Industry Skills Australia

Jobs and Skills Councils

An Australian Government Initiative

TRANSPORT & LOGISTICS INDUSTRY

2023 INITIAL WORKFORCE PLAN

About Industry Skills Australia

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

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

We will do this through:

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

Copyright

Disclaimer

Acknowledgements

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

Table of Contents

About the Initial Workforce Plan

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

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

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

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

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

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

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

Executive Summary

The Transport and Logistics industry comprises road transport, logistics, and stevedoring. The activities of the industry can be categorised into three (3) Occupational Areas (with further details in **Appendix A Transport and Logistics Occupational Areas**):

- **Road Transport** - operating and coordinating road vehicles for the transportation of passengers or freight by road.
- **Logistics** - planning, operating, and coordinating the flow of passengers or freight by any mode of transport. Includes warehousing, inventory management, demand and supply planning.
- **Stevedoring** - loading or unloading vessel cargo, stacking and storing on the wharf, and receiving and delivering cargo within the terminal or facility. Includes loading of trucks and trains that transport the cargo to the consignee.

The industry is characterised by immense diversity in occupations, workforce development needs, business types and sizes, and locations. Because of its integration within the economy and the embedded nature of its functions, the relative 'health' of the industry is often considered a barometer for the overall strength of the economy. The industry employs over 580,000[2] people across its major subsectors: road transport; logistics; warehousing; and stevedoring. The average age of workers is 44.6 years[3], with women making up 21.3% of the workforce[4].

Industry Skills Australia will analyse workforce functions and requirements for omnichannel logistics industry. Qualifications will be analysed to see how the existing ones can be utilised for this emerging industry and determine what new skills and pathways are required. Industry Skills Australia will consult and engage with industry stakeholders in this process.

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

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

Challenges impacting the supply and demand of workers in the Transport and Logistics industry, at the urban, regional and remote level include:

- **National labour shortages** and high competition for all available labour
- **Limited attraction strategies** by the industry
- **Shortages** of skilled heavy vehicle drivers
- Poor **industry image**

2 Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ06 - Employed persons by Industry group of main job
3 Australian Bureau of Statistics (2021) '2021 Census - Employment, income and education', TableBuilder
4 Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ06 - Employed persons by Industry group of main job

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

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

transport & logistics industry

TRANSPORT & LOGISTICS BUSINESS NO.

145,900

164 with 200+ employees

1799 with 20-199 employees

143,937 with 0-19 employees

AUSTRALIAN HOUSEHOLDS MAKING AN ONLINE PURCHASE IN 2022

82%

COMMERCIAL VEHICLES ON AUSTRALIAN ROADS IN 2023

4.3m

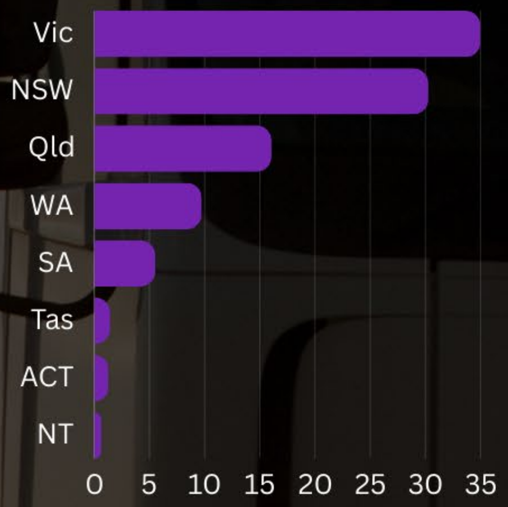
ESTIMATED ANNUAL REVENUE 2023

$138.7b

2022-2023
GDP CONTRIBUTION

2.2%

BUSINESS DISTRIBUTION BY STATE %



DOMESTIC FREIGHT TASK GROWTH

16.4%

projected to 2030

TONNE KILOMETERES OF ROAD FREIGHT MOVED

234.6 billion

2021 - 2022

TRUCK DRIVERS

7th

MOST NUMEROUS OCCUPATION IN AUSTRALIA

Sources
ABS Counts of Australian Businesses
Business No
Distribution of businesses

BITRE Road Vehicles
Commercial Vehicles on road

BITRE Yearbook 2022
Domestic Freight Task Growth
Freight moved

ABS Labour Force
Most numerous occupation

Australia Post, Inside Australian Online Shopping
Online purchases

IBISWorld
Annual revenue
GDP contribution

Megatrends Across Industries

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

Digital Technology and Automation

Automation and digital technologies are revolutionising industries and reshaping business operations. Automation is being driven by growing e-commerce and consumer demands, as well as the recent pandemic, which accelerated the adoption of digital transformation by several years.[5]

The Transport and Logistics industry has been an early adopter of automation and digital technologies.[6] The use of robotics,[7] drones and big data analytics[8] to optimise operations and improve productivity is well underway, while the data produced by telematics and sensors can offer opportunities such as fuel efficiency and dynamic routing, and better fleet maintenance.

Several Australian ports, such as the Victoria International Container Terminal, have been automated with advanced technologies,[9] creating more efficiency and a safer working environment. Autonomous trucks have been recently trialled [10] in Australia. The Maritime industry is also trialling the use of autonomous vessels,[11] which will increase safety, security and efficiency of vessels. There are also remotely operated vessels that can have seafarers on board, but with processes and operations either automated or remotely operated.

The aviation industry is similarly utilising cutting-edge technologies such as Uncrewed Aircraft Systems (UAS), remote digital tower technology,[12] OneSky (a harmonised civil and military air traffic management system), [13] and Satellite-Based Augmentation System (SBAS).[14] The Rail industry is operating autonomous trains, smart devices and automated asset inspections using LiDAR (Light Detection and Ranging) in asset management.

The role of humans in operating and maintaining autonomous and digital technology enhanced systems remains highly significant and workers will need to have the technical skills to work safely with new technologies.[15]

---

5 McKinsey. (2020). How COVID-19 has pushed companies over the technology tipping point—and transformed business forever
6 Deloitte Insights. (2021), The journey toward a touchless network through intelligent automation: The future of movement of goods
7 DHL Insights. (2022). Australia's e-commerce companies are getting a boost with warehouse automation
8 MHD Supply Chain News. (2023). 2023: A pivotal year for technology in supply chain. March
9 Productivity Commission. (2022). Lifting productivity at Australia's container ports: between water, wharf and warehouse. Inquiry Report. Australian Government
10 Big Rigs. (2022). Self-driving trucks hit the road for Australia's first live-traffic trial. November
11 Australian Maritime Safety Authority. (2022). Autonomous vessels in Australia
12 Australian Aviation. (2019). Airservices to trial remote digital tower prototype at Sydney. November
13 Airservices. (NA). What is OneSKY?
14 Australian Flying. (2018). Airservices launches SBAS Project. April
15 iMove. (2023). Creating our future transport and mobility workforce Understanding the workforce implications of transport digitalisation and automation in Australia

Decarbonisation

The adoption of sustainable practices and technologies to reduce Australia's carbon emissions has been gaining pace. The Australian Government is investing $24.9 billion in the next seven years to support the development of new clean energy industries and the decarbonisation of existing ones.[16] Businesses and industries are adopting sustainable practices and technologies, which will not only benefit the environment but also contribute to their economic growth and competitiveness.

Transport accounts for ¼ of Australia's Energy use

The supply chain is relying on autonomous technology and alternative fuels such as hydrogen to reduce its carbon footprint. Trials for zero-emissions hydrogen fuel-cell battery trucks are already underway in Australia.[17] The use of hydrogen and fuels such as ammonia is also gaining traction in the maritime industry with trials already underway.[18]

The aviation industry is transitioning towards alternative fuels such as hydrogen, but the implementation may take some time. In the shorter term, ground equipment powered by hydrogen powered fuel cells is being introduced.[19] The rail industry is similarly focusing on technologies such as hydrogen or battery electric to phase out diesel trains.

These developments are aligned with a global move towards a green economy. A recent KMPG survey of more than 1300 CEOs identified that 62% of respondents were considering investment in sustainability.[20] The most recent Future of Jobs Report from the World Economic Forum also identified that roles related to sustainability are among the fastest growing.[21] In Australia, about a quarter of businesses have reported an increasing need for emerging skills related to green economy.[22]

Supply chain and affiliated industries are well positioned to be a key enabler of environmental sustainability.[23] Introduction of these carbon reduction measures will require the workforce to have the skills and knowledge to safely work with new technologies and comply with regulations.

16 Climate Council. (2022). The federal budget: three highlights and lowlights for climate. October
17 Power Torque. (2023). First Aussie Hydrogen Truck. July
18 Offshore Energy. (2023). Carisbrooke Shipping to trial hydrogen engine on board one of its vessels. February
19 CSIRO. (2023). Opportunities for hydrogen in commercial aviation
20 KMPG. (2022). KMPG 2022 CEO Outlook: Growth strategies in turbulent times
21 World Economic Forum. (2023). The future of job reports 2023.
22 AiGroup. (2022). 2022 Skills Survey: Listening to Australian businesses on skills and workforce needs
23 Australia Post. (2021). Supply Chain Leaders' Sentiment Report.

