Industry Skills Australia

2026 WORKFORCE PLANNING UPDATE

RAIL INDUSTRY

JSC | Jobs and Skills Council
Transport and Logistics
An Australian Government Initiative

Acknowledgement of Country

Industry Skills Australia acknowledges the Traditional Owners of Country throughout Australia and recognises the continuing connection to lands, waters, skies and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures and to Elders past and present.

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About ISA

Industry Skills Australia (ISA) is the Jobs and Skills Council for the Transport Supply Chain industries. These include Aviation, Maritime, Rail, Transport and Logistics, and the emerging sectors of Omnichannel Logistics and Distribution, and Air and Space Transport and Logistics.

ISA is owned and led by industry. Our goal is to build a world class workforce for Australia's Transport Supply Chain industries to boost productivity, create better jobs and build opportunities for individuals. Our 30-year history in the Transport Supply Chain industries supports us in researching workforce needs, promoting skills development and creating training products that meet industry priorities.

This document should be attributed as: Industry Skills Australia. (2026). Rail Industry 2026 Workforce Planning Update.

Disclaimer
We have taken great care in preparing this Workforce Planning Update. We aim to provide accurate and helpful information. However, we cannot guarantee that this document is completely error free. Industry Skills Australia Limited is not liable for any harm or loss that may arise from dependence on this information. We encourage readers to use this report as a guide and seek further advice where needed.

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Image Credits
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Foreword

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Executive Summary

Australia's Rail industry provides vital freight services across the country and mobility to millions of metropolitan and regional passengers. The industry comprises private and public operators, passenger and freight operators, infrastructure owners and managers, manufacturers, and suppliers that operate in urban, regional and rural locations.

The Australian Rail industry employs nearly 55 thousand people and the workforce is expected to grow by 7.9% over the next decade[1].

The 2025 Workforce Plan identified **key challenges and drivers** that are impacting the Rail workforce. Further stakeholder consultation, research and analysis have confirmed the ongoing relevance of these issues for workforce planning. The key challenges and drivers point to four broad and interconnected priorities for the industry:

1. **Access to a Skilled Workforce**
2. **Availability of Training**
3. **Preparedness for Change**
4. **National Interoperability**

Collaborative Action

Addressing the Rail industry's complex workforce challenges exceeds the remit and resources of any single stakeholder, making collaboration essential. The 2026 Workforce Planning Update highlights collaboration that is progressing shared priorities, this includes ISA-led actions and broader industry initiatives.

[1] Jobs and Skills Australia, Employment Projections - May 2025 to May 2035

1. Access to a skilled workforce	2025	2026	2027
Improving Rail Career Information	⚙		
Rail Fundamentals (Pre-vocational)		⚙	
Increasing Diversity across Transport Supply Chain Industries		⚙	
Skilled Migration		🔭	
🔗 Australasian Railway Association: Strategic Plan			
🔗 Australasian Railway Association: Work in Rail Campaign			
🔗 Australasian Railway Association: Women in Rail Strategy 2023-26			
🔗 Australasian Railway Association: The Participation and Engagement of First Nations People in the Rail Industry			
2. Availability of training	**2025**	**2026**	**2027**
VET Workforce Project	⚙		
Cross-JSC Collaboration		⚙	
🔗 National Transport Commission: Future Skills Framework			
🔗 Australasian Railway Association: Rail Industry Worker			
3. Preparedness for change	**2025**	**2026**	**2027**
Rail Digital Skills Analysis	✓		
Digital Skills	⚙		
Autonomous Train Operations	⚙		
Technology Futures Taskforce Phase 2 – Occupational Analysis		■■■	
Skills Gaps for Cyber Security Threats		🔭	
Tracking Emerging Technology Adoption in the Rail Industry		🔭	
🔗 Australasian Railway Association: Rolling Stock Decarbonisation			
🔗 National Transport Commission: Cyber Security Training Program			
4. National interoperability	**2025**	**2026**	**2027**
Mutual Recognition Phase 1	✓		
🔗 Office of the National Rail Safety Regulator: Strategic Directions 2024-2027			
🔗 Harmonisation of Rail Standards Summary Report			
🔗 National Transport Commission: National Network for Interoperability			
🔗 National Transport Commission: Rail Safety National Law			

Completed ✓

Underway ⚙

Planned ■■■

Exploring 🔭

Related initiatives 🔗

Industry Overview

About the Industry

The Rail industry is critical to Australia's economy, society and environment, carrying approximately 912.5 million passenger journeys and transporting 447.9 billion tonne kilometres of freight in 2023/24.[2]

Rail industry activities can be categorised into four occupational areas:

Rail Operations – running train services and coordinating personnel, assets, activities, passengers and freight.

Rail Infrastructure – maintaining and managing the physical rail network, including tracks, signals, stations and yards.

Safety – protecting passengers, workers and assets through safety systems, inspections, training and compliance.

Rolling Stock Maintenance – servicing and repairing trains and other rail vehicles to ensure safe and reliable operation.

Nearly 55,000 people were employed in the Rail transport industry in 2025, and the workforce is projected to grow by 4.9% by May 2030 and 8.7% by May 2035.[3] Across the broader rail value chain[4], rail activity supports a further 32,300 direct jobs in rail manufacturing and construction, and up to 107,700 additional jobs across the wider economy through indirect (supply-chain) effects.[5]

The median age of Railway Track Workers was 42 in 2024, while Train and Tram Drivers had a median age of 47. Women accounted for 12.4% of the Rail workforce in the same year.[6]

The Rail industry spans a diverse range of organisations, including public and private passenger and freight operators, rail infrastructure owners and managers, manufacturers and suppliers working across metropolitan, regional and remote Australia. The industry also draws expertise from adjacent sectors such as civil construction, engineering and labour hire when required.

Oversight of safe rail operations is provided by the Office of the National Rail Safety Regulator (ONRSR), an independent body responsible for promoting and enforcing national rail safety. The Australian Rail Industry Standards Organisation (ARISO) has been established as the national industry-led technical standards body responsible for supporting interoperability and harmonisation across the Australian Rail industry, championing safety to improve productivity and efficiency.

NUMBER OF RAIL INDUSTRY BUSINESSES

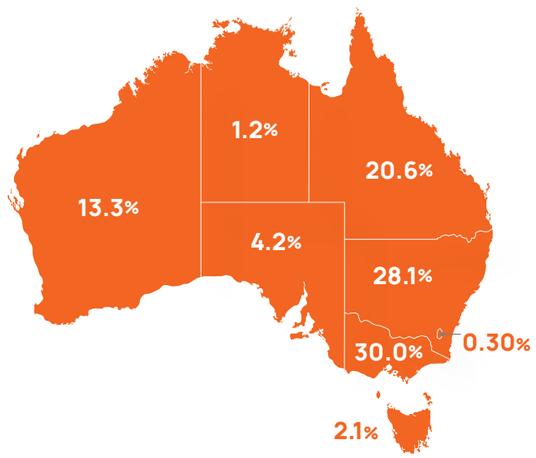
330

200+ employees	20-199 employees	0-19 employees
15	18	297

GDP CONTRIBUTION 2024-25

$11.6B

BUSINESS DISTRIBUTION BY STATE %



MEDIAN GENDER PAY GAP

10.4%

ESTIMATED ANNUAL REVENUE 2024-25

$27.3B

RAIL INFRASTRUCTURE BUILT 2024-2025

$16B

HEAVY RAIL NETWORK LENGTH (km)

31,200

RAIL PASSENGER JOURNEYS IN 2023-2024

912 MILLION

RAIL PASSENGER TRAVEL

DOUBLED

SINCE 2021-22

TOTAL FREIGHT VALUE

$308 B

RAIL-RELATED EXPENDITURE BY PUBLIC SECTOR

$35.7 B

IN 2023-24

WORKFORCE IN RAIL COMPANIES

54,795 (2025)

56,903 (2030)

Link to ISA Data Dashboard

QR CODE

2 Bureau of Infrastructure and Transport Research Economics. (2025). Trainline 12

3 Jobs and Skills Australia, Employment Projections - May 2025 to May 2035

4 Note: ISA does not cover electrical rail signaling, rail manufacturing and infrastructure construction. These areas fall under the coverage of other Jobs and Skills Councils.

5 Australasian Railway Association, The value of rail: The rail industry's economic and social contribution to Australia, 2025

6 Jobs and Skills Australia, Occupation profiles data - November 2025, Australian Government, 2025.

Refer to page 37 for sources

Impact of Global Megatrends

Megatrends are major long-term shifts that reshape the economy, workforce and global environment. They influence how industries operate, innovate and plan for the future. Six global megatrends are having significant and enduring impacts across industry and society.

For the Australian Rail industry, these megatrends have implications for future workforce skill requirements.

Demographic Shifts

Demographic shifts are reducing overall workforce participation and intensifying existing skills shortages in Australia. An ageing population, declining birth rates and slower migration growth are shrinking the pool of available workers and increasing pressure on productivity. The Rail industry is already experiencing a retirement cliff, with projections indicating that up to 35% of the workforce may retire by 2035.[7] This creates significant business risk if knowledge transfer and succession planning are not effectively managed.

These demographic pressures compound long-standing attraction and retention challenges. Competition from other sectors, especially Mining which offers substantially higher wages, reduces the Rail industry's ability to replenish its ageing workforce. Younger people show limited awareness of rail career opportunities, contributing to low entry rates. However, public attitudes towards sustainability and the renaissance of urban rail present an opportunity to reposition rail as an appealing, future-focused career pathway.

