capacity, as this will likely be the cheapest approach to comply with the mandate. This technology requires feedstocks such as UCO and tallow, which are in short supply globally. Competition from the US and other demand centres that may evolve in other countries will drive up the cost and availability for these feedstocks.
- **Policy uncertainty:** The policies are yet to be established and have been delayed several times. This leaves very little runway to get capacity built, with just 1.5 years until the mandate start compared to a more typical 2-5 years to plan, build and commission facilities.

### 4.2.3.3 UK SAF Policies

#### Available Policies in the UK

- **SAF Mandate, in place from 2025**
- **SAF Facility grant funding**
- **UK ETS**
- **SAF revenue support mechanism (in very early stages)**
- **RTFO (Obsolete for aviation after mandate implemented)**

The UK government has committed to scaling the use of SAF to achieve its "2050 Jet Zero target", announced in July 2022. As part of this strategy, by 2025 the UK has committed to have at least five UK SAF plants under construction and a SAF mandate in place, with a target of 10% SAF by 2030 (equivalent to 1.2 million tonnes).

The UK government has allocated £180 million funding for the SAF industry by 2025, which is incremental to the Advanced Biofuels Demonstration Competition (ABDC, 2014, £25m), Future Fuels for Flight and Freight Competition (F4C, 2017, £22m) and Green Fuels Green Skies Competition (GFGS, 2021, £15m) funds that supported the development and commercialization of SAF pathways.

In March 2023, the UK government release the second SAF Mandate Consultation, detailing the proposals to design and implement a SAF mandate. The paper presented proposals for volumes (via blending ratios), buy-out prices, details on the PtL SAF sub-mandate, and a HEFA cap. The mandate will start in 2025 and

will establish targets through 2040. Once the mandate is implemented, SAF will no longer be eligible for the RTFO.

- **SAF Mandate:** The paper proposes a standard obligation, which can be met using "standard SAF", and a sub-mandate for PtL SAF. While the sub-mandate design is similar to the EU's approach, the PtL SAF mandate is set at a notably lower level compared to the EU.

	2025		2030		2035		2040	
	Standard SAF	PtL SAF	Standard SAF	PtL SAF	Standard SAF	PtL SAF	Standard SAF	PtL SAF
<b>Low</b>	0.5%	0%	10%	0.05%	13%	0.25%	17%	1.5%
<b>Med</b>	2%	0%	10 %	0.10%	15%	0.50%	22%	3%
<b>High</b>	4%	0%	10%	0.20%	18%	1%	32%	6%

- **Sustainability criteria:** SAF must achieve at least 50% greenhouse gas (GHG) savings relative to fossil jet fuel, which will increase over time.
- **Feedstocks:** Waste/residue feedstocks can be used but food/feed crops and energy crops are excluded. For the PtL sub-mandate, CO<sub>2</sub> from the atmosphere, biological sources and fossil sources can be used. While the EU suggests that fossil CO<sub>2</sub> will not be eligible after 2035, the UK Proposal does not suggest a similar cap. Hydrogen needs to be produced using electricity generated from renewables or nuclear (Blue hydrogen is currently excluded and would require legislative change to include).
- **HEFA cap:** HEFA contributes to the standard obligation, but can only be used up to a cap. The proposal suggests a wide but low range for the HEFA cap, from 0 to c. 0.2 million tonnes (MT) in 2030. For context, the total 2030 mandate is expected to be around 1.2 MT.
- **Buy-out price:** The UK is proposing a fixed buy-out price (compared to the EU proposal of a buy-out price as a multiplier of the premium). The proposed buy-out prices were suggested at £2,567 for standard SAF (range of £2,051-£3,846) and £3,525 for PtL SAF (range of £2,567-£5,320). However, ICF believe that these buy-out prices are too low to drive uptake, given the increase in SAF costs with inflation and supply chain cost increases, so would need to be increased to ensure the obligation is not just brought-out.



- **Carbon intensity (CI) mechanism:** The proposal suggests a mechanism to scale certificates awarded by the CI factor. SAF with lower CI score, would generate more certificates. This would increase the certificates awarded if they are higher/lower than a 'average' SAF value, proposed at 26.7 gCO<sub>2</sub>e/MJ (a 70% GHG reduction). It suggests either a continuous calculation or using bands approach. For example, using the 'banded' approach, SAF achieving a 50% GHG reduction would receive 0.79 certificates, while SAF achieving a 100% GHG reduction would receive 1.36 certificates.
- **Tradable certificates:** The proposal suggests the compliance certificates will be tradeable. This means that the mandate could be met with a geographically variable use of SAF, with some airports using large volumes and others using none.

The UK ETS supports SAF by increasing the cost of fossil jet. While the UK ETS trades with an illiquidity premium to the EU ETS due to the smaller volumes, the value is still insufficient to make SAF use viable without other measures.

The UK also recently announced a plan to create a revenue stability mechanism for the SAF industry. This aims to overcome the volatility inherent to pricing under a mandate by creating a stable price (or potentially price floor) for SAF. This has long been the ambition of the industry, and the scheme announcement represents a welcome recognition by the government that the current policies are insufficient to attract the necessary investment. However, this scheme has several challenges, including that it's intended to be implemented in 2026 (one year after the mandate start), and that it will be funded by aviation.

### Challenges for SAF in the UK

The main challenges for SAF in the UK are the ability to comply with the mandate level and specific sustainability criteria. No new facilities in the UK have passed the Final Investment Decision (FID), driven by several factors:

- **HEFA Cap:** While the EU has heavily invested in HEFA and co-processing capacity, the UK HEFA cap has held back any major investments in this approach – compounded because the level of the cap has yet to be announced. The rationale for this approach is to avoid the substitution of feedstock from renewable road fuels (via the RTFO). This drives the UK to technologies such as Fischer-Tropsch, and cellulosic ethanol to jet, and while these are potentially more sustainable and scalable, their high cost and lower technical maturity make the investment case significantly more difficult.
- **Minimal supply-side support:** While the UK has several facilities in reasonably advanced stages of planning (stimulated through the grant funding), these plants cannot be financed/built without policy and revenue certainty. While the government has discussed several mechanisms (with industry coalesced around a CfD), no decision has been made. ICF understand that a key stumbling point is funding, with the government seemingly unwilling to hypothecate revenue from the APD or ETS, and suggesting any mechanism would require additional funding, presumably from the aviation industry.
- **Timelines:** The mandate is still under consultation, no supply-side policy has been established, and non-HEFA facilities are more complex and will require several years to design, build, and commission. The non-existent availability of compliant non-HEFA SAF for import by 2025 suggests that any shortfall will need to be bought-out from, resulting in airlines incurring cost while achieving no emission reduction.

#### 4.2.3.4 Japanese SAF Policies

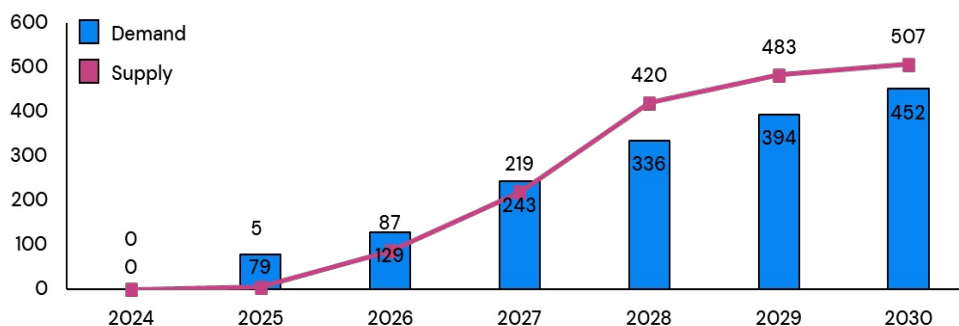
##### Available Policies in Japan

- **SAF Target for 10% use in 2030**
- **Potential for use of the GX fund to support facility Capex**

Increased use of SAF is a key component of the government of Japan's (GOJ) plan to reduce greenhouse gas emissions from aviation. Japan's Ministry of Economy, Trade and Industry (METI) recently announced a planned target volume for SAF under the Sophisticated Act by 2030. This target volume is in alignment with the announcement of the Basic Policy for Promoting Decarbonisation of Aviation by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). MLIT estimates that if SAF replaces 10% of jet fuel by 2030, SAF demand will reach 1.7 billion liters a year, equivalent to 452 million gallons.

### METI announced SAF will account for 10% of jet fuel consumption by 2030, with the forecasted supply volume expected to exceed the announced target

METI forecasted SAF demand and supply, million gallons



Source: METI, ICF conversion

To realise this goal, MLIT and METI jointly launched a public-private partnership to facilitate the development of reliable domestic production of SAF. Council members include government agencies, oil refineries and retailers, airlines, airports, oil storage, plant design, trading houses, and related industry associations.

As a result of this partnership, MLIT published the draft Basic Policy for Promoting Decarbonisation of Aviation in October, 2022. MLIT outlines three targets for airlines:

- Stabilization of CO<sub>2</sub> emissions from international flights
- Reduction in CO<sub>2</sub> emissions per unit transport from domestic flights by 16% by 2030
- Carbon neutrality for both international and domestic flights by 2050

Additionally, METI published a draft interim report<sup>66</sup> on SAF introduction in Japan. This report calls for Japanese SAF producers and suppliers to establish sufficient SAF manufacturing capacity and secure raw materials to produce SAF sustainably and at competitive prices<sup>67</sup>. To stimulate domestic SAF production, METI announced plans to set a new target volume for SAF under the 'Act on Promotion of Use of Non-Fossil Energy Sources and Effective Use of Fossil Energy Raw Materials by Energy Suppliers' by 2030. METI based

<sup>66</sup> [https://www.meti.go.jp/shingikai/energy\\_environment/saf/pdf/003\\_07\\_00.pdf](https://www.meti.go.jp/shingikai/energy_environment/saf/pdf/003_07_00.pdf)

<sup>67</sup>

[https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=METI%20to%20Develop%20a%20Separate%20SAF%20Target\\_Tokyo\\_Japan\\_JA2023-0050.pdf](https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=METI%20to%20Develop%20a%20Separate%20SAF%20Target_Tokyo_Japan_JA2023-0050.pdf)

this target volume on the Basic Policy for Promoting Decarbonisation of Aviation, aiming to replace 10 percent of jet fuel consumption with SAF by 2030. MLIT estimates that if SAF achieves this target, SAF demand will reach 1.7 billion liters per year.

As part of Japan's goal to achieve carbon neutrality by 2050, METI has established a substantial Green Innovation Fund with a budget of 2 trillion yen (USD \$16 billion), as part of the Fiscal Year 2020 Tertiary Supplementary Budget. This fund is entrusted to the New Energy and Industrial Technology Development Organization (NEDO) for its administration and operation. The primary objective of this fund is to support companies and other organizations committed to embracing ambitious targets for 2030, which have been collaboratively set by both the public and private sectors. This support spans the entire spectrum, ranging from research and development (R&D) efforts to practical demonstrations and the societal implementation of innovative solutions over the next decade. These target areas have been carefully selected based on their potential for significant policy impact and the necessity of sustained, long-term support to realize their widespread adoption. As part of this fund, NEDO awarded 114.5-billion-yen (USD \$916 million) grants to pilot projects developing e-fuel, SAF and other green fuels. Additional grants may be possible, with METI announcing plans to develop a capital investment subsidy program.

The Government of Japan (GOJ) administers two carbon credit certification programs, namely the J-Credit System for domestic activities and the Joint Crediting Mechanism (JCM) for international activities. Both initiatives were inaugurated in 2013. Under the domestic program, known as the J-Credit System, the METI, the Ministry of Agriculture, Forestry and Fisheries (MAFF), and the Ministry of the Environment (MOE) collaborated to establish and manage a carbon market. This system is designed to bolster regional efforts in reducing greenhouse gas emissions. It's noteworthy that J-Credits may be applicable within the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), despite CORSIA's offsetting not being voluntary and necessitating corresponding adjustments.

Other measures are also under discussion, including announcements by METI that (1) imported SAF may be exempt from the fossil fuel import tariff, and (2) there may be financial support for SAF research, development, operation, and certification acquisition.

### Challenges for SAF in Japan

The SAF regulation for SAF in Japan is still evolving, and many of the current challenges may be resolved over the coming years. These challenges include:

- **Non-binding target:** The ambition for 10% SAF by 2030 represents a target, rather than a mandate. ICF understands from discussions with local stakeholders that the social obligation created by this target will drive many companies, particularly those based locally, to increase SAF use. However, it lack many of the important details of a mandate, such as a non-compliance penalty, sustainability criteria, and trajectory beyond 2030.
- **Limited feedstock availability:** There is relatively limited feedstock in Japan compared to the size of the aviation industry, and the high cost of land and labour may make it more economic to develop production in other countries and then import the SAF. This may directly impact Australia, with several companies investigating opportunities across the country.
- **No clear capex or opex support:** While several options are under consideration, no support has yet been announced. This may hold back investments in SAF facilities in Japan.



### 4.3 Implications for Australian SAF policy

#### Implications for Australian SAF policy development

While the SAF industry is still developing and the success or challenges for different policy approaches are still to be proven, several trends can be observed across the leading countries:

- **A combination of mechanisms is required:** Every country with meaningful progress on SAF has adopted a combination of policies, with each addressing a different challenge. Most countries have a range of demand mechanisms (the mandate in the UK, EU, and Grand Challenge in the US), complemented with supply mechanisms (the IRA in the US, revenue support in the UK, and ETS fund in the EU). The EU and UK are further using the ETS to close the cost gap, while the US has adopted much more generous supply-side mechanisms to bring SAF price closer to parity with fossil fuels. These combinations are both more effective than isolated policies, and also provide a measure of policy redundancy, mitigating the impact for investors if one of the policies is removed or altered.
- **Clear policy over longer durations:** Policy uncertainty holds back policy investment, with financiers waiting for clarity and enforcement before deploying the considerable value required. The impact can be seen in the UK, where no greenfield facilities have achieved FID despite the progress made on policy. Longevity of policy is also crucial given the long timeframes that SAF facilities will operate over, and the uncertainty over the renewal of the CFPC credits in the US IRA has been cited by several companies as a reason to avoid investment.
- **Grants to kick-start the market:** Every country developing SAF has made use of grant mechanisms to de-risk early facilities, including the IRA funds in the US, AFF in the UK, MS funds in the EU, and GX fund in Japan. These have generally been awarded to support the developing (non-HEFA) technologies.
- **Sustainability standards:** The US, EU, and UK have all established sustainability standards with a higher floor level than CORSIA, by requiring higher GHG reductions. In the US, several policies (LCFS, BTC, CFPC) directly link the credit value to the CI of the fuel, and the UK has proposed a mechanism to increase the mandate value for fuels with a lower CI.

