

Automotive Industry

Workforce Plan 2024



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Acknowledgement of Country

In delivering our 2024 Workforce Plan we acknowledge the Traditional Custodians of the lands on which we live and work.

We acknowledge Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

Thank you to MTA NSW for allowing the use of their images in the Workforce Plan 2024 Automotive section.

Workforce Plan 2024. Version 1.2
August 2024

CEO foreword

Building on our Initial Workforce Plan 2023 – *The Future is Now*, I am proud to present AUSMASA’s Workforce Plan for 2024 – *Moving Ahead Together*. This plan brings together our key activities, projects, and priorities and explores a range of new economic insights and contemporary workforce data in support of the mining and automotive industries.

The mining and automotive industries have a long and rich history in Australia. They are innovative industries that are actively engaging in initiatives to support Australia’s net zero ambitions and establish new sustainable pathways to strengthen and secure domestic supply and value chains. Challenges such as these and their associated innovative solutions will not be realised without fit-for-purpose vocational education and training (VET) and workforce planning. Without this, we risk further skills shortages in these (and associated) industries.

AUSMASA is enthusiastically and impactfully tackling challenges faced by the VET sector, employers, and unions. Within this work, our 10-point Strategic Plan developed at our *Critical Minerals and Electric Vehicle Skills Forum 2023* stands out as a combined, future-focused example of how we can progress innovative solutions to key challenges common to the mining and automotive workforces. We build on this success in this Workforce Plan.

Our stakeholder work needs to be underpinned by up-to-date data and evidence to identify and meaningfully address workforce challenges – which is the role of this Workforce Plan. This year’s plan includes updated and deeper industry-level workforce data on demographics, educational attainment, occupation types, and improved time series data on workforce size and projections out to the 2030s. Coupled with existing VET data on specific training packages, this plan provides a broader and more granular evidence base of workforce and student-level data to identify and help propose solutions to workforce challenges faced by our industries.

As AUSMASA continues to deepen its workforce planning, stewardship, and other functions, the team and I look forward to continuing our work with our education, industry, and workforce stakeholders to address critical and emerging issues for these important industries.

I hope you find this workforce plan valuable in your work. Thank you for your ongoing commitment and support; we look forward to moving ahead together!

Dr Gavin Lind

Chief Executive Officer



Automotive industry overview

Employing over 320,000 workers, Australia's automotive industry has continued to change and adapt to an ever-evolving operating landscape. As large-scale automotive manufacturing declined, the focus shifted to specialised manufacturing, high-tech engineering, design, and components, keeping Australia on the automotive map. The industry is now adapting to a new wave of technologies, from EVs to autonomous driving systems, reflecting the industry's ability, and need, to adapt and innovate.

Australia's automotive industry encapsulates the sale, service, and repair of vehicles, including motorbikes, bicycles, and all-terrain vehicles, specialised heavy vehicle and bus manufacturing, customised body and trailer manufacturing, marine mechanical services, and the manufacture and sale of parts and accessories.

January 2023, Australia had 21,168,462 registered vehicles on the road, a number that has been growing by approximately 400,000 vehicles per year

Australia has had an enduring love affair with the automobile, with new car sales consistently beating previous records. By current trends, Australians are purchasing over a million new vehicles a year in one of the most competitive markets in the world.¹ As of January 2023, Australia had 21,168,462 registered vehicles on the road, a number that has been growing by approximately 400,000 vehicles per year.²

According to the Federal Chamber of Automotive Industries (FCAI), there are 60 brands of motor vehicles in Australia (including both light and heavy vehicles) with 380 different models that are sold by over 3,500 dealers.³ Population growth, the volume of vehicles in circulation and the variety of models enjoyed by Australians are key demand drivers for automotive industry employment.

¹ Federal Chamber of Automotive Industries. *Australia breaks all-time new vehicle sales in 2023*. 2024.

² Bureau of Infrastructure and Transport Research Economics. *Road Vehicles, Australia January 2023*. 2023

³ Federal Chamber of Automotive Industries. *The Australian New Vehicle Industry*. 2024



The easing of global supply shortages has helped the industry in Australia to generate nearly \$174 billion in revenue in 2022–23, with predictions that the industry will grow in the next 5 years to yield over \$185 billion annually.⁴ The sale of imported motor vehicles is expected to account for over 66% of revenue (\$115.7 billion), followed by the sale of parts and accessories (13%, \$22.6 billion), the provision of repair and maintenance services (13%, \$22.6 billion) and the local manufacture of automotive products (7.3%, \$12.7 billion).⁵

2023 saw new vehicle sales achieve the highest result on record, as Australian customers took delivery of 1,216,780 new vehicles.⁶ 2023's sales data also highlighted that consumers were continuing to embrace low emissions technologies, with EVs accounting for 7.2% of sales and hybrid vehicles accounting for 8.1% of sales.⁷

Although the onshore manufacturing of cars concluded in 2017, there is still a healthy market in the manufacture of heavy vehicles, particularly trucks and buses. IBISWorld states that the automotive manufacturing industry generated \$4.2 billion in revenue throughout 2023, from 338 businesses.⁸

Australian-manufactured trucks contain highly sought-after value-added features that are made specifically for the Australian environment, with the 2 major players being Volvo and PACCAR (Kenworth and DAF trucks), which are expected to continue their industry domination.⁹

The Bus Industry Confederation (BIC) lists 18 Australian manufacturers in its report *Moving People* published in 2020, estimating that "in the manufacturing of the completed bus, \$5 billion is contributed to the Australian economy each year and close to \$1.5 billion in supplies and services to keep the bus operational and delivering services".¹⁰

The Australian public's love of the great outdoors has driven a booming demand for new caravans in Australia and has boosted the productive output of recreational vehicle (RV) manufacturing. The caravans and camper trailer markets combined are worth \$3 billion annually, with campervans and motorhomes netting a further \$504.4 million in a very diverse industry that sees the market leader, Jayco, securing 11.4% of the market.¹¹

4 IBISWorld. *Automotive Industry in Australia*. 2023

5 IBISWorld. *Automotive Industry in Australia*. 2023

6 Federal Chamber of Automotive Industries. *Australia breaks all-time new vehicle sales in 2023*. 2024.

7 Federal Chamber of Automotive Industries. *Australia breaks all-time new vehicle sales in 2023*. 2024.

8 L. Duane-Davis. *Motor Vehicle Manufacturing in Australia*. 2023. IBISWorld.

9 L. Duane-Davis. *Motor Vehicle Manufacturing in Australia*. 2023. IBISWorld.

10 Bus Industry Confederation. *Moving People: Australian Bus and Coach Industry: A Snapshot*. 2020

11 J. Fahey. *Motor Vehicle Body and Trailer Manufacturing in Australia*. 2023. IBISWorld.



IBISWorld values the manufacturing of motor vehicle parts and accessories in Australia at \$4.1 billion annually, with powertrain and chassis parts making up over 65% of that with a contribution of \$2.7 billion in 2022-23.¹²

The automotive industry is heavily reliant on qualified tradespeople and, consequently, on the VET system, which is reflected in the significant enrolment statistics for the AUR training package. As the various data insights for the industry and its sectors show, many of the key occupations required by the industry are hampered by skills shortages.



Industry adapting to a new wave of technologies from EVs to autonomous driving systems



Australians are purchasing over a million new vehicles a year



60 brands of motor vehicles in Australia



Generating nearly \$174 billion in revenue in 2022-23



Consumers embracing low emissions technologies with EVs at 7.2% of sales and hybrid at 8.1%



Heavy vehicle manufacturing is a healthy market in Australia



\$5 billion contributes to the Australian economy in bus supplies and services

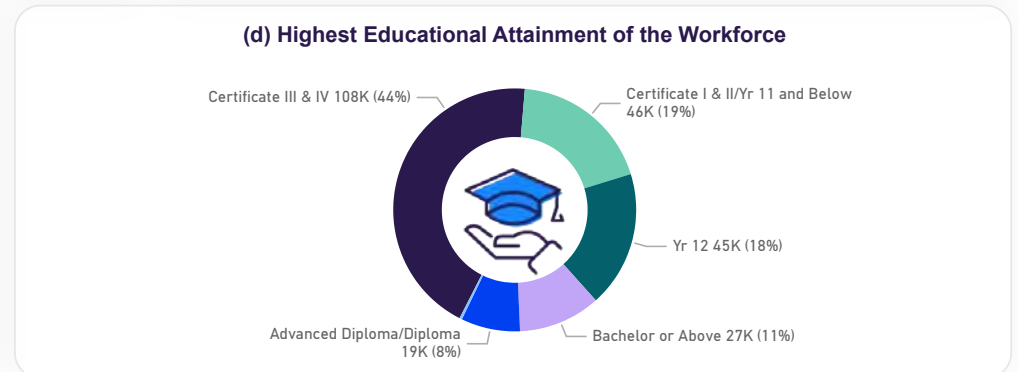
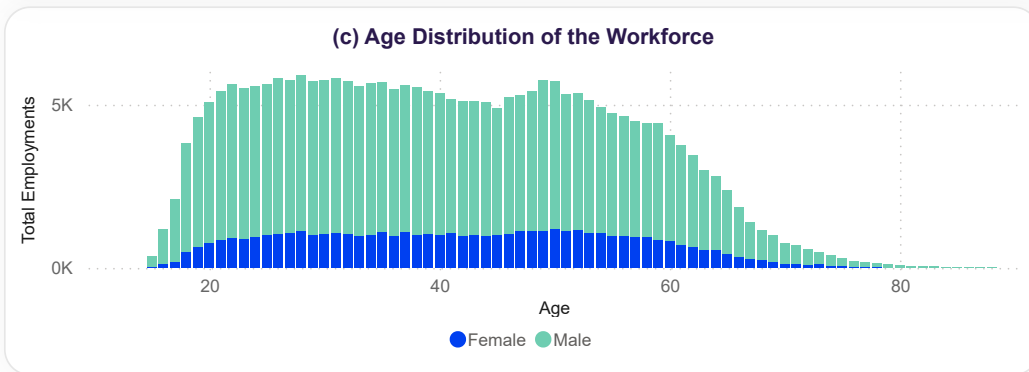
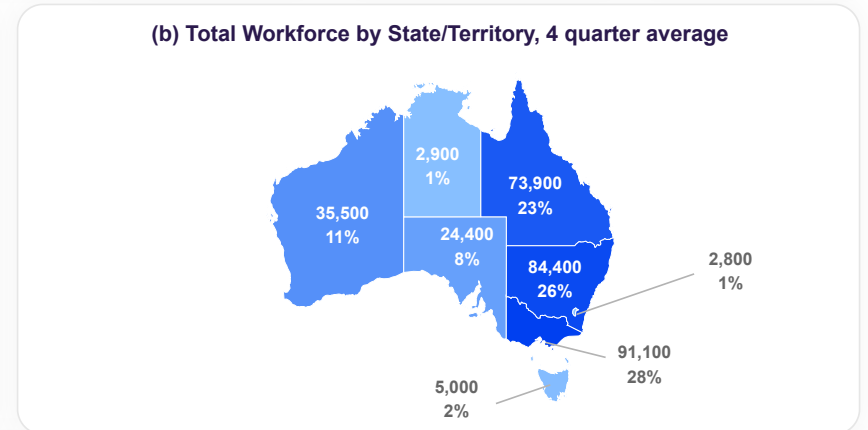
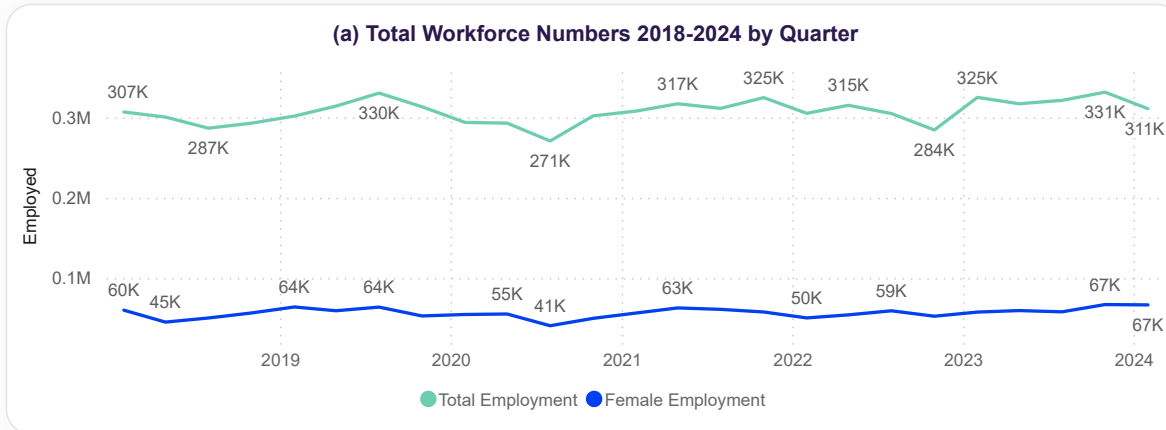
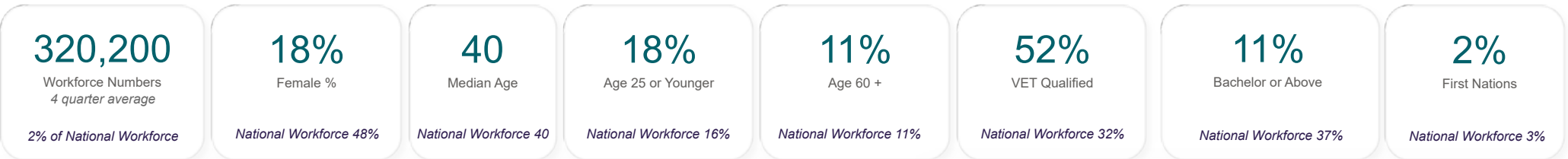


Manufacture of motor vehicle parts in Australia at \$4.1 billion annually

¹² DK Jeswanth. *Motor Vehicle Parts and Accessories Manufacturing in Australia. 2023*. IBISWorld.

Workforce insights

Figure 40: Automotive insights dashboard 1

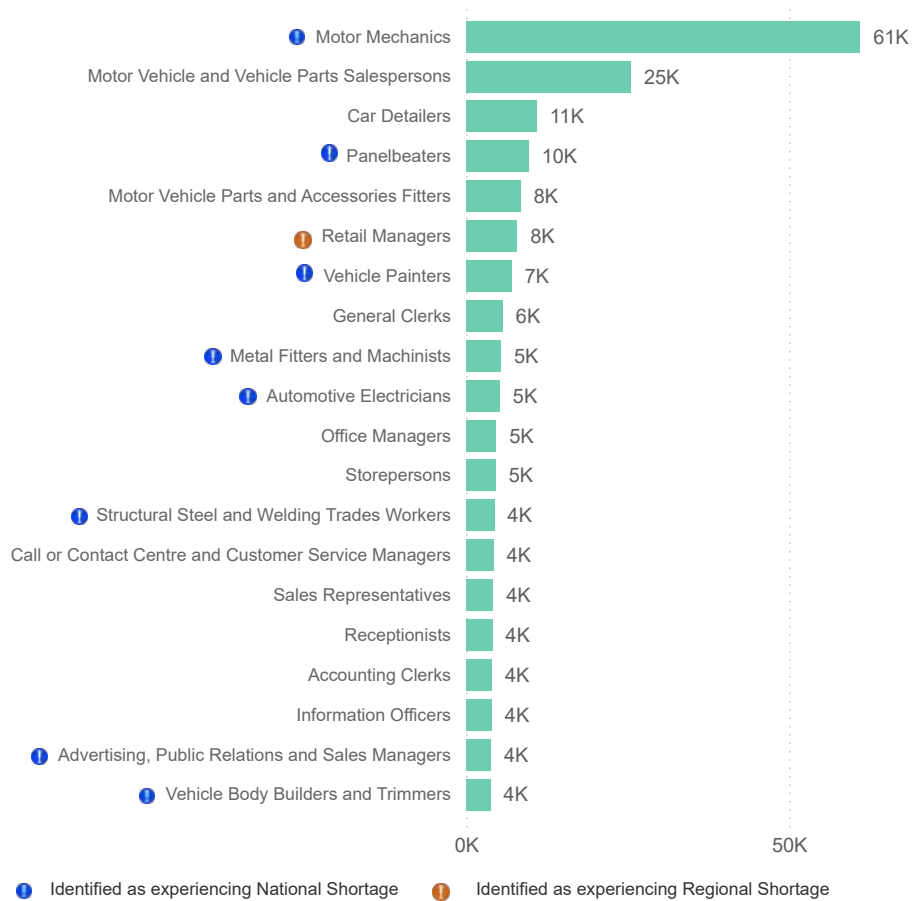


Sources: (top row) Workforce Numbers and Female %: ABS Detailed Labour Force Survey (Table EQ06, Four-Quarter Average), May 2023 - February 2024 | Median Age, Age 25 or Younger, Age 60+, VET Qualified, Bachelor or Above and First Nations: ABS Table Builder 2021 Census - counting persons, 15 years and over by 3-digit level INDP Industry of Employment (a) ABS Detailed Labour Force Survey (Table EQ06, Original), Reference Period: February 2024 (b) ABS Detailed Labour Force Survey (Table EQ06, 4-quarter Average), Reference Period: February 2024 (c) Census of Population and Housing (AGEP Age and SEXP Sex), 2021, TableBuilder (d) Census of Population and Housing (HEAP Level of Highest Educational Attainment), 2021, TableBuilder **Notes:** Workforce Numbers are rounded to the nearest 100.

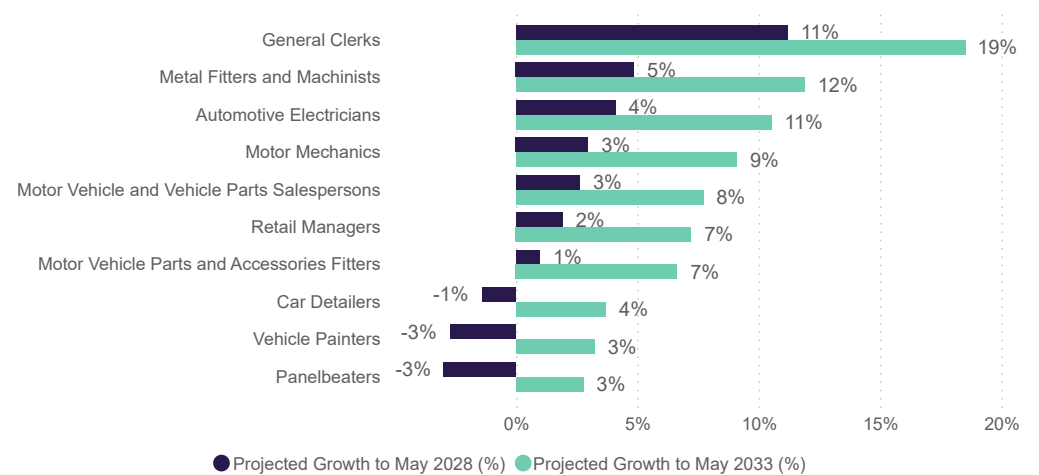
Workforce insights

Figure 41: Automotive insights dashboard 2

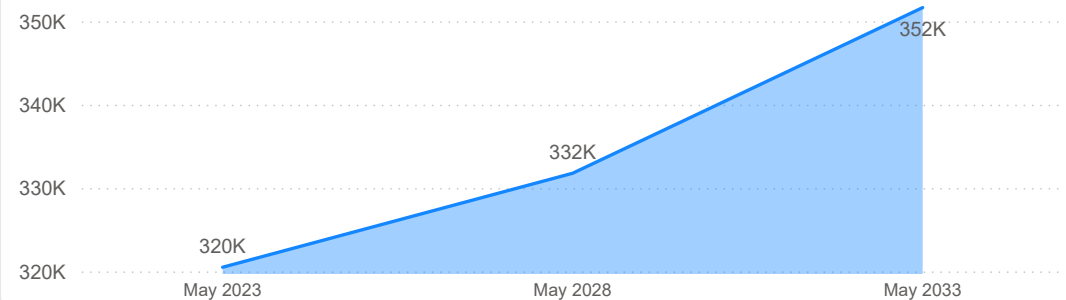
(e) Top 20 ANZSCO Occupations by Workforce Numbers