Infrastructure Demand

Accelerating demand for new and upgraded infrastructure is placing significant pressure on the Rail industry's workforce. Urbanisation and population growth are driving the need for major investments in climate-resilient transport networks to support expanding communities. Rail infrastructure investments are occurring in multiple jurisdictions, creating a constantly shifting pipeline of work and intensifying competition for skilled labour. As projects ramp up, rail employers report that they are not only competing with other industries for experienced workers but increasingly with other rail operators.

Major projects, such as Inland Rail, are expected to increase rail's share of containerised freight.[8] At the same time, sustained infrastructure growth across all Australian industry is increasing the freight and passenger task. This growth exposes investment gaps in heavy haulage infrastructure as well as in long-term operations and maintenance funding. Stakeholders note that governments often underinvest in ongoing network operations, threatening sustainability of services and creating safety risks when budgets are tight. Without a coordinated national approach to infrastructure expansion, the Rail industry will continue to struggle with strategic, long-term workforce planning.

7 Railway News, Australia's Rail Workforce Crisis: A Looming Shortage, 23 April 2025.

8 Australasian Railway Association, The-value-of-rail-2025.pdf, 2025, page 3.

Technological Change

Rapid technological change is reshaping industry as advances in AI, automation, robotics and hyper-connected digital systems transform business models and redefine workforce capability needs. In the Rail industry, these technologies are driving productivity gains but also disrupting traditional roles, requiring workers to develop new digital, analytical and systems-based competencies to keep pace with emerging operating environments. The NTC's Future Skills Framework highlights the need to build foundational skills to prepare workers for the introduction of digital train control, intelligent transport systems and decarbonisation technologies.[9]

As technological change reshapes the labour market, there is potential for the Rail industry to attract workers displaced by automation in other sectors. However, effective transition pathways will be needed to reskill people for work in Rail. Many transitioning workers are mid-career employees with financial and family responsibilities, which means they are unlikely to accept apprentice wages. Targeted government intervention and the creation of viable entry pathways will be needed to support transitions for mature workers.

Energy Transition

The global transition toward renewable and low-carbon energy systems has implications for the Australian Rail industry through the uptake of new energy technologies. While some private operators, such as Fortescue[10] and BHP[11], have acquired battery-electric locomotives, many freight operators lack the capital required to transition away from diesel in the short term. However, pockets of innovation are emerging across the network, including solar-supported passenger operations such as Canberra Metro[12] and plans for an Australian-first battery passenger train trial in SA.

There is growing recognition that rail offers long-term, lower-emissions solutions that support Australia's net zero goals. Increasing rail's share of freight movements will help to shift demand away from higher-emissions fossil fuel powered vehicles.[13] Electrification of both passenger and freight rail is increasing demand for specialist technical skills and prompting changes to training needs across the industry and requiring effective collaboration between the responsible Jobs and Skills Councils.[14]

In the Hunter region of NSW, energy transition will drive a sudden shift in mining and electricity markets that will put rail jobs at risk. While the Mining and Electricity sectors have transition processes in place for displaced workers, there is currently no coordinated transition plan to support affected Rail workers. Effective transition and reskilling solutions will be needed to retain these experienced workers in the Rail industry to alleviate shortages in other sectors and regions. At the same time, public perceptions of coal as a declining industry are making it more difficult for businesses with ongoing viable operations to attract and retain workers.

Climate Impacts

As extreme weather events become more frequent and severe they will impact the Rail industry by placing pressure on infrastructure, operations and supply chains. These events are already impacting the productivity of freight operations, particularly in regional and remote areas where freight networks are highly exposed to climate-related disruptions.[15] Rail organisations are facing growing demands for resilience planning to ensure services can continue safely and reliably during and after major weather events. The ability to position resources quickly to support recovery following floods and other disruptions is becoming critical for maintaining network performance and community access.

By easing congestion and reducing emissions, the Rail industry contributes to healthier and more sustainable communities. There is potential to use these environmental and social benefits to attract new entrants to the industry by positioning rail as a sector that actively supports Australia's clean-energy and sustainability goals.

Geopolitical Instability

Global instability and political volatility have potential to disrupt rail operations and investment in infrastructure. These pressures heighten unpredictability for operators, who must plan workforce and long-term asset investment decisions without clear visibility of future economic conditions. Greater instability also has potential to increase competition with the defence sector for skilled workers.

9 National Transport Commission, NTC NRAP Future Skills Framework (PDF), July 2025.

10 Fortescue, Fortescue marks Real Zero milestone with battery electric locomotives commissioning, Fortescue website, 12 February 2026.

11 BHP, BHP welcomes Australia's first purpose-built battery-electric locomotives to the Pilbara, BHP website, 14 November 2025.

12 Canberra Metro, Canberra's light rail network is making a direct contribution to the city's sustainability goals, Canberra Metro website, 2026.

13 Infrastructure and Transport Ministers, National Freight and Supply Chain Strategy, Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2025, p 26.

14 ISA is engaging with Powering Skills Organisation (PSO), the JSC with responsibility for electrical skills.

15 Infrastructure and Transport Ministries. (2025). National Freight and Supply Chain Strategy 2025. page 22.

Impact of Regional Issues

The Rail industry underpins the productivity of key regional areas around the country by enabling the efficient movement of bulk agricultural and resource commodities. Iron ore and coal make up the highest volume task moved by rail.[16] Rail employment has increased in both geographies since 2015 (**Figure 1**), driven by track worker growth in major cities (+40.3%) and driver growth in regional areas (+79.9%), while regional track worker numbers declined (-31.8%) over the same period.

Figure 1: Rail Occupation Trends, City vs Regional

Source: JSA NERO, February 2026

Table 1: Top Regions by Train Driver Employment (2025)

Jurisdiction	Region	Workers
QLD	Mackay - Isaac - Whitsunday	1421
QLD	Central Queensland	1280
NSW	Newcastle and Lake Macquarie	1123
NSW	Illawarra	1044
NSW	Hunter Valley exc Newcastle	924
QLD	Townsville	294
NSW	New England and North West	269
SA	South Australia - Outback	238
NSW	New South Wales - Central West	232
QLD	Cairns	193

Source: JSA NERO, February 2026

[16] Infrastructure and Transport Ministers, National Freight and Supply Chain Strategy, Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2025, p 15.

> *"Regional Australia is not a single labour market, but a group of diverse local communities and regions that each have their own challenges and opportunities. While some issues are shared or cross-cutting, many issues require tailoring to the needs of local communities."*
>
> Professor Jeff Borland[17]

- **Limited labour pool** – Industry workforce issues, such as an ageing population, are magnified in regional areas where skill shortages are more pronounced. There is competition between regions for skilled rail workers, notably between the east and west coast. Regional employers have reported difficulties securing key Transport Supply Chain occupations including freight train drivers, electrical trades18, overhead electricians and signallers. Some regional employers experience high competition for workers with the Mining industry which can offer more attractive pay and conditions. Regional workers are also more likely to require upskilling in technical and digital skills, and those who relocate from regional areas to pursue training or initial career entry often don't return.
- **Housing shortages** – Many regions have severe housing shortages and increasingly high housing costs, making it difficult or impossible to accommodate relocating workers and their families. Cairns and surrounding areas have experienced near zero rental accommodation rates and some regions lack safe and secure housing for staff.
- **Lack of services and amenities** – Limited childcare, poor digital connectivity, inadequate roads and lack of public transport hinder workforce participation and deter potential workers from relocating to regional areas. Access to healthcare can be limited with long wait times for doctor visits and lengthy travel required for specialist consultations and treatment. Some regional areas have FIFO arrangements for health professionals such as optometrists and other medical specialists.
- **Limited training availability** – Many regions lack sector specific training opportunities, requiring workers to travel long distances to participate in training – significantly increasing costs and at times resulting in workers not returning to the region. A shortage of trainers and assessors limits training provision and causes course cancellations. Poor internet access and limited public transport in regional areas impacts participation in both online and face-to-face training options.

[17] Jobs and Skills Australia, Jobs and Skills Roadmap for Regional Australia - Phase 1, Australian Government, 3 July 2025.

[18] Note: ISA does not cover electrical rail signaling, rail manufacturing and infrastructure construction. These areas fall under the coverage of other JSCs – Powering Skills Organisation (electrical rail signaling), Manufacturing Skills Alliance (rail manufacturing), Build Skills Australia (infrastructure construction).

Occupational Snapshot

Link to ISA Data Dashboard

QR CODE

OCCUPATIONS IN SHORTAGE

- Rail Engineer
- Rail Protection Officer
- Rail Signalling Engineer
- Railway Track Plant Operator
- Railway Track Worker

FEMALE (%)

14.1%

HIGHEST MEDIAN AGE

Train and Tram Drivers

47 YEARS OLD

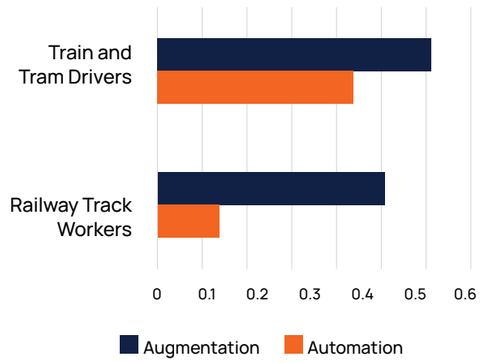
PART-TIME

2.2%

ONLINE JOB AD GROWTH 2020-2025

18.4%

AI AUTOMATION/AUGMENTATION EXPOSURE



WORKERS IN RAIL ROLES (2025)

23,304

WORKERS IN RAIL ROLES (2030)

23,772

LOWEST VACANCY RATE (%)

