



ENGINEERING & AUTOMOTIVE  
TRAINING COUNCIL INC.

# Engineering and Automotive Training Council Industry Workforce Development Plan 2012-2013

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## Plan Details:

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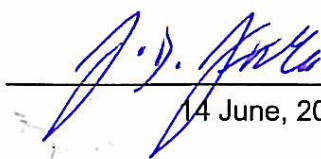
## Approval:

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| <b>Approval Authority:</b> | Chair of Training Council's Board of Management |
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## Signature:

**Date:**

  
14 June, 2013

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| <b>Endorsement:</b> | Department of Training and Workforce Development |
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**Signature:**

**Date:**

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## FOREWORD

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This Industry Workforce Development Plan has been produced by the Engineering and Automotive Training Council Inc (EATC).

The Engineering and Automotive Industries are two of the largest economic drivers in the State of Western Australia. Virtually all occupations within these industries are utilised in other industry sectors in Western Australia, including mining, oil and gas, transport, aviation, health, food, agriculture, manufacturing, marine, power generation, building and engineering construction etc.

With the EATC occupational coverage crossing such a wide variety of industry sectors, it becomes necessary to provide a workforce plan that takes into consideration the context of application of our occupational skills.

This document summarises the content of other reports produced by the Engineering and Automotive Training Council that can be viewed on the EATC's website [www.eatc.com.au](http://www.eatc.com.au)

Gathering information for these reports has been achieved through a variety of resources which includes questionnaires, interviews, site visits, feedback and constant discussions with those working within the Engineering and Automotive Industries in Western Australia.

As the Chair of the EATC Board of Management, I am pleased to present this report to all industry stakeholders, government agencies and the wider community for comment and constructive feedback. This report should be viewed as a “work in progress” document that is subject to future refinement and updating.

I would like to take this opportunity to thank all of the EATC staff on behalf of the Training Council for their hard work in producing this report.

It gives me great pleasure to commend this report to you.



**JOE FIALA**  
**CHAIRPERSON**

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## OVERVIEW

### Issuing Authority

This Industry Workforce Development Plan (IWDP) is issued under contract between the Department of Training and Workforce Development and the Engineering and Automotive Training Council (EATC) in accordance with the requirements of Schedule 2 of the Service Agreement and is updated annually by the EATC.

### Aim

The aim of this IWDP is to outline automotive and engineering industry workforce development trends, strategies, and actions that provide high-level advice to the Department to inform future strategic directions and Skilling WA – A Workforce Development Plan for Western Australia.

### Objectives

The objectives of this plan are to provide the Department with the following information:

(a) Industry Portfolios of the Engineering and Automotive Training Council:

#### Engineering Industry Profiles

- Aerospace Industry - Light Aircraft, Commercial Aircraft and Military- Avionics, Mechanical and Structures maintenance.
- Engineering Fabrication - Sheetmetal, Foundry, Heavy Fabrication Sector, Surface Finishing (Powder Coaters, Galvanisers and Electro Plating, Industrial Painters), Light Fabrication (Balastrade, Wrought Iron Works).
- Airconditioning and Refrigeration - Domestic and Commercial.
- Engineering Construction- Mining, Oil & Gas, Lift Industry, Commercial Buildings, etc.
- General Engineering - Maintenance across all industry sectors, ie Health, Food, Power Generation, Water Corporation, Mining, Oil and Gas, Transport, Agriculture and Manufacturing, etc.
- Ship and Boat Building - Manufacture and Maintenance of Leisure Craft, Fishing Boats, Passenger Ferries, Freight Shipping Vessels and Military Vessels.
- Engineering Electrical/Electronics/Instrumentation - Manufacture and Maintenance of Electrical Components, Switch Boards, Electric Motor Rewinds, PLC Controlled Flow Systems, etc.
- Professional Engineering Sector - Engineering Design, Mechanical, Structural and Production Engineering Services, Drafting Services, Metallurgical Services, Non-Destructive Testing (NDT) Services, Drafting Services and Engineering Consulting Services, etc.
- Miscellaneous Engineering Sectors - Locksmiths, Watch & Clock Repairs, Jewellery Manufacturing.

#### Automotive Industry Profiles

- Dealership/Retail - Light Vehicles, Motorcycles, Trucks, Mobile Equipment, Bicycles, Light Marine.
- Service and Repair Sector - Light Vehicles, Motorcycles, Bus and Trucks, Heavy Mobile Equipment, Agricultural Equipment, Bicycles, Tyre Outlets, Outdoor Power and Equipment, Light Marine, Body Trimmers, Auto Glazing and Auto Electrical.
- Vehicle Body Repair - Light Vehicles, Bus and Trucks
- Vehicle Body Building - Truck Trailers, Roo-Bars, Caravans/Mobile Homes, etc
- Motor Sports - Light Vehicle, Motorcycles, Trucks and Go-Carts
- After Market - Spare Parts, Motor Accessories Retail.

(b) High level state and national industry data and forward projections in regards to:

- Economic trends and impacts on workforce planning:

The current uncertainty surrounding the demand for commodity such as Iron Ore, Coal and other base metals has led to the deferment of many resource projects in Western Australia. This action has a direct impact on the skills demand for professional and technical occupations covered by the EATC, ie Drafters, Engineers, Fabricators, Mechanical Fitters etc.

Recently resource companies have terminated the employment of entire teams of workers involved with the development of prospective project; this has caused some occupations like “Drafter” to be in over supply.

- Current and future labour market modeling consistent with information provided for the development of the State Priority Occupation List (SPOL):

Notwithstanding the data provided to the Department for the development of the SPOL, the labour market both nationally and in Western Australia for some of the occupations covered by the EATC has shifted slightly to be in less demand. This shift is as a direct result of the decision to defer resource projects; a more detail explanation of the occupations affected can be seen under Section 3 Industry Profiles of this plan.

- Regional variations that may affect workforce planning:

The regional consultation undertaken by the EATC has shown similarities between the Perth metropolitan area and regions in terms of shortages for skilled labour in most trades and professional occupations covered by the EATC. Most regional employers expected skill shortages to be an issue for the next several years.

In all regional areas, one issue that is raised constantly by employers is the lack of training infrastructure/resources that regional training providers have to undertake apprenticeship training. In most regions there is only one public provider available, unlike the Perth metropolitan area where employers have a choice of public and private training providers.

Regional employers believe the lack of training resources contributes to workforce planning issues.

- Training and education including VETiS:

The training sector in Western Australia in most parts is responding to the demand for additional trade training due mainly as a result of the expansion in the resource sector and the “crowding-out” of skilled labour to that sector.

On the other hand, the education system in WA has been slow to respond to the need for better collaboration between the VET and education sector. There is an urgent need to better prepare students for a life in the workforce by structuring student curriculum to encompass the fundamental skills needed to operate in a business. To make them more “work ready”.

More involvement of industry and the VET sector in the development of VETiS program delivery will go a long way to break down the barriers between the two sectors and improve the candidates for apprenticeship training.

- Industry critical aspects that may impact on future planning:

The key industry critical aspects that will impact on future planning are:

- Skilled labour supply not keeping up with demand (baby boomer retirements, attraction of new recruits to the automotive and engineering industries).
- Quality of Apprenticeship training (deregulation of the public training providers).
- The ability of local industry to attract work associated with resource projects.
- Availability of funding for upskilling existing workers.

- (c) Identification of issues that impact on State Workforce Planning and that inform and are linked to Skilling WA strategies:

- Increase in participation of under-represented groups within the automotive and engineering in WA. **(SWA Strategic Goal 1.2)**
- Increase the number of automotive and engineering apprentices in training in WA to meet the skills needs of the State. **(SWA Strategic Goal 4.1)**
- Balancing the level of skilled migration to ensure there is no adverse affect to automotive and engineering apprentice intake in WA. **(SWA Strategic Goal 2.1)**
- Adequate infrastructure for regional training providers for trade training needs. **(SWA Strategic Goal 3.2).**

These objectives are established so that effective development of workforce planning in regions and at State level can occur.

### Industry Snapshots

#### Engineering

##### General Facts

- Engineering SMEs play a critical role in the Australian economy; they generate \$530.248 billion or 57% of the value of Australia's GDP [Source MSA Environmental Scan 2013]
- 65% of engineering companies require higher-level technical skills within the workforce to remain competitive [Source MSA Environmental Scan 2013]
- 40,000 people are employed in WA in metal, engineering and boating industries, 87% of which are male
- \$180 billion worth of projects are currently committed to or are under consideration in WA, creating over 50,000 construction jobs and 15,000 permanent jobs, many of which will be engineering or manufacturing occupations
- \$176 billion of other projects for the mining and resources sectors are currently on hold or in the planning stage
- 65% of engineering and manufacturing companies are reporting skill shortages at Certificate III–IV level and 42% at Certificate II production level

##### Engineering Aerospace

- Aircraft manufacturing, maintenance and repair are an integral part of the Australian aerospace industry. Occupations that work within this sector are Aircraft Maintenance Engineer (Avionics), Aircraft Maintenance Engineer (Mechanical), Aircraft Maintenance Engineer (Structures)
- Commercial aircraft parts manufacturing nationally accounts for 34% of the market place, with military aircraft manufacturing, parts and guided missiles accounting for 33.5%
- Companies operating in WA - 51
- WA percentage of market share - 12.8%

##### Engineering Airconditioning and Refrigeration

- Firms in this industry operate within wide and diverse sectors such as resource and mining, automotive, aerospace, construction, retail, hospitality, health
- Occupations that work within this sector are Metal Fabricators, Welders, Mechanical Fitters, Electricians, Drafters and Refrigeration Airconditioning Mechanics
- Companies operating in WA – 490
- Revenue generated throughout Australia - \$15.96 billion
- Consumes 21.9% of all electricity produced in Australia
- Produces 7% of all greenhouse gas emissions in Australia

##### Engineering Construction

- Firms in this industry are mainly engaged in the construction of engineering projects or infrastructure such as railways, dams, irrigation systems, harbour or river works, water or gas supply systems, oil refineries (except buildings), pipelines and in the on-site assembly of boilers, furnaces or heavy electrical machinery from prefabricated components, or in the general repair of such structures, machinery or equipment
- Occupations that work within this sector are Metal Fabricators, Welders, Mechanical Fitters, Heavy Duty Fitters, Electricians, Drafters, Locksmiths, Plant Mechanics and Refrigeration Air Conditioning Mechanics
- Companies operating in WA - 808

- WA percentage of market share - 25%
- Revenue generated within WA - \$48.6 billion

### **General Engineering**

- Firms in this industry operate within wide and diverse sectors such as resource and mining, automotive, aerospace and construction
- Occupations that work within this sector are Metal Fabricators, Welders, Mechanical Fitters, Heavy Duty Fitters, Electricians and Drafters
- Companies operating in WA - 611
- WA percentage of market share - 10%

### **Engineering Ship and Boat Building**

- The marine sector is made up of a number of industries including defence, commercial fishing, transport (ferries), tourism and recreation
- Occupations that work within this sector are Shipwrights, Marine Engineers, Metal Fabricators, Welders, Mechanical Fitters, Heavy Duty Fitters, Electricians, Drafters, Locksmiths, Plant Mechanics and Refrigeration Air Conditioning Mechanics
- Companies operating in WA - 176
- WA percentage of market share: Boatbuilding 18.4%, Shipbuilding 27%
- Value of the marine industry to the WA economy is \$3.58 billion

### **Engineering Electrical/Electronics**

- Firms in this industry operate within wide and diverse sectors such as mining and resources, construction and health
- Occupations that work within this sector are Mechanical Fitters, Electricians, Drafters, Plant Mechanics and Refrigeration Air Conditioning Mechanics
- Companies operating in WA - 74
- WA percentage of market share; motors/generators/electrical equipment manufacturing 10.3%, electronic components 7%, telecommunications 9.6%

### **Engineering Locksmiths, Watchmakers and Jewellers**

- Firms in these industries operate within wide and diverse sectors such as building and construction, retail and the arts
- Occupations that work within this sector are Electricians, Locksmiths, Watchmakers and Jewellers
- Companies operating in WA - 504
- WA percentage of market share - 9.2%
- Revenue generated throughout Australia - \$889.5 million

### **Engineering Manufacturing**

- Firms in this industry operate within wide and diverse sectors such as mining and resources, automotive, aerospace, construction and railways
- Occupations that work within this sector are Shipwrights, Marine Engineers, Metal Fabricators, Welders, Mechanical Fitters, Heavy Duty Fitters, Electricians, Drafters, Locksmiths, Plant Mechanics and Refrigeration Air Conditioning Mechanics
- Companies operating in WA – 808
- WA percentage of market share; structural metal products 10.4%, tool and hardware 13.3, sheet metal products 10.9
- Revenue generated throughout Australia - \$12.3 billion



## Automotive

### General facts

- Annual turnover in the Australian automotive sector is in excess of \$209 billion
- The Automotive industry pays more than \$10 billion in tax to Australian governments each year
- Sales and service income represents 2.7% of Gross Domestic Product (GDP)
- Nationally the automotive industry employs approximately 390,000 people
- Evidence suggests a large cohort of automotive labour (approximately 13,000 mechanics) have left the automotive industry and are now providing services to other industries, including mining [Source ASA Environmental Scan 2013]
- Passenger vehicles contribute 7.6% of Australia's greenhouse gas emissions
- The Australian automotive sector exports around \$3.3 billion worth of vehicles and components per year
- The Automotive industry is the largest contributor to manufacturing research and development in Australia, investing around \$668 million. One of the benefits of this investment is that new vehicles emit 20% fewer CO<sub>2</sub> emissions than in 2000.
- There are 38,736 people employed within the automotive industry in Western Australia
- Employment within the automotive industry in Western Australia has fallen dramatically by 4471 persons or 10.3% within the past 12 months. [Source ASA Environmental Scan 2013]
- The largest impact has occurred within the Automotive Repair and Maintenance sector, which has shed 4250 positions over the period, followed by the Motor Vehicle and Parts Manufacturing and Motor Vehicle Parts and Tyre Retailing sectors (losses of 1500 and 1000 persons respectively) [Source ASA Environmental Scan 2013]
- 50.7% of Western Australian automotive business are suffering from skilled labour shortages  
60.8% of business expect that skill shortages will affect their business operations within the next 12 months. [Source ASA Environmental Scan 2013]

### Automotive Service and Repair (Cars, Trucks, Motorcycles, Bicycles)

- Firms in this industry operate within wide and diverse sectors such as resource and mining, aerospace, construction, health, utilities, sport and recreation and emergency services
- Occupations that work within this sector are Automotive Technicians (Light and Heavy), Motorcycle Technicians, Auto Electricians, Vehicle Trimmers, Automotive Glaziers, Tyre Fitters, Bicycle Technicians, Automotive Airconditioning Technicians, Engine Reconditioners and Radiator Specialists
- Companies operating in WA - 3052
- WA percentage of market share - 11.5%
- Persons employed - 15,750 [Source ABS]
- Skill Shortage in WA - 52.6%

### Automotive Vehicle Body Repair (Panel and Paint)

- Occupations that work within this sector are Panel Beater, Vehicle Painter, Auto Electricians, Vehicle Trimmers, Automotive Glaziers and Tyre Fitters
- Companies operating in WA – 489
- Persons employed (included within automotive service and repair figure)
- Skill Shortage in WA - 50%

**Automotive Vehicle Body Building (Buses, Trucks, Trailers, Recreational Vehicles)**

- Firms in this industry operate within wide and diverse sectors such as, resource and mining, aerospace, construction, health, utilities, sport and recreation, emergency services and building specialised equipment required by these industries
- Occupations that work within this sector are Vehicle Body Builder, Vehicle Painter, Automotive Technicians (Light and Heavy), Auto Electricians, Vehicle Trimmers, Automotive Glaziers and Tyre Fitters
- Companies operating in WA – 176
- Persons employed (included within automotive service and repair figure)
- Nationally the push to increase the use of public transport has led to an increase in small bus sales up 21.4% and large bus sales up 47.4%
- Skill Shortage in WA - 60%

**Marine (Light) Recreational Boating**

- Occupations that work within this sector are Marine Technicians, Automotive Technicians (Light and Heavy), Auto Electricians and Vehicle Trimmers
- Companies operating in WA - 98
- Persons employed - 662 *[Source ABS]*
- Skill Shortage in WA - 50%

**Automotive Aftermarket (Including Accessories, Motor Trimmers, Outdoor Power and Equipment, Vehicle Dismantlers)**

- Occupations that work within this sector are Auto Electricians, Vehicle Trimmers, Automotive Glaziers, Tyre Fitters, Automotive Airconditioning Technicians, Engine Reconditioners, Radiator Specialists, Automotive Administration, Automotive Sales and Parts Interpreters
- Companies operating in WA - 786
- Persons employed - 7074 *[Source ABS]*
- Skill Shortage in WA - 58.3%

**Automotive Dealership/Retail (Light and Heavy Vehicle)**

- Occupations that work within this sector are Automotive Technicians (Light and Heavy), Auto Electricians, Vehicle Trimmers, Automotive Glaziers, Tyre Fitters, Automotive Airconditioning Technicians, Engine Reconditioners, Radiator Specialists, Automotive Administration, Automotive Sales and Parts Interpreters
- Companies operating in WA - 478
- Persons employed - 10,250 *[Source ABS]*
- Skill Shortage in WA - 60%

## Industry Sections and Training Packages

### Engineering and Automotive Training Council

#### Automotive Industry Sectors

- (a) Service & Repair (RS&R)
- (b) Vehicle Body Repair (Panel & Paint)
- (c) Vehicle Body Building
- (d) Motorsport
- (e) After Market
- (f) Dealership/Retail

#### Training Packages

- (a) AUR12
- (b) AUR12
- (c) AUM12
- (d) AUR12
- (e) AUR12
- (f) AUR12

#### Engineering Industry Sectors

- (a) Aerospace
- (b) Heavy Engineering Fabrication
- (c) Airconditioning & Refrigeration
- (d) Engineering Construction
- (e) General Engineering
- (f) Ship & Boat Building
- (g) Engineering Electrical/Electronics
- (h) Locksmiths, Watchmakers, Jewellers
- (i) Manufacturing
- (j) Composite Materials Manufacturing

- (a) MEA11
- (b) MEM05
- (c) MEM05
- (d) MEM05
- (e) MEM05
- (f) MEM05
- (g) MEM05
- (h) MEM05
- (i) MSS11
- (j) MEM05

### Workforce Development Drivers - Engineering and Automotive Industries

- (a) Ongoing demand for key occupations, eg Mechanical Fitters, Metal Fabricators, Motor Mechanics (light and heavy), Auto Electricians, Panel Beaters etc. Critical shortage of tradespersons with specialist skill sets, such as Mechanical Fitters with hydraulic experience, Metal Fabricators with coded welding skills and Automotive Technicians with high diagnostic skills.
- (b) Competition for skilled labour, due mainly as a result of the syphoning effect of skilled trades to the higher paying resource industry, for example, Light Vehicle Technicians being retrained to work on heavy mobile equipment on mine sites.
- (c) Rapid technological change within our industries, especially within the automotive sectors of light and heavy vehicle and the vehicle body repair industry.
- (d) Economic uncertainty/instability is currently a major workforce development driver that affects the automotive and the engineering industries. The shelving of project work by some resource companies is having a direct effect on many contractors associated with the project work. This uncertainty also affects automotive retail sales, which have been down for the 2011-2012 financial year.

