



**Jobs and  
Skills  
Councils**

An Australian Government Initiative



# AVIATION INDUSTRY

## 2023 INITIAL WORKFORCE PLAN

# About Industry Skills Australia

Industry Skills Australia has been established as the Jobs and Skills Council for the nation's Transport and Logistics industry sectors, which includes Aviation, Maritime, Rail, Transport and Logistics, and the emerging sectors of Omnichannel Logistics and Distribution, and Air and Space Transport and Logistics.

Owned and led by industry, our Jobs and Skills Council is committed to building a world-class supply chain workforce to increase productivity, create better jobs and build opportunities for individuals.

We will do this through:

- leveraging our more than 30-year history with the transport and logistics industry,
- undertaking research and data analysis to inform workforce planning,
- advocating for a workforce development approach in tackling industry skills issues, and
- developing priority training package products.

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## Acknowledgements

Industry Skills Australia Limited acknowledges and thanks representatives of the industry that provided their assistance in developing the Aviation Industry, 2023 Initial Workforce Plan with funding from the Department of Employment and Workplace Relations under the Jobs and Skills Council Program.

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# About the Initial Workforce Plan

Workforce Planning is the strategic centrepiece for Jobs and Skills Councils to inform and establish each of their other functions. This Initial Workforce Plan represents a stock take of existing information and sets a path for prioritising and diagnosing workforce challenges. The Plan will inform initial strategies and actions of Industry Skills Australia. As this is an Initial Workforce Plan, it has been developed using data and information collected through the transition from previous industry engagement arrangements, desktop analysis, preliminary stakeholder engagement and industry insights gathered through Jobs and Skills Council governance arrangements. In developing the Initial Workforce Plan, we leveraged our deep understanding of 'the state of play' across each of the four industries to produce four Skills Priorities Papers. These papers outlined common megatrends impacting on industries and specific workforce challenges and opportunities. Following targeted consultation with 'critical friends' including State and Territory Training Authorities, these Skills Priorities Papers formed the backbone of our workforce plans.

Informed by this consultation and a quantitative and qualitative evidence base, Industry Skills Australia's 2023 Initial Workforce Plans provide an important baseline for our Strategic Workforce Planning Committees as they embark on developing the 2024 workforce plans for their sectors.

The Initial Workforce Plan is not intended to include all jobs and skills-related challenges, but indicate the many areas in which Industry Skills Australia will develop collaborative relationships, conduct further research and evidence collection, and build workforce planning capability and expertise.

The Plan will be used to further engage with stakeholders, with the feedback received incorporated into future iterations of the Plan. As Jobs and Skills Councils mature and as the Plan is updated each year, the Plan will seek to better understand current, emerging and future workforce challenges and opportunities, including skills gaps and shortages for all industries within Industry Skills Australia's remit, including small, niche and regional sectors and to develop appropriate strategies and advice for addressing diagnosed challenges. This also includes working with Jobs and Skills Australia to better understand the outlook for employment for each industry sector.

The 2023 Initial Workforce plan builds the themes to work towards a 2024 Workforce Plan which will start to put forward strategies to address industry drivers/challenges.

Critical Industry Stakeholders are provided multiple opportunities to engage in the development and implementation of the Workforce Plan<sup>1</sup>. Industry Skills Australia subscribers will receive notification of public consultation on the 2024 Workforce Plan. Industry Skills Australia welcomes stakeholder input for future Workforce Plans.

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<sup>1</sup> Critical Industry Stakeholders are those organisations whose support for the Workforce Plan is considered critical to its broad acceptance by industry and governments.

# Executive Summary

The Aviation industry comprises the operation and coordination of aircraft for the transportation of freight and passengers by air. The activities of the industry can be categorised into three (3) occupational areas (with further details in **Appendix A Aviation Occupational Areas**):

- **Flight Operations** - planning, executing and managing flights including activities and processes involving the coordination and management of all aspects related to flights, from pre-flight preparations to post-flight procedures and safety.
- **Airport Operations** - managing and supporting passengers through airport systems, including security screening, ground operations, and the turnaround of aircraft between flights.
- **Aviation Rescue** - conducting rescue operations and emergency response to ensure the safety of people, crew and aircraft during critical situations.

The industry employs over 64,910<sup>2</sup> people across the major subsectors: domestic commercial aviation, international commercial aviation, general aviation, air-freight aviation, and aviation support infrastructure. The industry had an estimated annual revenue of 47.8 \$b in 2023, amounting to 57.06% growth over the previous year.<sup>3</sup> The average age of aviation workers is 42.7 years,<sup>4</sup> with women making up 34.7% of the workforce.<sup>5</sup>

Four megatrends have been identified that are impacting the Australian economy, businesses, and people. The megatrends identified in the workforce plan duplicate many of the industry drivers/challenges and are explored in the specific industry context in that section of the Workforce Plan. The megatrends include:

- Digital technology and automation
- Decarbonisation
- Workforce supply challenges
- Industry skills development

Challenges impacting the supply and demand of workers in the aviation industry include:

- **Workforce shortages**, especially pilot, cabin crew and ground operation workers, are impacting business operations
- **Training costs** are posing a barrier to entry
- **Decarbonisation and alternative fuels** require new skills
- **Some VET qualifications** are not meeting industry needs and are not well recognised by the industry
- **Regulatory changes and licensing requirements** need to be better reflected in training products
- **New technologies and emerging industries** require new skills

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<sup>2</sup> Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ06 - Employed persons by Industry group of main job  
<sup>3</sup> IBISWorld Industry Wizard (2023)

<sup>4</sup> Australian Bureau of Statistics (2021) '2021 Census - Employment, income and education', TableBuilder

<sup>5</sup> Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ06 - Employed persons by Industry group of main job



Developing evidence-based responses to all four of the challenges is impacted by limitations in the data available. Outside of Census years, the resolution of labour force data is not high due to ANZSCO limitations. The 2023 Initial Workforce Plan will be used as the basis to further engage with stakeholders and gather real-time workforce intelligence to inform evidence based and industry supported responses in the 2024 Aviation Workforce Plan.

The plan also identifies a number of related existing workforce strategies and initiatives and maps the challenges and drivers to them. Where relevant, the 2024 Workforce Plan will seek to align with, or contribute to, these strategies and initiatives, or collaborate with those responsible for implementing them.

AVIATION  
BUSINESS NO.

**2411**

23 with 200+  
employees

107 with 20-199  
employees

2281 with 0-19  
employees

REGISTERED DRONES  
IN AUSTRALIA

**29.9k**

PASSENGERS ON DOMESTIC  
COMMERCIAL FLIGHTS

**53.8m**

YEAR ENDING 2022

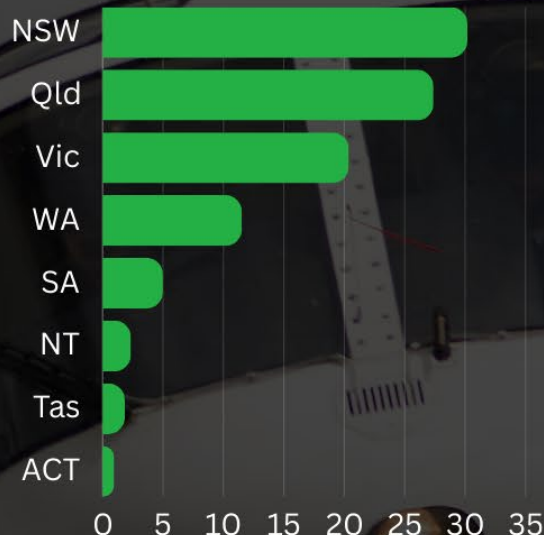
AIRPORTS IN  
AUSTRALIA

**162**

WITH SCHEDULED  
SERVICES

2022-2023  
GDP CONTRIBUTION  
**\$18.45B**

BUSINESS  
DISTRIBUTION BY  
STATE %



REGIONAL AIRPORTS CARRY

**41%**

OF ALL DOMESTIC  
PASSENGERS

DOMESTIC FREIGHT  
TASK GROWTH

**14.5%**

projected to 2030

ESTIMATED ANNUAL  
REVENUE 2023

**\$47.8b**

Sources  
*ABS Counts of  
Australian Businesses  
Business No  
Distribution of  
businesses*

*BITRE Domestic  
aviation activity  
Domestic passengers  
Regional airports  
carriage*

*Ourairports.com  
Airports in Australian*

*BITRE Yearbook 2022  
Domestic Freight Task  
Growth*

*CASA Annual Report  
2021-22  
Registered drones*

# Megatrends Across Industries

Four megatrends have been identified that are impacting the Australian economy, businesses, and people. A megatrend is a pattern or trend that has a massive impact on the way businesses operate and how people live in society. The identified megatrends create both challenges and opportunities which can be addressed through forward planning and workforce development.

## Digital Technology and Automation

Automation and digital technologies are revolutionising industries and reshaping business operations. Automation is being driven by growing e-commerce and consumer demands, as well as the recent pandemic, which accelerated the adoption of digital transformation by several years.<sup>6</sup>

The Transport and Logistics industry has been an early adopter of automation and digital technologies.<sup>7</sup> The use of robotics,<sup>8</sup> drones and big data analytics<sup>9</sup> to optimise operations and improve productivity is well underway, while the data produced by telematics and sensors can offer opportunities such as fuel efficiency and dynamic routing, and better fleet maintenance.

Several Australian ports, such as the Victoria International Container Terminal, have been automated with advanced technologies,<sup>10</sup> creating more efficiency and a safer working environment. Autonomous trucks have been recently trialled<sup>11</sup> in Australia. The Maritime industry is also trialling the use of autonomous vessels,<sup>12</sup> which will increase safety, security and efficiency of vessels. There are also remotely operated vessels that can have seafarers on board, but with processes and operations either automated or remotely operated.

The aviation industry is similarly utilising cutting-edge technologies such as Uncrewed Aircraft Systems (UAS), remote digital tower technology,<sup>13</sup> OneSky (a harmonised civil and military air traffic management system),<sup>14</sup> and Satellite-Based Augmentation System (SBAS).<sup>15</sup> The Rail industry is operating autonomous trains, smart devices and automated asset inspections using LiDAR (Light Detection and Ranging) in asset management.