Train and Tram Drivers

0.28%

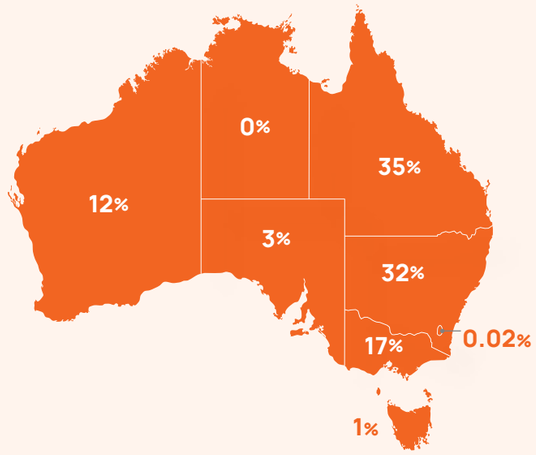
Refer to page 37 for sources

Training Highlights

Link to ISA Data Dashboard

QR CODE

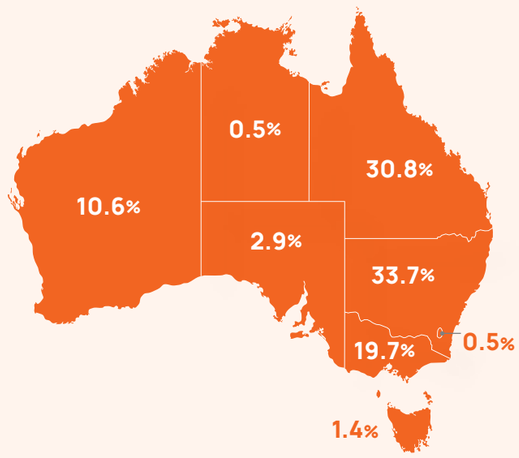
QUALIFICATION ENROLMENTS BY STATE%



TOTAL QUALIFICATION ENROLMENTS 2024

13,841

RTO MAP (EXPLICIT SCOPE)



VETiS STUDENT COUNT

29

RTOs WITH SCOPE TO DELIVER RAIL QUALS

40

TRAINING PACKAGE SUMMARY

22 qualifications
64 Skill Sets
255 Units of Competency

PARTICIPATION IN TRAINING

Female	First Nations	Disability
12.4%	**8.3%**	**3.1%**

TOP 5 QUALIFICATIONS BY ENROLMENTS (2024)

Cert II in Rail Infrastructure	**7,527**
Cert IV in Train Driving	**2,272**
Cert II in Track Protection	**1,613**
Cert III in Rail Infrastructure	**594**
Cert III in Light Rail Driving	**313**

APPRENTICESHIPS/ TRAINEESHIPS

(% of RAIL enrolments)

1.3%

HIGHEST GRADUATE EMPLOYMENT RATE (2020/2021)

Cert III in Rail Customer Service

100%

Refer to page 37 for sources

Progress on Industry Priorities

The 2025 Workforce Plan identified **key challenges and drivers** that are impacting the Rail industry workforce. Further stakeholder consultation, research and analysis have confirmed the ongoing relevance of these issues for workforce planning.

Key challenges and drivers point to four broad and interconnected priorities for the industry.

Key Challenges and Drivers identified in 2025 Workforce Plan

Rail organisations struggle to attract young and diverse talent

Industry faces critical occupational and skills shortages

→ impacts **the supply and demand for workers** and points to a need for...

Rail training capacity falls short of industry demands

→ influences **the skills of workers and new entrants** and points to a need for...

New skills are needed to address technical changes

New skills demands rise as rail shifts to clean energy

Skills gaps for cyber security threats

→ drives **future industry skill requirements** and points to a need for...

Lack of rail interoperability hampers labour mobility

→ affects **the nature of the Australian Rail industry** and points to a need for...

Industry Priorities for Workforce Planning and Development

1 Access to a Skilled Workforce

2 Availability of Training

3 Preparedness for Change

4 National Interoperability

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1 Access to a Skilled Workforce

The 2025 Workforce Plan reported that the Rail industry faces critical occupational and skills shortages and that rail organisations struggled to attract diverse talent.

Industry Growth

Expansions of national and regional rail infrastructure, for both freight and passenger transport, are increasing demand for rail workers across the country.

Government investment in modal integration and the establishment of connected **multi-modal freight precincts** will deliver new connections and upgrades to the existing freight rail network. Intermodal projects, Moorebank Interstate Rail Terminal, Westport in Kwinana, Beveridge Interstate Freight Terminal and the Port Rail Shuttle Network in Melbourne, aim to deliver productivity and environmental benefits by shifting container freight from road to rail.[19] Australia's largest intermodal logistics precinct, Moorebank Intermodal Terminal Precinct in Western Sydney, will take 3,000 heavy truck movements off Sydney's roads each day[20] when the facility is at full capacity.

Australian governments at the federal and state/territory level are investing in **new passenger rail projects** to connect communities and contribute to net zero targets. Expansions and upgrades of passenger rail networks are planned and under construction in Sydney[21], Melbourne[22], Brisbane[23], Perth[24], Adelaide[25] and Canberra.[26]

Demand for skilled labour across the Rail industry has intensified **shortages in specialist occupations**, (Table 2), particularly in signalling, civil, rolling stock and electrical trades.[27] Industry reports indicate that these shortages cannot be resolved quickly due to long training lead times and the limited transferability of overseas qualifications, especially for safety-critical signalling and cyber security roles. One initiative to address this shortage is the introduction of the National Signalling Assessment Framework[28] in 2023 to support skills portability for signalling railway safety workers with the aim of increasing the pool of workers needed to delivery rail projects across Australia.

Table 2: Rail Occupations in Shortage 2025

Occupation Title	AUS	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Freight Train Driver	R	S	R	R	R	R	R	R	R
Passenger Train Driver	R	S	R	R	R	R	R	R	R
Rail Engineer	S	S	S	S	S	S	S	S	S
Rail Protection Officer	S	S	S	S	S	S	S	S	S
Rail Signalling Officer	S	NS	S	S	NS	S	NS	NS	S
Railway Network Controller	NS	NS	S	NS	NS	NS	NS	NS	S
Railway Track Plant Operator	S	NS	S	NS	S	S	S	S	S
Railway Track Worker	S	S	S	S	S	S	S	S	S

Source: Occupational Shortage List (February 2026) S = Shortage, R = Regional Shortage, NS = No Shortage

19 Infrastructure and Transport Ministers, National Freight and Supply Chain Strategy, Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2025, p 23.

20 National Intermodal, Moorebank Intermodal Precinct [PDF], Fact Sheet, March 2023.

21 Transport for NSW, Sydney Metro West, NSW Government, 9 August 2017.

22 Victoria's Big Build, Suburban Rail Loop, Victorian Government, n.d.

23 Cross River Rail Delivery Authority, Home - Cross River Rail, Queensland Government, 2025.

24 Metronet, Morley-Ellenbrook Line, Government of Western Australia, n.d.

25 Department for Infrastructure and Transport, Adelaide Regional Rail Extensions Planning Study, Government of South Australia, n.d.

26 Light Rail to Woden, Light Rail Stage 2A: City to Commonwealth Park, ACT Government, n.d.

27 Note: ISA does not cover electrical rail signaling, rail manufacturing and infrastructure construction. These areas fall under the coverage of other JSCs – Powering Skills Organisation (electrical rail signaling), Manufacturing Skills Alliance (rail manufacturing), Build Skills Australia (infrastructure construction).

28 Australasian Railway Association and Metro Trains Australia, Rail Industry Worker, National Signalling Assessment Framework [PDF], Version 1, 29 September 2023, p 5.

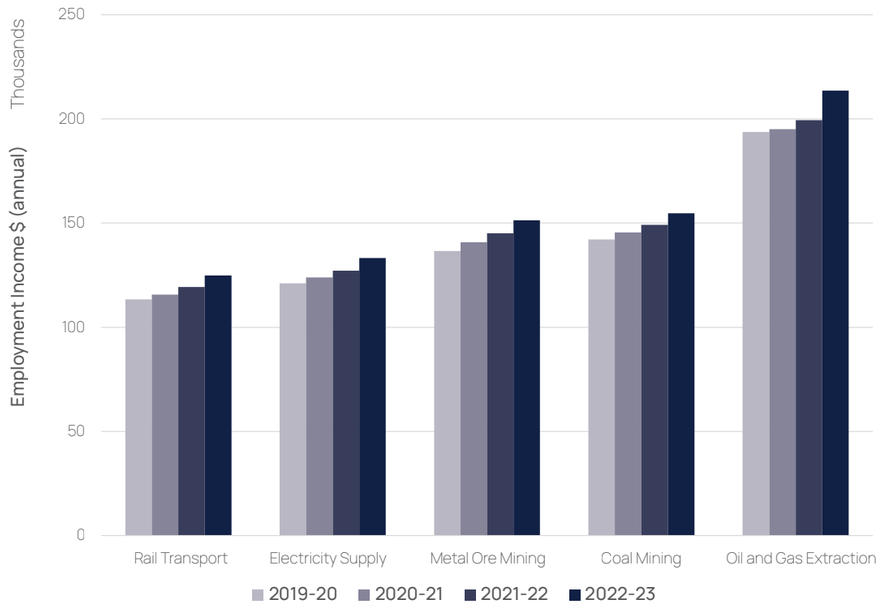
Attraction and Retention

A range of demographic and cultural factors currently limit the Rail industry's ability to attract and retain workers.

The Rail industry is facing a potential 35% reduction in the workforce by 2035 due to a **wave of retirements** in a workforce that skews significantly older than the Australian average.[29] The departure of experienced workers risks a significant loss of industry knowledge unless the industry can implement effective succession planning and progression pathways.

