



# Aviation Industry

2024 Workforce Plan



# About ISA

Industry Skills Australia (ISA) has been established as the Jobs and Skills Council (JSC) for the Transport and Logistics industry sectors, which includes Aviation, Maritime, Rail, Transport and Logistics, the emerging Omnichannel Logistics and Distribution, and Air and Space Transport and Logistics.

Owned and led by industry, our JSC 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

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People first, for a future-fit  
supply chain workforce

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# About the Workforce Plan

## Purpose

Workforce Planning is the strategic centrepiece for Jobs and Skills Councils to inform and establish each of their other functions. The Workforce Plan serves as a guide to identifying the contemporary drivers and challenges within Australia's Aviation industry and developing forward-thinking actions to address those challenges. Drawing upon a rich blend of data sources, including industry reports, stakeholder consultation and the direction from Strategic Workforce Planning Committee, it outlines the current obstacles impeding the industry's progress and proposes practical actions to overcome these hurdles.

The Workforce Plan begins the groundwork for ongoing evaluation and strategy refinement. It aims not only to diagnose current challenges but also to anticipate future trends and opportunities. This proactive approach ensures that the Australian Aviation industry remains agile and responsive to changing conditions.

A crucial aspect of this document is its collaborative nature, emphasising the value of stakeholder input. By incorporating diverse perspectives from industry experts, policy makers, and practitioners, the strategies presented are both robust and attuned to the real-world dynamics of the Aviation sector.

The Workforce 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 Workforce Plan is updated each year, it 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 Workforce Plan 2024 is not just a snapshot of the present but a roadmap for the future, guiding stakeholders in collectively navigating and shaping the evolving landscape of Australia's Aviation industry.



## JSC Obligations

In 2023, the Australian Government established ten (10) Jobs and Skills Councils to address the many workforce planning and skills development challenges facing Australia, and to ensure that our national skills system meets the rapidly evolving needs of industry, individual employers, and the workforce.

Jobs and Skills Councils have four formal roles:

1

Industry Stewardship which involves gathering industry intelligence to reliably represent the views and needs of industry back to the VET system and its decision-makers;

2

Workforce Planning which enables industry to identify its workforce development issues and design high-impact solutions, which are then captured in the national Workforce Plan for the industry;

3

Training Product Development which focusses on improving the quality, speed to market and responsiveness of training products to employer and workforce needs;

4

Implementation, promotion and monitoring which is a broad role that involves supporting training providers, promoting careers, and monitoring how well the system is meeting the needs of industry and learners.

Jobs and Skills Councils are funded by the Australian Government (Department of Employment and Workplace Relations) but work collaboratively with a wide range of bodies.







# Foreword

The Aviation Strategic Workforce Planning Committee (SWPC) comprises senior industry leaders established by Industry Skills Australia (ISA), the Jobs and Skills Council (JSC) for the Transport and Logistics (T&L) industries. The Committee forms the central mechanism through which industry is empowered to identify the immediate and emerging skill needs and the responses needed by the national skills system, industry, and government. Through rigorous research, analysis, and engagement with key stakeholders nationwide, the Committee oversees the development of the Aviation National Workforce Plan.

Since its inception in November 2023, the Committee has diligently examined the challenges and dynamics within the Aviation industry, identifying key priorities and exploring opportunities that could further enhance solutions for our industry. The aviation sector is currently encountering a myriad of workforce challenges, necessitating prompt actions. Persistent shortages in critical roles are compounded by an ageing workforce and fierce competition for skilled professionals across sectors. It is imperative to enhance the appeal of the aviation industry as an employer of choice. As the industry undergoes rapid expansion and embraces new technologies and develops decarbonisation initiatives, it presents both challenges and new opportunities in retaining and attracting its present and future workforce.

The Committee will continue to monitor the industry landscape to identify and prioritise areas requiring support, ensuring the development of a resilient and future-ready workforce.

**We extend our gratitude for your continued support as we collectively shape the future of our industry.**

**Adrianne Fleming OAM**

Chair, Aviation Strategic Workforce Planning Committee



# 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:

- **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 Australian Aviation industry currently employs over 71,000 people and is expected to grow by over 20% in the next decade.<sup>1</sup> Understanding the key factors impacting the supply and demand of workers in the aviation industry assists in the identification of workforce issues and potential solutions.

Four megatrends have been identified that are impacting the Australian economy, businesses,

and people. Their impact on the Aviation industry is explored in the challenges and drivers section of the Workforce Plan. The megatrends are:

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

The most significant labour market dynamics and workforce challenges influencing the supply and demand of workers in the Aviation industry include:

- Workforce shortages
- Training costs
- Industry recognition of qualifications
- Training products' alignment with licensing and regulatory requirements
- Sustainable Aviation Fuel and alternative fuels
- New technologies and emerging industries

The 2023 Initial Workforce Plan has been used to engage with stakeholders and gather workforce intelligence to inform evidence based and industry supported actions for the 2024 Aviation Workforce Plan. The plan will be refreshed and developed further each year, with work on the 2025 version already underway.

<sup>1</sup> Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ06 - Employed persons by Industry group of main job



## Proposed Actions

The **Proposed Actions** in the Workforce Plan have been developed and designed to address some of the key industry challenges as a priority. Each proposed action is a high-level description of a project and will be fully scoped, planned and implemented in consultation with relevant stakeholders. These include:

Industry Challenge/Driver	Proposed Action
VET qualifications should meet industry needs and be better recognised by industry	<ul style="list-style-type: none"> <li>• <b>Aviation rescue</b> - Review the Aviation Rescue Crew Officer and Air Crew Officer qualifications to cater for both fixed-wing and rotary wing operators.</li> </ul>
VET qualifications should meet industry needs and be better recognised by industry Regulatory changes and alignment with licensing requirements need to be better reflected in training products	<ul style="list-style-type: none"> <li>• <b>Transport security protection</b> - Review of the Transport Security Protection qualification to align with regulatory changes and current industry practices.</li> <li>• <b>Diploma of Aviation (Flight Instructor)</b> - Review the Diploma of Aviation (Flight Instructor) qualification to align with CASA licensing requirements and enhance the usability and currency of training.</li> </ul>
New technologies and emerging industries are transforming the aviation industry	<ul style="list-style-type: none"> <li>• <b>Space transport and logistics skills gap analysis</b> - Conduct a skills gap analysis to understand the skills and knowledge requirements for the space transport industry and determine how well the vocational sector is ready to prepare the current and future workforce.</li> </ul>
Workforce shortages are challenging the industry	<ul style="list-style-type: none"> <li>• <b>Aviation jobs and skills information</b> - Developing an up-to-date source of information to promote aviation careers and pathways.</li> </ul>
Workforce shortages are challenging the industry VET qualifications should meet industry needs and be better recognised by industry	<ul style="list-style-type: none"> <li>• <b>Cabin crew and ground operations skills audit</b> - Conduct a skills audit on Certificates III in Aviation (Cabin Crew) and Aviation (Ground Operations and Service), revise qualifications to improve training recognition and develop career pathways.</li> </ul>
Workforce shortages are challenging the industry Regulatory changes and alignment with licensing requirements need to be better reflected in training products	<ul style="list-style-type: none"> <li>• <b>Recognition of defence flight instructors and LAMES' training by CASA</b> - Investigate barriers and challenges in the recognition and licensing of military flight instructors and LAMES' training by CASA and developing a framework for mutual recognition.</li> </ul>
Regulatory changes and alignment with licensing requirements need to be better reflected in training products	<ul style="list-style-type: none"> <li>• <b>Vocation qualification alignment with RePL licensing</b> - Investigate barriers and challenges in aligning remote pilot vocational qualifications with CASA's RePL (Remote Pilot Licence).</li> </ul>

## Future Research and Consultation

The **Future Research and Consultation** activities identified in this Workforce Plan will be used to inform drivers and challenges in the 2025 Aviation Workplace Plan and potential workforce actions. These include:

Industry Challenge/Driver	Proposed Further Research and Consultation
Workforce shortages	<ul style="list-style-type: none"> <li>• <b>Diversity:</b> Industry Skills Australia will engage with aviation industry stakeholders to identify underrepresented groups and propose innovative strategies to increase diversity and inclusivity in the industry.</li> <li>• <b>Promotional campaign:</b> ISA will explore ways to promote the aviation industry by raising awareness among school children and encouraging them to consider aviation careers through VET pathways, industry partnerships, guest speakers, etc.</li> <li>• <b>Foundation programs:</b> ISA will work with the industry to identify and develop foundational programs in schools that foster a talent pipeline by introducing aviation skills and programs focused on emerging areas like AAM or RPAS.</li> <li>• <b>Aviation White Paper:</b> ISA will review the Aviation White Paper recommendations upon publication and collaborate with industry stakeholders and the Department of Infrastructure to prioritise strategies and actions from the White Paper.</li> <li>• <b>Skilled migration:</b> In collaboration with industry stakeholders, ISA will evaluate the current temporary and permanent skilled work visas, including the shift from the TSS visa to the SID visa, to assess their effectiveness in meeting workforce needs.</li> </ul>
Industry recognition of qualifications	<ul style="list-style-type: none"> <li>• <b>University and VET Program:</b> ISA will collaborate with universities offering aviation courses to bridge the gap between VET and Higher Education pathways and enhance VET recognition to expedite entry into the aviation job market</li> <li>• <b>Workplace Learning for Diploma of Aviation (CPL):</b> ISA will work with the industry to identify and explore partnerships between flight schools and airlines for graduate training and potential employment.</li> <li>• <b>Aerodrome Reporting Officer Skills Audit:</b> ISA will work with the industry and Australian Airports Association to understand why the current qualification for Aerodrome Reporting Officers is underutilised and will adapt training to better meet industry needs and attract individuals especially in regional areas to the industry.</li> </ul>
Training products' alignment with licensing and regulatory requirements	<ul style="list-style-type: none"> <li>• <b>Aligning Diploma of Aviation (CPL) with CASA licensing:</b> ISA will consult with the industry to explore the necessity and feasibility of aligning the Diploma of Aviation (CPL) with CASA licensing requirements.</li> </ul>
Sustainable Aviation Fuel (SAF) and alternative fuels	<ul style="list-style-type: none"> <li>• <b>SAF and alternative fuels:</b> ISA will proactively consult with stakeholders to understand changes and skills required for SAF and alternative fuels implementation, proposing targeted strategies to equip the workforce for safe work with these fuels.</li> </ul>
New technologies and emerging industries	<ul style="list-style-type: none"> <li>• <b>Advanced Air Mobility:</b> ISA will collaborate with the aviation industry to understand transformative changes from Advanced Air Mobility and RPAS to develop targeted strategies, including tiered licensing and training products, to equip the workforce for evolving challenges and future-proof the industry.</li> </ul>

## Existing Workforce Strategies and Initiatives

This 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 in implementing them.

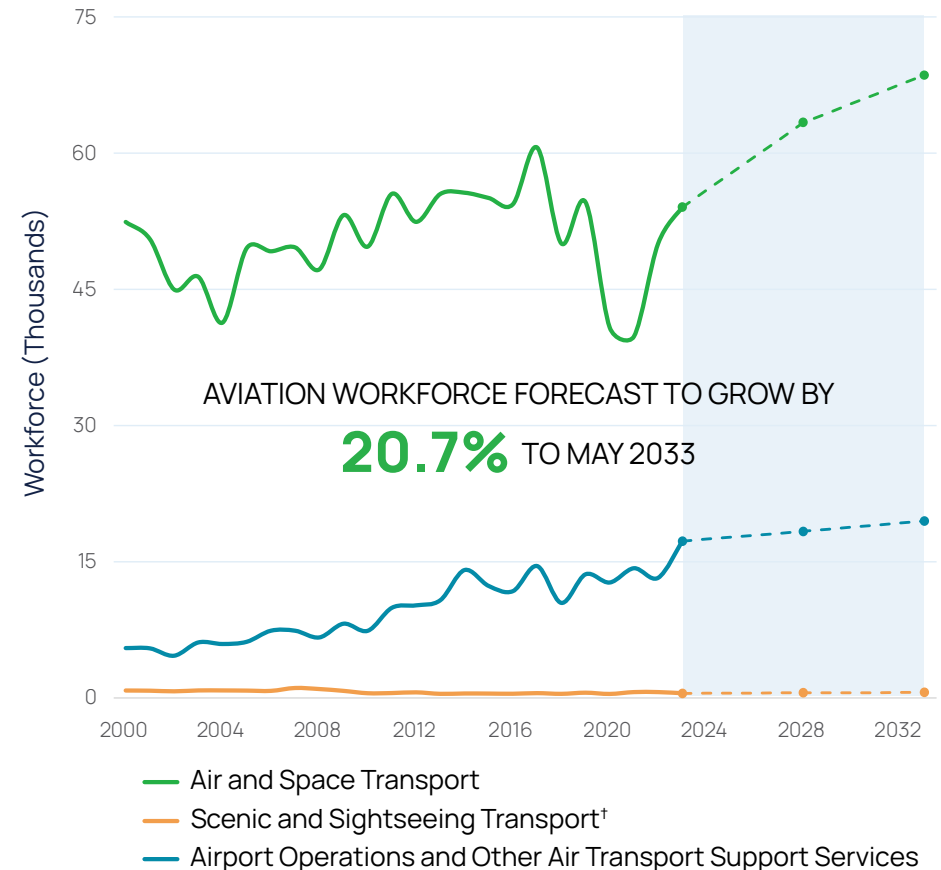


# Industry Overview

The Aviation industry is one of the largest industries in Australia, connecting people and businesses across the country and around the globe. It underpins Australia's domestic and international supply chains, creating jobs and facilitating international trade and tourism. The Aviation industry is also a significant contributor to the Australian economy generating \$18.98 billion in 2023.<sup>2</sup> The median age of aviation workers is 40 years,<sup>3</sup> with women making up 40.7% of workers.<sup>4</sup> The industry employed more than 71,800<sup>5</sup> people in 2023 and is projected to grow by 12.3% and 20.7% in the coming five and ten years respectively.<sup>6</sup> The Aviation industry comprises the operation and coordination of aircraft for the transportation of freight, passengers by air, fire mapping, aerial spraying and drone operations. General Aviation (GA) also plays a significant role, creating opportunities for employment in the Aviation industry as well as other industries. Critical GA activities are varied including air ambulance, delivery of medical supplies, inspection and protection of powerlines and phone towers in bushfires, support for law enforcement operations, monitoring of endangered species and habitats, safe movement of ships with marine pilot transfers, border security and surveillance, mail, freight and passenger services to remote communities and stations, scientific research and flights, scenic tourism, and sport and recreational aviation to mention a few.



Figure 1: Aviation Industry Workforce, 2000 - 2033



Source: ABS Labour Force/JSA Employment Projections

<sup>2</sup> IBISWorld Industry Wizard (December 2023)

<sup>3</sup> Australian Bureau of Statistics (2021) '2021 Census - Employment, income and education', TableBuilder

<sup>4</sup> Australian Bureau of Statistics, Detailed Labour Force Survey, EQ08 - Employed persons by Occupation unit group of main job, November 2023 (annual average of original data)

<sup>5</sup> Australian Bureau of Statistics, Detailed Labour Force Survey, EQ08 - Employed persons by Occupation unit group of main job, November 2023 (annual average of original data)

<sup>6</sup> Employment projections produced by Victoria University for Jobs and Skills Australia, May 2023 to May 2033

## AVIATION BUSINESS NO.

# 2411



**23** with **200+ employees**

**107** with **20-199 employees**

**2281** with **0-19 employees**



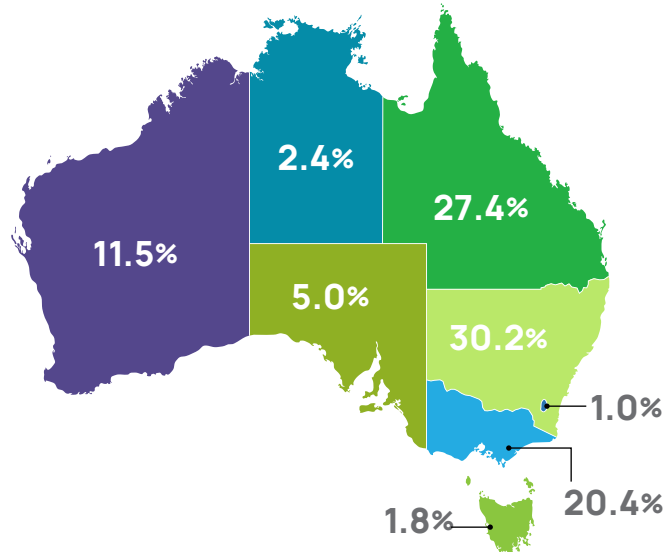
# 29,965

REGISTERED DRONES  
IN AUSTRALIA

PASSENGERS  
ON DOMESTIC  
COMMERCIAL FLIGHTS

# 53.77 MILLION

## BUSINESS DISTRIBUTION BY STATE %



## AIRPORTS IN AUSTRALIA

# 164



GDP CONTRIBUTION  
\$B 2022-2023

# 18.98

## REGIONAL AIRPORTS CARRY

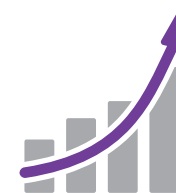
# 41%

OF ALL  
DOMESTIC  
PASSENGERS



DOMESTIC FREIGHT  
TASK GROWTH  
(PROJECTED TO 2030)

# 14.50%

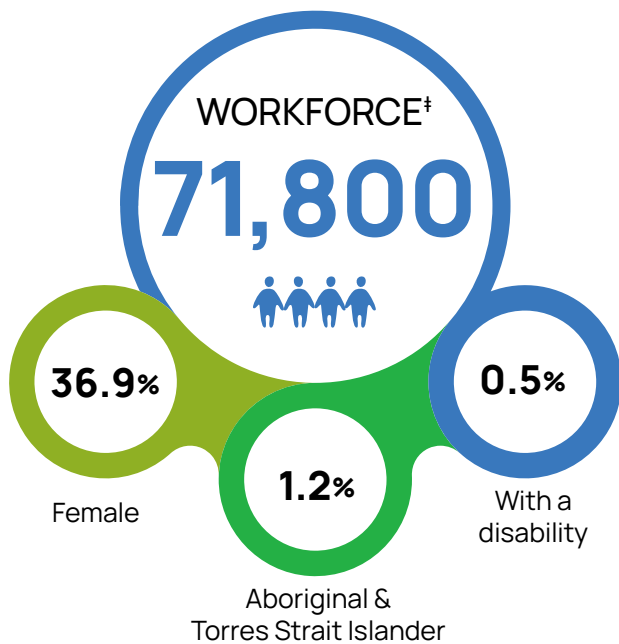


AVIATION INDUSTRY ESTIMATED  
ANNUAL REVENUE \$B 2024

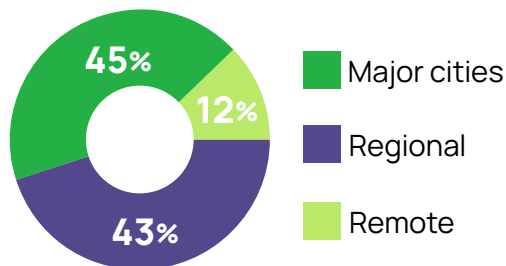


# 53.6





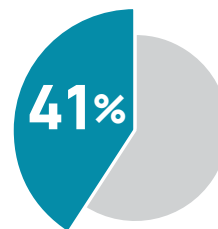
### RESIDENTIAL DISTRIBUTION OF WORKERS



### MEDIAN AGE

**40**

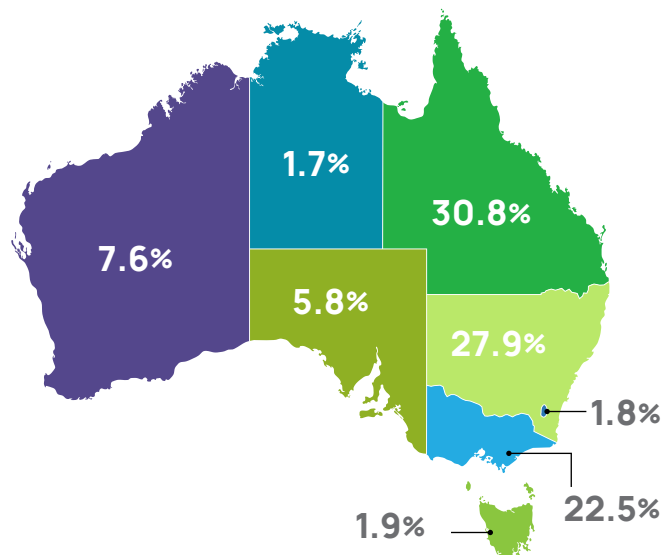
### WORKERS WITH VOCATIONAL EDUCATION



### WORKFORCE NEARING RETIREMENT (AGED 56-66)



### WORKFORCE DISTRIBUTION



### QUALIFICATION ENROLMENT 2022

**7,191**



### REGISTERED TRAINING ORGANISATIONS (RTO)

**100**

### TOP 5 OCCUPATIONS



# Megatrends

Megatrends are overarching, transformative shifts that are reshaping the workforce, economies, and the global environment, exerting profound impacts across all transport sectors. These trends, which include digital transformation, automation, decarbonisation, and workforce supply/demand issues, pose cross-sector challenges that demand innovative and adaptive responses, including skills development and improvements in diversity and inclusion in the workplace. Understanding these megatrends is crucial for addressing industry-specific challenges and leveraging the opportunities they present in shaping the future of transportation. The megatrends identified in this section represent cross-cutting issues that are evident across Industry Skills Australia's four main industry sectors.