Workforce Supply Challenges

Australia is grappling with significant labour shortages across many industries, including those supported by Industry Skills Australia. There is a general shortage of skills partly due to the border closures and slowing down of the migration in 2020 and 2021 because of the pandemic.[24] The Australian Bureau of Statistics reported that in November 2022, there were about 444,000 vacancies, which is deemed to be an indication of labour shortage.[25] The Australian Industry Group similarly indicated that 71% of businesses encountered difficulty in recruiting technicians and trade workers.[26]

The aviation industry has faced significant challenges and operational issues such as cancellation or long delays of flights due to a shortage of ground crew, pilots,[27] or air traffic control staff.[28] The pilot shortage has impacted regional airlines even more severely.[29] The rail industry has also reported workforce shortages in key roles such as train drivers, controllers, or signalling technicians.[30] These shortages may slow down the completion of infrastructure projects over the next three years.[31] Rail workforce shortages are being further exacerbated by growing skills gaps caused by the advent of new technologies and the need for upskilling for the existing workforce.

A shortage of truck drivers is reported across every state and territory in Australia according to the latest Skills Priority List.[32] The addition of truck drivers to the national Skills Priority List is a strong indication of the current and future demand for this occupation.[33] The maritime industry has also highlighted skills shortages as a key risk.[34]

Workforce shortages are even more severe in Regional, Rural and Remote Australia where attracting skilled workers and filling available job roles is even more challenging. A series of interconnected issues contribute to these challenges, including lack of availability of housing and childcare, shortage of training facilities, trainers, and assessors, and lack of good quality digital connectivity.[35]

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

Globally, organisations have started to prioritise the attraction and retention of new talent.[36] Similarly, Australian businesses are investing in staff training, developing skills, and attracting young people and more women into traditionally male-dominated industries and occupations.[37] The Australian Government is also focusing efforts on removing barriers and providing the right incentives and conditions to attract more workers to regional Australia.

24 *Financial Review. (2022). Why we don't have enough workers to fill jobs (in four graphs). June*
25 *Australian Bureau of Statistics. (2023). Job vacancies fall but remain high at end of 2022. Media Release January*
26 *AiGroup. (2022). 2022 Skills Survey: Listening to Australian businesses on skills and workforce needs*
27 *Financial Review. (2023). The 'alarming' workforce trend causing flight delays. February.*
28 *The Sydney Morning Herald. (2023). Airlines call for action on air traffic controller shortage as flight delays continue. August*
29 *Simple Flying. (2023). Rex flying solo to fix Australian pilot shortage. May*
30 *Australasian Railway Association. (2022). Building Australian Rail Skills for the Future*
31 *Infrastructure Magazine. (2022). Preparing for the infrastructure boom during a labour shortage. September*
32 *National Skills Commission. (2022). 2022 Skills Priority List*
33 *National Skills Commission. (2022). 2022 Skills Priority List Key Findings Report*
34 *Parliament of Australia: Senate Inquiry (2020). Policy, regulatory, taxation, administrative and funding priorities for Australian shipping*
35 *Houghton, K., Barwick, A, and Pregellio, S. (2023) Regional Jobs 2022: The Big Skills Challenge, Regional Australia Institute, Canberra.*
36 *KMPG. (2022). KMPG 2022 CEO Outlook: Growth strategies in turbulent times*
37 *AiGroup. (2020). An Apprenticeship Model for the modern economy*

Industry Skills Development

The Vocational Education and Training (VET) system in Australia is well positioned to supply the skills and knowledge required for the future of work. However, barriers such as perceptions of the VET sector[38] and shortages of qualified trainers are impacting on the attractiveness of the sector to prospective learners and on learner outcomes.[39]

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

- lack of high-quality training facilities and up-to-date equipment
- lack of RTOs and appropriately qualified Trainers/Assessors
- increased costs of training delivery
- mismatches between funding and training needs
- issues with language, literacy, numeracy and digital literacy
- the need for cultural competency in working with First Nations communities, further compound the situation.[40]

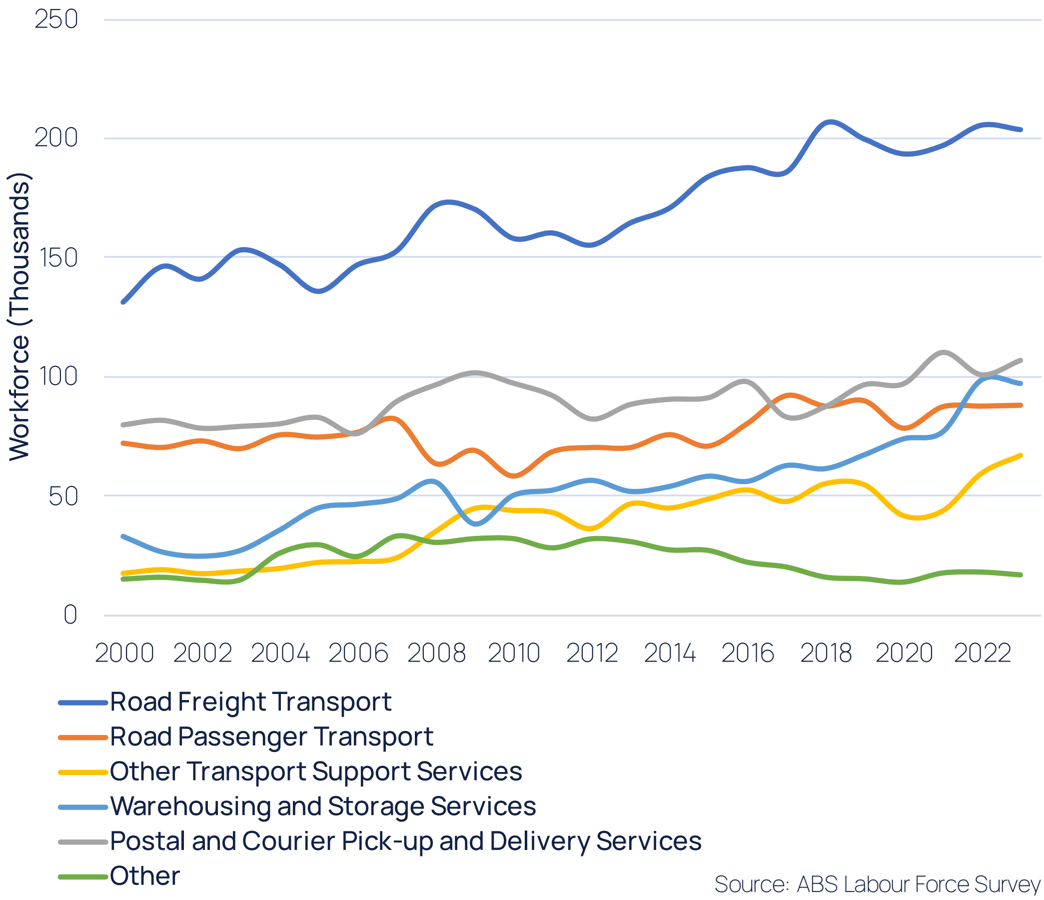
The Australian Government has committed to providing increased funding for improving the quality of TAFE facilities, fee-free TAFE and community-based vocational education places, as well as funding for improving quality teaching.[41] Creating greater flexibility with the VET system can yield better results by attracting more learners and leading to improved learner outcomes.[42]

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

38Parliament of Australia. (2023). Inquiry into the Perceptions and Status of Vocational Education and Training. Terms of Reference.
39Ibid.
40 Tabatha, G. & Andrahannadi, U. (2023). VET delivery in regional, rural and remote Australia: barriers and facilitators, NCVER
41 Australian Government. Budget October 2022-23 Skills and training: Giving Australians the skills they need for higher-wage jobs
42 The Regional Australia Institute (2023). 2023-2024 Federal Government Pre-Budget Submission.