The impact of workforce retirements is exacerbated by the **poaching of skilled rail workers** by other industry sectors. Employers report that rolling stock workers are especially vulnerable to poaching due to the transferability of their skills to the Mining sector where better pay and conditions are available in FIFO roles. Although rail is one of Australia's top-paying industries (**Figure 2**), Mining maintains a persistent wage premium, with metal ore mining paying around 21% more than rail, coal mining 24% more, and oil and gas extraction more than 70% more. Rail wages have grown steadily but the structural pay gap makes Mining consistently more attractive.

Figure 2: Highest-Paying Industries in Australia (2019–2023)



Source: ABS 2022-23, Jobs and Income of Employed Persons

Competition for new workforce entrants is making it difficult to replenish the rail workforce. Employers have observed a **lack of awareness among young people** about career opportunities in the Rail industry. Clear career pathways and professional development opportunities were identified by young rail professionals as measures that would encourage retention of young people in rail.[30] Existing initiatives to reach young people through career education and school engagement take time to materialise and will require sustained effort from industry to achieve results.

Industry stakeholders agree that the pool of workers available to the Rail industry could be expanded by increasing participation from under-represented groups. Many occupations in the Rail industry are **highly male dominated.**[31] Gender segregation research by Jobs and Skills Australia has found that women working in highly male dominated occupations stay in their roles for less time on average than their male colleagues.[32] Existing ARA initiatives support culture change and inclusion in the Rail industry through targeted mentoring, networking and diversity training programs for Women in Rail, Future Leaders, Young Professionals and Men in Rail.[33] While these programs will continue, the association acknowledges the need for a more comprehensive strategy with government support[34] and industry collaboration.

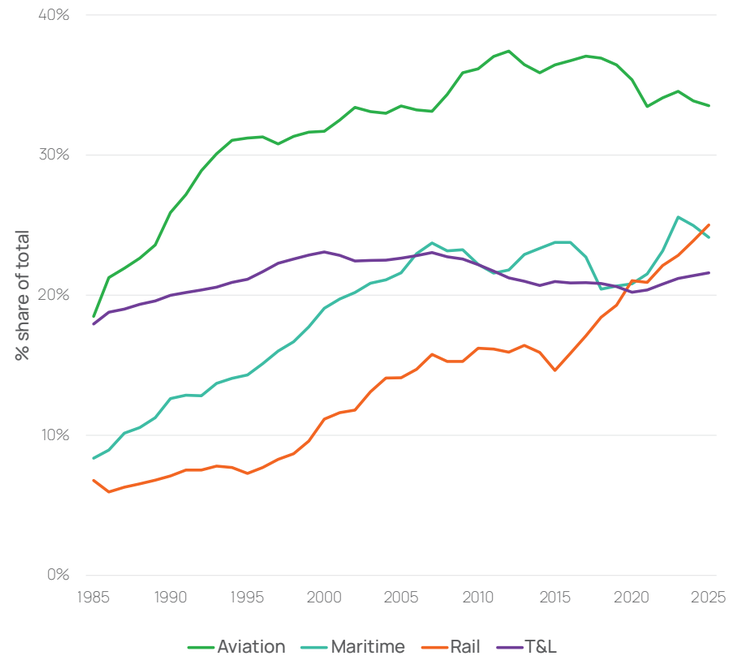
29 Railway News, Australia's Rail Workforce Crisis: A Looming Shortage, 23 April 2025.
30 Australian Railway Association, The ARA Young Rail Leaders gather industry feedback, ARA website, 5 September 2025.
31 Jobs and Skills Australia, Gender Economic Equality Study, Paper 2, 2025, p 99.
32 Jobs and Skills Australia, Gender Economic Equality Study, Paper 2, 2025, p 86.
33 Australasian Railway Association, Strategic Plan 2025-2030 [PDF], 2025, p 7.
34 Railway News, Australia's Rail Workforce Crisis: A Looming Shortage, 23 April 2025.

In 2025, the ARA released a **Rail Gender Equity Charter** developed in collaboration with industry leaders to set out a shared commitment to improving gender equity across all parts of the Rail industry.[35] More than 50 organisations have signed the Charter, pledging their commitment to five statements of intent:[36]

1. Fair and unbiased recruitment processes, to enable equal opportunity for candidates of all genders to start their career in rail.
2. Offering all employees equitable opportunity for career development and leadership.
3. Providing policy which supports and enables our gender equity commitments.
4. "Walk the talk" of gender diversity and inclusion, with executive leadership support and engagement in diversity initiatives.
5. Fostering a culture of inclusivity in the workplace, backing up our commitment with behaviours which make our employees feel valued and able to present their authentic selves.

Through these types of initiative, **the Rail industry has made substantial progress in improving gender inclusivity**. **Figure 3** shows that Rail has recorded the strongest long-run rise in the share of female full-time workers across all Transport sectors – growing from around 6% in 1985 to around 25% in 2025. This shift moves Rail from being the lowest-performing sector four decades ago to now sitting just behind Aviation (around 28%) and ahead of the other transport industries.

Figure 3: Female Workforce Share by Industry (5-Year Avg.)



Source: ABS, Labour Force Survey, Nov. 2025, EQ06, (5 year rolling average)

35 National Women in Transport, Driving equality with the Rail Gender Equity Charter, 28 October 2025.
36 Australasian Railway Association, Rail Gender Equity Charter [PDF], 2025.

Cultural barriers and a lack of facilities have been identified as limiting participation for some potential workforce entrants, particularly in regional and remote locations. Research conducted by the Rail, Tram and Bus Union (RTBU) on women transport workers' access to toilet and sanitary facilities found that almost three quarters of female transport workers have suffered health issues due to inadequate facilities.[37] Inflexible rostering and 24/7 operations can also be obstacles for people who need flexibility in employment arrangements. Discussion at the Frontline Flexibility Roundtable 2025, highlighted the important of leadership, technology and cultural change in embedding flexibility consistently and effectively across the entire rail workforce.[38]

ISA-led Actions

Improving Rail Career Information
This project supports workforce attraction and development by improving how careers in the industry are promoted and understood. Working with key partners, it will strengthen awareness of the sector and provide clear, accessible career information. The project will showcase the value of working in the sector, outline job roles, skills, qualifications and pathways, and leverage existing initiatives where possible. Together, these activities will raise awareness and support long-term workforce growth and retention.

Rail Fundamentals (Pre-vocational)
A nationally recognised Certificate II in Rail Fundamentals (Pre-Vocational) is being developed to create a clear pathway for school students into rail careers. By reviewing Victorian-accredited modules and existing TLI units, the qualification will be aligned to industry needs and equip students with essential entry-level skills. Addressing labour shortages and low awareness of rail opportunities, the program will strengthen workforce attraction and retention, support delivery across all states and territories, and build stronger connections between schools and employers to enhance employment pathways and bolster the future talent pipeline.

Increasing Diversity across Transport Supply Chain Industries
This project is building a comprehensive understanding of the current diversity and inclusion landscape across the Transport Supply Chain industries to inform scalable solutions in a second phase. It responds to fragmented diversity and inclusion efforts and the persistent underrepresentation of women, First Nations peoples, CALD communities, neurodiverse individuals and people with disabilities. By analysing demographics, reviewing existing initiatives, mapping gaps, and consolidating tools and resources, the project will deliver an environmental scan and recommendations that support a more inclusive, resilient and future focused workforce.

Skilled Migration
This activity will examine existing skilled migration pathways and policy settings for Transport Supply Chain occupations to assess how well they meet the current and emerging skill needs of industry. The work will involve analysis of available data and targeted consultation with industry, unions and government stakeholders. It will consider issues raised by stakeholders, including the responsiveness and cost of existing processes, and the extent to which current settings ensure that migrant workers have the skills, experience, and safety awareness required to perform effectively in Australian workplaces.

Related Initiatives

Australasian Railway Association: Strategic Plan 2025-2030
The ARA's strategic plan guides the association's work to drive policy reforms that maximise the benefits of rail. One of the plan's four strategic pillars is to elevate the Rail workforce by promoting rail as a career and creating a safe, inclusive and skilled workforce. The plan identifies a role for ARA in leading the adoption of nationally recognised skills frameworks, developing training pathways into the Rail industry, providing professional development and supporting culture change to facilitate inclusion.

Australasian Railway Association: Work in Rail Campaign
The ARA campaign promotes rail as a career of choice by showcasing opportunities in the industry. The campaign website provides information on working in rail including case studies, career education resources, pathways advice, an employer directory and job advertisements.

Australasian Railway Association: Women in Rail Strategy 2023-2026
ARA's current Women in Rail Strategy continues the work of previous strategies to advance gender equality and inclusiveness in the Rail industry. The initiatives focus on advocacy, mentoring, scholarships, training, research and networking.

Australasian Railway Association: The Participation and Engagement of First Nations People in the Rail Industry
The ARA research report was commissioned to provide an evidence base to help guide the industry's focus on strengthening engagement with First Nations people and businesses. The report examines the participation and engagement of First Nations people and highlights progress already underway as well as opportunities for the industry to take more deliberate long-term action.

[37] Rail, Tram and Bus Union, It's a bloody mess: A report on women transport workers' access to toilet and sanitary facilities [PDF], November 2025.
[38] Industry Skills Australia, Australia's Rail Industry Unites to Tackle Workforce Challenges, ISA website, 7 August 2025.

Flex from the Start
- A new approach to flexible work

In 2023, John Holland's Rail & Transport business unit pioneered a new approach to flexible work, supported by Women in Construction (WiC) funding and academic research led by Dr Natalie Galea, Melbourne University. The team introduced a customised program 'Flex from the Start' to normalise flexibility and remove long standing barriers to participation. The initiative has reshaped culture, reduced fatigue, and delivered outstanding retention in a sector known for rigid schedules. The trial's success led to the program becoming permanent in January 2025.