## Digital Technology and Automation

The adoption of high-performance computing, AI, machine learning, sensors, the Internet of Things (IoT), robotics and other Industry 4.0 technologies is growing globally. The next wave of digital innovation is expected to generate \$10–15 trillion globally, and currently available technologies could contribute \$140–250 billion to Australia's GDP by 2025.<sup>7</sup>

There is a drive to increase the technical capabilities of Transport and Logistics using IoT, data analytics and automation to boost efficiencies and productivity.<sup>8</sup> The increasing integration of smart technologies, driver assistance and other safety systems play a key role in improving the road transport sector's ability to enhance efficiency, safety and productivity. Unsurprisingly, logistics companies are turning to technology to reduce costs and improve productivity in transportation and warehousing.<sup>9</sup>

New technologies and increased levels of digitalisation and automation are continuously being introduced to the Maritime industry for reasons of safety, efficiency, and the environment.<sup>10</sup> However, the changes brought about by rapid technological development need to ensure that seafarers are required to reskill and upskill to new tasks and embrace emerging job opportunities.<sup>11</sup>

The Aviation industry is on the verge of new revolution, propelled by incorporating cutting-edge technologies such as Uncrewed Aircraft Systems (UAS), remote digital tower technology<sup>12</sup>, OneSky (a harmonised civil and military air traffic management system)<sup>13</sup> and Satellite-Based Augmentation System (SBAS).<sup>14</sup> Similarly, the Rail industry is operating autonomous trains, smart devices and automated asset inspections using various technologies including LiDAR (Light Detection and Ranging) in asset management. As a result, by 2027 nearly 40% of the existing rail workforce will need to learn new digital skills, with the number of specialised digital workers needed, projected to grow by 84%.<sup>15</sup>

<sup>7</sup> CSIRO. (2022). Global Megatrends impacting the way we live over coming decades

<sup>8</sup> PwC. (2023). Shifting Patterns: The future of the logistics industry

<sup>9</sup> McKinsey. (2023). Digital Logistics: Technology race gathers momentum

<sup>10</sup> World Maritime University. (2023). Transport 2040: Impact of technology on seafarers – the future of work

<sup>11</sup> World Maritime University. (2023). Transport 2040: Impact of technology on seafarers – the future of work

<sup>12</sup> Australian Aviation. (2019). Airservices to trial remote digital tower prototype at Sydney. November

<sup>13</sup> Airservices. (NA). What is OneSKY?

<sup>14</sup> Australian Flying. (2018). Airservices launches SBAS Project.

<sup>15</sup> Future Rail Skills Forum. (2022). Shaping the next generation workforce



Digital connectivity and advanced capabilities offer significant opportunities to diversify and strengthen regional and remote economies. These advancements can attract and retain a more skilled workforce, contributing to regional economic growth and sustainability.<sup>16</sup> However, this potential is hindered by underlying issues in these areas, including:

- A notable lack of local professionals with the necessary technical skills, which impedes the development and maintenance of digital infrastructure.
- Limited or unreliable internet access hampering the adoption of digital technologies and skilling opportunities.

This urban/rural divide is becoming increasingly critical as metropolitan areas surge ahead with rapid digital advancements.<sup>17</sup>

At the national scale, 2.7 million Australian jobs are at risk of being lost due to automation in almost all industry sectors by 2034.<sup>18</sup> However, almost twice as many jobs as those lost to automation (4.5 million) will be augmented by automation requiring upskilling, reskilling and digital skills to provide a pathway to a future-ready workforce.<sup>19</sup>

## Decarbonisation

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>20</sup> Around 7 in 10 business leaders recognise the need for Australia to achieve 'net zero' carbon emissions to keep up economically, while almost 8 in 10 believe that sustainable transformation is driving a competitive edge for companies.<sup>21</sup>

According to the DCCEEW,<sup>22</sup> the transport industry was responsible for nearly a quarter (24.6%) of energy consumption in 2020-21 (**Figure 2**) and will need to be a major focus of emissions targets. In the years to 2050, emissions from the Transport industry can be reduced due to electrification of the light vehicle fleet as adoption of electric vehicles (EVs) increases from less than 2% of Australian car sales to more than 55% by 2030.<sup>23</sup> Decarbonisation of long distance and heavy transport is expected to accelerate through 2030-2040<sup>24</sup> with trials for zero-emissions hydrogen fuel-cell battery trucks (FCEV)<sup>25</sup> and electric battery

trucks (BEV)<sup>26</sup> already under way for long range applications in Australia. The International Maritime Organization (IMO) has been working to steward the decarbonisation of the sector and has set targets to reduce shipping emissions intensity by at least 40% by 2030 and reduce greenhouse gas emissions to net zero by around 2050.<sup>27</sup> The use of hydrogen and fuels such as ammonia is also gaining traction in the maritime industry with trials already underway.<sup>28</sup> Additionally, in line with the Government's climate change agenda, the Maritime Emissions Reduction National Action Plan (MERNAP) developed by the Australian Government in collaboration with the Maritime industry will set strategic direction and recommend actions to achieve net zero emission.<sup>29</sup> Similarly, the International Civil Aviation Organization (ICAO) adopted the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) in 2016 as a carbon offset and carbon reduction scheme to lower aviation CO2 emissions.



<sup>16</sup> Rural Economies Centre of Excellence. (2021). Leveraging digital development in regional and rural Queensland

<sup>17</sup> Good Things Foundation Australia. (2021). Digital Nation Australia

<sup>18</sup> ACS. (2020). Technology impacts on the Australian workforce

<sup>19</sup> ACS. (2020). Technology impacts on the Australian workforce

<sup>20</sup> Climate Council. (2022). The federal budget: three highlights and lowlights for climate. October

<sup>21</sup> Schneider Electric. (2023). Sustainability index 2023

<sup>22</sup> Department of Climate Change, Energy, the Environment and Water, Australian Energy Statistics, Table E, September 2022

<sup>23</sup> CSIRO. (2023). Pathways to Net Zero Emissions – An Australian Perspective on Rapid Decarbonisation

<sup>24</sup> CSIRO. (2023). Pathways to Net Zero Emissions – An Australian Perspective on Rapid Decarbonisation

<sup>25</sup> Power Torque. (2023). First Aussie Hydrogen Truck

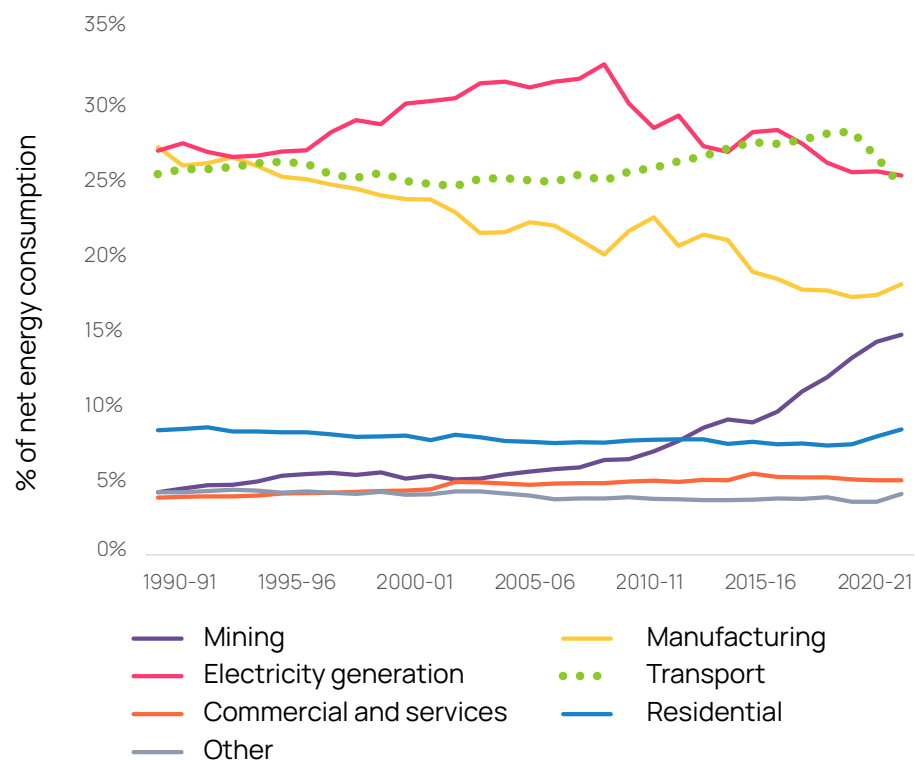
<sup>26</sup> CleanTechnica. (2023). Volvo makes longest ever all-electric truck journey in Australia.

<sup>27</sup> International Maritime Organization. (2023). 2023 IMO Strategy on Reduction of GHG Emissions from Ships - Annex 15, Resolution MEPC.337(80)

<sup>28</sup> Offshore Energy. (2023). Carisbrooke Shipping to trial hydrogen engine on board one of its vessels

<sup>29</sup> Department of Infrastructure, Transport, Regional Development, Communications and the Arts. (2023). Maritime Emissions Reduction National Action Plan

**Figure 2:** Energy Consumption in Australia



Source: DCCEEW (2022), Australian Energy Statistics, Table E

TRANSPORT  
ACCOUNTS FOR  
**1/4**  
OF AUSTRALIA'S  
ENERGY USE



SAF (Sustainable Aviation Fuel) is expected to play a significant role in the decarbonisation of the aviation industry to 2050.<sup>30</sup> Also, electric, hydrogen-electric, and hydrogen powered fixed wing aircraft are considered the most attractive long-term solution to full industry decarbonisation, but the implementation may take some time.<sup>31</sup> Rail transport using electricity is projected to double by 2050 from 12% in 2020.<sup>32</sup> Battery electric trains and hydrogen fuel cells are emerging options to displace the existing diesel fleet in the coming decades.

The Australian Government has committed to more than \$525 million to invest in regional hydrogen hubs and \$500m for electric vehicle charging infrastructure and hydrogen highways,<sup>33</sup> creating new jobs in regional areas. In Australia, about a quarter of businesses have reported an increasing need for emerging skills related to the green economy.<sup>34</sup>

Every country and sector contribute to emissions, either directly or indirectly, through day-to-day production and consumption. Integrating new technologies in diversification programs, reskilling, and redeployment programs may help address the socioeconomic impacts of digitalisation.<sup>35</sup>

## Workforce Supply Challenges and Diversity, Inclusion

The 2023 JSA's Skills Priority List (SPL) shows that 36% of occupations are in national shortage and about 5% higher than 2022 (31% of occupations).<sup>36</sup> JSA's Annual Jobs and Skills Report 2023, showed that occupations with a strong gender imbalance were more likely to be in shortage (**Figure 3**). The rise in shortages reflects the cumulative impacts of recruitment challenges, stemming from a persistently tight labour market which began tightening from late 2021. Addressing diversity and inclusion is essential for tackling skills shortages among transport occupations, where diversity is notably lacking. Australian businesses are investing in staff training, developing skills, and attracting young people and women into traditionally male-dominated industries and occupations.<sup>37</sup> Fostering equality, diversity and inclusion in industries is about challenging traditional mindsets and adopting more innovative work practices to attract and retain more diverse workforces.<sup>38</sup>

<sup>30</sup> Department of Infrastructure, Transport, Regional Development, Communications, and the Arts. (2023). Scenario Analysis of the Future of Australian Aviation

<sup>31</sup> Department of Infrastructure, Transport, Regional Development, Communications, and the Arts. (2023). Scenario Analysis of the Future of Australian Aviation

<sup>32</sup> CSIRO. (2023). Pathways to Net Zero Emissions – An Australian Perspective on Rapid Decarbonisation

<sup>33</sup> Australian Trade and Investment Commission. (2020). Transition to net zero

<sup>34</sup> AiGroup. (2022). 2022 Skills Survey: Listening to Australian businesses on skills and workforce needs

<sup>35</sup> McKinsey. (2022). The net-zero transition

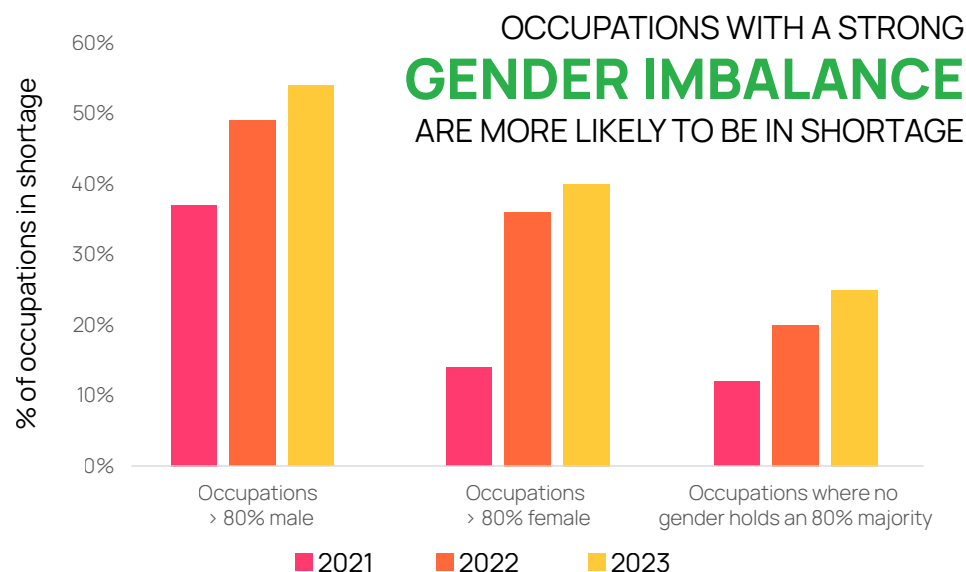
<sup>36</sup> JSA. (2023). Skills priority list

<sup>37</sup> Infrastructure Magazine. (2023). Gender diversity is critical to addressing our sector's skills shortages

<sup>38</sup> McKinsey. (2023). Diversity Matters Even More: The Case for Holistic Impact



**Figure 3:** Occupational Shortages by Gender Balance



Source: National Skills Commission, Skill Priority List 2021 and 2022; Jobs and Skills Australia, Skills Priority List 2023

In the Transport industry, a shortage of truck and bus drivers is reported across every state and territory in Australia according to the latest Skills Priority List.<sup>39</sup> The presence of truck drivers on the national Skills Priority List for 2 years is a strong indication of the current and future demand for this occupation.<sup>40</sup> There is also a reported shortage of deck officers, engineers and ratings across Australia. With a current global shortfall of 35,020 officers, projected to rise to 55,685 by 2027, Australia's seafarer demand is unlikely to be met solely through migration.<sup>41</sup>

<sup>39</sup> JSA. (2023). Skills priority list

<sup>40</sup> JSA. (2023). Skills priority list

<sup>41</sup> Department of infrastructure, transport, communications and arts. (2023). Strategic fleet taskforce report

<sup>42</sup> Financial Review. (2023). The 'alarming' workforce trend causing flight delays. February 2023

<sup>43</sup> The Sydney Morning Herald. (2023). Airlines call for action on air traffic controller shortage as flight delays continue. August

<sup>44</sup> Simple Flying. (2023). Rex flying solo to fix Australian pilot shortage. May

<sup>45</sup> Australasian Railway Association. (2023). 2023/24 Strategic plan

<sup>46</sup> Australasian Railway Association. (2022). Building Australian Rail Skills for the Future



*We need to be encouraging more women and first nations peoples to our industry to ensure our workforce is representative of our communities.*

Stakeholder feedback



The Aviation industry has faced significant challenges and operational issues such as cancellation or long delays of flights due to a shortage of cabin crew, ground crew, pilots,<sup>42</sup> or air traffic control staff.<sup>43</sup> The pilot shortage has impacted regional airlines even more severely.<sup>44</sup> While skills shortages are not new in rail, the current convergence of challenges and threats to workforce capability means this will be a critical issue for the industry over the next three years.<sup>45</sup> The rail industry has also reported occupational shortages in key roles such as train drivers, controllers, or signalling technicians.<sup>46</sup>



## Skills Development

The Vocational Education and Training (VET) system today remains an effective and efficient way of imparting the skills needed for employment. Work-based learning models will be more important in the future as technology-driven changes need to be quickly transmitted across industries and around workplaces.<sup>47</sup> However, barriers such as perceptions of the VET sector<sup>48</sup> and a growing shortage of vocational trainers impacts on the attractiveness of the sector and on learner outcomes.<sup>49</sup>

Delivering VET in regional and remote Australia to deal with occupational shortages faces several barriers,<sup>50</sup> including:

- a lack of high-quality training facilities
- up-to-date training equipment
- a lack of RTOs
- appropriately qualified trainers/assessors
- increased costs of training delivery
- numeracy and digital literacy
- the need for cultural competency in working with First Nations communities.