The role of humans in operating and maintaining autonomous and digital technology enhanced systems remains highly significant and workers will need to have the technical skills to work safely with new technologies.<sup>16</sup>

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6 McKinsey. (2020). *How COVID-19 has pushed companies over the technology tipping point—and transformed business forever*

7 Deloitte Insights. (2021). *The journey toward a touchless network through intelligent automation: The future of movement of goods*

8 DHL Insights. (2022). *Australia's e-commerce companies are getting a boost with warehouse automation*

9 MHD Supply Chain News. (2023). *2023: A pivotal year for technology in supply chain. March*

10 Productivity Commission. (2022). *Lifting productivity at Australia's container ports: between water, wharf and warehouse. Inquiry Report. Australian Government*

11 Big Rigs. (2022). *Self-driving trucks hit the road for Australia's first live-traffic trial. November*

12 Australian Maritime Safety Authority. (2022). *Autonomous vessels in Australia*

13 Australian Aviation. (2019). *Airservices to trial remote digital tower prototype at Sydney. November*

14 Airservices. (NA). *What is OneSKY?*

15 Australian Flying. (2018). *Airservices launches SBAS Project. April*

16 iMove. (2023). *Creating our future transport and mobility workforce Understanding the workforce implications of transport digitalisation and automation in Australia*



## Decarbonisation

The adoption of sustainable practices and technologies to reduce Australia's carbon emissions has been gaining pace. The Australian Government is investing \$24.9 billion in the next seven years to support the development of new clean energy industries and the decarbonisation of existing ones.<sup>17</sup> Businesses and industries are adopting sustainable practices and technologies, which will not only benefit the environment but also contribute to their economic growth and competitiveness.

Transport accounts for  $\frac{1}{4}$  of Australia's Energy use

The supply chain is relying on autonomous technology and alternative fuels such as hydrogen to reduce its carbon footprint. Trials for zero-emissions hydrogen fuel-cell battery trucks are already underway in Australia.<sup>18</sup> The use of hydrogen and fuels such as ammonia is also gaining traction in the maritime industry with trials already underway.<sup>19</sup>

The aviation industry is transitioning towards alternative fuels such as hydrogen, but the implementation may take some time. In the shorter term, ground equipment powered by hydrogen powered fuel cells is being introduced.<sup>20</sup> The rail industry is similarly focusing on technologies such as hydrogen or battery electric to phase out diesel trains.

These developments are aligned with a global move towards a green economy. A recent KMPG survey of more than 1300 CEOs [identified](#) that 62% of respondents were considering investment in sustainability.<sup>21</sup> The most recent Future of Jobs Report from the World Economic Forum also identified that roles related to sustainability are among the fastest growing.<sup>22</sup> In Australia, about a quarter of businesses have reported an increasing need for emerging skills related to green economy.<sup>23</sup>

Supply chain and affiliated industries are well positioned to be a key enabler of environmental sustainability.<sup>24</sup> Introduction of these carbon reduction measures will require the workforce to have the skills and knowledge to safely work with new technologies and comply with regulations.

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<sup>17</sup> Climate Council. (2022). *The federal budget: three highlights and lowlights for climate*. October

<sup>18</sup> Power Torque. (2023). *First Aussie Hydrogen Truck*. July

<sup>19</sup> Offshore Energy. (2023). *Carisbrooke Shipping to trial hydrogen engine on board one of its vessels*. February

<sup>20</sup> CSIRO. (2023). *Opportunities for hydrogen in commercial aviation*

<sup>21</sup> KMPG. (2022). *KMPG 2022 CEO Outlook: Growth strategies in turbulent times*

<sup>22</sup> World Economic Forum. (2023). *The future of job reports 2023*.

<sup>23</sup> AiGroup. (2022). *2022 Skills Survey: Listening to Australian businesses on skills and workforce needs*

<sup>24</sup> Australia Post. (2021). *Supply Chain Leaders' Sentiment Report*.

# Workforce Supply Challenges

Australia is grappling with significant labour shortages across many industries, including those supported by Industry Skills Australia. There is a general shortage of skills partly due to the border closures and slowing down of the migration in 2020 and 2021 because of the pandemic.<sup>25</sup> The Australian Bureau of Statistics reported that in November 2022, there were about 444,000 vacancies, which is deemed to be an indication of labour shortage.<sup>26</sup> The Australian Industry Group similarly indicated that 71% of businesses encountered difficulty in recruiting technicians and trade workers.<sup>27</sup>

The aviation industry has faced significant challenges and operational issues such as cancellation or long delays of flights due to a shortage of ground crew, pilots,<sup>28</sup> or air traffic control staff.<sup>29</sup> The pilot shortage has impacted regional airlines even more severely.<sup>30</sup> The rail industry has also reported workforce shortages in key roles such as train drivers, controllers, or signalling technicians.<sup>31</sup> These shortages may slow down the completion of infrastructure projects over the next three years.<sup>32</sup> Rail workforce shortages are being further exacerbated by growing skills gaps caused by the advent of new technologies and the need for upskilling for the existing workforce.

A shortage of truck drivers is reported across every state and territory in Australia according to the latest Skills Priority List.<sup>33</sup> The addition of truck drivers to the national Skills Priority List is a strong indication of the current and future demand for this occupation.<sup>34</sup> The maritime industry has also highlighted skills shortages as a key risk.<sup>35</sup>

Workforce shortages are even more severe in Regional, Rural and Remote Australia where attracting skilled workers and filling available job roles is even more challenging. A series of interconnected issues contribute to these challenges, including lack of availability of housing and childcare, shortage of training facilities, trainers, and assessors, and lack of good quality digital connectivity.<sup>36</sup>

**Occupations with a strong gender imbalance  
are more likely to be in shortage**

Globally, organisations have started to prioritise the attraction and retention of new talent.<sup>37</sup> Similarly, Australian businesses are investing in staff training, developing skills, and attracting young people and more women into traditionally male-dominated industries and occupations.<sup>38</sup> The Australian Government is also focusing efforts on removing barriers and providing the right incentives and conditions to attract more workers to regional Australia.

<sup>25</sup> Financial Review. (2022). *Why we don't have enough workers to fill jobs (in four graphs)*. June

<sup>26</sup> Australian Bureau of Statistics. (2023). *Job vacancies fall but remain high at end of 2022*. Media Release January

<sup>27</sup> AiGroup. (2022). *2022 Skills Survey: Listening to Australian businesses on skills and workforce needs*

<sup>28</sup> Financial Review. (2023). *The 'alarming' workforce trend causing flight delays*. February.

<sup>29</sup> The Sydney Morning Herald. (2023). *Airlines call for action on air traffic controller shortage as flight delays continue*. August

<sup>30</sup> Simple Flying. (2023). *Rex flying solo to fix Australian pilot shortage*. May

<sup>31</sup> Australasian Railway Association. (2022). *Building Australian Rail Skills for the Future*

<sup>32</sup> Infrastructure Magazine. (2022). *Preparing for the infrastructure boom during a labour shortage*. September

<sup>33</sup> National Skills Commission. (2022). *2022 Skills Priority List*

<sup>34</sup> National Skills Commission. (2022). *2022 Skills Priority List Key Findings Report*

<sup>35</sup> Parliament of Australia: Senate Inquiry (2020). *Policy, regulatory, taxation, administrative and funding priorities for Australian shipping*

<sup>36</sup> Houghton, K., Barwick, A. and Pregellio, S. (2023) *Regional Jobs 2022: The Big Skills Challenge*, Regional Australia Institute, Canberra.

<sup>37</sup> KMPG. (2022). *KMPG 2022 CEO Outlook: Growth strategies in turbulent times*

<sup>38</sup> AiGroup. (2020). *An Apprenticeship Model for the modern economy*

# Industry Skills Development

The Vocational Education and Training (VET) system in Australia is well positioned to supply the skills and knowledge required for the future of work. However, barriers such as perceptions of the VET sector<sup>39</sup> and shortages of qualified trainers are impacting on the attractiveness of the sector to prospective learners and on learner outcomes.<sup>40</sup>

The challenges are even greater in regional and remote areas, where there is:

- lack of high-quality training facilities and up-to-date equipment
- lack of RTOs and appropriately qualified Trainers/Assessors
- increased costs of training delivery
- mismatches between funding and training needs
- issues with language, literacy, numeracy and digital literacy
- the need for cultural competency in working with First Nations communities, further compound the situation.<sup>41</sup>

The Australian Government has committed to providing increased funding for improving the quality of TAFE facilities, fee-free TAFE and community-based vocational education places, as well as funding for improving quality teaching.<sup>42</sup> Creating greater flexibility with the VET system can yield better results by attracting more learners and leading to improved learner outcomes.<sup>43</sup>

Establishment of clearer career pathways and articulation arrangements that enable learners to seamlessly transition from the schools sector into VET and onwards to Higher Education are needed to build opportunities for individuals and support the shift to higher skilled job roles.

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<sup>39</sup>Parliament of Australia. (2023). *Inquiry into the Perceptions and Status of Vocational Education and Training. Terms of Reference.*  
<sup>40</sup>Ibid.

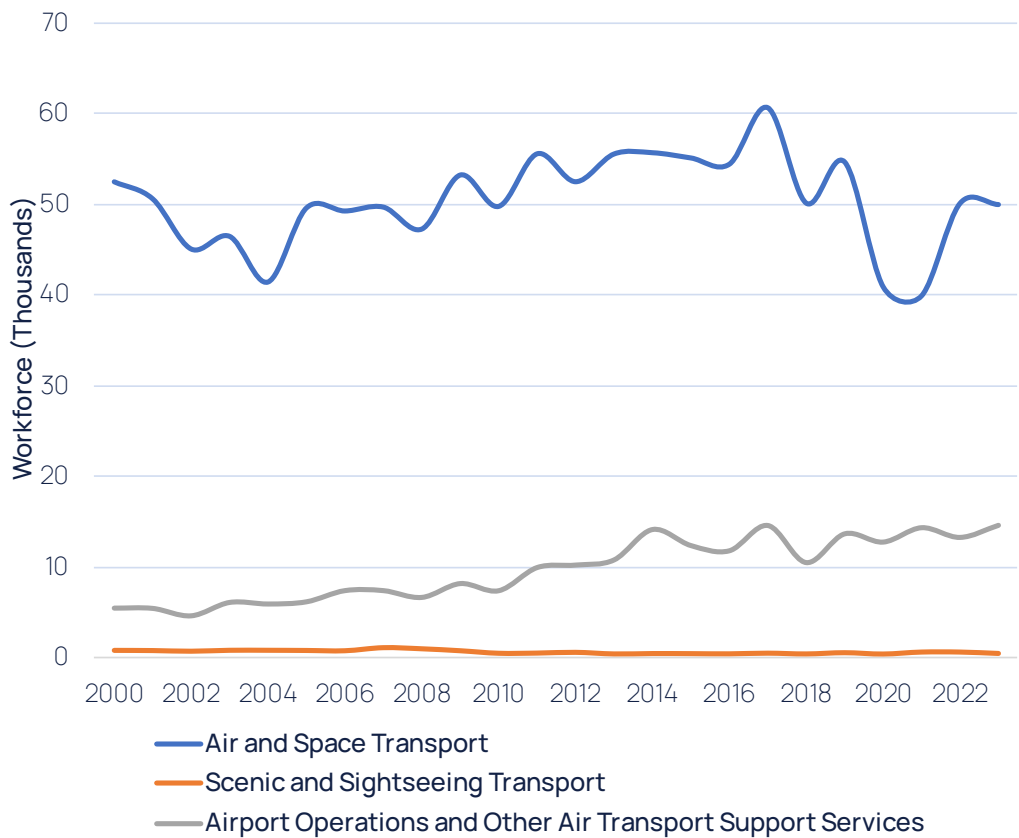
<sup>41</sup>Tabatha, G. & Andrahannadi, U. (2023). *VET delivery in regional, rural and remote Australia: barriers and facilitators*, NCVER