(f) Employment Projections by ANZSCO Occupations



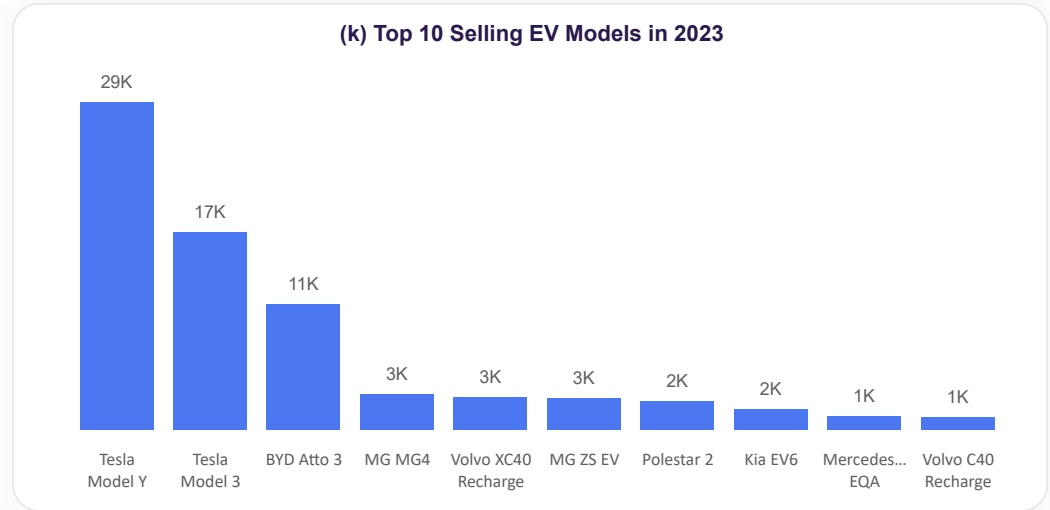
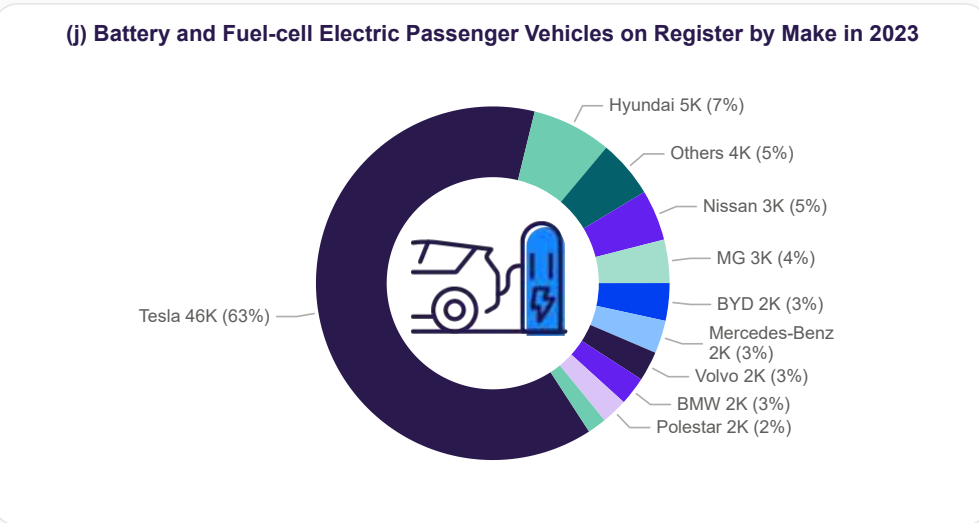
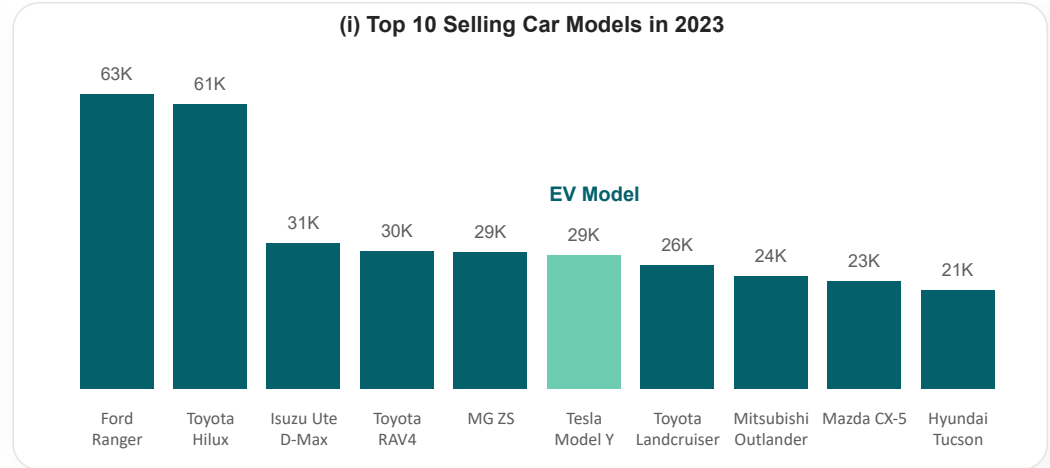
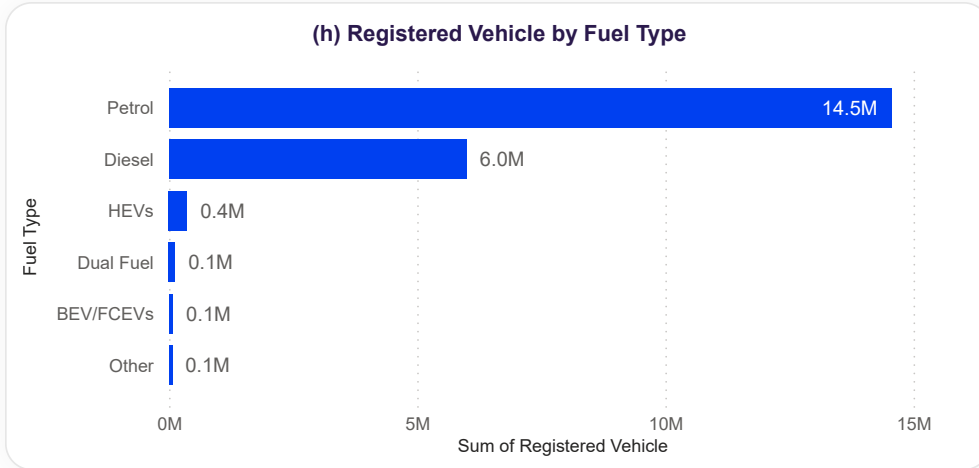
(g) Employment Projections of Automotive Industry



Sources: (e) ABS Table Builder 2021 Census - employment, income and education | JSA Skills Priority List 2023. 4-dig SPL (ANZSCO 2013) (f) Employment Projections produced by VU for JSA (May 2023 to May 2033) (g) Employment Projections produced by VU for JSA (May 2023 to May 2033)

Workforce Insights

Figure 42: Automotive insights dashboard 3



Sources: (h) BITRE Road Vehicles, Australia, January 2023 (Table 4) (i) Federal Chamber of Automotive Industries VFACTS report, December 2023 (j) BITRE Road Vehicles, Australia, January 2023 (Table 8) (k) Fleet EV News. Industry Statistics, Top 10 EVs in 2023

Industry-wide trends and priorities

Community perceptions of the automotive industry

When AUSMASA questioned how the industry is likely to be perceived by younger generations, many industry stakeholders feared that the perception was that working in automotive would be dirty, oily, and unsophisticated. The industry believes this perception is outdated, given the advances in technology and the industry more broadly. Paradoxically the industry's own perception of itself could be a factor in this. The Capricorn Society State of the Nation report highlighted that only 57% of the Capricorn Society's members would recommend a career in the automotive industry to a young person.¹³

many industry stakeholders feared that the perception was that working in automotive would be dirty, oily, and unsophisticated

Unlike the Generation Z perceptions data available for the mining industry, no substantial research has been identified that explores the attitudes towards automotive careers prior to that choice being made. Understanding the views, concerns and potential misconceptions about the automotive industry would be highly beneficial in developing specific strategies for attracting new entrants.

The Australian Automotive Aftermarket Association (AAAA) has undertaken a significant review of automotive apprentices to measure their satisfaction and challenges across a range of factors. This survey provides valuable insight into perceptions after the choice to enter the industry has been made.

96% of first year apprentices were either satisfied or very satisfied with their experience, with 41% of apprentices noting their interest in working on advanced vehicle technologies

Key aspects of AAAA's research show that 96% of first year apprentices were either satisfied or very satisfied with their experience, with 41% of apprentices noting their interest in working on advanced vehicle technologies such as electric and hybrid vehicles and advanced driver-assistance systems.¹⁴

Such findings are encouraging but require entrants to have made the choice to commence an apprenticeship within the automotive industry in the first place. The same survey showed that, particularly for female participants, receiving negative responses from family, friends, and peers in relation to choosing an automotive apprenticeship was a key challenge.¹⁵

If such an influence on potential entrants is based on outdated perceptions of the industry, it would support the views held by the industry of the need for greater career education.

One of AUSMASA's key current projects is the development of research insights into how Generation Z perceives the automotive industry. The insights gained from this project will allow AUSMASA to work

¹³ Capricorn Society. *State of the Nation* - 2022.

¹⁴ Australian Automotive Aftermarket Association. *Addressing Automotive Skills Shortages - Summary Report*. 2022.

¹⁵ Australian Automotive Aftermarket Association. *Addressing Automotive Skills Shortages - Summary Report*. 2022.

with industry to explore strategies for better communicating the exciting career opportunities that are available in the automotive industry.

Diversifying the workforce

The automotive industry has historically been strongly male-dominated, with female participation heavily skewed towards administration and sales-related roles.

Female participation in trades such as motor mechanics, auto electricians, panel beaters and spray painters remain extremely low, with ABS Labour Force figures for January 2024 showing only 900 (0.82%) of all motor mechanics in Australia (109,500) are female. Vehicle painters fare better at 1,800 (12%) women among a total of 15,000.¹⁶

The 2020 report '*Lifting the bonnet on the barriers to diversity & inclusion*' prepared by Tradeswomen Australia Foundation, identified that the automotive industry's engagement with diverse groups has been disproportionately lower than other industries over the last 20 years. It is important to understand that not all automotive workplaces are the same. Approaches to managing cultural reform, policies and practices that support diversity, equity and inclusion need to be flexible and tailored to meet the specific needs of the employees and the workplace.¹⁷

As within the mining sector, the automotive industry's gender dynamics and power imbalances can contribute to the prevalence of sexual harassment. Traditionally male-dominated, the industry often perpetuates a culture where men hold positions of authority, and women face marginalisation.¹⁸

Workplace Gender Equality Agency's
2022-23 Report shows an average
total remuneration gender pay gap of
25.5%.

According to the Workplace Gender Equality Agency's 2022-23 Report, the 21,603 employees from 19 reporting employers within the Repair and Maintenance subdivision had an average total remuneration gender pay gap of 25.5%. The gap is driven by the high percentage of men in the upper and upper middle pay quartiles – 92% and 88% respectively, while most women in the subdivision work in the lower middle and lower pay quartiles – 27% and 41%.

The average total remuneration for the upper quartile is \$194,000, while the lower quartile is \$67,000.¹⁹

NCVER enrolment statistics show that female employment in the industry may improve in the future, with approximately 4.5% female participation in the *AUR30620 Certificate III in Light Vehicle Mechanical Technology* and, perhaps more encouraging, 13.2% female participation in the *AUR20720 Certificate II in Automotive Vocational Preparation*, see [Appendix I](#).

for female participants, receiving negative responses from family, friends, and peers in relation to choosing an automotive apprenticeship was a key challenge

16 Australian Bureau of Statistics. *January 2024 - Labour Force, Australia, Detailed - Table EQ08*. 2024.

17 Tradeswomen Australia Foundation. *Lifting the bonnet on the barriers to diversity & inclusion*. 2020.

18 Wendy Tuohy. *'Get Caroline, she can MacGyver it': Women love the work in hyper-male industries, if not the harassment*. SMH.com.au. 2020.

19 Workplace Gender Equality Agency. *WGEA Data Explorer – Industry Results*. 2024.

The industry has recognised that improving female participation in the automotive industry is not only an important opportunity for addressing labour shortages but also an opportunity to create a more diverse and welcoming culture for all.²⁰

Research by the University of Sydney showed that women were more likely to be given apprenticeship opportunities and succeed when commitment to gender diversity was taken seriously by leadership and support from women's trades networking groups was available.²¹

An example of an industry-led initiative to support women in the automotive trade by networking with them, mentoring them, and encouraging them to succeed is the 'Women in Automotive organisation launched by the Victorian Automotive Chamber of Commerce (VACC) in 1999. Similar initiatives in other states include 'Auto Women' in Queensland, which was established in 2022 by the Motor Trades Association of Queensland (MTAQ).

The automotive industry's proportion of First Nations employees is recorded at just 2%, which is below the national average of 2.63%. One example of an industry initiative aimed at increasing the amount of First Nations workers within the automotive industry is a program run by On Common Country called '*Customised First Nations Work Preparation Program for the Automotive Industry*'. The program, which is run out of Townsville has recently completed its second intake, with 9 of the 13 participants subsequently securing work within the local automotive industry.²² Plans are underway to expand this program to other regional centres.

AREA OF FOCUS

While the automotive industry has several programs designed to attract and support a more diverse workforce, it must continue to prioritise this and lead from the top down. A diversified workforce will help further improve the industry's perception and consequently attract new entrants into automotive careers.

Skilled migration

Not unlike in the mining industry, automotive industry stakeholders have highlighted a range of barriers preventing the skilled migration system from having a bigger impact on addressing skills shortages than it currently is.

Despite qualified automotive technicians and related trades such as panel beaters, vehicle painters and automotive electricians from other countries generally working on, and thereby experienced in, the same models of vehicles that are on Australian roads, successfully supporting their migration to Australia is cumbersome and costly.

²⁰ Capricorn Society. *State of the Nation - 2022*. 2022.

²¹ Sarah Oxenbridge, Rae Cooper, and Marian Baird. *One of the boys? - The Work and Career Experiences of Australian Women Working in Automotive Trades Occupations*. Sydney: University of Sydney. 2019.

²² Evan Morgan. *Plans in place to expand On Common Country after successful first run*. Townsville Bulletin. 2024.

Capricorn Society's 2023 State of the Nation survey highlighted several key barriers faced by industry when attempting to utilise skilled migration, including the complexity of the process (62% of respondents), cost (35%) and the lack of housing for skilled migrants (33%).²³

A common frustration raised by the industry is the length of time and cost it takes Trades Recognition Australia (TRA) to complete skills assessments as the respective assessing authority. There have been calls to give industry peak bodies such as the MTAA, and state-based equivalents, the ability to undertake skills assessments, given a wide range of organisations including Engineers Australia already provide skills assessments.²⁴

Despite these challenges, skilled migration plays an important role in being able to fill the many roles within the automotive industry affected by skills shortages. A survey by Deloitte of 519 Motor Trade Association of Australia (MTAA) members employing 8,400 people, or approximately 2.2% of industry (as defined by MTAA) employment, found that across the respondents', 29% of vacancies were eventually filled via visa sponsorship, rising to 41% for motor mechanics (general) and 93% for vehicle bodybuilders.²⁵ Industry insights such as these show how important an efficient and cost-effective skilled migration program is for meeting current and future skills shortages.

While skilled migration remains an issue for industry, the Government is seeking to improve the integrity, quality, and timeliness of skills assessments following its Migration Review in 2022. As part of this work and its new Migration Strategy, the assurance requirements for existing assessing authorities and new organisations applying to become assessing authorities are being reviewed to enhance assurance, continual improvement, and facilitate best practices.²⁶

29% of vacancies were eventually filled via visa sponsorship, rising to 41% for motor mechanics (general) and 93% for vehicle bodybuilders

AREA OF FOCUS

Industry feedback will be important in relation to the challenges faced in trying to fill vacancies and the importance that skilled migration plays in being able to meet skills demand.

AREA OF FOCUS

More information is necessary to improve the skilled migration system's efficiency and responsiveness to the automotive industry skills shortages.

²³ Capricorn Society. *State of the Nation – Skilled Migration*. 2023.

²⁴ Insurance Council of Australia. 2024-25 Pre-Budget Submissions. 2024.

²⁵ Deloitte Access Economics. *Skills shortages in the Australian automotive industry*. 2024.

²⁶ Department of Employment and Workplace Relations. *Discussion Paper: Draft Best Practice Principles and Standards for Skilled Migration Assessing Authorities*. 2023.

Automotive repair and maintenance overview

The automotive repair and maintenance sector keeps Australia's vehicles on the road. The sector employs over 158,000 people within the automotive industry and consists of 27,704 service and repair workshops, 13,907 automotive body, paint and interior repair workshops and 3,487 automotive electrical service and repair workshops across the country.²⁷

Automotive service and repair workshops have increased in number by 11.5% since 2021.²⁸ While an element of increased workshop numbers would be expected to be tied to growth in overall vehicle numbers, additional research could assist in identifying other factors and trends, especially since the growth in workshops is increasing at double the rate of growth in overall vehicle numbers in Australia.

The total number of vehicles in the market and the number of workshops create a strong demand for qualified staff.

A survey of 1,900 of its 25,000 Australian and New Zealand members in the automotive industry in 2022 by Capricorn Society highlighted that most member workshops were independently operated, servicing on average 27.3 vehicles per week in workshops with an average of 2.9 hoists.²⁹ The survey also gave insights into workshop size, with 22% of respondents operating with just one team member, 54% with 2 to 5 team members, and 24% employing 6 or more.

²⁷ Australian Bureau of Statistics. *Counts of Australian Businesses, including Entries and Exits*. 2023

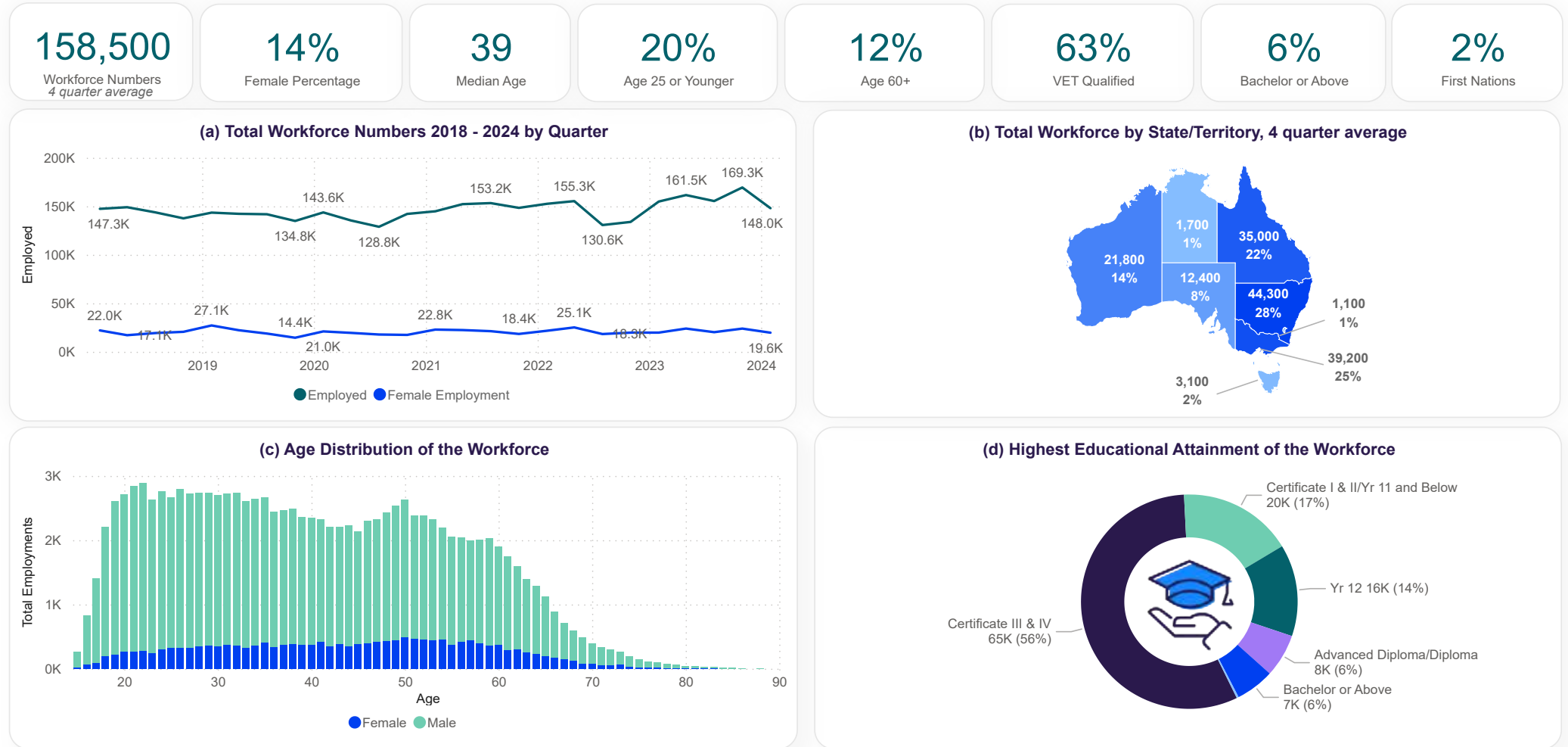
²⁸ Australian Automotive Aftermarket Association. *Future Readiness Index - Summary Pack - August 2023*. 2023.

²⁹ Capricorn Society. *State of the Nation 2022*. 2022.