**Market for co-products:** Every SAF facility produces a range of products, and the commercial case for SAF facilities typically leverages domestic value for the renewable diesel and naphtha produced. For example, renewable diesel can claim the RFS, LCFS, and BTC value in the US, and RED II compliance in the EU, and the RTFO in the UK, providing a meaningful contribution to the commercial case for a SAF facility. These existing renewable fuel industries also ensure access to a skilled workforce, and knowledgeable investors, insurers, and engineers. Attracting and building these skills may require additional time and value compared to more developed markets.

## 5 Appendix B: Methodology and assumptions

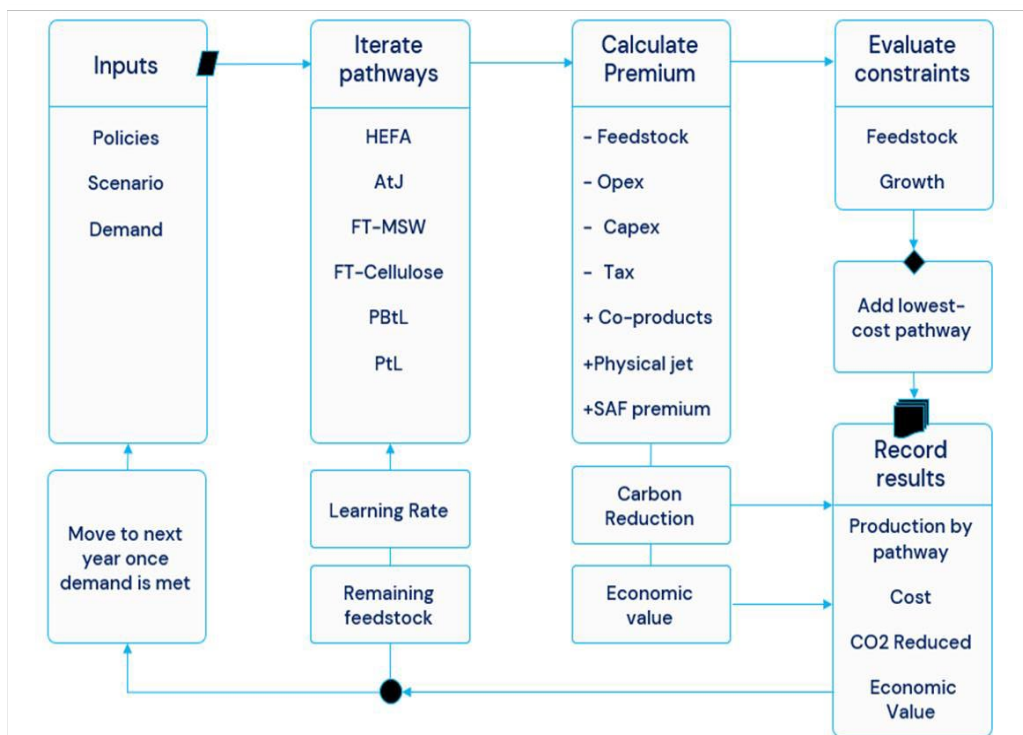


## 5.1 Assessment overview

The analysis detailed in the report used a model that calculated the least-cost industry configuration to deliver the volumes demanded. In each year, the levelized cost of SAF (LOC-SAF) is calculated for the six different pathways, using detailed models for each facility type. The LCO-SAF is calculated over the whole facility lifetime (including construction, commissioning, and operations), to estimate the SAF price premium over conventional fuel required to deliver a suitable risk-adjusted return to investors. The analysis then selects the least-cost capacity to deploy to meet demand (recognising that the facility development requires several years from investment to production, so capacity is built to meet future rather than current demand).

As capacity is added, the capex and risk premium decrease, while feedstock costs increase. This represents the impact of technology development and learning rate, and the constrained availability of the feedstocks. If finite policies are included in the scenario under assessment then availability of these may also change, for example a pot of capital grant funding may all be allocated, decreasing availability for future capacity. Two additional constraints are included to limit the growth for each pathway in any given year, representing the finite companies, workforce, equipment, and other resources available for facility development, and a second constraint for feedstock availability to represent the limit of each type of feedstock that is sustainably available.

The analytical framework evaluates the financial, feedstock, and deployment viability, and the cost, carbon, and economic value generates



### 5.1.1 Production pathway selection

The analysis considered the following 6 production pathways. SAF could potentially be produced from hundreds of different combinations of feedstocks, facility types, and production configurations, so these were selected to be a representation of the range of approaches available.

ID	Technology	Feedstock
1	Hydroprocessed esters and fatty acids (HEFA)	Mixed UCO/ Safflower Oil
2	Alcohol to Jet (ATJ)	Sugarcane ethanol
3	Gasification / Fischer Tropsch (FT)	Municipal solid waste (MSW)
4	Gasification / Fischer Tropsch (FT)	Woody biomass (Forestry)
5	Power to Liquids (PtL)	Solar/wind renewable power and point source CO <sub>2</sub>
6	Power & Biomass to Liquids (PBtL)	Municipal solid waste (MSW) / Solar/wind renewables

Each facility was assumed to focus on SAF production. Many can flex their production output to increase/decrease the portion of SAF produced (conversely decreasing/increasing the renewable diesel and naphtha production). This analysis assumed that each facility prioritized SAF production, on the basis that this is likely to be the highest-value fuel produced under the supply/demand scenarios considered. However, the ability to switch production to increase RD/Naphtha represents an important risk mitigation for producers.

The specifications for each facility are based on ICF's database and experience working with producers across the globe. These values were assessed and tailored to Australia, ensuring the analysis represented both the similarities in technology and unique factors (such as land, labour, construction and other costs) in Australia.

The facility configurations were fixed for the analysis. In reality, facilities would evolve over their lifetime to suit the macro environment and incentives; for example, producers may incorporate carbon capture technologies, adjust the use of tail-gases, build renewable generation, and a multitude of smaller decisions. As a result of this assumption, the analysis is likely to underestimate the industries responsive to changes of input. For example, incentives based on carbon reduction would likely have a greater impact than shown by this analysis.

### 5.1.2 Policy evaluation

There are many policy options to stimulate SAF consumption in Australia, with a variety used for SAF in the US, EU, and other examples used for different industries around the world. The 22 proposals from *Sustainable Aviation Fuel Policy in the United States: A Pragmatic Way Forward* by Fred Ghatata,<sup>68</sup> and the 37 proposals

<sup>68</sup> Sustainable Aviation Fuel Policy in the United States: A Pragmatic Way Forward by Fred Ghatata (Atlantic Council, Global Energy Center), April 2020

from the World Economic Forum *SAF Policy Toolkit*<sup>69</sup> provide a reasonably comprehensive list of potential options. This long-list was discussed and used to down-select a small selection of policies. These were selected based on their effectiveness, scalability, and their alignment with objectives.

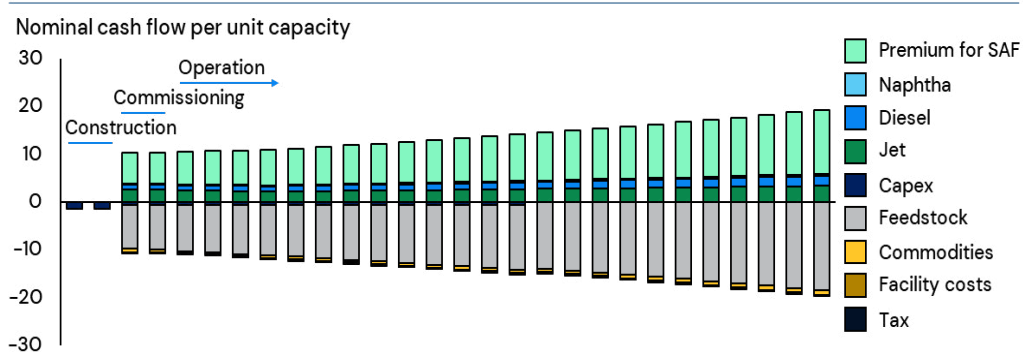
## 5.2 Calculating production cost

The levelized cost of SAF is calculated using a cash flow model for each facility, combining the total costs and sources of revenue over the facility lifetime. This allowed the additional revenue required to achieve a specific Internal Rate of Return to Equity to be calculated. The additional revenue required is then pro-rated to the SAF production to calculate the SAF premium required.

This model calculated the cash flow over the construction, commissioning and 25-year production lifespan of each facility. The all-in capital cost was split into the equity and debt components, and the debt payments included within the cash flow. The EBIT was calculated for each year, and an average tax rate was applied. The equity portion of the capex was combined with the profit to calculate the equity Internal rate of Return (IRR).

Revenue from the other fuels produced (renewable diesel and naphtha) was estimated based on the market premium for each of these fuels and is then included in the cash flow as sources of revenue. Many alternative assessments pro-rate the premium across all the fuels produced, which typically under-estimates the premium required for SAF, particularly in Australia where there is little policy to support the use of RD/naphtha. As these fuels represent 20–40% of production, assumptions on their revenue can have a relatively large influence on the SAF premium.

### HEFA capacity is dominated by the feedstock cost

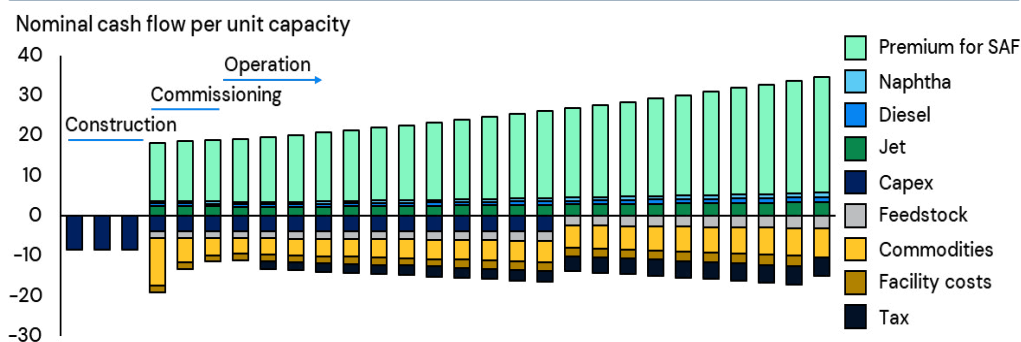


Each pathway has a different cost profile, with the difference in capital cost, operational costs, and feedstock costs driving notably different cash flow profiles for each.

<sup>69</sup> [https://www3.weforum.org/docs/WEF\\_Clean\\_Skies\\_for\\_Tomorrow\\_Sustainable\\_Aviation\\_Fuel\\_Policy\\_Toolkit\\_2021.pdf](https://www3.weforum.org/docs/WEF_Clean_Skies_for_Tomorrow_Sustainable_Aviation_Fuel_Policy_Toolkit_2021.pdf)



## FT-MSW capacity has a longer ramp-up, and is more sensitive to capex support and other commodities



The costs include all the inputs required for each facility to operate. This section will cover them in three sections:

- Facility costs, including the capital costs and learning rate.
- Feedstock costs, including cost and availability.
- Commodity costs, including the fossil jet, diesel, and naphtha, and other inputs such as natural gas, electricity, and oxygen.

### 5.2.1 Facility costs

The facility costs are generated using ICF Class V Capital Cost model, which uses a block flow diagram as a basis for the cost estimate. The major blocks including process, auxiliary, utility, and offsite units are listed and required capacities assigned to each block. The model scales the equipment costs, based on the required unit capacities, from the in-house database of unit equipment costs, using an appropriate scaling exponent and escalates the costs based on the annual Chemical Engineering Plant Cost Index (CEPCI) data. The Total Project Cost (TPC) is built up from the equipment costs by using standard factors for field costs, detailed engineering and procurement, miscellaneous costs, EPC profit and contingency, owner's costs and financing costs. These costs were tailored to Australia to reflect the countries bulk material and labour cost profile.

The SAF production costs will decrease as capacity scales. The reduction in infrastructure costs (i.e., cost per unit capacity) will be key to this and have been the largest contributor to cost reductions in other industries (such as solar and wind) over the past decade. These infrastructure cost reductions will be particularly steep for the novel technologies such as AtJ and FT pathways, while the more developed HEFA pathway is likely to demonstrate more incremental cost reductions.

The cost reductions are assessed using the learning curve approach. This models the cost reduction as capacity is scaled and is defined as the percentage reduction in costs as the installed capacity doubles. The facility cost

reductions depend (1) the assumed learning rate, and (2) the installed capacity. The learning rate is defined by the selected scenario and technology and varies from 8% to 20%. The Australian installed capacity is calculated iteratively, and the learning rate is then calculated using a blend of the Australia-specific learning, and the global industry learning rate. This approach allows the analysis to model the potential virtuous cycle, where some measures kick-start the market, and the lessons learnt from the resulting deployed capacity bring down the cost for additional capacity, further stimulating the market.

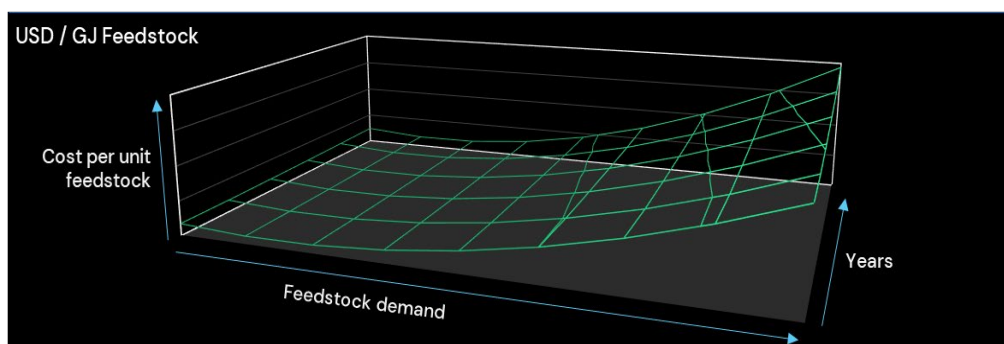
### 5.2.2 Feedstock analysis

Each feedstock is modelled using four factors:

- The initial cost per unit feedstock (in USD per GJ)
- The change in cost as additional feedstock is demanded, representing the additional price to collect and process increasingly distributed feedstocks, or to encourage production of more feedstock, or to attract some volumes from lower-value industries.
- The change in feedstock base price over time, representing development of the logistics value chains and technology improvements, and in some cases the anticipated increase in demand from other sectors.
- The limit on the amount of each feedstock that is available, which represents the finite volumes of each feedstock that can be sustainably used for SAF production.

The four factors can be represented as a surface plot, with the feedstock cost shown as the green lattice.