<sup>42</sup>Australian Government. *Budget October 2022-23 Skills and training: Giving Australians the skills they need for higher-wage jobs*

<sup>43</sup>The Regional Australia Institute (2023). *2023-2024 Federal Government Pre-Budget Submission.*

# Aviation Industry Data

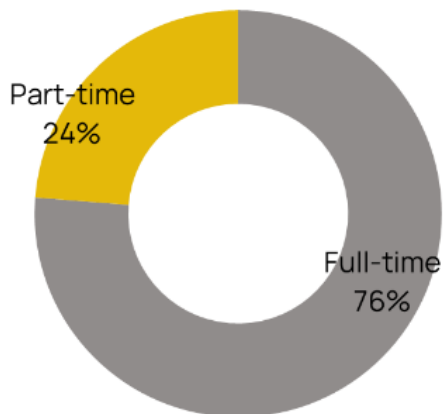
## Employment and distribution



Source: ABS Labour Force Survey

**Figure 1:** Aviation Industry Workforce, 2000 - 2023

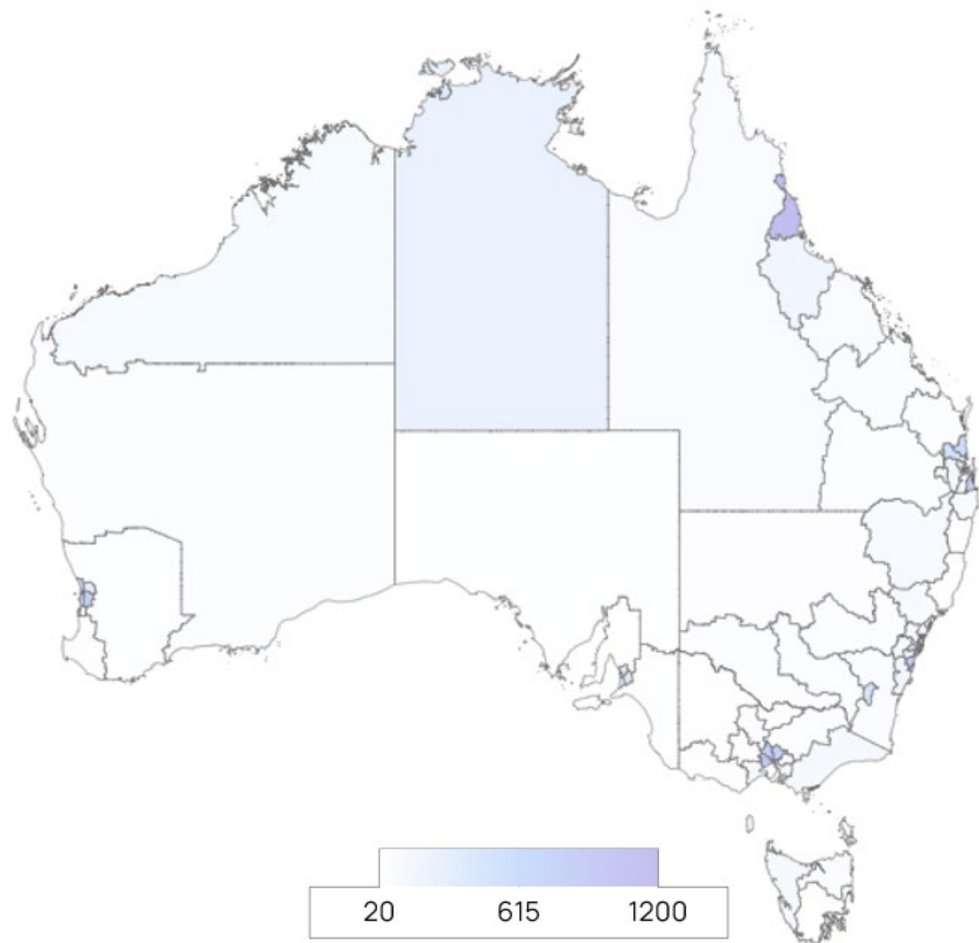
*The Aviation industry<sup>†</sup>  
employs nearly 65,000  
people in 2023*



Source: ABS Labour Force Survey

**Figure 2:** Employment status 2023

Although only 12% of Aviation workers reside in remote regions, the number of workers in remote regions has grown strongly since 2015.



Source: JSA, NERO 2023

**Figure 3:** Distribution of Aviation Workers, 2023

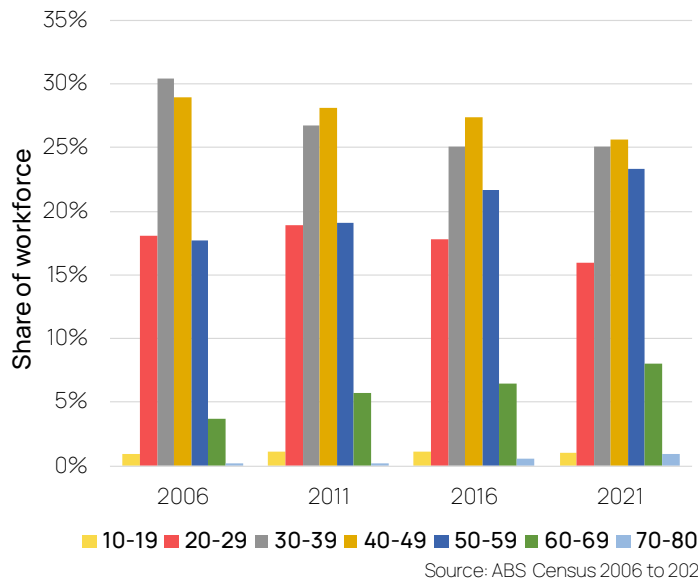
Geography	% of workers	Growth (since 2015)
Major City	44.71%	3.39%
Regional	43.61%	7.25%
Remote	11.69%	47.02%

**Table 1:** Distribution and Growth of Aviation Workers by Geography

Source: JSA, NERO 2023

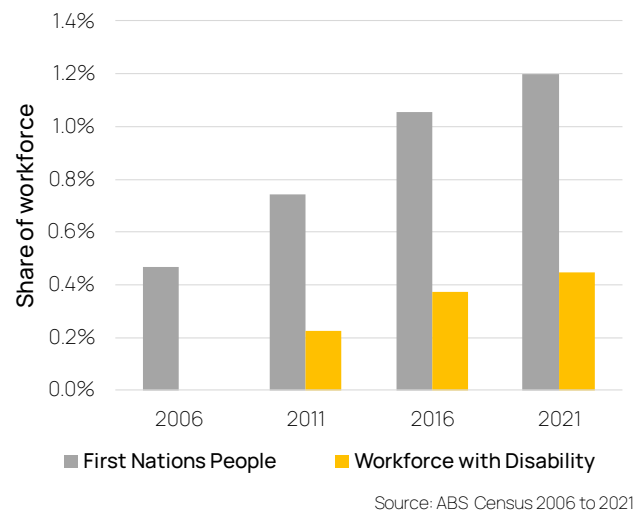


## Demographics

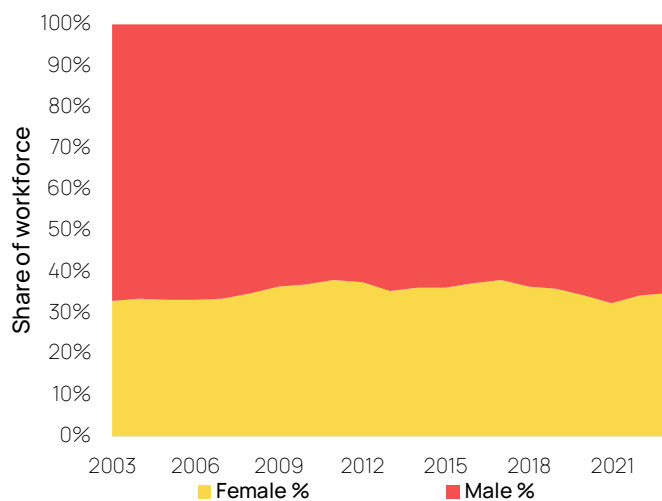


**Figure 4:** Aviation Industry Age Profile, 2006 - 2021

The share of First Nations people in the Aviation workforce has **more than doubled (155.2%)** since 2006 and the share of the workforce with disability has **nearly doubled (99.2%)** since 2011#



**Figure 5:** First Nations people and Disability Composition in Aviation Workforce, 2006 - 2021

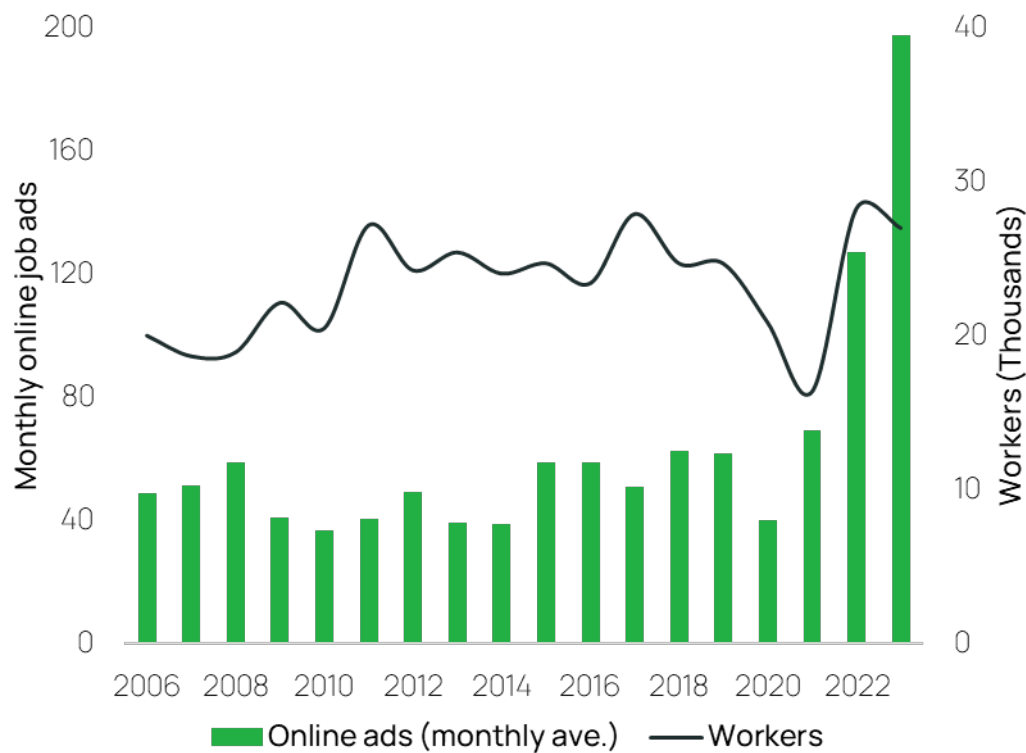


**Figure 6:** Female participation 2000 - 2023

**Female participation in the Aviation industry has declined slightly from a high of 37.9% in 2017 to now representing about a third of the workforce.**

## Occupations

Online job vacancies for Aviation workers have **more than tripled** (219.4%) since 2019, with the number of workers now returning to pre-COVID trends.