## Summary of Issues Table

| Issue   | Recommended Priority Action(s)  | Skilling WA Strategy   | Lead Agency  | Due Date    |
|---|---|--|--------------|-------------|
| <p><b>The vehicle body repair (panel and paint)</b></p> <p>sector of the automotive industry is also confronted with chronic skill shortages and a significant image problem relative to attracting people into the industry sector. With the volume of motor vehicles increasing on the roads every year, it is essential that the industry sector grows to keep pace with demand. Unfortunately, with chronic skill shortage issues confronting this sector, the industry is not now able to meet customer demands.</p> | <p>The EATC is also currently coordinating a promotional campaign to increase the 2013 intake of vehicle body repair apprentices, and to attract existing workers into the industry through special retraining programs. The EATC will continue the work started in 2012 with the promotion of its “Day in the Life” panel and paint promotional video, and will work corroboratively with industry stakeholders, MTAWA, to promote the vehicle body repair sector, through the federally funded Advisor Program.</p> <p>The EATC are working with industry stakeholders to roll out a pilot traineeship program, to address current and future skill shortages, within the Panel and Paint sector</p> <p>The promotional campaign and retraining initiatives may need to attract special government funding.</p> | <p><b>3.1.1</b><br/><b>3.1.2</b><br/><b>3.2.10</b><br/><b>3.2.12</b></p>                                 | EATC         | 2013 - 2014 |
| <p><b>National licensing for electrical trades.</b></p> <p>From mid 2013, national licensing will commence for electrical trades, state and territory licenses will be transferred across to the new system at this time. The Electrical Regulators Advisory Committee (ERAC) made a decision not to recognise the MEM30405 qualification for licensing as a trade Electrician (Mechanic). ERAC also</p>  | <p>Industry needs to decide if they want or need electrical mechanics or if fitters are sufficient. However, they should not be forced by a regulator or government decision to take a person with a licence that does not meet their needs.</p> <p>All electrical apprentices currently need to do the “Capstone test” as it is part of the training footprint. The Capstone rules and content will be re-written by</p>   | <p><b>3.1.1</b><br/><b>3.1.2</b><br/><b>3.1.3</b><br/><b>4.1.3</b><br/><b>4.1.4</b><br/><b>4.2.1</b></p> | EATC and MSA | June 2013   |

| Issue  | Recommended Priority Action(s)  | Skilling WA Strategy | Lead Agency | Due Date |
|--|---|----------------------|-------------|----------|
| <p>advised that from 30 September 2015 the MEM30405 qualification will not be recognised as eligible for an Electrician's licence. Only the EE-Oz Training Package qualification will be recognised.</p> <p>ERAC will accept the MEM30405 qualification to be recognised as eligible for an Electrical Fitters license. This does not require a Capstone test or installation experience. After 2015 an electrical fitter wishing to upgrade to a full Electrician's License, will need to apply to the Electrical Licensing Board (ELB) for a permit to carry out electrical installing work under supervision. They will be issued with a logbook to record their on-the-job electrical installing experience. After attaining at least twelve months installing experience, applicants will sit the Electrical Licensing Board's examination (Capstone). If successful, they will be issued an Electrician's License upon payment of the prescribed fee.</p> <p>This essentially makes the MEM apprenticeship a five year <u>fixed</u> term to reach the same license eligibility as the EE-Oz qualification/apprenticeship does in four years.</p> <p>This issue is critical to the resources and engineering construction and maintenance</p> | <p>Curriculum Department in DTWD. DTWD also made an offer to the Electrical Licensing Board that additional installation units be added to the engineering training footprint and be funded up to 1240 hours, essentially to give a dual-trade status. An installation logbook is completed during the four-year engineering apprenticeship and, after successful completion of a Capstone test, all the evidence is presented to the ELB at the time they apply for a licence at the end of the apprenticeship. Where there is no installation evidence then an Electrical Fitter's licence will be issued.</p> <p>This offer was refused; no valid reason was given other than the ELB was bound by the ERAC decision.</p> <p>The National Skills Council, Manufacturing Skills Australia (MSA), wrote six new assessment units of competency which MSA proposed to insert into the MEM30405 qualification. These assessment units were to meet ERAC requirements for the capstone testing and a revised form of the qualification showing the proposed new units. ERAC rejected these proposed changes.</p> <p>Subsequent to this refusal, key priority for Manufacturing Skills Australia (MSA) Industry Skills Council in 2012 has been completing a new electrical licensing pathway through the MEM05 Metal and Engineering Training Package qualifications. MSA stakeholders have an important need for licensing recognition and have written 19</p> |                      |             |          |

| Issue   | Recommended Priority Action(s)  | Skilling WA Strategy   | Lead Agency | Due Date         |
|---|---|--|-------------|------------------|
| <p>industry sectors. The skills gained by enrolment in the EE-Oz qualification/apprenticeship are not sufficient for these sectors as the emphasis is on domestic wiring and not heavy industrial electrical work. The MSA Environmental Scan indicates a skills shortage of electrical tradespersons at base and advanced trades levels, including skill areas of HV/DC motor control and industrial electricians.</p>   | <p>new units of competency for a specialised Certificate III electrical qualification to meet their requirements.</p> <p>Industry consultations are ongoing.</p>  |  |             |                  |
| <p><b>Poor work readiness of job candidates.</b> Serious concerns have been expressed in respect to the poor “work-readiness” of candidates seeking apprenticeships and employment in the automotive industry. This issue directly impacts on the ability of enterprises to recruit suitable applicants to fulfil the skill requirement of the automotive industry sectors.</p> <p>This issue, in particular, relates to school leavers, immigrants, mature-aged workers and under-represented groups. Poor work readiness can be defined as:</p> <ul style="list-style-type: none"> <li>• Poor language, literacy and numeracy skills</li> <li>• Basic communication, language skills</li> <li>• Non-exposure or understanding of the shop floor environment.</li> </ul> <p>The lack of these basic skills leads to high</p> | <p>The EATC, as a matter of priority, will lobby for the establishment of a working group consisting of training councils, DoE and DTWD and other industry stakeholders to jointly develop a policy to ensure Language, Literacy and Numeracy (LLN) levels of proficiency are achieved throughout the primary and secondary years of schooling and into VET programs, ie pre-apprenticeship studies.</p> <p>For example, the Workplace English Language and Literacy (WELL) program and other LLN initiatives are delivering results; however, these programs are not well-known by industry.</p> <p>The EATC will ensure a more concerted effort is made to promote this service to employers and the general community.</p> <p>To address the lack of industry knowledge The approach to this issue has been mainly to target students with expositions, industry presentations to students, VET programs and a variety of videos and</p> | <p>1.1.1<br/>1.2.1<br/>1.2.4<br/>1.2.5<br/>1.2.6<br/>1.3.1<br/>2.1.4<br/>3.1.2<br/>4.1.3<br/>4.1.5<br/>4.2.2<br/>4.3.4</p> | <p>EATC</p> | <p>2013-2014</p> |

| Issue   | Recommended Priority Action(s)   | Skilling WA Strategy | Lead Agency | Due Date |
|---|--|----------------------|-------------|----------|
| <p>attrition rates of apprentices, poor productivity, problems with quality service and, most of all, skills shortage issues.</p> <p>Employers believe the primary and secondary school system has let them down in terms of providing school leavers with the necessary numeracy and literacy skills required by industry.</p> | <p>pamphlets to promote various occupations and industries. However, teachers to a large extent are not well informed about career options for students, even career advisers when they exist are not familiar with trades and non university pathways for students.</p> |                      |             |          |

## SECTION 2 - METHODOLOGY

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The EATC applies a formal research methodology to all of its information and data collection. These notes describe the general approach taken by the Training Council in the collection of information and data related to the range of workforce development activities it undertakes.

- The information and data from a qualitative inquiry approach is typically obtained from direct interaction using fieldwork. The EATC has adapted this fieldwork methodology and collects information from companies and individuals involved in engineering and automotive activity at the workplace, through one-on-one interviews and by other direct contact with industry representatives.
- Additional industry data and statistics is sourced from a broad range of other organisations with a direct interest and involvement in the workforce development and training needs of the Western Australian engineering and automotive sectors. These organisations include:
  - Australian Workforce and Productivity Agency (Skills Australia)
  - Manufacturing Skills Australia (MSA)
  - Chamber of Commerce and Industry of Western Australia (CCIWA)
  - Australian Industry Group (AIG)
  - Motor Trade Association of Western Australia (MTAWA)
  - Auto Skills Australia (ASA)
- Review of published and web-based information and data.
- Consultation with industry representatives of the various sectors for validation. This involves structured interviews with a standard questionnaire developed by the EATC.
- Utilisation of the EATC metropolitan and regional Industry Advisory Group Network to validate and seek industry feedback on training and workforce development issues.
- The EATC's Registered Training Provider (RTO) Network Advisory Groups are utilised to validate training and workforce development issues.

Although the EATC utilises observation and document examination, the key qualitative research tool used is a structured interview guide. For all of its data collection and analysis activity, the EATC develops an appropriate interview guide which allows for the sourcing of information in a structured and measured way, but also provides an opportunity for the in-depth exploration of particular issues, ideas and initiatives that may arise during the interview process.

An interview guide is a list of key questions, issues and prompts which allows each interview to proceed in the same direction and allows the collection of information on the same topic while providing flexibility. The interview guide provides for exploration of topics in greater depth, probing to elucidate and illuminate key areas and freedom to discuss issues within a pre-arranged framework.

The use of a structured interview guide is not restricted to a one-on-one approach. The same methodology may be applied within a group activity where the guide is used to stimulate discussion and to encourage participants to provide detailed information. The EATC conducts forums in all regions of the State and uses this structured approach in these settings.



Many of the people involved in the engineering and automotive sectors consulted by the EATC in relation to workforce development and training needs, have not previously been involved in formal research activity and, as such, the structured interview guide provides a non-threatening and unobtrusive model of data collection.

The use of quantitative data obtained from reputable sources such as the Australian Bureau of Statistics (ABS), IBIS World and other organisations, together with the widespread application of a standard qualitative approach, ensures that all the material produced by the EATC is evidence-based and open to rigorous scrutiny.

## SECTION 3 - INDUSTRY PROFILE

### 3A - Engineering Industry

#### Overview of the Engineering Industry

- Industry Analysis**

There are a total of 2989 engineering companies in Western Australia (WA).

**Table 1 – Engineering Demographics in Western Australia**

| WESTERN AUSTRALIA – ENGINEERING DEMOGRAPHICS |                            |            |                |           |          |      |             |         |            |              |             |
|--|----------------------------|------------|----------------|-----------|----------|------|-------------|---------|------------|--------------|-------------|
| INDUSTRY SECTOR                              | WESTERN AUSTRALIAN REGIONS |            |                |           |          |      |             |         |            |              |             |
|  | GASCOYNE                   | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEAT BELT   | TOTAL       |
| Aerospace Engineering                        | 1                          | 3          | 1              | 3         | 3        | 0    | 35          | 3       | 2          | 0            | 51          |
| Air Conditioning & Refrigeration             | 4                          | 14         | 12             | 15        | 20       | 24   | 349         | 25      | 23         | 4            | 490         |
| Engineering Electrical                       | 0                          | 4          | 2              | 0         | 7        | 3    | 54          | 1       | 3          | 0            | 74          |
| Engineering General                          | 4                          | 67         | 25             | 16        | 25       | 13   | 347         | 51      | 46         | 17           | 611         |
| Engineering Marine                           | 1                          | 0          | 0              | 2         | 21       | 9    | 133         | 7       | 2          | 1            | 176         |
| Engineering Fabrication                      | 3                          | 59         | 51             | 15        | 19       | 14   | 554         | 25      | 41         | 27           | 808         |
| Engineering Professional                     | 0                          | 16         | 1              | 4         | 10       | 2    | 166         | 21      | 18         | 0            | 238         |
| Engineering Drafters                         | 0                          | 0          | 0              | 0         | 2        | 0    | 26          | 6       | 3          | 0            | 37          |
| Jewellers                                    | 1                          | 13         | 11             | 19        | 9        | 6    | 295         | 9       | 32         | 4            | 399         |
| Locksmiths                                   | 0                          | 3          | 2              | 4         | 3        | 5    | 79          | 3       | 5          | 1            | 105         |
| [Source: EATC Industry Database 2012]        |                            |            |                |           |          |      |             |         |            | <b>TOTAL</b> | <b>2989</b> |

Currently, the engineering industry in WA is in a reasonably healthy position relative to the amount of activity in the state, particularly in the construction of new facilities in the mining and resources sectors. This construction phase is starting to wind down with a number of planned new construction projects being put on “hold” which could have a flow-on effect in more availability of workers with skills to service the industry. The engineering industry is an occupational industry sector covering all industries in WA in a maintenance services, manufacturing and engineering construction capacity. Virtually all occupations within the engineering industries are utilised in other industry sectors in Western Australia, including mining, oil and gas, transport, aviation, health, food, agriculture, manufacturing, marine,

power generation, building and engineering construction etc. Future demands on the industry's labour market in the engineering trades will depend, to a large extent, on whether new resource, infrastructure and commercial engineering and building construction projects continue to come on-stream after current projects are completed, and what proportion of the associated work flows through to the local manufacturing industry.

Occupations within the engineering industry include engineers, shipwrights, boat builders, welders, marine engineers, aluminium fabricators, boilermakers, mechanical fitters, machinists, electricians, drafters, sheet metal workers, locksmiths, jewellers, engravers, materials handlers, blast coaters, metal finishers, foundry moulders and patternmakers.

The primary activities of the engineering industry in Western Australia (WA) can be broken down into the following sectors of coverage; Manufacturing – Metal and Non-metal, Aeroskills (aircraft maintenance), General Engineering/Fabrication, Transportation and Equipment Manufacture, Engineering Construction, Refrigeration and Airconditioning, Shipbuilding and Boatbuilding, Foundry, Mineral Processing (maintenance activities), Metal Machining, Surface Preparation and Surface Coating

The engineering industry in WA is involved in the manufacturing, installation, repair and maintenance of products. Engineering tradespersons are employed in a wide range of industries in assorted occupations that manufacture, install, repair and maintain plant equipment.

The engineering industry in WA is comprised predominantly of small-to-medium enterprises, having less than twenty employees. Approximately 15% are businesses with more than fifty employees. A diverse range of enterprises ensure that the career options for the industry are varied and can range from positions involved with manufacturing, servicing, research and development, marketing, robotics, quality control, hands-on production, product design and many more.

The sectors covered by EATC in the engineering industry are:

- Metal product manufacturing
- Heavy engineering
- Iron and steel
- Machinery and equipment and other manufacturing sectors
- Motor vehicles and parts
- Ship and boat construction and repair
- Railway rolling stock
- Aircraft production, repairs and servicing
- Engineering maintenance and services
- Refrigeration and airconditioning service and manufacturing
- Foundry
- Aerospace

### **Industry Sectors in Western Australia**

There are 611 general engineering companies in WA.

The general engineering sectors are competitive and technically sophisticated suppliers to both domestic and international markets across a wide range of activities.

These activities include:

- Manufacture of iron or steel and ferroalloys, hot and cold rolling of steel into primary shapes and the galvanising, pre-painting and tinning of sheet and strip steel
- Iron and/or steel casting and forging
- Manufacture of steel pipe and tubes
- Hot or cold rolling, drawing or extruding of aluminium
- Manufacture of copper tubing and wire
- Non-ferrous metals or alloy casting or forging
- Structural steel fabrication
- Manufacture of architectural aluminium products such as doors, window frames, etc
- Manufacture of metal cans, drums, tubes, etc
- Manufacture of wire, cable, wire netting, nails and rolled steel fence posts
- Manufacture of fabricated metal products such as boilers, water heaters, door handles, etc
- Manufacture or repair of railway equipment such as rolling stock, locomotives, etc
- Boat and shipbuilding and repair
- Service and maintenance engineering

Western Australia is a minor location for businesses within the general engineering industries with approximately 10% of metal, engineering and boating business in Australia.

**Table 2 - ANZSIC subdivision: 21 Primary Metal and Metal Product Manufacturing**

| <b>Sector Size by Business Locations</b> | <b>WA Percentage of Sector</b> |
|--|--------------------------------|
| Iron and steel casting and forging       | 10.0%                          |
| Steel pipe and tube manufacturing        | 13.9%                          |
| Aluminium sheet and rod manufacturing    | 5.0%                           |
| Copper tubes and wire manufacturing      | 6.4%                           |
| Non-ferrous metal casting                | 7.0%                           |

**Table 3 - ANZSIC subdivision: 22 Fabricated Metal Product Manufacturing**

| <b>Sector Size by Business Locations</b>                     | <b>WA Percentage of Sector</b> |
|--|--------------------------------|
| Structural steel fabricating                                 | 15.6%                          |
| Architectural aluminium product manufacturing                | 8.6%                           |
| Metal doors and other structural metal product manufacturing | 10.4%                          |
| Metal container manufacturing                                | 8.4%                           |
| Sanitary ware and other sheet metal product manufacturing    | 10.9%                          |
| Tool and hardware manufacturing                              | 13.3%                          |
| Spring and wire product manufacturing                        | 9.3%                           |
| Nut, bolt, screw and rivet manufacturing                     | 13.6%                          |
| Metal coating and finishing                                  | 12.5%                          |
| Non-ferrous pipe fitting manufacturing                       | 18.8%                          |
| Fabricated metal product manufacturing                       | 13.9%                          |

**Table 4 - ANZSIC subdivision: 23 Transport Equipment Manufacturing**

| <b>Sector Size by Business Locations</b> | <b>WA Percentage of Sector</b> |
|--|--------------------------------|
| Shipbuilding                             | 27.0%                          |
| Boatbuilding                             | 18.4%                          |
| Railway equipment manufacturing          | 11.4%                          |

**Table 5** - ANZSIC subdivision: 24 Machinery and Equipment Manufacturing

| <b>Sector Size by Business Locations</b>                                 | <b>WA Percentage of Sector</b> |
|--|--------------------------------|
| Photographic and optical good manufacturing                              | 12.6%                          |
| Medical and surgical equipment manufacturing                             | 10.6%                          |
| Measurement and other scientific equipment manufacturing                 | 13.2%                          |
| Computer and related equipment manufacturing                             | 9.7%                           |
| Telecommunication, broadcasting and transceiving equipment manufacturing | 9.6%                           |
| Electronic component manufacturing                                       | 7.0%                           |
| Household appliance manufacturing  | 10.0%                          |
| Motors, generators and other electrical equipment manufacturing          | 10.3%                          |
| Agricultural machinery manufacturing                                     | 12.6%                          |
| Mining and construction machinery manufacturing                          | 26.3%                          |
| Food processing equipment manufacturing                                  | 3.6%                           |
| Machine tool and part manufacturing                                      | 9.2%                           |
| Conveyor and crane manufacturing   | 8.8%                           |
| Pump and compressor manufacturing  | 12.0%                          |
| Heating and cooling (commercial equipment) manufacturing                 | 18.3%                          |
| Gaming and vending machine manufacturing                                 | 5.0%                           |
| Other industrial machinery and equipment manufacturing                   | 11.8%                          |

**Table 6** - ANZSIC subdivision: 25 Furniture and Other Manufacturing

| <b>Sector Size by Business Locations</b> | <b>WA Percentage of Sector</b> |
|--|--------------------------------|
| Sign manufacturing                       | 11.2%                          |
| Jewellery manufacturing                  | 9.2%                           |

**Table 7** - Other sectors covered by MSA Training Packages

| <b>Sector Size by Business Locations</b> | <b>WA Percentage of Sector</b> |
|--|--------------------------------|
| Household equipment repair services      | 9.0%                           |
| Structural steel services                | 16.5%                          |

*[Source: Manufacturing Skills Australia: Metal, engineering and boating industries statistics for Western Australia as at July 2011]*

May 2010 figures showed that an estimated 40,000 people in Western Australia were employed in the metal, engineering and boating industries. The majority of employees were males, employed full-time. Women made up 13% of employment, with nearly a third of women employed part-time.