Automotive repair and maintenance demographic insights

Figure 43: Automotive repair and maintenance demographic insights

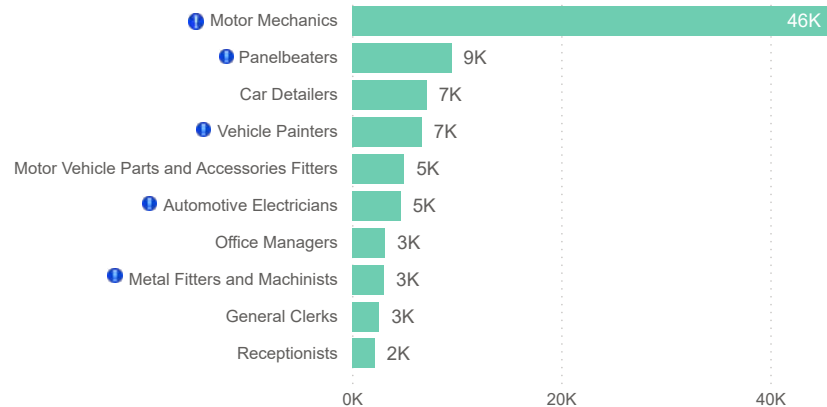


Sources: **(top row)** Workforce Numbers and Female %: ABS Detailed Labour Force Survey (Table EQ06, Four-Quarter Average), May 2023 - February 2024 | Median Age, Age 25 or Younger, Age 60+, VET Qualified, Bachelor or Above and First Nations: ABS Table Builder 2021 Census - counting persons, 15 years and over by 3-digit level INDP Industry of Employment **(a)** ABS Detailed Labour Force Survey (Table EQ06, Original), Reference Period: February 2024 **(b)** ABS Detailed Labour Force Survey (Table EQ06, 4-quarter Average), Reference Period: February 2024 **(c)** Census of Population and Housing (AGEP Age and SEXP Sex), 2021, TableBuilder **(d)** Census of Population and Housing (HEAP Level of Highest Educational Attainment), 2021, TableBuilder **Notes:** Workforce Numbers are rounded to the nearest 100.
Image Source: Auto Repair MTA - Nissan Academy-51

Automotive repair and maintenance occupation insights

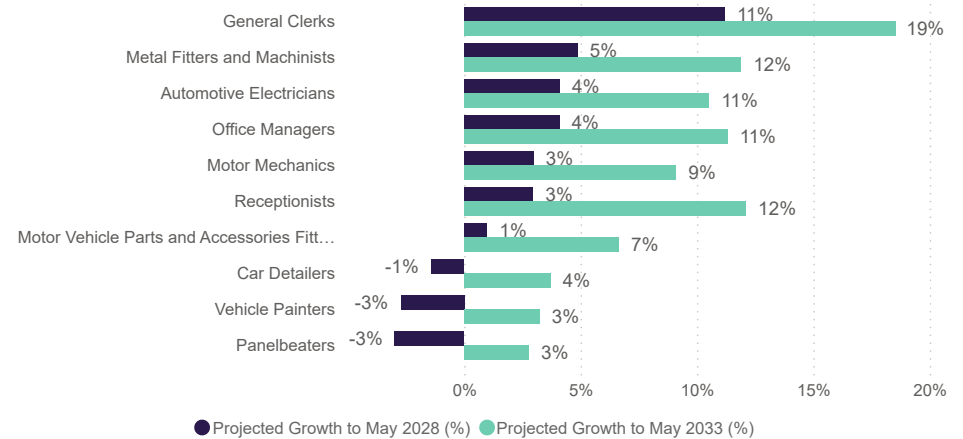
Figure 44: Automotive repair and maintenance occupation insights

(e) Top 10 ANZSCO Occupations by Workforce Numbers

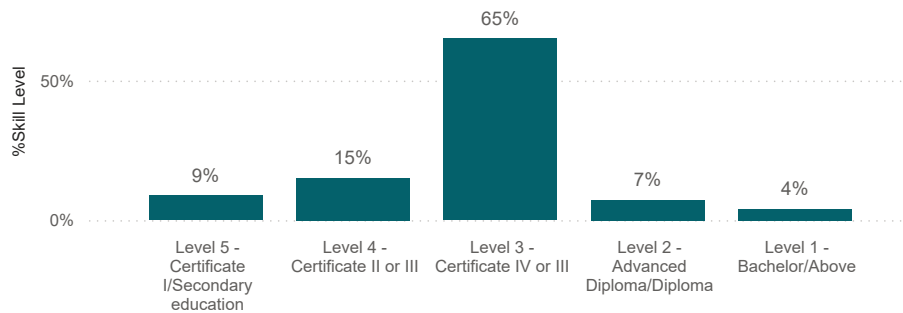


Identified as experiencing National Shortage

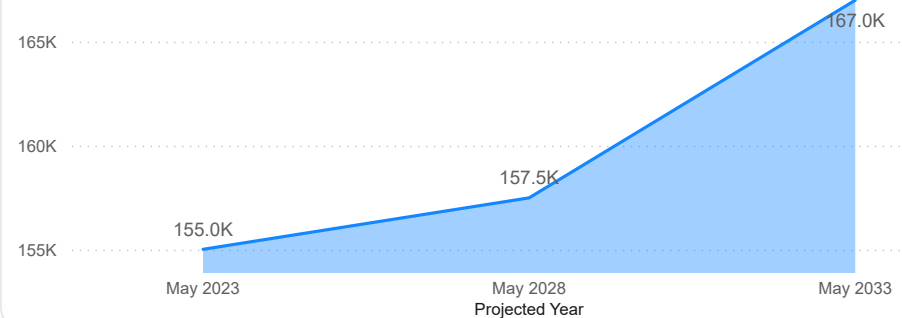
(f) Employment Projections by ANZSCO Occupations



(g) Automotive Repair and Maintenance Workforce Occupation Skill Level Commensurate with



(h) Employment Projections of Automotive Repair and Maintenance

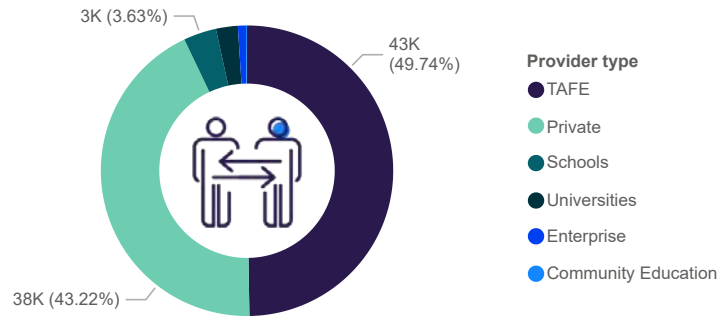


Sources: (e) ABS Table Builder 2021 Census - INDP Industry of Employment, OCCP Occupation | JSA Skills Priority List 2023. 4-dig SPL(ANZSCO 2013) (f) Employment Projections produced by VU for JSA (May 2023 to May 2033) (g) ABS Table Builder 2021 Census - employment, income and education (OCSKP Occupation Skill Level by INDP Industry of Employment) (h) Employment Projections produced by VU for JSA (May 2023 to May 2033)
Image Source: Auto Repair MTA - Nissan Academy-51

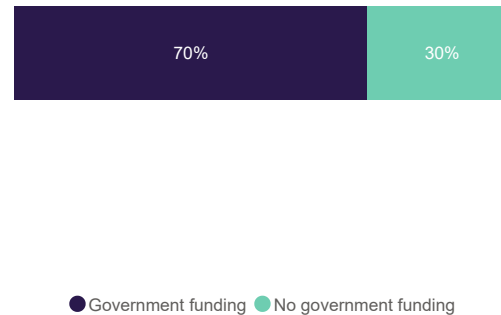
AUR service and repair training package insights

Figure 45: Automotive service and repair training package insights

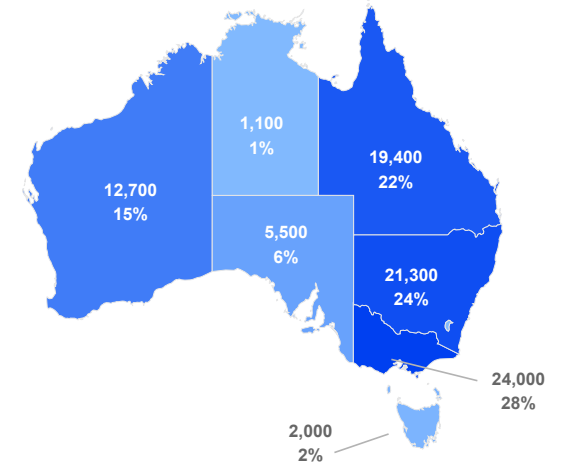
(i) Enrolments by Type of Training Providers



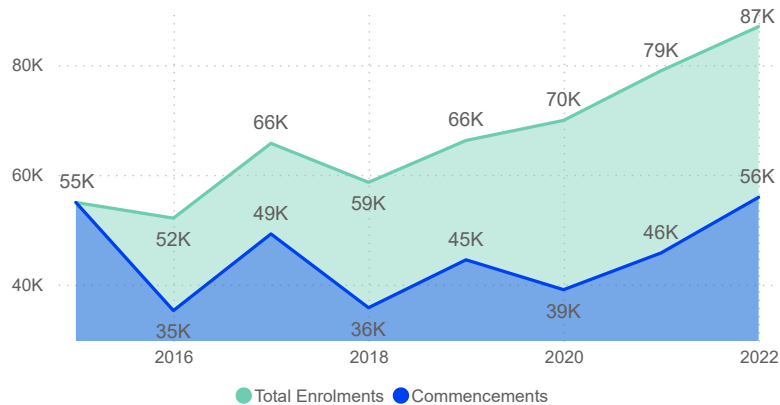
(j) Enrolments by Funding sources



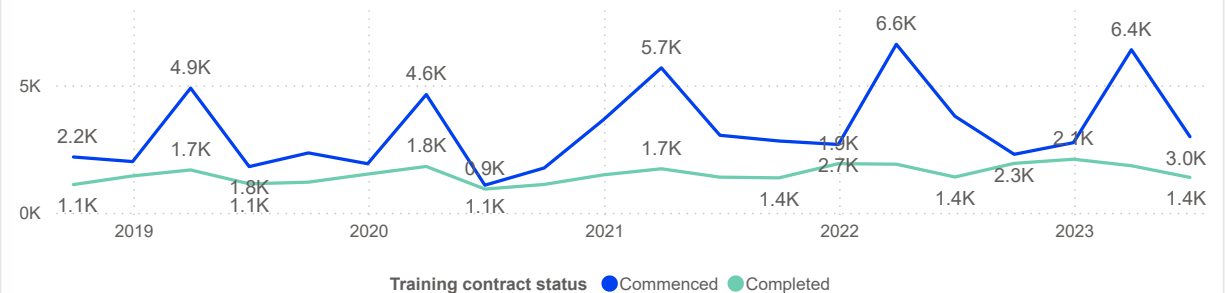
(k) Training Program Delivery Location



(l) AUR Service and Repair Annual Enrolments and Commencements



(m) AUR Apprentices and Trainees Commencement and Completion by Quarter



Sources: (i) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (j) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (k) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (l) NCVER. 2023. TVA program enrolments 2015-2022 (VOCSTATS). Adelaide, December (m) NCVER. 2023. Apprentices and trainees, Sep 2018 - Jun 2023 (VOCSTATS). Adelaide **Note:** 1. Figure (m) Apprentices and Trainees commencements and completions are rounded to nearest 5. 2. Figure (k) are rounded to nearest 100.

Image Source: Auto Repair MTA - Nissan Academy-51

Automotive repair and maintenance demographics

The automotive repair and maintenance sector employed 158,500 workers across auto electrics, mechanical servicing and repair, panel repair and vehicle painters as of February 2024 (based on a 4-quarter average), with motor mechanics accounting for 28.2% of all roles. If the 14,000 motor mechanics counted as part of the [automotive retail and wholesale](#) sector were included in this sector, the total workforce would be 172,536, with motor mechanics making up 35% of the workforce (approximately 60,000 in total).

The automotive repair and maintenance sector consists of 27,704 businesses involved in the repair and maintenance of vehicles, 13,907 automotive body, paint and interior repair businesses and 3,487 automotive electrical service businesses.³⁰

The workforce size has been largely stable over the last 5 years, with projected growth over the next 10 years estimated to equate to 12,000 additional positions.³¹

The stable workforce numbers are not linked to a lack of demand for the sector's services in the economy, but rather the difficulty that the sector has in growing overall workers due to the prevalence of skills shortages in key occupations. Half of the sector's top 10 occupations are identified as experiencing a skills shortage, covering key trade roles such as motor mechanics, panel beaters, vehicle painters, automotive electricians and machinists.³²

Research by the AAAA has suggested that the repair and maintenance sector is lacking almost 40,000 technicians, 27,000 qualified and

Figure 46: Automotive Electrical Services Businesses (No. of Employees)

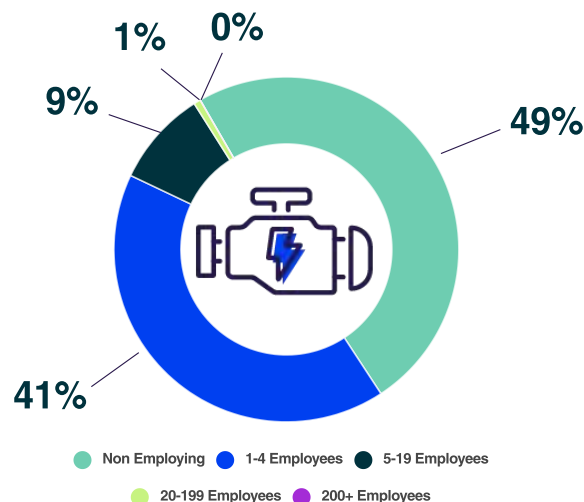


Figure 47: Automotive Body, Paint and Interior Repair Businesses (No. of Employees)

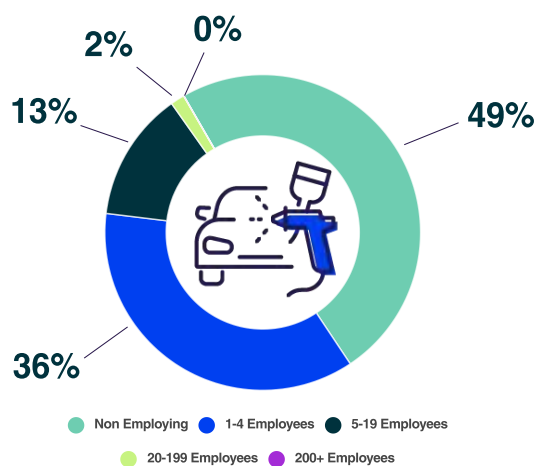
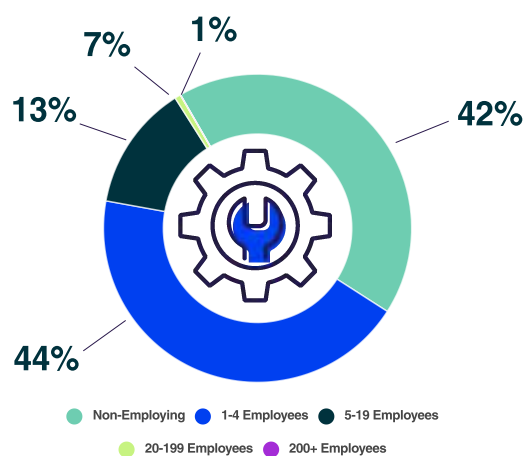


Figure 48: Automotive Repair and Maintenance Businesses (No. of Employees)



Source: Australian Bureau of Statistics. Counts of Australian Businesses, including Entries and Exits. 2023

30 Australian Bureau of Statistics. *Counts of Australian Businesses, including Entries and Exits*. 2023

31 Jobs and Skills Australia. *'Employment Projections'*. 2023

32 Jobs and Skills Australia. *'Skills Priority List'*. 2023

12,000 apprentices.³³ In the absence of these staff, a survey of automotive businesses by the Capricorn Society found a number of key impacts of having insufficient staff – including increased workload, longer hours, not having a work-life balance, inability to take time off or holidays, and increased pressure on business owners and staff (stress, fatigue)³⁴ – which could indicate how skills shortages can lead to self-reinforcing effects.

inability to take time off or holidays, and increased pressure on business owners and staff (stress, fatigue) - which could indicate how skill shortages can lead to self-reinforcing effects

Findings from Capricorn Society's 2023 State of the Nation special report into the skills shortage have suggested that it is taking automotive repair and maintenance businesses an average of 6 to 8 months to fill each vacancy.³⁵ A recent MTAA member survey found that the industry had an average recruitment fill rate of only 39% (Figure 32) across a range of advertised key occupations³⁶ – 28 percentage points below the 67% level used by Jobs and Skills Australia to help define occupational shortages.³⁷

*the industry had an average recruitment fill rate of only **39%** across a range of advertised key occupations – **28 percentage points** below the **67%** level used by Jobs and Skills Australia to help define occupational shortages*

While AAAA, Capricorn Society, and MTAA data differ from that used by Jobs and Skills Australia to identify skills shortages, they still serve as a key snapshot and comparator for ongoing skills shortages at an industry—and role-specific level. At the same time, they and other industry data can also indicate the pervasiveness of skills shortages and their potential for self-reinforcing effects.

33 Australian Automotive Aftermarket Association. *Half of all automotive workshops looking for staff*. 2023.

34 Capricorn Society. *State of the Nation 2022*. 2022.

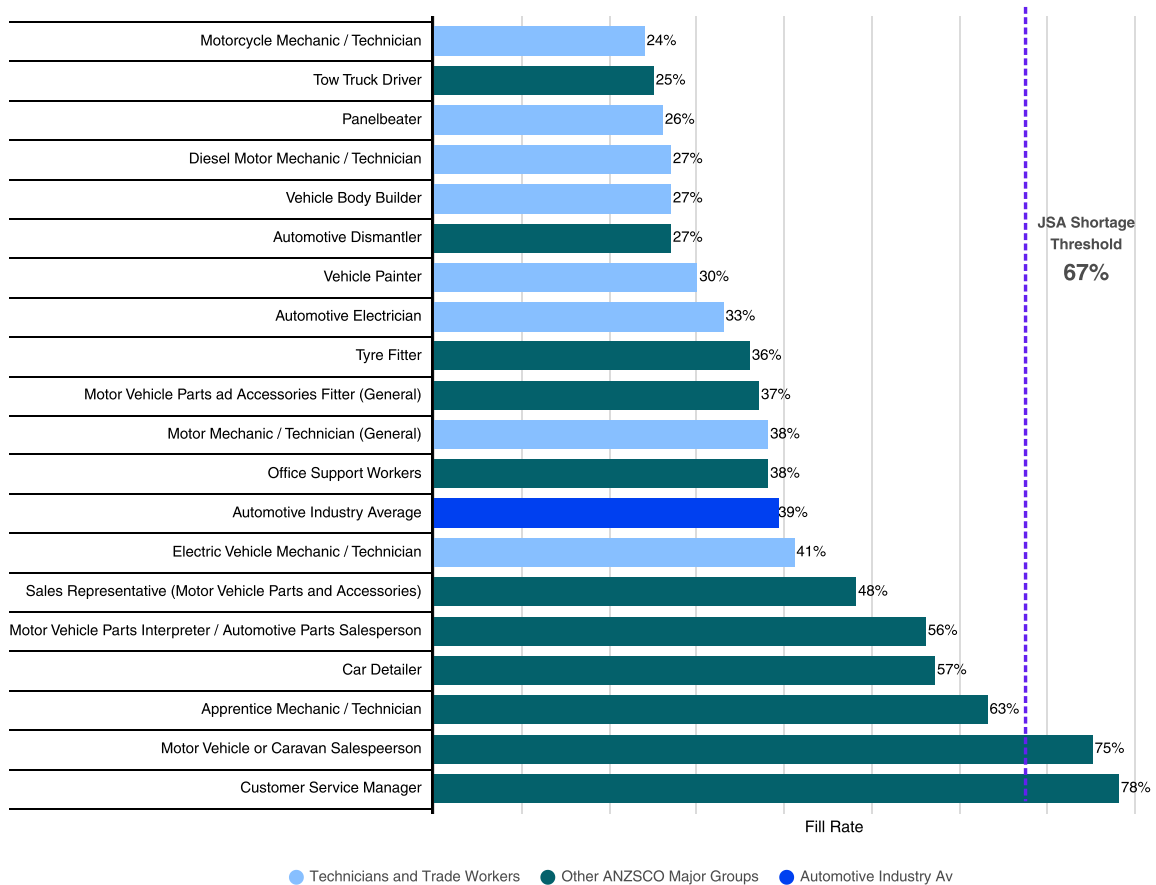
35 Capricorn Society. *State of the Nation – Finding Talent*. 2023.

36 Deloitte Access Economics with Motor Traders Association of Australia. *Skills shortages in the Australian automotive industry*. 2024.

37 Jobs and Skills Australia. *Skills Priority List Methodology*. 2023.



Figure 49: Automotive Industry Occupation Recruitment Fill Rates



Source: Deloitte Access Economics. Skills shortages in the Australian automotive industry. 2024.

Motorcycle mechanics, which are a subset of motor mechanics within the ANZSCO classification system, are also identified as experiencing a skills shortage. The 2021 Census reported 1,968 motorcycle mechanics as part of this sector.³⁸

2021 Census data shows that this sector also encompasses at least 1,700 bicycle mechanics,³⁹ who have specific training programs available but are not strictly required. ANZSCO classifies bicycle mechanics as a Skill Level 5 occupation, excluding it from consideration as part of the Skills Priority List. Feedback from the Bicycle Industries Association suggests the sector has closer to 3,000 bicycle mechanics, with at least 500-1,000 vacancies.

Automotive repair and maintenance occupations are geographically dispersed largely in line with Australia's population distribution, making a career in these occupations possible in most population centres and ensuring high career mobility.

Capricorn Society's 2023 State of the Nation special report into the skills shortage have suggested that it is taking automotive repair and maintenance businesses an average of 6 to 8 months to fill each vacancy

³⁸ Australian Bureau of Statistics. Data Builder – 2021 Census – 6-Digit ANZSCO Occupations. Accessed 2024

³⁹ Australian Bureau of Statistics. Data Builder – 2021 Census – 6-Digit ANZSCO Occupations. Accessed 2024



*One area where the automotive repair and maintenance sector strongly underperforms is female workforce participation. Only **13.78%** of the sector's workforce is female, making it the worst-performing sector within the mining and automotive industries.*

*Worryingly, based on the enrolment statistics of this sector's most common qualifications, only **6.41%** of current students are female. This makes it likely that the current rate of female workforce participation could slip further.*

One area where the sector performs better than any other in the mining and automotive industries is in attracting younger workers. 19.92% of the workforce is aged 25 or younger, a statistic likely influenced by the fact that most of the top occupations for this sector are trades that are completed via an apprenticeship pathway. The sector has 11.56% of its workforce aged over 60, a cohort that is likely approaching retirement in the coming years. On this basis, the attraction of new workers has been successful in at least keeping the workforce numbers stable.

Given the propensity toward trade occupations within this sector, it is not surprising that VET qualifications account for over half of the workforce by education level. Conversely, this sector has the lowest level of higher education-qualified workers (6%) across the mining and automotive industries.

Enrolments within key AUR qualifications that support this sector are strong and growing – 2022 statistics show 87,000 total enrolments and 56,000 commencements in relevant qualifications. The increased gap between commencing and actively enrolled students suggests AUR qualifications may be taking longer to complete since COVID. Nevertheless, enrolment demographics broadly correlate to Australia's population distribution, with TAFEs being a dominant provider of education and over two-thirds of training being conducted by way of government funding.

Automotive repair and maintenance workforce drivers

Workforce attraction and retention

The automotive repair and maintenance sector workforce faces unique challenges in attracting and retaining the skilled workers it needs. Attracting more apprentices to the industry is key to addressing the current skills shortages.