**Figure 7:** Aviation Workers and Online Job Ads, 2006 - 2023

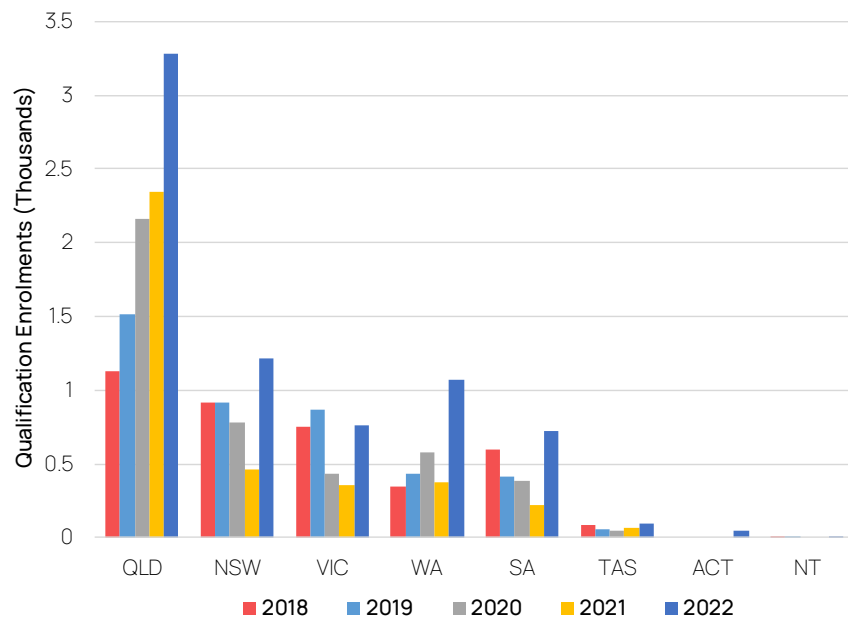
The impact of COVID-19 on Aviation workers was vividly captured in Census 2021, with **declines of up to 30% for Baggage Handlers/Airline Ground Crew** between 2016 and 2021.

Occupation	2006	2011	2016	2021	Ave. Growth	Future demand*
Aeroplane Pilot	6466	7995	7931	8136	1.54%	Moderate
Flight Attendant	7081	8287	8456	6092	-1.00%	Moderate
Baggage Handler / Airline Ground Crew	4505	4960	5728	4008	-0.78%	Moderate
Air Traffic Controller	1489	1557	1713	1589	0.43%	Moderate
Helicopter Pilot	787	1049	1089	1106	2.29%	Moderate

**Table 2:** Top Aviation Occupations, Growth and Demand Sources: ABS Census, Skills Priority List (6 October, 2022)

## Training

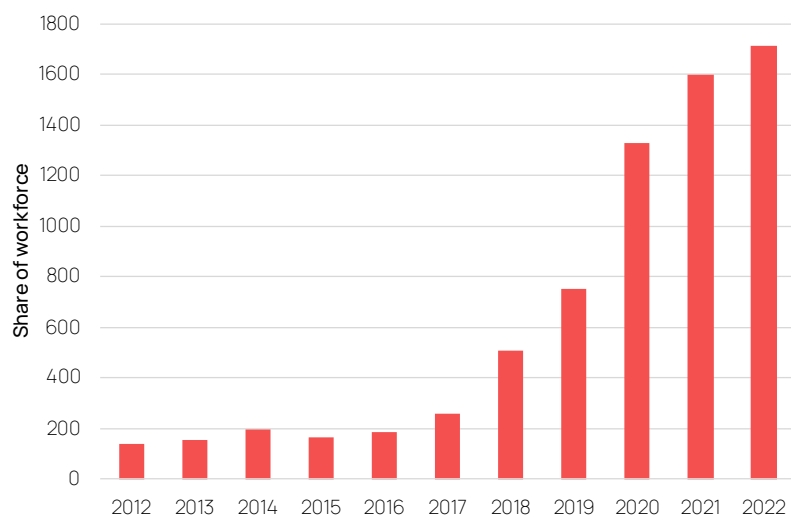
*Qualification enrolments in most States/Territories (with the exception of Queensland) were **clearly affected by COVID-19**, with most now recovering or out-performing the pre-pandemic trends.*



Source: NCVER Total VET Activity

**Figure 8:** Commencing Aviation Qualification Enrolments, 2017 - 2022

*The number of students enrolling in Aviation qualifications has grown strongly in recent years, increasing by about 46% per year since 2017.*



Source: NCVER VET in Schools

**Figure 9:** Aviation VETiS Students, 2022

# Key Challenges and Drivers Affecting the Aviation Workforce

## A. Workforce shortages are challenging the industry

As the industry continues to recover post COVID, it is facing a shortage of skilled workers across different occupations including pilots, flight instructors, cabin crew, security screening personnel and baggage handlers. This shortage is particularly pronounced in regional areas where it is more difficult to recruit, an issue which is even further compounded by differing requirements for levels of experience in regional airlines.<sup>44</sup> The latest *Boeing Pilot and Technician Outlook* has projected demand for 2.3 million new aviation personnel worldwide over the next 20 years to safely support the recovery in commercial air travel and meet rising long-term growth. About 39,000 of these will be needed in Australia.<sup>45</sup> This highlights the severity of this pressing challenge not only for flight and ground crew, but also for other occupations involved in maintaining aircraft.

The shortages are impacting the industry in a variety of ways.

**Pilot and cabin crew shortages** are a global problem, with the supply of pilots unable to keep up with the demand due to rapid post-COVID recovery.<sup>46</sup> Competition from international airlines and closely related industries are also impacting Australian airlines. During the pandemic, many airlines downsized their workforce and suspended recruitment efforts and are now finding it difficult to bring workers back to the industry. Australia's aviation sector is facing greater competition for skilled labour both domestically by other sectors and internationally by airlines in countries like the United States which poach highly qualified pilots from Australia.<sup>47</sup> There is currently a **cabin crew** shortage due to high turnover rates and limited training resources.

**Ground operations** have been similarly affected. The shortage of security screening personnel is placing a strain on airports' ability to maintain optimal safety and security levels for passengers and airlines.<sup>48</sup> The relative insecurity of many of the jobs in the aviation sector, especially the ground handling operations, has added to recruitment difficulties.<sup>49</sup>

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44 Campbell, Steven. (2022). *Regional Aviation Association of Australia's Submission to Inquiry into the Fair Work Legislation Amendment*. November 1st. Retrieved from <https://raaa.com.au/wp-content/uploads/Inquiry-into-FWC-Bill.pdf>

45 <https://www.boeing.com/commercial/market/commercial-market-outlook/index.page>

46 [https://www.aerosociety.com/media/17924/pilot\\_training\\_report\\_march\\_2022-final-pdf.pdf](https://www.aerosociety.com/media/17924/pilot_training_report_march_2022-final-pdf.pdf)

47

[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)

48 Australian Financial Review. (2022). "Airports say jobs shortages 'could persist.'" Retrieved from

<https://www.afr.com/companies/infrastructure/airports-say-jobs-shortages-could-persist-20220623-p5aw0f>

49 [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)

NEW AVIATION  
PERSONNEL  
NEEDED

39k

OVER NEXT  
20 YEARS

SINCE 2019  
MONTHLY ONLINE  
VACANCIES HAVE

TRIPLED

FOR  
AIR TRANSPORT  
PROFESSIONALS



**Flight instructor shortages** are also having a knock-on effect on new pilot numbers. In general, aviation flight training is declining in Australia.<sup>50</sup> Part of the challenge is the time and cost involved in achieving the required qualification and becoming a certified flight instructor. Even before the onset of the COVID pandemic, the flight training industry faced significant challenges due to a shortage of instructors and trainers, particularly experienced staff such as senior instructors and flight examiners, and airline check and training captains.<sup>51</sup> The industry has also reported a severe shortage of aircraft maintenance engineers, which will have an impact on the general aviation sector.<sup>52</sup> Industry Skills Australia will consult with the relevant Jobs and Skills Council to determine how it might impact the aviation sector and the strategies we propose.

The aviation sector is experiencing growth. Air travel is projected to reach pre-COVID-19 levels domestically by late 2023.<sup>53</sup> Demand for Air Transport Professionals, of which commercial pilots comprise 70%, is high. The number of monthly online vacancies for Air Transport Professionals has nearly tripled since 2019,<sup>54</sup> while the number of employed professionals has declined by up to 23% over the same period.<sup>55</sup> In other words, demand is increasing as the supply declines. While **Table 2** indicates moderate demand for key roles, industry consultation suggests that future demand will be strong.

Given that the sustainability of the aviation sector relies on a viable pipeline of skilled workers, the existing challenges may hamper the growth of the sector. Even with accelerated training efforts, it will take years to address the current shortages of experienced pilots.

<sup>50</sup>[https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024821/toc\\_pdf/Australia'sgeneralaviationindustry.pdf;fileType=application%2Fpdf](https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024821/toc_pdf/Australia'sgeneralaviationindustry.pdf;fileType=application%2Fpdf)

<sup>51</sup>[https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024821/toc\\_pdf/Australia'sgeneralaviationindustry.pdf;fileType=application%2Fpdf](https://parlinfo.aph.gov.au/parlInfo/download/committees/reportsen/024821/toc_pdf/Australia'sgeneralaviationindustry.pdf;fileType=application%2Fpdf)

<sup>52</sup> Regional Aviation Association of Australia. (2022). Aircraft maintenance engineer shortage – crisis and opportunities.

<sup>53</sup> Air Services Australia. (2022). Air Services Australia Corporate Plan 2022-23.