In an industry sector where men make up the majority of workers, it is to be expected that men also make up the majority of enrolments. Just over 96% of all commencements in the Metal and Engineering Training Package were male, with the largest course enrolment (2,386) being males enrolling into Certificate III in Engineering – Mechanical Trade.

*[Source: MSA/NCVER VOCSTATS accessed September 2010].*

In 2008-09 there were 3,970 businesses operating in Western Australia within the metal, engineering and boating industries. This included businesses that manufactured boats or jewellery. The majority of businesses were either non-employers (that is, they hadn't submitted an Income Tax Withholding (ITW) statement to the Australian Tax Office (ATO) for five consecutive years) or small businesses employing between 1–19 people.

The largest numbers of businesses were in the other fabricated metal product manufacturing sector (406). A further 1,724 businesses in Western Australia supplied maintenance and repair services. *[Source: Manufacturing Skills Australia – Metal, engineering and boating industries statistics for Western Australia as at July 2011]*

Engineering workers are employed in every industry sector in some capacity, often in a support or maintenance capacity. By far the biggest sector is manufacturing, which have all of the engineering trades engaged either directly or in a service role.

### **Aerospace Industry**

There are 51 aerospace/aviation engineering companies in WA.

Aircraft manufacturing and maintenance and repair have been an integral part of the development of the Australian aerospace industry, beginning in the 1920s with the development of the first military aircraft. However, by the 1990s Australia had ceased to manufacture large passenger aircraft. Small aircraft manufacturing still continues with Gippsland Aeronautics and Delta Corporation leading the way.

Today, the Australian aerospace industry competes in the world market as a niche manufacturer and supplier of components for international aircraft manufacturers, such as Boeing and Airbus. Approximately 20% of the industry's output is exported.

The Australian aerospace industry consists of four segments:

- Commercial aircraft and parts
- Military aircraft (including UAVs), parts and guided missiles
- Maintenance, repair and overhaul
- Light aircraft and parts.

Light aircraft and parts make up less than 1.7% of the industry. Commercial aircraft parts manufacture accounts for 34% of the market with the manufacture of military aircraft, parts and guided missiles accounting for 33.5%.

The manufacturing industry is dominated by four major players who account for 53% of the industry:

- Australian Aerospace
- Boeing Australia Holdings
- BAE Systems Australia Holdings Limited
- Hawker Pacific Pty Ltd

In Western Australia, the aerospace industry is concentrated within close proximity to any airports, supplying maintenance, repair and overhaul services. 12.8% of Australia's aircraft manufacturing and MRO business are located in Western Australia.

ABS May 2010 figures showed that an estimated 5,000 people in Western Australia were employed in Group 239, ANZSIC Code 2394, Other Transport Equipment Manufacturing. All employees were males working full-time. From these figures it is difficult to generalise employment for the aerospace industry in Western Australia with any accuracy.

In 2008–2009 there were 78 businesses operating in Western Australia within the aircraft manufacturing and repair services industry. This data includes the maintenance, repair and overhaul sector. The majority of businesses were either non-employers (that is, they hadn't submitted an Income Tax Withholding (ITW) statement to the Australian Tax Office (ATO) for five consecutive years) or small businesses employing between 1–19 people.

*[Source: MSA April 2011]*

The Aerospace maintenance, repair and overhaul sector is covered by the MEA11 Aeroskills Training Package. The new Training Package was endorsed in November 2011 as an upgrade from MEA07.

The aircraft maintenance qualifications support comprehensive skills development needs for aerospace industry personnel involved in the maintenance, repair and overhaul of aircraft and aircraft components. Specifically designed qualifications meet the competency requirements identified by the Civil Aviation Safety Authority (CASA) for people to become Licensed Aircraft Maintenance Engineers (LAME).

There is no Certificate I level qualification in the Aeroskills Training Package. Re-endorsement as MEA11 ensures that the package remains current and coherent, and will assist implementation by removing confusion concerning which versions of existing qualifications are current. This is of particular concern to the regulator and RTOs delivering licensed/regulated outcomes.

In mid-June 2011, the new Civil Aviation Safety Regulations covering aircraft maintenance, licensing and training for license came into effect, thus clearing the way for the inclusion of aircraft welding and non-destructive testing of aircraft structure and components in MEA11v1.

While the new regulations do not apply to general aviation until mid-2015, by working closely with the Civil Aviation Safety Authority (CASA), it has become possible to also include in MEA11v1 qualifications for the maintenance of small aircraft that are tailored to the needs of General Aviation.

Skill sets that relate to CASA licensing or regulatory requirements and, in some cases, also relate to ADF regulatory requirements are under development and will be included in MEA11 as ISC upgrades. The new CASA regulations to which the skill sets relate were implemented in late June 2011 and MSA is working closely with CASA to ensure that the skill sets are meeting their intended purpose and will become a component of MEA11 as soon as possible.

[Source: MSA October 2011]

### **Marine Industry in Western Australia**

There are 175 marine engineering companies in WA.

The latest research available on the WA marine industry is a 2010 report by Dr Helen Cripps entitled "*Report on the Western Australian Marine Industry*". This research was commissioned by the Department of Commerce to ascertain the size, structure and economic impact of the marine industry in Western Australia (WA). Previously, the Australian Bureau of Statistics (ABS) provided state-by-state measures of the economic value of ship and boat building activities, which provided some indication of the status of at least part of the marine industry. There is currently no reliable data on which to base future development strategies for the industry as the ABS no longer publishes this data at the state level and the last shipbuilding sector survey in WA was undertaken in 2002. Previous research has failed to account for the diversity of the marine industry that includes:

- Boatbuilding and repairing
- Marina operations/yacht clubs
- Marine equipment and components manufacturing
- Marine equipment retailing and repairing
- Marine services
- Shipbuilding and repairing
- Superyacht building, refit and services
- Tourism (Austrade, 2007)

The value of the total marine industry to the Western Australian economy is \$3,576,466,548.  
[Source: Report on the Western Australian Marine Industry, Dr Helen Cripps, Edith Cowan University 2010]

The marine sector is made up of a number of industries including defense, commercial fishing, transport (ferries), tourism and recreation. The diversity of products is highlighted by the recreational sector, which ranges from aluminium 'tinnies' to 70-metre luxury motor yachts (superyachts) (Austrade, 2007).

In recent years, the defense sector of the marine industry in WA has been well-supported with investment made by the Western Australian State Government in support of a strategy to develop a *"world-class defense shipbuilding hub in Western Australia"*.

Dr Cripps noted that capital investment increased between 2006 and 2008 in all industry sectors except boat service and supply. The 2005/2006 and 2006/2007 capital investment figures for the boat service and supply sector was due to significant investment in both years by a single respondent. The total capital investment grew by 25% in 2006/2007 and 47% in 2007/2008, which represents an 83% increase in two years. This significant level of investment highlighted the confidence of the industry at the time.

[Source: Report on the Western Australian Marine Industry, Edith Cowan University 2010]

The global financial crisis brought an end to this increase in capital investment with a consequential decrease in apprentices.

### **Jewellery, Locksmiths and Watch and Clock Makers**

The jewellery, locksmiths and watch and clock makers are small industry sectors. There are currently (November 2011) 38 jewellery apprentices, 52 locksmith apprentices and 3 watch and clock maker apprentices in training.

**There are 399 jewellery businesses and 105 locksmiths in WA.** There are watch and clock makers employed within the jewellery industry with a very small number of watch and clock makers working independently, many not registered as businesses.

### **Jewellery Design and Manufacture Industry**

The jewellery design and manufacture industry in Australia generates approximately \$889.5 million in revenue, contributing an estimated \$227.1 million to the Australian GDP while employing about 4,191 people.

Employees within the industry design and manufacture a range of jewellery and object products, including custom-made, one-off designs, mass produced designs, costume jewellery, mint coins, badges, medals and church ware. Typically, workers work with silverware, precious or semi-precious metal and gem stones. Industry operators may also be involved with designing, manufacturing, engraving, chasing or etching jewellery or precious metal, and selling these products to wholesalers or, in certain instances, directly to retailers.

[Source: Manufacturing Skills Australia MEM05v6 Draft Case for Endorsement – October 2011]

MSA have developed a new post-trade qualification - MEM40311 Certificate IV in Advanced Jewellery Manufacture - specifically developed to be delivered to people who are existing jewellery tradespersons or delivered to apprentices in a jewellery-related trade who choose to study at a higher level during their apprenticeship.

Current coverage within the MEM05 Metal and Engineering Training Package targets the Certificate III trade level outcome, which provides the essential technical skills for jewellery manufacturers. This new Certificate IV qualification addresses industry's need for more extensive and specialised skills in areas such as engraving and gem setting, and covers skills required to work with a greater range of materials and more complex items. It builds



upon trade level skills and encompasses some design units to support a well-rounded outcome for those providing custom-made items.

New high-level qualifications for jewellery and object design have been developed for inclusion in MEM05v5. The new Diploma and Advanced Diploma of Jewellery and Object Design target people who require specialist design and technical skills. Employees within the industry design and manufacture a range of jewellery and objects (including custom-made, one-off designs, mass produced designs, costume jewellery, mint coins, medals, etc). These two new qualifications have been endorsed by the National Quality Council (NQC).

In 2010, Central Institute of Technology's **Advanced Diploma of Jewellery Design** was endorsed in WA as an accredited course for three years, which Central Institute of Technology intends to continue to deliver with the support of the WA jewellery design industry.

### **Watch and Clock Industry**

The watch and clock industry in Australia is a small but important industry servicing the needs of the general public as well as the many industries and occupations that depend on accurate timekeeping. Timepieces vary from everyday mechanical and quartz clocks and watches to complex professional instruments. Watch and clock training was being delivered at the beginning of this project at RMIT in Melbourne and Sydney Institute of Technology, with some part-time delivery in Brisbane.

Availability of nationally recognised training in watch and clock repair has been a priority for the industry especially the national association, the Watch and Clock Association of Australia (WCA). The WCA currently has a membership of 255 across Australia. The industry has identified that the need for nationally recognised training was needed to both support the entry-level training mechanisms of apprenticeships and traineeships and to provide a career path to the more complex field of horology.

It has been identified that the industry in Australia had changed significantly and was no longer a manufacturing sector but a sector primarily engaged in supplying service and repair to retail and business customers. The development of the units of competency and the new Certificate III qualification recognises the more recent nature of the industry.

The industry has experienced difficulties in attracting new entrants. The establishment of a Training Package Certificate III qualification will provide a national qualification to complement apprenticeship training, while the addition of new units to the MEM20205 Certificate II in Engineering qualification will support traineeships. The addition of new units to MEM40105 Certificate IV in Engineering qualification will provide the basis for post-trade training and a career-path for tradespersons.

The industry has also been concerned to ensure that skills recognition for watch and clock repair and service skills is maximised. As part of this strategy, the inclusion of currently endorsed units of competency was maximised.

Central Institute of Technology (Central) has agreed to keep watch and clock making qualifications on scope. There are very few apprentices taken on in WA and the main entry into the trade is via hobby classes. Central has formed an alliance with the industry and has recognised a trade expert to conduct skills recognition when it is needed, either for future participants from the watch and clock making classes, or new apprentices that will need competency assessment.

Central will recognise the “hobby” class in watch and clock service and repair being run at Sevenoaks College as a potential feeder of trades people in the future, and that the course

can be marketed as a pathway into the trade and also consider the possible future use of the Central facilities in Perth for future courses in watch and clock service and repair.

### **Locksmiths**

The locksmithing sector is not large but it is significant. Even though there are shortages of skilled locksmiths in some areas, the opportunity to gain entry through an apprenticeship is still limited. Job growth is predicted to be slight and job turnover, which provides the majority of job opportunities, remains low.

Locksmiths are professional tradespeople who evaluate security requirements for a wide range of clients and make, maintain and install the security devices. Locksmiths assess their client's security needs by initially carrying out security surveys, whether for residential, commercial, government premises or automotive security. This includes issues such as working out master key systems, creating restricted areas at office premises, checking the security of all entrances and exit points or assessing car security.

Locksmiths are employed by locksmith businesses and, in most cases, end up owning their own business. As overheads are low and margins high, there is potential to profit from these business opportunities.

Another important area is the growing use of computer programs to generate codes for specialist keys, use computer software to set specifications for keys, and service and install digital and electronic locking systems.

Locksmiths can either work in a shop, or be mobile working from vehicles to install and repair security hardware in the field, to open door locks or service safes and vault doors.

Safe and vault technicians undertake additional training in safe, vault servicing and trouble shooting. They open, rebuild, paint, move and install safes.

Locksmiths who service bank equipment work with mechanical and electronic time locks, time delay devices, night deposit units and combinations, electronic and key locks for vaults and safes.

Locksmiths must obtain police clearance before being accepted as an apprentice. Once qualified, all locksmiths must be licensed and are required to be fingerprinted.

Locksmiths work under strict legislation, such as the Security and Related Activities Act and the Residential Tenancy Act. A locksmith must be aware of his or her legal rights to change a lock in a complicated situation, such as evictions.

Strict confidentiality is necessary, as the locksmith keeps all details of a client's security systems and key specifications. It is also vital that a locksmith be diplomatic and understanding when dealing with their clients.

*[Source: Locksmiths Guild of Australia]*

### **Refrigeration and Air Conditioning**

There are 488 refrigeration and air conditioning companies in WA.

A survey funded by the Australian Department of Environment and Water Resources and Refrigerants of all available published data, combined with extensive interviews with industry, has resulted in a range of robust metrics on the Refrigeration and Air Conditioning industry in Australia.

A significant database was compiled to facilitate the collation, analysis and testing of data.

The main results from the study indicate that the refrigeration and air conditioning industry:

- Involves direct spending of at least \$15.96 billion in 2006, slightly more than 1.7% of GDP.
- Involves machinery that consumed possibly 45,000 GWh, or 21.9% of all electricity sent out in Australia in 2006.
- Resulted in as much as 7% of all greenhouse gas emission in Australia in that year, or 40Mt of Carbon Dioxide emissions.
- Employs at least 163,000 people.

In the process of arriving at these values, the research concluded that:

- \$3.87 billion was spent buying and installing domestic and small commercial air conditioning equipment in Australia in 2006.
- There were at least 5.63 million installed air conditioners in 2006 – about 0.7 units per household.
- There is 9.46 million cubic metres of cold room storage capacity in Australia, with possibly 70% of that space using ammonia as refrigerant.
- 1438 chiller units were sold in 2006 and there is an installed base of 22,450 of these large devices.

It is felt that, while the major areas of employment and expenditure are captured previously, there are significant specialist areas for which insufficient data is presently available and which could add materially to these conclusions.

Major specialist areas for employment, sales of technology, engineering services and economic activity for which we presently have little accurate data include:

- Sales, service and installation of small cool rooms - not in the cold chain and supermarkets.
- Commercial aviation – domestic and international flights serviced here.
- Mining and in-mine machinery.
- Marine systems – domestic, international, commercial and private vessels equipped and serviced here.
- Ancillary sales and service for control systems, sensors, filters, chemicals, specialist cleaning.
- Military vehicles, equipment and systems.

There are also lower skilled jobs that are not easily accounted for, such as labourers and builders, engaged in the construction of new cool rooms, repair and sales of second-hand reconditioned fridges etc.

To capture some of these jobs, a conservative adjustment figure has been added to the employment numbers equivalent to 10% of all jobs identified, but not including employment in HVAC for non-residential buildings.

*[Source: Energy Strategies, The Cold Hard Facts, June 2007]*

The main issues affecting this sector in WA are:

- Rapidly changing technology and increased number of commercial refrigeration/airconditioning units installed.
- Upskilling for existing workers within the refrigeration and airconditioning sector to reflect changes to electrical and environmental licensing requirements.
- Training delivery needs to be spread to more than one college, particularly to regional areas. This will encourage employers to increase apprentice intake.
- Job prospects for Airconditioning and Refrigeration Mechanics are good.

- Employment for Airconditioning and Refrigeration Mechanics to 2015-16 is expected to grow strongly. Employment in this large occupation (23,600 in November 2010) rose strongly in the past five years and rose slightly in the long-term (ten years).
- Airconditioning and Refrigeration Mechanics have a high proportion of full-time jobs (90.9 per cent). For Airconditioning and Refrigeration Mechanics working full-time, average weekly hours are 41.2 (compared to 41.3 for all occupations) and earnings are average - in the sixth decile. Unemployment for Airconditioning and Refrigeration Mechanics is average.
- Airconditioning and Refrigeration Mechanics are employed across several industries including: other services; construction; retail trade; and manufacturing.
- The (internet) vacancy level for Airconditioning and Refrigeration Mechanics is moderate. The proportion of workers leaving the occupation (and needing to be replaced) is 10.1 per cent (annually) compared to the average for all occupations of 13.1 per cent.
- The mix of industries employing Airconditioning and Refrigeration Mechanics is very favourable for employment growth prospects.

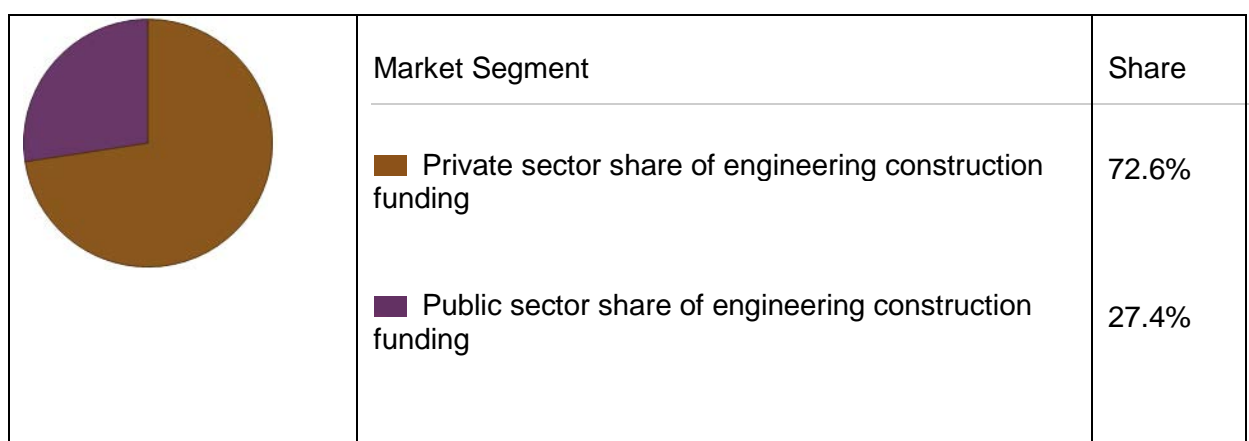
### Engineering Construction

A large part of engineering construction is taken up with the fabrication sector and there are 808 fabrication companies in WA.