While many of the key occupations needed by the sector require trade qualifications, the resulting wages earned by these trade-qualified workers are often less than those of other trades.

For example, research commissioned by the AAAA showed that the average apprentice automotive technician earned \$40,000 per year, compared to an average of \$55,000 for apprentice plumbers, electricians and carpenters.⁴⁰ Once qualified, the pay gap improved marginally but automotive technicians (\$72,000 per annum) still lagged plumbers (\$76,000 per annum), electricians (\$89,000 per annum) and carpenters (\$97,000 per annum).

Most industries that are dependent on a highly trade qualified workforce grapple with the competition for talent that plays out between young people choosing either a higher education pathway or selecting to study a trade within a VET qualification pathway.

For the automotive industry, if someone is open to choosing a trade for their vocation, the additional challenge comes from the fact that among trades, automotive occupations tend to pay far less.

When questioned at a recent AUSMASA online workforce planning workshop, 75% of automotive stakeholders believed that low pay compared to other trades and industries was one of the top 2 reasons why attracting new talent to the industry was difficult.

This industry feedback is corroborated by recent research undertaken by JSA into difficulties faced by employers when recruiting apprentices. JSA's Recruitment Experiences and Outlook Survey found that, particularly for apprenticeships in streams such as motor mechanics, the reasons why industry felt they had insufficient numbers of applicants was tied to competition with other industries, of which non-competitive wages was a factor.⁴¹

the average apprentice automotive technician earned \$40,000 per year, compared to an average of \$55,000 for apprentice plumbers

⁴⁰ Australian Automotive Aftermarket Association. Technician Salary Benchmarking Research. 2023.

⁴¹ Jobs and Skills Australia. *REOS spotlight: Employers' experiences recruiting for apprentices*. 2024.

While the choice of potential future trade occupations is no doubt formulated on multiple considerations and not just future earnings, this pay gap would not be helping, especially given that a recent longitudinal survey of Australian youth found that 28% of 21-year-olds were in financial stress.⁴²

One area where industry feels a change by government could make a positive difference is in the occupation name used by ANZSCO for some of its top occupations. The automotive industry has for some time now adopted the term Automotive Technician, however ANZSCO still uses the terms Motor Mechanic and Diesel Mechanic to define occupations. These titles are used by RTOs and Australian Apprenticeship Support Network (AASN) providers on any official material and paperwork for apprenticeship programs, which are what prospective apprentices, and their parents, rely on when choosing a program of study.

Industry feels strongly that the terms Motor Mechanic and Diesel Mechanic are detractors and perpetuate outdated views of their vocation. Recent feedback from Komatsu would suggest that occupation naming can have a big impact. When their recruitment drive for apprentice Mobile Plant Mechanics was not yielding a strong flow of candidates, Komatsu adjusted their recruitment campaigns to call for Mobile Plant Technicians and the response was significantly better.

Komatsu adjusted their recruitment campaigns to call for Mobile Plant Technicians and the response was significantly better

AREA OF FOCUS

The ABS should consider adjusting its terminology within ANZSCO to replace the word 'mechanic' with 'technician'.

⁴² NCVER. *Generation Z: life at 21*. 2022.





Many automotive tradespeople, especially those working in mining-intensive states such as Western Australia and Queensland, are finding that continuing their trades within the mining industry can yield significantly higher salaries. While such movement of labour assists the mining industry in meeting its workforce needs, it does create additional strain on the automotive industry, which represents the bulk of employers supporting apprentices to enter the automotive industry.

Feedback from industry stakeholders has shown that some businesses within the automotive repair and maintenance sector are responding with a range of innovative solutions. One metropolitan Western Australian workshop offered to mimic a FIFO roster for its staff, while another offered staff choosing to work in the mines the opportunity to return in the future with employee benefits such as long service leave accruals still in place. Feedback to AUSMASA from that business owner indicated they felt that for many technicians, the desire to earn good money in the mines was too hard to compete against but that invariably, many tire of the added pressures of FIFO work and returned after a few years.

Mentorship of apprentices

Given the importance of apprentices in building the automotive repair and maintenance workforce, ensuring their success once attracted is paramount.

NCVER completion data for apprenticeships that commenced in 2018 reflect a national average completion rate of 55.8% across all occupations within 3-4 years. The automotive trades cohort fared slightly better, with 58.1%, compared to an average rate of 53.4% for all trade apprenticeships.⁴³ This trend is also relatively consistent with the most recent pre-COVID data, which shows that 62% of those who commenced in the automotive trades in 2016 completed their apprenticeship within 4 years.⁴⁴ The failure of almost every second apprentice to complete within the standard 4-year timeframe for apprentices is one area that requires the VET and industry sector's ongoing attention.

During a recent AUSMASA national online workforce planning workshop, automotive industry stakeholders were asked the question: 'Aside from the apprentice themselves, who has primary responsibility for an apprentice's education and skills development?' 82% responded that this lay with the employer as opposed to the training provider.

43 NCVER. Completion and attrition rates for apprentices and trainees 2022: data tables. Adelaide, November. 2024.

44 NCVER. Completion and attrition rates for apprentices and trainees 2020: data tables. Adelaide, July. 2021.

Numerous training providers involved in the provision of automotive apprenticeship programs have expressed concern to AUSMASA that, due to the chronic skills shortage in the sector, insufficient workplace mentorship, coaching and support is being provided. Feedback by these training providers suggests that workshops are too understaffed to offer truly holistic support of an apprentices' development, noting that trainers are often required to assist students with tackling non-training related issues such as struggles in their personal lives. This has led many training organisations to feel as though the primary responsibility of mentoring and supporting an apprentice has been transferred back to them.

AUSMASA's broader industry engagement activities support the view that the industry is aware of its own critical role in developing apprentice skills and providing coaching and pastoral care. The industry is under pressure from the ongoing skills shortages. While AASN providers are contracted by the government to provide mentoring services to apprentices, industry feedback suggests this is either lacking or superficial at best.

The federal government has trialled various other approaches to the provision of mentoring services in the past, including via the Industry Specialist Mentoring for Australian Apprentices (ISMAA) program. While this program has been discontinued, feedback from the industry suggests that it added tangible benefits to the apprentices supported at the time.

AREA OF FOCUS

Consideration by government in relation to how industry can be better supported in the critical role of apprenticeship mentoring and support is seen as critical to improving retention and graduation rates. AUSMASA will continue to work with industry to advocate for government support that is targeted, and outcomes based.

Another issue raised by both training providers and employers concerns the lack of adequate language, literacy, numeracy, and digital (LLND) skills in apprentices entering the VET system. Consistent feedback from the industry has been that apprentices struggle with work-related literacy and numeracy tasks such as reading, interpreting, and applying service instructions.

Many training providers have also expressed the view that they are increasingly having to spend considerable and valuable training time dealing with LLND barriers.





In its submission to DEWR's *Future Directions* consultation paper, the Reading Writing Hotline advised that they currently receive over 4,000 calls annually from adult learners, of whom 40% are already employed and 70% are from an English-speaking background and were schooled in Australia.⁴⁵ In light of this, the submission, among other recommendations, extolled the value of industry introductory pathway programs in easing learners into apprenticeship courses.

The issue of LLND barriers and the role of pathway programs was also a key topic of discussion at AUSMASA's Critical Minerals and Electric Vehicles Skills Forum, held in October 2023. Industry stakeholders argued that the current Certificate II pathway programs in the AUR training package, while providing a broad introduction to the industry, did little to prepare students for the literacy and numeracy skills that they would need once they progressed to an apprenticeship.

AREA OF FOCUS

AUSMASA will work closely with industry to explore how automotive pathway programs can be better designed to address LLND barriers in addition to introducing industry skills and tasks.

International students

While new entrants to the automotive industry are needed, it is critical that they have the skills and experience required to meet employers' expectations. For Australian citizens and permanent residents seeking an automotive trade, this is achieved through a 4-year apprenticeship that blends structured training from TAFEs and private training providers with on-the-job training in the workplace from day one.

This is not the case with international students, many pay tens of thousands of dollars to complete the same trade-based qualification in as little as one year, with no mandated time in a workplace.

The Certificate III in Light Vehicle Mechanical Technology is the industry's primary educational mechanism for training new automotive technicians. 2022 data shows that of the 26,745 enrolments in this qualification, 7,245 (27%) were from international students, [Appendix I](#).

The qualification does not mandate any minimum number of hours that need to be spent in the workplace. For those students completing the

⁴⁵ Reading Writing Hotline. Submission to the Department of Employment and Workplace Relations Future Directions consultation paper. 2023.

program via an apprenticeship stream, hours in the workplace are guaranteed. International students generally cannot complete apprenticeships due to the eligibility rules:

- Being an Australian citizen or permanent resident; and
- Seeking an apprenticeship with full-time or part-time hours
- Over 18 years old (or with approval from a guardian if you are under 18 years old).

A temporary resident or Visa holder may be able to start an apprenticeship if they meet specific skills listed by the Department of Home Affairs however, a place is not guaranteed.

Industry has expressed concerns about the lack of on-the-job experience that international students are receiving and the perceived lack of quality in training delivery provided by many private training providers

Overlaid with the eligibility requirements are the restrictions on the number of hours that can be worked by international students, which means an Australian apprenticeship with its mandated work hours is largely out of reach for international students. Consequently, the amount, if any, of on-the-job experience or work placements that international students receive varies greatly depending on the training provider.

Industry has expressed concerns about the lack of on-the-job experience that international students are receiving and the perceived lack of quality in training delivery provided by many private training providers.

As a result, the industry has raised significant concerns about the lack of actual experience that international student graduates are bringing to the workforce. Many indicate that despite holding the required qualifications, graduates can rarely be employed as skilled automotive technicians.

The automotive industry has indicated to AUSMASA that it is broadly supportive of international students being allowed to study qualifications such as the Certificate III in Light Vehicle Mechanical Technology via an apprenticeship-type model, with the granted exception being that government incentives normally available for both apprentices and employers not be offered. The current conditions placed on student visas would need adjustment to make such a model feasible.

Another approach would be for AUSMASA to investigate changes to key AUR qualifications by embedding specific requirements for mandated hours in the workplace for non-apprenticeship students. This would provide confidence from employers that graduating international students have completed mandatory on-the-job work placements.

AREA OF FOCUS

AUSMASA will investigate the possibility of embedding specific requirements for mandated workplace hours in key AUR qualifications to ensure that students undertaking them outside of an apprenticeship pathway are provided the opportunity to apply their learnings and gain actual industry skills.

Electric and hydrogen vehicles

The Australian Government first introduced and consulted on a new National Electric Vehicle Strategy in late 2022, before it committed to implement a specific New Vehicle Efficiency Standard following public consultation in early 2023.⁴⁶ As a core Government strategy, it created a framework for a range of actions designed to lower EV costs – such as changes to fringe benefits tax and import tariff arrangements.⁴⁷

In 2023, the Australian transport sector produced 21% of Australia's total greenhouse gas emissions. Overall, cars make up about 60% of transport emissions.⁴⁸ Changes to efficiency standards and other policy initiatives aim to assist Australia in achieving its net-zero ambitions by encouraging the rapid adoption of new EVs and creating a second-hand market for EVs to lower entry costs. Without such interventions, the transport sector is projected to become Australia's largest emitting sector by 2030.⁴⁹

Over the last 4 years, state and territory governments have also produced strategies with actions designed to make EVs and charging infrastructure more affordable – including introducing new grant funding, rebates, subsidies, and changes to stamp duty and registration costs.⁵⁰ As the National Electric Vehicle Strategy outlined, national coordination was lacking until recently.⁵¹

In addition to existing policies to increase the demand for EVs, the introduction of Australia's New Vehicle Efficiency Standard will mean Australian motorists can choose from a wider range of more efficient, modern vehicles, including more EVs.⁵²

As of March 2024, the total number of EVs on Australian roads is estimated at 208,000. EVs accounted for 8.4% of all new light vehicle sales in 2023 (battery electric vehicles (BEVs) and plug in hybrid electric vehicles (PHEVs)), compared with 3.8% in 2022. In the first 3 months of 2024, EVs (both BEV and PHEV) accounted for 9.9% of all new light vehicles sales.⁵³ Despite this increase, Australia still lags other markets. In the European Union, EVs accounted for approximately 22.3% of sales in 2023.⁵⁴

⁴⁶ Department of Infrastructure, Transport, Regional Development, Communication and the Arts. *Cleaner, Cheaper to Run Cars: The Australian New Vehicle Efficiency Standard*. 2024.

⁴⁷ Department of Infrastructure, Transport, Regional Development, Communication and the Arts. *Cleaner, Cheaper to Run Cars: The Australian New Vehicle Efficiency Standard*. 2024.

⁴⁸ Department of Climate Change, Energy, the Environment and Water. *National Electric Vehicle Strategy*. 2023.

⁴⁹ Department of Climate Change, Energy, the Environment and Water. *Australia's emissions projections 2023*. 2023.

⁵⁰ Department of Climate Change, Energy, the Environment and Water. *National Electric Vehicle Strategy*. 2023.

⁵¹ Department of Climate Change, Energy, the Environment and Water. *National Electric Vehicle Strategy*. 2023.

⁵² Department of Infrastructure, Transport, Regional Development, Communication and the Arts. *New Vehicle Efficiency Standard introduced*. 2024.

⁵³ Federal Chamber of Automotive Industries, *VFACTS report*, March 2024.

⁵⁴ European Automobile Manufacturers' Association, *New EU Car Registrations*, 2024.



In addition to EVs (including PHEVs), the continued growth of hybrid vehicle sales has seen electric power and driveline technology resulting in a further 377,265 vehicles since the start of 2019.⁵⁵ Supporting sales growth will be changes to tax treatments, such as the Electric Car Discount Bill announced in 2022 and other changes at the state and territory level.

The future composition of Australia's vehicle fleet will increasingly be electric, representing the single biggest transformation of the automotive industry in over 100 years. As such, the service and repair sector need to be prepared to support and adapt to changing skills requirements.

There are varying indicators of industry preparedness when it comes to servicing EVs. Capricorn Society's 2022 State of the Nation survey found that 22% of respondents viewed EVs as a challenge for the industry, with only 18% considering themselves currently, or soon to be, ready to service them.⁵⁶ This sentiment was echoed in Capricorn's 2021 and 2020 State of the Nation surveys, indicating little progress in the industry on this issue. AAAA's Future Readiness Index – a measure of business planning for an electric future – suggests that half of Australian workshops are actively investing in the skills and equipment needed to service EVs and one in ten are already set up for an electric future.⁵⁷

In addition to investing in physical infrastructure to support the servicing of EVs, appropriate training for technicians will be critical. There are currently 2 skill sets and one dedicated qualification within the AUR training package designed to help equip current and future technicians with the skills they need to safely service and repair EVs:

- AUR32721 Certificate III in Automotive Electric Vehicle Technology
- AURSS00063 - Battery Electric Vehicle Diagnose and Repair Skill Set
- AURSS00064 - Battery Electric Vehicle Inspection and Servicing Skill Set

The 2 skill sets are currently the primary method of upskilling existing technicians, with the AUR32721 Certificate III in Automotive Electric Vehicle Technology being utilised for new entrants to the automotive industry who wish to specialise in EV servicing. The magnitude of upskilling the existing workforce to work on EVs, coupled with the average cost to do so (\$5,000 to \$7,000 per technician), has led the MTAA to call for the easing of requirements linked to the government's new energy apprenticeship program.⁵⁸

55 Bureau of Infrastructure and Transport Research Economics. *Road Vehicles, Australia January 2023*. 2023.

56 Capricorn Society. *State of the Nation 2022*. 2022.

57 Australian Automotive Aftermarket Association. *Future Readiness Index – Summary Pack – August 2023*. 2023.

58 Elias Visontay. *Australia's skilled mechanics shortage forcing insurers to write off electric vehicles after minor accidents*. The Guardian. 2024.

22% of respondents viewed EVs as a challenge for the industry, with only 18% considering themselves currently, or soon to be, ready to service them.



The AUR32721 Certificate III in Automotive Electric Vehicle Technology does not equip students with the skills required to service and repair internal combustion engines (ICE), while the AUR30620 Certificate III in Light Vehicle Mechanical Technology focuses students on the skills required to service and repair ICE engines with some opportunity to cover topics specific to EVs.

Given that, despite growing EV sales, the coming decades will see a mix of both ICEs and EVs on Australian roads needing service and repair, a training solution that does not require a dual qualification to produce a truly versatile automotive technician should be explored.

This topic was discussed at a recent AUSMASA online workforce planning workshop, where automotive stakeholders were asked:

‘For the immediate future, which will continue to have a blend of both ICE and electric vehicles, the best way to support the maintenance and repair workforce is by...’

The response from stakeholders, from the available choices given, was:

- ✓ **6.9%** Having separate specialist qualifications for each discipline.
- ✓ **13.8%** Having a new qualification that covers both disciplines.
- ✓ **79.3%** Having a baseline qualification supported by a range of specialised skill sets.

AREA OF FOCUS

AUSMASA will collaborate with the industry to determine how the AUR training package can best support the introduction of ICE and EVs in an evolving repair and maintenance environment.

AREA OF FOCUS

AUSMASA will work with the ABS through its review of ANZSCO to advocate for the addition of EV Technician to the occupation list.

Another ongoing discussion, with consequences for both the automotive and mining industries, concerns the possibility that some form of restricted electrical licence may become necessary for future work on EVs and electric mobile plant equipment. Recent consultations around this matter in Queensland considered whether such work should require a full electrical licence, which was not supported by the automotive industry.





Electric and hybrid vehicles also have unique safety requirements, especially for first responders such as firefighters, police, and tow truck operators in the case of a collision. Currently, there is no accredited training available for first responders in the VET system, with some training providers offering unaccredited training.

AUSMASA understands that Public Skills Australia (PSA), the JSC responsible for public safety, is investigating the development of an accredited training program for EV safety and emergency response. AUSMASA will ensure any program considers the needs of the automotive industry, especially those involved in accident repair.

AREA OF FOCUS

Given the automotive industry's safety needs and their intersection with accident repair, AUSMASA will collaborate with PSA to investigate the development of an accredited training program for EV safety and emergency response.

An important aspect of the maturing battery-electric landscape is the need to consider end-of-life recycling. Current EV batteries are neither easy nor economical to recycle.⁵⁹ To ensure the many critical minerals that have gone into each battery are not wasted, nor the environmental gains achieved during the life of the battery, governments are working on introducing recycling requirements.⁶⁰ This emerging skill will need to be passed on to workers who handle end-of-life vehicles.

AREA OF FOCUS

AUSMASA will work closely with industry to explore what unique skills are required for the dismantling and recycling of EV vehicles in an end-of-life setting.

Hydrogen presents as another promising fuel technology, which, depending on the energy source used to produce it, can be considered either low emission or zero emission in nature. As such, the Australian Government is assisting the development of a domestic hydrogen industry through the Guarantee of Origin Scheme and the Hydrogen Headstart and Regional

59 Ian Morse. 'A Dead Battery Dilemma'. Science, 372, no. 6544. 2021.

60 Ian Morse. 'A Dead Battery Dilemma'. Science, 372, no. 6544. 2021.

Hydrogen Hubs programs.⁶¹ In addition, in Budget 2024–2025 the Government committed \$8 billion over the next decade to support hydrogen production under its *Future Made in Australia* Initiative.⁶² Like the budget measures for critical minerals, most of this funding (an estimated \$6.7 billion) is allocated to a Hydrogen Production Tax Incentive, which will complement the Hydrogen Headstart programs.⁶³

Although Australia’s hydrogen industry is still developing, heavy linehaul haulage is seen as the most likely way that hydrogen will enter the automotive industry on any large scale within the foreseeable future.⁶⁴ This will create additional opportunities for truck manufacturers in Australia and require new skills for the technicians who service and repair such vehicles. A key enabler that is required prior to the broader adoption of hydrogen as a transport fuel is the establishment of refuelling infrastructure.

AREA OF FOCUS

There are currently no nationally accredited training programs for the service, repair and safe handling of hydrogen as it relates to vehicles within the VET system. Accordingly, AUSMASA is progressing a project proposal for the development of accredited training elements.

Scaffolding of learning in support of automotive career paths

2022 enrolment data, [Appendix I](#), supports feedback from stakeholders, namely that the automotive workforce’s primary reliance on the VET sector as an industry is to achieve initial trade qualifications, but it is then underutilised for further career progression and skills development.

That is not to say that the industry does not support, or indeed encourage, further training and skills development. Rather, a large proportion of such post-trade training occurs in the non-accredited space, often led and delivered by Original Equipment Manufacturers (OEMs).

OEM training is often used to upskill technicians in preparation for becoming Master Technicians. While such training is undoubtedly critical, it tends to be manufacturer-specific, leading to technicians being recognised as Master Technicians only for the specific brands for which they have received training.

This is not the case in jurisdictions such as the United Kingdom, where to become a Master Technician, accredited training programs must be completed.⁶⁵

a large proportion of such post-trade training occurs in the non-accredited space, often led and delivered by Original Equipment Manufacturers (OEMs)

61 Department of Climate Change, Energy, the Environment and Water. *Electricity and Energy Sector Plan – Discussion Paper*. 2024.

62 Commonwealth of Australia. *Budget 2024–2025 Budget Measures, Budget Paper No. 2*. 2024.

63 Commonwealth of Australia. *Budget 2024–2025 Budget Measures, Budget Paper No. 2*. 2024.

64 Department of Climate Change, Energy, the Environment and Water. *State of Hydrogen*. 2022.

65 Technical Topics. *How do I become a Master Technician (or a Master Mechanic)*. 2024.

The AUR training package does have qualifications at the Certificate IV and Diploma levels designed to assist technicians in developing their technical and supervisory skills. These qualifications are almost entirely used by international students.

The 2022 data shows 4,378 active enrolments for the AUR40216 Certificate IV in Automotive Mechanical Diagnosis, of which 3,937 (90%) were international students. The *AUR50216 Diploma of Automotive Technology* had 2,664 active enrolments in 2022, of which 2,588 (97%) were international students, [Appendix I](#).