Rail construction and maintenance operate under strict time constraints. When the rail network shuts down for maintenance on weekends, nights, or public holidays, rail teams must be on-site. This environment traditionally left no room for conventional flexible work. The key issues identified were:

- 10 to 11-hour workdays with limited recovery time
- 'Every weekend' work
- High levels of fatigue
- Difficulty attracting new talent, especially women
- Low retention and negative perceptions of work life balance
- Strong stigma around adjusting hours or leaving early

To create a sustainable workforce, the team needed a new kind of flexibility, one that worked for site-based rail work. The project's foundation was simple yet critical: listen to employees first. Instead of imposing corporate flex options like working from home, the team asked workers what they needed. The project representative explained, *"Before designing anything, we listened. No one wanted working from home… they needed something else."*

The guiding principles were:

- Tailor flexibility to roles that cannot work remotely
- Engage all stakeholders early
- Normalise flexibility through visible leadership modelling
- Trial, refine, and solidify changes through evidence
- Communicate transparently across teams and partners

Three flexibility initiatives were designed and piloted across selected rail projects:

Flex Wheel – A visual menu of 12 flexibility options used by managers, complete with photos and quotes. It removed stigma, boosted uptake, and showed visible leadership support. As the project representative said, *"What we heard a lot was, we don't see how many of our managers do it……. So, we put the face of a manager and got them to provide a quote about what they do flexibly."*

No Meeting Mondays – Blocking all Monday meetings created uninterrupted focus time, reducing after hours work and improving planning. The practice was later adopted by one of John Holland's clients, spreading meaningful cultural change beyond the organisation.

Flex 9 (Nine Day Fortnight) – The flagship model allowed employees to work 8.4-hour days and with every second Monday off. With voluntary opt in, roster redesign, team rotations and acting-up opportunities, 64 of 65 employees opted in.

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Outcomes

- **Outstanding retention** - Only one person left in two years. Flex 9 became a talent magnet, with staff reluctant to move to non-flex projects. The project representative reported *"There were 65 staff on the project, 64 took it on…. 64 people have not left that project. If anything, we've got more people asking to come back. So, retention is the result."*
- **Lower fatigue, higher engagement** - Employees reported better wellbeing, family routines, morale, and collaboration, many calling it 'life changing.'
- **Stronger capability** - With managers taking days/time off under the Nine Day Fortnight arrangement, other employees naturally stepped into regular acting roles on these days. This organically built their skills and strengthened the succession pipelines.

The project representative credits early stakeholder involvement, strong leadership buy-in, clear communication, and starting small before scaling. Their advice: *"Normalise flexible work, don't make it a special initiative."*

Flex from the Start proved that genuine flexibility is possible even in highly traditional, site-based industries. Through thoughtful design and a willingness to challenge old assumptions, John Holland's Rail & Transport business unit reshaped culture, lifted wellbeing, and set a new standard for flexibility in construction and infrastructure.

Key Insights

- John Holland redesigned flexibility for rail work by listening to employees and creating options that fit site-based roles.
- Delivered three practical initiatives: Flex Wheel, No Meeting Mondays, and a Nine Day Fortnight that removed stigma and improved workload balance.
- Achieved outstanding retention, with 64 of 65 employees joining the program and almost no staff leaving over two years.
- Significantly reduced fatigue and boosted wellbeing, with employees reporting better routines, morale, and collaboration.
- Shifted culture and capability, as acting up opportunities strengthened skills and leaders helped make flexibility 'normal business as usual.'

2 Availability of Training

The 2025 Workforce Plan reported that rail training capacity falls short of industry demands.

Training Availability

Access to rail-specific training remains limited across Australia (**Figure 4**), with most RTOs located in New South Wales, Victoria and Queensland. South Australia has very little local provision, with only two providers delivering three rail qualifications. Western Australia has a moderate level of training availability, offering 13 of the 22 available qualifications. Where local delivery is minimal or absent, interstate travel adds to training costs for individuals and employers.

Figure 4: RTO Count vs Qualification Count by Head Office Location

Source: training.gov.au, March 2026

There are **few supported training pathways** available for entry into the Rail industry. Because rail training is predominantly delivered by private RTOs, learners in most jurisdictions cannot benefit from Fee Free TAFE arrangements, with Western Australia being the main exception. Employers consulted by ISA report that training costs significantly affect their operating budgets, particularly in regions where workers must travel long distances to access training.

The delivery of rail qualifications is also constrained by the **lack of subject matter experts**. Some RTOs are exploring opportunities to access subject matter experts through third party auspice arrangements, but this is still constrained by the limited availability of people with the required expertise. The ARA recommended the establishment of an accredited network of providers to deliver ongoing skills development for the rail workforce pipeline.[39]

Rail employers are moving to **preferred provider models** for large contracts. Some employers have also reported an increased interest in establishing enterprise RTOs to improve their local training delivery.

The delivery of rail qualifications is a challenge for RTO financial viability. Industry stakeholders report that rising operating costs and the lack of subsidies put considerable financial pressure on rail RTOs, which can lead to their closure. Thin markets for specialist skills prevent RTOs from benefiting from economies of scale, deterring their entry or continuation in the delivery market. Additionally, RTOs struggle to recruit qualified trainers. There is a shortage of rail trainers with industry currency and experienced rail workers are often reluctant to move off the tools due to an associated drop in remuneration. Given their viability challenges, RTOs are unable to compete with higher paying employers.

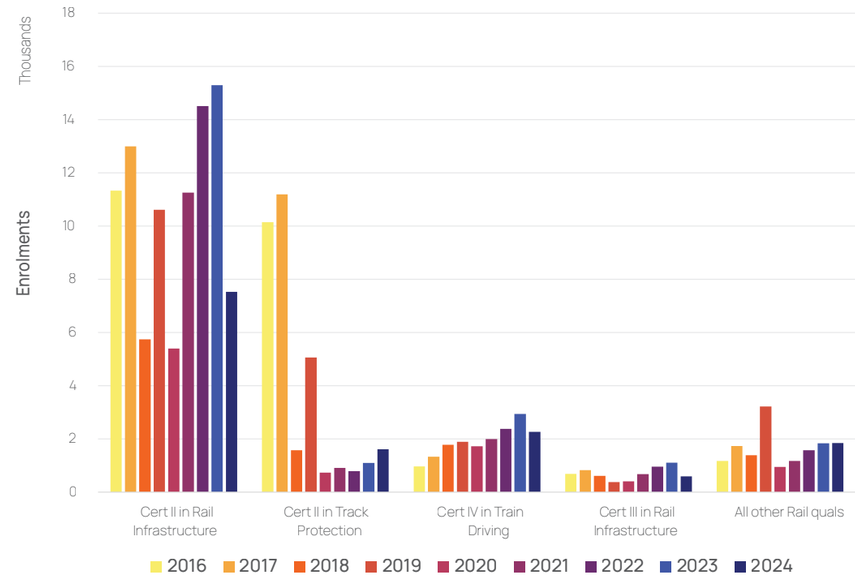
> *We have decided to develop an enterprise RTO to provide our own training."*
>
> [ISA survey respondent]

[39] Australasian Railway Association, Building Australian Rail Skills for the Future [PDF], March 2022, p 46.

Training Approaches

Employers report that some training products and delivery models are **not meeting industry requirements**. This concern is reflected in the structure of the training market itself, which is highly concentrated. Over the past nine years, just four qualifications have accounted for 91% of all rail enrolments (**Figure 5**), with 76.8% concentrated in only two Certificate II programs (Rail Infrastructure and Track Protection). Such concentration suggests a system geared heavily toward entry-level training, with relatively limited movement into the Certificate III and IV pathways that underpin more specialised roles. Some employers would like to have greater flexibility in their use of Certificate II qualifications to support industry entry and specialisation pathways.

Figure 5: Concentration of Rail Qualification Enrolments (2016-2024)



Source: NCVER Total VET Activity

Employers value practical, on-the-job training. The NTC Future Skills Framework emphasises a multi-modal learning approach that includes formal learning, social learning and on-the-job learning to keep pace with emerging technology.[40] However, employers and RTOs report that on-the-job training can be **discouraged by compliance and audit issues**.

Rail skills training and assessment is often tailored to the rail organisation, railway network and geographic location. However, tightly contextualised training can **restrict labour mobility** and skills transfer. While some progress has been made to establish nationally recognised standardised entry-level rail skills training has progressed, further effort is required to address barriers to mutual recognition.

The **underutilisation of recognition of prior learning (RPL)** also restricts labour mobility and skills transfer and increases training costs for employers when workers transferring between networks need to unnecessarily repeat training. The issue is driven by a lack of trust in the competency management frameworks across organisations and networks.

> *We lack a national program of recognition of skill… with consistent and adequate funding for the Recognition Process and the proper training of RPL Assessors – opportunities are being missed to increase capability of the workforce and avoid duplication of training."*
>
> [ISA survey respondent]

[40] National Transport Commission, Future Skills Framework [PDF], July 2025, p 18.

ISA-led Actions

VET Workforce Project
Aimed at building and supporting a secure and sustainable VET workforce, this project is in its critical second phase. ISA is investigating and validating VET workforce challenges and issues identified in Steam 1 and exploring industry-led responses. ISA is collaborating with stakeholders across Aviation, Maritime, Rail, and Transport and Logistics to refine a skills and competency framework and identify practical pathways to attract, develop and retain a diverse and capable VET workforce.