Occupations within the engineering construction sector represent the majority of those covered by EATC, either directly or indirectly. They include Engineers, Engineering Technologists and Technicians, Metal Fabricators, Welders, Mechanical Fitters, Heavy Duty Fitters, Aircraft Maintenance Engineers, Machinists, Electricians, Drafters, Locksmiths, Materials Handlers, Blast Coaters etc.

Firms in this industry are mainly engaged in the construction of engineering projects or infrastructure such as railways, dams, irrigation systems, harbour or river works, water or gas supply systems, oil refineries (except buildings), pipelines, and in the on-site assembly of boilers, furnaces or heavy electrical machinery from prefabricated components, or in the general repair of such structures, machinery or equipment.

**Figure 1 – Engineering Major Market Segments**



[Source: IBISWorld 2011]

Activity in the engineering construction market is funded by both the public sector and the private sector depending largely on the end use of the infrastructure and government policy on public sector ownership. The public sector's share of total funding of the engineering construction market has steadily trended downwards since the early 1990s, reflecting the impact of greater private sector ownership in public utilities (eg water, gas, electricity etc) through privatisation and the corporatisation of public authorities, along with the upsurge in recent years in private investment into mineral and energy infrastructure.

### **Activities (Products and Services)**

The primary activities of this industry are:

- Boiler, furnace and kiln construction (on-site assembly from prefabricated components)
- Transmission lines construction and cable laying (electricity or telecommunication).
- Electrical machinery, heavy, installation (on-site assembly)
- Harbour works, dredging, canal and jetty or wharf construction (except buildings)
- Water supply, dams, lakes, treatment plants and irrigation systems construction.
- Mineral and energy infrastructure (eg mine sites, oil refineries, smelter construction etc)
- Pipelines construction
- Railway construction
- Sewerage treatment plants construction
- Recreational infrastructure construction (sports arena, golf course, swimming pool etc)

The major products and services in this industry are:

- Heavy industry - mine construction
- Electricity generation and distribution facilities
- Heavy industry - oil refineries and chemical plant construction
- Other
- Water supply and storage infrastructure including treatment plants
- Telecommunication facilities - cable laying, switching stations etc
- Railway infrastructure - track laying, embarkation facilities
- Sewerage and drainage

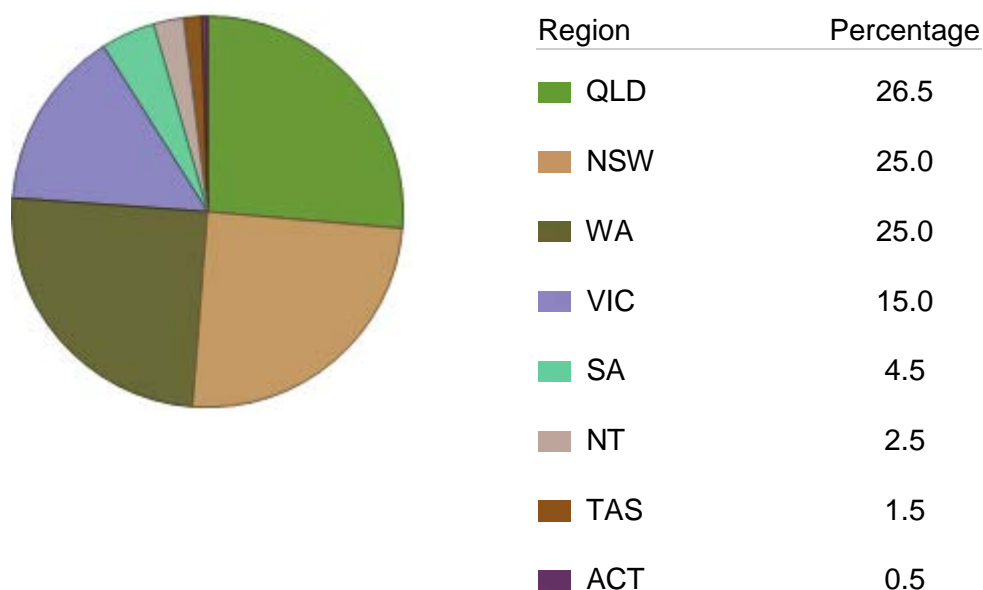
This segment includes the construction of infrastructure projects such as roads, airports, dams, etc. Such construction may be carried out by either the public or the private sector. Examples include Spencer Street Station, Tullamarine/Calder Freeway interchange, Geelong bypass, etc. Data indicates that the engineering construction segment has posted solid growth over the current performance period due to continued investment into developing key regional growth areas.

The value of work done in the total engineering infrastructure market is estimated to contract by 10.4% during the current year to total \$48.60 billion. This partly reflects the scaling back of investment into water supply, harbour and railway construction projects (from recent record levels), but principally represents to 22.8% contraction in the value of mineral and energy infrastructure developments (falling to around \$17.16 billion in 2009-2010 but remaining well above its long term average). Investment remains strong in the electrical power market, with construction proceeding on several alternate energy developments including thermal solar power plants, wind farms, a geothermal test plant. The industry continues to derive substantial impetus from the robust investment into the electric power, pipeline and telecommunications infrastructure markets (growth of greater than 10%), and the heightened activity in the aligned road construction market.

**Figure 2 - Geographic Spread**

Year: 2010

Engineering Construction



[Source: IBISWorld 2011]

The distribution of industry activity is generally influenced by patterns of population distribution and growth, but there is a notable skew in activity towards regions with a high level of private sector investment into mining and manufacturing activity. The distribution of industry activity by state and territory is based on the annual value of work done and the 2006 Counts of Australian Businesses.

Western Australia currently accounts for around 25% of national engineering construction work done, down from close to one-third in the late 2000s and greatly exceeded WA's share of the national population and economy (around 10% to 11.5% annually). This high representation in WA reflects the high levels of investment into mineral and energy resource infrastructure market (eg North West Shelf, Kalgoorlie gas pipeline etc), along with investment into mass transit infrastructure in Perth, and water and sewerage infrastructure. In the June 2006 counts of Australian businesses, WA accounted for 11.9% of all industry establishments, and 11.3% of establishments with employees.

[Source: IBISWorld 2011]

Major projects in this market over the outlook period include the Hope Downs iron ore project in Newman WA (valued at \$1.5 billion), the Alumina Australia upgrade to stage 3 of the Wagerup Alumina Refinery in Western Australia (valued at \$1.5 billion), a proposed methanol plant in Dampier WA (valued at \$630 million) which is awaiting financing and development approval from state government, the Fortescue Metal Group mining and processing facility in Pilbara WA (valued at \$550 million) which was originally planned to begin early 2005 but stalled due to financing difficulties associated with Chinese buyers, and the Swanbank Paper Mill in Queensland (valued at \$800 million) which is currently in the feasibility stage.

Activity in this market will also be subject to the advancement of planned projects such as the \$5 billion Austeel iron and steel project at Karratha WA using hot briquetted iron and producing steel pellets (delayed since 2001) and the \$5 billion North Rankin Gas Compression project to deliver high-value gas supply from the North West Shelf for another 25 years. [Source: IBISWorld 2011]

## **Foundry Industry**

There are thirteen foundries in WA, most in the metropolitan area.

The mining, resource, and rail sectors are booming, which has led to a larger need for foundry workers, particularly moulders. The foundry industry in WA mainly supports the mining and resources industries by providing wear products and hard face material. The two major foundries in the state are reporting record business and difficulty in getting suitable labour to service the growth. The industry is currently experiencing a skill shortage and no coherent strategies in place to address them.

The major foundry occupations are Foundry Pattern Makers, Foundry Moulders, Foundry Dressers, and Furnace Operators.

The Australian Foundry Institute has expressed concerns about training in the industry; however, the industry does not seem to be able to work cooperatively to overcome attraction, retention, and training issues. Initiatives have been attempted for a fast track program for foundry trades and minimal training in this area has been carried out for several years. These initiatives have met with little success. Existing non-trade employees in the industry should be given the opportunity to upgrade their skills to tradesperson status.

Foundry trades need to be promoted as a means of attracting more people in the industry and involving more employers to participate in training. There is one training provider that delivers training in this area.

## **Composites Industry**

The composites sector is currently growing in importance as an employer as well as a supplier of fabricated component and products. Its reach goes from marine to aerospace as well as covering a wide range of everyday products. Composites are steadily replacing many traditional materials as well as allowing movement into areas where traditional materials would not be suitable.

EATC has been an active participant in the Composites Industry Advisory Board (CIAB), which is a consortium of industry sectors involved in the use and manufacture of composite products in the ship and boatbuilding, resources, aerospace, domestic swimming pools and other associated industries. EATC submitted an EVAC application for the registration of a new trade of Engineering Technician (Composites) – Trade. This application is anticipated to be gazetted in mid-October 2012. EATC being the lead training council in this industry have liaised with the Resources Industry Training Council (RITC). The RITC have an interest in this application as they have coverage of the composite swimming pool industry sector.

CIAB have been advocating for a number of years that a new trade is required for workers in the use of composites, but have had difficulty in identifying suitable training material. This problem has now been addressed by Manufacturing Skills Australia (MSA) registering in March 2012 a new qualification MEM3112 Certificate III in Engineering – Composites Trade for the composites industries.

There is a severe shortage of suitably skilled workers available in WA to service the composites industry. Employers have been forced to seek skilled workers from overseas but this is made difficult with the trades not being listed on the SPOL. The new apprenticeship pathway to the Engineering Technician (Composites) – Trade may go some way to address this issue. EATC will endeavour to raise the profile of the industry to highlight the skills shortage and have it listed on the SPOL.

- **Industry Trends**

- Despite the boom and a pipeline of some \$450 billion in mining investment and related infrastructure, many traditional metals and engineering firms are missing out due to a number of reasons.
- There are many cases where Australian firms are not competitive on price, quality and delivery and don't have the capability to compete effectively for work. The high exchange rate is part of the problem, but not the whole story. Many of these firms missing out on the work need to refocus and reorganise the business model and identify what kind of work they will compete for.
- In many big LNG projects, the local content for the steel used, the fabrication work for things like piping, pumps and compressors, structures and more specialist plant and equipment is 10% or less and the work packages so large that Australian industry doesn't get the opportunity to compete and the work goes offshore.
- A number of projects are using foreign standards and specifications that are built around imported products that the mining and energy firms and their global procurement teams use elsewhere in the world, which doesn't give Australian industry a reasonable opportunity to compete.
- In a number of cases whole plants in the form of modular or functional units are being imported into Australia. In the past the work would have been done in small sections where Australian industry did much of the manufacturing work here. Since the offshore procurement team doesn't have someone in Australia with seniority to engage with Australian suppliers and customize smaller packages to the circumstances of Australian industry, it doesn't happen.
- In still other cases, those importing steel plate, fabrication work and other manufactured products into Australia's big mining/energy projects are being heavily subsidized by their own governments, which seriously disadvantage Australian manufacturers trying to compete for the work and not getting the same subsidies. Alternatively, the customers or equity investors in the project have manufacturing-related parties that they direct the work to as part of their involvement. *[Source: MSA Environmental Scan 2012]*

A number of metal and engineering enterprises in the resources supply chain report that their businesses are doing fairly well. However, this is often the case in leasing equipment and rework, repair and service-related activity. Unfortunately, many parts of the fabrication and equipment sections of the metals and engineering industry have been missing out on the work.

Attracting and retaining employees in this sector is a major issue, and one that is closely linked to the competition for workers for the resources sector. Both manufacturing and resources enterprises are competing for the same skills, and neither has adequate supply. There are skill shortages across all metal trades, non-trades, para-professionals and professionals. Manufacturing enterprises hold little optimism that this will change in the near future.

Defense, a significant user of skills in this sector, is also competing for many of these skills and predicts that its own shortfall will increase in the next decade as it takes on more government funded projects.

- **Labour and Skill Demand**

- Western Australia (WA) employment is around 1,608,200 people with the major industry employers being construction, retail trade, health care and social assistance. The WA labour market grew over the year to June 2011 (although at a slower rate to the previous year), with an increase in around 20,000 people.



- The largest growth occupations were in technicians and trades workers (9,700), followed by machinery operators and drivers (8,800). The WA economy is one of the strongest in the country, fuelled by a range of large resource projects. There are currently more than \$180 billion worth of projects either committed or under consideration for the state during the next few years. These will create more than 50,000 construction jobs and 15,000 permanent jobs, many of which will be in engineering and manufacturing occupations under the coverage of MSA.
- Labour shortages are listed as the state's biggest challenge in supporting its growth. Employers from the resources sector already report filling an average of only 30% of advertised vacancies compared to 70% for other sectors, with experienced engineers one of the most critical shortages.

Predictions are that this will get much worse. WA research on workforce needs estimate that around 230,000 workers will be required by 2017 to fill new jobs created, in addition to the 186,000 needed to replace current workers who retire or leave. To further this complexity, more than half of these jobs are expected to require higher-level skills to meet work needs of professionals, managers, and technicians and trades workers. This potentially results in around 420,000 new workers needed with over 87% of these requiring Certificate III level qualifications or higher. This places significant pressure on attracting suitable applicants into training, as well as progressing them into further skill development.

- With the growth in employment opportunity come spiraling employment costs as employers compete for talent. Skill shortages are heavily impacting manufacturing enterprises as the skills that are available are siphoned off to the resources sector. Skill and labour shortages are particularly critical in highly skilled machinists, electricians with instrumentation skills, mechanical fitters with hydraulic skills, heavy fabricators, and welders with high-level code skills. Manufacturing enterprises in WA say they are reluctant to take on apprentices as they cannot keep them in the face of resources competition, and they are not securing work from resources contracts. However, some resources companies are starting to take on more training initiatives. This includes conducting skills assessments and upskilling activity for imported labour. Effective skills assessment and RPL are essential to effective workforce development in the region and processes are being streamlined, including the engagement of a pre-assessment expert 'gatekeeper', to increase responsiveness and appropriately direct applicants. Local manufacturers would like to see the four-year nominal term for Apprenticeships reinstated (this has been done) and more local content required in resources projects.
- Local engineering and fabrication enterprises say that rather than thriving with the boom, they are on the verge of collapse. The WA Government has targeted five strategic goals to help to address the state's workforce issues. These focus on establishing and implementing a planned and coordinated strategy to increase population and improve participation and productivity for the state, as well as provide flexible, responsive, and innovative education and training. *[Source: MSA Environmental Scan 2012]*

### **Planned projects:**

Infrastructure and mining projects planned for Western Australia are valued at \$176 billion, these projects are either under construction, committed or considered highly likely to proceed. Most of the projects are located in the Pilbara region, both in terms of the number of projects and the value of projects. They are spearheaded by Chevron's Gorgon and Wheatstone projects, which together are worth an estimated \$75 billion or 43 per cent of the total value of all projects. Development of the iron ore industry will also drive a number of new projects, with most of these also located in the Pilbara region.

With the exception of the Bunbury Waterfront Development, all infrastructure projects are located in either Perth or the Pilbara region. Infrastructure development in Perth centre's on social services, particularly the construction of the Fiona Stanley Hospital and the new children's hospital. New infrastructure in the Pilbara region aims to expand existing iron ore transport infrastructure, particularly the development of Cape Lambert and the Inner Harbour at Port Hedland as well as the associated transport and processing links at the Port.

In terms of employment, the bulk of future employment will be located in the Pilbara region with the bulk of construction workers required over the 2013 to 2016 period.

### **Demand for Labour**

Engineering professionals are now Australia's most sought after workers overtaking corporate services managers, according to the latest **Clarius Skills Index**.

The June quarter Index – Australia's only measure of supply and demand of skilled labour – showed the shortage of qualified engineers had increased to 8,564 workers with a **106.7 'Extreme'** reading. This is an increase of 22 per cent on the previous March quarter where there was a shortage of 7,000 professionals.

While Engineering professionals recorded an increased demand, the Index found that demand for white collar workers in all 20 measured occupations grew in the past quarter.

Major projects in the resources sector have been driving a strong market for engineers in both the construction and operational phases, which has intensified the shortage.

It is also being exacerbated by the regional location of some major projects, which have deterred some professionals from moving into high demand areas. The job market for engineers has started to slow down, particularly as companies delay or shelve new projects.

In recent months some larger organisations and governments place major infrastructure and resources projects under review or on hold, including the review announcement by BHP Billiton of its Olympic Dam and Port Hedland expansions.

### **Mechanical Engineering Trades Workers**

Indicators are that the projected demand and supply for mechanical engineering trades workers to 2020 are that the supply shortfall will worsen over time until 2014 as supply is projected to grow slowly while demand is projected to increase considerably to 2014 before flat-lining.

**Engineering Tradesperson (Fabrication).** There is an ongoing high demand for skilled labour in all the fabrication trades, particularly for experienced workers:

- **Fabricator Heavy** (commonly known as Boilermaker and Boilermaker/Welder). This occupation is classified at a Priority 1 level in all industry sectors.
- **Fabricator Light** (commonly known as Sheet Metal Worker). This occupation is in **Priority 2** level in all industry sectors.

**Welders.** The demand for ferrous and non-ferrous welders is static; ranked at Priority 2, however, the demand for steel welders appears to have increased at this particular time. Good first-class welders are ranked at a Priority 1 level, Aluminium welders in the shipbuilding industry are still in continuing short supply and are ranked at a Priority 1 level.

**Shipwright and Boatbuilding.** The nature of the ship and boat building industry has changed in recent years. The traditional shipwright training is not being renewed as training is dropping off due to a fall in demand for new boats. This will cause a shortage in the future of multi-skilled trades people. The ship building industry has changed to a production model that tends to compartmentalise skills rather than multi-skill workers, with a high emphasis on welding skills. The EATC would rate this occupation at Priority 2 level.

**Composites Industry Tradespeople.** The composites sector is currently growing in importance as an employer as well as a supplier of fabricated component and products. Its reach goes from marine to aerospace as well as covering a wide range of everyday products. Composites are steadily replacing many traditional materials as well as allowing movement into areas where traditional materials would not be suitable. There is a severe shortage of suitably skilled workers available in WA to service the composites industry, employers have been forced to seek skilled workers from overseas but this is made difficult with the trades not being listed on the SPOL. The new apprenticeship pathway to the Engineering Technician (Composites) – Trade may go some way to address this issue. EATC will endeavour to raise the profile of the industry to highlight the skills shortage and have it listed on the SPOL. The EATC would rate this occupation at Priority 1 level.

#### **Engineering Tradesperson (Mechanical)**

- **Mechanical Fitter** (all types except heavy duty). The demand for mechanical fitters across all aspects of industry is continuing and has remained consistently high over the last few years, which includes marine fitters. The increasing demand would rank this occupation at a Priority 1 level.
- **Plant Mechanic/Heavy Duty Fitter.** This occupation in the engineering industry is identical to that of the automotive technician, heavy mobile equipment trade. Different RTOs deliver training from either the MEM05 Training Package in Engineering or AUR05 Automotive Training Package. The trade skill set has the same occupational outcome with different qualification titles. The demand for this occupation justifies a ranking of Priority 1 status.