<sup>54</sup> Jobs and Skills Australia (2023). Internet Vacancy Index

<sup>55</sup> Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ08 - Employed persons by Occupation unit group of main job



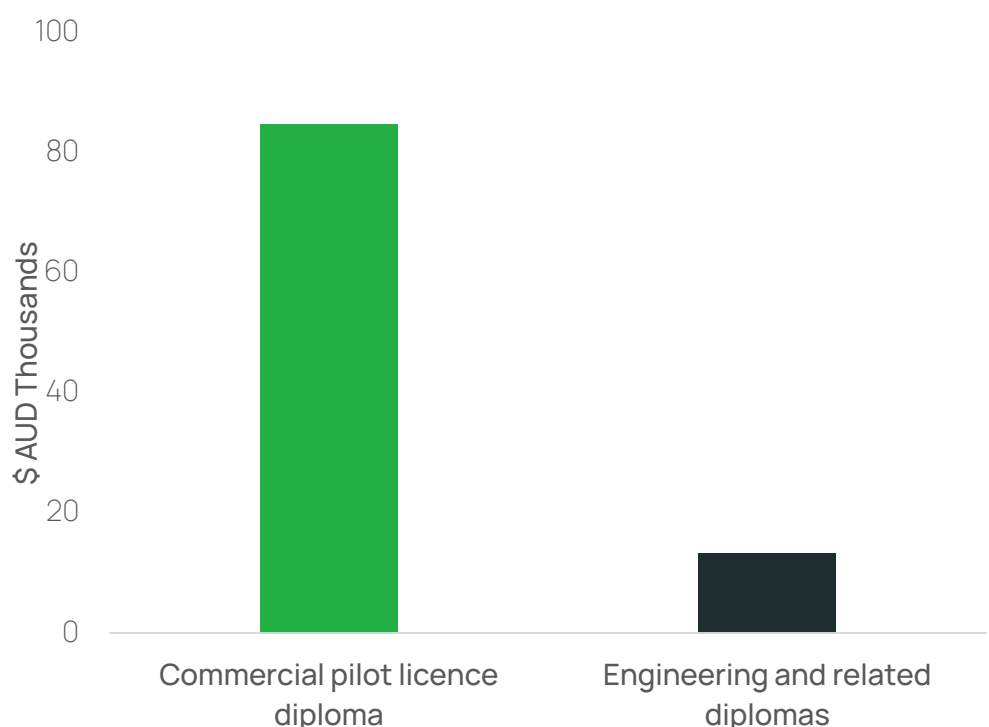
COST OF TRAINING  
A COMMERCIAL  
PILOT  
**6** TIMES  
COST OF AVERAGE  
DIPLOMA IN THE  
SAME FIELD OF  
EDUCATION

## B. Training costs are creating barriers for potential new pilots

The cost of aviation training, including pilot and cabin crew training, is substantial and involves various components such as tuition fees, flight hours, simulator sessions, and meeting regulatory requirements. The cost of training a commercial pilot is six times the cost of the average diploma in the same field of education.<sup>56</sup>

The funding sources for aviation training can vary, with some individuals financing their training privately through personal savings or loans, and others receiving sponsorship from airlines, government programs or scholarships. Additionally, some training organisations offer financing options or instalment plans to ease the financial burden. The availability and accessibility of funding can vary geographically, leading to disparities in access to training opportunities.

Apart from training fees, the cost of obtaining a Commercial Pilot Licence (CPL) poses a further challenge (**Figure 10**). Cost and access to funding are currently a barrier for new entrants.<sup>57</sup> There have been reports that employers sometimes require pilots to enter training bonds or incur personal debts in order to undertake training.<sup>58</sup>



Source: MySkills and National Skills Commission VET average price benchmarks

**Figure 10** Cost of training in related diplomas

<sup>56</sup> VET average price benchmarks report 2021

<sup>57</sup>Parliament of Australia: Senate Inquiry (2022). *The future of Australia's aviation sector, in the context of COVID-19 and conditions post pandemic*

<sup>58</sup> Ibid.

GLOBAL AIR TRANSPORT  
INDUSTRY IS COMMITTED TO

**NET  
ZERO  
BY 2050**

## C. Sustainable Aviation Fuel (SAF) and alternative fuels initiatives have implications for skill needs

The global air transport industry is committed to net zero by 2050.<sup>59</sup> One of the key enablers of sustainability is the development and implementation of Sustainable Aviation Fuel (SAF), as well as hydrogen fuel and fuel cells, and batteries. Australia is well poised to develop SAF feedstocks for domestic sustainable aviation fuel.<sup>60</sup>

There has been an increasing focus on SAF in Australia, along with investments to support the implementation of alternative fuels. Qantas has developed Australia's first SAF Coalition program to support the development of a domestic SAF sector.<sup>61</sup> CSIRO's research on hydrogen adoption in the aviation sector also highlights that the adoption of hydrogen for ground support equipment by 2025 is feasible. Guidelines and a policy framework are expected to be in place to expedite the uptake of hydrogen in the near future.<sup>62</sup>

Australia's first commercially produced electric aircraft has also recently been unveiled in South Australia.<sup>63</sup> The introduction of alternate energy powered aircrafts (electric and hydrogen) and associated ground infrastructure will have implications for workforce skills in the medium and long-term.

<sup>59</sup> IATA. (2021). *Net Zero Carbon Emissions by 2050*.

<sup>60</sup> CSIRO. (2023). *Sustainable Aviation Fuel Roadmap*.

<sup>61</sup> Qantas. (2022). *Qantas Sustainability Report 2022: Driving Sustainability to Protect the Future of Travel*.

<sup>62</sup> CSIRO. (2022). *A roadmap for hydrogen in the aviation industry*.

<sup>63</sup> Australian Aviation. (2023). *Adelaide firm to unveil Australia's first commercial electric aircraft*.

VET  
QUALIFICATIONS  
WERE HELD BY  
**42%**  
OF ALL PILOTS  
IN 2021

## D. VET qualifications should meet industry needs and be better recognised by the industry

Vocational Education and Training (VET) qualifications provide a valuable opportunity for learners to gain employment. The share of aeroplane pilots that rely on VET qualifications has been declining steadily, from 48% of all pilots in 2006 to 42% in 2021.<sup>64</sup> Regardless, more pilots hold a VET qualification compared to qualifications from other types of education providers, which indicates the important role of the VET sector in supplying the required workforce.

Some qualifications, such as Certificate III in Aviation (Cabin Crew), are not well-recognised by the industry. Airlines in general prefer to use in-house training programs, but trained staff do not receive any nationally recognised qualification or certification for this training.

Industry stakeholders indicate that the length of training time (approximately three months) required for the Certificate III Aviation (Cabin Crew) is an issue for the industry and have highlighted the potential for development of a lower-level qualification, such as a Certificate II with a shorter training duration, that could also be delivered in schools. Stakeholders suggest that a new lower-level qualification could provide a point of entry for potential recruits, as well as enable learners to develop knowledge and transferable skills that could be used in other industries such as hospitality and tourism. A new qualification could also help airlines to save time and costs in delivering initial training.

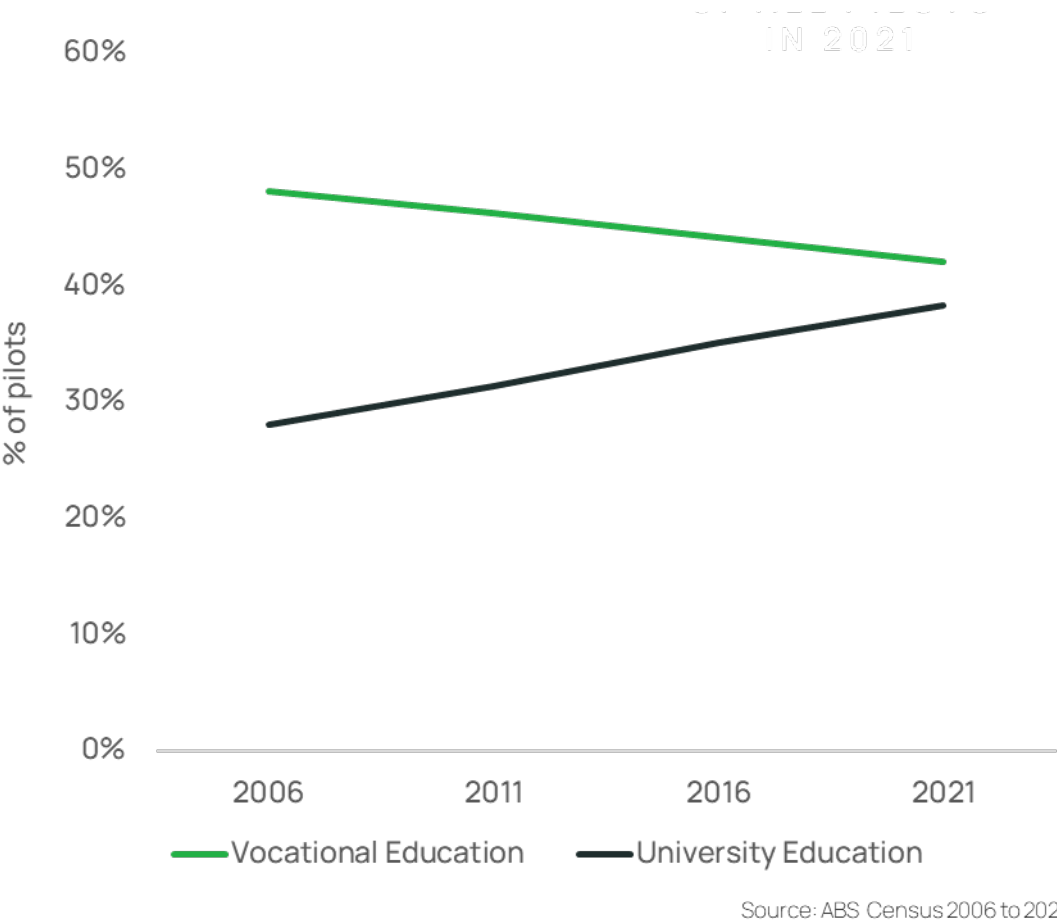
School-based employment pathway programs are a popular approach adopted by many sectors to build the future workforce. Further efforts are needed to promote VET in schools, provide career guidance and advice,<sup>65</sup> and create pathways for students. A particular opportunity exists in Western Sydney where a new airport is planned to open in 2026, creating many career opportunities across the aviation sector. Level II qualifications could provide an ideal introduction to the aviation industry and build aviation skills for potential new entrants.

To meet industry requirements, some current qualifications require revision. The industry has advised that Certificates III and IV in Aviation (Air Crew Officer; Rescue Crew Officer) will need to be reviewed to meet industry needs. Recue and air crew officers perform normal and emergency duties in search and rescue operations. A major part of these operations is conducted by fixed wing aircraft, but the available qualifications are heavily skewed towards rotary aircraft.

<sup>64</sup> ABS, Census 2006-2021

<sup>65</sup> Australian Government. (2020). *Looking to the Future: Report of the Review of senior secondary pathways*

This limits the capacity of the industry to use nationally endorsed training, relying instead on in-house training. Therefore, highly trained staff do not receive qualifications upon completion of their training. This issue may also extend to State Emergency Services and other specialist emergency services provided via fixed wing platforms. Industry stakeholders have called for a revision of these qualifications to ensure consistency in training and safe conduction of search and rescue operations on fixed wing aircrafts.