Additionally, one of the biggest challenges to achieving successful outcomes with disadvantaged groups is the high rate of attrition in attendance as a result of other factors such as health, housing, transport and family issues.<sup>51</sup> The lack of appropriate housing in particular was highlighted by stakeholders

as a significant barrier to support the future workforce in regional and remote Australia.<sup>52</sup>

The National Skills Agreement reflects a commitment by the Commonwealth, state and territory governments by investing \$12.6 billion to support the VET sector with capacity to deliver skills for critical and emerging industries.<sup>53</sup> Creating greater flexibility within the VET system can yield better results by attracting more learners and leading to improved learner outcomes.<sup>54</sup> Supporting this approach, the Australian Universities Accord Final Report<sup>55</sup> outlines the importance of VET and higher education to meet the nation's skill demands and ensuring fair access to high-quality education.

Skills Ministers have agreed to progress some early changes to the current standards for RTOs which will come into effect from March 2024, including;

- New and updated training products from the updated Training and Education (TAE) training package.
- Enable people who hold an educational degree to be engaged as trainers/assessors.
- Allow people actively working towards the Certificate IV or Diploma to deliver training/assessment under supervision.
- Enable broader use of industry experts.
- Align the changes to Fit and Proper Person requirements.
- Implement minor amendments towards validation, language, and inclusion of wellbeing services to educational and support services.

<sup>47</sup> Department of the Prime Minister and Cabinet. (2019). Expert Review of Australia's Vocational Education and Training System

<sup>48</sup> Parliament of Australia. (2023). Inquiry into the Perceptions and Status of Vocational Education and Training. Terms of Reference.

<sup>49</sup> Department of the Prime Minister and Cabinet. (2019). Expert Review of Australia's Vocational Education and Training System

<sup>50</sup> Tabatha, G. & Andrahannadi, U. (2023). VET delivery in regional, rural and remote Australia: barriers and facilitators, NCVER

<sup>51</sup> Department of the Prime Minister and Cabinet. (2019). Expert Review of Australia's Vocational Education and Training System

<sup>52</sup> Regional Australia Institute. Against the odds - Realising regional Australia's workforce potential. Retrieved from [https://regionalaustralia.org.au/Web/Shared\\_Content/Smart-Suite/Smart-Library/Public/Smart-Library-Viewer.aspx](https://regionalaustralia.org.au/Web/Shared_Content/Smart-Suite/Smart-Library/Public/Smart-Library-Viewer.aspx)

<sup>53</sup> Department of Employment and Workplace Relations. (2023). National skills agreement - Reforming the national VET system

<sup>54</sup> The Regional Australia Institute. (2023). 2023-2024 Federal Government Pre-Budget Submission.

<sup>55</sup> Australian Government. (2024). Australian universities accord final report



## Conclusion

The intersection of digital technology, decarbonisation, and workforce challenges marks a transformative era for Australia's transport sectors. Rapid digital advancements are significantly altering the economic landscape, bringing the prospect of automation-related job displacement and new employment opportunities. Government and industry commitments to decarbonisation are also reshaping transportation's future. Addressing workforce issues, particularly in remote areas, and prioritising diversity and inclusion are key to industry growth and innovation. The VET system is central to this shift, adapting to industry needs and ensuring a future-ready skilled workforce.

Aligning these elements is crucial for Australia to effectively navigate and leverage these major trends.



# Key Challenges and Drivers

## 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,<sup>56</sup> flight instructors, cabin crew, security screening personnel and baggage handlers. This shortage is particularly pronounced in regional areas (**Table 1**) where it is more difficult to recruit, an issue which is compounded by differing requirements for levels of experience in regional airlines.<sup>57</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>58</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 new generation also prefers pursuing multiple careers instead of sticking to a single, traditional career path. Therefore, developing career pathways is essential to help them progress through their career journey.



<sup>56</sup> Aviation Green Paper Towards 2050. (2023). Australian Government  
<sup>57</sup> 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>  
<sup>58</sup> Boeing (2023) Commercial Market Outlook 2023-2042. Retrieved from <https://www.boeing.com/commercial/market/commercial-market-outlook/index.page>

Table 1: Aviation Occupations in Shortage 2023

Occupation	AUS	ACT	NSW	NT	SA	TAS	VIC	WA	QLD
Aeroplane Pilot	S	S	S	S	S	S	S	S	R
Flight Attendant	S	S	S	S	S	S	S	NS	S
Baggage Handler / Airline Ground Crew	S	S	S	S	S	S	S	S	S
Air Traffic Controller	NS	NS	NS	NS	NS	NS	S	NS	NS
Helicopter Pilot	NS	NS	NS	S	NS	NS	NS	NS	NS
Flying Instructor	S	NS	S	NS	S	NS	S	S	S
Aircraft Refueller	NS	NS	NS	NS	NS	NS	S	NS	NS

S = Shortage, R = Regional Shortage, NS = No Shortage  
Source: Skills Priority List (20 December, 2023)

“*To address workforce shortages in aviation, there is a pressing need to increase focus on funneling student careers towards this industry. It’s crucial to highlight not only immediate challenges but also emphasise the industry’s strengths and long-term advantages, including career progression, safety, and longevity.*”  
Stakeholder feedback



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 demand due to rapid post-covid recovery.<sup>59</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 industry is facing greater competition for skilled labour both domestically by other sectors and internationally by airlines in countries such as the United States which poach highly qualified pilots from Australia.<sup>60</sup> Our stakeholder survey indicates that Flight Attendants have a high turnover rate due to low wages, working conditions, and limited career pathways. Flight Attendants have also been added to the Australian Apprenticeship Priority List as a priority occupation.<sup>61</sup> The recent aviation accident in Japan has highlighted the critical role cabin crew play in saving lives. In case of an emergency, flight attendants are first responders and need to have a broad range of skills including safety, first aid, conflict management, team work, cultural awareness, etc.

Flight Attendants' Association of Australia and other stakeholders have requested a review of Certificate III in Aviation (Cabin Crew) and further industry consultation to investigate the barriers to the industry utilising this qualification and amending it accordingly.<sup>62</sup>

**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>63</sup> The relative insecurity of many jobs in the aviation sector, especially ground handling operations, has added to recruitment difficulties.<sup>64</sup> Establishing clear training and career pathways<sup>65</sup> plays a pivotal role in encouraging more individuals to pursue careers in the aviation industry. These pathways serve as transparent roadmaps, guiding individuals on how to progress in the industry, outlining the qualifications and skills required for each career step.

**Flight instructor shortages** are also having a knock-on effect on new pilot numbers. In general, aviation flight training is declining in Australia.<sup>66</sup> Part of the challenge is the time and cost involved in achieving the required qualification to become 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>67</sup>

**Aircraft Maintenance Engineers (LAMEs)** are in critical shortage which affects all aviation sectors especially in remote and regional communities. From 2016 onwards, an average of 135 aircraft engineer licences have been issued annually, contrasting starkly with the average of 297 licenses issued per year over the preceding decade.<sup>68</sup> According to CASA's annual report, there are 9,603 licence holders as of 2023/23, but this is not an indication of the current number of LAMEs in the workforce as these licences are perpetual and not all the licence holders are currently working.<sup>69</sup> According to ABS there are 12,163 Aircraft Maintenance Engineers in Australia in 2023,<sup>70</sup> but ABS does not distinguish between licensed and unlicensed engineers. The occupation has been in shortage in all states and territories for three consecutive years,<sup>71</sup> with an average of 163 job ads per month in 2023.<sup>72</sup> The workforce is also very male dominated (93.2% male<sup>73</sup>) which highlights the need to attract more women to this occupation. The stringent regulatory requirements and the lack of awareness and pathways deter people

<sup>59</sup> Aero society. (2022). What is the future for gender diversity in the pilot trainer role? Myth or reality?. Retrieved from [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)

<sup>60</sup> Rural and Regional Affairs and Transport References Committee. (2022). The future of Australia's aviation sector, in the context of COVID-19 and conditions post pandemic. Retrieved from [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)

<sup>61</sup> 2024 Australian Apprenticeship Priority List. (2024). Minister of Employment and Workplace Relations Portfolio. Media Release. Jan 1st, 2024.

<sup>62</sup> Submission of the Flights Attendants' Association of Australia to the Aviation Green Paper. (2023). Flight Attendants' Association of Australia. Nov 2023.

<sup>63</sup> 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>

<sup>64</sup> [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)

<sup>65</sup> Australian Government. (2023). Aviation Green Paper Towards 2050

<sup>66</sup> Rural and Regional Affairs and Transport Legislation Committee. (2022). Australia's general aviation industry. Retrieved from [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>67</sup> Rural and Regional Affairs and Transport Legislation Committee. (2022). Australia's general aviation industry. Retrieved from [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>68</sup> Regional Aviation Association of Australia. (2022). Aircraft maintenance engineer shortage – crisis and opportunities.

<sup>69</sup> Civil Aviation Safety Authority. (2023). Annual Report 2022-2023

<sup>70</sup> Australian Bureau of Statistics (Dec 2023, quarterly average) Labour Force Survey, EQ08 - Employed persons by Occupation unit group of main job

<sup>71</sup> Skills Priority List. (2023). Jobs and Skills Australia. [Skills Priority List | Jobs and Skills Australia](#)

<sup>72</sup> Jobs and Skills Australia. (2023). Internet Vacancy Index

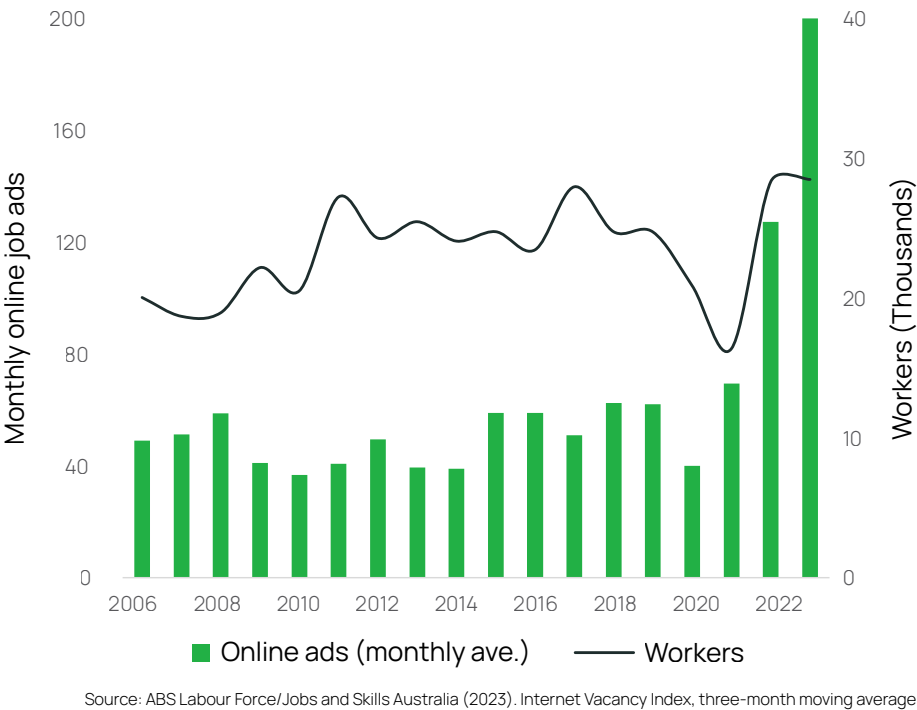
<sup>73</sup> Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ08 - Employed persons by Occupation unit group of main job

from joining the industry. To address this issue, proactive measures are imperative. This includes promoting the occupation, streamlining certification process and the recognition of foreign Lames' qualifications, greater collaboration between Defence Aviation Safety Authority (DASA) and CASA, and creating clearly defined pathways. The introduction of the recent modular licensing initiative from CASA is a welcome move, but there is still more to be done. Industry Skills Australia will explore opportunities for collaboration with the relevant Jobs and Skills Council for the LAMEs to address this issue.

The aviation sector is experiencing growth. Air travel is projected to reach pre-covid levels domestically by late 2023.<sup>74</sup> Indicators of demand for Air Transport Professionals, of which commercial pilots comprise 70%, are high (**Figure 4**). The number of monthly online vacancies for Air Transport Professionals has nearly tripled since 2019,<sup>75</sup> while the number of employed professionals has declined by up to 23% over the same period.<sup>76</sup> In other words, job ads demand is increasing as the supply declines. While **Table 2** indicates below average future demand for key roles, this is in the context of historically high average demand in the labour market.



**Figure 4:** Aviation Workers and Online Job Ads, 2006 - 2023



SINCE 2019 MONTHLY  
ONLINE VACANCIES HAVE  
**TRIPLED**  
FOR AIR TRANSPORT PROFESSIONALS

<sup>74</sup> Air Services Australia. (2022). Air Services Australia Corporate Plan 2022-23.  
<sup>75</sup> Jobs and Skills Australia (2023). Internet Vacancy Index, three-month moving average  
<sup>76</sup> Australian Bureau of Statistics, Detailed Labour Force Survey, EQ08 - Employed persons by Occupation unit group of main job, November 2023 (annual average of original data)



**Table 2:** Top Employing Aviation Occupations, Growth and Demand

Occupation	2006	2011	2016	2021	Ave. Growth <sup>77</sup>	Future demand*
Aeroplane Pilot	6466	7995	7931	8136	1.54%	Below average
Flight Attendant	7081	8287	8456	6092	-1.00%	Average demand
Baggage Handler / Airline Ground Crew	4505	4960	5728	4008	-0.78%	Below average
Air Traffic Controller	1489	1557	1713	1589	0.43%	Below average
Helicopter Pilot	787	1049	1089	1106	2.29%	Below average
Flying Instructor	738	840	873	963	1.79%	Below average
Aircraft Refueller	471	624	748	703	2.71%	Below average

Source: ABS Census, Skills Priority List (20 December 2023)

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

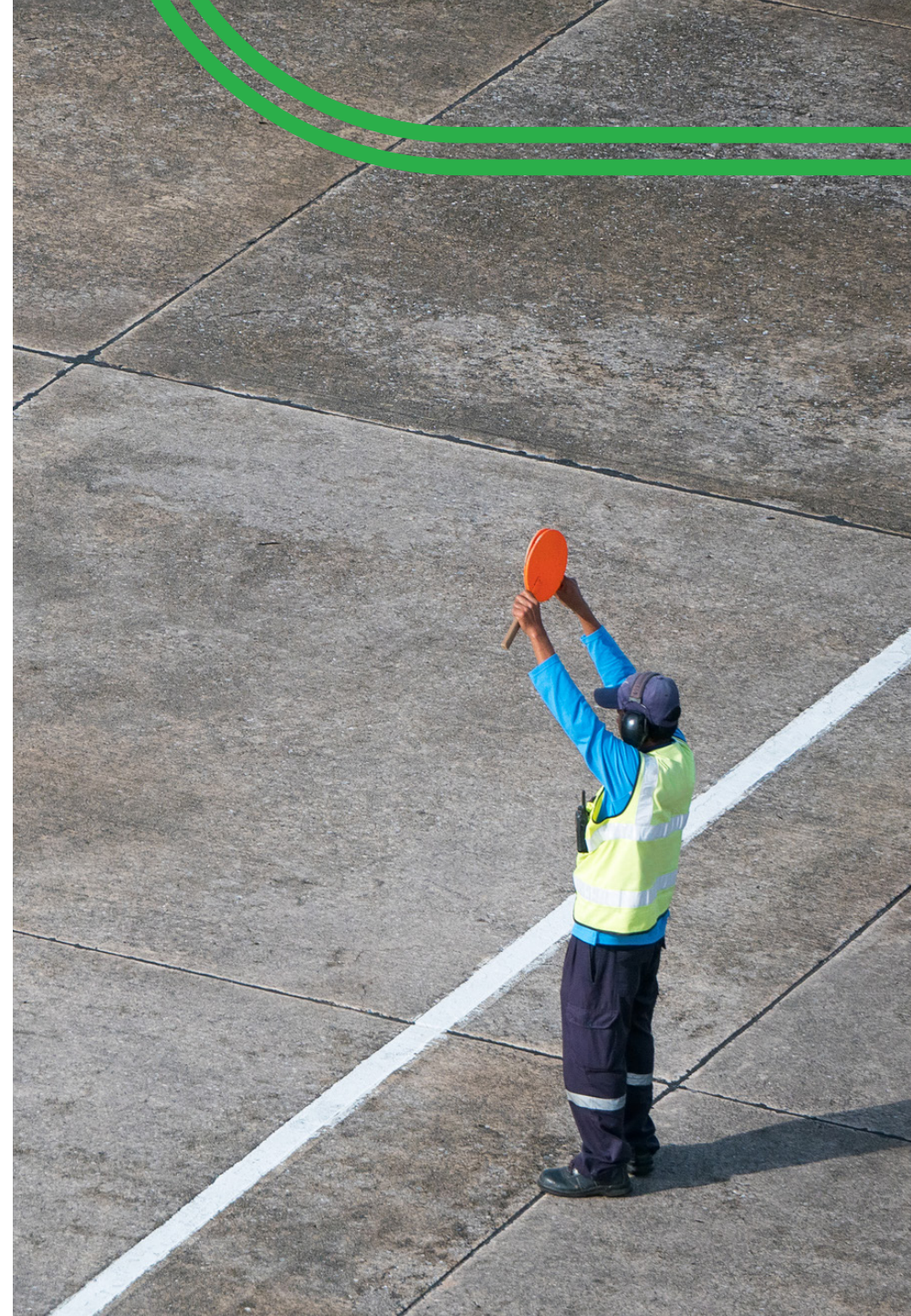
Proposed actions include:

- [Aviation Jobs and Skills Information](#)
- [Cabin Crew and Ground Operations Skills Audit](#)
- [Recognition of Defence Flight Instructors' Training by CASA](#)

Further areas for research and consultation to inform the development of future strategies include:

- [Diversity](#)
- [Aviation Industry Promotional Campaign](#)
- [Foundation Programs](#)
- [Aviation White Paper](#)
- [Skilled Migration](#)

<sup>77</sup> Compound Annual Growth Rate (CAGR) has been employed to estimate the average annual growth in employment over intercensal periods.