Cross-JSC Collaboration
Cross JSC collaboration is a proactive and ongoing effort to address shared workforce planning and skills development priorities. ISA engages with the Manufacturing Industry Skills Alliance on rail manufacturing, Powering Skills Organisation on electrical rail signalling, Build Skills Australia on infrastructure construction and Future Skills Organisation on digital technologies.

Related Initiatives

National Transport Commission: Future Skills Framework
The NTC's Future Skills Framework outlines the skills the Rail industry will need as new technologies are adopted to support digital train control, intelligent transport and decarbonisation of the sector. It provides guidance for employers and educators on how these skills can be developed through formal education, social learning and on-the-job training – including through the use of virtual reality technology and microcredentials.[41]

Australasian Railway Association: Rail Industry Worker (RIW)
The ARA's RIW program is a unified system of managing competences, health, safety and fitness for duty. It serves as a single source of truth for workforce credentials, allowing businesses to track and manage their teams efficiently while ensuring compliance with the Rail Safety National Law. The program is a collaborative effort between industry organisations to harmonise competency standards across Australia.

VIDA Certificate II Program

The Victorian Government's unprecedented investment in major transport infrastructure has sharply increased demand for a skilled, job ready rail workforce. To meet this need, the Victorian Infrastructure Delivery Authority (VIDA) established the Training for the Future (TFTF) initiative. TFTF is an industry aligned, policy driven partnership with the Victorian rail sector designed to build a sustainable and diverse talent pipeline. The program targets workforce attraction and supports entry pathways that prepare participants for immediate deployment on live rail and transport infrastructure projects. Through high-quality integrated technical, safety, compliance and employability training, the program strengthens local workforce participation and supports priority cohorts, ensuring infrastructure investment delivers enduring skills outcomes alongside physical assets. One of the key deliverables from TFTF, the VET in Schools program Certificate II in Rail Fundamentals, provided an opportunity for secondary students to immerse themselves in real rail learning and environments, as a pathway to working in rail. Through the program's immense success, an opportunity has emerged to establish Certificate II in Rail Fundamentals (pre-vocational) as a national training product.

Key strength: direct alignment with major project pipelines and contractor requirements, enabling training that reflects real industry needs and accelerates job transition.

Outcomes:

- delivered targeted employment outcomes for over 500 participants.
- indirectly supported more than 10,000 others.
- completion rates of 96% for Certificate II in Rail Fundamentals in 2023.

TFTF has left a legacy of a successful and scalable blueprint for aligning skills supply with long term infrastructure priorities while broadening participation across the rail workforce. More details: VET in Schools – Certificate II in Rail Fundamentals - Victoria's Big Build

[41] NTC NRAP Future Skills Framework.pdf pages 18 and 20

3 Preparedness for Change

The 2025 Workforce Plan reported that new skills are needed in the Rail industry to address technical changes and to respond to cyber security threats and the shift to clean energy.

Digital Transformation

Research conducted by Deloitte found an **increasing need for digital and technical skills** in the Rail industry with 40% of the rail workforce needing to learn new skills to do their job in the future.[42] Industry stakeholders have reported skill shortages for operating and maintaining digital, automated and new technologies.

The NTC's Future Skills Framework[43] (the Framework) outlines the **skills the Rail industry will need** as new technologies are adopted. The Framework organises these into three categories:

- **Digital Train Control** – Advanced innovation in railway operations that enhance safety, optimise efficiency and improve reliability of train services.
- **Intelligent Transport** – Technologies and enablers that support the wider ecosystem by providing deep insights, optimise resources and improve security.
- **Decarbonisation** – Renewable energy technologies and green innovation that support the transition to sustainability and low carbon emissions.

Although the roll out of some technologies will occur over the longer term, the Framework stresses that the workforce **needs to build foundational skills now.**[44] **Seven technical skill categories are identified as critical.**[45]

- Understanding of emerging technology
- Technical design and engineering
- Safety and compliance
- Electrical engineering
- Project management
- Data science and analytics
- Troubleshooting and systems analysis

Employers have reported an **increasing importance of soft skills**. Attendees at the Future Rail Skills Forum 2025 highlighted the importance of digital literacy, change management and data analytics for the future rail workforce.[46] Eight adaptive skills that will be crucial for navigating change are identified in the Framework Skills Framework.[47] These are:

- Digital literacy
- Communication
- Critical thinking
- Problem solving
- Leadership
- Teaming and collaboration
- Adaptability
- Learning agility

42 Deloitte, Future Digital Skills in Rail, 2023, cited in NTC Future Skills Framework.pdf p 8.
43 National Transport Commission, Future Skills Framework [PDF], July 2025, p 8.
44 National Transport Commission, Future Skills Framework [PDF], July 2025, p 30.
45 National Transport Commission, Future Skills Framework [PDF], July 2025, p 15.
46 Industry Skills Australia, Australia's Rail Industry Unites to Tackle Workforce Challenges, ISA website, 7 August 2025.
47 National Transport Commission, Future Skills Framework [PDF], July 2025, p 16.

Clean Energy

To support decarbonisation, the Australian Government envisages **increasing rail's share of freight** movement because it is a lower emissions mode than road transport.[48] Increased passenger movement by rail will also contribute to reducing overall transport emissions.

Table 3: Freight Transport Emissions Intensity by Mode (2019)

Transport mode	Emissions intensity[49]
Air	2301.4
Road (articulated truck)	48.9
Rail (diesel)	26.9
Rail (electric)	25.6
Sea (container)	14.9
Sea (bulk)	7.2

Source: Impacts of mode shift on well-to-wheel emissions... (Part II, 2024)

Over the longer term, battery electric trains and hydrogen fuel cells are emerging options to replace Australia's existing diesel fleet in coming decades.[50] **Gradual decarbonisation** of rail transport is anticipated through a mix of track electrification, battery electric trains, low carbon liquid fuels (LCLFs) and hydrogen.[51]

Adopting low-emission technologies will **require significant investment** for industry. The Australian Government has indicated that it will take opportunities through the Infrastructure Investment Program (IIP) to invest in passenger rail electrification[52]. Government leadership will also be needed to progress changes to the regulatory requirements and rolling stock standards that will enable a net zero pathway for the Rail industry.

The push toward decarbonisation will **require a workforce with specialised skills**. Industry stakeholders have suggested that proactive training and recruitment initiatives are needed to develop the skilled professionals to support the adoption of new technologies, such as battery-electric solutions.[53]

Cyber Security Risks

The Australian Signals Directorate has advised that critical infrastructure is, and will continue to be, an attractive target for state-sponsored cyber actors, cybercriminals, and hacktivists.[54] Cyber security is critical for protecting essential infrastructure and services, therefore any gaps in cyber security present **risks for railway operators**. The National Freight and Supply Chain Strategy 2025 points to a 2023 cybersecurity breach at a major Australian port to emphasise highlight the importance of safeguarding crucial freight networks from disruption.[55]

A 2024 survey of rail officials found gaps in cyber security measures, particularly in optimising practices to achieve advanced cyber-hygiene standards.[56] Recommendations from the survey include maintaining up-to-date cyber security training and fostering a proactive cyber security culture. The National Transport Commission is working with Holmesglen TAFE to develop cyber security training for the Rail industry.

Due to the risks around security of information, rail operators are taking a **cautious approach to the adoption of AI**. Through stakeholder consultation, industry representatives have stated that careful consideration of risk and a clear understanding of the alignment between AI and human oversight is needed prior to any roll out of AI enabled technologies. Participants at the 2025 ARA People and Culture Conference identified the growing need for upskilling and collaborative training programs to underpin the integration of AI and digital technologies in the Rail industry.[57]

48 Australian Government, Transport and Infrastructure Net Zero Roadmap and Action Plan [PDF], September 2025, p 5.
49 Grams of carbon-dioxide equivalent per tonne-kilometre (g CO_2 e / tonne km)
50 GHD, The critical path to decarbonise Australia's rail rollingstock: Transitioning the rail industry and its supply chain [PDF], Prepared for the Australasian Railway Association, July 2024.
51 Australian Government, Transport and Infrastructure Net Zero Roadmap and Action Plan [PDF], September 2025, p 5.
52 Australian Government, Transport and Infrastructure Net Zero Roadmap and Action Plan [PDF], September 2025, p 31.
53 Railway News, Australia's Rail Workforce Crisis: A Looming Shortage, 23 April 2025.
54 Australian Signals Directorate, Annual Cyber Threat Report 2024-2025, Australian Government, n.d.
55 Infrastructure and Transport Ministers, National Freight and Supply Chain Strategy, Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2025, p 27.
56 O Malhotra, Cybersecurity Resilience in Australian Railways: Understanding Cyber-Resilience Approaches and Compliance Levels within the Railway Sector [PDF], Griffith University and Rail Industry Safety and Standards Board, June 2024.
57 Industry Skills Australia, Australia's Rail Industry Unites to Tackle Workforce Challenges, ISA website, 7 August 2025.

ISA-led Actions

Rail Digital Skills Analysis
The Rail industry workforce requires the capability to operate and maintain a range of digital, automated and other new technologies related to rail signalling, critical communications, asset management, track maintenance, high speed, autonomous and remotely operated rail. ISA, with national subject matter experts, has developed Digital Occupation Profiles for five key rail roles, outlining the digital knowledge and proficiency required in line with the Australian Digital Capability Framework. These profiles strengthen industry capability by clarifying emerging digital expectations, supporting the identification of skills gaps, guiding targeted workforce development, and informing job design to attract a wider talent pool.

Digital Skills
New Digital Occupation Profiles are being developed by ISA to strengthen the digital capability of rail workers as automation reshapes roles and increases the need for advanced digital literacy and technological proficiency. Building on earlier work that produced profiles for five rail occupations, this project will define the digital knowledge and skill levels required for Rail Shunters, Rail Customer Service Officers, and Light Rail Drivers/Controllers using the DigComp Framework. As part of a broader Digital Skills Project examining capability needs across the entire transport supply chain, this work responds to growing skills shortages that affect the industry's ability to operate and maintain emerging technologies.