**Refrigeration and Air Conditioning Mechanic.** Increased electrical skills are reflected in this sector and demand for skilled labour in both refrigeration and air-conditioning is high rated at Priority 2 level.

**First-Class Machinist.** This occupation is currently in steady demand, particularly those with Computer Numerically Controlled (CNC) skills. The demand is for machinists who have a high skill level; many machinists do not have the skills levels necessary for industry requirements. Training should be made available to individuals or enterprises to upskill machinists to a higher proficiency level; this would help address some of the skill shortage issues from industry. Ranked Priority 1.

**Aeroskills.** Aeroskills trades people in the various occupations of this industry sector in Western Australia are in steady demand, especially in the mechanical and avionics fields of the aerospace industry. The aerospace industry in WA is relatively small with very few employers able to employ apprentices, this restricts the availability for apprenticeships positions in WA.

- **Aircraft Maintenance Engineers (Mechanical).** EATC ranked ITC Priority.
- **Aircraft Maintenance Engineers (Avionics).** EATC ranked ITC Priority.

**Trades Assistant.** This non-trade occupation is also in steady demand, particularly experienced workers. In the last few years many experienced trades assistants have taken advantage of skills recognition and FastTrack programs to gain trade qualifications via RPL processes.

### **Engineering Tradesperson (Electrical)**

- **Electrician.** This occupation is in the Priority 1 category and there is an insatiable appetite for electricians across all industry sectors. In the oil and gas and resource sectors, the demand for electricians with instrumentation skills and qualifications is growing.
- **Engineering Drafter.** This professional occupation is at a Priority 1 level across all sectors of the industry, however recent lay-offs of many drafters and engineers by resource and construction companies has, at least in the short term eased the priority.

Manufacturing Skills Australia (MSA) report – shortage of skills is one of the biggest hurdles affecting productivity in Australia and now directly affects almost one in three Australian companies, according to latest research conducted by Bankwest. Skill shortages are back on the urgent list for Australian manufacturing and automotive enterprises, with Western Australia and Queensland being hit especially hard with competition from the resources sector. MSA research findings concur with the Bankwest estimation, with enterprises naming salary competition from more attractive opportunities, such as the resources sector, as one of the primary culprits. While the Critical Skills Investment Fund includes a brief to address skills gaps in sectors impacted by a loss of workers to major projects, there is concern that this initiative's focus on the resources sector skill needs will further leave manufacturing and automotive needs behind on the agenda.

Some MSA stakeholder's stress that the resources sector and infrastructure projects already have the advantage by being able to offer highly competitive salaries. Respondents to MSA's Environmental Scan survey identified workers qualified at the Certificate III (trade) and Certificate IV levels to be hardest to find (65%), followed by Certificate II level production skills (42%). While higher level and specialised skills are required in fewer numbers, these roles provide critical intelligence and leadership for enterprises and, as such, are still one of the highest priorities for industry.

*[Source: MSA Environmental Scan 2011]*

The following table from ABS shows significant reduction in the manufacturing industries in WA along with a reduction in construction. These figures may be deceiving with regard to engineering as the engineering construction in the North West has increased and is continuing to increase. Domestic construction has decreased over the period. There is an increase in mining employment which would involve engineering workers, particularly Plant Mechanics, Fabricators, Fitters and Electricians.

MSA's 2012 Environmental Scan identifies the following skill shortages:

- Fabrication trades including Boilermakers, Sheetmetal Workers and Welders at base and advanced trades levels
- Foundry operatives, including Casting Dressers and Induction Furnace Operators
- Foundry tradespeople, Moulders and Patternmakers
- Industrial Metallurgists

Mechanical tradespersons at base and advanced trade levels, including:

- Maintenance Fitters
- Mechanical Fitters
- Advanced trades in hydraulics and pneumatics
- Plant and Heavy Transport Mechanics
- Machinists
- Locksmiths
- Refrigeration and Airconditioning
- Instrument Technicians
- Electrical tradespersons at base and advanced trades levels, including:

- HV/DC Motor controllers
  - Industrial Electricians
  - Operators, Setters and Programmers for advanced manufacturing systems
  - Process Control Specialists
  - Engineering Designers, including 3D modeling specialists
  - Drafters
  - Engineering Technical Officers
  - Architectural hardware specifiers
  - Engineering Managers
  - Toolmakers
  - Project managers
  - Schedulers
  - Non Destructive Testing (NDT) Technicians
- **Regional Impact**
    - Australia's production of liquefied natural gas (LNG) is expected to more than triple by 2017, making it the second largest global LNG exporter by 2015 (after Qatar). Australia currently has two operating LNG facilities (North West Shelf and Darwin), three under construction in WA (Gorgon, Pluto, Wheatstone, Prelude FLNG), one under construction in the NT, and three under construction in QLD (Curtis, Gladstone, Australia Pacific). Most of these facilities are due to start production by 2017 and will require a significant number of workers during the construction phase. Several others are planned across WA, QLD and NT and likely to enter construction phase over the next few years. Capital investment into projects now under construction is around \$175 billion.
    - Accessing the required quantity and quality of skilled workers is a significant challenge for these projects. For those working in operational and maintenance roles in high-tech, high-risk facilities, experience and safety consciousness are critical qualities. Enterprises are looking for trade qualified and experienced workers, preferably with experience working in remote areas. Central concerns of the large employers for these projects include training capacity to up-skill the local workforce and streamlining access to temporary skilled migrants, particularly during the construction phase, and when access to local skilled labour is limited.
    - Enterprises find employing Australians to be increasingly about playing a competition on pricing which, when combined with costs of accommodation and lifestyle packages, is becoming significantly expensive. On top of this, workers themselves are often seeking work in resources-related projects to pursue high salaries, and are responsive to more competitive offers. As such, the poaching and movement of workers not only affects other manufacturing sectors, but also impacts these enterprises, and is increasingly proving to be unsustainable. On the other hand, skills are needed now, and four-year training programs are considered to be too long to be a solution to addressing project needs. *[Source: MSA Environmental Scan 2012]*

### **Regulatory Requirements**

The occupational licensing of electrical workers is regulated in Western Australia by EnergySafety, through the Department of Commerce. The electrical worker licenses are issued by the Electrical Licensing Board (ELB).

The Electrical Licensing Board issues licenses for the following type of work:

- Electrical contracting work – to electrical contractors
- Electrical installing work – to electricians and is valid for up to five years
- Electrical training – to apprentices and trainees
- Restricted electrical work – to restricted electrical workers

Data provided by EnergySafety identifies that there has been an increase in the number of all types of current licenses in WA over the last five years, shown in **Table 8**.

**Table 8** - Overall Electrical Licenses in WA as at 30 June Each Year

| License Type  | Number 30 June 2008 | Number 30 June 2009 | Number 30 June 2010 | Number 30 June 2011 | Number 30 June 2012 |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Electrician's License                                   | 21 075              | 23 003              | 25 054              | 27 219              | 30 384              |
| Electrician's Training License (Indentured Apprentices) | 3 551               | 3 529               | 3 557               | 3 868               | 4 059               |
| Pre-Apprentices   | 436                 | 531                 | 677                 | 587                 | 420                 |
| Electrical contractors                                  | 3 627               | 3 906               | 4 128               | 4 325               | 4 397               |
| Restricted  | 4 130               | 3 882               | 3 130               | 3 338               | 3 539               |

(Data courtesy of EnergySafety).

There are two national training packages that contain qualifications which lead to an electrical license:

- UEE07 Electrotechnology – UEE30807 Certificate III in Electrotechnology Electrician/ UEE30811 Certificate III in Electrotechnology Electrician
- MEM05 Metals and Engineering – MEM30405 Certificate III in Engineering – Electrical/Electronic Trade and MEM40105 Certificate IV in Engineering, with sufficient electrical installation work carried out on the job.

In WA these qualifications are deemed 'Class A' under the *Vocational Education and Training Act 1996* and can only legally be delivered through an apprenticeship pathway or through a skills recognition pathway.

In May 2010, following a review of the effectiveness of the qualifications, electrical safety regulators, by the Electrical Regulatory Authorities Council (ERAC), it was determined that the MEM30405 Certificate III in Engineering – Electrical/Electronic Trade qualification does not adequately ensure training delivery or assessment of the competence necessary for the issue of an electrician's license and that this qualification is more suited for an 'electrical fitter'. Currently this decision impacts apprentices who will be awarded the MEM30405 qualification on or after 30 September 2015, and will only be entitled to an Electrician's License endorsed "Electrical Fitting Work Only" and will not be entitled to undertake the Capstone Assessment.

This position may change prior to this date, as the Manufacturing Industry Skills Council (MSA) responsible for the Metals and Engineering Training Package is working with ERAC on amending the qualification to allow it to be recognised for the license.

There are transition arrangements in place for completing apprentices awarded the qualification prior to this date, which include statements to support the type of electrical installing work completed on-the-job during the apprenticeship.

- **Gender/Age Participation**

The Engineering and Automotive industries have an ageing workforce with the largest group of workers aged between 31-42. Attributing factors include the high attrition rate of the industry due to the physical nature of much of the work and over the past ten years a decrease in the numbers of apprentices employed by large government organisations.

The need to develop strategies to target mature-aged workers is becoming more of an additional urgency, given the impact of new and emerging technologies on all workplaces, the lack of post-compulsory qualifications held by mature-aged Australians and the need for some mature-aged people to update their skills as they move employment.

It is recommended industry is also encouraged to realise their financial responsibilities in terms of this existing workforce training.

There is a very low participation rate of females in the trades. Females are not well represented in the engineering and automotive industries in a trade's capacity.

*"Occupational segregation between men and women continues to exist, and male dominated occupations tend to earn more than female dominated occupations. Women are more likely to be clerical, sales, community and personal service workers, while men are more likely to be technicians, trades workers, machinery operators, drivers and labourers. Women are still substantially under-represented in the manual trades in Australia, with the number of women in manual trades being less than 2 per cent".*

*[Source: The Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) The review of the Equal Opportunity for Women in the Workplace Act 1999. (2009)].*

In an industry sector where men make up the majority of workers, it is to be expected that men also make up the majority of enrolments. Just over 96% of all commencements in the Metal and Engineering Training Package were male, with the largest course enrolment (2,386) being males enrolling into Certificate III in Engineering – Mechanical Trade.

*[Source: MSA/NCVER VOCSTATS accessed September 2010].*

ABS6202.0 May 2010 data shows that only 1.1% of the automotive and engineering trade workers are female. This is the lowest of all the trades in Australia.

- **Under-Represented Groups Participation**

- Aboriginal participation in the engineering, construction and mining industries has been increasing over the last decade. Mining companies, particularly in regional areas, have dedicated programs of employment for Aboriginal people. Also with the increase in resource activity, more Aboriginal people are being attracted to the industry. However, Aboriginal participation in engineering training is still very low in WA. Factors attributing to this include the lack of culturally sensitive Aboriginal training needs based support programs (including effective literacy support), failure to recognise the need to employ more flexible, non-traditional modes of delivery, limited access to computer usage and ongoing practical experience of technology and, in certain situations, inappropriate placement of training facilities in relation to industry concentration and work placement opportunities.

- The EATC has developed an Aboriginal Employment Strategy to provide guidance and advice to those vocational training, employment and labour market service providers working to secure employment for Aboriginal people in the engineering and automotive industries. This document directly addresses the Skilling WA's Strategic Goal 1 *"Increase participation in the workforce particularly among the under-employed and disengaged, mature-aged workers, Aboriginal and Torres Strait Islander and other under-represented groups."*
- As part of its current strategic direction, the EATC is encouraging small and medium enterprises to identify opportunities to increase Aboriginal employment participation in the two sectors it represents.
- The vast majority of employers in the engineering and automotive industries are unable to establish and maintain the pre-employment preparatory services and the ongoing employment based services required to support Aboriginal people during the transition to permanent, sustainable employment.
- It is unlikely that the entry to employment arrangements in the two sectors will change in any significant way in the short to medium term and, as such, it is important that Aboriginal people have the pre-requisite knowledge and skills to compete directly for apprenticeship and traineeship positions.

## Major Challenges and Barriers

The outlook for the engineering industry over the next five years will be affected by:

- The global economic downturn and the ongoing financial crisis in the USA and the Euro zone.
- The value of the Australian dollar against other currencies.
- The introduction of the carbon tax and the Mining Resource Rent tax.
- Environmental legislation/regulation.
- The development of infrastructure, particularly to support the mining and resource industries.

There are a number of social issues in the engineering industry that impact on workers in the industry and general society:

- The common practice of fly-in fly-out (FIFO) mainly to the Pilbara cause a number of problems and social issues:
- Disruption of family life, workers not having contact with their children, many of them in their formative years.
- Living conditions that are not conducive to a healthy lifestyle, such as working long hours with little opportunity to pursue outside interests.
- Family break-up due to spouses finding other pursuits and partners.
- The high wages paid to many construction and resource industry workers causes an imbalance in the workforce in general causing a division of the "haves and have not's".
- Pressure put on smaller employers to pay higher wages to keep staff.
- Difficulty for industry to employ apprentices in the FIFO environment.
- Labour shortages tending to increase immigration and the consequential strain on the government to increase services.

The engineering industry operates in a steadily changing environment and uses new technologies and modern work practices to maintain a competitive position in world markets. This requires employees to constantly develop and maintain a high level of skills.



The engineering industry has an ageing workforce. In comparison to the number of new entrants, the majority of workers fall within the older age groups. Attributing factors to non-entry into the engineering workforce may include the image of the industry, traditionally perceived as being hot, dirty and physically demanding, being non-inviting to new entrants, as well as a decrease in major training sources for apprentices due to the privatisation of many government engineering and utility enterprises.

The engineering industry has been active in reshaping itself over the last decade and has embraced new technologies and innovation, with more efficient production practices and becoming increasingly export focused.

The engineering industry, in general, is experiencing an increase in activity and continues to be vibrant and innovative. Its success is heavily dependent on current and upcoming activity in resource developments and construction projects.

The engineering industry in WA can be volatile. The industry is cyclical in nature and is strongly influenced by national and international economic factors including:

- Economic conditions with Australia's major trading partners, who are mostly in the Asia Pacific region, particularly China.
- Demand for domestically produced consumer goods such as cars and appliances are mainly driven by prices which are sensitive to input prices and exchange rates affecting prices of competing imports.
- Demand for services and domestically produced industrial products, such as fabricated metal products, is determined primarily by the level of activity in the mining, construction and resources sector, which is influenced by economic conditions nationally and internationally.
- Tariffs, export markets, exchange rates.

The global uncertainty with financial markets is not affecting WA as much as other states with significant declines in the manufacturing industries. WA and Queensland are experiencing the same issues of skilled labour shortages with a strong fly-in, fly-out labour force. There seems to be reluctance from redundant skilled workers from other states to move closer to the two states with the skills shortage.

There has been an expectation that with the many projects being ramped up in the resources sector, there would be a flow-on effect of work for local industries. Much of the manufacturing work for construction of some of the heavy engineering components is being awarded to overseas companies; there is an increased pressure on the WA Government to ensure that there is a larger "local content" in engineering work for local industry.

The small numbers in training and the large movement of people out of the industry each year suggests that the mining industry, rather than Australian governments, should take most of the responsibility for the skills shortages from which it claims to suffer.

- The general lack of understanding by many in the teaching profession on what the trades skills are and what career opportunities exist, particularly knowledge of the engineering industry. This is one of the major impediments to engagement with prospective candidates in the Industry.
- The VET in Schools program is placing a greater emphasis on the trade areas, but there still appears to be some resistance by parents and, consequently, students to pursue a trade career. Much more needs to be achieved in the way of promoting the benefits of a trade career and to abolish the negative image of trades in general. There is a need to expand the VET in Schools program to ensure a meaningful mix of school-based VET programs with suitable structured workplace learning.

- Poor reading and numeracy skills are a major barrier to employment, particularly school leavers. The biggest complaint from employers is the lack of basic literacy and numeracy skills in school leavers who apply for apprenticeships. The perception that trades are a low achievers destination for school leavers is one that seems to be perpetuated by many in the teaching profession. Engineering is a profession that requires very high applied numeracy skills and all engineering tasks require, to some extent, measurement and computations. Being able to read and understand complex instructions is fundamental to productivity.
- As a result of the increasing activity in the resources sector, there will be a need for an increase in training delivery, particularly with apprenticeships in traditional trade areas and in post-trade para-professional studies related to Mechanical Engineering. These increases are likely to take place over the next two to three years. The difficulty of the training providers in the Pilbara and the Kimberley regions to attract suitable teaching staff is a huge barrier to effective training of apprentices and post-trade programs.
- Historically, the engineering and mining industries have had a commitment and preference for employment-based training through apprenticeships, as both industries require “skilled” people and consider a three-and-a-half or four-year training period through apprenticeships allows sufficient time for skills development. This lengthy period of training is often a disincentive for smaller employers who cannot guarantee continuity of work over the whole training period. This is a particular problem when there is a downturn in business activity.
- Enterprises often need to be able to source fully skilled workers when they win contracts. With “boom” conditions the pool of skilled workers is not available and the training time is too long for the instant labour requirement.
- Demand for skills is very much dependent on project-type development of the states’ natural resources, with a lesser emphasis on upgrading skills for those people employed in maintenance activities. This factor in itself presents a problem in identifying training priorities and issues for the stakeholders. Knowing what skills and skill levels are required to work on projects is usually not determined until the supply is tested in the workforce market place, presenting a dilemma for the Industry.
- Companies who require the skilled labour often consider personnel in their workforce as possibly benefiting from up-skilling training. These workers are usually working long hours, which restrict their ability to attend structured training courses. This is a major barrier to increasing the higher level skills in the workforce. Cost is also a prohibitive factor and a consideration for many training providers in delivering flexible and appropriate training to meet the requirements of industry to personnel working on remote work sites.
- The businesses most affected by skill shortages are not the large construction or engineering companies, but the small to medium sized organisations. These businesses are down the line as far as their ability to attract large-scale work and, therefore, experience difficulty competing with the higher salaries offered to the more highly skilled people of the larger companies. The smaller employers are often loath to spend money on training as they believe that when the level of skill of their employees rises, the employees will be “poached” by larger companies who may be able to pay higher wages or offer better career pathways.
- There is a serious shortage of younger people entering the Vocational Education and Training (VET) sector as trainers; the issue of an ageing VET lecturer population is probably more serious than in the industry workforce. Unless these “soon to retire” trainers and teachers are replaced, we will have no-one to teach the few that we are attracting into the industry.

- Employers are seeking more flexible and responsive solutions to their training needs. An improvement in lean and agile manufacturing concepts has led to a focus on skills and modes of training that improve the viability and economic prospects of the firm. Registered Training Organisations need to recruit new staff to replace an ageing workforce in the engineering training delivery area. Without this constant renewal of training staff, they will be even less able to deliver to the needs of the industry.
- There are many experienced engineering workers in various positions and enterprises who have no formal qualifications. In many cases, attention to minor skills gaps by way of skills assessment could bring these workers up to trade level. There is a need for the continued promotion of the FastTrack Apprenticeship system for experienced mature-aged workers.
- The cyclical nature of the engineering industry in Western Australia has been a feature for many years and does not look as if it will change in the foreseeable future. Every time there is a higher world demand for minerals or resources, there is surge in activity in Australia. The resources industry in the North West is the major contributor to Australia's wealth. It is also one of the major users of skilled engineering labour. New mining enterprises in Queensland will also put pressure on the market for skilled labour. It is becoming more difficult to find skilled workers to fill the increasing number of vacancies. The fly-in, fly-out workers have significant pressures put on their family life with the constant disruption due to work demands. Workers are expected to work long hours in very trying and difficult conditions, particularly on construction work. This not only puts a strain on their health, but also may have an impact on the effective working life of workers. This, in the long term, is a significant barrier to employment in the engineering industry.
- Employers have difficulty in maintaining a stable set of employees due to the highly competitive "bidding" in wages. This situation is worse in times of skilled labour shortages.