OEM and other non-accredited training provide a valuable addition to the training landscape, though if such training limits career mobility or recognition by other employers, there could be a case for considering a better use of the accredited VET system. This is especially important considering the progress being made toward implementing a National Skills Passport, as promoted by the government's Employment White Paper.⁶⁶

AUSMASA's [career pathway mapping project](#) will aim to provide clearer insights into real-world examples of career development and progression within the automotive industry, including how both accredited and non-accredited training programs were used to achieve such outcomes.

Advanced technologies

The automotive industry worldwide continues to implement new high-technology solutions and systems into vehicles, making the task of workers who service, repair and fit such systems more complicated and digitally reliant.

Modern vehicles are being fitted with advanced driver-assistance systems (ADAS), including radars, multiple cameras, sensors, and sophisticated operating systems, to not only manage safety systems, the engine, transmission and exhaust but also most of the in-cabin functions and experiences.

To the degree that such a modern and digitally enabled industry could assist in enticing new entrants to join, such advances are welcome. They also benefit consumers and road safety in general. The increased presence of sophisticated software and electronic systems also requires the skills of the existing and future workforce to keep pace.

⁶⁶ The Treasury. Working Future: The Australian Government's White Paper on Jobs and Opportunities. 2023.





Frequent feedback from the industry to AUSMASA has been that many training providers are failing to keep pace with technology and teaching students on outdated equipment. Equally, some industry participants have lamented the fact that OEMs are reluctant to grant access to their proprietary systems for training providers, requiring all training to be conducted by them, which may not always be possible in all locations.

Increased inclusion of ADAS within modern vehicles is also creating unique challenges for existing AUR training packages. Auto glaziers are increasingly required to replace windscreens, behind which are cameras and other sensors. Such systems require careful calibration to operate effectively. Industry feedback suggests that currently, auto glaziers cannot conduct this calibration process after replacing a windscreen, which puts additional workload strain on technicians to do so. Consequently, AUSMASA is working closely with the industry to determine what changes to the AUR32220 Certificate III in Automotive Glazing Technology qualification or licensing may be required to empower auto glaziers to perform some or all ADAS recalibration tasks.

AREA OF FOCUS

AUSMASA will continue to work with industry to determine what changes to other qualifications or licensing may be required to empower automotive workers to perform some or all ADAS recalibration tasks.

Technological advancement requires increased digital literacy requirements. It is imperative that the VET sector can support existing workers to keep pace with this change and that qualifications are kept current to remain relevant.

AREA OF FOCUS

A key priority for AUSMASA will be to work with stakeholders in identifying the digital skills needs of the industry through use of the Australian Digital Capability Framework.

Automotive retail and wholesale overview

The automotive retail and wholesale⁶⁷ sector, with a workforce of over 121,000 (four-quarter average, May 2023 to February 2024), [Figure 43](#), sells vehicles, trucks, buses, motorcycles, bicycles, and tyres, as well as parts and accessories.

Data from industry peak bodies and IBISWorld highlight that there are upwards of 3,575 car dealerships,⁶⁸ 697 motorcycle dealerships⁶⁹, 462 truck dealerships⁷⁰ and 532 caravan and trailer dealerships⁷¹ in Australia. Insights provided by Bicycle Industries Australia suggest there are approximately 1,000 bicycle retailers, not including large retail department stores such as Kmart.

These businesses are generally geographically distributed in line with Australia's population distribution, servicing metropolitan, rural and remote communities. This makes employment opportunities within this sector broadly available to much of the Australian population.

Car dealerships tend to co-locate, especially in metropolitan areas, which attracts supporting businesses such as parts and tyre retailers and fitters. This often creates localised hubs of employment for the automotive retail and wholesale sectors.

Workers directly involved in the sale of vehicles in Australia require an appropriate motor vehicle salesperson licence, the regulation of which is handled by individual states and territories. While training is required prior to attaining such a licence, this is normally in the form of a short course and is not, by requirement, a full qualification. The AUR package does offer the non-compulsory AUR31020 Certificate III in Automotive Sales qualification, which can often be completed as a traineeship, including prior to the final issue of a motor vehicle salesperson licence.

67 NOTE: While AUSMASA is providing data and a narrative on the automotive wholesaling sector as part of its 2024 Workforce Plan, it should be noted that this sector is officially the responsibility of the Service and Creative Skills Australia (SaCSA) Jobs and Skills Council. The automotive wholesaling sector is expected to become officially part of AUSMASA's responsibility prior to the 2025 Workforce Plan.

68 Federal Chamber of Automotive Industries. *The Australian New Vehicle Industry. 2024*

69 J. Fahey. *Motorcycle Dealers in Australia. 2023*. IBISWorld.

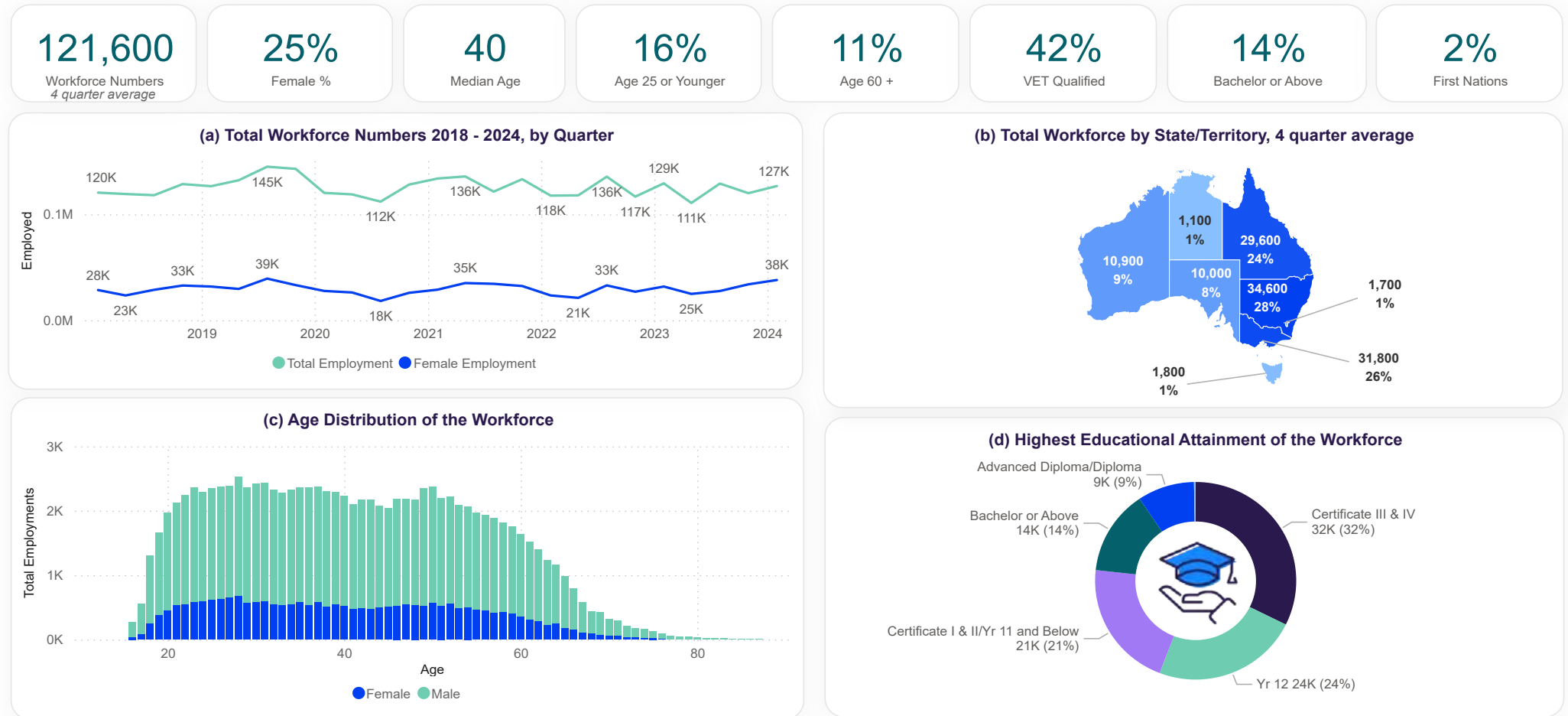
70 IBISWorld. *Truck Dealers in Australia. 2023*.

71 M. Iishi. *Trailer and Caravan Dealers in Australia. 2024*. IBISWorld



Automotive retail and wholesale demographics insights

Figure 50: Automotive retail and wholesale demographics insights

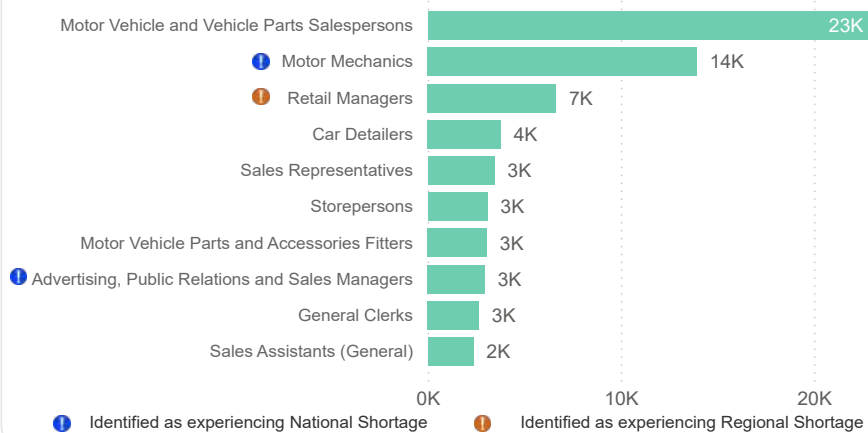


Sources: **(top row)** Workforce Numbers and Female %: ABS Detailed Labour Force Survey (Table EQ06, Four-Quarter Average), May 2023 - February 2024 | Median Age, Age 25 or Younger, Age 60+, VET Qualified, Bachelor or Above and First Nations: ABS Table Builder 2021 Census - counting persons, 15 years and over by 3-digit level INDP Industry of Employment **(a)** ABS Detailed Labour Force Survey (Table EQ06, Original), Reference Period: February 2024 **(b)** ABS Detailed Labour Force Survey (Table EQ06, 4-quarter Average), Reference Period: February 2024 **(c)** Census of Population and Housing (AGEP Age and SEXP Sex), 2021, TableBuilder **(d)** Census of Population and Housing (HEAP Level of Highest Educational Attainment), 2021, TableBuilder **Notes:** Workforce Numbers are rounded to the nearest 100.

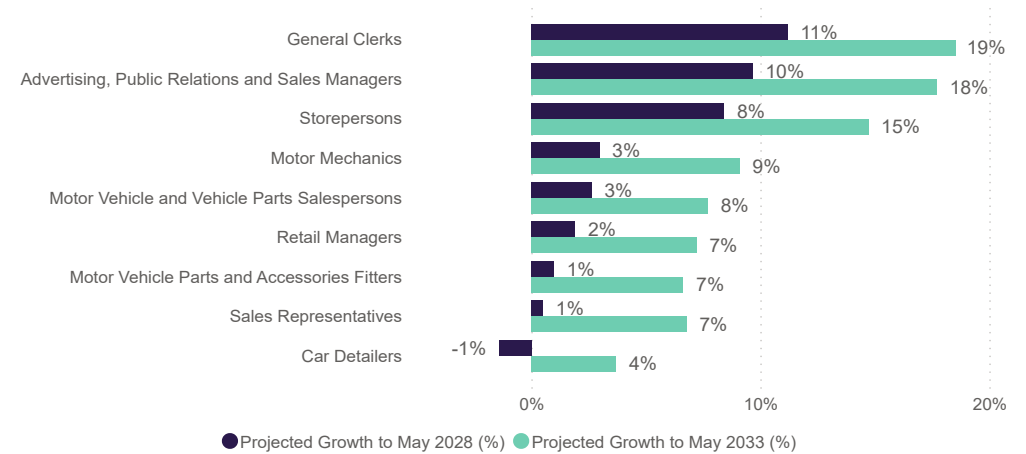
Automotive retail and wholesale occupation insights

Figure 51: Automotive retail and wholesale occupation insights

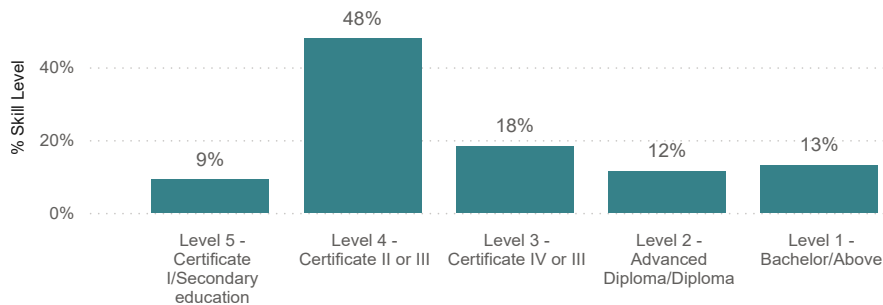
(e) Top 10 ANZSCO Occupations by Workforce Numbers



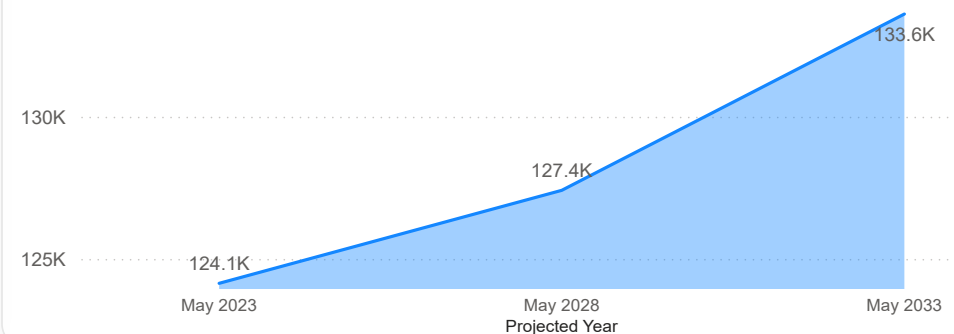
(f) Employment Projections by ANZSCO Occupations



(g) Automotive Retailing and Wholesaling Workforce Occupation Skill Level Commensurate with



(h) Employment Projections of Motor Vehicle Retailing and Wholesaling

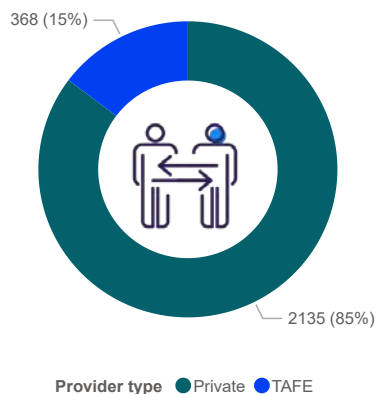


Sources: (e) ABS Table Builder 2021 Census - INDP Industry of Employment, OCCP Occupation | JSA Skills Priority List 2023. 4-dig SPL(ANZSCO 2013) (f) Employment Projections produced by VU for JSA (May 2023 to May 2033) (g) ABS Table Builder 2021 Census - employment, income and education (OCSKP Occupation Skill Level by INDP Industry of Employment) (h) Employment Projections produced by VU for JSA (May 2023 to May 2033)

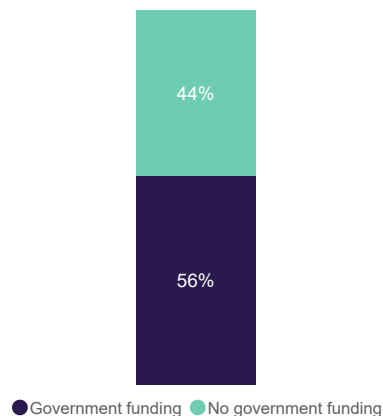
Automotive retail and wholesale AUR retail training package insights

Figure 52: Automotive retail and wholesale AUR retail training package insights

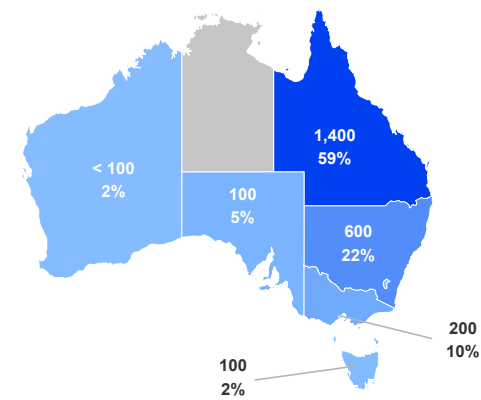
(i) Enrolments by Type of Training Providers



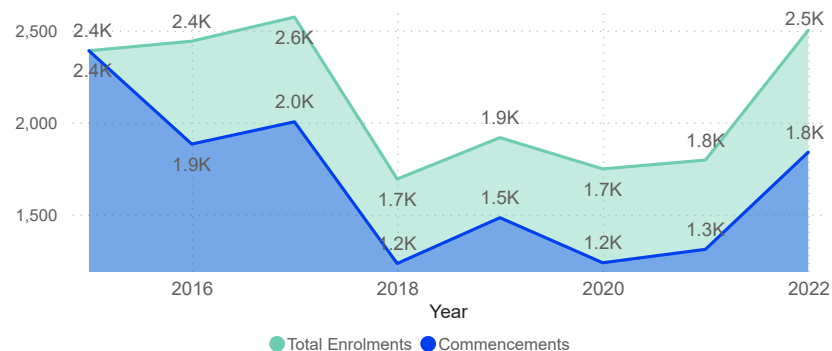
(j) Enrolments by Funding Sources



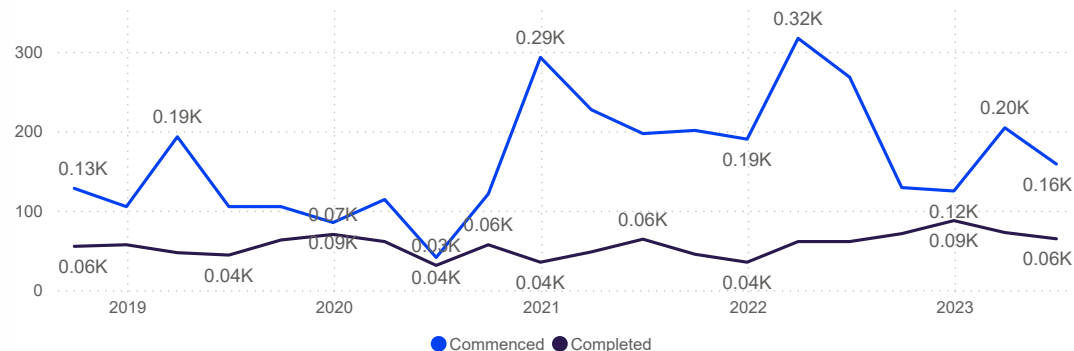
(k) Training Program Delivery Location



(l) AUR retail Annual Enrolments and Commencements



(m) AUR Retail Apprentices and Trainees Commencements and Completion by Quarter



Sources: (i) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (j) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (k) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (l) NCVER. 2023. TVA program enrolments 2015-2022 (VOCSTATS). Adelaide, December (m) NCVER. 2023. Apprentices and trainees, Sep 2018 - Jun 2023 (VOCSTATS). Adelaide **Note:** 1. Figure (m) Apprentices and Trainees commencements and completions are rounded to nearest 5. 2. Figure (k) are rounded to nearest 100.

Automotive retail and wholesale demographics

The automotive retail and wholesale sector's workforce of 121,600 (four-quarter average, May 2023 to February 2024) has remained relatively steady over the last 5 years, despite year-on-year growth in new vehicle sales. While the workforce receded marginally throughout the COVID pandemic, it has returned to its longer-term average size. The ability of a workforce that is not growing to be able to cater to growing sales volumes likely speaks to the changing nature of how consumers research and increasingly purchase their vehicles.

The increased access consumers have to rich and engaging online content, including the proliferation of detailed vehicle reviews on sites such as YouTube, has taken the activity of researching potential purchases increasingly off the car yard and into the lounge room. Feedback from the industry has confirmed an increasing number of consumers are ordering their vehicles online or they visit dealerships purely to test drive, spec-up and order their vehicles.

the prevalence of non-trade roles within this sector is seen as the key reason for the higher female workforce demographics

The overall increase in activity within the sector is projected to see the workforce grow over the coming nine years to approximately 133,600 workers.⁷²

The automotive retail and wholesale sector is dominated by occupations such as salespersons, retail managers, car detailers and store persons. Of note, the ABS includes a count of 14,000 motor mechanics within its ANZSIC statistics for this sector, likely due to these staff working for service departments embedded within dealerships. These 14,000 mechanics and their associated skills, needs and challenges will be considered as part of this report's [Automotive Repair and Maintenance](#) section.

Excluding motor mechanics, only one of this sector's top occupations is identified by the 2023 Skills Priority List as experiencing a skills shortage, being for advertising, public relations and sales managers, suggesting this sector of the automotive industry is experiencing less difficulty in meeting its required workforce needs.⁷³

Not unlike the actual physical location of dealerships and retailers, the sector's workforce is broadly distributed across Australia in line with population density.