Autonomous Train Operations
ISA is undertaking a skills gap analysis to support the growing adoption of autonomous train operations across Australia. As autonomous networks expand in both passenger and heavy-haul sectors, existing training products—primarily designed for freight—no longer meet evolving industry needs. Through research and consultation, the project is assessing current training coverage, identifying emerging skill requirements, and benchmarking industry practice. Findings will inform future updates to the Transport and Logistics Training Package, with Stage 1 producing recommendations for new or revised training products and Stage 2 focused on their implementation.

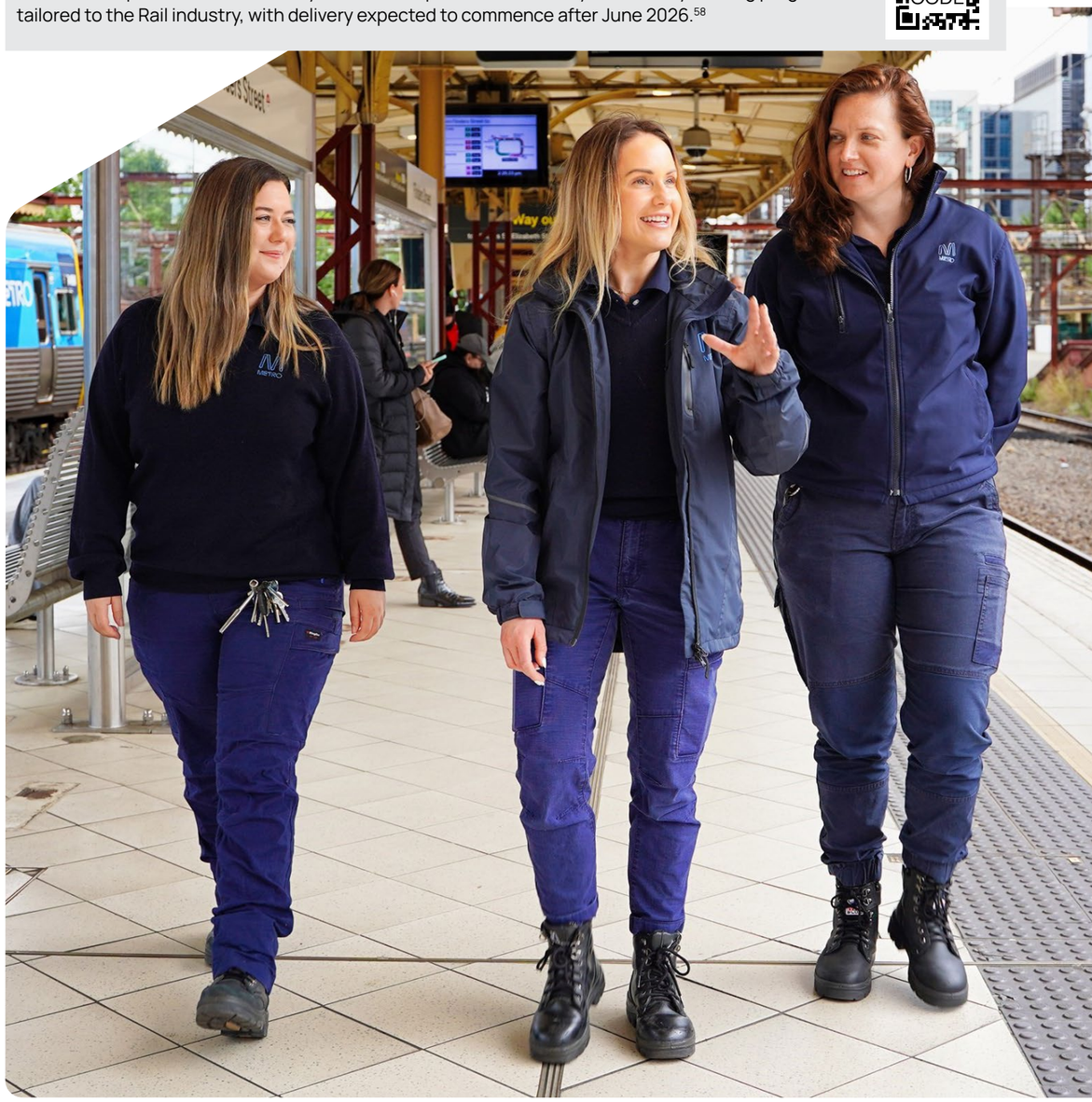
Technology Futures Taskforce Phase 2 - Occupational Analysis
The Technology Futures Taskforce (TFT) will pilot a methodology to identify new and emerging technologies set to reshape key transport supply chain occupations and the training products that support them. It will combine AI analysis with expert insights from industry to validate the findings and anchor them into the Australian context.
This phase will focus on four transport supply chain occupations undergoing significant technological change. It will deliver occupation reports, map affected training products, estimate the technology adoption rate and develop a scalable Technology Trend Radar. Together, these outputs will strengthen workforce readiness, guide upskilling and reskilling, and enable training packages to anticipate future skills needs.

Stakeholder Consultation
ISA will conduct consultation activities to inform the development of future initiatives that support the Rail workforce. Stakeholder engagement will explore:
- Skills Gaps for Cyber Security Threats
- Tracking Emerging Technology Adoption in the Rail Industry

Related Initiatives

Australasian Railway Association: Rollingstock Decarbonisation
The ARA's Critical Path to Decarbonising Australia's Rail Rollingstock report outlines the pathway to adopting new technologies for decarbonising the nation's rollingstock. The ARA is engaging with governments on the need for a national strategy to plan for future energy and infrastructure needs as part of this transition.

National Transport Commission: Cyber Security Training Program
The NTC has partnered with TAFECyber to develop two accredited cyber security training programs tailored to the Rail industry, with delivery expected to commence after June 2026.[58]



[58] National Transport Commission, National Rail Action Plan newsletter: December 2025, NTC website, 19 December 2025.

4 National Interoperability

The 2025 Workforce Plan reported that a lack of rail interoperability is hampering labour mobility in the Rail industry.

Mutual Recognition

Differences in operational rules, technologies and systems between Australia's 18 separate rail networks continue to present challenges for labour mobility due to **lack of recognised skill portability**. Industry stakeholders report that the lack of mutual recognition leads to duplication of training. Harmonising rules and procedures across networks has potential to improve safety, drive down costs and time lost to extra training and improve workforce mobility.[59]

Industry interest in collaboration and harmonisation of rail standards was evident at industry gatherings throughout 2025[60] and there is growing momentum for a single integrated rail system. Advancing **national rail interoperability** is a National Cabinet priority that is being addressed through the National Rail Action Plan.[61]

Industry stakeholders have emphasised the need for nationally recognised competencies that can be scaled to different organisational requirements, supported by consistent role titles, clear responsibilities and shared terms and definitions. They also called for national operating rules and procedures built on agreed risk-management principles, as well as robust governance arrangements to develop and maintain network rules. Together, these elements would ensure procedures that align with safe-working principles and remain flexible enough to be tailored to each organisation's operational context.

Entry-level Training

For many years, industry stakeholders have reported that the **lack of national consistency** for entry-level training impacts productivity in the industry. A National Transport Commission blueprint for nationally recognised entry-level rail skills training aims to support greater workforce mobility and interoperability across networks.[62]

The development of **national rail skills curriculum** to support entry-level training will harmonise training programs and help to address industry concerns about inconsistent approaches to training and assessment.[63]

59 National Transport Commission News April 2025, National Rail Action Plan newsletter: April 2025 I National Transport Commission

60 ISA website Australia's Rail Industry Unites to Tackle Workforce Challenges

61 Department of Industry Science and Resources, Related Government Priorities, Related government priorities I National Rail Procurement and Manufacturing Strategy I Department of Industry Science and Resources

62 National Transport Commission. (2023). National blueprint for the mutual recognition of entry-level training courses

63 Australasian Railway Association. (2024). Harmonisation of Rail Standards Summary Report.pdf

ISA-led Actions

Mutual Recognition Phase 1
Phase one of this project has been completed, advancing national consistency in entry-level rail skills aligned with the National Transport Commission's (NTC) 2024 blueprint. While operators supported mutual recognition, many preferred a mandatory model and were hesitant to adopt guidelines without confirmed governance. In August 2025, ministers endorsed key harmonisation actions, with ARISO established to lead the development of interoperable national standards and address operating-rule barriers. ISA will continue collaborating with the NTC to determine the optimal timing for Phase 2.

Related Initiatives

Office of the National Rail Safety Regulator: Strategic Directions 2024-2027
The Office of the National Rail Safety Regulator (ONRSR) strategic directions focus on enhancing rail safety for the Australian community through targeted, risk-based regulation and by proactively sharing insights and information from ONRSR's work.

Harmonisation of Rail Standards Summary Report
The report prepared by GHD was commissioned by the Australasian Railway Association (ARA), National Transport Commission (NTC), Office of National Rail Industry Coordination (ONRIC) and Rail Industry Safety and Standards Board (RISSB) to gain deeper insights into what is preventing the adoption of existing international and Australian standards, to achieve harmonised standards.

National Transport Commission: National Network for Interoperability
The NTC has established the National Network for Interoperability (NNI) to identify the freight and passenger corridors that are critical for national connectivity. The NNI identifies the interstate freight and passenger lines between Australia's major ports, regions and passenger terminals and has been formally approved by Australia's Infrastructure and Transport Ministers. An interactive version of the map shows the individual networks that make up the corridors, and the organisations that manage them.