Transport & Logistics Industry Data

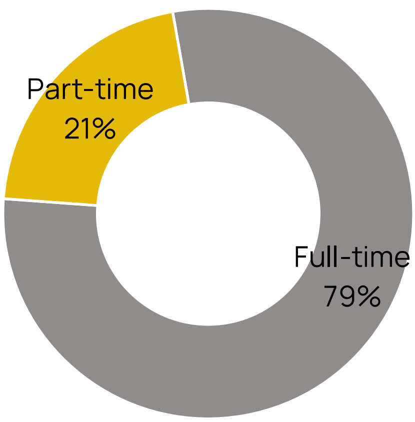
Employment and distribution



Source: ABS Labour Force Survey

Figure 1: *Transport and Logistics Industry Workforce, 2000 - 2023*

The Transport and Logistics industry ***employs more than 580,000 people*** *in 2023*



Source: ABS Labour Force Survey

Figure 2: *Employment status 2023*

Transport and Logistics workers are concentrated in urban centres, with ***more than 80% residing in major cities or inner regional*** *areas.*

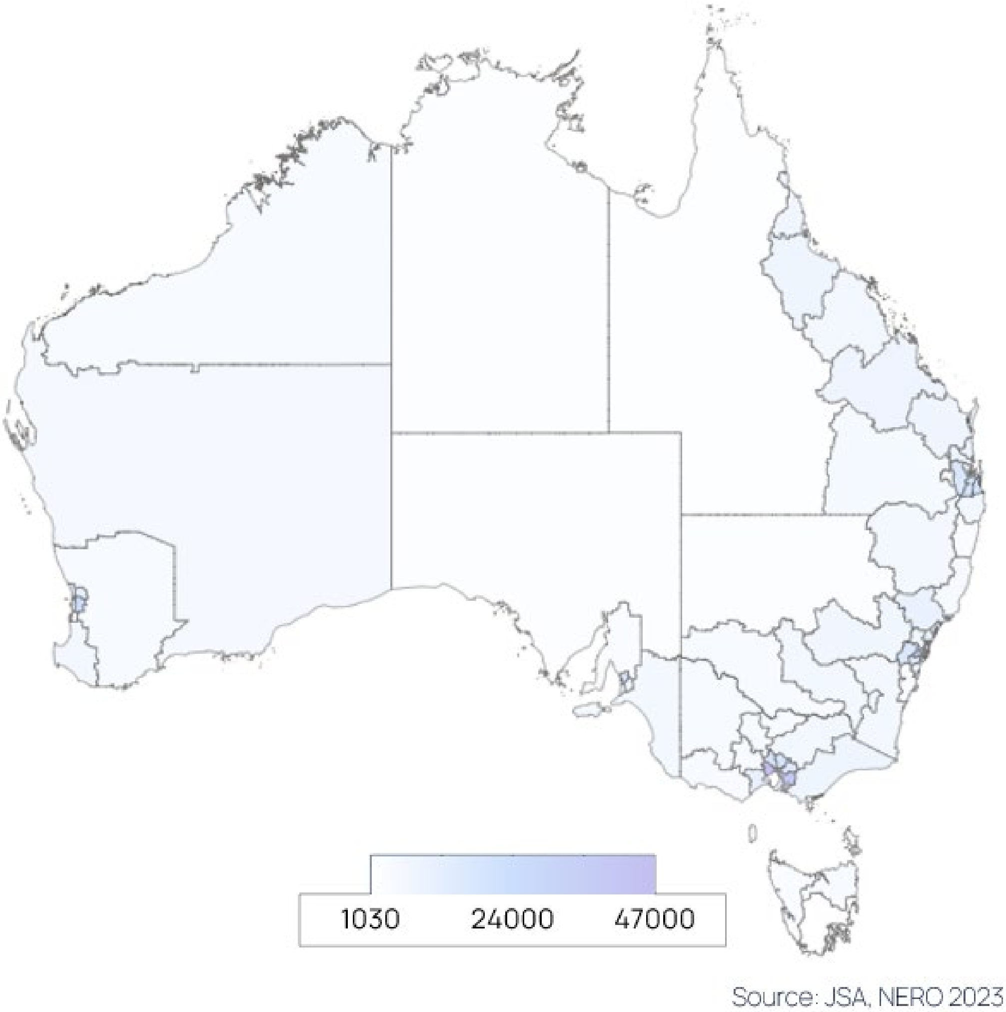


Figure 3*: Distribution of Transport and Logistics Workers, 2023*

Geography	% of workers	Growth (since 2015)
Major City	41.30%	19.78%
Regional	50.76%	16.65%
Remote	7.94%	14.11%

Table 1*: Distribution and Growth of Transport and Logistics Workers by Geography*
Source: JSA, NERO 2023

Demographics

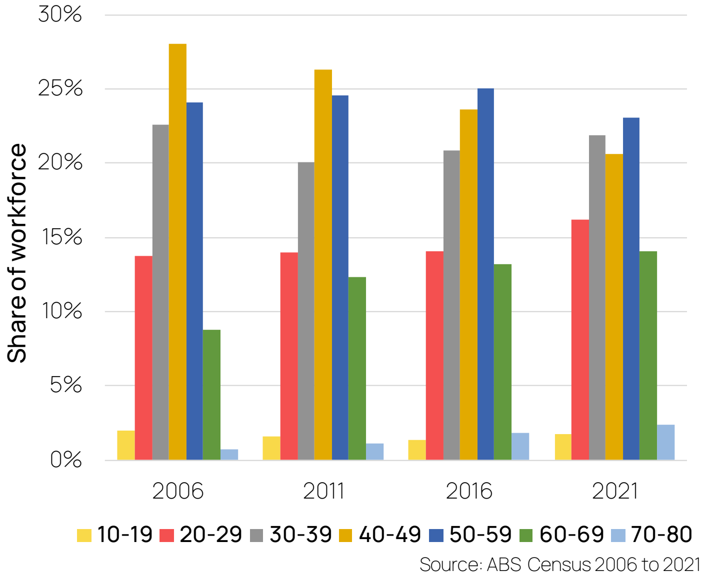


***Figure 4**: Transport and Logistics Industry Age Profile, 2006 - 2021*

*While the proportion of the workforce under 40 has seen a slight increase, **the percentage of those 60 and over has risen from 9.5% to 16.5%**, mainly reducing the share of 40 to 49-year-olds.*

*The share of First Nations people in the Transport and Logistics workforce has **increased substantially** (68.5%) since 2006. The share of the workforce with a disability has grown at about the same pace (47.3%) but since 2011#*

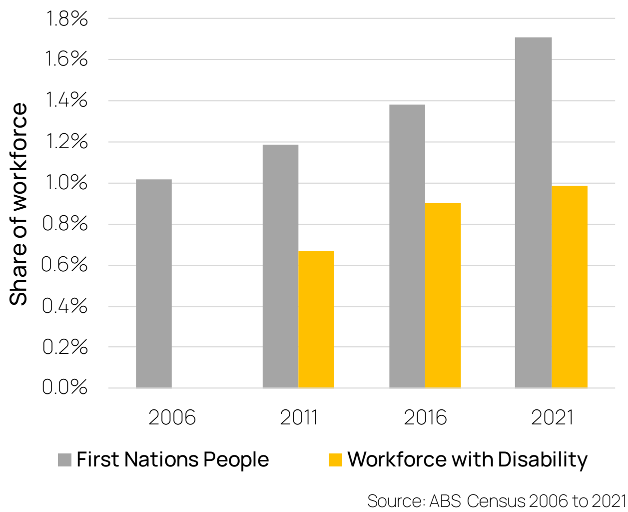


***Figure 5**: First Nations people and Disability Composition in the T&L Workforce, 2006 - 2021*

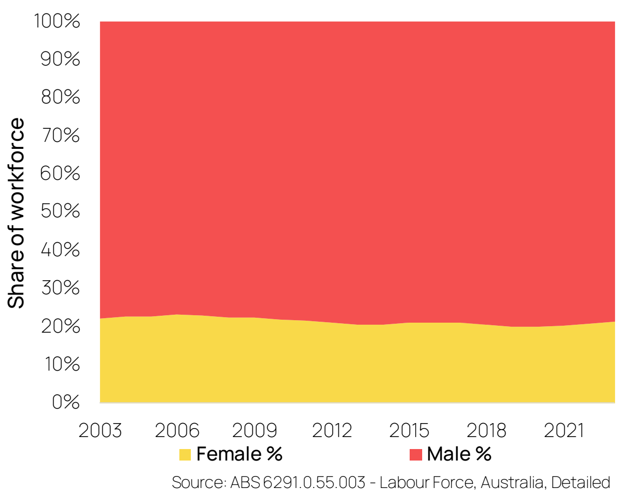


***Figure 6**: Female participation 2000 - 2023*

*__Female participation__ in the Transport and Logistics industry has **remained relatively static** over the last 20 years.*

Occupations

Though softening somewhat this year, the number of online job ads for Transport and Logistics workers ***reached levels in 2022 not seen since 2008****.*