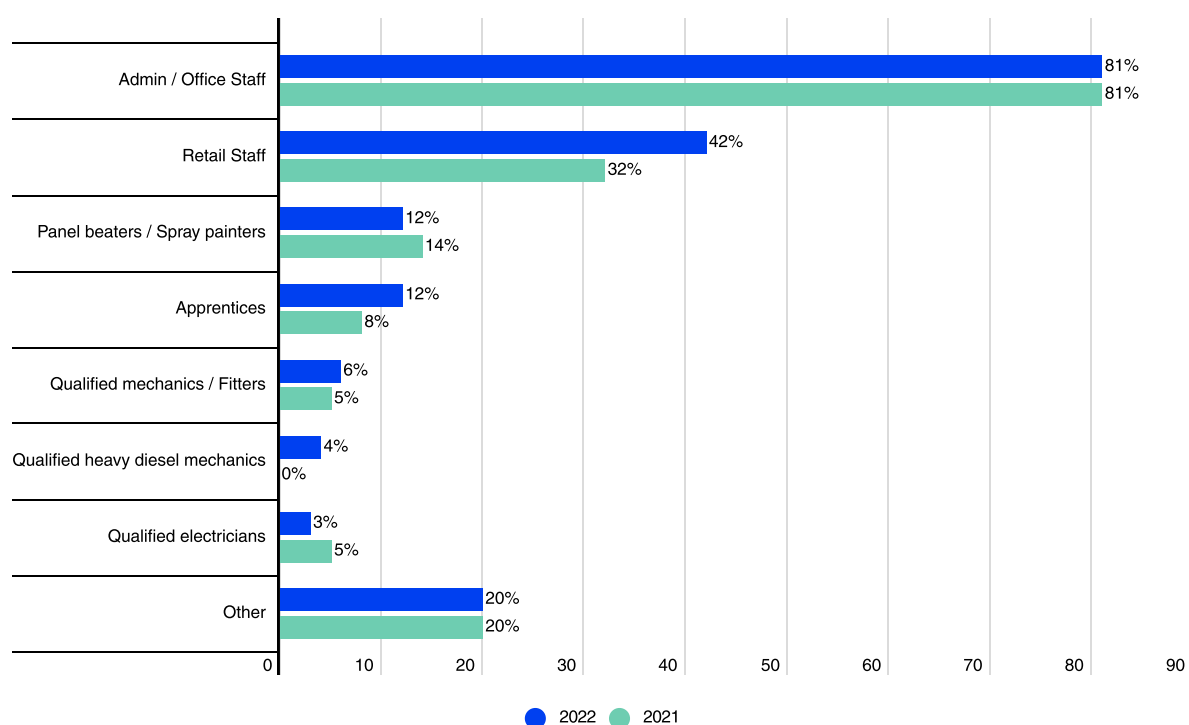
The automotive retail and wholesale sector has the largest proportion of female workers within the automotive industry, accounting for 25% of the workforce. The prevalence of non-trade roles within this sector is seen as the key reason for the higher female workforce demographics, a position which is corroborated by industry research conducted by the Capricorn Society which identified the key areas within the automotive industry employing women.⁷⁴

⁷² Jobs and Skills Australia. *'Employment Projections'*. 2023

⁷³ Jobs and Skills Australia. *'Skills Priority List'*. 2023

⁷⁴ Capricorn Society. *State of the Nation 2022*. 2022

Figure 53: Automotive businesses with female participation



Source: Capricorn Society. State of the Nation 2022. 2022

The automotive retail and wholesale sector counts 16.45% of its workforce as being aged below 26, five percentage points higher than the proportion of the workforce aged above 60 (11.41%) and approaching retirement. This generally bodes well for the sector in relation to backfilling upcoming retirements with new entrants.

Most of the top occupations within this sector, excluding motor mechanics, are identified within the ANZSCO occupation classifications system as being Skill Level 4 or 5 roles that largely equate to qualifications at the Cert II level and below. Such roles have lower educational barriers to entry.⁷⁵ As a result, almost half of the workforce has secured work in the sector with only secondary equivalent education attainment. Certificate III and IV qualifications make up the next largest proportion of the workforce at approximately 32%, with the remainder comprising those with diploma level and above qualifications.

Enrolments within VET qualifications relevant to this sector are heavily concentrated on the AUR31020 Certificate III in Automotive Sales, and its superseded version AUR31016 of the same name (2,235 enrolments, 54% of which are by way of a traineeship). Most VET enrolments (59.11%) occurred in Queensland, where it is a requirement to complete numerous units from these qualifications as part of the motor salesperson registration process.⁷⁶

⁷⁵ Australian Bureau of Statistics. *ANZSCO - Australian and New Zealand Standard Classification of Occupations – Structure. 2022.*

⁷⁶ Queensland Government. *Register as a motor salesperson. 2021.*

Automotive retail and wholesale workforce drivers

While not affected by skills shortages, the automotive retail and wholesale sector is experiencing a gradual but persistent change to both consumer behaviour and the method by which automotive manufacturers are bringing their products to market.

As has already been discussed, consumers' access to detailed and informative online reviews, especially in video format on platforms such as YouTube, has seen a shift away from salespersons being the primary source of information on vehicle types and models.

The functionality offered by vehicle manufacturers' websites has also evolved significantly, with online car configurators and the ability to price up potential purchases, including specifically chosen options, now standard. Undoubtedly, the ability to furnish highly interactive online experiences and maintain close relationships with online reviewers and influencers has increased the important role of advertising and marketing professionals within the industry.

The ability to complete an order for a new vehicle online is also becoming more commonplace, especially among electric vehicle brands such as Tesla and BYD, who have gone one step further and replaced dealerships with company-owned stores.⁷⁷

These advances for consumers have, in some instances, reduced the role of a vehicle salesperson to order fulfilment.

Feedback from dealers, especially those involved in the sale of popular SUVs, 4WDs and light commercial vehicles, suggests consumers are increasingly looking to dealerships for assistance in modifying their vehicles as part of the sales process. Modifications such as suspension upgrades, bull bars, changes to wheels and tyres, canopies and driving lights have seen salespeople become important sources of insights and guidance once again.

⁷⁷ Naughton, Nora. *Electric cars are killing the car dealership as we know it*. Business Insider. 2024



Automotive manufacturing overview

Although Australia's automotive manufacturing sector is no longer home to large-scale passenger vehicle manufacturing (having ceased in 2017), it generated over \$14 billion in revenue from over 3,000 businesses in 2022–23.^{78 79 80 81}

The sector's greatest economic output is derived from the manufacture of caravans and camper trailers, accounting for \$3 billion in revenue in 2022–23 (21.1% of this sector's output). The manufacture of trucks (16.1% of sector output), motor vehicle bodies (12.6%) and buses (10.5%) round out the top performers.

In 2021, the industry developed 23,931 RVs (towable and motorised).⁸² By January 2023, there were 765,150 registered caravans on Australian roads, up from 726,584 in 2022 and 687,172 in 2021.⁸³

Table 3: Automotive Manufacturing Sector Revenues 2022–23

Manufactured Products (2022/23)	Revenue (\$ millions)	%
Caravans and Camper Trailers	3,000	21.1%
Trucks	2,300	16.1%
Motor Vehicle Bodies	1,800	12.6%
Buses	1,500	10.5%
Powertrain Parts	1,500	10.5%
Chassis Parts	1,200	8.4%
Other Motor Vehicle Manufacturing	719	5.0%
Campervans and Motorhomes	504	3.5%
Other Parts	427	3.0%
Accessories	412	2.9%
Body Exterior Parts	346	2.4%
Motor Vehicle Trailers	308	2.2%
Interior and Safety Parts	227	1.6%
TOTAL	14,243	100%

Source: AUSMASA calculated values from IBISWorld Industry Reports

⁷⁸ IBISWorld. *Automotive Industry in Australia*. 2023

⁷⁹ L. Duane-Davis. *Motor Vehicle Manufacturing in Australia*. 2023. IBISWorld.

⁸⁰ J. Fahey. *Motor Vehicle Body and Trailer Manufacturing in Australia*. 2023. IBISWorld.

⁸¹ DK Jeswanth. *Motor Vehicle Parts and Accessories Manufacturing in Australia*. 2023. IBISWorld.

⁸² Caravan Industry Association of Australia. *Who We Are*. Accessed April 2024

⁸³ Bureau of Infrastructure and Transport Research Economics. *Road Vehicles, Australia January 2023*. 2023

Automotive manufacturing demographics insights

Figure 54: Automotive manufacturing demographics insights

40,000

Workforce Numbers
4 quarter average

22%

Female %

42

Median Age

12%

Age 25 or Younger

11%

Age 60 +

43%

VET Qualified

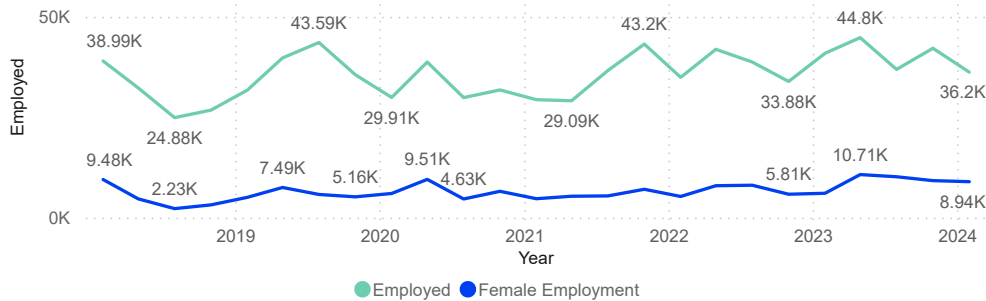
21%

Bachelor or Above

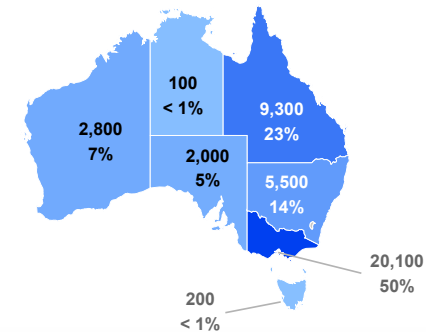
1%

First Nations

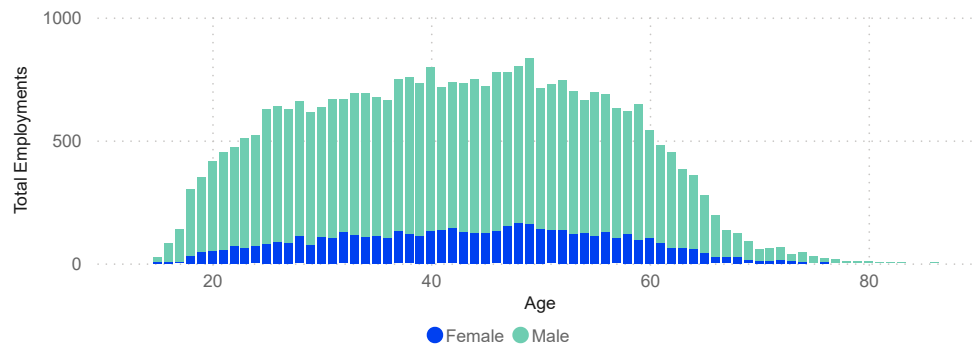
(a) Total Workforce Numbers 2018 - 2024 by Quarter



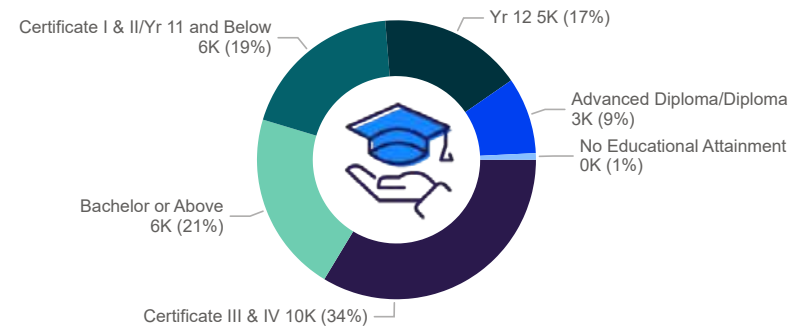
(b) Total Workforce by State/Territory, 4 quarter average



(c) Age Distribution of the Workforce



(d) Education Level of the Workforce

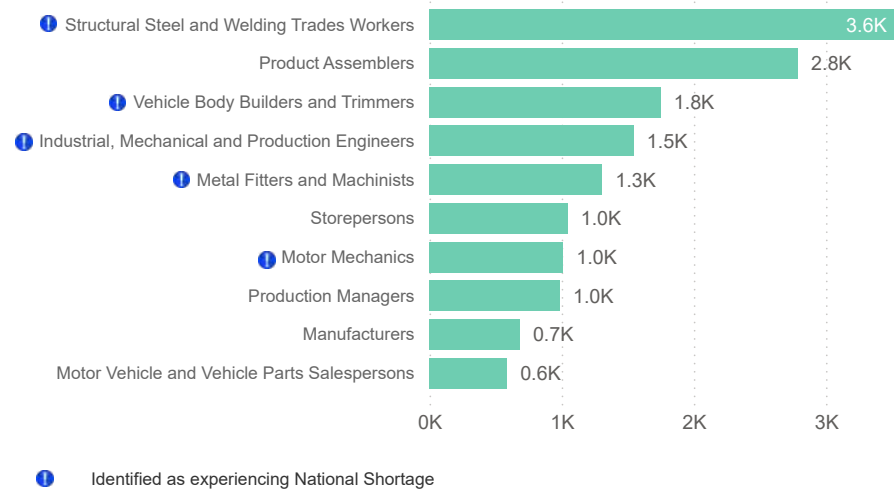


Sources: (top row) Workforce Numbers and Female %: ABS Detailed Labour Force Survey (Table EQ06, Four-Quarter Average), May 2023 - February 2024 | Median Age, Age 25 or Younger, Age 60+, VET Qualified, Bachelor or Above and First Nations: ABS Table Builder 2021 Census - counting persons, 15 years and over by 3-digit level INDP Industry of Employment **Notes:** Workforce Numbers are rounded to the nearest 100. (a) ABS Detailed Labour Force Survey (Table EQ06, Original), Reference Period: February 2024 (b) ABS Detailed Labour Force Survey (Table EQ06, 4-quarter Average), Reference Period: February 2024 (c) Census of Population and Housing (AGEP Age and SXP Sex), 2021, TableBuilder (d) Census of Population and Housing (HEAP Level of Highest Educational Attainment), 2021, TableBuilder

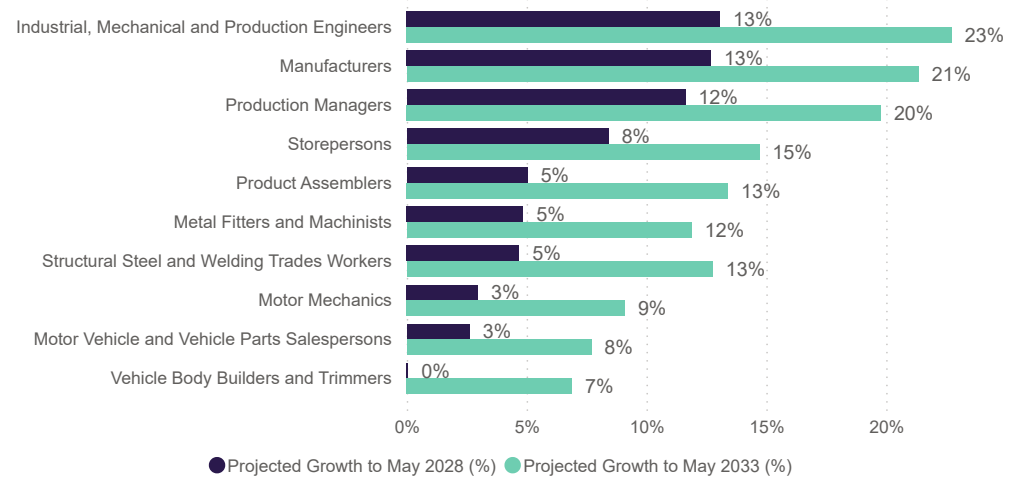
Automotive manufacturing occupation insights

Figure 55: Automotive manufacturing occupation insights

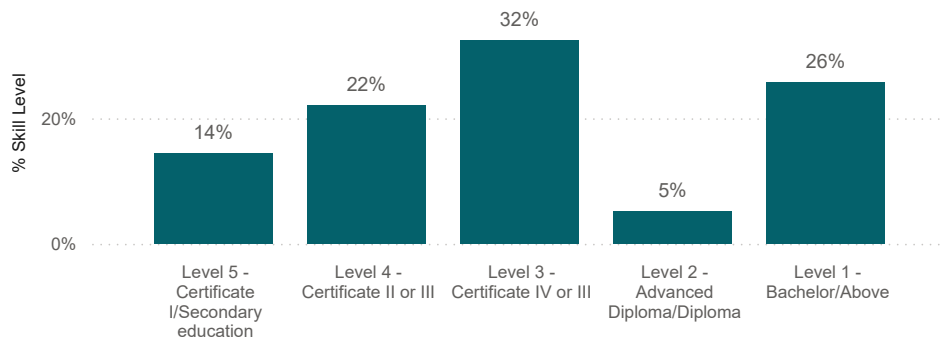
(e) Top 10 ANZSCO Occupations by Workforce Numbers



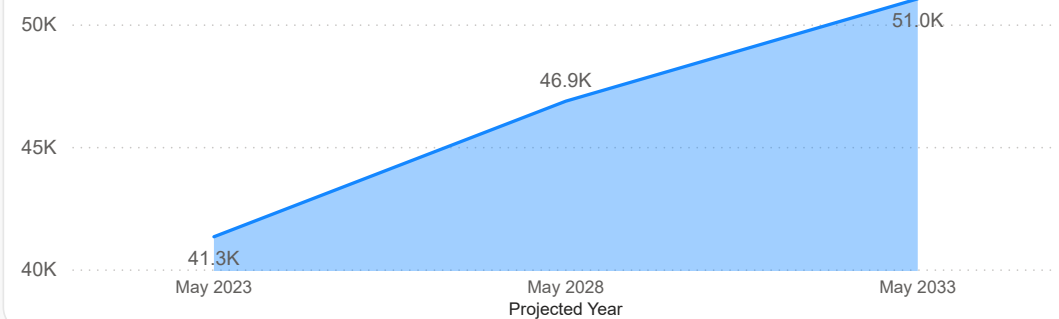
(f) Employment Projections by ANZSCO Occupations



(g) Automotive Manufacturing Workforce Occupation Skill Level Commensurate with



(h) Employment Projections of Motor Vehicle Manufacturing



Source: (e) ABS Table Builder 2021 Census - INDP Industry of Employment, OCCP Occupation | JSA Skills Priority List 2023. 4-dig SPL(ANZSCO 2013) (f) Employment Projections produced by VU for JSA (May 2023 to May 2033) (g) ABS Table Builder 2021 Census - employment, income and education (OCSKP Occupation Skill Level by INDP Industry of Employment) (h) Employment Projections produced by VU for JSA (May 2023 to May 2033)

Automotive manufacturing AUM training package insights

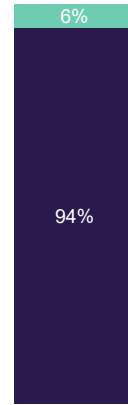
Figure 56: Automotive manufacturing AUM training package insights

(i) Enrolments by Type of Training Providers



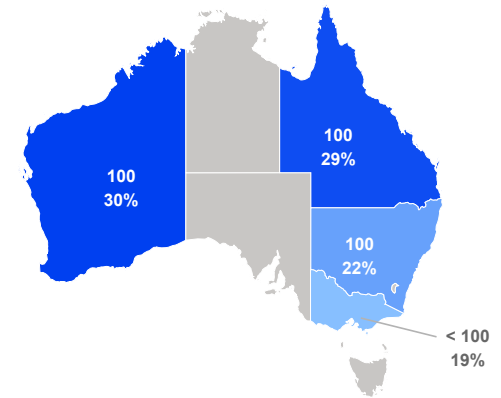
Provider type ● TAFE institutes

(j) Enrolments by Funding Sources

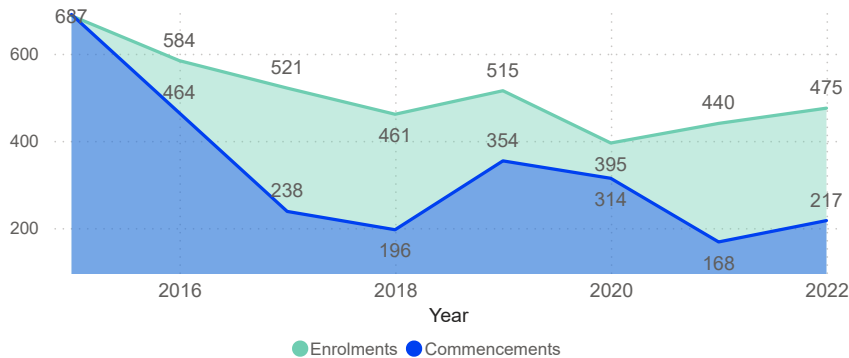


● Government funding ● No government funding

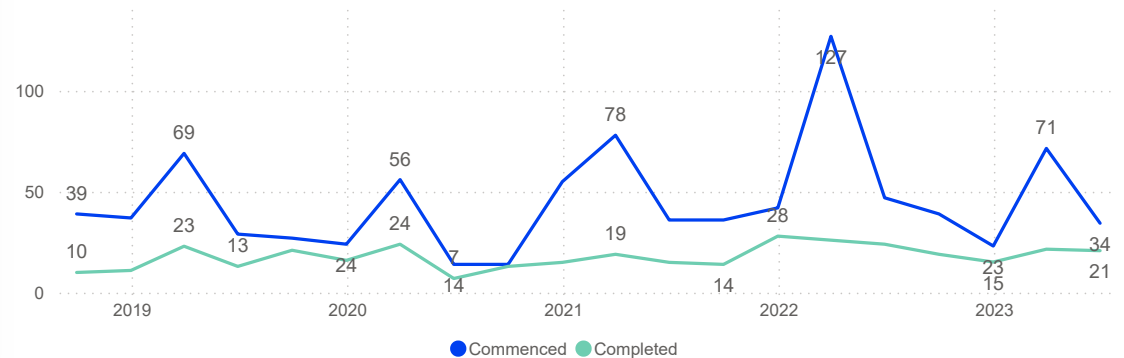
(k) Training Program Delivery Location



(l) AUM Annual Enrolments and Commencements



(m) AUM Apprentices and Trainees Commencements and Completion by Quarter



Sources: (i) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (j) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (k) NCVER. 2023. TVA program enrolments 2022 (VOCSTATS). Adelaide (l) NCVER. 2023. TVA program enrolments 2015-2022 (VOCSTATS). Adelaide, December (m) NCVER. 2023. Apprentices and trainees, Sep 2018 - Jun 2023 (VOCSTATS). Adelaide **Note:** 1. Figure (m) Apprentices and Trainees commencements and completions are rounded to nearest 5. 2. Figure (k) are rounded to nearest 100.