National Transport Commission: Rail Safety National Law
The NTC has released a Consultation Regulatory Impact Statement setting out proposed reforms to the Rail Safety National Law (RSNL). The proposed changes are intended to modernise the RSNL, ensuring it can better support national rail interoperability and greater harmonisation across the industry, while maintaining safety as the primary objective of the law.

International Benchmark

- UK Rail Workforce Interoperability and Data Integration

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The UK Rail sector provides a strong international example of how a nationally coordinated approach to interoperability and data integration can enhance long term workforce planning and mitigate emerging skills risks. Led by the National Skills Academy for Rail (NSAR), the UK has established an integrated workforce data system that aligns information from rail operators, training providers, qualifications bodies and national labour statistics[64] (Skills Intelligence Model). This alignment provides a consistent cross sector view of current and future skills demand.

The UK model is underpinned by broader national guidance on 'AI ready' data, which emphasises standardisation, interoperability, metadata quality and cross organisational data sharing as essential enablers for effective use of AI and predictive analytics.[65] Within the rail sector, this foundation has enabled early identification of workforce challenges associated with an ageing labour force, digital signalling implementation, increased automation and the transition to net zero. Importantly, the insights generated are not siloed: they directly influence national decisions on funding allocations, apprenticeship structures and training program priorities.

Australia has an opportunity to align with international best practice

Like the UK, Australia's Rail industry is grappling with skills shortages, an ageing workforce, limited industry appeal and evolving skill requirements driven by digital transformation. Comparable pressures are also being felt in the European rail sector.[66] However, Australia's response is hindered by fragmented, state-based skills recognition and limited visibility of system wide workforce demand. This limits industry wide workforce mobility and the ability to respond rapidly to emerging skills gaps.

A shift to nationally interoperable skills and data frameworks supported by consistent data standards and recognition of competencies across jurisdictions would substantially improve Australia's workforce resilience. AI offers the critical mechanism for transformation. When supported by interoperable data, AI systems can convert aggregated workforce information into predictive insights that anticipate shortages, guide early training investment and accelerate reskilling for emerging technologies.

Australia is positioned to lead globally

- Rail Safety National Law (RSNL)[67] already provides governance mechanisms for greater national consistency and the scale of upcoming rail projects mean that Australia has a unique opportunity to embed interoperability requirements and enable workforce planning.
- Proposed updates to the Rail Safety National Law[68] (RSNL) through NTC's Consultation Regulatory Impact Statement (CRIS) would modernise the regulatory framework to support national interoperability and industry harmonisation while preserving safety as the core principle.
- The National Network for Interoperability[69] (NNI) provides clarity on where interoperability delivers the greatest value, enabling targeted and strategic implementation.

Collectively, these initiatives position Australia to transition from a reactive, jurisdiction-based approach to a predictive, nationally aligned workforce planning system. This transition would strengthen safety and productivity, support the adoption of advanced rail technologies and ensure long term workforce sustainability aligned with global best practice.

64 National Skills Academy for Rail, Skills Intelligence Model, Workforce Analytics - NSAR, n.d.

65 UK Department for Science, Innovation & Technology, Guidelines and best practices for making government datasets ready for AI, 19 January 2026.

66 European Rail Skills Alliance, STAFFER Final Report [PDF], October 2024.

67 Office of the National Rail Safety Regulator, Legislation – Rail Safety National Law & related legislation, ONRSR website, 2026.

68 National Transport Commission, Rail Safety National Law, NTC website, n.d.

69 National Transport Commission, National Network for Interoperability, NTC website, n.d.

Appendices

Appendix A: 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/OSCA and ANZSIC.

- ANZSCO (Australian and New Zealand Standard Classification of Occupations) or OSCA (Occupation Standard Classification for Australia) categorises occupations based on skill level and specialisation
- While OSCA replaced ANZSCO for use in Australia in December 2024, the underlying data (such as the Labour Force Survey, or the Occupational Shortage List) are yet to be updated.
- 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/OSCA 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/OSCA) 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.

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 according to historical Census distributions.

Sources for infographics

Data	Source
Automation/augmentation exposure	JSA, Our Gen AI Transition, Occupation exposure data 2025 Note: JSA exposure scores estimate the potential for Gen AI to augment or automate tasks in each occupation. They reflect technical potential rather than actual adoption or employment effects.
Business No Business distribution by state %	ABS Counts of Australian Businesses 2025
Female (%)	ABS Labour Force 2023 2025, four-quarter average data
GDP contribution $b 2024-2025 Estimated annual revenue $b 2024-2025	IBISWorld Industry Wizard
Highest graduate employment rate (2020/2021)	JSA, VET Graduate Outcomes 2020-21
Highest median age	JSA, Occupation Profile data (Nov 2025)
Kilometres of operational heavy railways Rail passenger journeys in 2023-2024	BITRE, Trainline 12
Lowest vacancy rate (%) Part time (%)	JSA, Jobs and Skills Atlas 2026
Median gender pay gap	Workplace Gender Equality Agency (WGEA) 2024/25
Occupation Shortages	JSA, Occupation Shortage List 2025
Online job ad growth % (2020 - 2025)	JSA, Internet Vacancy Index 2025
Qualification enrolments 2024 Qualification enrolments by state % VETiS student count Gender/First Nations/Disability % (2024) Apprenticeships/Traineeships (% of Rail enrolments) Top 5 qualifications by enrolments (2024)	NCVER, Total VET Activity 2024
RTOs scoped to deliver Rail quals Training Package summary (# quals, units, skill sets)RTO map (Explicit scope)	training.gov.au 2026
Rail infrastructure built $b 2024-2025	BITRE, Infrastructure Construction Yearbook 2025
Rail-related expenditure by public sector Rail passenger travel	BITRE, Rail Yearbook 2025
Total freight value	Supply Chain Transport and Logistics Dashboard 2026. Commodity values use latest available data for each commodity (2018–2025)
Workforce in Rail companies (2025) Workforce in Rail companies (2030) Workers in Rail roles 2025 Workers in Rail roles 2030	JSA, Employment Projections 2025

Appendix B:Abbreviations List

ABS	Australian Bureau of Statistics
AI	Artificial Intelligence
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industrial Classification
AQF	Australian Qualifications Framework
ARA	Australasian Railway Association
ARISO	Australian Rail Industry Standards Organisation (formerly RISSB)
BITRE	Bureau of Infrastructure and Transport Research Economics
DOP	Digital Occupational Profile
IIP	Infrastructure Investment Program
ISA	Industry Skills Australia
JSA	Jobs and Skills Australia
JSC	Jobs and Skills Councils
LCLF	Low Carbon Liquid Fuel
NRAP	National Rail Action Plan
NTC	National Transport Commission
ONRSR	Office of the National Rail Safety Regulator
OSCA	Occupation Standard Classification for Australia
OSL	Occupation Shortage List
RISSB	Rail Industry Safety and Standards Board
RIW	Rail Industry Worker
RPL	Recognition of prior learning
RTO	Registered Training Organisation
SWPC	Strategic Workforce Planning Committee
VET	Vocational Education and Training
VIDA	Victorian Infrastructure Delivery Authority
VR	Virtual Reality

Appendix C: Methodology

ISA's workforce planning process is underpinned by deep industry knowledge and a commitment to delivering reliable and forward-looking workforce advice.

Ongoing engagement with industry informs our comprehensive approach to workforce planning. We speak regularly with stakeholders to understand real-world workforce issues. We then combine these insights with careful analysis of workforce and training data.

By reviewing evidence to continually test what we hear, we build a clear and practical picture of how industry is changing and what pressures lie ahead.

The 2026 Workforce Planning Update builds on the industry intelligence compiled in the 2025 Workforce Plan and provides information on the progress of initiatives to address identified industry challenges.

Key steps in preparing the 2026 Workforce Planning Update

1 Stakeholder engagement

Industry roundtables, leader dinners and targeted consultations validated the challenges identified in the 2025 Workforce Plan and flagged new and emerging issues

2 SWPC reflection

The SWPC reviewed consultation insights to refine themes, confirm industry priorities and shape potential actions.

3 Scoping survey

A public survey tested themes, priorities and proposed responses with industry stakeholders.

4 Draft development

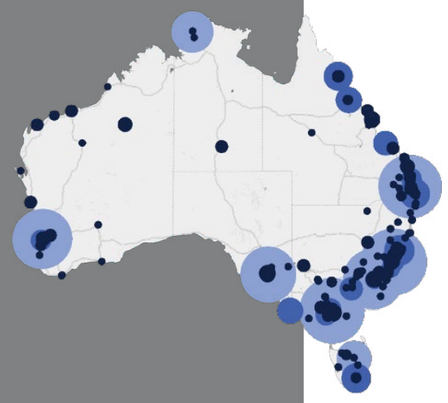
Quantitative and qualitative data were analysed to illustrate identified challenges and document progress against industry priorities.

5 Public feedback

A draft update was shared with stakeholders for review and comment.

6 Finalisation

Guided by the SWPC, stakeholder feedback was incorporated to refine and complete the 2026 Workforce Planning Update.



Roundtables

Through a national series of Industry Dinners and Roundtables, ISA heard directly from industry stakeholders across Australia. This on-the-ground engagement with industry leaders, employers, unions, industry organisations and government representatives provides critical intelligence that cannot be captured through data alone. It plays a central role in understanding the real-world challenges facing the industry and clarifying where effort is most urgently needed.

Stakeholders highlighted the complex workforce challenges affecting their operations and stressed the need for collaboration to address interconnected issues within and across industry sectors. They also helped to identify practical, forward-looking solutions to advance industry priorities.

Industry Skills Australia

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