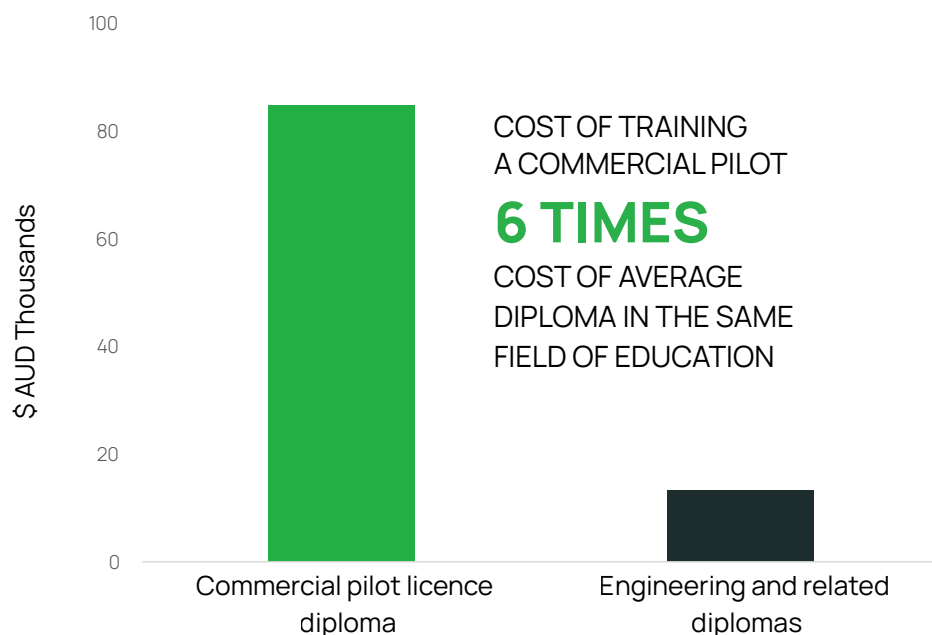




## B. Training Costs are Creating Barriers for Potential New Pilots

The cost of aviation training, including pilot and cabin crew training (**Figure 5**), is substantial and involves various components such as tuition fees, flight hours, simulator sessions, and meeting regulatory requirements.

**Figure 5:** Cost of commercial pilot training vs related engineering diploma



Source: MySkills and National Skills Commission VET average price benchmarks

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. ISA's stakeholders' survey results indicate that the use of technologies such as increasing use of simulation and virtual delivery of competency-based training can play a role in decreasing the training costs.

Apart from training fees, the cost of obtaining a Commercial Pilot Licence (CPL) poses a further challenge. Cost and access to funding are currently a barrier for new entrants.<sup>78</sup> There have been reports that employers sometimes require pilots to enter into a training bond or incur personal debts in order to undertake training.<sup>79</sup> Stakeholders have indicated incorporating mandatory workplace learning as a component of the Diploma of Aviation in partnership with industry. This can be achieved via cadetship programs that can help learners gain more flight time and industry experience as well as a potential opportunity for employment upon the completion of their training. Different types of pilots also need to have various types of specialisations depending on the aircraft and the types of tasks they perform. It has been suggested to investigate the incorporation of elective specialisations in the Diploma of Aviation (Commercial Pilot) to cater for more technical tasks that are sometimes required depending on the subsector of the industry.



<sup>78</sup> Parliament of Australia: Senate Inquiry. (2022). The future of Australia's aviation sector, in the context of COVID-19 and conditions post pandemic

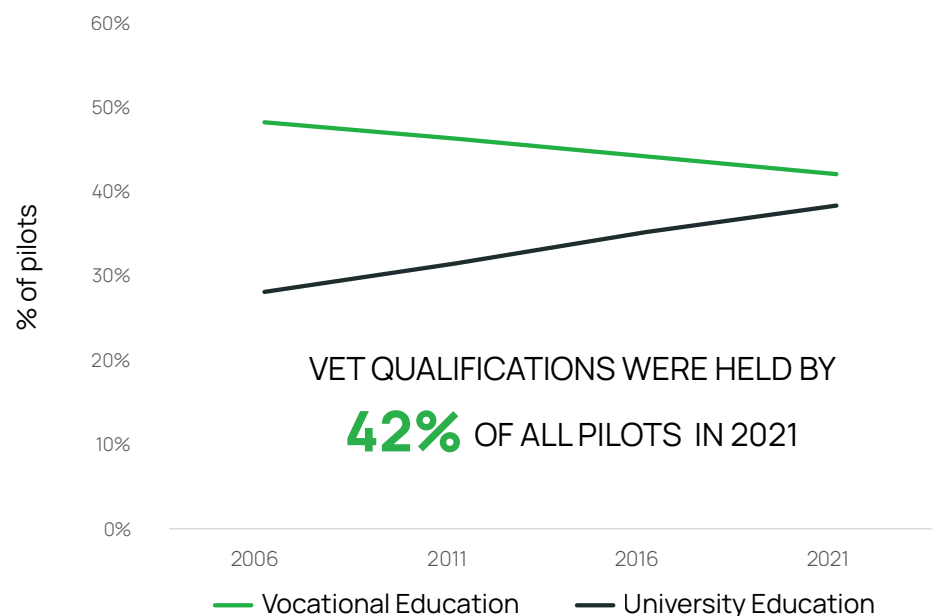
<sup>79</sup> Ibid.



## C. VET Qualifications Should Meet Industry Needs and be Better Recognised by the Industry

Whilst VET qualifications provide a valuable opportunity for learners to gain employment, the share of aeroplane pilots whose highest qualification is a VET qualification has been declining steadily, from 48% of all pilots in 2006 to 42% in 2021 (below).<sup>80</sup>

**Figure 6:** Share of Pilots with Vocational Qualification vs University Degree



Regardless, more pilots hold a VET qualification compared to qualifications from other types of education providers,<sup>80</sup> which indicates the important historical 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. Feedback from Industry stakeholders indicates

that a skills audit should be conducted to ensure that industry needs and the qualification skills standards are aligned. Cabin crew have a wide range of transferrable skills which are highly in demand and can be used in adjacent industries.

Certificate III in Aviation (Aerodrome Operations) is also an underutilised qualification. The Strategic Workforce Planning Committee has advised that more consultation needs to be conducted with airport operators to better understand the skills and knowledge requirements of Aerodrome Reporting Officers.

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>81</sup> and create clear pathways in the aviation industry 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 industry. Programs that can provide foundation skills to students can provide an ideal introduction to the aviation industry and provide a platform to build aviation skills for potential new entrants.

In response to industry's request, the Certificates III and IV in Aviation (Air Crew Officer; Rescue Crew Officer) have been proposed to be reviewed. Rescue 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 (helicopters). 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 nationally recognised 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. The review will aim to ensure consistency in training and safe conduction of search and rescue operations on fixed wing aircraft.

Proposed actions include:

- [Aviation Rescue](#)
- [Transport Security Protection](#)
- [Diploma of Aviation \(Flight Instructor\)](#)
- [Cabin Crew and Ground Operations Skills Audit](#)

Further areas for research and consultation to inform the development of future strategies include:

- [University and VET Program](#)
- [Workplace Learning for Diploma of Aviation \(Commercial Pilot Licence\)](#)
- [Aerodrome Reporting Officers Skills Audit](#)

<sup>80</sup> ABS. Census 2006-2021

<sup>81</sup> Australian Government. (2020). Looking to the Future: Report of the Review of senior secondary pathways



## D. Regulatory Changes and Alignment with Licensing Requirements Need to be Better Reflected in Training Products

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

They have highlighted the need for a revision of the Diploma of Aviation (Flight Instructor; Commercial Pilot Licence, and Instrument Rating), 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, however, only 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). CASA has also expressed interest in investigating a framework for aligning drone-related qualifications with the CASA issued Remote Pilot Licence (RePL).

A better alignment between training products and licensing requirements will help 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. ISA will continue to consult with CASA and industry stakeholders to investigate the feasibility and the application of a licensing framework for better alignment between qualifications and licensing outcomes. Our stakeholders have also suggested that ISA conduct research to investigate the barriers to transitioning defence aviation personnel (flight instructors) to civil airlines and vice versa. The research needs to investigate the regulatory challenges and how best to address them.

There is also an opportunity to collaborate with the Manufacturing Industry Skills Alliance (the Jobs and Skills Council for the manufacturing industry) to discuss the alignment of aviation engineering licensing.

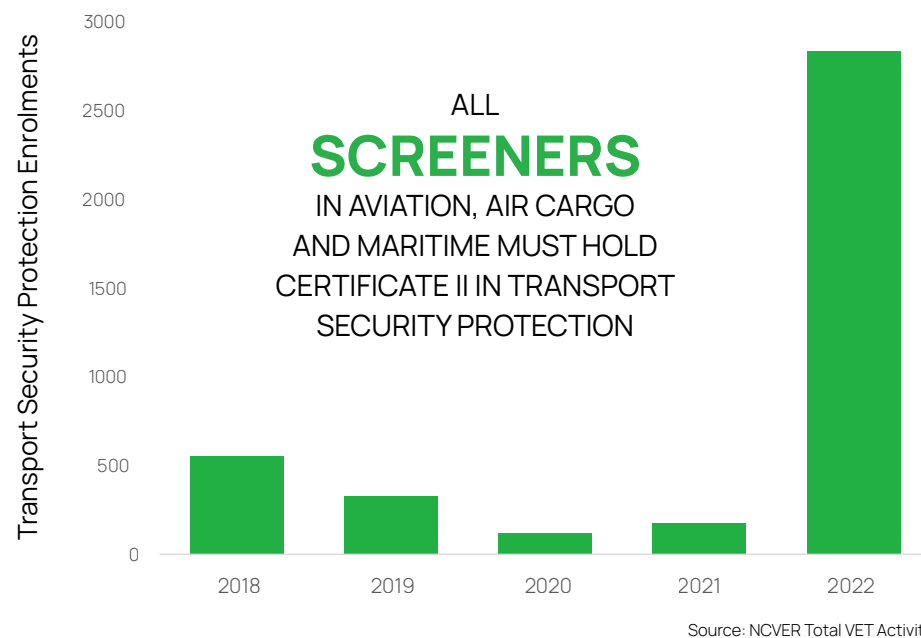
Apart from alignment with licensing requirements, the Diploma of Aviation (Flight Instructor) needs to be reviewed to update the superseded Units of Competency and review other components to ensure they reflect current industry practices.





In response to The Department of Home Affairs' request to review Certificate II in Transport Security Protection, ISA has proposed a project to review this qualification to ensure it reflects the latest industry and regulatory requirements.

**Figure 7: Transport Security Protection Enrolments 2018 - 2022**



Proposed actions include:

- Transport Security Protection
- Diploma of Aviation (Flight Instructor)
- Recognition of Defence Flight Instructors' Training by CASA
- Vocational Qualification Alignment with RePL Licensing

Further areas for research and consultation to inform the development of future strategies include:

- Aligning the Diploma of Aviation (Commercial Pilot Licence) with CASA Licensing

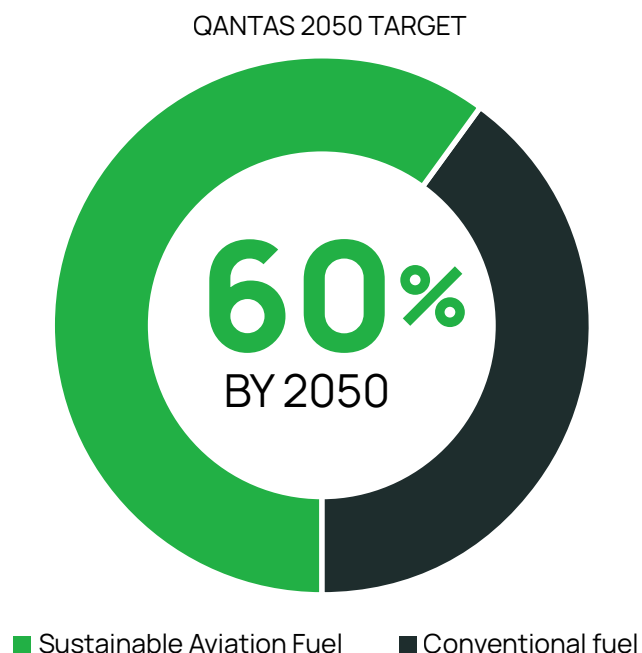


## E. Sustainable Aviation Fuel (SAF) and Alternative Fuels Initiatives have Implications for Skill Needs

The global air transport industry is committed to net zero by 2050.<sup>82</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>83</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>84</sup>

Figure 8: Qantas Sustainable Aviation Fuel Target for 2050



Source: Qantas Sustainability Report 2023

<sup>82</sup> IATA. (2021). Net Zero Carbon Emissions by 2050.

<sup>83</sup> CSIRO. (2023). Sustainable Aviation Fuel Roadmap.

<sup>84</sup> Qantas. (2022). Qantas Sustainability Report 2022: Driving Sustainability to Protect the Future of Travel.

<sup>85</sup> CSIRO. (2022). A roadmap for hydrogen in the aviation industry.

CSIRO's research on hydrogen adoption in the aviation industry 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>85</sup>

The introduction of alternative energy powered aircrafts (electric and hydrogen) and associated ground infrastructure will have implications for workforce skills in the medium and long-term.

Further areas for research and consultation to inform the development of future strategies include:

- Sustainable Aviation Fuels (SAF) and Alternative Fuels







## 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>86</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>87</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>88</sup>
- Electric aircraft are also gaining more traction and can be used in short-haul trips<sup>89</sup> in Australia with the first plane already commercially produced and unveiled.<sup>90</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>91</sup> which includes the use of small, electric and eVTOL aircrafts to transport people and goods within urban areas.
- Technologies such as virtual reality and artificial intelligence can significantly improve quality, efficiency, and engagement outcomes across various sectors in the Aviation industry. Collaboration with CASA is required to help the integration of these technologies into existing systems.

Skills in digital and automation technologies will be needed by workers as these new systems are introduced. New skills related to electric aircraft<sup>92</sup> will also be needed to ensure safety and regulatory compliance.

<sup>86</sup> Airservices Australia. (2022). Airservices Annual Report 2022.

<sup>87</sup> Australian Aviation. (2019). Digital air traffic control towers are coming to Australia and NZ

<sup>88</sup> Airservices Australia. (2023). Corporate Plan 2023.

<sup>89</sup> KMPG. (2019). Australia's Aerospace Industry Capability

<sup>90</sup> Asian Aviation. (2023). Australia's first commercially produced electric aircraft unveiled. Retrieved from <https://asianaviation.com/australias-first-commercially-produced-electric-aircraft-unveiled/>

<sup>91</sup> 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>

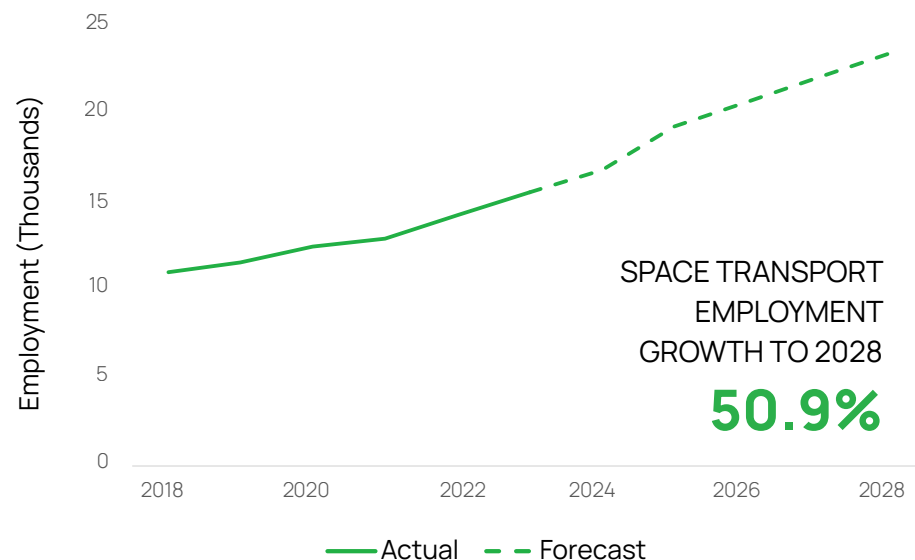
<sup>92</sup> Institute for Intelligent Systems Research and Innovation & Deakin University. (2020). Advanced Aerial Mobility and eVTOL aircraft in Australia: Promise and Challenges



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>93</sup> The Australian space industry's focus on space transport and logistics is evidenced by the growing number of companies specialising in this area.<sup>94</sup> 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.



**Figure 9:** Employment Growth in the Space Transport Sector in Australia



Source: IBISWorld 2023, OD5545 Satellite Communications and Astronautics

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 workforce development requirements and career pathways.<sup>95</sup> ISA has proposed a skills audit project to determine the range of skills and knowledge required for this sector and how best the vocational system can provide them.

Proposed actions include:

- **Space Transport and Logistics Skills Gap Analysis**

Further areas for research and consultation to inform the development of future strategies include:

- **Advance Air Mobility**

<sup>93</sup> ACIL Consulting. (2017). Australian Space Industry Capability

<sup>94</sup> IBISWorld. "OD5545 Satellite Communications and Astronautics in Australia." IBISWorld Industry Wizard. Accessed 18 December 2023

<sup>95</sup> Aviation Green Paper Towards 2050. (2023). Australian Government



# Proposed Actions

The 2024 Workforce Plan identifies the following proposed actions developed in consultation with industry to address the sector-specific and cross-sector issues.