**Figure 11:** Pilot training by education sector

# ALL SCREENERS

IN AVIATION,  
AIR CARGO  
AND MARITIME  
MUST HOLD  
CERTIFICATE II  
IN  
TRANSPORT  
SECURITY  
PROTECTION

## E. Regulatory changes and alignment with licencing requirements need to be better reflected in training products

Industry stakeholders have raised a number of issues relating to regulations and licensing requirements.

The Department of Home Affairs serves as the security regulator for the aviation and maritime industries and air cargo sector. Since January 2022, it has been a requirement for screeners in the aviation and maritime sectors to hold a Certificate II in Transport Security Protection, and since 2023, also a requirement for those in the air cargo sector. Since its release in 2019, the Certificate II in Transport Security Protection has had only a minor update. However, since the initial development of the qualification, new screening systems have been implemented across Australian airports, including Perth,<sup>66</sup> Sydney and Melbourne.

There has also been a growing focus on disability, with the International Civil Aviation Organisation developing a work program to create a disability-inclusive air transport system.<sup>67</sup> In line with this work program, screening officers require skills and knowledge to better engage with passengers with disabilities.

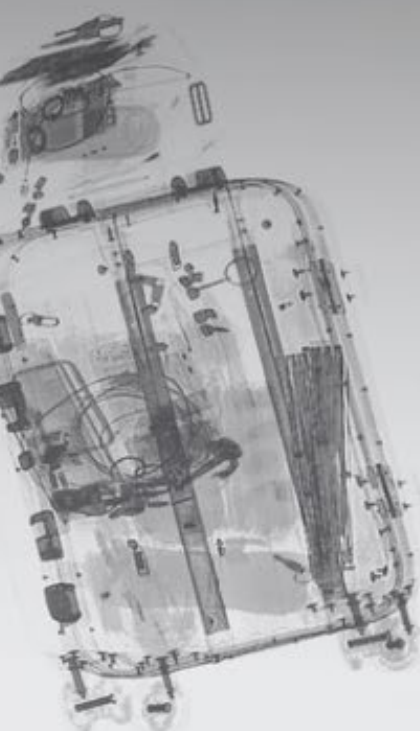
The Department of Home Affairs, industry, and Registered Training Organisations have indicated the need to review the Certificate II in Transport Security Protection to ensure it reflects the latest industry and regulatory requirements.

Industry stakeholders have also indicated the need for a revision of the Diploma of Aviation (Flight Instructor; Commercial Pilot Licence), to create better alignment with Civil Aviation Safety Authority (CASA) licensing requirements. The Diploma of Aviation provides skills and knowledge for flight crew personnel performing normal and emergency commercial pilot duties in support of commercial or Defence aviation flight operations. The qualification covers part of the requirements for certification as a commercial pilot by CASA. Those who successfully complete the qualification still need to undertake further study to attain a Commercial Pilot Licence (CPL) from CASA.

There is a need for a better alignment of aviation training and certification to ensure that all aviation professionals undergo similar training and meet the same competency standards, promoting uniformity and reliability within the industry. This would further enhance the industry's recognition of an individual's competence and professionalism.

<sup>66</sup> Aviation Technology. (2022). Under the x-ray: improving security at Perth Airport. Retrieved from <https://www.airport-technology.com/features/under-the-x-ray-improving-security-at-perth-airport/>

<sup>67</sup> International Civil Aviation Organisation. (2022). ICAO Annex-9 Facilitation Program Overview.





# NEW CIVIL MILITARY AIR TRAFFIC MANAGEMENT SYSTEM (CMATS)

## F. New technologies and emerging industries are transforming the aviation industry

A range of new technologies are transforming ways of working in the aviation sector:

- The increasing integration of Uncrewed Aircraft Systems (UAS) in airspace will require innovative solutions and systems to harmonise the safe integration of traditional aircraft and UAS.<sup>68</sup>
- Digital Control Tower technology is being proposed at Canberra Airport and Western Sydney International Airport by Airservices Australia, to optimise airport operations through enhanced real-time data sharing.<sup>69</sup>
- OneSky is a new Civil Military Air Traffic Management System (CMATS) which will replace the existing air traffic management systems soon and will improve air services and support future air traffic growth.<sup>70</sup>
- Electric aircraft are also gaining more traction and can be used in short-haul trips<sup>71</sup> in Australia with the first plane already commercially produced and unveiled.<sup>72</sup>
- Advanced Aerial Mobility (AAM) using electric Vertical Take-Off and Landing (eVTOL) is only a few years away. These systems can be either remotely or autonomously operated. This will create great opportunities for the urban air mobility sector<sup>73</sup> which includes the use of small, electric and eVTOL aircrafts to transport people and goods within urban areas.

Skills in digital and automation technologies will be needed by workers as these new systems are introduced. New skills related to electric aircraft<sup>74</sup> will also be needed to ensure safety and regulatory compliance.

Australia can play a significant role in the field of air and space transport and logistics as a result of its strategic location, skilled workers and world-class research centres. The country is ideally placed to perform rocket and satellite launches, operation of ground stations for spacecraft communication and tracking, provision of remote sensing capabilities for Earth observation, and development of innovative technologies and services for space logistics.<sup>75</sup>

68 Airservices Australia. (2022). *Airservices Annual Report 2022*.

69 Australian Aviation. (2019). *Digital air traffic control towers are coming to Australia and NZ*

70 Airservices Australia. (2023). *Corporate Plan 2023*.

71 KMPG. (2019). *Australia's Aerospace Industry Capability*

72 Asian Aviation. (2023). *Australia's first commercially produced electric aircraft unveiled*. Retrieved from <https://asianaviation.com/australias-first-commercially-produced-electric-aircraft-unveiled/>

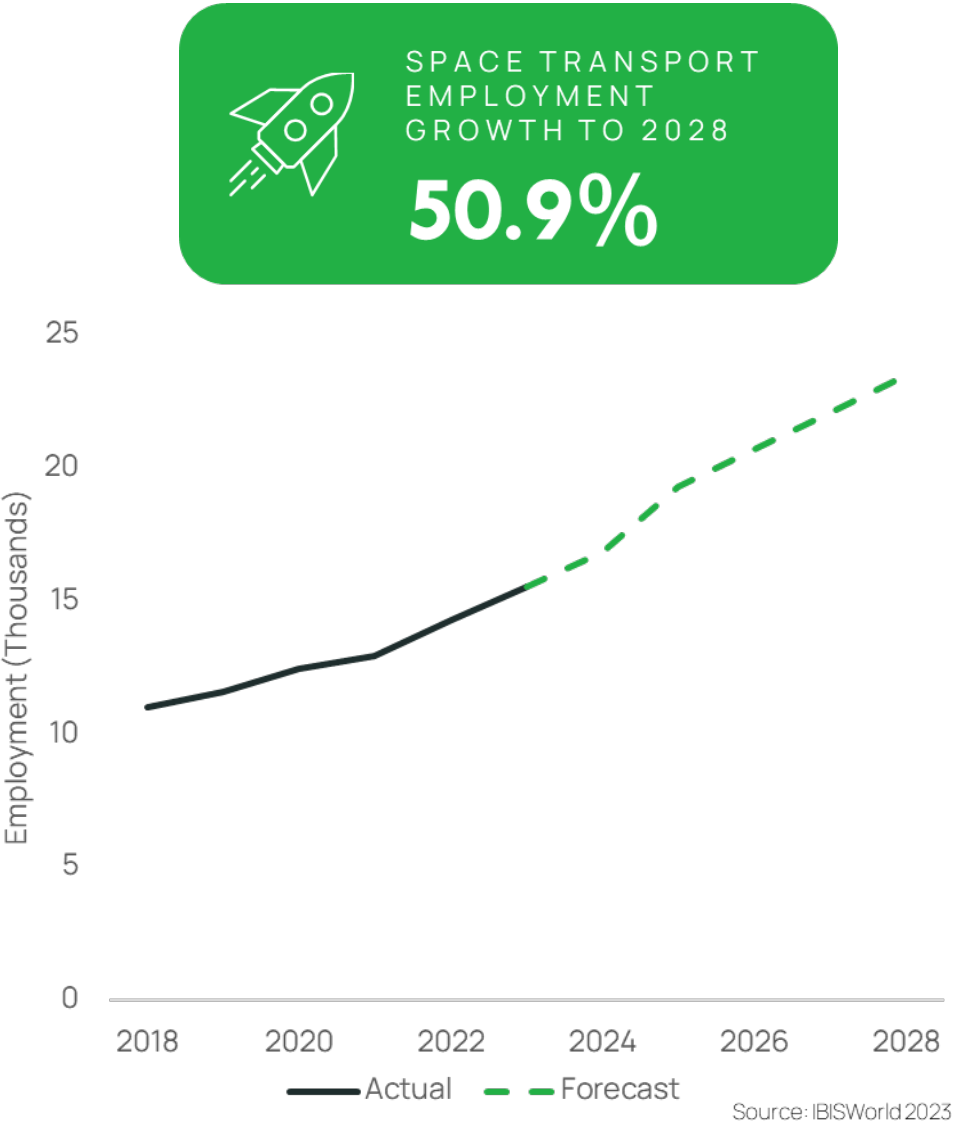
73 Australian Flying. (2022). *All About Eve: behind the eVTOL Revolution*. Retrieved from <https://www.australianflying.com.au/latest/all-about-eve-behind-the-evtol-revolution>

74 Institute for Intelligent Systems Research and Innovation & Deakin University. (2020). *Advanced Aerial Mobility and eVTOL aircraft in Australia: Promise and Challenges*

75 ACIL Consulting. (2017). *Australian Space Industry Capability*.

The Australian space industry's focus on space transport and logistics is evidenced by the growing number of companies specialising in this area. As the space industry continues to grow, Australia's expertise and capabilities in space transport and logistics will remain at the forefront of this dynamic field.

The specific nature of skills and roles involved in the air and space transport industry is yet to be determined. There is a need to determine the requirements for this emerging industry and what qualifications and pathways will be required.



**Figure 12:** Predicted space transport employment growth

OCCUPATIONS THAT  
NEED A UNIQUE ANZSCO  
CODE INCLUDE

DRONE  
OPERATORS

SECURITY  
SCREENING  
OFFICER

RESCUE CREW  
OFFICER



## G. Data gaps

Outside of Census years, the resolution of labour force data is not high. Aviation has only two occupational categories at the 4-digit ANZSCO level. As a practical example, reported shortages in Baggage Handlers or Airport Security Screening Officers cannot be corroborated since they are only available at 6-digit resolution, or not available at all.

The Australian Bureau of Statistics (ABS) is currently undertaking a comprehensive review of the Australian and New Zealand Standard Classification of Occupations (ANZSCO) to reflect the contemporary labour market, the first major review since 2006. From October to December this year, the focus will be on occupations in road transport, warehousing, postal, courier, pick-up and delivery services.