#### Feedstock prices reflected both increasing demand and efficiency improvements

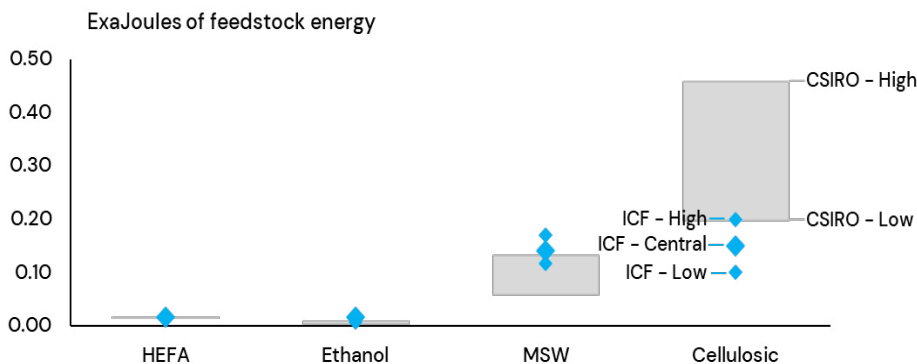


Source: ICF Analysis

The total availability for each feedstock was based on the results from the CSIRO Sustainable Aviation Fuel Roadmap, with some adjustments. The comparison is given below, showing the CSIRO range as the grey columns, compared to the model inputs shown by the blue diamonds. The inputs for HEFA and AtJ feedstocks were similar, with both relatively constrained. The Municipal Solid Waste (MSW) availability was slightly higher than CSIRO, with the values taken from a detailed proprietary model on the MSW availability in each country. The Cellulosic availability included availability of wood, agricultural residues, and bagasse, and was substantially lower in this analysis. This was based on three factors; firstly, an understanding that the agricultural residues in Australia are often quite distributed, and total availability may over-estimate the volumes that could practically be aggregated for use at a facility. Secondly, significant volumes (typically 20%–60%) of agricultural waste must

be left in the field to ensure soil health and avoid erosion, and this analysis wanted to ensure volumes used are sustainable. Thirdly, significant volumes of cellulosic material (particularly bagasse) are in use already, and competition between end-sectors may be strong. The reduction in availability was calculated to include these constraints.

### The feedstock availability for SAF broadly aligns to the CSIRO results, although with slightly increased ethanol and MSW, and decreased cellulosic availabilities

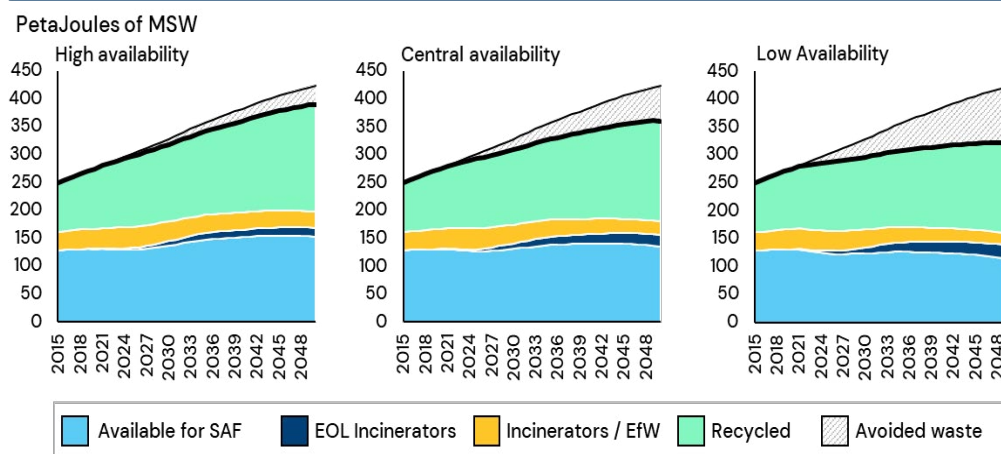


Source: ICF analysis, <https://www.csiro.au/en/research/technology-space/energy/sustainable-aviation-fuel>. All values normalised to 2030. Cellulosic includes wood, agricultural residues, and bagasse

The Municipal Waste Availability was calculated using the ICF proprietary model on global waste production and management. This forecasts waste production based on population and GDP forecasts, and their elasticity to waste production. The calculations are done individually for each waste stream, including food and greens, paper and card, glass and metal, plastics, and others. This allows the opportunities and challenges for each waste stream to be included. The available waste is reduced by four factors:

- Avoided waste, which represents the transition to a circular economy, and particularly impacted the volume of plastics sent for disposal.
- Recycling rates, which increase over the analysis duration. Historical recycling rates are typically logistical, with rapid increases followed by declining progress, and this was modelled for each waste stream. Some (particularly glass, metals, paper, and card) achieve very high recycling rates, while the recycling for food and greens is typically lower.
- Incinerator and energy from waste capacity is assumed to be sustained, with a small volumes available for switching to SAF production as some of the facilities reach their end-of-life. The transition volume is shown as the dark-blue wedge in the stacked volume chart.

## Scenarios of MSW availability, considering waste generation, reduction, recycling, incineration, and the residual available for SAF production



The residual volume is considered available for SAF production, and this methodology aligns to a waste hierarchy that prioritizes reduction, recycling, and reuse. As waste production was the same in all scenarios, the low MSW availability scenario represents the most aggressive transition to a circular economy. While MSW use for SAF creates a high value product, improves energy security, and reduces emissions, the central and low availability scenarios may be preferable from a whole system perspective.

### 5.2.3 Commodities

The renewable energy industry is being built alongside the fossil fuel industry and overlaps in many areas. Natural gas and electricity are crucial inputs for SAF production, while the price of fossil jet fuel represents the physical value of SAF. This section provides detail on the approaches used to estimate the value of these commodities.

Crude Oil was used as the benchmark for this study as jet, diesel, and naphtha are derivatives, and the price of natural gas and electricity are related due to the similarities in end-use industries. The crude oil prices used in this report were obtained from the International Energy Agency (IEA) World Energy Outlook 2022<sup>70</sup>. The IEA outlook includes 3 different scenarios (Stated Policies Scenario, Announced Pledges Scenario, and Net Zero Emissions by 2050 Scenario) with each considering the different outcomes from the different possible policy pathways.

<sup>70</sup> World Energy Outlook 2022, IEA - <https://www.iea.org/reports/world-energy-outlook-2022>

*Crude oil price forecasts by the IEA under different transition scenarios, USD 2022 per barrel*

Scenario	Source	2030	2040	2050
High	IEA (STEPS) Crude Oil	\$ 82	\$ 89	\$ 95
Central	IEA (APS) Crude Oil	\$ 64	\$ 62	\$ 60
Low	IEA (NZE) Crude Oil	\$ 35	\$ 28	\$ 24

*Note: The IEA crude oil price is a weighted average import price among IEA member countries.*

Crude oil prices are notoriously challenging to forecast, with interacting supply and demand factors driven by politics, economics, and technology developments, and this uncertainty can be seen in the range of forecasts. To ensure the analysis captures this uncertainty, the 3 scenarios were analysed. The APS scenario represents the central scenario, with the STEPS forecast as the upper case and the NZE as the lower case. As these analyses only provide values at 5-year intervals, the intermediate values were interpolated.

Approximately 17% of Australian crude refined is from domestic sources, with the balance of 83% imported, primarily from Malaysia and Brunei<sup>71</sup>. Two key benchmarks for the country are Tapis and Brent, and latter was used for this analysis due to its global relevance.

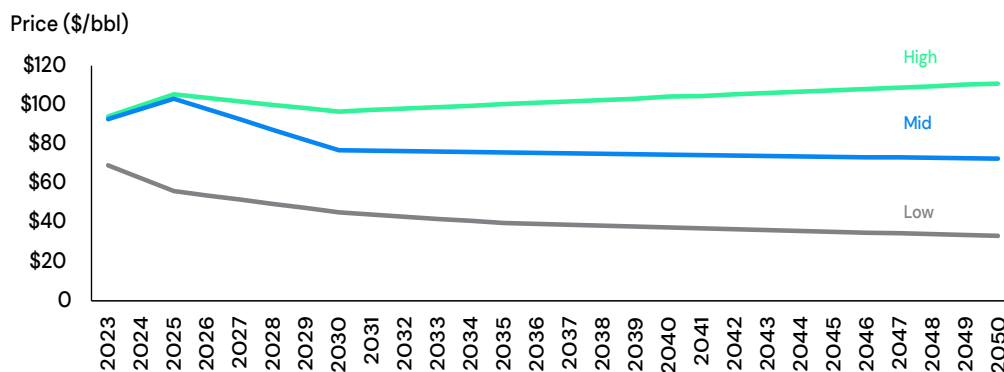
Jet fuel is derived from crude oil and their market prices are strongly correlated with an  $R^2$  value of 0.92 over the period Oct 2016 – Dec 2019. This premium for jet fuel over crude is known as the crack spread and does vary according to supply and demand for jet compared to other fractions of the crude barrel, although the absolute difference is generally lower than the changes in crude oil price.

This analysis used the average crack spread over this three year period, and excluded more recent pricing. This was chosen to ensure a long-term perspective, rather than the extreme volatility seen in the past few years due to the energy crisis. Using the correlation between the Brent oil and jet fuel price historically, together with the forecasted crude oil prices described in section 5.1, ICF obtained 3 scenarios for the future prices of jet fuel. These predictions aim to illustrate the central estimate and range of future prices, although volatility around this long-term trend is highly likely.

<sup>71</sup> <https://app.archieinitiative.org/map?mode=oil>



## Jet Fuel Price Forecast (2023 -2050)



Source: ICF analysis

The price of fossil naphtha, diesel, and natural gas were estimated using a similar methodology, ensuring consistency between assumptions. Renewable diesel and naphtha can demand a green premium, and will be essential to decarbonise the Australian mining, long distance trucking, and petrochemical industries. Current market prices for oxygen were used (for the facilities that require this as an input), with a small adjustment to reflect the potential technology improvements.

## 5.3 Deployment constraints and carbon intensity

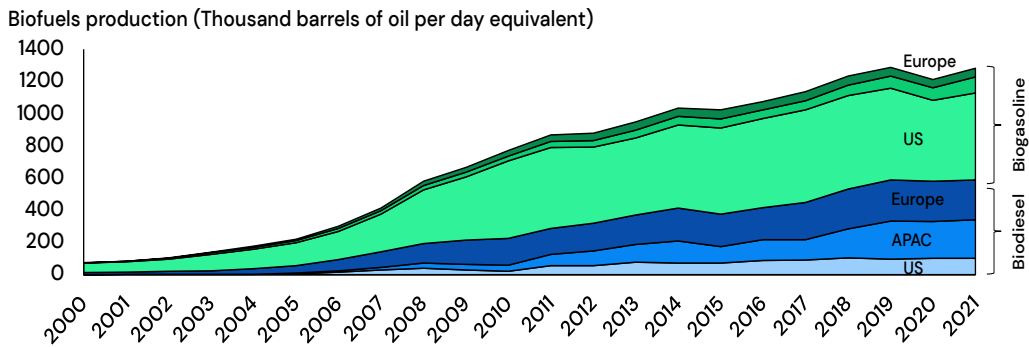
### 5.3.1 Deployment constraints

The capacity growth of SAF will be primarily determined by the economically viable volumes that can be produced, however several additional constraints may limit SAF deployment. These can be split in various categories:

- **Limited organizational capacity:** The SAF industry is currently small, and few organizations have developed the capacity and knowledge to build SAF facilities. The industry will grow as these organizations increase in capacity, as additional start-ups enter the market, and as organizations in related markets pivot to SAF production. The time taken to achieve this will limit the rate of deployment.
- **Physical bottlenecks:** This includes the limitations on technical components, such as catalysts/reactors and building materials such as concrete/steel.
- **Permitting constraints:** Environmental permitting can take several years, as may the certification to sell fuel into the RFS and LCFS. Any sequestration must be permitted to Class 6/CARB.
- **Technology development and risk:** Some of the technologies have only been proven on a limited scale and/or duration. In some cases, producers and capital providers will wait to see the results of the early (FOAK) facilities before attempting to construct/fund additional facilities.

Each of these factors is complex to account for separately, so this analysis includes an aggregate factor to limit the rate at which new facilities can be built. This factor is based on the historical deployment of renewable fuel capacity. The chart below summarizes the biofuel industry growth in different regions since 2000.

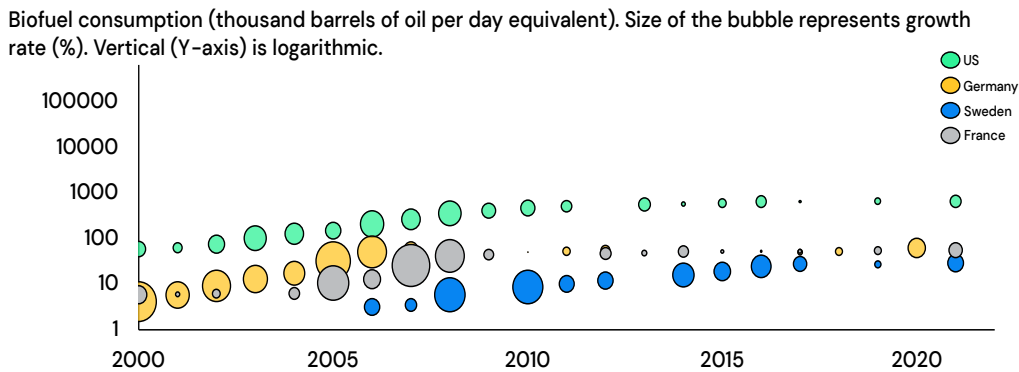
### Biofuels growth since 2000 (kboed)



Source: BP Statistical Review 2022, ICF analysis

Despite the lack of historical data for SAF capacity growth, the similarities in production with other biofuels (particularly renewable diesel), allow for this method to provide results applicable to sustainable aviation fuel. Analysis of these industries show the expected trend of declining percentage growth rates but increasing absolute production volumes as the base production increases.