**Table 3:** Proposed Actions to Address Challenges and Drivers

Aviation Rescue		
Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<b>Driver/Challenge</b> <ul style="list-style-type: none"> <li><u>C. VET qualifications should meet industry needs and be better recognised by the industry</u></li> </ul> <b>Symptom</b> Quality Mismatch	<p><b>Activity:</b> AVI30519 - Certificate III in Aviation (Rescue Crew Officer) and AVI40119 - Certificate IV in Aviation (Air Crew Officer) are under review.</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>Reviewing and updating two Qualifications, 34 Units of Competency, 17 Skill Sets</li> <li>Enhancing the usability of the qualification to cater for both fixed-wing and rotary wing operators</li> <li>Allowing more workforce to acquire a qualification upon the completion of their training and increasing enrolment in these qualifications</li> <li>Ensuring training and assessment is comprehensive and adaptable to various aircraft types</li> <li>Reviewing the existing competencies to ensure they are appropriately classified as core and elective given changes in the aviation industry.</li> <li>Investigating the need for developing an elective stream for fixed-wing aircraft. This could result in a reduction in the number of core units and the introduction of relevant elective options to provide specialised outcomes within qualifications</li> </ul> <p><b>Impact:</b> The review will align the qualifications with current industry practices and allows more people in the workforce to have access to nationally-recognised qualifications regardless of the type of aircrafts they are using. This project has commenced with reviewed training products due for submission to the Assurance Body in January 2025 – <a href="#">Aviation Rescue project</a>.</p> <p><b>Anticipated timing:</b> March 2024-March 2025</p>	<ul style="list-style-type: none"> <li>CASA</li> <li>AMSA</li> <li>Toll Helicopters</li> <li>Leidos Australia</li> <li>Surf life Saving Queensland</li> <li>NSW Rural Fire Service</li> <li>Tafe WA South Metropolitan</li> <li>Queensland Training and Development</li> <li>Life Flight</li> <li>Other relevant training providers, government organisations, associations and unions</li> </ul>

## Transport Security Protection

Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<p><b>Driver/Challenge</b></p> <ul style="list-style-type: none"> <li>• <u>C. VET qualifications should meet industry needs and be better recognised by the industry</u></li> <li>• <u>D. Regulatory changes and alignment with licensing requirements need to be better reflected in training products</u></li> </ul> <p><b>Symptom</b></p> <ul style="list-style-type: none"> <li>• Quality Mismatch</li> </ul>	<p><b>Activity:</b> Certificate II in Transport Security Protection will be reviewed to align it with regulatory changes and current industry practices.</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>• Reviewing one existing qualification, 16 existing units of competency, and six existing skill sets</li> <li>• Aligning the qualification with regulatory changes requiring screening officers from passenger, maritime, and cargo screening sector to hold a Certificate II</li> <li>• Reviewing core and specialist electives to ensure they are well aligned with current industry practices across all three sectors</li> <li>• Investigating the need to develop a general elective stream so that each sector can use the relevant general elective units of competency to meet their sector-specific needs and regulations.</li> <li>• Incorporating the skills and knowledge requirements related to the new industry technologies in the qualification</li> <li>• Enhancing the usability of the qualification across multiple sectors including passenger, cargo, and maritime screening</li> </ul> <p><b>Impact:</b> The review will align the qualifications with the latest regulatory changes and industry practices across specific sectors. This project has commenced with reviewed training products due for submission to the Assurance Body in November 2024 – <a href="#">Transport Security Protection project</a>.</p> <p><b>Anticipated timing:</b> March 2024- March 2025</p>	<ul style="list-style-type: none"> <li>• Department of Home Affairs</li> <li>• DHL</li> <li>• Asset College</li> <li>• ISS Facility Services</li> <li>• Major Security</li> <li>• Certis Group</li> <li>• Other relevant training providers with the Qual on scope</li> <li>• Other relevant government organisations, associations and unions</li> </ul>





## Diploma of Aviation (Flight Instructor)

Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<b>Driver/Challenge</b> <ul style="list-style-type: none"> <li><u>C. VET qualifications should meet industry needs and be better recognised by the industry</u></li> <li><u>D. Regulatory changes and alignment with licensing requirements need to be better reflected in training products</u></li> </ul> <b>Symptom</b> <ul style="list-style-type: none"> <li>Occupational Shortage</li> </ul>	<p><b>Activity:</b> Diploma of Aviation (Flight Instructor) will be reviewed to update the superseded units of competency and better align it with CASA licensing requirements.</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>Reviewing the qualification to update the superseded TAE units of competency</li> <li>Analysing the deleted unit of competency to determine the need to develop a new unit of competency</li> <li>Enhancing the usability and currency of the qualification to ensure it contains the latest content for flight instructors.</li> <li>Investigating ways to better align the qualification with Civil Aviation Safety Authority's (CASA) Flight Instructor Rating Grade 3 licensing, standards and resources.</li> </ul> <p><b>Impact:</b> The review will enhance the recognition and usability of the qualification. There is a possibility to better align the qualification with CASA licensing requirements.</p> <ul style="list-style-type: none"> <li><b>Anticipated timing:</b> June 2024-June 2025</li> </ul>	<ul style="list-style-type: none"> <li>CASA</li> <li>Australian Flight Training Industry Association</li> <li>Relevant training providers with the Qual on scope</li> <li>Other relevant government organisations, associations and unions.</li> </ul>

## Space Transport and Logistics Skills Gap Analysis

Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<b>Driver/Challenge</b> <ul style="list-style-type: none"> <li><u>F. New technologies and emerging industries are transforming the aviation industry</u></li> </ul> <b>Symptom</b> <ul style="list-style-type: none"> <li>Skills Shortage</li> </ul>	<p><b>Activity:</b> This project will conduct a skills gap analysis to understand the skills and knowledge requirements for the space transport industry and determine how well the vocational sector is ready to prepare the current and future workforce. The project will also develop relevant training products to address the identified gaps.</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>Delineating the scope of space transport and logistics and determine the existing and emerging roles that underpin the sector</li> <li>Conduct an international scan to identify examples of existing roles within space transport and logistics in EU countries and the United States.</li> <li>Evaluating the adequacy of vocational training that is currently available for space transport and logistics workers</li> <li>Identifying gaps and deficiencies in current training products and to determine whether new training products need to be developed</li> <li>Developing new training products to cater for current and future skills requirements in this emerging industry.</li> </ul> <p><b>Impact:</b> The project will identify new skills and job roles in this industry and develop the products for the current and future workforce needs.</p> <p><b>Anticipated timing:</b> June 2024-June 2025</p>	<ul style="list-style-type: none"> <li>CASA</li> <li>Australian Space Agency</li> <li>Aviation/Aerospace Australia</li> <li>Relevant industry associations and unions</li> <li>Relevant training providers and government agencies</li> </ul>

## Aviation Jobs and Skills Information

Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<p><b>Driver/Challenge</b></p> <ul style="list-style-type: none"> <li>• <u>A. Workforce shortages are challenging the industry</u></li> </ul> <p><b>Symptom</b></p> <ul style="list-style-type: none"> <li>• Occupational Shortage</li> <li>• Under-attractive occupations</li> </ul>	<p><b>Activity:</b> Developing an up-to-date source of information to promote aviation careers and pathways.</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>• Collaborating with the National Careers Institute to update aviation career information and qualifications and skills requirements</li> <li>• Consulting with the industry to draft a comprehensive list of available career options in the aviation industry</li> <li>• Developing a comprehensive source of qualifications and job outcomes associated with them</li> <li>• Consulting with the industry to develop and promote career pathways</li> <li>• Collaborating with Manufacturing Industry Skills Alliance to incorporate relevant LAMEs' skills and knowledge requirements and pathways into this project</li> </ul> <p><b>Impact:</b> This project will create a comprehensive source of information that can be used by career counsellors, students, industry, and prospective workforce to gain an in-depth understanding of available careers and requirements in the Aviation industry.</p> <p><b>Anticipated timing:</b> June 2024-June 2025</p>	<ul style="list-style-type: none"> <li>• National Careers Institute</li> <li>• TAFEs, and RTOs delivering aviation training products</li> <li>• Australian Airports Association</li> <li>• Regional Aviation Association of Australia</li> <li>• Manufacturing Industry Skills Alliance</li> <li>• CASA</li> <li>• Australian Federation of Air Pilot</li> <li>• Australian and International Pilots Association</li> <li>• Flight Attendants' Association of Australia</li> <li>• Royal Australian Air Force</li> </ul>





## Cabin Crew and Ground Operations Skills Audit

Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<p><b>Driver/Challenge</b></p> <ul style="list-style-type: none"> <li><u>A. Workforce shortages are challenging the industry</u></li> <li><u>C. VET qualifications should meet industry needs and be better recognised by the industry</u></li> </ul> <p><b>Symptom:</b></p> <ul style="list-style-type: none"> <li>Quality Mismatch</li> <li>Under attractive Occupations</li> </ul>	<p><b>Activity:</b> Conducting a skills audit on Certificate III in Aviation (Cabin Crew) and Certificate III in Aviation (Grounds Operation and Services)</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>Conducting a Skills Audit on certificate III in Aviation (cabin crew) with airlines and training schools to investigate the barriers of utilising the qualification by airlines</li> <li>Revising certificate III in Aviation (cabin crew) to incorporate the findings from the Skills Audit to boost the recognition of the qualification and better align it with industry needs</li> <li>Investigating the possibility of having the qualification licensed by CASA and aligning it with airlines training manuals</li> <li>Conducting a Skills Audit on certificate III in Aviation (Ground Operations and Service) with service providers to investigate the required skills and current industry practices to update the qualification and incorporate transferable skills to enable career progression and pathways</li> <li>Developing career pathways for flight attendants and ground operations workers to enable career progression</li> <li>Identifying flight attendants and ground operations workers' transferable skills and building training products to enable workforce mobility and transition into/from adjacent industries and roles</li> </ul> <p><b>Impact:</b> Revising the qualifications, developing career pathways will boost the attractiveness of these occupations to new recruits and will help organisations retain their workforce.</p> <p><b>Anticipated timing:</b> June 2024 - June 2025</p>	<ul style="list-style-type: none"> <li>Flight Attendant's Association of Australia</li> <li>Transport Workers' Union</li> <li>Qantas</li> <li>Virgin Australia</li> <li>Rex</li> <li>RTOs delivering cabin crew and ground operation training</li> <li>ISS Facility Services</li> <li>Dnata</li> <li>CASA</li> </ul>



## Recognition of Defence Flight Instructors and LAMEs' Training by CASA

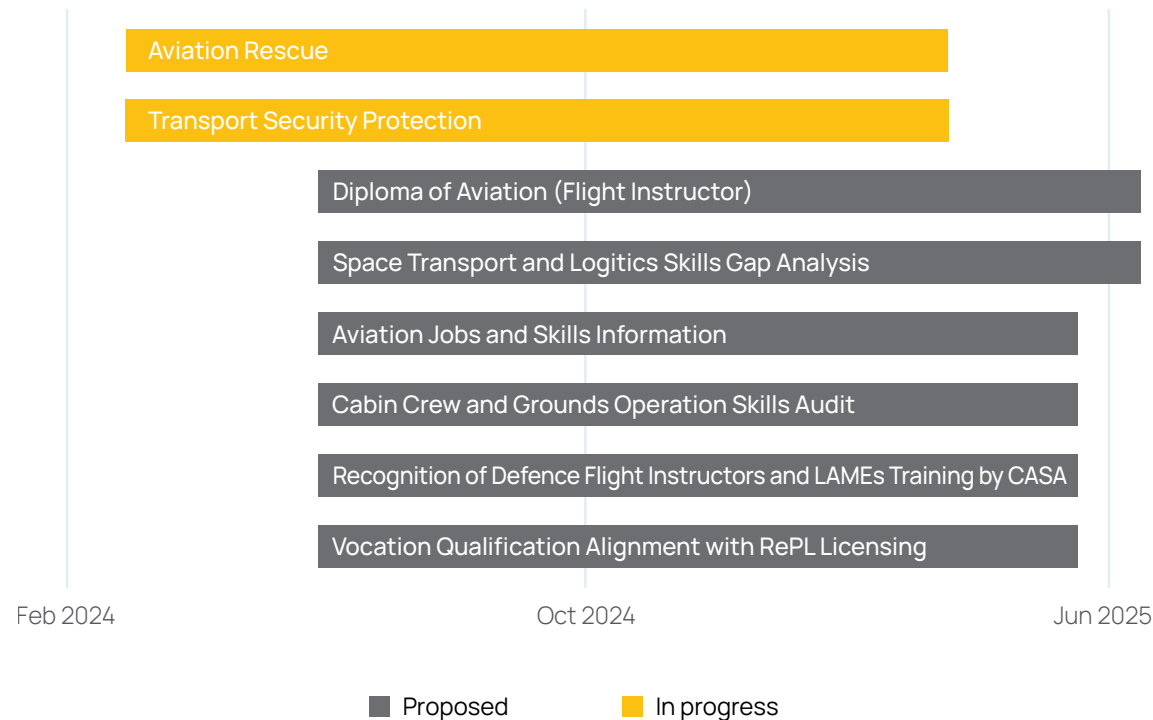
Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<p><b>Driver/Challenge</b></p> <ul style="list-style-type: none"> <li><u>A. Workforce shortages are challenging the industry</u></li> <li><u>D. Regulatory changes and alignment with licensing requirements need to be better reflected in training products</u></li> </ul> <p><b>Symptom:</b></p> <ul style="list-style-type: none"> <li>Occupational Shortage</li> <li>Quality Mismatch</li> </ul>	<p><b>Activity:</b> Investigating barriers and challenges in the recognition and licensing of military flight instructors' training by CASA and developing a framework for mutual recognition</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>Conducting research to identify current challenges in recognising Defence flight instructors and LAMEs' training by CASA</li> <li>Investigating the feasibility of transferring defence aviation RPL into civil airlines via CASA</li> <li>Developing a framework or program to facilitate the recognition and licensing of defence training by CASA</li> </ul> <p><b>Impact:</b> This project will facilitate the transition of military flight instructors and LAMEs into civil airlines and help address some of the current workforce shortages.</p> <p><b>Anticipated timing:</b> June 2024 - June 2025</p>	<ul style="list-style-type: none"> <li>CASA</li> <li>Defence Aviation Safety Authority (DASA)</li> <li>Australian Federation of Air Pilots</li> <li>The Australian and International Pilot Association</li> <li>Regional Aviation Association of Australia</li> <li>Australian Airports Association</li> <li>Australian Flight Training Industry Association</li> <li>Manufacturing Industry Skills Alliance</li> <li>Other relevant training providers, government, associations and unions</li> </ul>

## Vocational Qualification Alignment with RePL Licensing

Labour Market Dynamics	Proposed Action/Strategy	Key Stakeholders
<p><b>Driver/Challenge</b></p> <ul style="list-style-type: none"> <li><u>D. Regulatory changes and alignment with licensing requirements need to be better reflected in training products</u></li> </ul> <p><b>Symptom:</b></p> <ul style="list-style-type: none"> <li>Quality Mismatch</li> </ul>	<p><b>Activity:</b> Investigating barriers and challenges in aligning remote pilot vocational qualifications with CASA's RePL (Remote Pilot Licence)</p> <p><b>Components:</b></p> <ul style="list-style-type: none"> <li>Reviewing RePL licensing misalignment between remote pilot vocational qualification qualifications to incorporate CASA's RePL</li> <li>Aligning remote pilot qualifications with CASA's RePL</li> </ul> <p><b>Impact:</b> This project will streamline the licensing pathway, by simplifying the process for qualified individuals to become licence holders.</p> <p><b>Anticipated timing:</b> June 2024 - June 2025</p>	<ul style="list-style-type: none"> <li>CASA</li> <li>Australian Association of Uncrewed Systems</li> <li>Other relevant organisations or training providers</li> </ul>



# Proposed Action Schedule



# Future Research and Consultation

Additional engagement, research and consultation activity has been identified to assist in the development of future strategies or initiatives to inform the 2025 Workforce Plan. These focus areas cover the key themes associated with our challenges and drivers and are not an exhaustive list as industry may raise additional issues as we work with them in 2024.

## A. Workforce Shortages are Challenging the Industry

### Diversity

Industry Skills Australia will actively engage with aviation industry stakeholders to thoroughly identify underrepresented cohorts. ISA will consult with stakeholders involved in initiatives such as Women in the Aviation Industry Initiative to leverage the existing activities or propose new ones. Through extensive consultations, ISA aims to gain valuable insights into diversity challenges faced by the industry in different occupations and existing barriers to entry for underrepresented groups. ISA will also highlight and investigate the role of employers in investing in their workforce development and increasing diversity. ISA seeks to propose innovative and effective strategies that will pave the way for increased diversity and inclusivity in the aviation industry.

### Aviation Industry Promotional Campaign

ISA will explore effective ways to promote the industry and highlight the professional nature of work and the current and future career opportunities in the industry. A key focus will be raising awareness among school children to create motivation and encourage students to consider careers in the aviation industry especially via VET pathways which provide a cheaper and faster opportunity to becoming a pilot. The components of the campaign will include inviting guest speakers and industry professionals, industry ambassadors to raise awareness and promote aviation careers. This can also include establishing partnership between industry and schools to promote aviation industry and career guidance programs.

### Foundation Programs

ISA will consult with the industry to identify the available foundation programs that are rolled out in schools, and investigate developing other effective programs that foster a pipeline of talent from an early age in schools, such as aviation foundation skills or programs focused on AAM or RPAS to provide an entry point into the industry.

### Aviation White Paper

ISA will review the Aviation White Paper recommendations that will be published in the second half of 2024. We will consult with industry stakeholders and the Department of Infrastructure, Transport, Regional Development, Communications and the Arts to prioritise strategies and actions that will come from the White Paper.

### Skilled migration

In consultation with industry stakeholders, we will investigate the current temporary and permanent skilled work visas, including the recent transition from the Temporary Skill Shortage (TSS) visa to the new Skills in Demand (SID) visa, reviewing how they are meeting the needs of the workforce and addressing shortages.

## C. VET Qualifications Should Meet Industry Needs and be better Recognised by the Industry

### University and VET program

In a concerted effort to foster synergy between the VET sector and the higher education sector, ISA will undertake consultation and collaborations with universities delivering aviation courses. Recognising the importance of a seamless transition from VET qualifications to advanced university programs, our focus is on bridging the gap between these educational pathways. ISA is actively exploring the feasibility of a mutual program between VET and university systems, with the goal of enhancing job outcomes and expediting entry into the aviation job market.

### Workplace Learning for Diploma of Aviation (Commercial Pilot Licence)

ISA will consult with the industry to identify initiatives where flight schools have partnered with airlines to deliver training with the possibility of potential employment for graduates. ISA will further explore the feasibility of developing similar initiatives by establishing partnerships between training providers and industry. Initiatives such as AFAP Resilient Pilot programs will also be investigated.



#### **Aerodrome Reporting Officers Skills Audit**

ISA will consult with the industry and Australian Airports Association to identify the reasons the current qualification for Aerodrome Reporting Officers is underutilised. Following industry consultation, ISA will develop new training products or amend the existing one to better cater for the current industry needs. A key focus of this project will be attracting people in regional areas to enter the aviation industry.

### **D. Regulatory Changes and Alignment with Licensing Requirements Need to be better Reflected in Training Products**

#### **Aligning the Diploma of Aviation (Commercial Pilot Licence) with CASA licensing**

ISA will consult with the industry to explore the necessity and feasibility of aligning the Diploma of Aviation (CPL) with CASA licensing requirements.

### **E. Sustainable Aviation Fuel (SAF) and Alternative Fuels Initiatives Have Implications for Skill Needs**

#### **Sustainable Aviation Fuels (SAF) and Alternative Fuels**

Through a proactive approach, ISA will undertake further consultation with targeted stakeholders to comprehensively grasp the nature of the changes and the skills required by the implementation of SAF and alternative fuels. ISA aims to propose targeted strategies that equip the workforce with the necessary skills to work safely with SAF and alternative fuels.

## **F. New Technologies and Emerging Industries are Transforming the Aviation Industry**

#### **Advance Air Mobility**

ISA will conduct further consultation and collaboration efforts with the aviation sector, focused particularly on the transformative changes introduced by Advanced Air Mobility. ISA seeks to comprehensively understand the dynamic nature of these developments. Recognising that such innovations bring forth unique workforce challenges, we aim to identify the precise skills required by this evolving landscape. ISA will also investigate and consult with stakeholders to assess the need for a tiered licensing approach to RPAS technologies. The possibility of using RPL to transition the workforce from uncrewed to crewed systems will be investigated too. Through robust partnerships with industry stakeholders, we plan to devise targeted strategies, such as the development of specialised training products and introductory courses, which can be delivered in schools ensuring that the workforce is well-equipped to future proof.