Industry Skills Australia has advised ABS of the following issues:

- The classification of Aeroplane pilot is too generic to enable the industry to capture an accurate workforce size and assess specific skills needs. There needs to be at least three classifications: scheduled air transport pilot; non-scheduled air transport pilot; and aerial work pilot.
- There are a number of roles that need to be identified with a unique code, as they have not been accurately reflected in the ANZSCO classification and they have different licencing and skills requirements. These roles include:
  - *Drone operators and chief remote pilot:* Currently, drone operators, or the use of an unmanned aerial system (UAS) or unmanned aerial vehicle (UAV), roughly come under the category of machine operator, which is not an accurate reflection of the role.
  - *Security Screening Officer:* This occupation is not reflected in the ANZSCO classification, and a rough equivalent is security officer (442217). However, screening officers are divided into four streams: Air Cargo Examination Officer, Domestic Airport Screening Officer, International Airport Screening Officer, and Maritime Screening Officer.

*Rescue Crew Officer:* This occupation roughly corresponds to Emergency Service Worker (441112). The tasks involved in this role, however, are quite different from those of emergency workers.



WORKFORCE  
**64.9k**

34.7% FEMALE

1.2% ABORIGINAL  
& TORRES STRAIT ISLANDER

0.5% WITH A DISABILITY

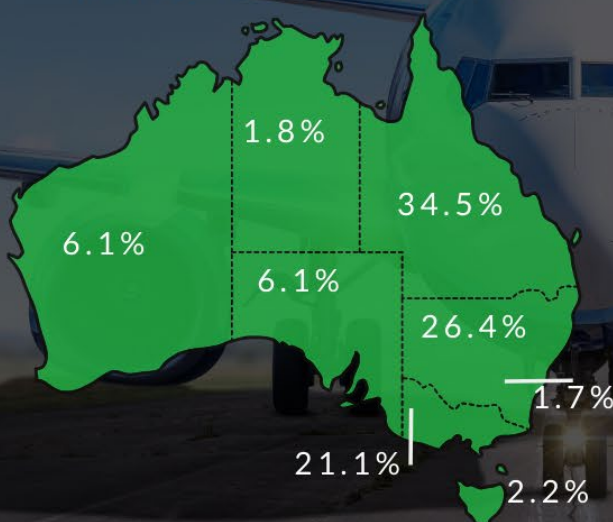
AVERAGE AGE  
**43YRS**

WORKFORCE NEARING  
RETIREMENT

**15.7%**

AGED 56-66

### WORKFORCE DISTRIBUTION



### TOP 5 OCCUPATIONS

Aeroplane Pilot - 8,136

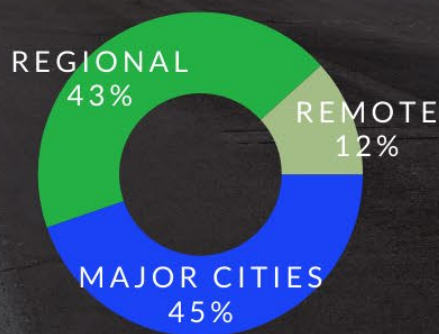
Flight Attendant - 6,092

Baggage Handler &  
Ground Crew - 4,008

Air Traffic  
Controller - 1,589

Helicopter Pilot - 1,106

### RESIDENTIAL DISTRIBUTION



WORKFORCE WITH  
VOCATIONAL EDUCATION

**41%**

Aviation training  
delivered by

**107**

REGISTERED TRAINING  
ORGANISATIONS

QUALIFICATION  
ENROLMENTS 2022

**7,191**

AVIATION TRAINING  
PACKAGE

Sources

**ABS Census**

First Nations People

Disability

Vocational education

Age and retirement

Top 5 occupations

**ABS Labour Force**

Workforce

Gender

Distribution

**Other**

Residential distribution:

JSA NERO

Qualification

enrolments: NCVER

Training delivery:

training.gov.au

# Existing Workforce Strategies and Initiatives

Industry Skills Australia will seek to align our work with, or contribute to, existing workforce strategies and initiatives, or collaborate with those responsible for implementing them in the 2024 Workforce Plan. Below is a mapping of the workforce strategies and initiatives identified as relevant to the Aviation Industry and the key drivers and challenges outlined in this Workforce Plan. We will continue to add to this list as we consult further with industry.

Following is a key to the mapping shown in the second column of the table:

- A.** Workforce shortages are challenging the industry

**B.** Training costs are creating barriers for potential new pilots
- C.** Sustainable Aviation Fuel (SAF) and alternative fuels initiatives have implications for skill needs

**D.** VET qualifications should meet industry needs and be better recognised by the industry
- E.** Regulatory changes and alignment with licencing requirements need to be better reflected in training products

**F.** New technologies and emerging industries are transforming the aviation industry

Table 3: Existing Workforce Strategies and Initiatives

Strategy/Initiative	Mapping to identified drivers /challenges	Jurisdiction	Owners	Purpose	Key Components/timing	Reference	Impact on Aviation workforce	How it will inform our work
Fee-Free TAFE	B	National	Australian Government in partnership with state and territory governments	To address skills shortages and delivery fee-free TAFE and vocational education places for students to train, retrain or upskill.	<ul style="list-style-type: none"><li>\$1 billion 12-month Skills Agreement to deliver 180,000 Fee-Free TAFE and vocational educational places from January 2023.</li><li>additional \$414.1 million will be committed for a further 300,000 TAFE and vocational educational courses to be made fee-free from Jan 2024 is currently in negotiation.</li></ul> <p>National priorities include:</p> <ul style="list-style-type: none"><li>sovereign capability</li><li>First Nations Australians</li><li>young people (17-24)</li><li>people who are out of work or receiving income support payments</li><li>women undertaking study in non-traditional fields.</li><li>certain categories of visa holders.</li></ul> <p>The identified funded qualifications include:</p> <ul style="list-style-type: none"><li>Certificate II in Transport Security Protection</li><li>Certificate III in Aviation (Remote Pilot)</li><li>Certificate III in Aviation (Cabin Crew)</li><li>Certificate III in Aviation (Ground Operations and Service)</li></ul>	<a href="#">Fee-Free TAFE</a>	Medium/High – Fee Free TAFE in partnership with States and Territories have provided funding for the development of maritime skills.	The summary of funded initiatives will form part of the advice on funded pathways for aviation Strategic Workforce Committee to inform 2024 Aviation Workforce Plan.



Strategy/Initiative	Mapping to identified drivers /challenges	Jurisdiction	Owners	Purpose	Key Components/timing	Reference	Impact on Aviation workforce	How it will inform our work
<b>Australian Civil Space Strategy 2019–2028</b>	A , D, E, F,	National	Australian Space Agency	To diversify the economy, triple the size of Australia's space sector and grow an additional 20,000 jobs by 2030  To transform and grow the Australian space industry over 10 years	2019 - 2028  There are four main components: <ul style="list-style-type: none"> <li>• promoting international engagement</li> <li>• cultivating national capability</li> <li>• ensuring safety and national interest</li> <li>• and fostering innovation</li> </ul>	<a href="#">Advancing Space: Australian Civil Space Strategy 2019-2028</a>	To help address identifying new roles and skill for space transport, identify new technologies in space transport and how the VET sector can prepare the workforce for this emerging industry	The strategy will inform our approach towards workforce planning for air and space transport to identify new roles and skills that can be addressed via the VET sector. It will also inform the advice provided to the aviation Strategic Workforce Planning Committee in developing the 2024 Aviation Workforce Plan.  We will also consult with the Manufacturing Jobs and Skills Council to assess the interconnections between space transport and manufacturing and how they impact the required skills and knowledge for the workforce.
<b>Aviation White Paper</b>	A, B, C, D, E, F,	National	Department of Infrastructure, Transport, Regional Development, Communication and the Arts.	The White Paper will set the long-term policies to guide the next generation of growth and innovation in the aviation sector	2024-50  The focus is on: <ul style="list-style-type: none"> <li>• maximising the aviation sector's contribution to achieving net zero carbon emissions, including through SAF and emerging technologies</li> <li>• the economic reforms needed to improve productivity across the sector, including addressing skills shortages, competition between airports and airlines, and charting a course out of the pandemic</li> <li>• supporting and regenerating Australia's general aviation sector</li> <li>• better mechanisms for consultation on and management of issues like aircraft noise, airport development planning and changing security requirements.</li> </ul>	<a href="#">Aviation White Paper</a>	The Paper will help prioritise workforce planning and initiatives to address workforce shortages and decarbonisation of the industry	The paper will inform Industry Skills Australia's Aviation Workforce Plan 2024 in prioritising workforce initiatives and projects, as well as inform the advice provided to the aviation Strategic Workforce Committee
<b>Clean Energy Capacity Study</b>	C	National	Jobs and Skills Australia	To understand workforce needs for Australia's transition to a clean energy economy. The capacity study will build on existing research and deepen our understanding of the clean energy sector	2023-2050  The focus in on: <ul style="list-style-type: none"> <li>• Identifying what jobs and industries make up Australia's clean energy workforce</li> <li>• Identifying the number of workers needed (and where) and what skills are needed</li> <li>• Identifying opportunities for workers to transition to new roles</li> <li>• identifying the required education, training and migration pathways.</li> </ul>	<a href="#">Clean Energy Capacity Study</a>	The capacity study will help identify the impact of renewable energy on the aviation sector, especially with regards to SAF and what skills or training initiatives might be needed.	The paper will inform the advice provided to the Aviation Strategic Workforce Planning Committee to identify skills and initiatives required for the transition of the Aviation industry to green energy
<b>Sustainable Aviation Fuel Funding Initiative</b>	C	National	The Australian Renewable Energy Agency	\$30 million funding initiative to reduce emissions in the aviation sector	July 2023 -Nov 2023  The initiative will: <ul style="list-style-type: none"> <li>• support engineering feasibility and project development activities or funding for pilot scale and pre-commercial demonstrations</li> <li>• novel and scalable approaches across the supply chain.</li> </ul>	<a href="#">Sustainable Aviation Fuel Funding Initiative</a>	This initiative is based on Australia's Bioenergy Roadmap, which will inform the development of the Aviation Workforce Plan in 2024.	The paper will inform the advice provided to the Aviation Strategic Workforce Planning Committee to identify skills and initiatives required for the transition of the Aviation industry to green energy

# Appendix A Aviation Occupational Areas

Industry Skills Australia acknowledges that the ANZSCO codes used by the VET system to identify occupations in the Aviation industry do not always align with the way in which the industry describes itself.

The table below describes job roles in terms that industry will recognise. We have developed this framework as a starting point to assist in conversations with industry stakeholders and will further refine it over time in collaboration with the Strategic Workforce Planning Committees.