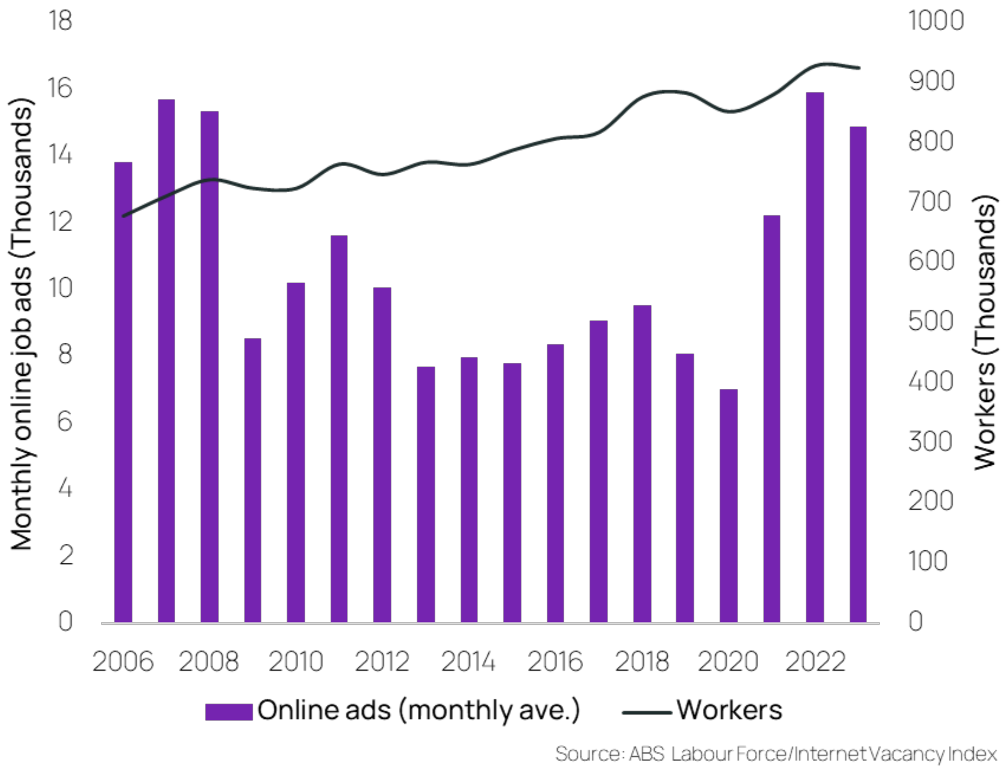


Figure 7: *Transport and Logistics Workers and Online Job Ads, 2006 - 2023*

According to the Census, ***most of the top occupations in Transport and Logistics have substantially outpaced average population growth*** *(1.52%) since 2006. Though future demand is moderate, current demand for Truck and Bus drivers is being reported as strong in all States and Territories.*

Occupation	2006	2011	2016	2021	Ave. Growth	Future demand*
Truck Driver	120924	135287	137148	148284	1.37%	Moderate
Storeperson	96843	102456	108191	134598	2.22%	Strong
Delivery Driver	31664	32995	40892	69982	5.43%	Strong
Forklift Driver	39308	44258	48898	55980	2.39%	Moderate
Bus Driver	20212	25221	32906	34190	3.57%	Moderate

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

Training

*The impact of COVID on enrolments is most noticeable in NSW and Victoria, but the greatest declines between 2019 and 2020 were in Tasmania and NT, which both recorded enrolment **declines of more than 50%**.*

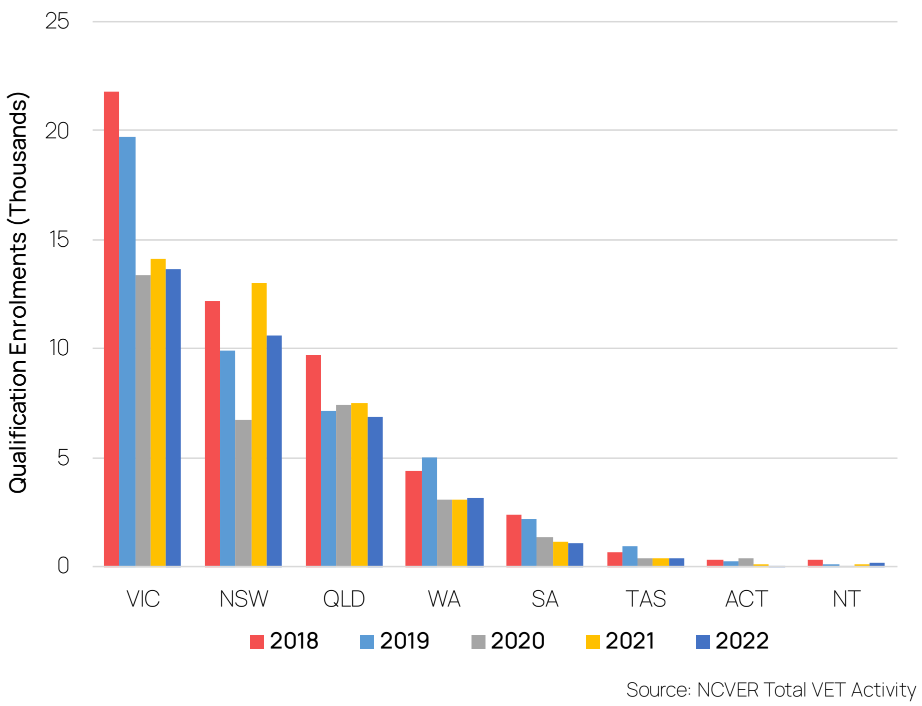


***Figure 8**: Commencing Transport and Logistics Qualification Enrolments, 2017 - 2022*

Although the number of VETiS students enrolling in Transport and Logistics qualifications has been increasing since 2020, the 2022 peak is lower than six out of the last ten years.

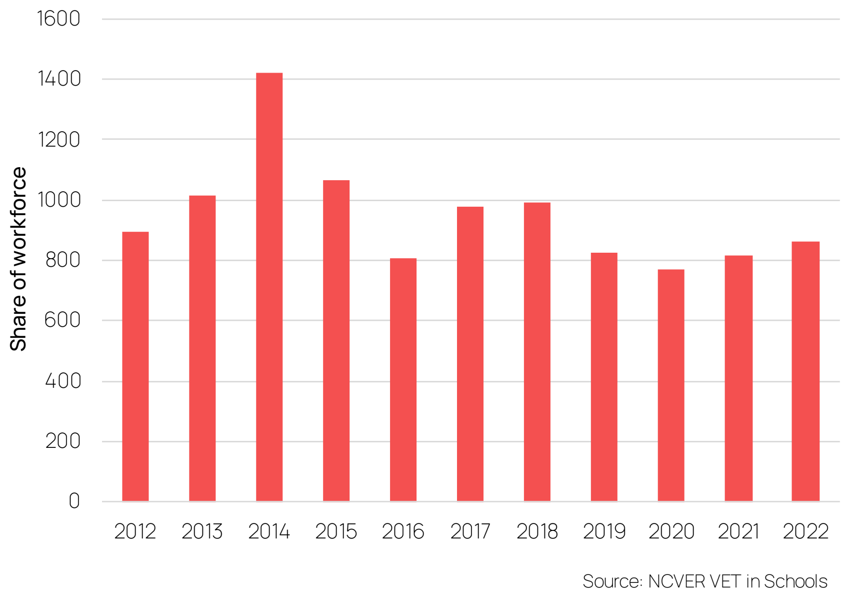


***Figure 9**: Transport and Logistics VETiS Students, 2022*

Key Challenges and Drivers Affecting the Transport and Logistics Workforce

A. Attraction and retention are still the number one issues for the transport and logistics industry

Attraction and retention have become serious concerns for the transport and logistics industry, with far-reaching implications for businesses, supply chains, and the overall Australian economy. Businesses across all sectors of the industry, from warehousing and road transport, through to maintenance and support staff, are struggling to find suitably skilled staff to operate productively and profitably.

Many **trucking enterprises** are experiencing financial pain due to shortages of heavy vehicle drivers, as unused fleet vehicles still incur significant costs. They are also being affected by the lack of suitably skilled staff in the warehousing sector, which creates difficulties in maintaining timeslots for loading and unloading. This is adding time and costs and reducing productive driving time, which then adds to the cost of moving freight. Trucks are also off the road longer when maintenance is required due to shortages of skilled maintenance staff.

Like the road transport industry, shortages of **bus drivers** are being experienced across the country. A key finding of the NSW bus industry taskforce is "that most cancellations and other service failures are a direct result of driver shortages. Some depots are significantly understaffed." This is not a new challenge and is systemic across the entire transport industry. Both Busways and Transport for New South Wales (TfNSW) have reported that over the last 12 months their biggest issue is skilled bus driver recruitment.

The **warehousing** sector in Australia is also experiencing attraction issues and a shortage of skilled and reliable workers that will be exacerbated by the increasing popularity of online shopping. Internet shopping has significantly transformed warehouses in Australia, with the effects likely to persist and evolve. Key impacts include a heightened demand for warehousing space due to e-commerce growth. This growth means that the demand for warehouse workers will continue to increase. In 2022, 82% of Australian households made an online purchase, with an average of 5.6 million households making an online purchase every month. E-commerce is also growing in outer rural and remote Australia with a 6.4% and 5.7% increase in online shopping in 2022 respectively.[43]

Warehousing operations are requiring flexible workforce solutions for fluctuating demand, particularly in e-commerce. Warehouses increasingly rely on casual workers for cost-effective, scalable labour during peak periods. However, this shift raises concerns about labour rights, as casual workers may not have the same protections as full-time employees. It also poses challenges in terms of workforce training and retention. To stay competitive, warehouses are

43 eCommerce Industry Report – 2023 Inside Australian Online shopping, Australia post. (2023)

adopting automation and technology, enhancing last-mile logistics, and addressing sustainability concerns. There has been a significant growth of 35.8% in the Warehousing and Storage Services workforce size in the past five years, with the sector currently employing around 96,000 people of which 24.5% are female.[44] The workforce growth in the broader Transport, Postal and Warehousing sector is projected to grow by 6.1% by 2026.[45]

Infrastructure limitations pose challenges for the warehousing sector. In some areas, transportation networks are not well-equipped to handle the increasing volume of goods, resulting in congestion and delays. Insufficient road and rail connectivity can hinder the efficient movement of goods to and from warehouses.