## **New and Emerging Skills**

The composites sector is currently growing in importance as an employer as well as a supplier of fabricated component and products. Its reach goes from marine to aerospace as well as covering a wide range of everyday products. Industry sectors involved in the use and manufacture of composite products include ship and boatbuilding, resources, aerospace, domestic swimming pools and other associated industries. Composites are steadily replacing many traditional materials as well as allowing movement into areas where traditional materials would not be suitable.

There is a severe shortage of suitably skilled workers available in WA to service the composites industry, employers have been forced to seek skilled workers from overseas but this made difficult with the trades not being listed on the SPOL. The new apprenticeship pathway to the Engineering Technician (Composites) – Trade may go some way to address this issue. EATC will endeavour to raise the profile of the industry to highlight the skills shortage and have it listed on the SPOL.

Key growth areas identified by MSA which require composites skills are:

- Advanced manufacturing
- Advanced fabrication techniques
- Welding
- Defense engineering including naval shipbuilding

All of the key growth areas identified in the MSA Environmental Scan 2012 are:  
(Note: all of these areas apply to WA as well as nationally)

- Advanced manufacturing
- Advanced fabrication techniques
- Welding
- International technical standards and trading requirements
- CAD
- Robotics/simulation programming and controls
- Integrated systems
- Alternative energy
- Green products
- Nanotechnology
- Defense engineering including naval shipbuilding
- Online technology
- Project management
- International benchmarking
- Automatic machining
- Community engagement
- Maintenance
- E-marketing

These growth areas are not necessarily areas that need new skills rather they need to be targeted as areas of increasing attention, MSA has taken this on board and will apply the appropriate action.

#### **Occupations in Demand (ANZSCO Code)**

| <b>ANZSCO</b> | <b>Occupation</b>                   | <b>Priority Memo</b>   |
|---------------|-------------------------------------|--|
| 133211        | Engineering Manager                 | Most Engineering Managers work under their occupations of : <ul style="list-style-type: none"> <li>• Mechanical Engineer</li> <li>• Structural Engineer</li> <li>• Industrial Engineer</li> <li>• Material Engineer</li> </ul> |
| 233512        | Mechanical Engineer                 | Due to the long lead time to properly train Mechanical Engineers, importation of skilled migrants in this occupation is an essential strategy to help overcome critical skill needs.   |
| 312511        | Mechanical Engineering Draftsperson | There remains a steady demand for the skills associated with Drafters occupation, however a large degree of drafting contracts are performed overseas, ie Philippines, Singapore etc   |
| 312512        | Mechanical Engineering Technician   | This occupation is aligned to other occupational such as – Engineering Planners, Estimators, and Schedulers etc. All these occupations are in demand in many companies.  |
| 312911        | Maintenance Planner                 | There is a ongoing shortage of experienced Maintenance Planners, most Planners are recruited from top trades people with shop floor knowledge being a critical component with the skill needs of this occupation.              |

| ANZSCO | Occupation                                 | Priority Memo  |
|--------|--|--|
| 322114 | Metal Casting Trades Worker                | Recruitment issues are the primary concern for this occupation, no one wants to work in a foundry where it is a hot, noisy dusty environment, with very little pathway progression.  |
| 322211 | Sheetmetal Trades Worker                   | <p>With the critical skill shortages in the Heavy Engineering Fabrication sector, Sheetmetal Trade Workers are being enticed into the heavy fabrication sector.</p> <p>The transition from working on sheetmetal to heavier steel plate is minimal, the skill sets for both trade areas is very similar.</p> <p>This □syphoning affect of skilled workers to the heavy fabrication sector has caused a critical shortage of experienced sheetmetal workers to undertake the ever increasing demand for sheetmetal products, especially for the resource projects under construction now and in the future. The EATC would recommend that this occupation be elevated to Priority 1 status.</p> |
| 322311 | Metal Fabricator                           | Metal fabricators are employed in virtually every industry sector in WA; the current number of apprentices in training will not meet the demand for this key occupation. Engineering Construction especially in the resource sector requires far more skilled workers than what is being trained by industry in WA.  |
| 322312 | Pressure Welder                            | As this occupation is amalgamated in with Welder (first-class) and Coded Welders in Australia, it should be classified as Priority 1 category  |
| 322313 | Welder (First Class)                       | Currently Welder (first class) apprentice numbers in training will not even replace the current “Baby Boomer” retirement figures for Welders. The State is facing a critical skill shortages associated with this occupation.  |
| 323111 | Aircraft Maintenance Engineer (Avionics)   | Demand for this occupation is increasing, apprenticeship numbers will not keep up with this demand.  |
| 323112 | Aircraft Maintenance Engineer (Mechanical) | With the small number of apprentices undertaking training, demand for this occupation will exceed supply, it is essential to recruit overseas skilled tradesperson in this occupation.   |
| 323113 | Aircraft Maintenance Engineer (Structures) | With only one apprentice in training at the moment, this does not reflect the overall demand for this occupation.  |
| 323211 | Fitter (General)                           | The Mechanical Fitter trade is recognized within the engineering sector as a critical occupation. The supply of skilled labour is not keeping up with the very high demand for this occupation.  |
| 323112 | Fitter and Turner                          | This occupation is in critical demand across most engineering industry sectors.  |

| ANZSCO | Occupation  | Priority Memo  |
|--------|---|--|
| 323113 | Fitter-Welder   | The occupation of "Fitter Welder" is in the real sense a Mechanical Fitter who can weld to a standard acceptable to industry. There is no registered apprenticeship currently for this occupation. The reason it has been classified at Priority 1 status is because the skills of Fitting and Welding are in very high demand. The EATC is currently reviewing a proposal from industry to amalgamate the trades of Fitter and Welder to create a Certificate IV higher trade outcome.          |
| 323114 | Metal Machinist (First Class)                         | Metal machinist (first-class) occupation is strategic in terms of importance for the general engineering sector. The current demand for this occupation is at a critical level, especially for experience Machinists with CNC programming skills.  |
| 323299 | Metal Fitters and Machinists not elsewhere classified | This occupation is a combination of the Mechanical Fitter and Metal Machinist trades, the data contained in the Fitter (general) and Metal machinist occupations is relevant to this occupation.   |
| 323313 | Locksmith   | Training lead times maybe an issue.  |
| 323314 | Precision Instrument Maker and Repairer               | Very long training lead times are associated with the new trade title for this occupation this ensures the issues are 5+ years.  |
| 323411 | Engineering Patternmaker                              | This occupation should be left at Priority 2 level.  |
| 323412 | Toolmaker   | The Toolmaker occupation operates in a small niche sector of the engineering industry. It is a strategic occupation within the industry and is vital for the operational needs of many companies. The numbers under training is small. The occupation should remain at Priority 2 level.   |
| 341111 | Electrician (General) )                               | This occupation is in the Very High Priority category and there is an insatiable appetite for electricians across all industry sectors. In the oil and gas and resource sectors, the demand for electricians with instrumentation skills and qualifications is growing.  |
| 342111 | Airconditioning and Refrigeration Mechanic            | With the growing population, airconditioning and refrigeration skills are in every increasing demand both on a domestic and commercial basis. Current apprenticeship training numbers will not keep up with the industry demand for this occupation.   |
| 399111 | Boat Builder and Repairer                             | The EATC IWDP refers to the Marine Industry in Western Australia, in which this occupation plays a pivotal role in. The Marine industry in WA has serious concerns relative to the number of Boat Builders and Repairer leaving the industry for higher paid jobs in the Resource sector. The skill sets associated with this occupation makes them attractive to the engineering fabrication and mine maintenance sectors. This has resulted in a skill shortage issues in the marine industry. |

| ANZSCO | Occupation   | Priority Memo  |
|--------|--|--|
| 399112 | Shipwright   | The EATC IWDP refers to the Marine Industry in Western Australia, in which this occupation plays a pivotal role in. The Marine industry in WA has serious concerns relative to the number of Boat Builders and Repairer leaving the industry for higher paid jobs in the Resource sector. The skill sets associated with this occupation makes them attractive to the engineering fabrication and mine maintenance sectors. This has resulted in a skill shortage issues in the marine industry. |
| 711513 | Plastics Fabricator or Welder                      | The Marine industry in WA has serious concerns relative to the number of Boat Builders and Repairer leaving the industry for higher paid jobs in the Resource sector. The skill sets associated with this occupation makes them attractive to the engineering fabrication and mine maintenance sectors. This has resulted in a skill shortage issues in the marine industry  |
| 711515 | Reinforced Plastic and Composite Production Worker | The swimming pool and associated products manufacturing industry in WA has serious concerns relative to the low number skilled workers available to service their needs.   |

## Workforce Development Opportunities

### Engagement of Aboriginal Workers in the Engineering Industries

Aboriginal participation in the engineering, construction and mining industries has been increasing over the last decade. Mining companies, particularly in regional areas, have dedicated programs of employment for Aboriginal people. Also with the increase in resource activity, more Aboriginal people are being attracted to the industry. However, Aboriginal participation in engineering training is still very low in WA. Factors attributing to this include the lack of culturally sensitive Aboriginal training needs based support programs (including effective literacy support), failure to recognise the need to employ more flexible, non-traditional modes of delivery, limited access to computer usage and ongoing practical experience of technology and, in certain situations, inappropriate placement of training facilities in relation to industry concentration and work placement opportunities.

The EATC has developed an Aboriginal Employment Strategy to provide guidance and advice to those vocational training, employment and labour market service providers working to secure employment for Aboriginal people in the engineering and automotive industries. This document directly addresses the DTWD's Strategic Goal 1 *"Increase participation in the workforce particularly among the under-employed and disengaged, mature-aged workers, Aboriginal and Torres Strait Islander and other under-represented groups."*

As part of its current strategic direction, the EATC is encouraging small and medium enterprises to identify opportunities to increase Aboriginal employment participation in the two sectors it represents.

The vast majority of employers in the engineering and automotive industries are unable to establish and maintain the pre-employment preparatory services and the ongoing employment based services required to support Aboriginal people during the transition to permanent, sustainable employment.

It is unlikely that the entry to employment arrangements in the two sectors will change in any significant way in the short to medium term and, as such, it is important that Aboriginal people have the pre-requisite knowledge and skills to compete directly for apprenticeship and traineeship positions.

### **VET Training Data by Qualification – Enrolments and Completion**

The majority of qualifications in the engineering industry are in the Certificate III and Certificate IV Trades areas:

- Certificate I in Engineering – suitable for VET in schools and pre-vocational programs
- Certificate II in Engineering – suitable for pre-apprentice programs and areas that need skills but not to full trade level
- Certificate III in Engineering – Production Systems – this is a non-trade qualification
- Certificate III in Engineering – Mechanical Trade
- Certificate III in Engineering – Fabrication Trade
- Certificate III in Engineering – Electrical/Electronic Trade
- Certificate III in Marine Craft Construction
- Certificate III in Locksmithing
- Certificate III Jewellery Manufacture
- Certificate III in Watch and Clock Services and Repair
- Certificate IV in Aeroskills (Avionics)
- Certificate IV in Aeroskills (Mechanical)
- Certificate IV in Engineering – post-trade qualification
- Certificate IV in Advanced Jewellery Manufacture
- Diploma of Engineering – Advanced Trade – post-trade qualification
- Diploma of Engineering – Technical
- Advanced Diploma of Engineering

Despite skills shortages, the evidence is that there is only a small increase in apprenticeships in WA in the engineering field. Electricians have increased but many of those are domestic electricians without the complementary engineering skills required for the resource and engineering construction sectors.

Apprenticeships classified under Metals, Manufacturing and Services Apprenticeships include Fitters, Fabricators, Plant Mechanics, Machinists and Welders have increased over the past three years. Traineeships under the same sectors are small but show an increase over the past three years.

The DTWD Training Records System (TRS) shows the following apprentice and trainee numbers:

**Table 20 - Electrical Apprenticeships (combined Engineering and Utilities & Electrotechnology)**

|                    |      |
|--------------------|------|
| As at 30 June 2010 | 3546 |
| As at 30 June 2011 | 3816 |
| As at 30 June 2012 | 4132 |

Increase of 586 apprentices in training over three years



**Table 21 - Metals, Manufacturing & Services Apprenticeships**

|                    |      |
|--------------------|------|
| As at 30 June 2010 | 4641 |
| As at 30 June 2011 | 4654 |
| As at 30 June 2012 | 4872 |

Increase of 231 apprentices in training over three years

**Table 22 - Metals, Manufacturing & Services Traineeships**

|                    |     |
|--------------------|-----|
| As at 30 June 2010 | 282 |
| As at 30 June 2011 | 326 |
| As at 30 June 2012 | 323 |

Increase of 41 trainees in training over three years

The following information is sourced from the DTWD Training Records System (TRS) Data Cube for Providers. It covers information on pre-employment, apprenticeships and traineeships and VET in Schools qualifications; course enrolments June 2011 to June 2012. All of the Training Packages covered by the engineering industries are shown.

**Table 23 – MEM05 Qualifications**

| MEM05 Qualifications All Contracts                                    | Commencements | Completions | In Training |
|---|---------------|-------------|-------------|
| MEM10105 Certificate I in Engineering                                 | N/A           | N/A         | N/A         |
| MEM10205 Certificate I in Boating Services                            | N/A           | N/A         | N/A         |
| MEM20105 Certificate II in Engineering                                |               |             |             |
| MEM20205 Certificate II in Engineering – Production Technology        | 0             | 0           | 0           |
| MEM20305 Certificate II in Boating Services                           | 0             | 0           | 0           |
| MEM30105 Certificate III in Engineering – Production Systems          | 4             | 9           | 2           |
| MEM30205 Certificate III in Engineering – Mechanical Trade            | 1077          | 565         | 2312        |
| MEM30305 Certificate III in Engineering – Fabrication Trade           | 1001          | 393         | 1862        |
| MEM30405 Certificate III in Engineering – Electrical/Electronic Trade | 97            | 140         | 362         |
| MEM30505 Certificate III in Engineering – Technical                   | 6             | 65          | 5           |
| MEM30605 Certificate III in Jewellery Manufacture                     | 15            | 15          | 33          |
| MEM30705 Certificate III in Marine Craft Construction                 | 9             | 8           | 20          |
| MEM30805 Certificate III in Locksmithing                              | 27            | 15          | 56          |
| MEM30905 Certificate III in Boating Services                          | 0             | 0           | 0           |
| MEM31010 Certificate III in Watch and Clock Service and Repair        | 0             | 0           | 0           |
| MEM40105 Certificate IV in Engineering                                | 87            | 76          | 174         |
| MEM40205 Certificate IV in Boating Services                           | 0             | 0           | 0           |
| MEM50105 Diploma of Engineering – Advanced Trade                      | 0             | 0           | 5           |
| MEM50205 Diploma of Engineering – Technical                           | 1             | 8           | 10          |
| MEM60105 Advanced Diploma of Engineering                              | 0             | 0           | 3           |

|  |             |             |             |
|--|-------------|-------------|-------------|
| MEM60111 Advanced Diploma of Engineering | 2           | 0           | 2           |
| <b>Totals</b>                            | <b>2523</b> | <b>1279</b> | <b>5034</b> |

| MEA Qualifications All Contracts                     | Commencements | Completions | In Training |
|--|---------------|-------------|-------------|
| Certificate IV in Aeroskills (Avionics) (MEA40607)   | 1             | 0           | 13          |
| Certificate IV in Aeroskills (Avionics) (MEA40610)   | 4             | 0           | 4           |
| Certificate IV in Aeroskills (Mechanical) (MEA40702) | 0             | 8           | 0           |
| Certificate IV in Aeroskills (Mechanical) (MEA40707) | 1             | 5           | 1           |
| Certificate IV in Aeroskills (Mechanical) (MEA40710) | 16            | 0           | 16          |
| Certificate IV in Aeroskills (Structures) (MEA40807) | 0             | 0           | 0           |
| Certificate IV in Aeroskills (Structures) (MEA40810) | 2             | 0           | 2           |
| Diploma of Aeroskills (Mechanical) (MEA50210)        | 3             | 0           | 3           |
| <b>Totals</b>  | <b>27</b>     | <b>13</b>   | <b>74</b>   |

**Table 24 – Competitive Manufacturing**

| MSA Qualifications All Contracts  | Commencements | Completions | In Training |
|---|---------------|-------------|-------------|
| Certificate III in Competitive Manufacturing (MSA31108)                   | 3             | 2           | 3           |
| Certificate IV in Competitive Manufacturing (MSA41108)                    | 735           | 228         | 953         |
| Diploma of Manufacturing Technology (MSA50108)                            | 3             | 0           | 6           |
| Certificate III in Surface Preparation and Coating Application (MSA30309) | 1             | 0           | 0           |
| Certificate II in Recreational Vehicle Manufacture (MSA20610)             | 1             | 0           | 1           |
| Certificate III in Recreational Vehicle Manufacture (MSA30610)            | 1             | 9           | 5           |
| <b>Totals</b>   | <b>744</b>    | <b>239</b>  | <b>968</b>  |

**Table 25 – VET in Schools Qualifications**

| VET in Schools qualifications: Course enrolments 2007 – 2011 – Engineering |   |      |      |      |      |      |
|--|---|------|------|------|------|------|
| Qualification Code   | Qualification Name                        | 2011 | 2010 | 2009 | 2008 | 2007 |
| 52299  | Certificate II in Jewellery Manufacture   |      |      |      |      |      |
| MEA20410   | Certificate II in Aeroskills              | 5    | 13   |      |      |      |
| MEA40610   | Certificate IV in Aeroskills (Avionics)   | 1    |      |      |      |      |
| MEA40710   | Certificate IV in Aeroskills (Mechanical) |      |      |      |      |      |

| VET in Schools qualifications: Course enrolments 2007 – 2011 – Engineering |  |          |          |          |          |          |
|--|--|----------|----------|----------|----------|----------|
| MEA40810   | Certificate IV in Aeroskills (Structures)  |          |          |          |          |          |
| MEM10105   | Certificate I in Engineering   | 1389     | 1324     | 1085     | 968      | 1109     |
| MEM10205   | Certificate I in Boating Services  | 53       | 80       | 39       |          |          |
| MEM20105   | Certificate II in Engineering  | 551 (70) | 400 (76) | 360 (20) | 357 (79) | 291 (35) |
| MEM30205   | Certificate III in Engineering – Mechanical Trade                                | 16 (13)  | 3 (5)    | 3 (2)    | 6        |          |
| MEM30305   | Certificate III in Engineering – Fabrication Trade                               | 40 (20)  | 46 (20)  | 41 (19)  | 20 (21)  | 2        |
| MEM30405   | Certificate III in Engineering – Electrical/Electronic Trade                     | 1 (1)    |          | 1        |          |          |
| MEM30505   | Certificate III in Engineering – Technical                                       | 146      | 97       | 82       | 23       |          |
| MEM30605   | Certificate III in Jewellery Manufacture   |          |          |          |          |          |
| MEM30705   | Certificate III in Marine Craft Construction                                     |          |          |          |          |          |
| MEM40105   | Certificate IV in Engineering [Engineering (Electrical Instrumentation) Pathway] |          |          |          |          |          |
| MEM50211   | Diploma of Engineering – Technical   |          | 1        | 2        | 2        |          |
| MSA10107   | Certificate I in Manufacturing (Pathways)  | 143      | 78       | 112      | 159      | 52       |

- Numbers in black = numbers from AVETMISS data collection. (As stated above, this should also include SBA and SBT course enrolments).
- Numbers in red = numbers of SBA/SBT course enrolments from TRS.