Occupational Area	Job Role
Flight Operations	Commercial aeroplane pilot, Commercial helicopter pilot, Chief Remote Pilot, Deputy Chief Pilot, Senior Base Pilot, remote pilot,
	Cabin Crew, Flight Attendant
	Flight Instructor – Grade 2, Flight Instructor – Grade 3, Qualified Flying Instructor
	Aerodrome Controllers, Air Traffic Controllers, Approach Controllers, Enroute Controllers
Airport Operations	Aerodrome Reporting Officer, Airport Safety Officer, Airside Operations Officer, Operations Officer, Works Safety Officer (WSO)
	Aerodrome Manager, Aviation Manager, Business Manager, Operations Manager, Safety Manager
	Baggage Handler, Baggage Operator, Customer Service, Customer Service Operator, Ground Operations, Ground Operator, Ramp Operator
	Air Cargo Examination Officer, Domestic Airport Screening Officer, International Airport Screening Officer, Maritime Screening Officer
	Cargo Services Operator, Loadmaster
Aviation Rescue	Aviation Rescue Crew officer, Down the Wire Crew Officer, Police, Helicopter Crew Officer, Paramedics and Other Emergency Service Personnel, Rescue Crew Officer (RCO)
	Air Crew Officer

# Appendix B Training System Data

## Qualification Enrolments

Qualification	2018	2019	2020	2021	2022
AVI10119 Certificate I in Aviation (Foundation Skills)	0	0	0	0	0
AVI20118 Certificate II in Transport Security Protection	555	330	120	179	2833
AVI20119 Certificate II in Aviation (Flight Operations-Cargo Services)	0	8	11	0	0
AVI20219 Certificate II in Aviation (Ground Operations and Service)	19	5	3	0	0
AVI30119 Certificate III in Aviation (Aerodrome Operations)	32	10	19	32	8
AVI30219 Certificate III in Aviation (Cabin Crew)	372	387	440	193	206
AVI30319 Certificate III in Aviation (Ground Operations and Service)	237	351	74	49	130
AVI30419 Certificate III in Aviation (Remote Pilot)	554	994	1545	1822	1770
AVI30519 Certificate III in Aviation (Rescue Crew Officer)	13	22	19	32	15
AVI40119 Certificate IV in Aviation (Air Crew Officer)	145	127	143	35	61
AVI40122 Certificate IV in Aviation (Supervision)	40	83	28	16	12
AVI40422 Certificate IV in Aviation (Remote Pilot-Beyond Visual Line of Sight)	0	0	0	0	0
AVI50115 Diploma of Aviation (Air Traffic Control)	46	84	6	34	24
AVI50119 Diploma of Aviation (Aviation Management)	24	40	43	17	25
AVI50222 Diploma of Aviation (Commercial Pilot Licence - Aeroplane)	1078	1297	1198	733	1187
AVI50322 Diploma of Aviation (Commercial Pilot Licence - Helicopter)	93	133	131	122	118

Qualification	2018	2019	2020	2021	2022
AVI50419 Diploma of Aviation (Flight Instructor)	54	66	74	77	147
AVI50519 Diploma of Aviation (Instrument Rating)	496	256	474	385	552
AVI59922 Diploma of Aviation (Chief Remote Pilot)	0	0	0	0	0
AVI60219 Advanced Diploma of Aviation (Pilot in Command)	31	19	75	110	121
<b>Grand Total</b>	<b>3789</b>	<b>4212</b>	<b>4403</b>	<b>3836</b>	<b>7209</b>

*Note: enrolment numbers include all versions of the qualification across the years they were available (e.g. AVI20118 Certificate II in Transport Security Protection includes enrolments for AVI20416, AVI20316, AVI20713, AVI20613 and AVI20118.)*

## Qualification Completions

Qualification	2018	2019	2020	2021	2022
AVI10119 Certificate I in Aviation (Foundation Skills)	0	0	0	0	0
AVI20118 Certificate II in Transport Security Protection	523	351	175	122	2078
AVI20119 Certificate II in Aviation (Flight Operations-Cargo Services)	0	9	9	0	0
AVI20219 Certificate II in Aviation (Ground Operations and Service)	12	0	3	0	0
AVI30119 Certificate III in Aviation (Aerodrome Operations)	37	20	35	37	5
AVI30219 Certificate III in Aviation (Cabin Crew)	285	258	247	107	126
AVI30319 Certificate III in Aviation (Ground Operations and Service)	148	44	61	17	15
AVI30419 Certificate III in Aviation (Remote Pilot)	394	355	1266	1213	1297
AVI30519 Certificate III in Aviation (Rescue Crew Officer)	37	7	7	9	13
AVI40119 Certificate IV in Aviation (Air Crew Officer)	88	63	98	34	42

Qualification	2018	2019	2020	2021	2022
AVI40122 Certificate IV in Aviation (Supervision)	20	34	52	10	7
AVI40422 Certificate IV in Aviation (Remote Pilot-Beyond Visual Line of Sight)	0	0	0	0	0
AVI50115 Diploma of Aviation (Air Traffic Control)	9	17	43	49	11
AVI50119 Diploma of Aviation (Aviation Management)	8	17	23	8	5
AVI50222 Diploma of Aviation (Commercial Pilot Licence - Aeroplane)	558	689	777	475	505
AVI50322 Diploma of Aviation (Commercial Pilot Licence - Helicopter)	96	108	102	101	73
AVI50419 Diploma of Aviation (Flight Instructor)	38	78	23	83	118
AVI50519 Diploma of Aviation (Instrument Rating)	403	246	368	376	394
AVI59922 Diploma of Aviation (Chief Remote Pilot)	0	0	0	0	0
AVI60219 Advanced Diploma of Aviation (Pilot in Command)	24	10	37	77	56
<b>Grand Total</b>	<b>2680</b>	<b>2306</b>	<b>3326</b>	<b>2718</b>	<b>4745</b>

## Number of RTOs scoped to deliver Aviation Qualifications<sup>76</sup>

Qualification	RTO count
AVI10119 Certificate I in Aviation (Foundation Skills)	2
AVI20118 Certificate II in Transport Security Protection	13
AVI20119 Certificate II in Aviation (Flight Operations-Cargo Services)	0
AVI20219 Certificate II in Aviation (Ground Operations and Service)	3
AVI30119 Certificate III in Aviation (Aerodrome Operations)	1
AVI30219 Certificate III in Aviation (Cabin Crew)	7
AVI30319 Certificate III in Aviation (Ground Operations and Service)	7
AVI30419 Certificate III in Aviation (Remote Pilot)	25
AVI30519 Certificate III in Aviation (Rescue Crew Officer)	9
AVI40119 Certificate IV in Aviation (Air Crew Officer)	9
AVI40122 Certificate IV in Aviation (Supervision)	2
AVI40422 Certificate IV in Aviation (Remote Pilot-Beyond Visual Line of Sight)	2
AVI50115 Diploma of Aviation (Air Traffic Control)	2
AVI50119 Diploma of Aviation (Aviation Management)	6
AVI50222 Diploma of Aviation (Commercial Pilot Licence - Aeroplane)	41
AVI50322 Diploma of Aviation (Commercial Pilot Licence - Helicopter)	6
AVI50419 Diploma of Aviation (Flight Instructor)	11
AVI50519 Diploma of Aviation (Instrument Rating)	41
AVI59922 Diploma of Aviation (Chief Remote Pilot)	0
AVI60219 Advanced Diploma of Aviation (Pilot in Command)	5

<sup>76</sup> Training.gov.au (as at 05 Sept 2023)



# Appendix C Glossary of Terms

**Gap analysis** - The process of quantifying and identifying the difference between current workforce and skills needs and what will be required into the future.

**Labour shortage** - Where the demand for unskilled labour (entry level or otherwise) is greater than the supply of those available and willing to work under existing industry conditions

**Registered Training Organisation** - Organisations that are approved by ASQA, WA TAC or VRQA to deliver nationally recognised training in the VET sector

**Reskilling** - Involves learning new skills outside of workers' existing skillset which are often closely adjacent to their current function, but can be geared toward a different path entirely

**Skill Set** - A single unit of competency or a combination of units of competency from a training package that link to a licensing or regulatory requirement, or a defined industry need

**Skill shortage** - where the demand for specific skills (or knowledge) is greater than available within the current workforce

**Skilled labour shortage** - Where the demand for employees in specific occupations is greater than the supply of those who are qualified, available and willing to work under existing industry conditions

**Training Provider** - Any organisation or individual providing education or training services

**Upskilling** - Undertaking learning to expand one's existing skill set. Upskilling enhances workers' performance in their current role, potentially advancing them along their career path

**Workers** - The term refers to occupational data (ANZSCO)

**Workforce development** - Design or delivery of initiatives to build the skills and capability of the workforce. May include but is not limited to: skills audits and skills analyses; on or off-the-job training; skills recognition; recruitment, job design and career pathways; assessment and evaluation.

**Workforce Plan** - The repeated, systematic and cyclical identification, analysis and planning of workforce skill needs at the enterprise (micro) or sector/region (meso) or whole of industry/economy (macro) level

**Workforce Planning** - Analysis, research and strategies to identify, forecast and respond to the current, emerging and future workforce challenges and opportunities

**Workforce** - The term refers industrial data (ANZSIC).

# Appendix D Explanatory Notes to Data

## Occupational data (Workers) vs Industrial data (Workforce)

When analysing the workforce and industry data in Australia, two classifications are commonly used: ANZSCO and ANZSIC.

- ANZSCO (Australian and New Zealand Standard Classification of Occupations) categorises occupations based on skill level and specialisation.
- ANZSIC (Australian and New Zealand Standard Industrial Classification) classifies businesses into industry sectors. This groups companies based on the primary activities they are engaged in.

In simple terms, ANZSCO is about what people do in their jobs, and ANZSIC is about the industry or sector where businesses operate. They are used for different purposes and are not directly comparable.

In this document, we use the term 'Workers' when referring to occupational data (ANZSCO) and industry 'Workforce' when referring to industrial data (ANZSIC).

## Business Count

In the Counts of Australian Businesses data, industries are classified by the main industry linked to a business ABN. This method has limitations. Firstly, businesses operating in several States/Territories are counted only once, making enterprise figures appear low in some areas. This does not mean that there are no enterprises in those regions; rather, that their headquarters are located elsewhere. Secondly, if an organisation operates in multiple industries, it is only counted in one, leading to potential inaccuracies in industry classification.

## Training Data

Total VET Activity (TVA) data is collected from all types of RTOs and not only those in receipt of Commonwealth or State funding.

## Endnotes/Special References

<sup>†</sup> Scenic and Sightseeing Transport is an industrial category that covers all transport modes, and the workforce is split proportionately among the transport sectors.

<sup>\*</sup> Future Demand was calculated by the National Skills Commission who was responsible for producing the Skills Priority List (SPL) 2022

<sup>#</sup> Disability data is not available in Census year 2006



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