# Approach to Consultation

Transport and Logistics industries are characterised by extremely high numbers of industry stakeholders at a national and state level, each with different perspectives and priorities. The sectors are highly diverse, comprising businesses ranging from complex national and global companies through to a multitude of small one and two person businesses. Over 99% of enterprises within our coverage are small business.

Not all of these stakeholder groups will want to engage in the workforce planning process. As part of our user-centred approach, we will work with our stakeholder groups and individual stakeholders to determine the level of involvement they would like and to what degree. If and when a stakeholder's focus shifts, we will adjust our engagement with them accordingly.

A listing of key stakeholder groups with which we will engage, including industry bodies and government related entities, can be found at [Table 4](#).



**Table 4:** Key Stakeholder Groups

STAKEHOLDER GROUPS	KEY STAKEHOLDER IDENTITY
INDUSTRY	<ul style="list-style-type: none"> <li>• Enterprises</li> <li>• Industry peaks</li> <li>• Industry associations</li> <li>• Innovation sector</li> <li>• Unions</li> <li>• Occupational licensing/regulatory bodies</li> <li>• Professional bodies</li> </ul>
INDIVIDUALS	<ul style="list-style-type: none"> <li>• Existing workers</li> <li>• Apprentices/trainees</li> <li>• Learners</li> <li>• Job seekers</li> </ul>
VET SYSTEM	<ul style="list-style-type: none"> <li>• Registered Training Organisations</li> <li>• Individual VET practitioners</li> <li>• Jobs and Skills Councils</li> <li>• Industry Training Advisory Bodies (and equiv.)</li> <li>• VET regulators</li> <li>• Training Product Assurance Body</li> </ul>
SCHOOLS SECTOR	<ul style="list-style-type: none"> <li>• Secondary schools</li> <li>• Individual teachers</li> <li>• Secondary education authorities</li> <li>• Careers associations</li> </ul>
HIGHER ED.	<ul style="list-style-type: none"> <li>• Universities</li> </ul>
GOVERNMENTS	<ul style="list-style-type: none"> <li>• Dept. of Employment and Workplace Relations</li> <li>• Jobs and Skills Australia</li> <li>• National Careers Institute</li> <li>• NCVER</li> <li>• Dept. of Inf, Trans, Reg. Dev, Comms and the Arts</li> <li>• Regional Australia Institute</li> <li>• Regional Development Australia</li> <li>• State Training Authorities</li> <li>• National Transport Commission</li> </ul>



Consultation and engagement with different groups of stakeholders will inform ongoing development of our Workforce Plans, including deepening our understanding of key workforce drivers and challenges, expanding our breadth and depth of data sources, filling evidence gaps, validating and providing context to workforce data, and developing effective actions/strategies to address workforce drivers and challenges.

The following key elements will form part of our consultation and engagement approach.

#### **Industry Skills Australia Committees**

ISA is establishing a range of mechanisms to provide input and advice into the Workforce Plans.

#### **Strategic Workforce Planning Committees**

The Strategic Workforce Planning Committees (SWPCs) are responsible for the development of the Workforce Plans, with a focus on identifying, forecasting and responding to workforce challenges, opportunities and emerging skills needs. They will shape and prioritise our actions through their Workforce Planning advice. The SWPCs comprise leaders from each major industry to ensure buy-in and leadership from across the industry (geographic, sector and business scale).

Our Strategic Workforce Planning Committee, comprising representatives of industry and unions, is a key mechanism for the collection and validation of industry intelligence, as well as strategy development.

#### **Industry Advisory Council**

ISA's Industry Advisory Council (IAC) will provide advice on leading trends from adjacent industries/client industries (e.g., online retail and its transformation of logistics). The IAC comprises of senior supply chain executives and industry leaders from a range of industries where supply chain effectiveness is core business or a key contributor to productivity.

It operates as a dynamic advisory mechanism to the Board and SWPCs by providing cutting-

edge business intelligence and strategic insights from across the economy.

#### **Industry Engagement**

Broader industry stakeholder engagement will involve consulting with stakeholder groups in [Table 4](#).

Commencing from the development of the Year 2 Workforce Plan that is due in April 2024, we will implement a full cycle of industry consultation as per [Figure 10](#). below.





#### **JSC Engagement**

ISA will engage and collaborate with the other Jobs and Skills Councils on shared workforce planning and skills development priorities. We will also consult and advise when ISA-led workforce planning strategies will impact on another JSC's scope of work, such as the usage of imported units and workforce development.



# WORKFORCE PLAN CYCLE (2025)

Figure 10: Full Workforce Plan Development Cycle

PROCESS & INDICATIVE TIMING	 DATA COLLECTION & DRAFTING Jun - Jul 2024	 INITIAL CONSULTATION Aug - Sep 2024	 DRAFTING & CONSULTATION Oct 2024 - Jan 2025	 SIGN OFF, SUBMISSION & PUBLICATION Feb- Mar 2025	 IMPLEMENTATION & MONITORING April 2025 onwards
KEY STEPS	<ul style="list-style-type: none"> <li>Consolidate intelligence gathered from implementation and monitoring</li> <li>Undertake further research and consultation where required</li> <li>Refresh &amp; review baseline data, previous year's megatrends, and new qualitative reports</li> <li><b>Consolidate input from SWPC, other ISA committees and key stakeholders</b></li> </ul>	<ul style="list-style-type: none"> <li>Prepare Industry Skills Priorities Paper for initial stakeholder input</li> <li>Confirm Industry Skills Priorities with SWPC and key stakeholders</li> <li><b>Consult with stakeholders on Industry Skills Priorities Paper</b></li> <li>Analyse and respond to feedback</li> <li>Undertake further research/consultation as required</li> </ul>	<ul style="list-style-type: none"> <li>Prepare first draft of the Workforce Plan, including proposed actions</li> <li>SWPC review draft, provide input and advice on proposed actions and priorities</li> <li><b>Release draft Workforce Plan on ISA website for public consultation</b></li> <li>Moderate, consolidate and analyse feedback</li> <li>Update Workforce Plan based on feedback</li> </ul>	<ul style="list-style-type: none"> <li>SWPC review, validate and sign off final Workforce Plan</li> <li>Submit Workforce Plan to DEWR for formal approval</li> <li>Prepare and submit proposed actions</li> <li>Publish and promote Workforce Plan and activities/projects on ISA website</li> </ul>	<ul style="list-style-type: none"> <li>Undertake promotion, build collaboration across stakeholders to deliver Workforce Plan priorities</li> <li>Implement approved actions</li> <li>Monitor and evaluate activity/project progress/outcomes</li> <li><b>Engage stakeholders to monitor the responsiveness of the national skills system</b></li> </ul>
WHO WE CONSULT	<ul style="list-style-type: none"> <li>Strategic Workforce Planning Committee</li> <li>Industry</li> <li>VET System</li> <li>Schools Sector</li> <li>Higher Education</li> <li>Individuals</li> </ul>	<ul style="list-style-type: none"> <li>Strategic Workforce Planning Committee</li> <li>Governments</li> <li>Industry</li> </ul>	<ul style="list-style-type: none"> <li>Strategic Workforce Planning Committee</li> <li>Governments</li> <li>Industry</li> <li>VET System</li> <li>Schools Sector</li> <li>Higher Education</li> <li>Individuals</li> </ul>	<ul style="list-style-type: none"> <li>Strategic Workforce Planning Committee</li> <li>Governments</li> </ul>	<ul style="list-style-type: none"> <li>Industry</li> <li>VET System</li> <li>Schools Sector</li> <li>Higher Education</li> <li>Governments</li> </ul>
HOW WE CONSULT	<ul style="list-style-type: none"> <li>Meetings</li> <li>Webinars</li> <li>Emails</li> <li>Surveys</li> </ul>	<ul style="list-style-type: none"> <li>Internal meetings and input from SWPC</li> <li>Internal meetings</li> </ul>	<ul style="list-style-type: none"> <li>ISA website</li> <li>Webinar</li> <li>Email and social media</li> </ul>	<ul style="list-style-type: none"> <li>ISA website</li> <li>Webinar</li> <li>Email and social media</li> <li>Meetings</li> <li>Conference presentations</li> </ul>	<ul style="list-style-type: none"> <li>ISA website</li> <li>Webinar</li> <li>Surveys</li> <li>Conference presentations</li> <li>Meetings</li> </ul>

**Bold** – key points of consultation with stakeholders



# Existing Workforce Strategies and Initiatives

Our implementation of the research, consultation and activities outlined above will be informed by existing workforce strategies and initiatives. Where relevant, we will seek to align our work with, or contribute to, these strategies and initiatives, or to collaborate with those responsible for implementing them.

Below is a mapping of the workforce strategies and initiatives that we have identified as relevant to the Aviation Industry and the key issues and evidence gaps outlined in this Workforce Plan. We will continue to add to this list as we consult further with industry.

## MAPPING KEY:

**A** - Workforce shortages are challenging the industry

**B** - Training costs are creating barriers for potential new pilots

**C** - VET qualifications should meet industry needs and be better recognised by the industry

**D** - Regulatory changes and alignment with licensing requirements need to be better reflected in training products

**E** - Sustainable Aviation Fuel (SAF) and alternative fuels initiatives have implications for skill needs

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


Title	Mapping	Description	How it will impact/inform the WFP
Australian Civil Space Strategy 2019–2028	A, C, E, F,	<p>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.</p> <p>There are four main components:</p> <ul style="list-style-type: none"> <li>• promoting international engagement</li> <li>• cultivating national capability</li> <li>• ensuing safety and national interest and fostering innovation</li> </ul>	<p>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 to inform ISA 2024 Workforce Plan.</p> <p>We will also consult with Manufacturing Jobs and Skills Council to assess the interconnections between space transport and the manufacturing sector and how they impact the required skills and knowledge for the workforce</p>

Aviation White Paper	A, B, C, D, E, F	<p>The White Paper will set the long-term policies to guide the next generation of growth and innovation in the aviation sector.</p> <p>The focus is on:</p> <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>	<p>The Paper will help prioritise workforce planning and initiatives to address workforce shortages and decarbonisation of the industry. ISA will review the recommendations of the White Paper when it is published in the second half of 2024 to prioritise workforce initiatives and projects for 2025.</p>
Fee Free TAFE	A, B	<p>To address skills shortages and delivery fee-free TAFE and vocational education places for students to train, retrain or upskill.</p> <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>	<p>Medium/High – Fee Free TAFE in partnership with States and Territories have provided funding for the development of aviation skills. The summary of funded initiatives will form part of the advice on funded pathways for aviation Strategic Workforce Committee to inform ISA 2024 Workforce Plan.</p>



Sustainable Aviation Fuel Funding Initiative	E	<p>\$30 million funding initiative to reduce emissions in the aviation sector. July 2023 -Nov 2023</p> <p>The initiative will:</p> <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>	<p>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.</p>
Women in the Aviation Industry Initiative	A	<p>The initiative funds a range of activities to increase visibility and awareness of the sector among young girls and women in collaboration with industry partners. The initiative includes activities such as:</p> <ul style="list-style-type: none"> <li>• forums to support emerging women leaders in aviation.</li> <li>• outreach activities among school students.</li> <li>• programs for flight instructors to foster leadership and inclusion and targeting school students.</li> </ul>	<p>This initiative will inform future research and consultation to either leverage existing diversity initiatives or develop new ones to increase awareness and participation of women and other underrepresented groups in the aviation industry. ISA will consult with stakeholders to better understand the barriers to diversity and propose actions to address them.</p>





# Appendix A Reference Data and Charts



# Employment and Distribution

Figure 11: Employment Status 2023

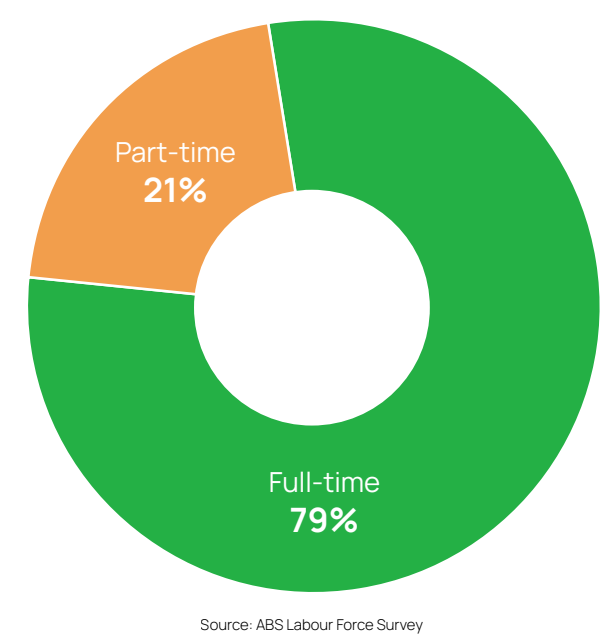
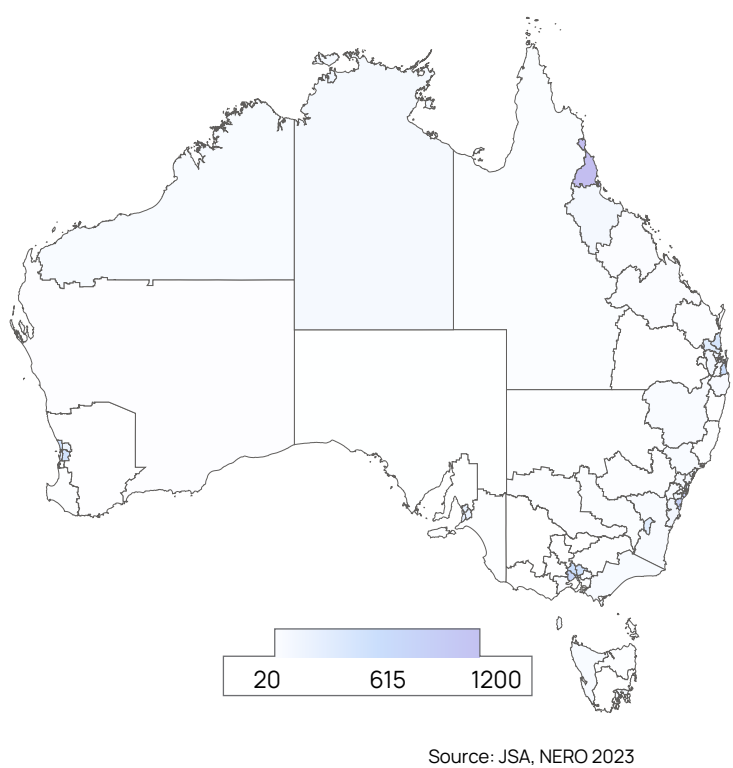


Table 5: Distribution and Growth of Aviation Workers by Residence

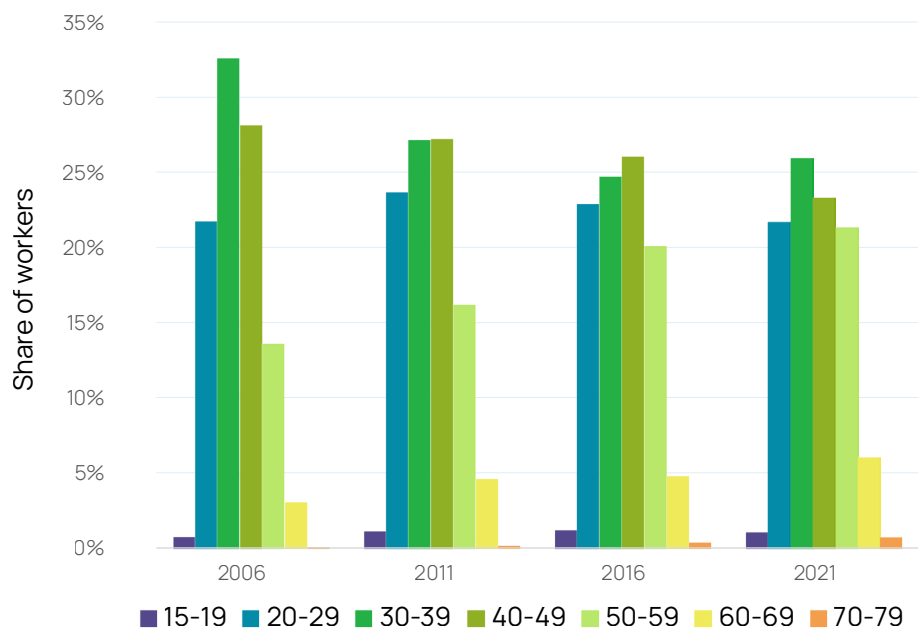


Residence	% of workers (2021)	Growth (since 2016)
Major City	73.8%	-18.9%
Regional	18.4%	6.8%
Remote	4.5%	-1.8%
Transitory <sup>1</sup>	3.3%	-38.7%

Sources: ABS Census, 2016 and 2021

# Occupational Demographics

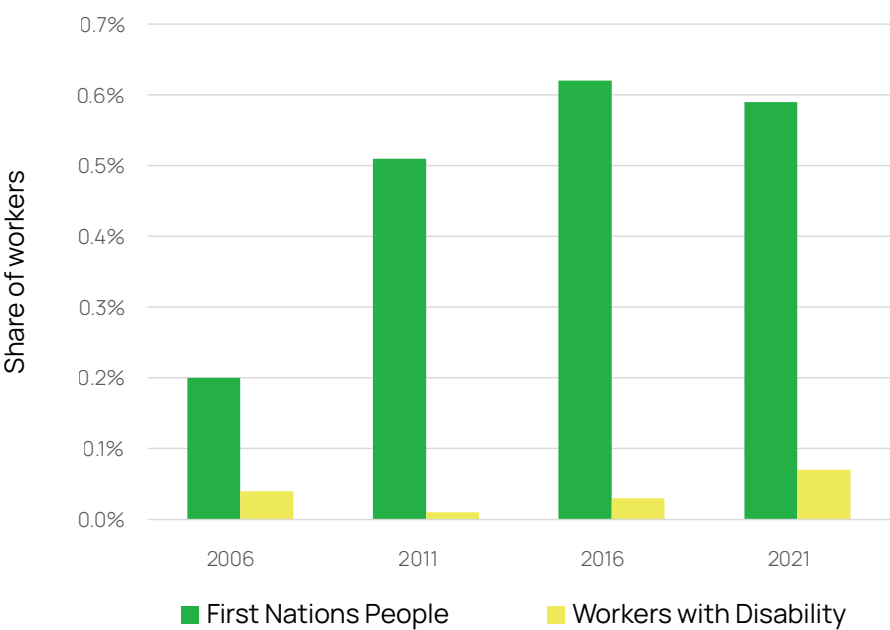
Figure 12: Aviation Workers Age Profile, 2006 - 2021



Source: ABS Census 2006 to 2021

THE % OF WORKERS  
ABOVE 60 GREW TO  
**6.7%** IN 2021

Figure 13: First Nations People and Workers with Disability, 2006 - 2021



Source: ABS Census 2006 to 2021

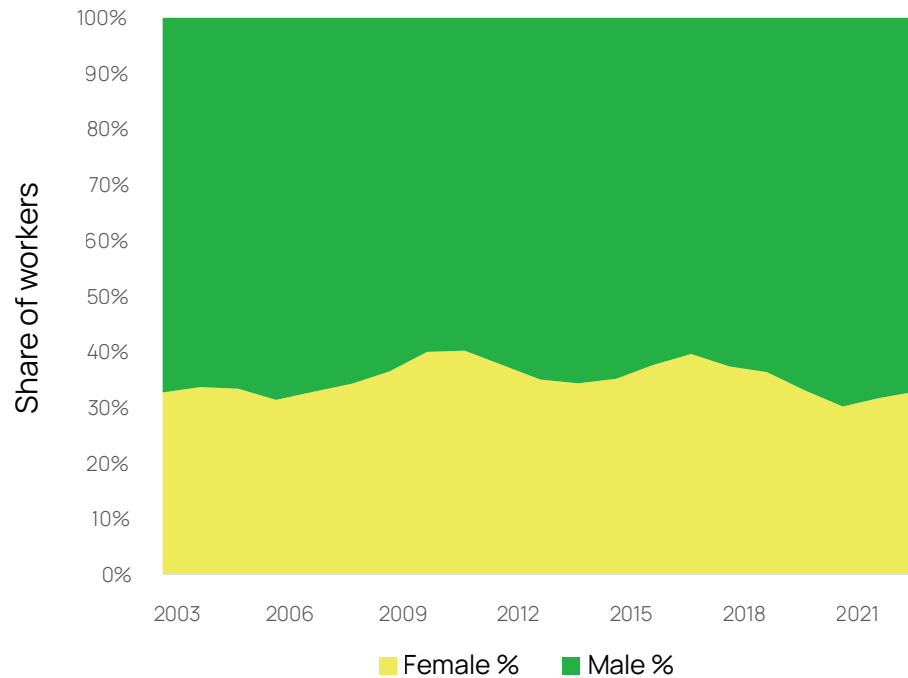
IN 2021, FIRST NATIONS INDIVIDUALS AND  
WORKERS WITH DISABILITIES COMPRISED ONLY  
**0.59%** AND **0.07%** OF WORKERS



## Training

Please refer to 'Training system data' for a list of relevant VET and university qualifications associated with the charts.