Many warehouses continue to rely on manual processes, which can lead to inefficiencies, errors, increased operating costs and more importantly, adding to the existing labour shortages. Technology can play a crucial role in optimising warehouse operations. While the adoption of advanced technologies such as automation, robotics, and warehouse management systems are still relatively slow in Australia, large retailers are investing in automated warehouses and robotics, which will reduce routine or physically demanding tasks. As warehouses shift to greater levels of technology implementation this will ease the skilled labour shortage issues, and at the same time, it will increase the digital skills required by workers.[46]

Job ad vacancy rates for occupations related to warehousing have recorded a monthly average increase of 109% since July 2020. These jobs include couriers and postal deliverers; delivery drivers; forklift drivers; purchasing and supply logistics clerks; storepersons; supply, distribution and procurement managers; and transport and despatch clerks have.[47] Some of these jobs are able to be automated which further highlights the importance of digital skills development for the workforce.

Addressing these warehousing challenges requires proactive measures and collaboration among industry stakeholders. Investing in training and upskilling programs can help alleviate the labour shortage, while adopting advanced technologies that can improve operational efficiency.

In the **Stevedoring** sector, Australia's major ports, such as Port Botany in Sydney and the Port of Melbourne, are experiencing congestion issues. Increasing container volumes and larger vessels have put a strain on existing port infrastructure, including berths, container yards, and road and rail access. Achieving optimal efficiency and productivity is crucial for the stevedoring sector, as delays in cargo handling and vessel turnaround times can impact the competitiveness of Australian ports. Advancements in technology, such as automation, artificial intelligence, and data analytics, are transforming port operations worldwide. However, the adoption of these technologies in the Australian stevedoring sector has been relatively slow.

Improving operational processes, investing in technology and equipment, and implementing efficient training and labour practices are essential to enhance port efficiency and profitability.

Addressing these issues in the stevedoring sector requires a multi-faceted approach involving collaboration between stevedoring companies, port authorities, unions, and government agencies. Investments in infrastructure expansion and modernisation, embracing technology,

44 Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ06 - Employed persons by Industry group of main job
45 National Skills Commission. (2021). Industry and occupation trends over the five years to November 2026
46 DHL. Logistics Insights. Australia's E-Commerce Companies Are Getting A Boost With Warehouse Automation. (2022).
47 Jobs and Skills Australia (2023). Internet Vacancy Index

development of skills to meet technical and safety requirements and implementing sustainable practices are key steps to enhance the efficiency and competitiveness of the sector.

To address shortages across the transport and logistics industry, a comprehensive attraction and retention strategy is needed to target schools and more diverse pools of potential workers and assist employers to retain existing workers. We propose to trial a suite of attraction approaches to establish what works well and is sustainable for the industry.

Elements of this strategy might include:

A. Fostering relationships with schools, industry associations and educational institutions to raise awareness about the diverse career opportunities available in the sector

B. Offering industry visits, guest lectures, and work experience to attract young talent and develop interest at an early stage

C. Collaborating with educational institutions to develop industry-specific pre-employment training programs that equip individuals with the necessary skills for Transport and Logistics careers

D. Promoting and supporting the use of job sharing, which can provide numerous benefits for both employees and the companies for which they work

E. Encouraging apprenticeships, traineeships, and work-based learning programs to provide hands-on experience

F. Promoting the benefits of job roles in the industry, such as competitive wages, job security, and opportunities for career progression, to help change the perception of the industry and attract a wider pool of candidates.

Enterprises also require encouragement and government support to address work-life balance for existing employees, from heavy vehicle drivers to warehouse workers. Implementing measures such as flexible scheduling, dedicated rest areas along transportation routes, and improved communication systems can significantly enhance driver satisfaction and retention rates. A strategy may also include promotion of existing resources such as the Healthy Heads, Trucks and Sheds, and Steering Healthy Minds programs. These programs focus on wellbeing by offering robust support, mental health resources, and access to healthcare services to enhance job satisfaction and reduce employee turnover. Additionally, industry training in mental health plays a crucial role in building capacity within the sector. It equips individuals to manage their own mental health and, importantly, to recognise concerning behaviours and provide support to their colleagues. We must explore a diverse range of strategies to ensure that workers can perform their tasks safely while maintaining a healthy work-life balance.

FREIGHT TASK BY ROAD SET TO INCREASE BY

11.6%

IN THE FIVE YEARS TO 2028

B. Heavy Vehicle Driver shortages continue to create significant challenges for the road transport sector.

The **heavy vehicle driver shortage** in Australia has significant implications for the economy and logistics system. Key issues include disruptions to the supply chain, increased costs for businesses due to delays, rising freight expenses caused by the need for higher driver wages, safety risks from overworked drivers, supply chain interruptions affecting just-in-time inventory systems, and a disproportionate impact on regional areas that rely on road transportation. Additionally, the shortage impedes the transport industry's ability to support economic growth and expansion.

Truck drivers are among the most numerous occupations in Australia[48] (7th largest) and among the most in-demand (20st most advertised position in 2023), with online ads tripling since May 2020[49]. Over the five years to 2028, the freight task carried by road is expected to increase by 11.6%[50], further escalating the demand for drivers (**Figure 10**).

The factors contributing to driver shortages are varied.

An **aging demographic profile** across the Transport and Logistics industry is a symptom not only of Australia's ageing population, but of a failure to attract and retain new staff. In the road transport sector, many experienced drivers are nearing retirement age, and there are not enough young drivers entering the profession to fill the vacancies. Without an adequate pipeline of new recruits, the disparity between supply and demand will grow, exacerbating current shortages and costing industry. Given the average age of workers is 44.6 years[51], with women making up only 21.3% of the workforce[52], enhanced recruitment efforts targeting schools, women, and younger recruits are required to create the necessary demographic shift.

48 Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ08 - Employed persons by Occupation unit group of main job
49 Jobs and Skills Australia (2023). Internet Vacancy Index
50 BITRE Australian Aggregate Freight Forecasts, 2022 update
51 Australian Bureau of Statistics (2021) '2021 Census - Employment, income and education', TableBuilder
52 Australian Bureau of Statistics (2023, quarterly average) Labour Force Survey, EQ06 - Employed persons by Industry group of main job

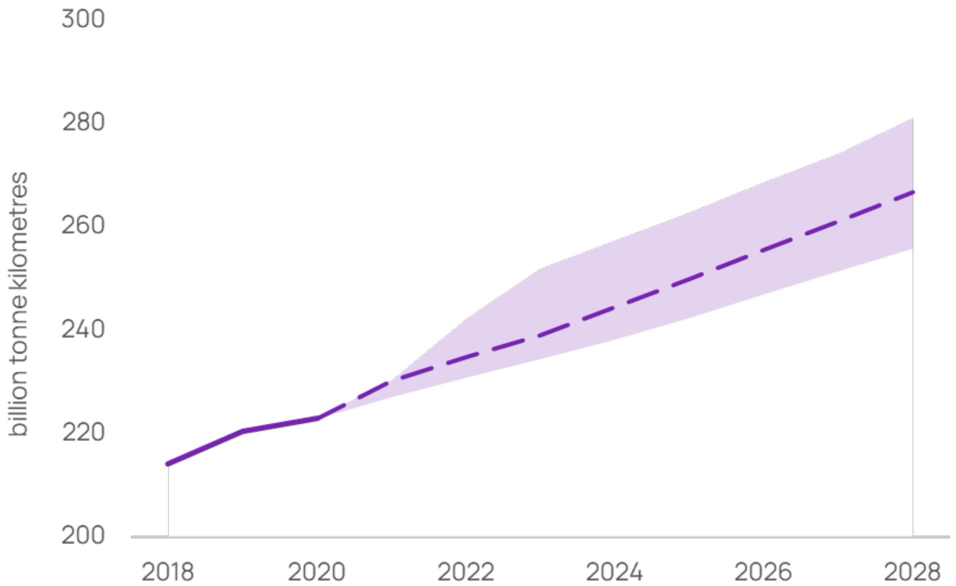


***Figure 10** Freight task by road increase*

Heavy vehicle driving presents numerous **perceived challenges and a poor image,** which can deter potential candidates, especially those from a wider, more diverse demographic. However, the basis for these perceptions is often based on a misunderstanding of the roles. For example:

- **Long hours on the road:** This can be true depending on the specific type of driving been done and freight being carried. However, there are also driving roles that do not require long hours on the road. Few may be aware that hours behind the wheel in heavy vehicles are regulated under Heavy Vehicle National Law (HVNL) so that fatigue management is controlled by limiting hours.
- **Extended periods away from home**: Whilst this is a reality for a minority, there are many driving roles where the driver stays within 100km of the yard and is home every night.
- **Physically demanding work**: This is a component of some roles, but emerging technologies and advancements have been, and are being implemented to assist.
- **Concerns about road safety:** These contribute to the reluctance of many to join the profession, as road transport workers remain the most likely to be killed at work, with a fatality rate 9.4 times higher than the average across all industries.[53] This is where government policy changes and training will assist in providing a safer work environment.