### The rate of capacity growth declines with increase in industry size



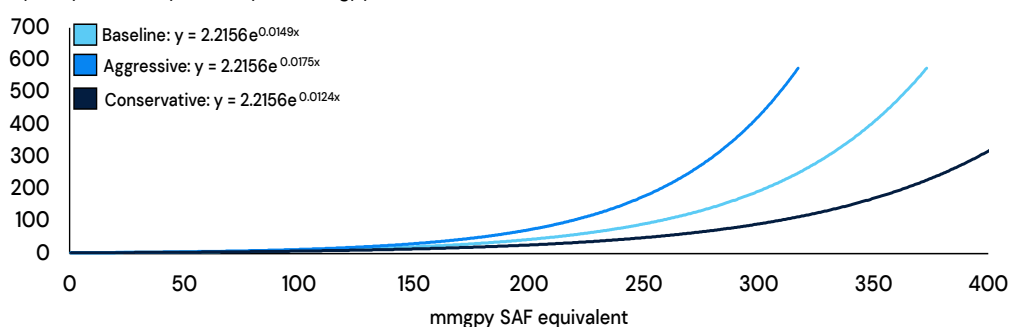
Source: BP Statistical Review 2022, ICF analysis

The larger size of some economies (e.g. the US) have allowed faster renewable fuel capacity deployment that could be achieved in Australia. To adjust for this, the biofuel consumption volume was normalised by the crude oil consumption of the given country. The normalized deployment curves across a range of countries was then assessed to understand the range of deployment rates, comparing the additional absolute growth to the current

industry size. Applying these ranges to the Australian market developed three scenarios for the potential deployment rate of SAF facilities in the country. To ensure that a minimum rate of deployment is possible, a floor value was also implemented, equivalent to the larger of 40 mmgpy or 1 facility (which is larger than this for HEFA and AtJ, but smaller for facilities using solid biomass)

## Capacity Growth

Capacity addition year-to-year (mmgpy)



Source: BP Statistical Review 2022, ICF analysis

The three different scenarios presented – Aggressive, Baseline and Conservative, cover a spectrum of possible industry growth outcomes in Australia. This analysis provides a useful indication, but (as shown by the wide range of the scenarios modelled) has considerable uncertainty. Firstly, the SAF production process relies on more complex technology and pathways (than the renewable diesel facilities), leading to potentially slower growth rates, particularly in early years. This highlights the importance that early facilities are supported to de-risk these technologies. Secondly, the deployment rate in other countries is often not the maximum deployment rate that could have been achieved; other factors (particularly regulation) had an importance influence.

The model included an important feedback loop between the level of policy support and deployment rate, with higher rates possible when greater portions of future revenue (or capex) were covered by policies. This mechanism was developed to reflect the additional focus on industry development when risk-adjusted returns are higher, which can be achieved by de-risking future revenue.

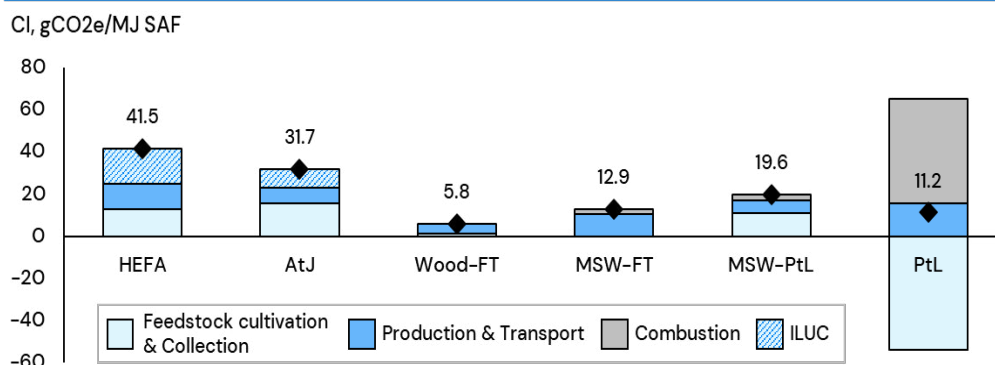
### 5.3.2 Carbon Intensity

A lifecycle analysis (LCA) for each of the six pathways studied in this Project was calculated using the CORSIA methodology developed by ICAO. The LCA was then used as a key input into the financial and build-out simulations. Actual LCA scores may differ from those calculated here based on actual geographical location, the local grid, transportation distances, and final designs of the processes.

The HEFA pathway has the highest CI score (41.51 gCO<sub>2</sub>e/MJ) and the sugarcane AtJ pathway has the second highest CI score (29.11 gCO<sub>2</sub>e/MJ) based mainly on the high ILUC value for soybean oil and sugarcane and greater emissions associated with cultivation / collection of soybean oil. The Wood Waste FT pathway has the lowest CI score (8.06 gCO<sub>2</sub>e/MJ) with the main contributor being the oxygen required. The MSW FT pathway

has a CI score of 17.28 gCO<sub>2</sub>e/MJ, with the greatest contributor to emissions being fuel production. This is a result of non-biogenic carbon in the MSW feedstock. The MSW and Green H<sub>2</sub> pathway has a greater CI than the MSW FT pathway due to the emissions associated with green hydrogen production and the grid electricity needed for production. The PtL case has a CI score of 11.16 gCO<sub>2</sub>e/MJ using ANL GREET 2022. The CO<sub>2</sub> feedstock is not considered biogenic, so fuel combustion is the greatest contributor to the CI score followed by fuel production. For all pathways, the CI score can be lowered by using carbon capture and sequestration (CCS).

### Carbon Intensity values for each production pathway



Source: ICF Analysis

For this analysis, the ICAO Greenhouse gases Regulated Emissions, and Energy use in Technologies (ICAO – GREET) model developed by Argonne National Laboratory (ANL) using the CORSIA methodology was used for approved pathways studied in this Project. The Power to Liquids (PtL) pathway used in this analysis is not an approved pathway under CORSIA, so the Argonne National Laboratory’s Greenhouse gases Regulated Emissions, and Energy use in Technologies (ANL GREET) model was used and modified to align with CORSIA methodology.

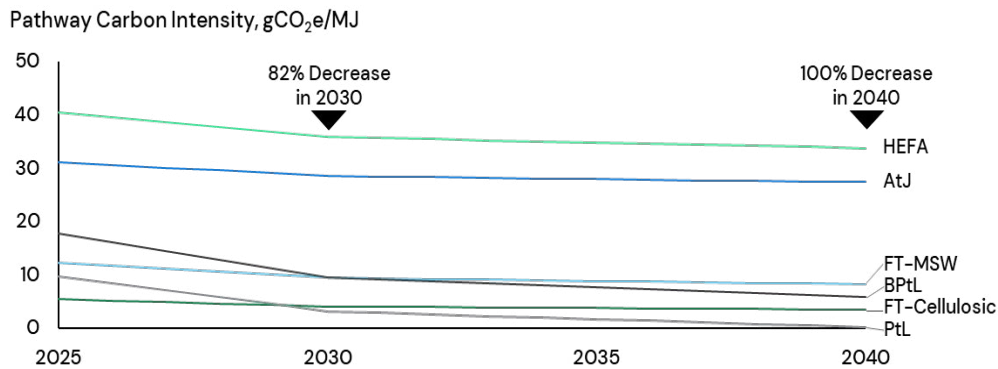
CORSIA has a core LCA boundary including emissions for cultivation/collection of feedstock, feedstock transport, fuel production, fuel transport, and SAF combustion (wake emissions). Induced land use change (ILUC) is also considered under CORSIA and two methods are used to calculate default ILUC emissions. ILUC emissions are modeled under GTAP-BIO and GLOBIOM. The default ILUC emissions for each feedstock were calculated based on the difference in GTAP-BIO and GLOBIOM values. If the difference in the two ILUC values calculated was less than 8.9 gCO<sub>2</sub>e/MJ, the average of the ILUC for the two methods is used. If the difference in the two ILUC values is greater than 8.9 gCO<sub>2</sub>e/MJ, the default ILUC was calculated by adding 4.45 gCO<sub>2</sub>e/MJ to the lower ILUC value.

Unlike ANL GREET methodology, CORSIA only considers CO<sub>2</sub> emissions from SAF combustion, excluding methane and nitrous oxide emissions. If the feedstock is biogenic, the wake emissions are considered zero. The CORSIA LCA employs an energy-based allocation for all liquid products, including co-production of renewable diesel and naphtha. In the ANL GREET model, energy, mass, or market based allocations are available for pathways. The CORSIA LCA is also an attributional LCA, accounting for mass and energy flows for the process. No displacement of emissions for co-products is considered. This differs from the ANL GREET model where avoided emissions can be considered from co-products replacing the need to produce potential products (i.e. producing cattle feed, called distillers grains, during corn ethanol production reduces the need for animal feed production from other sources).

In the ICAO-GREET model, default inputs were provided by the Massachusetts Institute of Technology (MIT). Energy inputs for SAF production and co-product production were based on ICF modeling. Certain minor factors in LCA scores were not modeled due to their minimal expected impact, including electrical and natural gas standby demand when the process is not in operation, catalyst, and chemical supplies.

Electricity is an important component of the CI analysis, driving several points of CI emission for several pathways. As the electricity grid in Australia transitions to use more renewable electricity, this will slightly reduce the SAF CI, and this decline has been shown below.

### The SAF emissions reduction improves as the electricity grid decarbonises



Source: <https://treasury.gov.au/policy-topics/measuring-what-matters/dashboard/emissions-reduction>

On-site or directly connected renewables are typically included within the LCA, so many facilities could accelerate the grid transition if incentives support the reduction of the SAF CI. This can be seen in the US policy environment, with several facilities considering on-site wind, solar, and biomass generation.





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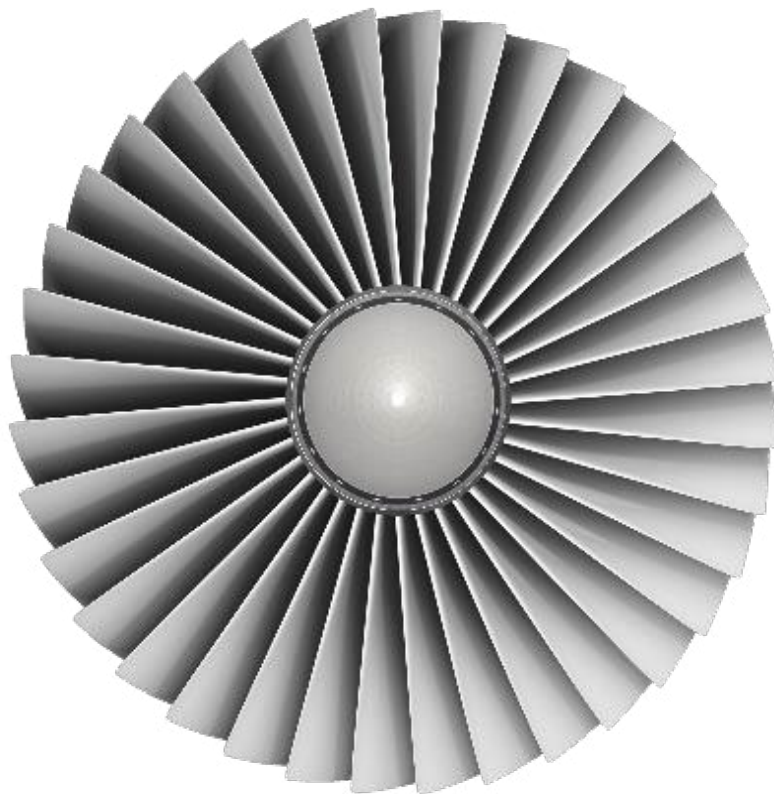
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Our team brings experience from successfully delivering sustainability projects both within aviation and out-of-sector. Our aviation experience ranges from leading the analysis for DG CLIMA on potential combinations of EU ETS & CORSIA, to detailed advisory on airline sustainable fuel offtake contracts and decarbonisation strategies. Our experts can draw on best-practice developed while successfully delivering sustainability projects for over 75 Global FT500 leading companies, and we supported the first US greenhouse gas inventory, the [first mandatory greenhouse gas reporting program](#), the first federal agency climate adaptation program, and the development of [China's emissions trading scheme](#). Learn more at [icf.com/aviation](https://icf.com/aviation)

# Annexure D

Deloitte Access Economics Report on the economic contribution of the Qantas Pilot Academy

**Deloitte.**



## **Economic impact of the Qantas Group Pilot Academy**

The Qantas Group  
November 2023

**Deloitte**  
Access **Economics**

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# Executive summary

Pilot training plays a critical role in developing skills in Australia's aviation workforce - a workforce that is central to connecting Australia to the world. The purpose of this report is to demonstrate the role of the Qantas Group Pilot Academy (the Academy) in:

- Supporting upstream supply chains (and consequently employment in upstream suppliers) who provide goods and services to the Academy.
- Increasing the supply of skilled pilots and thus enhancing the productivity of the Australian economy, increasing access to trained pilots both for Qantas and other firms in the aviation industry.

The Academy is a pilot training school established by the Qantas Group in partnership with Flight Training Adelaide (FTA), an Australian aviation college in operation since 1982. The establishment of the Academy involved support from Qantas, the Queensland Government, FTA and Wagners who built the facility and own the student accommodation.

Given that multiple actors are involved (and it is not straightforward to attribute the activities of the academy to any single actor), this report examines the economic impact of the Academy overall, not the contribution of the Qantas Group or any other entity to the Academy. It is also based on the Academy reaching its maximum stated capacity of 250 students per annum by the end of 2023-24 in line with current projections. If the Academy does not meet these projections for any reason, the economic impact would be smaller than that presented in this report.

Pilot training is essential to supplying pilots and is a critical enabler of growth in the Australian aviation industry. The COVID-19 pandemic led to significant aviation disruptions with a large outflow of pilots from the industry. An Australian Federation of Air Pilots (AFAP) survey of member pilots found that by November 2020, approximately 23% had been made redundant and 57% were on full or partial stand down.

The inflow of new pilots also fell significantly during COVID with the number of new commercial pilot licenses falling by 30% from 2019-20 to 2021-22. Despite a recovery in 2022-23, new commercial pilot licenses remained 14% below the peak in 2019-20.

The rapid fall and partial recovery in air traffic combined with the decline in the aviation workforce has led to shortages of pilots in Australia. In 2023, Jobs and Skills Australia (JSA) listed aeroplane pilots as an occupation in shortage in Australia, including pilots on the Skills Priority List. Analysis by Boeing shows that there is expected to be global demand for 649,000 new pilots over the next two decades while analysis by Oliver Wyman projects a global shortage of around 80,000 pilots over the next decade.

## Analytical framework

To estimate the economy-wide impact of the Pilot Academy, the following direct impacts to the economy were estimated:

- Capital expenditure: The costs associated with building and establishing the facilities of the Academy.
- Operational expenditure: The ongoing costs required to run and manage the Academy.
- The supply of pilots: The impact of the Academy on the supply of pilots – both to Qantas and other airlines and firms who require pilots. This includes adjustments to wages of new pilots based on their level of experience.
- Overall labour supply: Separate to the supply of pilots, the Academy is assumed to lead to some students training as pilots who otherwise would have pursued different careers or training opportunities.
  - Based on the typical labour force outcomes of those who have a year 12 or above qualification and information on the share of pilots who work full time, the investment



scenario is estimated to result in a small net increase in overall labour supplied by this cohort relative to the base case scenario.