Automotive manufacturing demographics

The automotive manufacturing sector's workforce has broadly remained steady at around 40,000 workers (four-quarter average, May 2023 to February 2024), [Figure 54](#). With increases in specialised local automotive manufacturing and in line with record vehicle, caravan and campervan sales, it is not surprising the JSA employment projections forecasts the industry to surpass 50,000 workers over the 10 years to May 2033.⁸⁴

Half of the **top 10** occupations for this sector are identified by the 2023 Skills Priority List as **experiencing a shortage**, including **4** out of the top **5** occupations

Key occupations for the sector include structural steel and welding trades, product assemblers, vehicle body builders and trimmers and industrial, mechanical and production engineers. Half of the top 10 occupations for this sector are identified by the 2023 Skills Priority List as experiencing a shortage, including 4 out of the top 5 occupations.⁸⁵

Strong growth in these occupations is expected over the coming years, especially for industrial, mechanical and production engineers, which the JSA employment projections suggests the industry will need over 8,900 more of over the 10 years to May 2033.⁸⁶

The sector's workforce is centred in Victoria (45% of the total workforce), followed by Queensland (26%), New South Wales (13%), Western Australia (8%) and South Australia (6.5%). The Northern Territory and Tasmania each have less than half a per cent of the workforce population.

Although this sector relies heavily on trade occupations, it performs much better than the automotive repair and maintenance sector in relation to female representation within the workforce, recording 21.5%.

The workforce, with a median age of 42, is the oldest of all the automotive industry sectors, with 12.45% of its workforce under the age of 26, offset by 10.9% aged over 60.

84 Jobs and Skills Australia. *'Employment Projections'*. 2023

85 Jobs and Skills Australia. *'Skills Priority List'*. 2023

86 Jobs and Skills Australia. *'Employment Projections'*. 2023





This sector relies strongly on both the VET system and higher education, a testament to the mixed nature of skills required in manufacturing. Almost 43% of the workforce are VET qualified, and 21% hold a higher education qualification, which is the highest workforce percentage within the automotive industry.

21% hold a higher education qualification, which is the highest workforce percentage within the automotive industry

Data from NCVER shows the AUM30218 Certificate III in Automotive Manufacturing Technical Operations – Bus, Truck and Trailer accounts for almost all the active enrolments within the AUM training package, see [Appendix I](#). In 2022, the package recorded 475 actively enrolled students, of which 217 commenced that year.

As outlined above, it is worth noting that it is currently only offered by public TAFEs in Western Australia (30% of enrolments), Queensland (29%), New South Wales (22%) and Victoria (19%)⁸⁷ This represents a challenge for industry expansion in other jurisdictions.

Automotive manufacturing workforce drivers

The Australian automotive manufacturing workforce has had to reinvent itself following the departure of large-scale passenger vehicle manufacturing. It has emerged as a small but growing, highly skilled multi-disciplinary workforce involved in a range of vehicle, vehicle body, and parts manufacturing.

In addition to meeting the demands of an outdoor-loving nation in the form of caravans, RVs and trailers, other innovative businesses have also emerged.

Firms such as Walkinshaw Engineering and Premcar have developed successful business models on the back of in-demand Australian automotive engineers. In the case of Walkinshaw, this has seen a boom in left to right-hand drive conversions for big American ‘utes’ such as the Dodge Ram, and more recently for the Toyota Tundra.⁸⁸

Australia’s ongoing adoption of EV technology is also creating new automotive manufacturing opportunities for the industry, with several businesses beginning to specialise in EV conversions.

⁸⁷ Training.gov.au. *AUM30218 - RTOs With Scope to Deliver*. Accessed March 2024

⁸⁸ Stephen Corby. *The revival of Australia’s manufacturing industry is focused on building the future*. The Australian. 2023.

Australian firm Zero Automotive is preparing to roll out 200 EV-converted Toyota LandCruisers to underground mines commencing in 2024,⁸⁹ with fellow Australian firm SEA Electric having even bolder plans to convert 8,500 Toyota HiLux and LandCruiser utes, also in support of the mining industry.⁹⁰ In this instance, demand factors from the mining industry are helping to drive new manufacturing opportunities in the automotive industry.

On a larger scale, the automotive manufacturing industry is well poised to support the local manufacture of EV components, including batteries, provided the full or partial intent of Australia's Critical Mineral Strategy is fulfilled.⁹¹ This would represent a significant demand driver for an increase in the skills already present within the automotive manufacturing industry and likely require new and advanced skills linked to emerging technologies.

AREA OF FOCUS

AUSMASA will continue to work closely with industry to explore what additional skills may be required to fully realise the opportunities of EV components.

89 Jordan Mulach. *Electric Toyota Landcruiser 70 Series Ute Revealed for Australia – But Not Showrooms*. Drive.com. 2023.

90 Jordan Mulach. *Australian Company to Build 8500 Electric Toyota Hilux, Landcruiser Utes for Mining Sites*. Drive.com. 2023.

91 Mard Dean. *Rebuilding Automotive Manufacturing in Australia: Industrial Opportunities in an Electrified Future*. 2022.





**Mining and
Automotive**
Skills Alliance

The Mining and Automotive Skills Alliance (AUSMASA)
is a Jobs and Skills Council funded by the
Australian Government Department of Employment and Workplace Relations.

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Appendix

Key stakeholders and engagement strategies

Appendix A

AUSMASA recognises the important contribution industry, peak bodies, unions, STAs, government departments (both state and federal), the education sector and other JSCs make in the successful execution of AUSMASA's workforce planning, industry stewardship, training product development and implementation, promotion, and monitoring functions.

[Appendix E](#) lists the key stakeholders currently being engaged with by AUSMASA, noting this list is constantly expanding and evolving. [Appendix E](#) identifies key stakeholders by industry (mining and automotive), by government department and education provider type (public and private).

Within the mining and automotive industry stakeholder lists, further classification is made for employers, unions, OEMs, industry associations, and peak bodies.

Employers and unions are critical for receiving granular feedback on industry movements, challenges and opportunities at specific sites and among particular job roles. On the other hand, industry and peak bodies can provide valuable industry-wide insights on trends, challenges, and opportunities and are often able to leverage their large membership base to gain in-depth survey data.

OEMs provide up-to-date intelligence on the technologies that will shape the future workforce of the mining and automotive industries and are often keenly involved in training initiatives for such new features.

STAs and government departments are key sources of policy priorities, including funding training, investment in TAFE infrastructure, strategies impacting work health and safety, and localised workforce transformation challenges.

Public and private education providers are critical for ensuring the delivery considerations of training products are understood, with providers also offering industry insights from a training and education perspective.

AUSMASA acknowledges the vital importance of its partnership with DEWR, JSA, and the NCI as key contributors to the success of the JSC model. Close working relationships with DEWR, JSA, and the NCI are upheld at the executive leadership level.

It should be noted AUSMASA is applying a diverse range of strategies to ensure key stakeholders are consulted, and projects are driven by industry needs, considering the needs and perspectives of individual states and territories.

Existing engagement activities

Appendix B

AUSMASA has implemented a range of strategies to engage with and be informed by key stakeholders. These activities are identified below.

Direct stakeholder engagement

AUSMASA is keenly interested in connecting widely with the mining and automotive industries, and while several formal engagement mechanisms are detailed below, the Industry Engagement team within AUSMASA stands ready and willing to engage with stakeholders at any time.

The AUSMASA team regularly attends and supports key industry events, conventions, and conferences around Australia to connect with a wide array of stakeholders. The Industry Engagement team is prepared to connect as required with interested stakeholders to discuss concerns and insights or explore opportunities for the mining and automotive industries. Such meetings can occur in person or online.

AUSMASA has staff based in Western Australia, Queensland, and Victoria and regularly visits other states and territories in both metropolitan and regional locations.

AUSMASA aims to respond to industry enquiries within 2 business days.

Strategic Workforce Advisory Panels (SWAP)

AUSMASA's Strategic Workforce Advisory Panels represent a key tripartite engagement strategy. In this strategy, key industry insights and trends are shared with AUSMASA, and recommended projects are considered for endorsement.

Each panel consists of 15 members, including employers, unions, education provider peak bodies (both TAFE and private RTOs), industry associations, and OEMs. The selection of each panel's members was completed in September 2023, and each panel meets 4 times per year.

The composition of each SWAP panel was guided by a range of strategic objectives, including the desire to aim for gender balance, broad geographic representation, a diversity of organisation types and the appointment of members with detailed industry insights.

The membership composition of both SWAPs is available in [Appendix D](#) of this plan.

Technical Advisory Groups (TAGs)

Technical Advisory Groups (TAGs) are established in support of specific projects and are designed to provide subject matter expert advice and guidance throughout the training product development process.

The number of TAGs constituted at any given time will depend on the quantum of projects underway with

AUSMASA. TAGs consist of 12–15 members, with meetings generally occurring monthly for the duration of the project.

As per the guiding principles of SWAPs, TAG members will comprise employers, unions, relevant industry groups and associations as well as education providers.

Industry and education provider roundtables

AUSMASA aims to hear from industry all throughout Australia, noting different regions, rural and remote communities, and certain locations have unique opportunities and challenges that need to be understood.

In addition to the engagement strategies already identified, AUSMASA conducts a range of industry and education provider roundtables, forums, and workshops throughout Australia. These roundtables are open to any interested stakeholder and are offered free of charge.

Roundtables allow participants to hear directly from AUSMASA about the status of current and planned projects. The roundtables feature a facilitated session whereby participants can directly share their insights into candidate attraction and retention issues and opportunities, how well the VET system and current qualifications are serving their needs, and any emerging trends the industry feels will have an impact in the near future.

The insights gained by these roundtables feed directly into AUSMASA's stakeholder insights ecosystem and are used to inform future bodies of work to assist the industry.

Roundtables are run separately for each industry.

State Training Authorities and government departments

AUSMASA values the importance of maintaining collaborative engagement with all relevant STAs and applicable government departments, both state and federal.

Members of AUSMASA's executive leadership team organise engagements with STAs and government departments through regular communication and meetings.

Planned engagement activities

Appendix C

Additional engagement activities are planned to be introduced soon to further enhance AUSMASA's ability to gain valuable industry insights.

Skills Forum 2024

Building on the success of 2023's CMEV, [Critical Minerals Electric Vehicle Skills Forum \(page 20\)](#), AUSMASA will host a Skills Forum in the second half of 2024.

This forum will bring together key stakeholders from across the automotive and mining industries, including employers, unions, OEMs, education providers and government, for a facilitated deep dive into the skills, challenges, and opportunities facing both industries.

As was the case with CMEV, AUSMASA will employ the Rapid Consensus Building approach to the day's activities to derive meaningful plans and next steps for both industries. **Details for the Skills Forum are being finalised.**

The AUSMASA Pulse of the Industry Survey

A new engagement strategy AUSMASA will discuss with key stakeholders is the concept of a broad-ranging survey to gain insights into attraction and retention, emerging trends and satisfaction with specific qualifications and programs.

Noting AUSMASA's stakeholders, especially key industry bodies, have access to large databases of industry participants, it is envisaged that any such survey would be conducted in partnership with these organisations.

Discussions around how such a survey would work are planned to commence in June 2024 with the first survey proposed for October–November, in time to add insights into the next annual workforce plan.

Briefing sessions for STAs and industry regulators

Following on from the dedicated introductory meetings held by AUSMASA with STAs in 2023, the Training Products and Implementation team have commenced regular briefings to keep STAs and industry regulators abreast of projects being undertaken by AUSMASA and seek specific feedback on state and territory priorities.

Creation of a Thought Leadership Network

The mining and automotive industries are at the forefront of technological innovation and exciting new trends and opportunities. While many of AUSMASA's engagement strategies focus on understanding the industry's current and emerging needs, it is equally important to keep an eye on the future pipeline of technology, disruption, and opportunities.

AUSMASA will look to establish a Thought Leadership Network to bring together futurists and experts in the technologies that will shape the future of the mining and automotive industries and other key industry leaders. **The Thought Leadership Network is in its early stages of conceptual development.**

Collaboration with other Jobs and Skills Councils

AUSMASA is privileged to work alongside 9 other dedicated JSCs, who all share the common aim of assisting the industries we represent to thrive.

Many of the challenges and opportunities faced by the mining and automotive industries are shared by others too. Innovative and impactful solutions often benefit from collaborative efforts.

The CEOs of all 10 JSCs meet at least quarterly to share lessons and challenges and identify opportunities for collaborative solutions. In addition to these quarterly CEO meetings, AUSMASA is proposing to discuss 2 additional JSC-wide collaboration opportunities with the other JSCs.

The first proposal will be to work on a large multi-industry career map, highlighting the career entry, progression, and mobility available in Australia's modern workforce. The ability to jointly explore inter-industry linkages, entry and exit points between industries and the shared skills required to make such journeys possible would offer deeper insights into common development opportunities within each JSC's respective training packages and serve as a visual tool for career exploration.

Secondly, AUSMASA proposes the joint hosting by all JSCs of a 'State of the Nation' forum, with a particular focus on technology and its impact on future workforces across multiple industries. The ability to get key stakeholders from multiple industries to collaborate and explore potential solutions to a changing workforce landscape could give rise to an ongoing signature event for the JSC network.

AUSMASA also recognises the mining and automotive industries are naturally closely aligned with other industries, such as oil and gas, transport and logistics, manufacturing, digital skills, and building and construction. It makes sense to seek out close working relationships with the JSCs supporting these industries.

This plan has already highlighted opportunities to work with Future Skills Organisation on improving digital literacy skills and Public Skills Australia on first responder training in relation to EV accidents.









Additionally, AUSMASA will work with BuildSkills Australia, who share elements of the RII training package. This will ensure any work on the package considers the needs of both the mining and civil construction industries.







Engagement with Industry Skills Australia, which represents the transport industry, will likely revolve around the shared exploration of the impact of hydrogen and driverless technologies on heavy transport and opportunities that arise as part of the broader critical mineral strategy as it relates to supply-chain implications from increased onshore refining and processing.

Finally, engaging with the Powering Skills Organisation, which represents energy, oil and gas, and renewables, will likely revolve around shared workforce challenges between mining and the oil and gas industry, noting numerous critical trade roles are shared across both industries.

SWAP members

Appendix D

Automotive SWAP Members	Name	Title	Organisation
	Bruce McIntosh	State Manager	Tasmanian Automotive Chamber of Commerce
	Deborah Joyce	Executive Officer	Automotive Training Board New South Wales
	Ian Price	RTO General Manager	Motor Traders' Association of New South Wales
	Jason Trewin	Chief Operating Officer	I-CAR Australia in Victoria
	Jodi Ryan	General Manager Apprenticeships	Motor Trade Association South Australia Northern Territory
	Jonathon Maile	Executive Director - Engineering, Transport and Defence	South Metropolitan TAFE in Western Australia
	Kate Evans	Training Manager and Apprentice Program Leader	Cummins Asia Pacific
	Lesley Yates	Director of Government Relations and Advocacy	Australian Automotive Aftermarket Association

Automotive SWAP Members	Name	Title	Organisation
	Mark Harper	Industry Consultant Automotive and Engineering	Utilities, Engineering, Electrical and Automotive Training Council
	Matthew Tosolini	National Registered Training Organisation (RTO) and Technical Capability Manager	Komatsu Australia
	Melissa Mangano	National Employee Relationship Manager	United Forklift and Access Solutions
	Paul Baxter	National Skills and Training Coordinator	Australian Manufacturing Workers Union
	Sarah Brunton	National Technical Officer	Electrical Trades Union of Australia
	Todd Hacking	Chief Executive Officer	Heavy Vehicle Industry Association

Key Stakeholders

Appendix E

Automotive Industry Stakeholders

Original Equipment Manufacturers/ Employers	Industry Associations / Peak Bodies
	Bicycle Industries Australia (BIA)
Carloop	Australian Automotive Aftermarket Association (AAAA)
CMV Truck & Bus	Australian Manufacture Workers Union (AMWU)
Cummins	Australian Refrigeration Council (ARC)
Eagers Automotive	Boating Industry Association (BIA)
Ford	Bus Industry Confederation (BIC)
Foton mobility	Capricorn Society
Isuzu	Electrical Trades Union (ETU)
Paccar	Federal Chamber of Automotive Industries (FCAI)
Pure Hydrogen	Future Battery Industries Cooperative Research Centre
Revora	Heavy Vehicle Industry Association (HVIA)
Revora	Manufacturing Skills Queensland
Scania	Motor Trade Association of SA/NT (MTA SA/NT)
Tesla	Motor Trades Association NSW (MTA NSW)



Original Equipment Manufacturers/ Employers	Industry Associations / Peak Bodies
Toyota	Motor Trades Association of Australia (MTAA)
United Forklift and Access Solutions	Motor Trades Association of Queensland (MTAQ)
Velocity Trucks	Motor Trades Association of Western Australia (MTA WA)
Volkswagen Group	Queensland Resources Council
Zero Automotive	Royal Automobile Club of Queensland (RACQ)
CMV Truck & Bus	Tasmanian Automotive Chamber of Commerce (TACC)
Zero Automotive	Truck Industry Council (TIC)
	Utilises Engineering Electrical Automotive Training Council (UEEA)
	Utilities, Engineering, Electrical, Automotive Training Council (UEEA)
	Victorian Automotive Chamber of Commerce (VACC)

State Training Authorities & Government Departments

State Training Authorities	Government Departments
Automotive Training Board NSW	Department of Biodiversity, Conservation and Attractions (DBCA) (Australian Government)
NSW Department of Education, Skills & Pathways Training Services NSW	Department of Education - Training Services NSW Education and Skills Reform Division (NSW)
Office of the State Training Board WA	Department of Education (NT)
Victorian Skills Authority	Department of Energy, Environment and Climate Action (DELWP) (Australian Government)
Skills Canberra	Department of Energy, Environment and Climate Action (VIC)
Skills SA	Department of Industry, Tourism and Trade (NT)
Skills Tasmania	Department of Training and Workforce Development (DTWD) (WA)
South Australian Skills Commission	Department of Youth Justice, Employment, Small Business and Training (QLD)
	Department of Infrastructure, Planning and Logistics (NT)
	Electrical Safety QLD
	Industry Skills Advisory Council NT (ISACNT) (NT)
	Office of Industrial Relations (QLD)

Education Providers

Public Education Providers	Private Education Providers
Box Hill Institute	Aveling
Canberra Institute of Technology (CIT)	I-CAR
Central Queensland University (CQU)	Independent Tertiary Education Council of Australia (ITECA)
Central Regional TAFE (WA)	Komatsu
Charles Darwin University	Monarch
Griffith University	MTA Institute
Bendigo Kangan TAFE	MTA NSW
North Metropolitan TAFE (WA)	MTA SA/NT
North Regional TAFE (WA)	MTA WA
South Metropolitan TAFE (WA)	MTAQ
South Regional TAFE (WA)	Trainwest
Central Regional TAFE	Volkswagen Group Australia
Sydney University	Westrac
TAFE Directors Australia (TDA)	WorkSafe Connect
TAFE NSW	
TAFE QLD	
TAFE SA	
TasTAFE	

Summary of identified areas of focus

Appendix F

Automotive industry

Diversifying the workforce

A1. AREA OF FOCUS

While the automotive industry has several programs designed to attract and support a more diverse workforce, it must continue to prioritise this and lead from the top down. A diversified workforce will help further improve the industry's perception and consequently attract new entrants into automotive careers.

Skilled migration

A2. AREA OF FOCUS

Industry feedback will be important regarding the challenges faced trying to fill vacancies and the importance skilled migration plays in meeting skills demand.

AREA OF FOCUS

More information is necessary to improve the skilled migration system's efficiency and responsiveness to the automotive industry skills shortages.

Workforce attraction and retention

A3. AREA OF FOCUS

The ABS should consider adjusting its terminology within ANZSCO to replace the word 'mechanic' with 'technician'.



Mentorship of apprentices

A4. AREA OF FOCUS

Consideration by government in relation to how industry can be better supported in the critical role of apprenticeship mentoring and support is seen as critical to improving retention and graduation rates. AUSMASA will continue to work with industry to advocate for government support that is targeted, and outcomes based.

A5. AREA OF FOCUS

AUSMASA will work closely with industry to explore how automotive pathway programs can be better designed to address LLND barriers in addition to introducing industry skills and tasks.

International students

A6. AREA OF FOCUS

AUSMASA will investigate the possibility of embedding specific requirements for mandated workplace hours in key AUR qualifications to ensure students undertaking them outside of an apprenticeship pathway are provided the opportunity to apply their learnings and gain actual industry skills.

Electric and hydrogen vehicles

A7. AREA OF FOCUS

AUSMASA will collaborate with the industry to determine how the AUR training package can best support the introduction of ICE and EVs in an evolving repair and maintenance environment.



A8. AREA OF FOCUS

AUSMASA will work with the ABS through its review of ANZSCO to advocate for the addition of EV Technician to the occupation list.

A9. AREA OF FOCUS

Given the automotive industry's safety needs and their intersection with accident repair, AUSMASA will collaborate with PSA to investigate the development of an accredited training program for EV safety and emergency response.

A10. AREA OF FOCUS

AUSMASA will work closely with industry to explore what unique skills are required for the dismantling and recycling of EV vehicles in an end-of-life setting.

A11. AREA OF FOCUS

There are currently no nationally accredited training programs for the service, repair and safe handling of hydrogen as it relates to vehicles within the VET system. Accordingly, AUSMASA is progressing a project proposal for the development of accredited training elements.

Advanced technologies

A12. AREA OF FOCUS

AUSMASA will continue to work with industry to determine what changes to other qualifications or licensing may be required to empower automotive workers to perform some or all ADAS recalibration tasks.