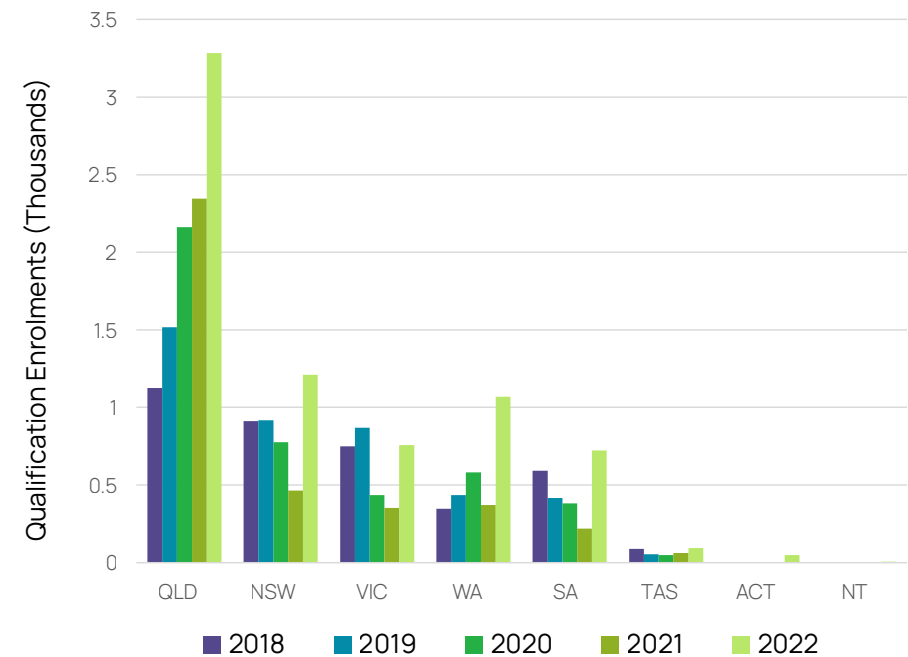
**Figure 14:** Female Employment Share 2000 - 2023



Source: ABS 6291.0.55.003 - Labour Force, Australia, Detailed (four-year rolling average)

WOMEN COMPRISED NEARLY A THIRD  
**(32.9%)** OF WORKERS IN 2023

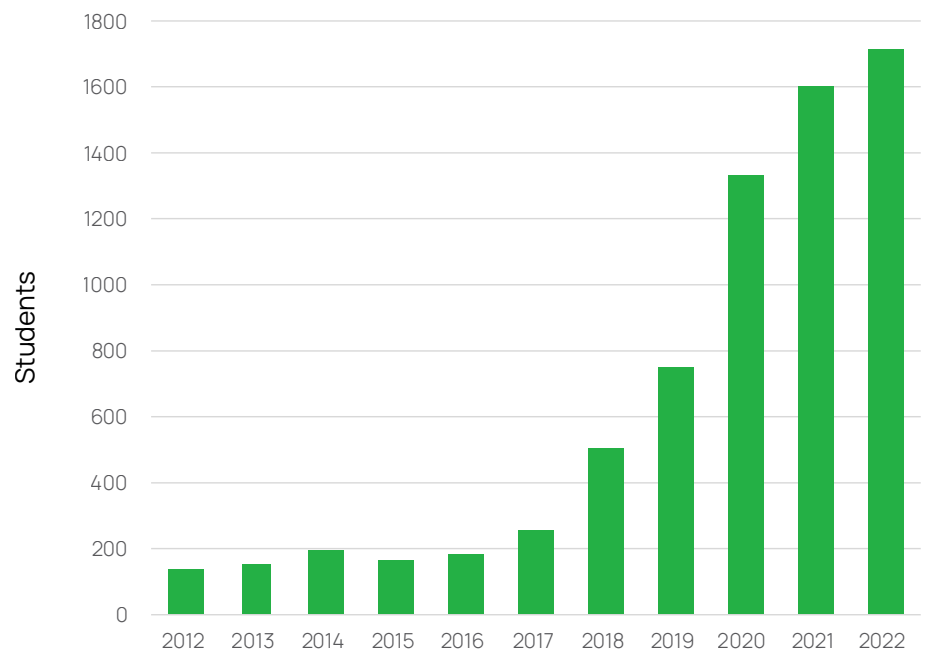
**Figure 15:** Commencing Aviation Qualification Enrolments, 2018 - 2022



Source: NCVET Total VET Activity

ENROLMENTS IN QLD COMPRISED NEARLY HALF  
**(45.7%)** OF ALL AVI ENROLMENTS IN 2022

**Figure 16:** Aviation VETiS Students, 2012 - 2022



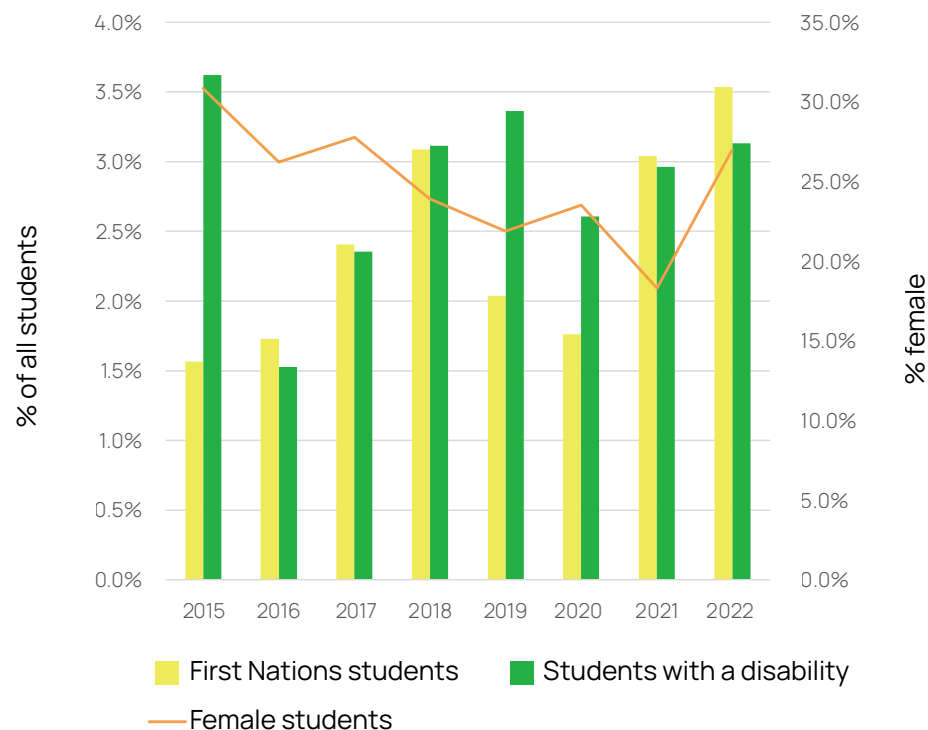
Source: NCVET VET in Schools

VETiS STUDENT ENROLMENTS HAVE INCREASED BY

**46.3%**

PER YEAR IN THE LAST 5 YEARS

**Figure 17:** Share of Qualification Enrolments by Diversity Measures

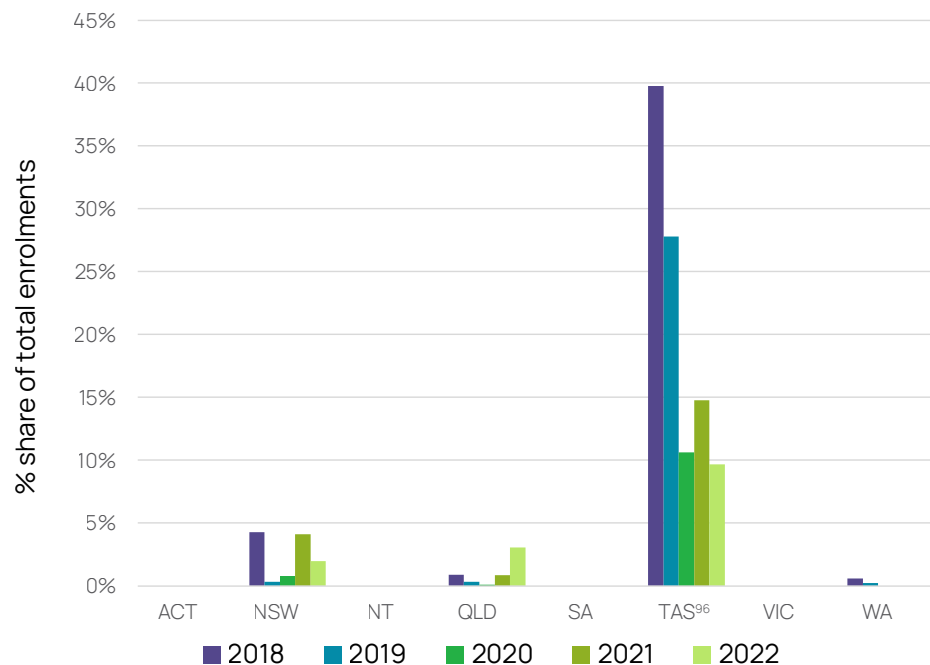


Source: NCVET Total VET Activity

THE RECENT INCREASE IN 2022 HALTED A STEADY DECLINE IN **FEMALE ENROLMENTS** SINCE 2015. THE SHARE OF **FIRST NATIONS STUDENTS** HAS RETURNED TO LEVELS NOT SEEN SINCE 2018. THE SHARE OF **STUDENTS WITH A DISABILITY** IS YET TO RETURN TO PRE-COVID LEVELS



**Figure 18:** Apprenticeships/Traineeships Share of Total Enrolments

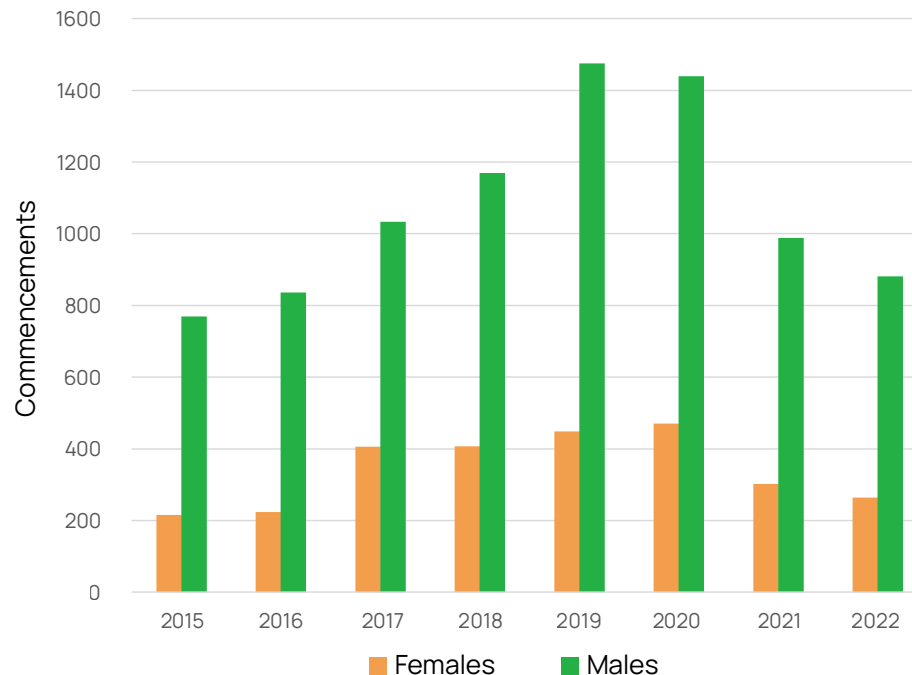


Source: NCVER Total VET Activity

**40%** OF AVI ENROLMENTS WERE SUPPORTED BY AN APPRENTICESHIP/TRAINEESHIP IN TAS IN 2015, WHICH HAS SINCE DECLINED TO **10%** IN 2022

<sup>96</sup> While the proportion of enrolments being offered as traineeships in Tasmania are high the overall numbers of enrolments is low (see Figure 15)

**Figure 19:** Commencements in Aviation-related University Qualifications by Gender



Source: Australian Government Department of Education

THOUGH DECLINING SINCE COVID, THE SHARE OF FEMALES IN AVIATION QUALIFICATIONS HAS REMAINED APPROXIMATELY CONSTANT  
**(AVERAGE 24%)**

## Training System Data

### Qualification Enrolments<sup>96</sup>

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
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.)

<sup>96</sup> NCVER VOCSTATS <<https://www.ncver.edu.au/research-and-statistics/vocstats>>, extracted on December 2023

## Qualification Completions<sup>97</sup>

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
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>

<sup>97</sup> NCVER VOCSTATS <<https://www.ncver.edu.au/research-and-statistics/vocstats>>, extracted on December 2023



## Number of RTOs Scoped to Deliver Aviation Qualifications<sup>98</sup>

Qualification	RTO count
AVI10119 Certificate I in Aviation (Foundation Skills)	2
AVI20118 Certificate II in Transport Security Protection	15
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)	28
AVI30519 Certificate III in Aviation (Rescue Crew Officer)	9
AVI40119 Certificate IV in Aviation (Air Crew Officer)	9
AVI40122 Certificate IV in Aviation (Supervision)	3
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)	8
AVI50419 Diploma of Aviation (Flight Instructor)	11
AVI50519 Diploma of Aviation (Instrument Rating)	40
AVI59922 Diploma of Aviation (Chief Remote Pilot)	0
AVI60219 Advanced Diploma of Aviation (Pilot in Command)	5

<sup>98</sup> Training.gov.au (as at 20 December 2023)



## Aviation-related University Qualifications<sup>99</sup>

Qualification Type	Course Name
Diploma	Aviation Security Management
Diploma	Aviation Theory
Associate Degree	Aviation (Aeronautics)
Associate Degree	Aviation (Flight Operations)
Associate Degree	Aviation (Management)
Associate Degree	Aviation (Operations Management)
Associate Degree	Aviation (Prof Pilots)
Associate Degree	Aviation (Professional Pilots)
Bachelor	Applied Science (Aviation)
Bachelor	Applied Science (Aviation)/BachelorBusiness
Bachelor	Applied Science (Aviation)/ BachelorBusiness (Management)
Bachelor	Applied Science (Honours) (Aviation)
Bachelor	Aviation
Bachelor	Aviation (Commercial Pilot)
Bachelor	Aviation (Flight)
Bachelor	Aviation (Flying)
Bachelor	Aviation (Honours)
Bachelor	Aviation (Management)
Bachelor	Aviation (Management)/BachelorBusiness
Bachelor	Aviation (Pilot Training)

Qualification Type	Course Name
Bachelor	Aviation (Pilot)
Bachelor	Aviation And Piloting
Bachelor	Aviation And Piloting/BachelorBusiness
Bachelor	Aviation Management/BachelorBusiness
Bachelor	Aviation Technology
Bachelor	Aviation/BachelorBusiness
Bachelor	Aviation/BachelorInformation Technology
Bachelor	Commerce / Aviation (Management)
Bachelor	Engineering (Honours)/BachelorAviation
Bachelor	Laws/BachelorAviation (Management)
Bachelor	Laws/BachelorAviation Management
Bachelor	Science (Aviation)
Bachelor	Technology (Aviation)
Graduate Certificate	Aviation (Human Factors)
Professional Certificate	Aviation (Operational Safety Systems)
Graduate Certificate	Aviation (Piloting)
Graduate Diploma	Aviation And Business
Graduate Certificate	Aviation Management
Graduate Diploma	Aviation Medicine
Master	Engineering (Aerospace And Aviation)
Master	Engineering (Aerospace Engineering And Aviation)
Doctor	Aviation – Research

<sup>99</sup> Australian Government Department of Education

## 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 correspond 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. Job roles that have no clear ANZSCO alignment are identified with a dash, '-'.