## Higher Education Pathways

There are 399 professional engineering companies in WA; these include mechanical and general engineers.

There are 68 electrical engineering companies in WA.

There are 35 engineering drafting companies in WA.

The EATC has wide coverage of industry occupations from VET in schools up to qualified engineers. We realise that we were predominantly concentrating on trades issues and did not have an industry perspective on post-trades and higher level engineering issues.

In August 2011, the EATC completed a research project into the demand for and use of higher level engineering qualifications by industry in Western Australia. Specifically, the research project was required to establish the level of industry need and demand for higher level engineering qualifications at the Diploma, Advanced Diploma and Associate Degree level.

The primary focus of the project was to identify the industry's understanding and usage of higher level Vocational Education and Training (VET) qualifications in areas within the EATC coverage.

A key component of this focus was for the project to comprehend the occupational classification associated with higher level engineering positions and to identify how these classifications are used within industry.

It is clear that there is a “blurring of the lines” within the VET system with regard to the classifications.

There appears to be an assumption within some of the public VET institutes that the introduction of Associate Degrees in Engineering will allow for the delivery of training programs in support of Engineering Technologist positions. This is not the case. The formal occupation classification system and the professional body categorization both specify that the expected qualification level for an Engineering Technologist role is a full Bachelor Degree.

The current Diplomas and Advanced Diplomas of Engineering offered by the VET system satisfy the indicative skill levels for Engineering Technician roles. The introduction of Associate Degrees in Engineering will simply extend the learning within the same indicative skill level for an Engineering Technician.

Within the companies and organizations examined by the project, there is little usage of the formal classification titles for either technologist or technician.

The research found that, with the exception of the two government agencies, there was virtually no industry recognition of higher level vocational education and training (VET) engineering qualifications and, consequently, no need or demand factors were identified.

The project had two phases, with phase one using a sample approach of fifteen companies and organisations followed by a second sample of twenty companies with similar characteristics, different from the fifteen respondents involved in the initial research activity.

The initial research activity identified a significant gap in the industry knowledge and understanding of higher level VET engineering qualifications. As a consequence of the project findings, advice was sought from the Central Institute of Technology and Polytechnic West on the career and job destinations and prospects for higher level engineering course graduates.

The two public training providers advised the EATC that graduates use the higher level qualifications to assist with alternative entry to university and as an entry-level employment point for occupations such as draftspersons and laboratory technicians.

The second phase used a short survey instrument that identified nine typical positions above the base trade level. These positions were:

- Drafter/Draftsperson
- Planner
- Workshop or Shift Supervisor
- Maintenance Supervisor
- Scheduler
- Estimator
- Process or Laboratory Technician
- Engineering Associate
- Engineer

A total of thirty-five Western Australian companies with a direct requirement for all levels of engineering skills have responded to the research requests. The thirty-five companies are representative of the Western Australian engineering manufacturing, engineering maintenance and the mining and resource sectors that utilise all levels of engineering skills.

In addition, during both phases of the project, the following organisations representing various engineering disciplines and professions were consulted:

- Engineers Australia
- Australian Steel Institute
- Marine WA
- Australian Institute of Air-conditioning, Refrigeration and Heating

The combined projects have identified a lack of knowledge and understanding of higher level VET engineering qualifications in industry and an almost total lack of demand for these qualifications in relation to typical positions above the base trade level.

The combined projects have also identified a high level of regard and recognition within industry for trade level qualifications and the use of these qualifications as the base for further skills development and progression into above trade engineering positions.

The research shows that there is almost no industry use of higher level VET engineering qualifications for the nine identified typical positions. The survey did not identify any other positions different from the nine identified typical positions that require higher level VET engineering qualifications.

With the exception of positions classified as Engineers and requiring a Bachelor Degree qualification, the acceptable entry level qualification for all other positions is the trade level Certificate III program. Most of the respondents employ workshop, shift and maintenance supervisors with a requirement that people in these positions progress from a trade background.

Some of the respondents employ Planners, Schedulers and Estimators with a requirement that people in these positions progress from a trade background.

Those respondents that employ Drafters/Draftsmen expect a qualification at the Certificate IV level or above, with most preferring a progression to these qualifications from a trade background.

There is a minimal requirement for diploma level qualifications for any of the eight typical positions below the Engineer level. There is almost no opportunity for direct entry to the eight typical positions below the Engineer level for graduates from full-time higher level VET engineering programs.

In almost all cases and for all nine typical positions, the respondents expect applicants for these positions to have developed their skills through on-the-job experience.

## Industry Issues

- **Skill and labour shortages in engineering trades** are at critical levels. There are skill and labour shortages in a number of trades, particularly experienced and highly skilled machinists, engineering electricians with instrumentation skills and mechanical fitters with hydraulic skills, heavy fabricators and welders with high level coded welding skills. Intensive specialised training may be carried out in a post-trade capacity. Fitters, fabricators and electricians may be employed in any industry sector outside of engineering specific enterprises in a service, construction or maintenance capacity. As a training issue, the emphasis on core skills within all of the trades is paramount, particularly in the engineering industry. The application of core skills in a variety of situations is the key to a good engineering tradesperson. It is the duty of the RTO to provide these skills for apprentices that can then be applied in the particular workplace in which the apprentice or trainee is employed.

Companies who require skilled labour often consider personnel in their workforce as possibly benefiting from up-skilling training. These workers are usually working long hours, which restrict their ability to attend structured training courses. This is a major barrier to increasing the higher level skills in the workforce. Cost is also a prohibitive factor and consideration for many training providers is delivering flexible and appropriate training to meet the requirements of industry to personnel working on remote worksites.

- **Poor work readiness of job applicants for engineering trades**, which includes reading and numeracy skills, are a major barrier to employment and training, particularly with school leavers. Accurate and relevant career advice in schools is vital for students who aspire to enter the engineering and automotive industries. It is the responsibility of the Education Department, industry and VET providers to ensure that the capabilities of applicants and the required skills needed in our industries are clearly understood.
- **Employers not indenturing apprentices due to lack of work in WA engineering metal fabrication companies** as resources companies' are not allocating work to local companies. Much of the metal fabrication work that is completed overseas could be done locally for mining and resources construction work. This low level of local content on major resource projects is preventing local companies being able to employ apprentices. It is widely believed that WA's skilled engineering and fabrication jobs are in danger of collapse. This view is supported by the Australian Steel Institute, UnionsWA and the Association of Professional Engineers, Scientists and Managers, Australia. **Local content** in the engineering industry is an issue requiring urgent attention to ensure that local labour and local companies are used in the resources boom. It is reported that Australian engineering capability is diminishing as engineering design work goes overseas. There is also concern that training of new trade workers is under threat due to the use of overseas workers in Australia on working visas. Particularly, there is major concern among WA engineering metal fabrication companies over low levels of local content on major resource projects. For example, the engineering metal fabrication shops along the Kwinana strip are only working at 30% capacity. The State Manager for the Australian Steel Institute, James England, was quoted as saying "the use of offshore workers for some of WA's resource projects is having a devastating impact on the local fabrication industry. People might be surprised to learn that, despite a large number of huge resources projects being under construction up north, most of our fabrication workshops are almost empty and some businesses are close to collapse," (Ibid). The State Government is unfortunately in a position where they are required to support local industry, but at the same time attract investment from international investors. Balancing the needs of all stakeholders is difficult in relation to this issue. The occupations employed in the engineering fabrication sector have been categorised as priority 1 on the State Priority Occupations List (SPOL). EATC envisages that these occupations will become even more critical in the next twenty-four month period.
- **Lack of training opportunities for engineering electricians due to withdrawal of engineering training package qualification for a full electricians licence.** Changing national electrical licensing arrangements are a cause of great confusion and disquiet, particularly in the engineering construction, mining, oil and gas, and general engineering sectors. From mid-2013, national licensing will commence for electrical trades, state and territory licenses will be transferred across to the new system at this time. The Electrical Regulators Advisory Committee (ERAC) made a decision not to recognise the engineering electrical trade qualification, MEM30405, for licensing as a trade Electrician (Mechanic). ERAC will accept the MEM30405 qualification to be recognised as eligible for an Electrical Fitters license. This does not require a Capstone test or installation experience. After 2015 an electrical fitter wishing to upgrade to a full Electrician's License, will need to apply to the Electrical Licensing Board (ELB) for a permit to carry out electrical installing work under supervision. They will be issued with a logbook to record their on-the-job electrical

installing experience. After attaining at least twelve months installing experience, applicants will sit the Electrical Licensing Board's examination (Capstone). If successful, they will be issued an Electrician's Licence upon payment of the prescribed fee. This essentially makes the MEM apprenticeship a five-year fixed term to reach the same license eligibility as the EE-Oz qualification/apprenticeship does in four years.

- **Very low industry recognition of higher level Vocational Education and Training (VET) engineering qualifications.** In August 2011, the EATC completed a research project into the demand for and use of higher level engineering qualifications by industry in Western Australia. Specifically, the research project was required to establish the level of industry need and demand for higher level engineering qualifications at the diploma, advanced diploma and associate degree level. The research found that, with the exception of the two government agencies, there was virtually no industry knowledge or recognition of the availability of higher level Vocational Education and Training (VET) engineering qualifications and, consequently, no need or demand factors were identified.
- **Lack of a suitable declared trade for apprentice recruitment in the composites industry** is preventing the industry from training new workers. The composites sectors are currently growing in importance as an employer as well as a supplier of fabricated component and products.

## 3B - Automotive Industry

### Overview of the Automotive Industry

The automotive industry in Western Australia (WA) is a large and diverse industry which includes manufacturing, light vehicle retail service and repair, vehicle body repair, outdoor power equipment, agricultural machinery, bicycles, recreational boating, recreational vehicles, motorcycles and heavy vehicle mobile equipment and heavy road transport retail and repair.

The automotive industry is a major contributor towards the Western Australian economy.

The automotive Industry is crucial to the Australian economy. It employs approximately 386,991 people nationally with 37% being in the Retail Service and Repair sector. Annual turnover for the automotive industry is approximately \$209.3 billion, this figure is largely comprised of sales and service income this represents 2.7% of Gross Domestic Product (GDP).

Western Australia currently has 11.5% of the total automotive market share. This is shown in the total Australian context in the key facts and Figure 3 below.

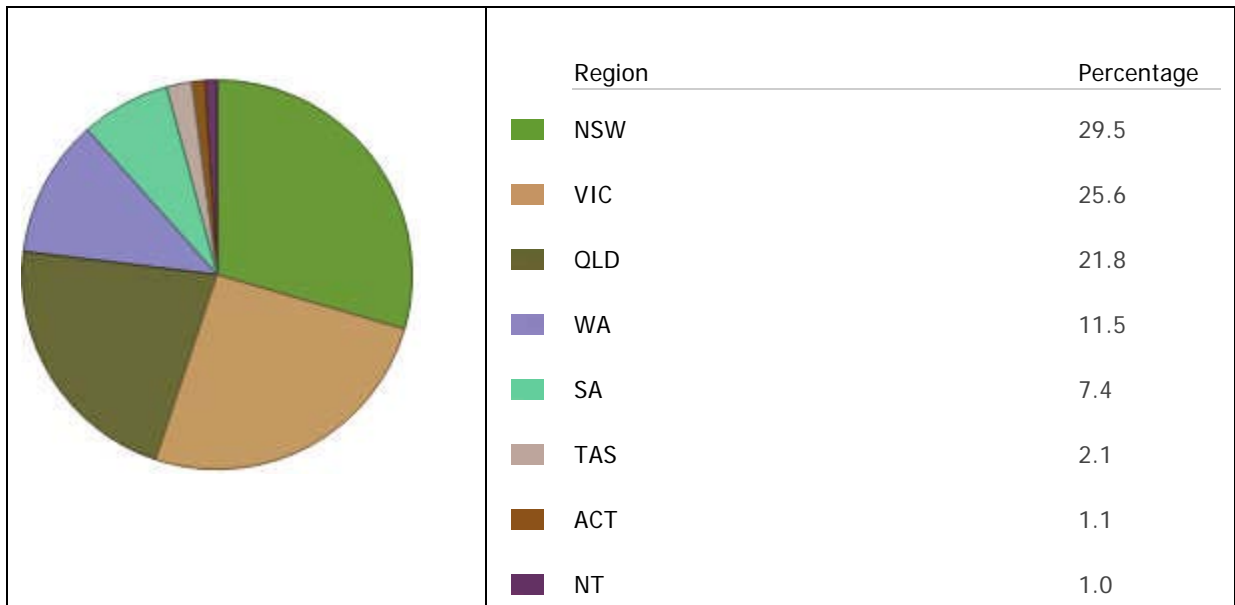
#### Key Facts

|                      |  |
|----------------------|--|
| <b>1,008,437</b>     | More than one million motor vehicles were sold in Australia in 2011  |
| <b>109,067</b>       | Almost 110,000 motorcycles, ATVs and scooters were sold in the same period   |
| <b>9.4%</b>          | Vehicle sales for the first eight months of 2012 are up 9.4% (62,738 units) compared with sales for the same period in 2011, with a YTD total of 728,047 |
| <b>64</b>            | There are 64 automotive brands in the Australian market  |
| <b>110,000</b>       | There are more than 110,000 businesses in the Australian automotive sector   |
| <b>\$209 billion</b> | Annual turnover in the Australian automotive industry exceeds \$209 billion  |
| <b>\$10 billion</b>  | The industry pays more than \$10 billion in tax to Australian governments each year  |
| <b>\$3.3 billion</b> | The Australian automotive sector exported around \$3.3 billion worth of vehicles and components in 2011  |
| <b>\$668 million</b> | The automotive industry is the largest contributor to manufacturing research and development in Australia, investing around \$668 million in 2009-10     |
| <b>7.6%</b>          | Passenger vehicles contribute 7.6% of Australia's greenhouse gas emissions   |
| <b>20%</b>           | The average new vehicle emits 20% fewer CO <sub>2</sub> emissions than in 2000, and just a fraction of nitrous oxide and particulate matter              |
| <b>75%</b>           | Up to 75% of vehicle components are recycled or re-used  |
| <b>3.5%</b>          | The effective average tariff rate is 3.5%, taking Free Trade Agreements into account, down from over 30% in the 1990s                                    |

[Source: ASA Environmental Scan 2012]



**Figure 3 – Automotive Market Share**



[Source: IBIS World 2011]

The automotive sector is a constantly changing landscape, and due to the constant demands on vehicle manufacturers to conform to ever-changing emission, safety regulations and fashion trends, the automotive sector has now become a hot bed of new technologies such as, hybrid/electric vehicles, the use of carbon composite construction technologies, water-based paint systems and a heavy emphasis upon computer-based technologies.

With the advent of these new technologies, new methods of training and skill sets will need to be constantly developed (Auto Skills Australia (ASA) have produced the AUR12 and AUM12 (endorsed) Training Packages which include these new technologies). The automotive sector is now becoming a very high-tech industry, thus creating the need for highly qualified employees.

- **Industry Analysis**

Providing accurate data for automotive businesses presents some challenges. There are sources of information available, but none are complete measures. This anomaly is largely due to the structure of businesses and the way data is collected by data collection agencies. By way of example, an automotive business enterprise can be a single workplace in a single location, or a business with multiple workplaces operating in one or more states.

The Australian Bureau of Statistics (ABS) publishes counts of Australian business annually. These are based on Business Activity Statements (BAS) from the Australian Taxation Office, therefore representing businesses registered with an Australian Business Number (ABN) that are actively remitting GST.

Apart from the fact that not all businesses may be registered for GST purposes, the main challenge with ABS business counts as a data source arises with businesses that have operations involving multiple sites or locations. These sites may all be reporting under the one ABN of the head office location, in which case they would be counted as one business in one location.

A better measure would be a count of actual workplaces. [Source ASA Environmental Scan 2012]

The EATC has created its own automotive database by applying the counting workplaces methodology in WA.

**Table 9 – Automotive Demographics in Western Australia**

| WESTERN AUSTRALIA – AUTOMOTIVE DEMOGRAPHICS |                           |            |                |           |          |      |             |         |            |            |       |
|---|---------------------------|------------|----------------|-----------|----------|------|-------------|---------|------------|------------|-------|
| INDUSTRY SECTOR                             | WESTERN AUSTRALIA REGIONS |            |                |           |          |      |             |         |            |            |       |
|   | GASCOYNE                  | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEAT BELT | TOTAL |
| Automotive Electrical                       | 3                         | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40         | 365   |
| Automotive Air Conditioning                 | 0                         | 1          | 3              | 1         | 1        | 1    | 34          | 1       | 3          | 2          | 47    |
| Automotive Glaziers                         | 1                         | 9          | 6              | 1         | 7        | 3    | 41          | 9       | 5          | 1          | 83    |
| Retail & Automotive Accessories             | 3                         | 19         | 15             | 10        | 12       | 17   | 210         | 9       | 28         | 11         | 334   |
| Bicycle Mechanics                           | 0                         | 2          | 2              | 1         | 2        | 2    | 73          | 2       | 8          | 2          | 94    |
| Boat Maintenance & Service                  | 2                         | 0          | 9              | 5         | 8        | 4    | 57          | 6       | 7          | 0          | 98    |
| Heavy Vehicle Mobile Equipment              | 1                         | 28         | 14             | 0         | 26       | 2    | 151         | 37      | 9          | 15         | 282   |
| Heavy Vehicle Road Transport                | 2                         | 20         | 14             | 1         | 15       | 5    | 73          | 10      | 21         | 2          | 163   |
| Light Vehicle Repairers                     | 9                         | 56         | 71             | 27        | 54       | 81   | 981         | 31      | 96         | 69         | 1474  |
| Motorcycle Repairers                        | 1                         | 6          | 6              | 4         | 9        | 5    | 97          | 3       | 15         | 4          | 150   |
| Motor Trimmers                              | 0                         | 6          | 3              | 2         | 6        | 5    | 63          | 2       | 6          | 2          | 95    |
| Outdoor Power & Equipment                   | 1                         | 35         | 27             | 5         | 9        | 2    | 129         | 16      | 8          | 3          | 235   |
| Radiator Specialists                        | 0                         | 3          | 4              | 2         | 2        | 3    | 40          | 0       | 11         | 3          | 68    |
| Recreational Vehicles                       | 0                         | 0          | 7              | 0         | 2        | 2    | 45          | 1       | 1          | 0          | 58    |
| Tyre Fitters                                | 4                         | 18         | 15             | 12        | 10       | 11   | 189         | 13      | 28         | 26         | 326   |
| Vehicle Body Builders                       | 0                         | 1          | 4              | 0         | 5        | 1    | 96          | 1       | 4          | 6          | 118   |
| Vehicle Dismantlers                         | 1                         | 2          | 7              | 1         | 4        | 4    | 92          | 1       | 9          | 1          | 122   |
| Vehicle Dealerships Light & Heavy           | 3                         | 16         | 19             | 14        | 24       | 24   | 299         | 8       | 42         | 29         | 478   |
| Vehicle Body Repairs                        | 3                         | 23         | 30             | 7         | 22       | 11   | 313         | 8       | 50         | 23         | 489   |
| TOTAL                                       |                           |            |                |           |          |      |             |         |            |            | 5080  |

NOTE: Automotive Air Conditioning Services can be found in other sectors, ie Auto Electrical, Light Vehicle Repair etc and are identified with a red asterisk in each sector

[Source: EATC Industry Database 2012]

The automotive industry in WA and nationally impacts upon almost all industries in some form, automotive occupations work in or around diversified industries such as:

- **Mining** - Plant Mechanic, light and heavy vehicle maintenance
- **Utilities Water/Power** – light and heavy vehicle maintenance, Plant Mechanic - outdoor power equipment
- **Health** - light and heavy vehicle maintenance
- **Logistics** - light and heavy vehicle maintenance
- **Agriculture and Forestry** - Plant Mechanic, light and heavy vehicle maintenance, outdoor power equipment

- **Building and Construction** - Plant Mechanic, light and heavy vehicle maintenance, outdoor power equipment
- **Sport and Recreation** - Plant Mechanic, light and heavy vehicle maintenance, outdoor power equipment,
- **Emergency Services** - Plant Mechanic, light and heavy vehicle maintenance, outdoor power equipment

Consumer and customer service demands are a key driver of skilling needs in all of the automotive sectors and customer expectations are very high at all stages of the product life cycle from initial purchase through to regular maintenance, and repair. These expectations must be met by the organisations and employees providing the products and services.