These changes to the economy have been modelled using Deloitte Access Economics Regional General Equilibrium Model (DAE-RGEM). DAE-RGEM is a large scale, dynamic, multi-region, multicommodity Computable General Equilibrium (CGE) model of the world economy with bottom-up modelling of Australian regions. Please see for more detail on the model.

Estimating the economy-wide impacts of changes, such as the five described above, requires comparing two alternative futures for the Australian economy: one where the Academy is not developed (referred to here as the 'base scenario' or 'business as usual'); and one where the Academy reaches its full potential (referred to here as the 'investment scenario'). The data used to estimate the effects comes from a range of data sources including FTA and the Census of Population and Housing administered by the Australian Bureau of Statistics. Data from the FTA has not been separately audited or verified.

The investment scenario is constructed utilising three specific economic variables (all related to labour) — aggregate labour supply; employment within the air transport sector; and wages within the air transport sector. The size of the direct impacts – which form the basis upon which the economy-wide (CGE) modelling is undertaken – are determined based on estimates of the number of additional pilots produced as a result of the Pilot Academy (not merely those who graduate from the Academy).

As there are no firm estimates of the proportion of Academy graduates who would not otherwise have become pilots, assumptions in relation to the number of graduates who attend the Pilot Academy, but who would have still undertaken equivalent training in its absence, have been made. In setting these assumptions it is noted that it is not clear if there is a lack of training capacity in the market currently, indeed there are a large number of flight schools in Australia. In other words, it may be possible for those training at the Academy to have trained elsewhere in the business as usual scenario. On the other hand, the link between the Academy and potential employment with the Qantas Group, as well as the residential scholarships offered by the Academy to female and indigenous students, may attract some students who would not have become a pilot otherwise. In particular, the 2018 *Expert Panel Report on Aviation Skills and Training* highlighted the importance of clear pathways in addressing aviation skills shortages.

Given the uncertainty concerning the number of pilots who would have undertaken equivalent training in the absence of the investment, results are presented as ranges to reflect the inherent uncertainty regarding the proportion of Pilot Academy graduates who would have undertaken equivalent training in the absence of this investment. These assumptions have significant implications for the results.

The sensitivities underpinning these results are:

- **Sensitivity 1:** 40% of graduates would have been pilots in the base case (i.e. in the absence of the Academy)
- **Sensitivity 2:** 80% of graduates would have been pilots in the base case (i.e. in the absence of the Academy)

Capital expenditure and operational expenditures are consistent across the two sensitivities.

Given the Academy was established in 2019-20, the model is partially retrospective and captures the period 2019-20 to 2042-43. Gross domestic product (GDP) impacts are provided in present value terms (at a 7 per cent discount rate) for the period between 2019-20 and 2032-33 and between 2019-20 and 2042-43.

## Results

The results of the modelling indicate that the additional investment and subsequent activity associated with the Academy is expected to have a positive impact on the Australian economy, increasing GDP and employment in full time equivalent (FTE) terms over the period between 2019-20 and 2042-43. Impacts are primarily driven by the increased presence of skilled pilots in the air transport sector, while flow-on impacts to a range of other sectors are generated through upstream and downstream sectoral linkages.

In present value terms, the Academy is estimated to increase Australian GDP by between \$255 million and \$603 million between 2019-20 and 2032-33 (discounted at a 7% discount rate). Over a longer modelling time horizon to 2042-43 the Academy is estimated to increase Australian GDP by between \$722 million and \$1.95 billion in present value terms. On average, this means that GDP is expected to be between \$74 and \$207 million higher annually between 2019-20 and 2042-43. By 2042-43, GDP is expected to grow to be \$196 and \$571 million higher than under the base case scenario.

There is however greater uncertainty around the impacts over this longer modelling horizon as it is possible that the nature of skill shortages may vary over this longer time period. In terms of employment, the Academy is estimated to generate between 313 and 831 additional FTE jobs across the broader economy between 2019-20 and 2042-43, on average per annum. By 2042-43 this is expected to reach between 649 and 1,830 additional FTEs employed in the broader economy, compared to the base case.

Table i : Results summary, 2019-20 - 2032-33

	Present value (2019-20 – 2032-33)	Average (2019-20 – 2032-33)	As at 2032-33
Gross Domestic Product (\$m)	255 – 603	29 – 70	76 – 214
Employment (FTE jobs)		164 - 392	368 – 989

Source: Deloitte Access Economics

Table ii : Results summary, 2019-20 - 2042-43

	Present value (2019-20 – 2042-43)	Average (2019-20 – 2042-43)	As at 2042-43
Gross Domestic Product (\$m)	722 – 1,950	74 – 207	196 – 571
Employment (FTE jobs)		313 – 831	649 – 1,830

Source: Deloitte Access Economics

With a shortage of pilots in Australia today and global forecasts showing this shortage growing into the future, investments in pilot training capacity are critical to ensuring that the considerable economic benefits that flow from a vibrant aviation sector are not constrained by its workforce capacity. The Academy is a significant economic operation in its own right, with current employment of 92 FTE and expected annual operating expenditure of \$15 million once it reaches capacity. However, this modelling demonstrates that its economic impact extends well beyond the Academy itself, with the injection of skilled labour that it generates increasing economic capacity and productivity in aviation, tourism and the myriad of connected sectors.

**Deloitte Access Economics**

# 1 Background

## 1.1 Introduction

Pilot training plays a critical role in the development of human capital in Australia's aviation workforce - a workforce that is central to connecting Australia to the world. The purpose of this report is to demonstrate the role of the Qantas Pilot Academy in:

- Supporting upstream supply chains (and consequently employment in upstream suppliers) who provide goods and services to the Pilot Academy.
- Increasing the supply of skilled pilots and thus enhancing the productivity of the Australian economy, increasing access to trained pilots both for Qantas and other firms in the aviation industry.

The Academy is a pilot training school established by the Qantas Group in partnership with FTA, an Australia aviation college in operation since 1982. The establishment of the Academy involved support from Qantas, the Queensland Government, FTA and Wagners who built the facility and own the student accommodation.

Given that multiple actors are involved (and it is not straightforward to attribute the activities of the Academy to any single actor), this report examines the economic impact of the Academy overall, not the contribution of the Qantas Group or any other entity to the Academy. It is also based on the Academy reaching its maximum stated capacity of 250 students per annum by the end of 2023-24 in line with current projections.

## 1.2 Analytical framework

This report estimates the economic impact of the Qantas Pilot Academy based on:

- The investment required to build the Academy and ongoing operating expenditure.<sup>1</sup>
- The increase in the supply and employment of pilots due to the Academy, including consideration of the future demand for pilots and modelling the alternative career pathways for trainees in the absence of the Academy.
- The wages of workers after training at the Academy (both those who find employment with Qantas and those employed elsewhere in the industry).

The study models these impacts using the DAE-RGEM, a large scale, dynamic, multi-region, multicommodity CGE model of the world economy with bottom-up modelling of Australian regions. DAE-RGEM encompasses all economic activity in an economy - including production, consumption, employment, taxes and trade - and the inter-linkages between them. The analysis captures the flow-on impacts to supply chains, as well as flow-on impacts driven by regional linkages. Appendix A provides further details of the DAE-RGEM.

## 1.3 Scope of the analysis

This analysis uses the DAE-RGEM to estimate the net economic impacts of the Academy on:

- economic output in terms of GDP as a result of the increased number of pilots trained and their contribution to reducing pilot skills shortages in the economy
- economic output by industry and
- employment by industry.

The use of economy-wide modelling allows for more definitive statements on the net impact of this investment on the Australian economy and employment and provides a more quantitatively robust assessment of how the Pilot Academy will impact the Australian economy.

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<sup>1</sup> This analysis has included capital expenditure associated with the development of the hangar and purchase of training simulators and aircraft. The expenditure on residential accommodation by Wagners has not been included in these figures.

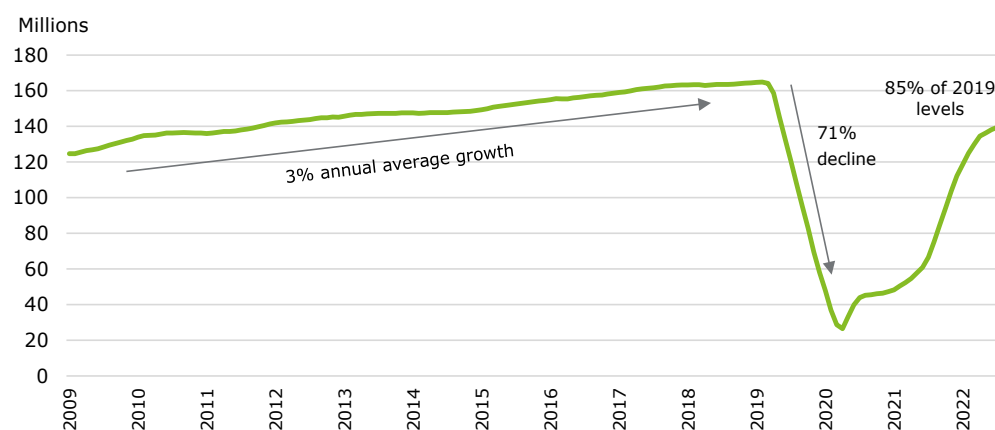
## 2 The context behind the Academy

This section provides an overview of the Academy and the nature of demand and supply in the market for pilots in Australia.

### 2.1 Pilot demand and supply

Pilot training plays a critical role in supplying pilots to help the Australian aviation sector grow. Passenger numbers through Australia's top 20 airports increased by an average of 3% annually between 2009 and 2019 (Chart 2.1). Similarly, the employment of air transport professionals within Australia increased by an annual average of 2% from 2009 to 2019.<sup>2</sup>

Chart 2.1: Airport passenger movements in Australia's top 20 airports, 2009 to June 2023 (12 month rolling sum)



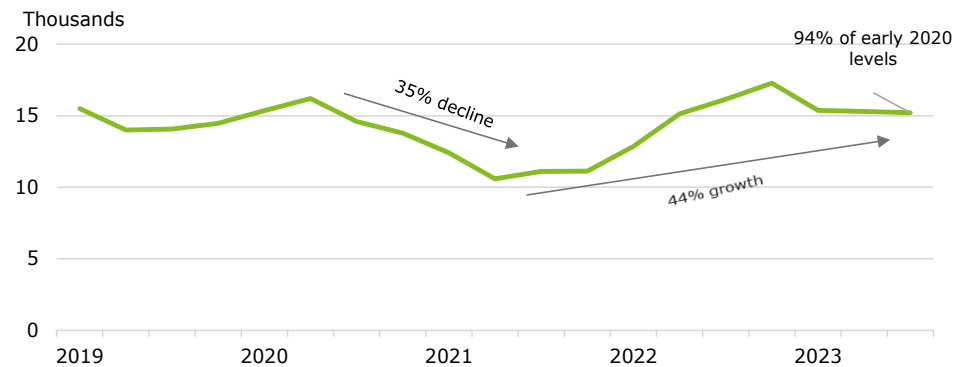
Source: Department of Infrastructure, Transport, Regional Development, Communications and the Arts (2023)

The demand for air travel declined significantly in 2020 with the onset of the COVID-19 pandemic and the implementation of government mandated travel bans and lockdowns within Australia and around the world. Passenger movements within Australia's top 20 airports decreased by 71% in 2019-20 (Chart 2.1). Consequently, the pandemic led to a significant reduction in the number of pilots working and operating aircraft in Australia. The number of air transport professionals began declining in the second quarter of 2020 and reduced by 35% over 12 months (Chart 2.2).

<sup>2</sup> Air transport professionals include aeroplane pilots, air traffic controllers, flying instructors, helicopter pilots and other air transport professionals.

Economic impact of the Qantas Group Pilot Academy

Chart 2.2: Employment of air transport professionals in Australia, February 2019 - August 2023 (12 month average)

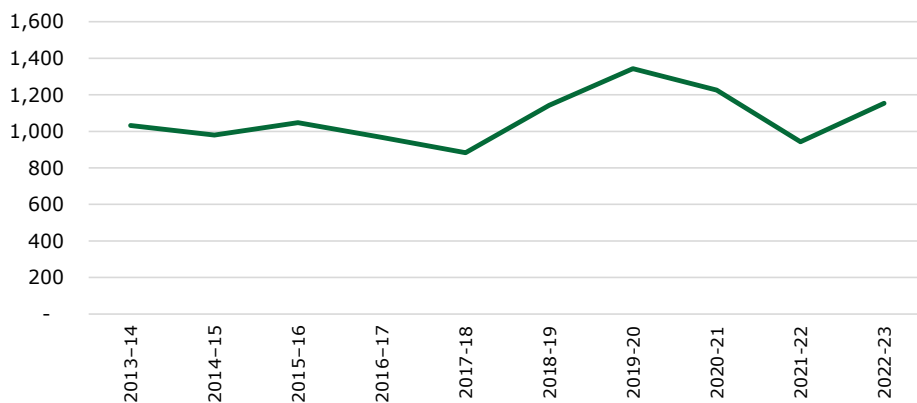


Source: ABS (2023)

The pandemic led to many pilots leaving the aviation sector either temporarily or permanently. An Australian Federation of Air Pilots (AFAP) survey of member pilots found that by November 2020, approximately 23% had been made redundant and 57% were on full or partial stand down.<sup>3</sup> Concurrently, many highly experienced pilots were encouraged to accept a voluntary early retirement package.<sup>4</sup>

The inflow of new pilots also decreased significantly during this period with the number of newly issued Civil Aviation Authority (CASA) commercial pilot licences falling by around 30% from 1,343 in 2019-20 to 943 in 2021-22 before recovering to around 1,154 in 2022-23 (Chart 2.3 Chart 2.3).<sup>5</sup> Despite a recovery in 2022-23, new commercial pilot licenses remained 14% below the peak in 2019-20.

Chart 2.3: Number of new commercial pilot licenses issued, 2013-14 - 2022-23



Source: Civil Aviation Authority Annual Reports 2017-18 to 2022-23

<sup>3</sup> Australian Federation of Air Pilots, *The Future of Australia's Aviation Sector*, 13 November 2020 <[https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future\\_aviation\\_25\\_AFAP\\_2020.pdf](https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/future/files/future_aviation_25_AFAP_2020.pdf)>

<sup>4</sup> Australian & International Pilots Association, *Submission To The Senate Rural And Regional Affairs And Transport References Committee Inquiry Into The Future Of Australia's Aviation Sector*, 18 December 2020 <<https://www.aipa.org.au/media/2075/22-05-27-aipa-submission-to-rrat-re-future-of-aviation-18-dec-20.pdf>>

<sup>5</sup> Civil Aviation Safety Authority, *Annual Report 2022-23*, <<https://www.casa.gov.au/sites/default/files/2023-10/casa-annual-report-2022-2023.pdf>>



Since the end of border closures and lockdowns, the sector has begun to recover with air traffic within Australia's top 20 airports reaching 85% of 2019 levels in June 2023 (Chart 2.1). As demand for air travel increased, employment followed. Employment of air transport professionals rose to around 94% of early 2020 levels, after a large decline through 2020 and 2021 (Chart 2.2).