The public perception of heavy vehicle driving as a low-status occupation has also contributed to the shortage. Work-life balance and wellbeing initiatives could assist in helping redefining the industry's image, while raising awareness of the benefits and opportunities within the industry is essential to attract a broader range of candidates.

The current **licensing framework** was not designed to make a heavy vehicle driver 'job ready', yet on some level there is an expectation from employers that they are.

53 Safe Work Australia (2019) Work-related Traumatic Injury Fatalities, Australia

Stringent licencing requirements to obtain a heavy vehicle driver's licence involve substantial costs and rigorous training and testing. At the same time, there are numerous skills required of heavy vehicle operators that are not tested or trained for as part of the licencing process, such as load restraint, loading and unloading, completion of work diaries, compliance with regulations, road law, Chain of Responsibility, fatigue management, and skills for the specific truck type, to name a few. Some licenced heavy vehicle drivers are not employed because employers do not have confidence that training and licencing processes have provided all of the necessary skills to safely and efficiently operate heavy vehicles.

This suggests the need for additional training for heavy vehicle drivers. While there has been growth in truck drivers, distribution among licence types has not been even. According to BITRE, the number of truck drivers with heavy combination (HC) licences has declined by 12.2% in the last decade[54] despite increases in all other licence types (particularly Multi Combination) that more than offset the decline in HC licence holders. To date, the industry has been unable to set standards to address the link between training, job-readiness and licensing. However, heavy vehicle licensing requirements are currently being reviewed by Austroads.

Whilst heavy vehicle operators are on the skills shortage list, they are not currently on the "**Priority Migration Skilled Occupation List**", which means that people cannot be hired from overseas countries to help meet the demand for truck drivers. Collaboration with governments and key stakeholders to address this issue would help to help ease the critical driver shortages relatively quickly. However, while some consideration might be given to exploring migration pathways, more effort needs to be focused on how the transport and logistics industry can better attract and retain staff, including demonstrating a commitment to safe and sustainable standards and investing in their existing workforce.

The industry wide shortages and the shortage of heavy vehicle drivers is a complex issue that demands a multifaceted approach Emphasising the benefits, enhancing training programs, improving work conditions, leveraging technology, and fostering collaboration are all essential components of a comprehensive strategy to address the shortage and secure the industry's future success. An important part of this will be to have the Heavy Vehicle Driver Apprenticeship made available in the States and Territories where it is not yet available.

[54] BITRE Yearbook 2022

COMPLIANCE ISSUES REQUIRING IMMEDIATE ATTENTION IN THE TRANSPORT AND LOGISTICS TRAINING PACKAGE

FATIGUE MANAGEMENT

CHAIN OF RESPONSIBILITY

C. Compliance roles are becoming critical

Compliance personnel within the transport and logistics industry play a crucial role in ensuring that companies operate within legal and regulatory frameworks. Compliance personnel are responsible for managing and implementing various compliance-related tasks and ensuring adherence to laws and regulations to maintain the integrity of operations and avoidance of penalties or legal action. They serve as guardians of legal and ethical practices.

Training to upskill transport and logistics workers in compliance requirements, safety practices, and regulatory changes is required as an increasing number of occupations operate in high-risk environments. This includes immediate attention to address regulatory issues in two Chain of Responsibility Units of Competency within the Transport and Logistics Training Package.

The National Heavy Vehicle Regulator (NHVR) is responsible for vehicle standards, fatigue management, access permits, over mass, compliance and enforcement across the Australian heavy vehicle industry. It monitors compliance with heavy vehicle regulations and conducts enforcement activities to ensure the industry's adherence to safety standards. The regulations apply to aspects of heavy vehicles such as mass transfer allowance, concessional and general mass limits, heavy vehicle mass and dimension limits and oversize mass. The National Heavy Vehicle Inspection manual was amended in October 2021. There has also been a new a new fatigue management system launched by the NHVR to support the heavy vehicle industry to access safe and tailored fatigue risk management options. To ensure compliance with Chain of Responsibility law, different aspects of NHVR regulations will need to be reflected in relevant Transport and Logistics Training Package qualifications and Units of Competency.

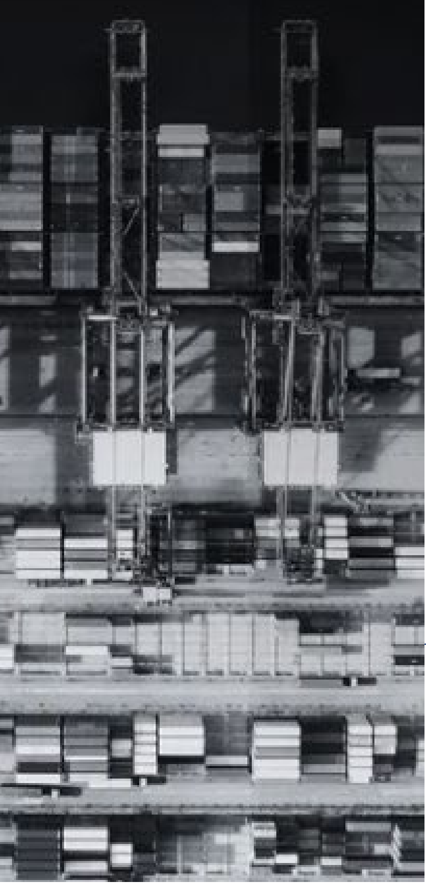
Training is also required to support industry roles where compliance is the central function. This may focus on areas such as:

- Key Aspects of Compliance Roles
- Regulatory Compliance
- Policies and Procedures
- Licencing and Permits
- Auditing and Monitoring
- Incident Response and Investigation
- Industry Advocacy.

DECLINE OF VOCATIONAL TRAINERS AND ASSESSORS

39.6%

IN MAJOR CITIES IN THE LAST 3 YEARS



D. Shortage of Trainers and Assessors

While shortages of 'Vocational Education Teachers' are being reported in all States and Territories[55], supply issues are being most keenly felt in Victoria, South Australia, and Tasmania, with reported declines of vocational practitioners in the last three years of 21.9% in very remote areas, 34% in regional areas and 39.6% in major cities in those states[56]. The national shortage of trainers and assessors is seriously affecting rural, regional, and remote areas of Australia, exacerbating existing educational disparities. These areas face unique challenges due to their geographical isolation and limited access to resources, and the scarcity of qualified vocational practitioners compound these issues.

A lack of trainers and assessors restricts the range of VET courses that can be offered locally, hindering the ability of learners to acquire skills aligned with their interests and local industry and community demands. For example, Tasmania has only two RTOs available to deliver heavy vehicle licence testing in the state. The limited numbers of trainers make it challenging to get new drivers on the road and to upgrade existing licenses.

Reduced access to trainers and assessors also results in limited practical training opportunities, which is vital for hands-on skills acquisition in fields such as transport and logistics.

Additionally, the shortage contributes to a brain drain from rural areas, as potential trainers and assessors are drawn to urban centres where more opportunities and amenities are available. This perpetuates a cycle of limited local expertise, impacting the capacity for skill development and economic growth in rural communities.

Industries that rely on VET graduates in these areas, such as agriculture, transport and logistics and mining, suffer from a lack of qualified personnel. This inhibits economic development and the ability to meet industry demands, further entrenching the urban-rural divide.

55 Jobs and Skills Australia (JSA), Jobs and Skills Atlas, Sept 2023
56 Nowcast of Employment by Region and Occupation (NERO), Sept 05 2023

FIRST MAJOR REVIEW OF ANZSCO SINCE

2006

IS CURRENTLY UNDERWAY

E. Data gaps

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 2023, the focus will be on occupations in road transport, warehousing, postal, courier, pick-up and delivery services. Industry Skills Australia will provide feedback on the accuracy of current occupation skill levels and descriptions and any occupations anticipated to emerge in the next 5 to 10 years.

The Labour Force Survey significantly underrepresents the true size of the workforce in the Transport and Logistics industry. While the survey confines its count to those working specifically within the Transport, Postal and Warehousing Industry, it overlooks the fact that Transport and Logistics workers are prevalent across all sectors. Fewer than half (42%[57]) of these workers are employed in their 'home' industry, with the majority dispersed in various other sectors.

The Omnichannel logistics is also an emerging industry which seeks to synchronise and optimise product distribution across multiple channels, including online and offline, to provide customers with a seamless shopping experience. It involves efficient inventory management, order fulfillment, and technology integration to ensure products are available and delivered promptly, meeting the expectations of customers who seek convenience and flexibility in their shopping journeys. The specific nature of skills and roles involved in omnichannel logistics is yet to be determined. There is a need to determine the requirements for this emerging industry and what qualifications and pathways will be required.