A13. AREA OF FOCUS

A key priority for AUSMASA will be to work with stakeholders in identifying the digital skills needs of the industry through use of the Australian Digital Capability Framework.

Automotive manufacturing

A14. AREA OF FOCUS

AUSMASA will continue to work closely with industry to explore what additional skills may be required to fully realise the opportunities of EV components.

Update on 2023 Identified Opportunities

Appendix G

The following opportunities were identified in AUSMASA's 2023 Initial Workforce Plan 'The Future is Now'. An update on each opportunity is provided below.

Opportunity 1

Given the significant changes happening within the automotive industry with the ongoing growth of battery EVs (light, heavy and mobile plant), the emergence of hydrogen and feedback on the suitability of vocational preparation qualifications in sufficiently promoting all aspects of an automotive career path, AUSMASA proposes to conduct a targeted review of the AUR training package to ensure key elements remain fit for purpose.

Elements of the review would focus on:

- Qualifications with historically low or no enrolments.
- The ability for training providers to train students on the required modern equipment/vehicles to produce credible training outcomes, creating a benchmark of what best practice looks like.
- The potential and desirability of mechanical trade qualifications to incorporate sufficient elements of both EV servicing technology and internal combustion engine (ICE) technology to prevent the need for dual-qualifications and/or skill sets to equip the workforce with the necessary skills to operate in an environment where both types of vehicles will be prevalent for decades to come.

Potential changes to the package's vocational preparation qualifications to ensure they adequately prepare students for higher-level VET training within the automotive industry and suitably expose students to a broad range of skills and vocational opportunities.



STATUS: This opportunity has been progressed via a number of separate projects.

- The qualifications with historically low and no enrolments has been advanced to a fully funded AAS project.
- Equipment requirements and benchmarking of best practice has been captured as part of the CMEV 10-point Strategic Plan and is being viewed as a key Industry Stewardship activity. This will include exploring ways of supporting industry and the VET sector as it relates to accessing appropriate equipment for training.
- The design of mechanical trade qualifications in light of both ICE and EV technologies is progressing with further industry engagement, which will include discussion of how Government EV targets could best be met by upskilling and/or growing the workforce.
- Potential changes to the package's Certificate II qualifications are being progressed via a pilot Automotive Demonstration Project in support of the Qualification Reform Design Group activities.

Opportunity 2

The AUM and RII training packages should also be reviewed for qualifications with historically low or no enrolments, determining their ongoing fit for purpose or other strategies to promote their uptake.

STATUS: Project commenced, see [current projects](#) for more information



Opportunity 3

The Gen-Z research undertaken by AUSMASA has been particularly insightful for establishing Generation Z's views towards the mining industry. While the automotive industry believes that a number of those findings would also hold true for their industry, there is no data to support those views.

Understanding Generation Z's perceptions of the automotive industry would assist in developing specific vocational preparation courses and inform strategies for better promoting the industry to potential new entrants.

As such, a research project to identify the public perception of the automotive industry is proposed.

STATUS: Project commenced, see [current projects](#) for more information

Opportunity 4

AUSMASA proposes to work with key mining industry employers with the view of establishing a research project that collects de-identified exit interview data and explores reasons for workers choosing to change employers within the industry or leave the industry altogether.

Such data would provide valuable insights into what workforce attraction and retention strategies are working, why people choose to leave the industry completely and what role, if any; training opportunities, or lack thereof; or challenges in adapting to new technologies or processes played a part in the worker's decision to leave.

STATUS: Reevaluating best approach, noting Jobs and Skills Australia is conducting research into occupation mobility (Data of Occupation Mobility (DOM)) that should meet the desired outcome of this priority.

Opportunity 5

Understanding the current skills landscape, especially for key roles in both the mining and automotive industries, coupled with a skills map of what will be required in the future for both existing and any new roles, is critical for the development of responsive training packages that meet current and forecasted skills gaps.

AUSMASA proposes undertaking a comprehensive skills mapping exercise for key roles in both industries, for both the current and future state. The key roles of focus will be based on the top roles identified for each industry in this Workforce Plan and further refined through stakeholder feedback.

Aspects of such a project would include:

- Current skills identification of key roles in both industries
- Skills identification of future needs, be they for the same roles or, in the case of role augmentation or transformation, new roles (i.e., critical minerals processing, service and repair of hydrogen vehicles or end-of-life recycling of batteries)
- The development of both present state and future state 'personas'
- Comprehensive skills gap analysis
- Mapping of identified skills against current qualifications

STATUS: Project commenced, see [current projects](#) for more information



Opportunity 6

Utilising the insights gathered from the skills-mapping project, it is proposed that the RII training package elements that deal with mineral processing are reviewed to ensure they are fit for purpose in supporting increased critical minerals onshore refining and processing activities.

STATUS: Pending completion of the skills-mapping project

Opportunity 7

As identified in this plan, car detailers represent a sizable component of the automotive industry workforce. Car detailers would generally be classified as ANZSCO Skill Level 5 occupation where the level of skill is commensurate with an Australian Qualifications Framework (AQF) Certificate I or compulsory secondary education and possibly some on-the-job training. Given car detailer's existing engagement with the industry, AUSMASA proposes to explore what support, including potential Language, Literacy and Numeracy training, is necessary to encourage car detailers to consider a trade in the industry (Light Vehicle Mechanic, Auto Electrician etc).

STATUS: Further industry engagement and research required



Opportunity 8

It has already been identified that skilled migration should play an important part in helping to address skills gaps in the mining and automotive industries. Evidence to date suggests that it is failing to have the full desired impact.

AUSMASA proposes to engage with industry and others to ascertain key barriers to fully utilising skilled migration to assist in addressing skills shortages. As part of this, AUSMASA will seek to understand the relative contribution of employer-sponsored visas to each sector.

This project would also explore the role of Australian international education programs aligned with the mining and automotive industries, with a focus on producing graduates and could assist with skills shortages.

STATUS: Established as a key engagement project for AUSMASA within its industry stewardship remit. Ongoing stakeholder engagement taking place with updated findings and recommendations within this workforce plan.

Opportunity 9

Complementing the skills-mapping project, AUSMASA proposes to undertake a thorough career progression-mapping exercise for both the mining and automotive industries, exploring current pathways for people to join the industries through entry into, through and beyond the VET environment.

Insights gained from this career pathway map could inform the development of new qualifications and skill sets, which could include:



- Specific qualifications and skill sets aimed at helping secondary students, career changers or workers impacted by workforce transformation to gain access to the mining and automotive industries.
- Revised and/or new qualifications and skill sets designed to assist in career progression aligned with the skills that the industry will need both now and in the future.
- Development of higher-education qualifications and/or programs to help workers prepare for and access university-grade disciplines in demand by the mining and automotive industries. Examples could include degree apprenticeships and associate degrees, noting that this supports the focus of the Employment White Paper on higher apprenticeships.

STATUS: Project commenced, see [current projects](#) for more information

Opportunity 10

AUSMASA proposes to monitor the impact of industry initiatives to improve workplace culture, especially as it relates to bullying and sexual harassment. The most useful source of data to inform such progress would be from mining industry employers themselves based on internal reporting and investigation of incidents.

Additional insights would be gained from any changes in trends recorded by the Workplace Gender Equality Agency (WGEA), state-based commissioners and/or regulators and the Australian Human Rights Commission.

STATUS: Updated insights and observations provided in this workforce plan

Opportunity 11

Valuable insights can be learned from investigating how other countries tackle similar skills challenges in their workforce. AUSMASA plans to gain a greater understanding of overseas skills and training strategies with a view of using this to inform other activities identified in this section of the workforce plan.

STATUS: Project scoping continuing

Data Methodology

Appendix H

Explanatory Notes to workforce demographic and occupational insights

AUSMASA's workforce analysis is based on the 2 key government classification systems: ANZSIC and ANZSCO.

- **ANZSIC** (Australian and New Zealand Standard Industrial Classification) classifies businesses into industry sectors, based on the primary activities they are engaged in.
- **ANZSCO** (Australian and New Zealand Standard Classification of Occupations) categorises all occupations and jobs using the skill-based classification.

The total workforce numbers are calculated by aggregating the workforce numbers of ANZSIC 3-digit groups from the Australian Bureau Statistics (ABS) quarterly Labour Force Survey (LFS).

The workforce numbers have been adjusted by averaging the figures for the last four quarters (May 2023 to February 2024) to accommodate the volatility and seasonal impacts on quarterly employment. This methodology also applies to Figure b - total workforce by State/Territory in each data dashboard.

To correctly capture the workforce cohorts relevant to each sub-industry, instead of LFS data, 2021 census data has been utilised to show the workforce characteristics in the age distribution (Figure c), highest education attainment (Figure d), workforce numbers by top occupations (Figure e) and workforce skill levels (Figure g).

Employment Projections

The employment projections in this report (pages 5, 7, 13 and figures f and h of data dashboards) are based on employment projections produced by Victoria University for Jobs and Skills Australia. It is noted the projections are based on a starting point of employment estimated in May 2023 using ABS LFS, which may not align with the employment figures from the latest LFS data (February 2024). It is advised to interpret the projections as how current trends could be expected to play out rather than the precise predictions of the future.

Explanatory Notes to Training Package Insights

The training package enrolments have been grouped by the qualifications that support relevant sub-industries.

- AUM qualifications have been mapped to Automotive Manufacturing sub-industry.
- AUR retail qualifications have been mapped to Automotive retail and wholesale sub-industry.
- AUR service and repair qualifications have been mapped to Automotive repair and maintenance sub-industry.
- RII Coal qualifications have been mapped to Coal mining sub-industry.
- RII field exploration and drilling operations qualifications have been mapped to the Exploration and Other mining support services sub-industry.
- The other RII qualifications are shared among the Metal Ore and Non-metallic mineral and quarrying.

Caveats in interpreting the training package data

The Civil infrastructure qualifications under RII training packages have been excluded as these qualifications are outside of AUSAMSA's scope. BuildSkills Australia is responsible for RII civil infrastructure qualifications.

Data gaps and limitations

- As addressed in the Critical Minerals section, there is a limitation with ANZSIC classifications in identifying the workforce for critical minerals. Even with the most granular level of ANZSIC codes, the workforces for critical minerals have been distributed across multiple ANZSIC classes with the other resource types that are not critical minerals. It would be beneficial to have a dedicated ANZSIC group to reflect the critical mineral workforce.
- Although NCVER enrolment data is useful in identifying trends, the ability for JSCs to also have access to statistical data on enrolments and completions by education providers would be highly useful. Such data could be used to inform specific engagement activities. It is noted that such data would be sensitive and incapable of being published but would still prove useful for internal strategic decision-making.
- NCVER data on apprenticeship commencements and completions is highly useful, though additional insights such as student progression (in terms of time and unit progression) at the time of apprenticeship discontinuation would aid in better identifying opportunities for intervention and redress

Enrolment data tables

Appendix I

The following NCVET data shows enrolment data for the 2 Automotive training packages under AUSMASA's remit (AUM, AUR). At the time of publication of the 2024 Workforce Plan, the most current enrolment statistics available were for 2022. AUSMASA will provide updated statistics to its stakeholders once 2023 enrolment data becomes available.

TRAINING PACKAGE ENROLMENT DATA, 2022

Automotive Industry Manufacturing (AUM)		Total Enrolments	% Male	% Female & Other	Commencements	Total Completions	Apprentices / Trainees	International Students	Release Status
AUM30218	Certificate III in Automotive Manufacturing Technical Operations - Bus, Truck and Trailer	468	96.6%	3.4%	209	70	428	-	Current
AUM20218	Certificate II in Automotive Manufacturing Production - Bus, Truck and Trailer	7	100.0%	0.0%	8	4	0	-	Current
Total		475	96.6%	3.4%	217	74	428	-	

TRAINING PACKAGE ENROLMENT DATA, 2022 (page 1)

Automotive Industry Retail, Service and Repair (AUR)	Total Enrolments	% Male	% Female & Other	Commencements	Total Completions	Apprentices / Trainees	International Students	Release Status
AUR30620 Certificate III in Light Vehicle Mechanical Technology	15,618	95.4%	4.5%	13,156	2,075	10,064	4,557	Current
AUR30616 Certificate III in Light Vehicle Mechanical Technology	11,127	95.6%	4.3%	1,822	3,855	7,638	2,688	Superseded
AUR20720 Certificate II in Automotive Vocational Preparation	9,778	86.8%	13.0%	9,490	2,286	13	1	Current
AUR31116 Certificate III in Heavy Commercial Vehicle Mechanical Technology	4,551	95.9%	4.1%	1,049	1,284	3,828	231	Superseded
AUR40216 Certificate IV in Automotive Mechanical Diagnosis	4,378	97.8%	2.1%	2,842	2,829	0	3,937	Current
AUR31120 Certificate III in Heavy Commercial Vehicle Mechanical Technology	4,274	96.0%	4.1%	3,888	484	3,390	222	Current
AUR20716 Certificate II in Automotive Vocational Preparation	3,823	89.2%	10.6%	2,062	1,909	1	21	Superseded
AUR31216 Certificate III in Mobile Plant Technology	3,471	93.9%	5.9%	916	1,097	2,911	168	Superseded
AUR31220 Certificate III in Mobile Plant Technology	3,061	91.2%	8.5%	2,935	600	2,354	38	Current
AUR30320 Certificate III in Automotive Electrical Technology	2,772	91.6%	8.1%	2,525	390	1,930	354	Current
AUR50216 Diploma of Automotive Technology	2,664	98.0%	1.7%	1,793	1,532	0	2,588	Current
AUR30316 Certificate III in Automotive Electrical Technology	2,481	92.7%	7.5%	682	804	1,932	145	Superseded
AUR20520 Certificate II in Automotive Servicing Technology	1,638	87.3%	12.8%	1,563	449	248	12	Current
AUR20516 Certificate II in Automotive Servicing Technology	1,635	86.8%	12.9%	856	564	177	0	Superseded
AUR20220 Certificate II in Automotive Air Conditioning Technology	1,527	97.2%	2.0%	1,423	1,176	121	0	Current
AUR31020 Certificate III in Automotive Sales	1,277	75.8%	23.5%	1,114	93	744	0	Current
AUR10120 Certificate I in Automotive Vocational Preparation	1,217	80.5%	19.4%	1,177	635	72	0	Current

TRAINING PACKAGE ENROLMENT DATA, 2022 (page 2)

Automotive Industry Retail, Service and Repair (AUR)	Total Enrolments	% Male	% Female & Other	Commencements	Total Completions	Apprentices / Trainees	International Students	Release Status
AUR32416 Certificate III in Automotive Refinishing Technology	1,105	89.5%	10.3%	251	307	1,005	5	Superseded
AUR32120 Certificate III in Automotive Body Repair Technology	1,002	97.4%	2.2%	793	89	937	1	Current
AUR32116 Certificate III in Automotive Body Repair Technology	989	97.3%	2.2%	217	270	863	49	Superseded
AUR32420 Certificate III in Automotive Refinishing Technology	982	89.9%	10.0%	797	83	907	0	Current
AUR21920 Certificate II in Automotive Tyre Servicing Technology	964	95.1%	3.3%	817	330	299	0	Current
AUR31016 Certificate III in Automotive Sales	958	82.9%	17.0%	509	162	473	0	Superseded
AUR20218 Certificate II in Automotive Air Conditioning Technology	894	96.6%	3.5%	533	773	73	11	Superseded
AUR30420 Certificate III in Agricultural Mechanical Technology	795	97.0%	3.5%	728	63	772	0	Current
AUR30416 Certificate III in Agricultural Mechanical Technology	615	96.9%	2.9%	113	149	552	0	Superseded
AUR50116 Diploma of Automotive Management	611	95.4%	3.9%	380	232	0	535	Current
AUR30816 Certificate III in Motorcycle Mechanical Technology	487	94.7%	3.9%	124	124	433	0	Superseded
AUR30820 Certificate III in Motorcycle Mechanical Technology	482	95.0%	5.8%	394	21	459	0	Current
AUR30516 Certificate III in Marine Mechanical Technology	463	98.1%	1.7%	139	122	405	0	Superseded
AUR20416 Certificate II in Automotive Electrical Technology	449	89.8%	9.4%	383	312	14	0	Superseded
AUR32220 Certificate III in Automotive Glazing Technology	347	90.5%	9.5%	223	9	347	0	Current
AUR30716 Certificate III in Outdoor Power Equipment Technology	260	94.6%	2.7%	71	61	232	0	Superseded

TRAINING PACKAGE ENROLMENT DATA, 2022 (page 3)

Automotive Industry Retail, Service and Repair (AUR)	Total Enrolments	% Male	% Female & Other	Commencements	Total Completions	Apprentices / Trainees	International Students	Release Status
AUR32518 Certificate III in Automotive Underbody Technology	255	99.6%	1.2%	99	49	237	0	Current
AUR30520 Certificate III in Marine Mechanical Technology	226	97.3%	2.7%	226		210	0	Current
AUR20420 Certificate II in Automotive Electrical Technology	221	88.7%	10.9%	214	106	25	0	Current
AUR20916 Certificate II in Automotive Body Repair Technology	185	88.6%	11.9%	40	65	72	0	Superseded
AUR30720 Certificate III in Outdoor Power Equipment Technology	185	95.7%	4.9%	167	5	180	0	Current
AUR20920 Certificate II in Automotive Body Repair Technology	176	92.0%	7.4%	146	76	75	0	Current
AUR30220 Certificate III in Bicycle Workshop Operations	162	91.4%	7.4%	158	21	77	0	Current
AUR31520 Certificate III in Automotive Diesel Engine Technology	138	98.6%	0.0%	102	45	25	104	Current
AUR40820 Certificate IV in Automotive Mechanical Overhauling	120	96.7%	1.7%	63	80	0	114	Current
AUR21220 Certificate II in Automotive Underbody Technology	103	89.3%	4.9%	76	33	71	0	Current
AUR31316 Certificate III in Automotive Engine Reconditioning	89	98.9%	0.0%	19	17	79	0	Current
AUR21820 Certificate II in Automotive Steering and Suspension System Technology	80	85.0%	7.5%	60	21	20	0	Current
AUR21916 Certificate II in Automotive Tyre Servicing Technology	78	97.4%	3.9%	64	9	5	0	Superseded
AUR32216 Certificate III in Automotive Glazing Technology	74	95.9%	1.4%	2	44	74	0	Superseded
AUR20820 Certificate II in Outdoor Power Equipment Technology	69	101.4%	1.5%	69	59	0	0	Current
AUR20320 Certificate II in Bicycle Mechanical Technology	64	85.9%	9.4%	58	56	1	0	Current

TRAINING PACKAGE ENROLMENT DATA, 2022 (page 4)

Automotive Industry Retail, Service and Repair (AUR)	Total Enrolments	% Male	% Female & Other	Commencements	Total Completions	Apprentices / Trainees	International Students	Release Status
AUR32320 Certificate III in Automotive and Marine Trimming Technology	61	77.0%	19.7%	61	11	58	0	Current
AUR40416 Certificate IV in Automotive Performance Enhancement	59	93.2%	1.7%	56	57	0	59	Deleted
AUR30116 Certificate III in Automotive Administration	56	19.6%	62.5%	33	11	54	0	Current
AUR30920 Certificate III in Motor Sport Technology	51	82.4%	9.8%	28	11	0	0	Current
AUR21520 Certificate II in Automotive Cylinder Head Reconditioning	49	95.9%	2.0%	49	34	0	0	Current
AUR32316 Certificate III in Automotive and Marine Trimming Technology	49	89.8%	12.2%	3	18	51	0	Superseded
AUR40620 Certificate IV in Automotive Electrical Technology	47	100.0%	0.0%	29	28	0	34	Current
AUR31820 Certificate III in Heavy Commercial Trailer Technology	45	100.0%	0.0%	30	9	43	0	Current
AUR30216 Certificate III in Bicycle Workshop Operations	42	88.1%	4.8%	21	12	31	0	Superseded
AUR40116 Certificate IV in Automotive Management	28	85.7%	10.7%	21	8	8	7	Current
AUR10116 Certificate I in Automotive Vocational Preparation	27	85.2%	29.6%	24	21	0	0	Superseded
AUR31420 Certificate III in Automotive Diesel Fuel Technology	23	108.7%	4.4%	13	7	22	0	Current
AUR40720 Certificate IV in Automotive Body Repair Technology	12	100.0%	0.0%	12	10	0	8	Current
AUR40816 Certificate IV in Automotive Mechanical Overhauling	11	100.0%	0.0%	11	14	0	11	Superseded
AUR21120 Certificate II in Automotive Sales	6	33.3%	33.3%	4	3	6	0	Current
AUR31816 Certificate III in Heavy Commercial Trailer Technology	5	100.0%	0.0%	3	4	5	0	Superseded
AUR20316 Certificate II in Bicycle Mechanical Technology	4	100.0%	0.0%	0	0	4	0	Superseded

TRAINING PACKAGE ENROLMENT DATA, 2022 (page 5)

Automotive Industry Retail, Service and Repair (AUR)	Total Enrolments	% Male	% Female & Other	Commencements	Total Completions	Apprentices / Trainees	International Students	Release Status
AUR32721 Certificate III in Automotive Electric Vehicle Technology	4	100.0%	0.0%	4		0	0	Current
AUR40320 Certificate IV in Motor Sport Technology	4	100.0%	0.0%	4		0	0	Current
AUR21816 Certificate II in Automotive Steering and Suspension System Technology	3	100.0%	0.0%	0	3	5	0	Superseded
AUR31616 Certificate III in Automotive Drivetrain Technology	2	100.0%	0.0%	0	0	2	0	Deleted
AUR40616 Certificate IV in Automotive Electrical Technology	2	100.0%	0.0%	2	0	0	0	Superseded
AUR31516 Certificate III in Automotive Diesel Engine Technology	1	100.0%	0.0%	0	0	0	0	Superseded
Total	89,511	93.0%	6.8%	57,736	26,116	44,634	15,900	

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