The rapid fall and partial recovery in air traffic combined with the decline in the aviation workforce has led to shortages of pilots in Australia. In 2023, JSA listed aeroplane pilots as an occupation in shortage in Australia, including pilots on the Skills Priority List. According to JSA there is a shortage of aeroplane pilots in every state and territory except for Queensland where there is a shortage in regional areas.

Looking forward, global airline passengers are expected to grow strongly as rising population and incomes boost demand for air travel. Internationally, Boeing expects air traffic demand to return to pre-pandemic levels by 2024 and then continue on a growth trajectory.<sup>6</sup>

Boeing estimates that a total of 649,000 new pilots will be needed globally over the next 20 years (2023-2042) to support this growth in demand.<sup>7</sup> Separate analysis has shown that demand for pilots will outstrip supply globally between 2022 and 2024, with the shortage to worsen over the next decade. Overall, global aviation is expected to be short around 80,000 pilots by 2032 unless there is a downturn in future demand or efforts are made to increase the supply of pilots.<sup>8</sup>

Continued growth in pilot demand is expected to exacerbate the pilot shortage.<sup>9</sup> It has also been recognised, that there is currently insufficient training capacity for pilots to fill the pilot shortage.<sup>10</sup> This highlights the need for investment in flight training and early career-development programs for pilots.

The high global demand in pilots acts as an additional challenge for Australia in attracting and retaining pilots. The Academy aims to address the shortage of pilots by providing training. However, there are challenges in encouraging individuals to pursue a career as a pilot that may persist and hinder the supply of pilots including:

- Becoming a pilot is a niche and high skill career pathway with high course costs. For example, course tuition at the Academy is approximately a total of \$163,000. This is significantly higher than the student fees component of a typical Commonwealth supported undergraduate degree.
- Once they have graduated, junior pilots may need to relocate to regional areas and work in general aviation to gain more flying experience. This additional hurdle and need to relocate may further deter some individuals from pursuing a career as a pilot.

The concurrent shortage in flight instructors can make it difficult to staff flight training programs which limits the number of students that can be trained.

Australia has a large number of flight training schools but they have to date proved insufficient to meeting the demand for pilots in Australia in particular given the strength of career opportunities overseas and a shortages of pilots in the Asia-Pacific region. Issues concerning addressing the future supply of pilots were noted in the recent Parliamentary Inquiry on *The future of Australia's aviation sector, in the context of Covid-19 and conditions post pandemic* which highlighted the findings of a 2018 *Expert Panel Report on Aviation Skills and Training* review which emphasised the need to attract more women into aviation and the importance of building career pathways

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<sup>6</sup> Boeing, *Pilot and Technician Outlook 2023-2042*, <<https://www.boeing.com/commercial/market/pilot-technician-outlook/#/interactive-forecast>>

<sup>7</sup> Ibid. This figure represents the total demand and not a shortage in demand relative to supply.

<sup>8</sup> Oliver Wyman, *The Airline Pilot Shortage Will Get Worse*, <<https://www.oliverwyman.com/our-expertise/insights/2022/jul/airline-pilot-shortage-will-get-worse.html>>

<sup>9</sup> LEK, *Scenario Analysis of the Future of Australian Aviation*, September 2023

<<https://www.infrastructure.gov.au/sites/default/files/documents/aviation-white-paper-scenario-analysis-september-2023.pdf>>

<sup>10</sup> Ibid.

linked to employment opportunities.<sup>11</sup> The Academy helps address these workforce challenges given its focus on attracting women and supporting a career pathway beyond training.

## **2.2 The Qantas Group Pilot Academy**

The Qantas Group Pilot Academy was established by the Qantas Group in partnership with FTA, an Australian aviation college in operation since 1982. The Academy was first established in 2020 at Wellcamp Airport in Toowoomba, Queensland. It has now been successfully operating for almost four years with a total of 275 students having graduated from the Academy.

### **2.2.1 Purpose of the academy**

The Academy was created with the purpose of providing high quality pilot training to help meet the increasing need for skilled pilots. The Qantas Group offers employment to a large number of the Academy's graduate cohort every year, providing a direct benefit to the Qantas Group in supporting their pipeline of pilots. The Academy also benefits the wider aviation industry by providing greater opportunities for individuals to receive pilot training and therefore introducing more qualified pilots into the broader employment pool with many graduates working as charter pilots or flight instructors upon graduating.

### **2.2.2 Training**

At the Academy, aspiring pilots complete a 55-week course delivered by FTA. The training incorporates the appropriate theory knowledge and flying skills needed to receive the following CASA licenses and ratings:

- Commercial Pilots Licence (CPL),
- Airline Transport Pilots Licence (ATPL) theory,
- Multi-Engine Command Instrument Rating (ME IR) and
- Multi-Crew Cooperation (MCC).

This provides graduates with the appropriate skills, knowledge and qualifications to begin their career as a commercial pilot, typically as a First Officer. Some students may become training instructors before entering the commercial sector.

### **2.2.3 Students**

The Academy is designed to be able to accept a maximum of 250 students annually, with this scale expected to be reached in 2023-24. Students are typically high school or university graduates with strong academic performance, particularly in maths and science. Students usually join the Academy with little to no flying experience.

To become a student at the Academy individuals must go through an extensive application process. After a pre-screening stage, selected applicants must complete approximately 10 hours of computer-based training and an online assessment on abbreviated aviation theory, an aviation specific psychometric and skills assessment, a core skills test and an in-person interview.

### **2.2.4 Costs**

Students can access a VET student loan to cover the course tuition at the Academy (around \$163,000). Onsite accommodation while at the Academy is an additional cost (approximately \$400 per week). The Qantas Group offers equity-based scholarships to women and First Nation Australians that cover the cost of housing and meals while at the Academy.

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<sup>11</sup> Rural and Regional Affairs and Transport References Committee, *The future of Australia's aviation sector, in the context of COVID-19 and conditions post pandemic* (2022)  
<[https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024656/toc\\_pdf/ThefutureofAustralia'saviationsector,inthecontextofCOVID-19andconditionspostpandemic.pdf;fileType=application%2Fpdf](https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024656/toc_pdf/ThefutureofAustralia'saviationsector,inthecontextofCOVID-19andconditionspostpandemic.pdf;fileType=application%2Fpdf)>

## 3 Analytical approach

This chapter describes the analytical approach used to determine the ways in which the development of the Pilot Academy is likely to affect the Australian economy. The establishment and ongoing operation of the Academy will generate several direct impacts to the economy, which are then used as inputs to an economy wide model to estimate the broader impacts for the Australian economy (the results of which are set out in Chapter 4).

To estimate the economy wide impact of the Pilot Academy, the following direct impacts to the economy were estimated:

- Capital expenditure: The costs associated with building and establishing the facilities of the Academy.
- Operational expenditure: The ongoing costs required to run and manage the Academy.
- The supply of pilots: The impact of the Academy on the supply of pilots – both to Qantas and other airlines and firms who require pilots. This includes adjustments to wages of new pilots based on their level of experience.
- Overall labour supply: Separate to the supply of pilots, the Academy is assumed to lead to some students training as pilots who otherwise would have pursued different careers or training opportunities.
  - Based on the typical labour force outcomes of those who have a year 12 or above qualification and information on the share of pilots who work full time, the investment scenario is estimated to result in a small net increase in overall labour supplied by this cohort relative to the base case scenario.

To incorporate these five shocks into the model, a base case and an investment scenario were developed:

- The **base case scenario** reflects a 'business-as-usual' case where there was no investment in establishing the Academy.
- The **investment scenario** captures the case where the Academy is built and operates over the modelling time horizon.

Given the academy was established in 2020, the model is partially retrospective and captures the period 2019-20 to 2042-43.

The five direct impacts or "shocks" resulting from the investment scenario underpin the modelling within this report and are discussed in greater detail below.

### 3.1 Capital and operational expenditure

Data on the capital and operating expenditure associated with the pilot training facility was supplied to Deloitte Access Economics by FTA. Deloitte Access Economics has not independently verified this data. All capital and operating expenditure values provided were inflated to 2023 dollars.

#### 3.1.1 Capital expenditure

Capital expenditure refers to the funds used to acquire, update or maintain a long-term asset. In the context of the Academy, capital expenditure was required for the construction of the training facility including any infrastructure and training equipment needed, the purchase of planes and flight simulators. The capital expenditure has been included as an input to the CGE model but is not reported here for reasons of commercial sensitivity<sup>12</sup>

#### 3.1.2 Operational expenditure

Operational expenditure are the costs associated with the ongoing running of the training facility.

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<sup>12</sup> The cost of building the student accommodation was not included in the modelling.

The operating expenditure for the Pilot Academy inclusive of wage and sub-contractor expenditure is estimated by FTA to be \$16 million annually when the Academy is at capacity which is expected to occur in 2023-24.

The estimated operating expenditure for previous years was calculated to be proportionate to the number of students at the Academy each year. The average annual operating expenditure figures adjusted to 2023 dollars are shown in Table 3.1.

Table 3.1: Summary of operational expenditure, 2019-20 - 2042-43

Operational expenditure	Annual average (\$m 2023)
<b>Total</b>	14.7
Wage expenditure	6.4
Sub-contractor expenditure	8.3

Source: FTA

### 3.2 Pilot employment and labour supply

The training offered by the Academy is likely to have two main impacts on the labour market. It is principally expected to increase the net supply of pilots but in so doing it is likely to increase the probability that those who are trained enter the labour force find employment relative to the situation where they had not undertaken pilot training (and may or may not have undertaken other forms of tertiary education).

Changes to the supply of pilots and overall labour supply are calculated by comparing the base case scenario to an investment scenario. All person counts were adjusted to be in full time equivalent (FTE) units.

#### Base case scenario

In the base case, it is expected that a proportion of those undertaking pilot training at the Academy would complete their flight training elsewhere if the Academy did not exist and would still find employment as pilots, while others would be employed in other industries or undertake different forms of tertiary education. For those who would not have become pilots in the base case, their estimated employment outcomes are based on the distribution of labour force status of those with a qualification of year 12 or above (the minimum requirement for entry to the pilot academy). Specifically, labour force status data from the 2021 Census for those of a similar age and qualification was used to determine whether they are likely to be employed (and if so in a full time or part time capacity), unemployed or not in the labour force. It is assumed that students are 21 in the year attending the Academy and have at least completed high school or an equivalent qualification.

For those who become pilots in the base case (but also in the investment case), an attrition rate of 4.2% per year is applied. This is based on modelling of labour market transitions by occupation group undertaken by Deloitte Access Economics. This figure is the annual proportion of those employed as air transport professionals who leave the industry for reasons other than retirement. These individuals are assumed to work in other industries upon leaving the sector.

A key area of uncertainty in the analysis is how many Academy students would have become a pilot in the base case scenario e.g. by attending other flight training academies of which there are many. Many of those who attend the Academy are likely to be passionate about becoming pilots and may have alternatively attended different training facilities. For example, a proportion of the current student cohort transfer over from a Bachelor of Aviation to complete their pilot training which suggests they are likely to have a relatively strong interest in the aviation sector. On the other hand, the demand for pilots from the Qantas Group and the greater scope for a career pathway at Qantas may act as a reason that prompts some students to study at the Academy where they might not otherwise have considered a career as a pilot.

Two sensitivities were modelled to account for this uncertainty, in which the proportion of Academy graduate pilots who are assumed to have become pilots in the base case scenario is varied from 40 per cent to 80 per cent (Table 3.2). These sensitivities do not impact the capital and operational expenditure.

Table 3.2: Proportion of Academy students assumed to become pilots in the base case scenario, under each sensitivity

	Proportion (%)
Sensitivity 1	40
Sensitivity 2	80

Source: Deloitte Access Economics

### Investment scenario

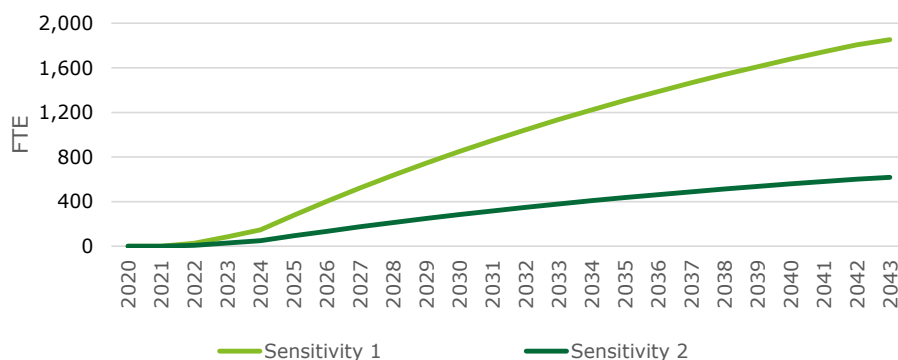
In the investment scenario, and assuming that all successfully graduated students would become pilots in the year after they complete training, the Pilot Academy increases the number of trained pilots in Australia, training an expected 250 pilots a year at maturity.

The expected attrition rate of air transport professionals of 4.2% per year is applied to the pilot employment figures, with a further adjustment made to account for the proportion of pilots who are employed part time, based on Census data.

### 3.2.2 Pilot employment

Due to the greater opportunity to become trained as a pilot from the career pathway offered by the Academy and the Qantas Pilot Scholarships, there are more pilots in the investment scenario compared to the base scenario (Chart 3.1/Chart 3.1).

Chart 3.1: Stock of additional pilots over time, 2019-20 - 2042-43



Source: Deloitte Access Economics

By 2042-43, the Academy is expected to have a total of 5,275 graduates. Under the sensitivities tested, the total additional FTE pilots in 2042-43 ranges from 618 to 1,853 (Table 3.3) depending on the extent to which graduates would have trained as pilots in the base case. This represents a material increase in the number of pilots in Australia over time. There are currently estimated to be around 8,000 airline pilots in Australia<sup>13</sup> with 5,713 holding a commercial pilot licence in 2022-23.<sup>14</sup>

<sup>13</sup> JSA, *Labour Market Insights Aeroplane Pilots*, <<https://labourmarketinsights.gov.au/occupation-profile/aeroplane-pilots?occupationCode=231111>>

<sup>14</sup> CASA, *Annual Report 2022-23*, <<https://www.casa.gov.au/sites/default/files/2023-10/casa-annual-report-2022-2023.pdf>>



Table 3.3: Total additional pilots directly attributable to the pilot academy, 2042-43

	<b>Total additional pilots in 2042-43 (FTE)</b>
Sensitivity 1	1,853
Sensitivity 2	618

Source: Deloitte Access Economics

The wage of a new pilot is adjusted in the modelling to account for their expected level of experience. In the base case scenario, full-time wages within the air transport industry are taken from the 2021 Census.