While qualification completions are provided in **Appendix B Training System Data** as is, observed actual completion rates (i.e., the proportion of qualifications commenced in a single year that are eventually completed) as calculated by NCVER[58] are not available at qualification or training package resolution.

.

58 NCVER 2023, VET qualification completion rates 2022, NCVER, Adelaide

transport & logistics workforce

WORKFORCE

580k

21.3% FEMALE

1.71% ABORIGINAL & TORRES STRAIT ISLANDER

0.98% WITH A DISABILITY

AVERAGE AGE

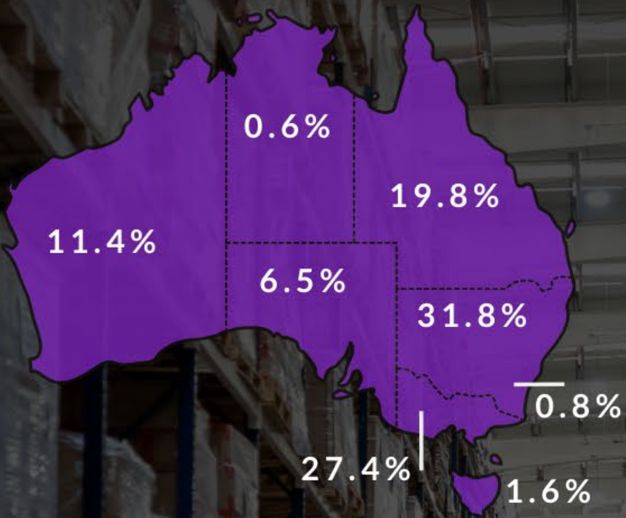
44YRS

WORKFORCE NEARING RETIREMENT

18.5%

AGED 56-66

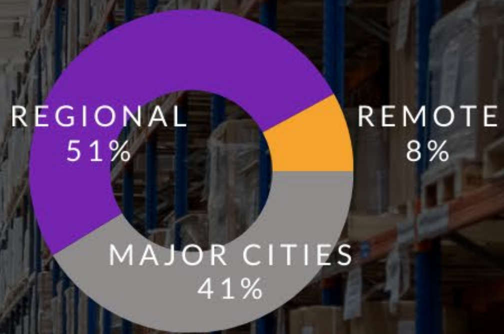
WORFORCE DISTRIBUTION



TOP 5 OCCUPATIONS

Truck Driver - 148,284
Storeperson - 134,598
Delivery Driver - 69,982
Forklift Driver - 55,980
Bus Driver - 34,190

RESIDENTIAL DISTRIBUTION



WORKFORCE WITH VOCATIONAL EDUCATION

29%

2022 QUALIFICATION ENROLMENTS

36,022

TRANSPORT & LOGISTICS TRAINING PACKAGE

Transport & Logistics training delivered by

656

REGISTERED TRAINING ORGANISATIONS

Sources

ABS Census
First Nations People
Disability
Vocational education
Age and retirement
Top 5 occupations

ABS Labour Force
Workforce
Gender
Distribution

Other
Residential distribution: JSA NERO
Qualification enrolments: NCVER
Training delivery: training.gov.au

Existing Workforce Strategies and Initiatives

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

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

A - Attraction and retention are still the number one issues for the transport and logistics industry

B - Heavy Vehicle Driver shortages continue to create significant challenges for the road transport sector.

C - Compliance roles are becoming critical

D - Shortage of Trainers and Assessors

E - Data gaps

Table 3: Existing Workforce Strategies and Initiatives

Strategy/Initiative	Mapping to identified driver /challenge	Jurisdiction	Owners	Purpose	Key Components/timing	Reference	Impact on Maritime workforce	How it will inform our work
Heavy Vehicle Driving Apprenticeship Proposal	B	National	Previous Transport and Logistics Industry Reference Committee / Australian Industry Standards (now ISA)	To lead the establishment of a Heavy Vehicle Driving Apprenticeship aligned to the Certificate III in Driving Operations in each state and territory	Sept 2021 – Current Previous Transport and Logistics Industry Reference Committee-led initiative Ongoing engagement with STAs and state bodies	Heavy Vehicle Driving Apprenticeship	The initiative aims to build safety and overall professionalism of the truck driver occupation	Identify any updates required to the Certificate III in Driving Operations to reflect industry skills needs and ensure rigour and depth of knowledge required for apprenticeship qualification
National Freight and Supply Chain Strategy	B, C	National	Dept of Infrastructure, Transport, Regional Development, Communications & the Arts Freight Australia	To increase the productivity and efficiency of Australia's freight and supply chains	Start 2019 – current The Strategy commits to action in four critical areas: • smarter and targeted infrastructure • enable improved supply chain efficiency • better planning, coordination and regulation • better freight location and performance data	National Freight and Supply Chain Strategy	The National Action Plan aims to lift freight system performance	It will assist in identifying workforce issues in the sector and potentially inform our future research.
Towards a new Heavy Vehicle National Law (HVNL)	B, C	National	National Transport Commission	To simplify the law for heavy vehicles to enhance safety while delivering industry productivity and flexibility	Under development – expected July 2024 The new legislation will: • give flexibility to operators wanting to innovate, and certainty for operators wanting simplicity. • adapt quickly to changing needs and takes an outcomes-driven approach. • provide supports improvements to road network access systems and processes • simplify fatigue management and record-keeping • clarify primary duty and parties covered by the chain of responsibility	Towards a new Heavy Vehicle National Law	Greater professionalism Improved safety, equity and accessibility	Industry Skills Australia has commenced a project to update two Chain of Responsibility units of competency to align with regulatory requirements. Due for completion April 2024.

Strategy/Initiative	Mapping to identified driver /challenge	Jurisdiction	Owners	Purpose	Key Components/timing	Reference	Impact on Maritime workforce	How it will inform our work
Transport and Infrastructure Net Zero Roadmap and Action Plan	A	National	Dept of Infrastructure, Transport, Regional Development, Communications & the Arts	To reduce emissions in the transport sector through using more renewable energy sources	The Roadmap and Action Plan will provide a clear strategy to: • reduce emissions across the transport and infrastructure sectors • support national and international commitments to reduce greenhouse gas emissions • maximise on economic and productivity opportunities • provide investors with future investment certainty • deliver a nationally consolidated approach to accelerate decarbonisation for key sectors.	Transport and Infrastructure Net Zero Roadmap and Action Plan	The workforce may need new skills to adhere to new policies and new technologies	It will provide a guide as to what new skills (if any) that will be need required by industry
National Electric Vehicle Strategy	A	National	Department of Climate Change, Energy, the Environment and Water	To increase the uptake of electric vehicles (EVs) to reduce our emissions and improve the wellbeing of Australians	The National Electric Vehicle Strategy will provide a clear strategy to: • Expand EV availability and choice • reduce road transport emissions • make it easy to charge EVs across Australia • increase local manufacturing and recycling • make EVs more affordable • reduce the cost to Australians of running their vehicles.	National Electric Vehicle Strategy	The strategy will identify what logistics enterprises will need to implement and the workforce skills needs in new EV technologies	The strategy will provide Australia's approach to electric vehicles and will highlight the skills and infrastructure gaps that need addressing
Nationally consistent approach to on-road enforcement for automated vehicles (AVs)	B	National	National Transport Commission	To develop enforcement practices for AVSs and establish data requirements and data access protocols for enforcement officers	To ensure that enforcement officers can: • safely intervene and interact with AVs • identify an AV, its level of automation and who is in control • access data to respond to road safety risks (such as for crash investigation and reporting) • share data with relevant parties, particularly the in-service regulator.	On-road enforcement for automated vehicles	The findings will provide clear guidance as to the requirements that industry will need to operate within.	It will provide guidance on any skills gaps required to be addressed.