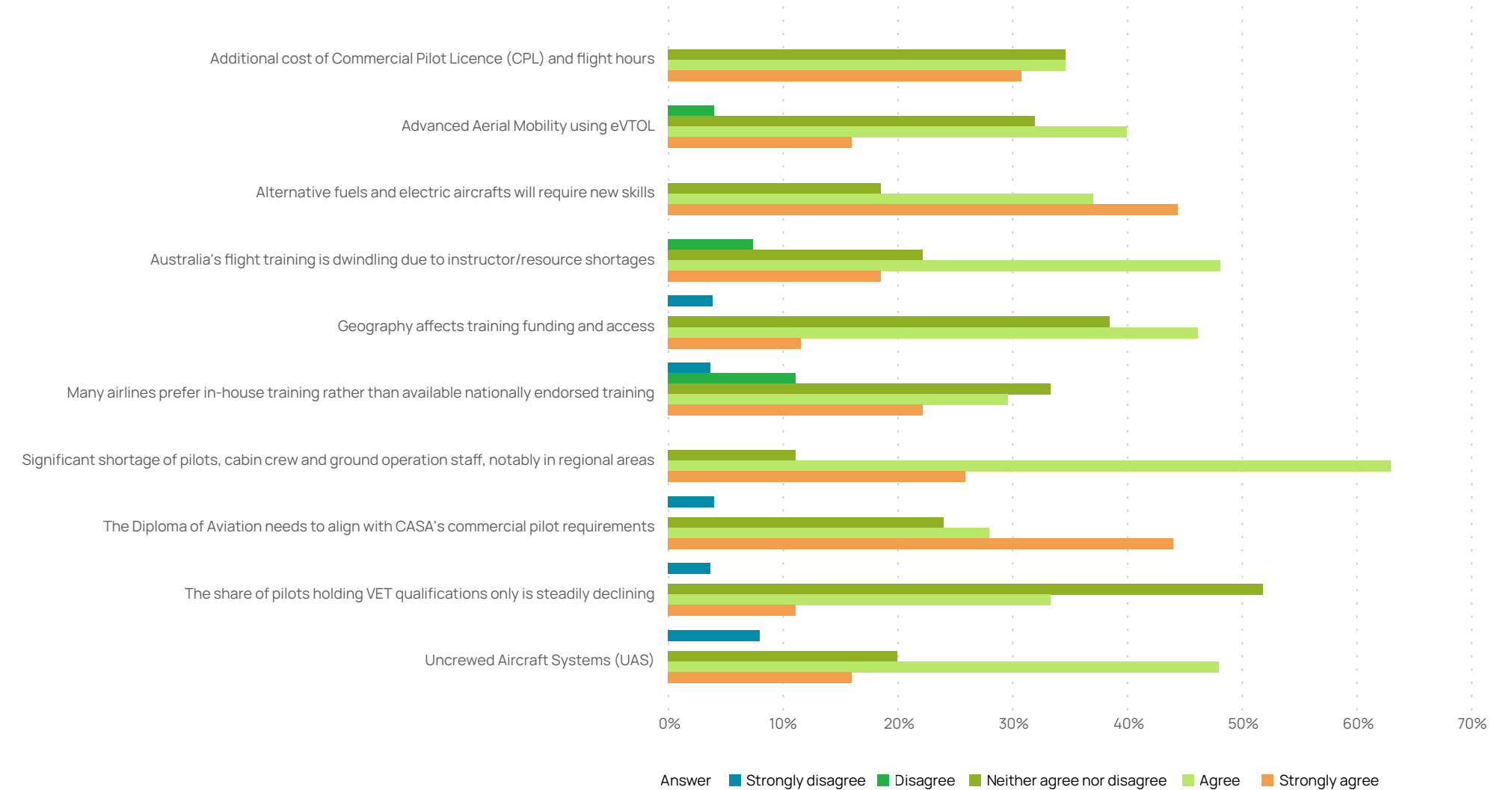
Occupational Area	ANZSCO Occupation Titles	Job Roles
1. Flight Operations	231111 Aeroplane Pilot, 231114 Helicopter Pilot	Commercial aeroplane pilot, Commercial helicopter pilot, Chief Remote Pilot, Deputy Chief Pilot, Senior Base Pilot, Remote pilot
	451711 Flight Attendant	Cabin Crew, Flight Attendant
	231113 Flying Instructor	Flight Instructor – Grade 2, Flight Instructor – Grade 3, Qualified Flying Instructor
	231112 Air Traffic Controller	Aerodrome Controllers, Air Traffic Controllers, Approach Controllers, Enroute Controllers
2. Airport Operations	-	Aerodrome Reporting Officer, Airport Safety Officer, Airside Operations Officer, Operations Officer, Works Safety Officer (WSO)
	139999 Specialist Managers nec	Aerodrome Manager, Aviation Manager, Business Manager, Operations Manager, Safety Manager
	721911 Aircraft Baggage Handler and Airline Ground Crew	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
	721911 Aircraft Baggage Handler and Airline Ground Crew	Cargo Services Operator, Loadmaster
	733112 Aircraft Refueller	Aircraft Refueller
3. Aviation Rescue	231114 Helicopter Pilot	Aviation Rescue Crew officer, Down the Wire Crew Officer, Police, Helicopter Crew Officer, Paramedics and Other Emergency Service Personnel, Rescue Crew Officer (RCO)
	231114 Helicopter Pilot	Air Crew Officer



# Stakeholder Survey Summary

The stakeholder survey was conducted between December 2023 to January 2024 and was designed to test the identified challenges and drivers and to capture proposed strategies from industry. There were 27 aviation industry respondents, with the highest number of participants coming from Queensland and Victoria.

## Stakeholder Consensus on Workforce Issues



## Impact on organisations

Survey participants were queried about the impact of the identified drivers and challenges on their organisations. The following presents a summary of these key insights.

- A. Workforce Shortages: Significant across the sector, causing flight cancellations and delays. Challenges include recruiting enough skilled crew and flight instructors.
- B. High Training Costs for New Pilots: Prohibitively expensive training deters new entrants, exacerbated by geographic limitations and the availability of facilities.
- C. Skills Needs for Sustainable Aviation Fuel (SAF): Transition to SAF and new technologies demands additional training, stretching already limited resources.
- D. Declining relevance of VET Qualifications: A gap between the skills provided by educational institutions and those required by the industry, affecting the portability and relevance of accredited training.
- E. Qualification not well aligned with CASA licensing: Qualifications not well aligned with regulatory requirements, complicating certification processes.
- F. New Technologies: Integration of drones and AAM poses challenges for safety, airspace management, and requires new skills.

## Proposed solutions

Respondents were asked for recommended solutions to tackle the identified drivers and challenges. Below is a summarised overview of these recommendations.

- A. Workforce Shortages
  - Increasing the attractiveness of the aviation profession through better terms and conditions.
  - Encouraging dedicated instructors to remain in the teaching field, rather than moving to airline positions.
  - Offering VET sector qualifications to improve staff retention rates.
- B. High Training Costs for New Pilots
  - Advocacy for government support or funding to make pilot training more accessible.
- C. Skills Needs for Sustainable Aviation Fuel (SAF)
  - Investment in re-training current pilots and technicians for SAF and new technologies.
  - Collaboration with industry leaders and airlines to update training curricula to include SAF-related skills.
- D. Declining relevance of VET Qualifications
  - Enhancing the portability of accredited training to make it more industry-relevant.
  - Aligning in-house training programs with national standards to ensure broader recognition.
- E. Qualification not well aligned with CASA licensing.
  - Working towards better alignment of training outcomes with CASA licensing requirements.
  - Simplifying the competency recording process to avoid duplication and ensure compliance.
- F. New Technologies
  - Integrating new technologies into training programs to prepare the workforce for future demands.
  - Addressing safety and airspace management challenges associated with drones and AAM through regulatory changes and specialised training.

## Other key drivers

Respondents were invited to discuss any other significant drivers and challenges influencing skills and workforce development within their sector. The following provides a summary of these critical issues.

- The pandemic highlighted the importance of job security and industry stability, impacting recruitment, retention, and sector appeal.
- Global competitiveness demands a holistic skill development approach, advocating for national standards to ensure transferability and industry alignment.
- Aligning military and civil training can address skill shortages by providing a shared skill base.
- Enhancing awareness of diverse aviation roles, such as air traffic control and safety investigation, can expand the talent pool beyond pilots.
- Improving pay and conditions is essential for attracting and retaining talent, addressing key workforce challenges.
- Challenges arise from an aging workforce and the dispersion of employees, especially in remote areas, highlighting roles with minimal qualifications but crucial importance.
- The high cost of pilot training detracts from the career's attractiveness, alongside concerns about reduced crew operations and safety.
- Complex and costly regulatory processes, including CASA licensing, deter new pilots and challenge flight training organisations.
- Critical shortages in non-pilot roles, like air traffic control and maintenance, require attention, extending to support industries for airport development.
- Addressing aviation challenges requires an integrated, visionary approach that leverages technology for a sustainable industry future.

# Public Consultation Summary

Draft Workforce Plans were published on the Industry Skills Australia website in March 2024 and feedback invited from the Aviation subscribers.

The following table describes the main feedback themes and how they were responded to in the Workforce Plan.

Feedback Theme	Response in the Workforce Plan
<b>Industry Remit and the inclusion of LAMEs.</b> Stakeholders indicated that the role of General Aviation (GA) and other industries that rely on GA for their operation need to be acknowledged. They also pointed out that LAMEs are in shortage and while this occupation sits with another JSC, it still needs to be included in this Workforce Plan.	The industry overview section has been amended to acknowledge the role of GA in the aviation industry. The shortage of LAMEs is now included in the 'Workforce Shortages' including some data and potential solutions that can be further pursued to address some of the challenges. The LAMEs have also been added to two of the Proposed Actions to further explore opportunities for cross-collaboration with Manufacturing Industry Skills Alliance.
<b>Cost of Training.</b> Aviation stakeholders indicated that pilot training is very expensive. Industry needs to be more involved in investing in workforce development and the use of technologies such as simulation need to be further explored. It was also highlighted that the role of VET as an effective and more cost-efficient avenue to becoming a pilot should be further promoted.	The workforce plan has acknowledged that pilot training is expensive. The role of industry in investing in workforce development has been highlighted. As a part of the promotional activities, ISA will highlight the role of VET as a more time and cost effective way of becoming a pilot.
<b>Cabin Crew and Industry Recognised Qualification.</b> Stakeholders indicated that cabin crew has a high turnover rate due to fatigue and difficult working conditions. They also pointed out there is a need for an industry recognised qualification and career pathways.	The workforce plan as proposed an action to conduct a skills audit in collaboration with industry to identify current work practices and transferable skills between grounds operation and cabin crew to develop career pathways.
<b>Inclusion of Higher Education and RPAS.</b> It was suggested that coverage of higher education and RPAS was insufficient.	There coverage of pathways between higher education and VET is a part of future research. The workforce plan has also been amended to include RPAS and consultation about a more advanced tier based approach to RPAS licensing.





# ANZSCO and ANZSIC Classifications

This section provides a detailed breakdown of the Australian and New Zealand Standard Classification of Occupations (ANZSCO) and the Australian and New Zealand Standard Industrial Classification (ANZSIC) as they have been used in this document to quantify occupations and industry.

ANZSCO data is presented at two levels of detail. The highest level of detail (6-digit) is available for Census and Skills Priority List data while 4-digit data is available for the quarterly Labour Force data, Employment Projections and the Internet Vacancy Index and others.

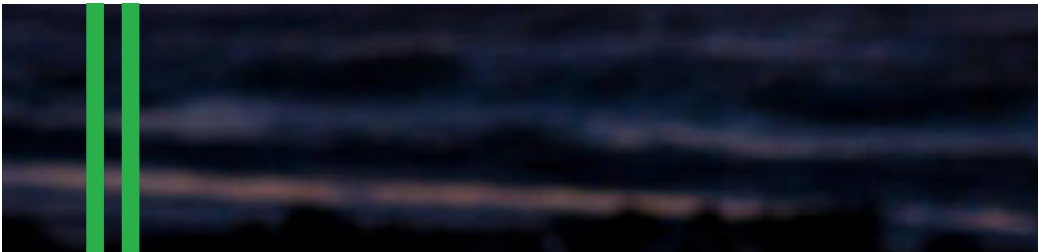
ANZSIC data is also presented at two levels of detail. The highest level of detail (4-digits) is available for Census, Counts of Australian Businesses and IBISWorld Industry Class reports, that approximately align to 4-digit ANZSIC while 3-digit data is available for the quarterly Labour Force data, Employment Projections and others.

Note: 'nec' stands for 'not elsewhere classified' and 'nfd' stands for 'not further defined'. If the Census/Survey respondent didn't provide enough information to categorise the occupation/industry at the highest level of detail, 'not further defined' is used and the respondent is still counted.

ANZSCO Code	Title	Level of Detail
231100	Air Transport Professionals, nfd	6-digit
231111	Aeroplane Pilot	6-digit
231112	Air Traffic Controller	6-digit
231113	Flying Instructor	6-digit
231114	Helicopter Pilot	6-digit
231199	Air Transport Professionals, nec	6-digit
451711	Flight Attendant	6-digit
721911	Aircraft Baggage Handler and Airline Ground Crew	6-digit
733112	Aircraft Refueller	6-digit
2311	Air Transport Professionals	4-digit
4517	Travel Attendants	4-digit



ANZSIC Code	Title	Level of Detail
4900	Air and Space Transport	4-digit
5220	Airport Operations and Other Air Transport Support Services	4-digit
490	Air and Space Transport	3-digit
522	Airport Operations and Other Air Transport Support Services	3-digit
501	Scenic and Sightseeing Transport <sup>†</sup>	3-digit
5010	Scenic and Sightseeing Transport <sup>†</sup>	4-digit



## 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).

### Occupational shortage vs skills shortage

In this document, we distinguish between occupational shortages and skills shortages.

- Occupational shortage: This occurs when employers struggle to fill vacancies for a specific occupation or can't find employees with specialised skills needed in that occupation. Essentially, there aren't enough qualified people available to do the job.
- Skills shortage: This refers to a situation where the existing workforce does not possess the right skills to meet the demands of their sector or occupation. It's not about the number of employees, but about the quality or suitability of their skills.

### 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.

### Employment projections

Jobs and Skills Australia provides employment projections for specific quarters, spanning from May 2023 to May 2033. In contrast, we use the annual average of employment figures from all quarters to smooth the data. To ensure internal consistency, we apply the projected percentage growth rates to the annual average employment figures from the Labour Force Survey. This method avoids discrepancies that might arise from using the specific employment levels of May 2023, which can differ from the annual average.

### 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 according to historical Census distributions.

\*Future demand is calculated by Jobs and Skills Australia for each occupation by looking at two things: how many more jobs there will be in the future and how many people will leave their current jobs. Occupations are then given a rating like "Above average," "Average," or "Below average," based on these predictions compared to all other occupations.

## 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 the 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 licensing 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.
- The aviation industry is growing fast and new technologies are making a major impact on workforce skills and knowledge requirements. As these jobs are emerging, the specific nature of these roles and their responsibilities are yet to be determined. One of the new areas to emerge is Urban Air Mobility, with the deployment of eVTOLs. Aviation sustainability is another growing area. The application of electric aircraft or alternative fuels is still a few years ahead, but the industry will require new roles such as Sustainable Air Fuel Specialists. Another new area is Space Transport, but the nature of jobs and roles in this area is yet to be determined and be reflected in ANZSCO classification.

The Labour Force survey's representation of the Aviation industry's workforce is significantly undercounted compared to IBISWorld figures. This is primarily due to the unique nature of the industry, which involves both Australian and international employees who meaningfully contribute to workforce totals. Unlike Labour Force data, which only includes Australian employees, IBISWorld figures account for this international presence. This explains much of the discrepancy between the two data sources.

**Appendix A** lists qualification completions; however, these figures should not be compared with enrolment numbers to ascertain completion rates. Instead, completion rates<sup>100</sup> are calculated by the National Centre for Vocational Education Research (NCVER), reflecting the proportion of qualifications that are ultimately completed. It's important to note that these rates are available for all qualifications collectively, but not for specific training packages or individual qualifications.



<sup>100</sup> NCVER 2023, VET qualification completion rates 2022, NCVER, Adelaide





# Appendix B

## 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 a person's 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

**Occupational 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 a person's existing skill set. Upskilling enhances a worker's 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 to industrial data (ANZSIC)

# Appendix C

# Methodology

The Workforce Plan adopts a comprehensive approach to understand and address workforce driver and challenges in our industries. Our methodology is designed to be evidence based, industry supported and actionable, ensuring that the insights we generate are both relevant and practical.

## 1. Generating Hypotheses

Initially, we formed “hypotheses” about the workforce. A hypothesis is an idea that is proposed so that it can be tested to see if it might be true. For example, we might hypothesise that the demand for truck drivers is high due to ongoing issues with attracting and retaining employees in these roles. Individual hypotheses are grouped into narrative sections, for example “A. Attraction and retention in the Transport and Logistics sectors”. These hypotheses guide our research and analysis, helping us to focus on specific areas of interest.

## 2. Data and Research Support

To validate our hypotheses, we draw on both qualitative and quantitative sources, including labour market reports, academic studies, news articles and a wide variety of data. This step is crucial for grounding our hypotheses, ensuring that the problems we have identified are backed by solid evidence.

## 3. Stakeholder Survey

The stakeholder survey is designed to test our hypotheses with industry. For each hypothesis we:

- measure agreement among stakeholders.
- gain an understanding of how the identified issues are impacting organisations.
- capture suggested responses to the issues.
- identify any additional key drivers not previously considered.

The insights gathered from stakeholders play a pivotal role in shaping the Plan. Their feedback not only tests the relevance of the identified challenges but also enriches the development of Proposed Actions with practical solutions.

## 4. Developing Proposed Actions

A key part of our methodology involves the Labour Market Dynamics and Potential Strategies Mapping tool. This tool allows us to:

- Diagnose our hypotheses as having one or more ‘symptoms’, symptoms being categories of shortages/ surpluses of skills and workers. These symptoms indicate how the labour supply is meeting demand.
- Identify potential strategies to respond to the identified issues.

- Evaluate existing initiatives, identifying any that are aligned with our hypotheses. This helps to ensure our Proposed Actions complement, rather than duplicate, existing efforts.

## 5. Incorporating Feedback

Prior to public consultation, we seek feedback from the relevant industry SWPC (Strategic Workforce Planning Committees). This step is crucial for ensuring our findings and recommendations are relevant, practical, and aligned with the needs and priorities of industry.

## 6. Public Consultation

A draft of our report is made available for public consultation, allowing a broader audience to contribute their insights and feedback via a feedback form. This phase enables us to fine-tune our challenges/ drivers and validate Proposed Actions through direct engagement with our stakeholders.





#### Sources for infographics on pages 11-12

##### **ABS Counts of Australian Businesses**

Business No  
Business distribution by state %

##### **ABS Labour Force 2023**

Workforce  
Female %  
Workforce distribution

##### **BITRE Yearbook 2022**

Domestic freight task growth  
(projected to 2030)

##### **BITRE, Domestic Aviation Activity 2022**

Passengers on domestic commercial flights  
Regional airports carry % of all  
domestic passengers

##### **CASA Annual Report 2021-2022**

Registered drones in Australia

##### **Census 2021**

Aboriginal & Torres Strait Islander %  
With a disability %  
Workforce with vocational education  
Median age  
Workforce nearing retirements (aged 56-66)  
Top 5 occupations

##### **IBISWorld Industry Wizard**

GDP contribution \$b 2022-2023  
Estimated annual revenue \$b 2024

##### **NCVER, Total VET Activity 2022**

Qualification enrolments 2022

##### **NERO 2023**

Residential distribution

##### **ourairports.com**

Airports in Australia

##### **training.gov.au, RTOs with explicit scope to deliver quals**

Registered training organisations (RTO)





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