In the investment scenario, the average wages for the industry are adjusted to account for the additional pilots from the Academy that will be employed either at Qantas or elsewhere as junior pilots.

Qantas provided the historical and projected figures of the proportion of Academy students that were or will be hired by Qantas after graduating (Table 3.4 **Error! Reference source not found.**). In 2023-24 and onwards, it is expected that around 40% of graduates will be employed by Qantas. Wage projections have been based on information on starting salaries from the Qantas Group. It is then assumed that income will remain the same for two years and then increase at the same trajectory as all Australian aeroplane pilots, using 2021 Census data on earnings by age for pilots.

Table 3.4: Percentage of graduating cohort expected to be employed by the Qantas Group, 2020-21 to 2023-24

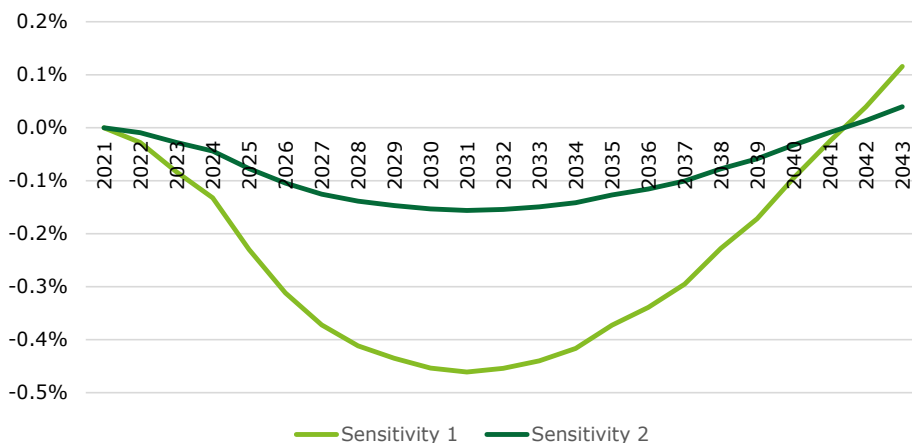
	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24 onwards</b>
Pilot Academy graduates employed by Qantas	10%	21%	40%	40%

Source: Qantas Group

For those pilots employed elsewhere, the average wage for full-time pilots from the 2021 Census is used directly as the assumed wage, again using age as a proxy for years of experience. The additional pilots employed in the investment case alongside their expected average wage is used to calculate the total average wage within the air transport industry in the investment case.

The percentage difference between the average wages in the air transport industry in the base and investment case is used to account for the experience of new pilots (Chart 3.2). As the number of additional pilots is dependent on the proportion of students expected to be pilots in the base case, the change in experience also varies across the two sensitivities. The impact on industry experience is negative until 2041 as the cohort of graduating pilots is relatively young compared to the average age within the industry and therefore earn less on average but this gap closes as the graduates gain more experience in the industry.

Chart 3.2: Changes in wages in the air transport sector over time, 2019-20 - 2042-43



Source: Deloitte Access Economics

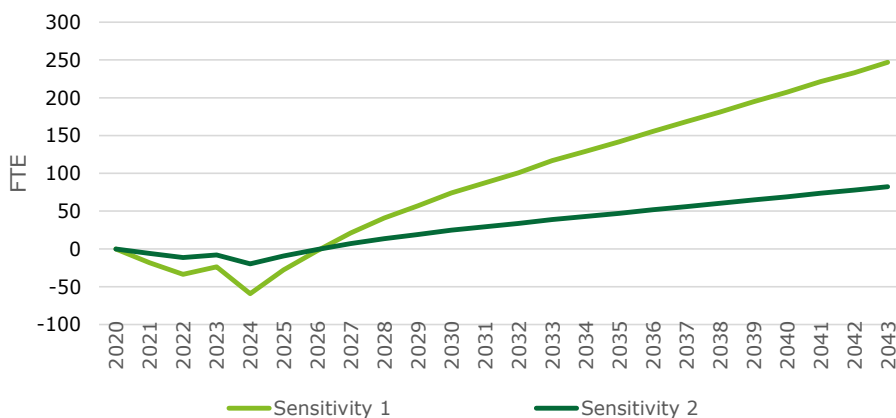
### 3.2.3 Overall labour supply

The shock in overall labour supply is the difference in the labour supply between the base case and investment scenarios. This difference in labour supply arises because for the cohort who would not have become pilots in the base case, attending the pilot academy slightly increases their likelihood of: entering the labour force, being employed and the probability of working full time (subject to sufficient labour demand which is accounted for in the economy-wide modelling). The cumulative difference in labour supply is displayed in Chart 3.3.

In the first few years, the overall labour supply is lower in the investment case compared to the base case as the Academy students are studying full time and are therefore taken out of the labour force until they graduate in the following year. As students graduate and begin to fill the pilot shortage, the labour force is expanded.

The Pilot Academy results in only a small net increase in the overall Australian labour supply (not just pilots). Most of those training as pilots would have been employed in other industries in the base case so this effect is relatively small year on year. Over the modelling period, this equates to an average increase in labour supply stock by 31-92 FTEs across the two sensitivities.

Chart 3.3: Stock of additional labour supply over time, 2019-20 - 2042-43



Source: Deloitte Access Economics

## 4 Economic impact of the Pilot Academy

The aim of this analysis is to estimate the economy-wide impacts that establishing the Pilot Academy has had on the broader Australian Economy. To undertake this analysis, several economic impacts of the academy have been considered to estimate the changes to the economy which are driven by the Pilot Academy (as outlined in Chapter 3). These changes to the economy, or shocks, have then been applied to estimate the broader economic impacts in a Computable General Equilibrium (CGE) framework, using Deloitte's in-house CGE model.<sup>15</sup>

### 4.1 Computable general equilibrium modelling

A change (or shock) in any part of the economy has impacts that reverberate throughout the rest of the economy. For example, a shock to employment in the air transport sector would have direct implications for employment and output for the industry but would also generate flow-on impacts for sectors which compete for labour, as well as those which have supply-chain linkages.

The shocks described in this report have been informed by the analysis within Chapter 3. The shocks include:

- Capital expenditure
- Operational expenditure within education sector
- Overall labour supply
- Employment within the air transport sector<sup>16</sup>

This study seeks to model these impacts using the DAE-RGEM. DAE-RGEM is a large scale, dynamic, multi-region, multi-commodity CGE model of the world economy with bottom-up modelling of Australian regions. DAE-RGEM encompasses all economic activity in an economy including production, consumption, employment, taxes, and trade and the inter-linkages between them. DAE-RGEM provides a framework through which these shocks to the economy can be applied, and the flow on impacts demonstrated through the resulting changes in economic activity. For this project, the model has been customised for the Australian economy adopting its unique economic characteristics.

As the aim of this analysis is to understand the impacts that the Pilot Academy has had on the economy, both the economic shocks generated by the Pilot Academy and the resulting economy-wide impacts are defined as deviations from a base case economy. This base case describes a world where the Academy was not established.

The database underlying the model has been calibrated to reflect the current economic climate, and the future economic trajectory for Australia between 2019-20 and 2042-43, in terms of economic growth and employment.

Further detail as to the modelling framework used is provided in Appendix A.

### 4.2 Scenarios

A set of inputs that stylise alternative scenarios has been developed so that the economic impact of the Pilot Academy can be estimated.

#### Base case scenario

To estimate the economic impact of the Pilot Academy, a 'business-as-usual' or base case scenario has been developed, which reflects the future economic trajectory for Australia between 2019-20 and 2042-43, under the case where the Pilot Academy did not proceed. The period chosen reflects

<sup>15</sup> DAE-RGEM: Deloitte Access Economics – Regional Equilibrium Model

<sup>16</sup> This includes an adjustment to the expected wages of new pilots based on their expected level of experience.

the period when the Academy was built and began operating, as well as a 20-year horizon from the time of this analysis.

### **Investment scenario**

The investment scenario involves a case where the Pilot Academy proceeds in construction and operations. The scenario captures the impacts of the economic shocks listed in Section 4.1 and described in Chapter 3.

There are three shocks which have been captured in this analysis which relate to labour— Australian labour supply, employment within the air transport sector and expected wages within the air transport sector. These shocks are underpinned by estimates of the number of additional pilots produced as a result of the Pilot Academy. As such, assumptions around the share of students who attend the Pilot Academy but would have still undertaken equivalent training in its absence have large implications for the size of estimates.

As such, results have been presented as ranges, to reflect the inherent uncertainty around the proportion of Pilot Academy graduates who would have undertaken equivalent training in the absence of this investment. These ranges demonstrate the results of sensitivity testing around the percentage of Pilot Academy graduates who would have become pilots in the base case. The sensitivities underpinning these results are:

- Sensitivity 1: 40% of Academy graduates would have been pilots in the base case
- Sensitivity 2: 80% of Academy graduates would have been pilots in the base case

### **Capital expenditure**

Capital and operational expenditure figures have been estimated and provided for this analysis, establishing the deviation in these economic variables is taken to be the amount that was spent in establishing the Pilot Academy (assuming that nothing would have occurred under the base case).

Capital expenditure is represented within the CGE framework as a (positive) shock to capital investment occurring within the Australian economy. Based on the information provided, this expenditure occurs across three years – 2019-20, 2020-21 and 2023-24.

### **Operational expenditure**

Operational expenditure related to the establishment and operation of the Pilot Academy is modelled within the CGE framework as generating a (positive) shock to the output of the Australian education sector. This captures the increased expenditure occurring as a result of operating the Pilot Academy, which ultimately delivers training and education to attendees.

### **Labour supply**

As described in Chapter 3, the Pilot Academy is modelled to drive changes to Australian labour supply in terms of FTE employment. This is driven by an estimated transition from part-time work in casualised sectors towards full-time employment within the air transport sector as a result of the Pilot Academy.

### **Pilot employment**

A main outcome of the pilot academy is an increase in the number of pilots working in the air transport sector following graduation. This has been modelled within DAE-RGEM as an increase in employment within the air transport sector, relative to the base case.

The establishment of the Pilot Academy, and resulting increase in the number of junior pilots entering the workforce, is modelled in this analysis as driving changes to average wages within the industry.

In the initial years of the Pilot Academy, additional employment of pilots is driven by increased numbers of pilot graduates. This ultimately results in a reduction in average industry experience, representative of the increased number of recently graduated pilots. The effect of this reduces over time, as earlier cohorts become more experienced and affect the overall experience of the additional pilot stock resulting from the Pilot Academy.

### 4.3 Results

The results of the modelling indicate that the additional investment and subsequent activity associated with the Qantas Group Pilot Academy is expected to have a positive impact on the Australian economy, increasing GDP and employment (in FTE terms) over the period between 2019-20 and 2042-43. Over the next decade to 2032-33 the Pilot Academy could be expected to increase Australian GDP by between \$255 million and \$603 million in present value terms (discounted at a 7% discount rate).

Between 2019-20 and 2042-43 the Academy is estimated to increase Australian GDP by between \$722 million and \$1.95 billion in present value terms. On average, this means that Australian GDP is expected to be between \$74 and \$207 million higher between 2019-20 and 2042-43. By 2042-43, GDP is expected to grow to be \$196 and \$571 million higher than is forecast under the base case scenario.

In terms of employment, the Pilot Academy is expected to generate between 313 and 831 additional FTE jobs across the broader economy between 2019-20 and 2042-43, on average per annum. By 2042-43 there are expected to be between 649 and 1,830 additional FTEs employed in the broader economy, compared to the base case.

There is however greater uncertainty around the impacts over this longer modelling horizon as it is possible that the nature of skill shortages may vary over this longer time period.

Table 4.1: Summary of results, 2019-20 - 2032-33

	Present value (2019-20 – 2032-33)	Average (2019-20 – 2032-33)	As at 2032-33
Gross Domestic Product (\$m)	255 – 603	29 – 70	76 – 214
Employment (FTE jobs)		164 – 392	368 – 989

Source: Deloitte Access Economics

Table 4.2: Summary of results, 2019-20 - 2042-43

	Present value (2019-20 – 2042-43)	Average (2019-20 – 2042-43)	As at 2042-43
Gross Domestic Product (\$m)	722 – 1,950	74 – 207	196 – 571
Employment (FTE jobs)		313 – 831	649 – 1,830

Source: Deloitte Access Economics

#### 4.3.2 Gross Domestic Product

In 2019-20 and 2020-21, an injection of capital expenditure from the construction of the training facility generates an uplift in construction, and ancillary sectors such as heavy manufacturing and services. During the early years of academy operations, a temporary reduction in the net supply of labour due to individuals exiting the labour force to undertake training at the Pilot Academy means that impacts induced by the additional construction activity are partially offset.

After 2025-26, the stock of pilots graduating from the Academy begins to generate a net additional increase in the supply of labour in the economy. This coincides with increasing cohorts of graduates from the Academy are expected to find employment within the air transport sector. The availability of additional pilots in the economy helps to satisfy the demand for skilled pilots, enabling an expansion of output in the air transport sector.

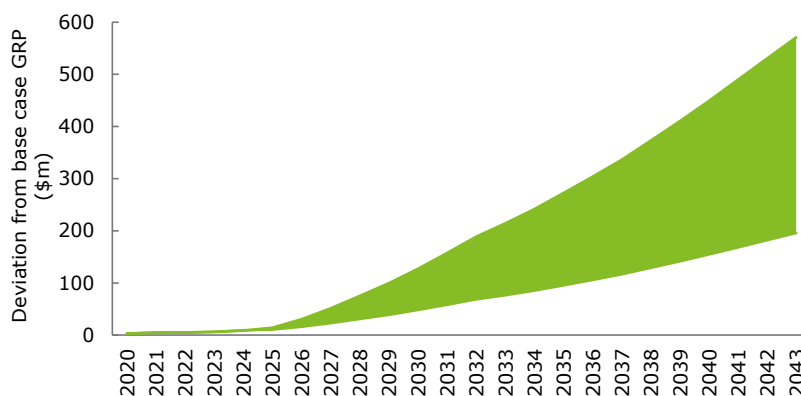
Additional activity unlocked in air transport through access to more skilled labour drives positive impacts to Australian GDP by allowing for additional passenger flights, airfreight services and increased capital utilisation and induced investment, positively impacting a range of upstream and downstream sectors across the broader economy. Throughout this period the operations of the



training facility also support positive impacts to Gross Value Added (GVA) in the education sector and broader economy.