Appendix A Transport and Logistics Occupational Areas

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

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

Occupational Area	Job Role
Road Transport	Fleet Manager, Operations Manager, Passenger Service Delivery Manager, Service Delivery Manager
	Administration Assistant, Drivers' Assistant, Equipment Operator, Freight Handler, Heavy Vehicle Cleaner, Intermodal Terminal Worker, New Workers, Pick and Packer, Receival and Despatch Worker, Specialised Cargo Handler, Trade Assistant
	Bitumen Tanker Driver, Chemical Tanker Driver, Fuel Tanker Driver, Heavy Vehicle Recovery Driver, Liquid Petroleum Gas (LPG) Tanker Driver, Transport Supervisor, Bus Driver, Coach Driver, Commercial Driver, Concrete Agitator Driver, Courier Driver, Light Rigid Driver, Line Haul Driver, Pickup and Delivery Driver, Pilot Vehicle, Driver, Ride Share Driver, Taxi Driver, Tip Truck Driver, Tow Truck Driver, Waste Vehicle Driver
	Car Driving Trainer, Heavy Vehicle Driving Trainer, Motorcycle Rider Trainer
	Open Road Operator, Tunnel Road Operator
	Furniture Removalist, Team Leader
Logistics	Aviation Scheduler, Depot Yard Person, Despatch Clerk, Despatch Supervisor, Distribution Centre Supervisor, Facility Manager, Inventory Clerk, Inventory Controller, Load/Unload Supervisor, Loader, Logistics Assistant, Logistics Coordinator/Supervisor, Logistics General Hand, Logistics Operator, Maritime Scheduler, Pick Packer, Rail Operations Scheduler, Rail Terminal Operator, Reach Truck/Forklift Driver, Receiving Clerk, Receiving Supervisor, Store Person, Supply Chain Administration Officer, Supply Chain Administration Operator, Team Leader, Transport Allocator, Transport Clerk, Transport Scheduler, Warehouse General Hand, Warehouse Operator, Warehouse Supervisor, Yard Person, Yard Supervisor, Supply Chain Executive Manager, Supply Chain Program Manager, Supply Chain Senior Manager, Logistics Manager
	Commercial Manager, Fleet Manager, Integrated Logistics Support Manager, Integrated Logistics Support Officer, Inventory Controllers, Logistics Engineer

	Or Ram Engineer, Materiel Logistics Director, Materiel Logistics Executive Manager, Materiel Logistics Program Manager, Materiel Logistics Senior Manager, Materiel Sustainment Manager, Product Support Manager, Product Support Officer, Purchasing/Commercial Officer, Supply Chain Manager, Supply Chain Officer, Support Systems Manager, Support Systems Officer, Technical Logistics Manager, Technical Logistics Officer
	Mobile Crane Leading Hand, Mobile Crane Operator, Mobile Crane Supervisor
	Licenced Customs Broker
Stevedoring	Crane Operator, Equipment Controller, Equipment Operator, Stevedore, Team Leader
	Stevedore Shift Manager, Stevedore Supervisor, Stevedore Team Leader

Appendix B Training System Data

Qualification Enrolments

Qualification	2018	2019	2020	2021	2022
TLI11321 Certificate I in Supply Chain Operations	133	107	59	110	33
TLI20221 Certificate II in Road Transport Terminal Operations	0	0	0	0	0
TLI20321 Certificate II in Stevedoring	135	38	16	2	0
TLI20421 Certificate II in Supply Chain Operations	5352	4880	3383	3784	3384
TLI21221 Certificate II in Driving Operations	761	947	476	42	17
TLI22421 Certificate II in Furniture Removal	78	3	0	0	0
TLI30122 Certificate III in Mobile Crane Operations	1593	1553	753	566	814
TLI30219 Certificate III in Stevedoring	148	103	0	18	0
TLI30321 Certificate III in Supply Chain Operations	23905	18245	12645	13269	12935
TLI31222 Certificate III in Driving Operations	14723	14435	12968	18325	15975
TLI31321 Certificate III in International Freight Forwarding (Operator)	97	73	41	192	246
TLI33321 Certificate III in Furniture Removal	15	27	4	0	0
TLI40122 Certificate IV in Specialist Driving Operations	699	732	288	147	132
TLI40221 Certificate IV in International Freight Forwarding (Senior Operator)	17	11	7	18	23
TLI40321 Certificate IV in Supply Chain Operations	2408	885	375	554	315
TLI40421 Certificate IV in Stevedoring Operations	0	0	0	0	0
TLI40521 Certificate IV in Traffic Control Room Operations	0	9	40	35	17
TLI40722 Certificate IV in Mobile Crane Operations	191	1267	91	172	167
TLI41222 Certificate IV in Motor Vehicle Driver Training	754	939	1025	1206	1129

Qualification	2018	2019	2020	2021	2022
TLI41522 Certificate IV in Materiel Logistics	0	0	10	0	0
TLI50119 Diploma of International Freight Forwarding	41	47	38	13	19
TLI50221 Diploma of Logistics	759	1027	525	997	641
TLI50422 Diploma of Materiel Logistics	0	0	0	0	0
TLI50716 Diploma of Bus and Coach Operations	0	0	2	0	0
TLI50822 Diploma of Customs Broking	178	195	151	209	185
TLI60122 Advanced Diploma of Materiel Logistics	0	5	0	0	0
TLI60222 Advanced Diploma of Supply Chain Management	132	128	2	104	180
Grand Total	**52119**	**45656**	**32899**	**39763**	**36212**

Note: enrolment numbers include all versions of the qualification across the years they were available (e.g. TLI20221 Certificate II in Road Transport Terminal Operations includes enrolments for TLI21710 and TLI21716.)

Qualification Completions

Qualification	2018	2019	2020	2021	2022
TLI11321 Certificate I in Supply Chain Operations	544	27	27	32	20
TLI20221 Certificate II in Road Transport Terminal Operations	0	0	0	0	0
TLI20321 Certificate II in Stevedoring	0	0	10	1	0
TLI20421 Certificate II in Supply Chain Operations	1581	1482	1368	1480	1278
TLI21221 Certificate II in Driving Operations	611	815	407	12	0
TLI22421 Certificate II in Furniture Removal	4	0	0	0	0
TLI30122 Certificate III in Mobile Crane Operations	45	13	0	0	0
TLI30219 Certificate III in Stevedoring	9	16	0	16	0

Qualification	2018	2019	2020	2021	2022
TLI30321 Certificate III in Supply Chain Operations	6879	5393	4238	2962	2064
TLI31222 Certificate III in Driving Operations	3277	2862	2269	1842	1172
TLI31321 Certificate III in International Freight Forwarding (Operator)	35	60	51	43	39
TLI33321 Certificate III in Furniture Removal	10	17	0	0	0
TLI40122 Certificate IV in Specialist Driving Operations	195	0	0	5	0
TLI40221 Certificate IV in International Freight Forwarding (Senior Operator)	14	10	3	0	23
TLI40321 Certificate IV in Supply Chain Operations	1237	372	297	248	243
TLI40421 Certificate IV in Stevedoring Operations	0	0	0	0	0
TLI40521 Certificate IV in Traffic Control Room Operations	2	14	22	13	36
TLI40722 Certificate IV in Mobile Crane Operations	59	0	0	0	0
TLI41222 Certificate IV in Motor Vehicle Driver Training	688	846	899	1018	1071
TLI41522 Certificate IV in Materiel Logistics	0	0	7	0	0
TLI50119 Diploma of International Freight Forwarding	20	14	10	2	0
TLI50221 Diploma of Logistics	324	324	302	181	304
TLI50422 Diploma of Materiel Logistics	0	0	0	0	0
TLI50716 Diploma of Bus and Coach Operations	0	0	0	1	0
TLI50822 Diploma of Customs Broking	75	38	33	52	17
TLI60122 Advanced Diploma of Materiel Logistics	0	5	0	0	0
TLI60222 Advanced Diploma of Supply Chain Management	50	61	51	54	47
Grand Total	**15659**	**12369**	**9994**	**7962**	**6314**

Number of RTOs scoped to deliver Transport and Logistics Qualifications[59]

Qualification	RTO count
TLI11321 Certificate I in Supply Chain Operations	6
TLI20221 Certificate II in Road Transport Terminal Operations	1
TLI20321 Certificate II in Stevedoring	1
TLI20421 Certificate II in Supply Chain Operations	43
TLI21221 Certificate II in Driving Operations	7
TLI22421 Certificate II in Furniture Removal	1
TLI29921 Certificate II in Rolling Stock Maintenance	0
TLI30122 Certificate III in Mobile Crane Operations	4
TLI30219 Certificate III in Stevedoring	5
TLI30321 Certificate III in Supply Chain Operations	132
TLI31222 Certificate III in Driving Operations	63
TLI31321 Certificate III in International Freight Forwarding (Operator)	2
TLI33321 Certificate III in Furniture Removal	1
TLI40122 Certificate IV in Specialist Driving Operations	3
TLI40221 Certificate IV in International Freight Forwarding (Senior Operator)	3
TLI40321 Certificate IV in Supply Chain Operations	26
TLI40421 Certificate IV in Stevedoring Operations	2
TLI40521 Certificate IV in Traffic Control Room Operations	2
TLI40722 Certificate IV in Mobile Crane Operations	6
TLI41522 Certificate IV in Materiel Logistics	2
TLI50119 Diploma of International Freight Forwarding	2
TLI50221 Diploma of Logistics	25
TLI50422 Diploma of Materiel Logistics	1
TLI50716 Diploma of Bus and Coach Operations	1
TLI50822 Diploma of Customs Broking	3
TLI60122 Advanced Diploma of Materiel Logistics	0
TLI60222 Advanced Diploma of Supply Chain Management	4

59 Training.gov.au (as at 05 Sept 2023)

Appendix C Glossary of Terms

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

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

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

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

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

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

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

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

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

Workers - The term refers to occupational data (ANZSCO)

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

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

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

Workforce - The term refers industrial data (ANZSIC).

Appendix D Explanatory Notes to Data

Occupational data (Workers) vs Industrial data (Workforce)

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

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

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

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

Business Count

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

Training Data

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

Endnotes/Special References

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

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

Disability data is not available in Census year 2006

Industry Skills Australia

WWW.INDUSTRYSKILLSAUSTRALIA.ORG.AU