By 2032-33 GDP is expected to be between \$76 and \$214 million higher than it would have been in the base case scenario. Over the following decade this grows to an impact of between \$196 and \$571 million by 2042-43. These impacts are also driven through the increased experience of pilots, which is expected to manifest primarily toward the end of the modelling period.

Chart 4.1: Deviation in gross domestic product (\$m), 2019-20 - 2042-43

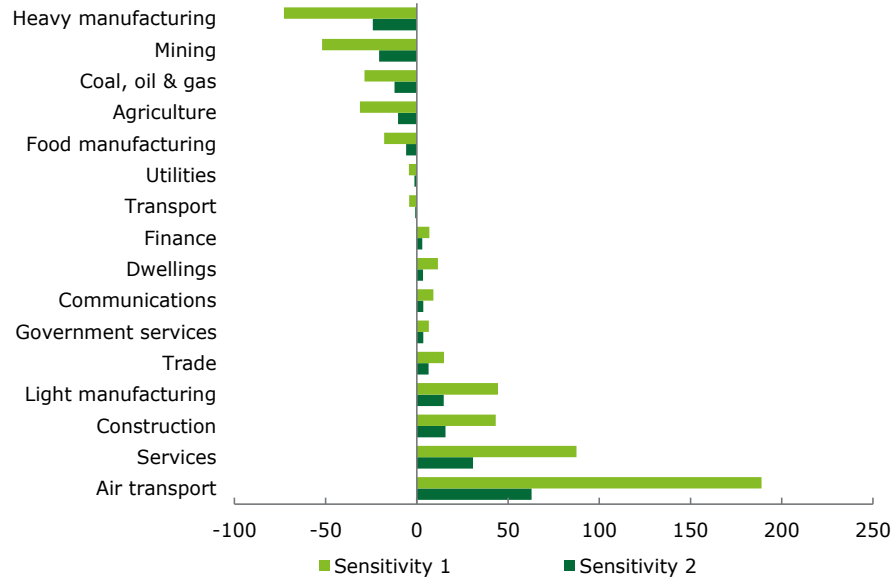


Source: Deloitte Access Economics

The Pilot Academy is expected to have varying impacts on different sectors across the economy. The air transport sector is expected to be a primary beneficiary of the additional availability of skilled labour, expanding its services in proportion with the additional employment of pilots. As this occurs, the air transport industry is expected to generate positive impacts in a range of sectors that supply services required to support its expansion. This includes professional and scientific services, finance and government services.

The construction sector also benefits from an uplift in investment activity associated with increased air transport operations, while trade (retail and wholesale) benefit from increased freight and induced consumption activity. Some sectors, such as manufacturing, mining and agriculture are expected to grow slower relative to the baseline. This is as the expansion of air transport under the scenario, diverts, or 'crowds-out' a degree of investment and labour towards the sectors more connected to the air transport sector.

Chart 4.2: Average deviation in value added (\$m), 2019-20 - 2042-43

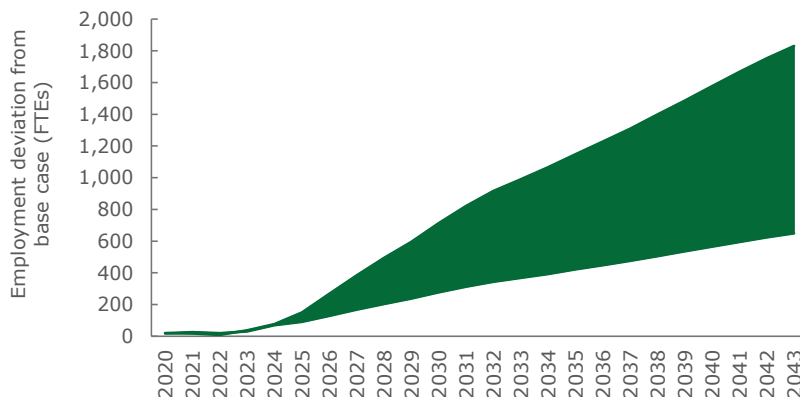


Source: Deloitte Access Economics

### 4.3.3 Employment

The Pilot Academy is also expected to have a positive impact on employment in the Australian economy. It's expected that by 2032-33 there could be between 368 and 989 additional FTE employed within Australia. As with GDP, increased activity between 2019-20 and 2022-23 is primarily driven by additional economic activity driven by the capital expenditure and the commencement of additional operational expenditure.

Chart 4.3: Deviation in Employment (FTEs), 2019-20 - 2042-43



Source: Deloitte Access Economics

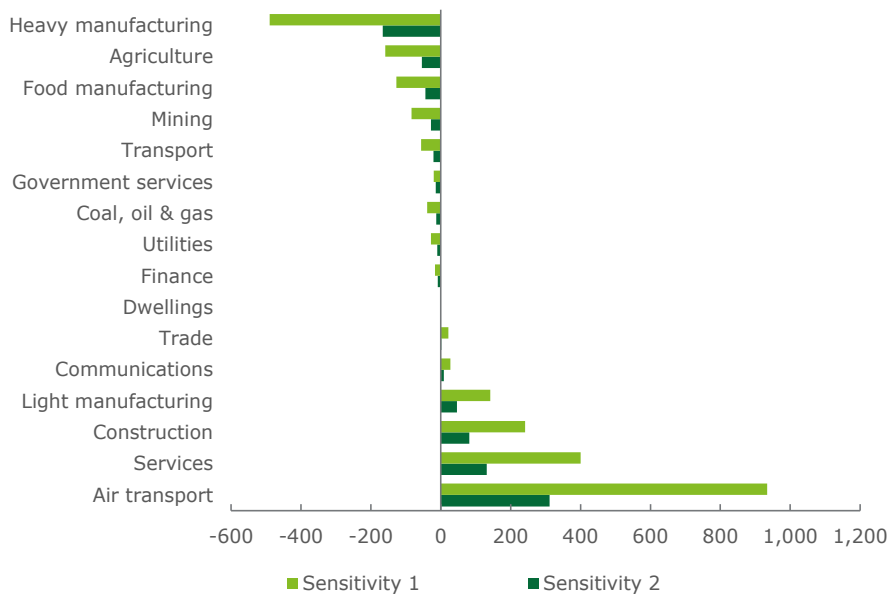
Post 2023-24, the broader effects of the increased number of pilot graduates is felt across the economy. The increase in pilot employment in the air transport sector, as well as the recovery from an initial labour supply dip occurring from additional participation in education, begins to increase general employment more rapidly across the economy.

While employment impacts are primarily driven by the increase in academy graduates gaining employment, other sectors are also expected to benefit. In particular, services sectors (including

scientific, professional and other services) are expected to expand as a result of upstream sectoral linkages to air transport.

Other sectors which expand their workforce as a result of the Pilot Academy are the construction, light manufacturing, communications and trade sectors. These sectors are closely related to the air transport sector, and benefit directly from the increased capacity of freight and passenger services resulting from the air transport sector expansion.

Chart 4.4: Average deviation in employment (FTEs), 2019-20 - 2042-43



Source: Deloitte Access Economics

While the impact to employment is largely positive, a number of sectors within the economy experience slower employment growth as a result of the Pilot Academy, driven by crowding-out from the air-transport sector. As a result of the Pilot Academy, competition for labour in non-air transport sectors increases. As such, these other sectors faced increased competition for labour. This is primarily seen in capital intensive industries, such as heavy manufacturing and agriculture, as well as those which do not expand as a result of policy such as Government services.

# Appendix A: Deloitte Access Economics Regional General Equilibrium Model

## A.1. Introduction

A change in any one part of the economy will have impacts that reverberate throughout the entire economy. For example, the building of a new mine will involve increased economic activity in the mining industry, but it will also have a range of impacts in other parts of the economy:

- There will be effects up and down the supply chain. As a sector expands it will draw in an increased volume of intermediate inputs from related sectors resulting in an increased demand for their output and an expansion in production. If the expansion in the sector is demand driven (especially foreign demand) then the price of its output will increase putting pressure on those who use it as an intermediate input meaning their production may contract.
- The expansion in both the sector directly affected and those which supply it will result in an increased competition in factor markets (like those for labour and capital). Factors will move between industries in response to changes in demand and the price (wage) they can earn. This will result in the 'crowding out' of some activity in competing sectors as they lose workers and capital.
- At an aggregate level (across the whole economy) there may be an increase in demand for labour such that it induces increased labour supply (the encouraged worker effect) or an inflow of capital as relative rates of return shift. This induced factor supply enables an expansion of the economy, meaning more income and consumption which can stimulate sectors oriented toward this.
- If the expanding sector is export-oriented, then the expansion of its production which resulted in increased export income and could be associated with a positive shift in the terms of trade. However, this positive effect – in conjunction with an inflow of investment – would increase demand for local currency, causing real exchange rate appreciation with consequences for other exporting industries.

Computable General Equilibrium (CGE) models are the best-practice method available for examining the impacts of a change in one part of the economy on the broader economy as they can capture the multitude of impacts highlighted above. Not only can CGE models account for these effects, but the results from the models can also be used to build a narrative which stakeholders respect – as it is based on accepted economic theory and the latest data – and which is easily understood.

## A.2. Deloitte Access Economics— Regional General Equilibrium Model

The Deloitte Access Economics Regional General Equilibrium Model (DAE-RGEM) belongs to the class of models known as recursive dynamic regional CGE models. Other examples of models in this class are the Global Trade and Analysis Project Dynamic (GDyn) model, the Victoria University Regional Model (VURM) and The Enormous Regional Model (TERM).

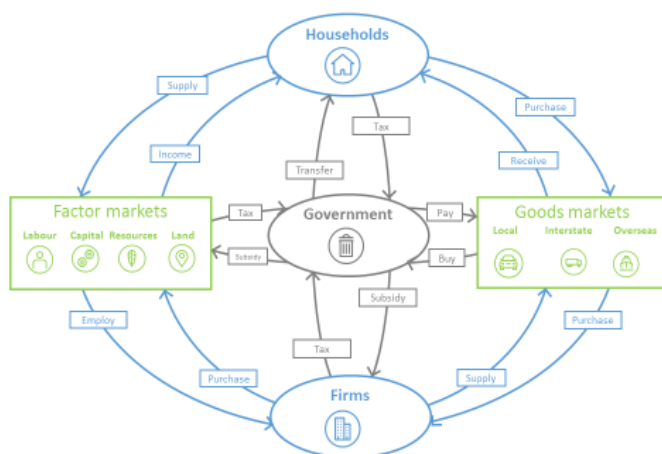
Like GDyn, DAE-RGEM is a global model, able to simulate the impact of changes in any of the 140 countries in the GTAP database (including Australia) onto each of the 140 countries. The ability to incorporate the flow-on impacts of changes that may occur in rest of the world is a key feature of global models that is not available in single-country models, such as the VURM Model or TERM.

However, like those models, DAE-RGEM is a bottom-up model of regional Australia. So DAE-RGEM is able to project the impacts on different States and sub-State regions of Australia of changes occurring in any region of Australia or in rest of the world within a single, robust, integrated economic framework.

This model projects changes in macroeconomic aggregates such as GDP, employment, export volumes, investment and private consumption. At the sectoral level, detailed results such as output, exports, imports by commodity and employment by industry are also produced.

Figure A.1 provides a stylised representation of DAE-RGEM, specifically a system of interconnected markets with appropriate specifications of demand, supply and the market clearing conditions determine the equilibrium prices and quantity produced, consumed and traded.

Figure A.1: A stylised representation of DAE-RGEM



Source: Deloitte Access Economics (2023)

The model rests on the following key assumptions:

- All markets are competitive, and all agents are price takers
- All markets clear, regardless of the size of the shock, within the year
- It takes one year to build the capital stock from investment and investors take future prices to be the same as present ones as they cannot see the future perfectly
- Supply of land and skills are exogenous. In the business-as-usual case, supply of natural resource adjusts to keep its price unchanged; productivity of land adjusts to keep the land rental constant at the base year level
- All factors move sluggishly across sectors. Land moves within agricultural sectors; natural resource is specific to the resource using sector. Labour and capital move imperfectly across sectors in response to the differences in factor returns. Inter-sectoral factor movement is controlled by overall return maximizing behaviour subject to a CET function. By raising the size of the elasticity of transformation to a large number we can mimic the perfect mobility of a factor across sectors and by setting the number close to zero we can make the factor sector specific. This formulation allows the model to acknowledge the sector specificity of part of the capital stock used by each sector and also the sector specific skills acquired by labour while remaining in the industry for a long time. Any movement of such labour to another sector will mean a reduction in the efficiency of labour as a part of the skills embodied will not be used in the new industry of employment.

DAE-RGEM is based on a substantial body of accepted microeconomic theory. Key features of the model are:

- The model contains a 'regional household' that receives all income from factor ownerships (labour, capital, land and natural resources), tax revenues and net income from foreign asset holdings. In other words, the regional household receives the gross national income (GNI) as its income.

- The regional household allocates its income across private consumption, government consumption and savings so as to maximise a Cobb-Douglas utility function. This optimisation process determines national savings, private and government consumption expenditure levels.
- Given the budget levels, household demand for a source-generic composite goods are determined by minimising a CDE (Constant Differences of Elasticities) expenditure function. For most regions, households can source consumption goods only from domestic and foreign sources. In the Australian regions, however, households can also source goods from interstate. In all cases, the choice of sources of each commodity is determined by minimising the cost using a CRESH (Constant Ratios of Elasticities Substitution, Homothetic) utility function defined over the sources of the commodity (using the Armington assumption).
- Government demand for source-generic composite goods, and goods from different sources (domestic, imported and interstate), is determined by maximising utility via Cobb-Douglas utility functions in two stages.
- All savings generated in each region are used to purchase bonds from the global market whose price movements reflect movements in the price of creating capital across all regions.
- Financial investments across the world follow higher rates of return with some allowance for country specific risk differences, captured by the differences in rates of return in the base year data. A conceptual global financial market (or a global bank) facilitates the sale of the bond and finance investments in all countries/regions. The global saving-investment market is cleared by a flexible interest rate.
- Once aggregate investment level is determined in each region, the demand for the capital good is met by a dedicated regional capital goods sector that constructs capital goods by combining intermediate inputs in fixed proportions, and minimises costs by choosing between domestic, imported and interstate sources for these intermediate inputs subject to a CRESH aggregation function.
- Producers supply goods by combining aggregate intermediate inputs and primary factors in fixed proportions (the Leontief assumption). Source-generic composite intermediate inputs are also combined in fixed proportions (or with a very small elasticity of substitution under a CES function), whereas individual primary factors are chosen to minimise the total primary factor input costs subject to a CES (production) aggregating function.



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