Confidence within the automotive industry, post Global Financial Crisis (GFC) has not shown any noticeable recovery and factors that have contributed to this are:

- Global economic uncertainty, in particular the European financial crisis
- The newly legislated Carbon Tax, which has impacted upon consumer confidence.
- The value of the Australian dollar against other currencies - consumers are turning towards the global market.
- The anticipated 2010-2011 mining and resource surge did not materialise to the extent proposed, this has carried on into 2012 with a noticeable down turn towards the later part of 2012.
- Mining and Resource companies holding back on current and future projects, this creates an air of uncertainty within all sectors of the automotive industry.

The continued global uncertainty will, for the foreseeable future, impact upon the automotive industry not only in WA but for the whole of Australia. Business and consumer confidence will not return until the global financial market shows some stability.

Vehicle sales are a key indicator of consumer confidence, vehicle sales in WA have risen 14.9% to the end of August 2012 but passenger vehicle sales are down 4.2%.

Nationally the trend towards buying smaller and more fuel efficient vehicles is continuing with sales of large sedans dropping -22.9% and sales of large prestige sedans dropping -18.7% but sales of medium sedans have risen 14.8% to the end of August 2012.

The largest increase in vehicle sales has occurred in the bus sectors small buses (up to 20 seats) 21.4% and large buses (over 20 seats) 47.4%

Heavy Commercial vehicle sales have increased 7.8% to the end of August 2012.

Overall, 728,047 vehicles (cars, SUVs, light commercials and trucks) have been sold since the beginning of 2012. This is a 9.4 per cent increase (62,738 vehicles) on sales for the first eight months of 2011.

The rise in vehicle sales can be attributed largely to a reduction in finance rates by all the major manufactures to stimulate vehicle sales. *[Source Federal Chamber of Automotive Industries (VFACTS)]*

The main sectors involved within the automotive industry in WA are:

- Automotive Manufacturing
- Heavy Road Transport
- Heavy Vehicle Mobile Equipment
- Agricultural machinery
- Light vehicle
- Automotive Vehicle Body Repair

- Recreational Vehicles
- Outdoor Power Equipment
- Vehicle Body Building
- Marine (Light)
- Motorcycles
- Bicycles

**Automotive Manufacturing** consists of mainly large manufacturing plants that produce vehicles or vehicle components and the majority of the work is engineering based. Western Australia does not have a major presence within the manufacturing sector, manufacturing that takes place is mainly in specialised sectors such as heavy road transport trailers, buses and caravans and mobile homes.

Nationally, three main companies operate manufacturing plants in Australia; Ford, Holden and Toyota. Ford and Holden have announced rationalisations in line with their parent companies in the US. The traditional market for large passenger vehicles is steadily declining (-22.9% on 2011 figures) and this can be attributed to increased competition from cheaper imported vehicles (the Chinese and Korean imports are steadily growing) and the escalation of global oil prices. The focus on smaller and more fuel efficient and environmentally friendly vehicles is also a major factor for this shift in consumer purchases.

### **Heavy Vehicle Road Transport and Mobile Equipment**

The heavy vehicle sector incorporates a wide cross section of industries and is responsible for sales, service and repair of heavy trucks, trailers and mobile equipment and is one of the main contributors to the efficient operation of the logistics, mining and resource sectors along with agriculture and forestry. In fact everything we touch has at some point been transported by a truck.

The industry encompasses a wide spectrum of businesses:

- **Sole Trader** - this business model is mainly in the form of a small independent workshop.
- **Small to medium enterprise** - this model mainly encompasses service centres that may be independent or part of a franchise chain.
- **Corporate companies** - businesses within this area are mainly large dealerships or multi-franchise Pty companies.

There are currently approximately 282 Heavy Mobile Equipment and 163 Heavy Vehicle Road Transport companies operating in WA with approximately 151 Heavy Mobile Equipment and 73 Heavy Vehicle Road Transport companies centered around Perth Metro.

Occupations that work within the heavy vehicle sector, qualification structure (as commonly used in WA):

| Title                        | Qualification  |
|------------------------------|--|
| <b>Trades Assistant</b>      | <ul style="list-style-type: none"> <li>• AUR20512 Certificate II in Automotive Servicing Technology</li> </ul>   |
| <b>Windscreen Fitter</b>     | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Body Repair Technology</li> <li>• AUR32212 Certificate III in Automotive Glazing Technology</li> </ul>  |
| <b>Automotive Technician</b> | <ul style="list-style-type: none"> <li>• AUR31212 Certificate III in Mobile Plant Technology</li> <li>• AUR31112 Certificate III in Heavy Commercial Vehicle Mechanical Technology</li> <li>• AUR30412 Certificate III in Agricultural Mechanical Technology</li> <li>• AUR40812 Certificate IV in Automotive Mechanical Overhauling</li> <li>• AUR40212 Certificate IV in Automotive Mechanical Diagnosis</li> <li>• AUR50212 Diploma of Automotive Technology</li> </ul> |

|                                     |   |
|-------------------------------------|---|
| <b>Automotive Electrician</b>       | <ul style="list-style-type: none"> <li>• AUR20412 Certificate II in Automotive Electrical Technology</li> <li>• AUR30312 Certificate III in Automotive Electrical Technology</li> <li>• AUR40612 Certificate IV in Automotive Electrical Technology</li> </ul>  |
| <b>Automotive Vehicle Body</b>      | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Body Repair Technology</li> <li>• AUR32112 Certificate III in Automotive Body Repair Technology</li> <li>• AUR40712 Certificate IV in Automotive Body Repair Technology</li> </ul>   |
| <b>Automotive Specialist</b>        | <ul style="list-style-type: none"> <li>• AUR21912 Certificate II in Automotive Tyre Servicing</li> <li>• AUR31912 Certificate III in Elevating Work Platform Technology</li> <li>• AUR31812 Certificate III in Heavy Commercial Trailer Technology</li> <li>• AUR31712 Certificate III in Forklift Technology, Technology</li> <li>• AUR31312 Certificate III in Automotive Engine Reconditioning</li> <li>• AUR31412 Certificate III in Automotive Diesel Fuel Technology</li> <li>• AUR31512 Certificate III in Automotive Diesel Engine Technology</li> <li>• AUR40812 Certificate IV in Automotive Mechanical Overhauling</li> <li>• AUR40212 Certificate IV in Automotive Mechanical Diagnosis</li> <li>• AUR50212 Diploma of Automotive Technology</li> </ul> |
| <b>Administration</b>               | <ul style="list-style-type: none"> <li>• AUR20112 Certificate II in Automotive Administration</li> <li>• AUR30112 Certificate III in Automotive Administration</li> </ul>   |
| <b>Automotive Management</b>        | <ul style="list-style-type: none"> <li>• AUR40112 Certificate IV in Automotive Management</li> <li>• AUR50112 Diploma of Automotive Management</li> </ul>   |
| <b>Automotive Parts Interpreter</b> | <ul style="list-style-type: none"> <li>• AUR31012 Certificate III in Automotive Sales</li> </ul>  |
| <b>Automotive Sales</b>             | <ul style="list-style-type: none"> <li>• AUR21112 Certificate II in Automotive Sales</li> <li>• AUR31012 Certificate III in Automotive Sales</li> <li>• AUR40112 Certificate IV in Automotive Management</li> </ul>   |

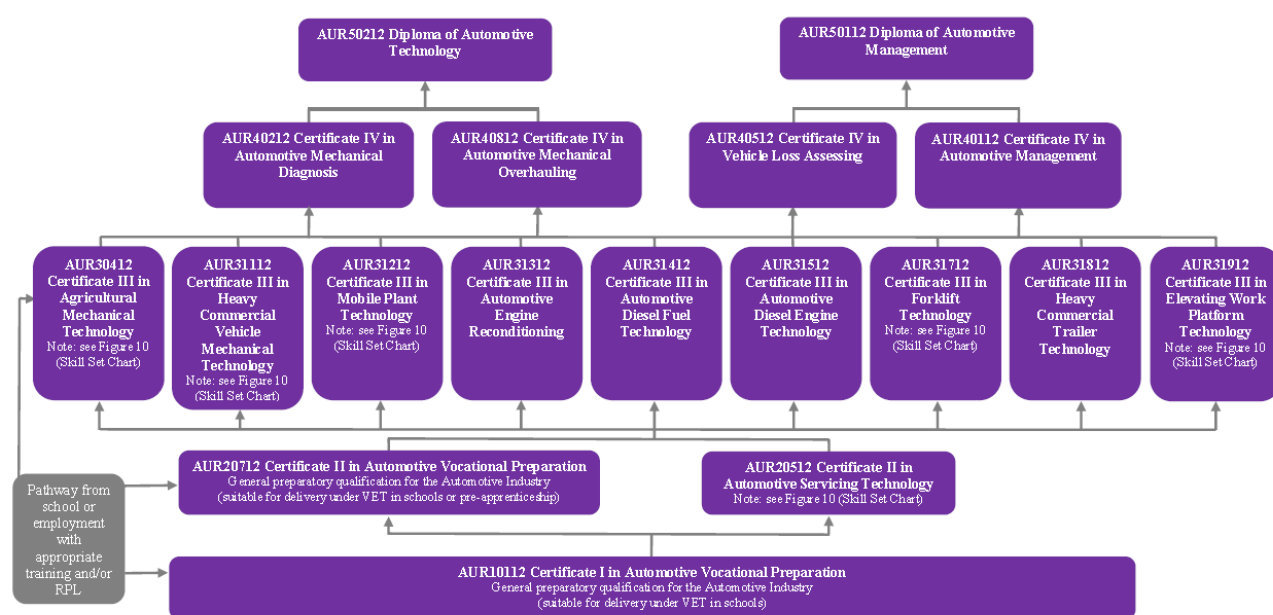
**Table 10 - Businesses Currently Operating in Heavy Vehicle Road Transport and Mobile Equipment**

| EATC - AUTOMOTIVE DATABASE SUMMARY |                            |            |                |           |          |      |             |         |            |           |       |
|------------------------------------|----------------------------|------------|----------------|-----------|----------|------|-------------|---------|------------|-----------|-------|
| INDUSTRY SECTOR                    | WESTERN AUSTRALIAN REGIONS |            |                |           |          |      |             |         |            |           |       |
|                                    | GASCOYNE                   | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEATBELT | TOTAL |
| Automotive Electrical              | 3                          | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40        | 365   |
| Automotive Air Conditioning        | 0                          | 1          | 3              | 1         | 1        | 1    | 34          | 1       | 3          | 2         | 47    |
| Automotive Glaziers                | 1                          | 9          | 6              | 1         | 7        | 3    | 41          | 9       | 5          | 1         | 83    |
| Retail & Automotive Accessories    | 3                          | 19         | 15             | 10        | 12       | 17   | 209         | 9       | 28         | 11        | 333   |
| Heavy Vehicle Mobile Equipment     | 1                          | 28         | 14             | 0         | 26       | 2    | 151         | 37      | 9          | 15        | 282   |
| Heavy Vehicle Road Transport       | 2                          | 20         | 14             | 1         | 15       | 5    | 73          | 10      | 21         | 2         | 163   |
| Motor Trimmers                     | 0                          | 6          | 3              | 2         | 6        | 5    | 63          | 2       | 6          | 2         | 95    |
| Radiator Specialists               | 0                          | 3          | 4              | 2         | 2        | 3    | 40          | 0       | 11         | 3         | 68    |

|                                   |   |    |    |    |    |    |     |    |    |    |     |
|-----------------------------------|---|----|----|----|----|----|-----|----|----|----|-----|
| Tyre Fitters                      | 4 | 18 | 15 | 12 | 10 | 11 | 189 | 13 | 28 | 26 | 326 |
| Vehicle Dismantlers               | 1 | 2  | 7  | 1  | 4  | 4  | 92  | 1  | 9  | 1  | 122 |
| Vehicle Dealerships Light & Heavy | 3 | 16 | 19 | 14 | 24 | 24 | 299 | 8  | 42 | 29 | 478 |

**NOTE: Automotive Air Conditioning Services can be found in other sectors, ie Auto Electrical, Light Vehicle Repair etc [Source: EATC Industry Database 2012]**

**Figure 4 – Pathway Chart for Mechanical Heavy Vehicle Sector**



[Source ASA]

### Skill Shortages within the heavy vehicle sector

The heavy vehicle sector within Western Australia continues to have some major issues with reported skills shortages in:

- Heavy Vehicle Technician
- Auto Electricians
- Diagnostic Technicians
- OTR Tyre Fitter

The ongoing demand for heavy vehicle and plant mechanics far outweighs the supply of qualified persons and people being trained in this occupation. This is mainly due to the demand from the various industry sectors employing these occupations such as mining, civil construction, transport and agriculture etc. This demand creates a further problem whereby companies are reluctant to train apprentices knowing that they may leave once their apprenticeship is completed, to gain employment in the mining and resource sectors that have the ability to offer attractive pay and work/life packages.

Auto Electricians are in very high demand within the heavy vehicle sector, as with light vehicles. The heavy vehicle manufactures are increasingly using complicated computer and electronic components within heavy vehicle construction. This, coupled with the ever-increasing speed of technological change within the industry, has created a lack of suitably

qualified people within this sector. Aftermarket fitment of global positioning systems, additional lighting and data technology equipment has further highlighted this issue.

Diagnostic Technicians also fall into this category. The pace at which manufacturers are using new and sophisticated technologies to comply with government legislation for more fuel efficient, safer and greener vehicles, has created an issue whereby nearly all workshops need to have at least one person with highly developed diagnostic and fault finding abilities.

Off-The-Road (OTR) tyre fitters are also highly in demand. The OTR sector has been highlighted as a skill shortage area. Due to the nature of the work involved in OTR tyre applications, skilled fitters will need to be trained to a higher qualification than currently exists to fully cover the removal and fitting of these large wheel and tyre assemblies in a safe manner.

### **Agricultural Machinery**

The agricultural sector in WA comprises of farm/forestry machinery dealers and independent service and repair centres.

As with other sectors of the automotive industry, the agricultural machinery sector, has seen massive changes within the industry, with the ever increasing use of electronic and computer controlled systems, this in turn has highlighted the need for specialist diagnostic technicians who have the skills to work on these complicated systems.

Occupations that work within the agricultural machinery sector, qualification structure (as commonly used in WA):

| <b>Title</b>                        | <b>Qualification</b>  |
|-------------------------------------|---|
| <b>Trades Assistant</b>             | <ul style="list-style-type: none"> <li>• AUR20512 Certificate II in Automotive Servicing Technology</li> </ul>  |
| <b>Windscreen Fitter</b>            | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Body Repair Technology</li> <li>• AUR32212 Certificate III in Automotive Glazing Technology</li> </ul>   |
| <b>Automotive Technician</b>        | <ul style="list-style-type: none"> <li>• AUR30412 Certificate III in Agricultural Mechanical Technology</li> <li>• AUR40812 Certificate IV in Automotive Mechanical Overhauling</li> <li>• AUR40212 Certificate IV in Automotive Mechanical Diagnosis</li> <li>• AUR50212 Diploma of Automotive Technology</li> </ul>   |
| <b>Automotive Electrician</b>       | <ul style="list-style-type: none"> <li>• AUR20412 Certificate II in Automotive Electrical Technology</li> <li>• AUR30312 Certificate III in Automotive Electrical Technology</li> <li>• AUR40612 Certificate IV in Automotive Electrical Technology</li> </ul>  |
| <b>Automotive Specialist</b>        | <ul style="list-style-type: none"> <li>• AUR31912 Certificate III in Elevating Work Platform Technology</li> <li>• AUR31812 Certificate III in Heavy Commercial Trailer Technology</li> <li>• AUR31712 Certificate III in Forklift Technology</li> <li>• AUR31512 Certificate III in Automotive Diesel Engine Technology</li> <li>• AUR31412 Certificate III in Automotive Diesel Fuel Technology</li> <li>• AUR31312 Certificate III in Automotive Engine Reconditioning</li> <li>• AUR40812 Certificate IV in Automotive Mechanical Overhauling</li> <li>• AUR40212 Certificate IV in Automotive Mechanical Diagnosis</li> <li>• AUR50212 Diploma of Automotive Technology</li> </ul> |
| <b>Administration</b>               | <ul style="list-style-type: none"> <li>• AUR20112 Certificate II in Automotive Administration</li> <li>• AUR30112 Certificate III in Automotive Administration</li> </ul>   |
| <b>Automotive Management</b>        | <ul style="list-style-type: none"> <li>• AUR40112 Certificate IV in Automotive Management</li> <li>• AUR50112 Diploma of Automotive Management</li> </ul>   |
| <b>Automotive Parts Interpreter</b> | <ul style="list-style-type: none"> <li>• AUR31012 Certificate III in Automotive Sales</li> </ul>  |
| <b>Automotive Sales</b>             | <ul style="list-style-type: none"> <li>• AUR21112 Certificate II in Automotive Sales</li> <li>• AUR31012 Certificate III in Automotive Sales</li> <li>• AUR40112 Certificate IV in Automotive Management</li> </ul>   |

**Table 11 - Businesses Currently Operating in Agricultural Machinery**

| INDUSTRY SECTOR                   | GASCOYNE | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEAT BELT | TOTAL |
|-----------------------------------|----------|------------|----------------|-----------|----------|------|-------------|---------|------------|------------|-------|
| Automotive Electrical             | 3        | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40         | 365   |
| Automotive Air Conditioning       | 0        | 1          | 3              | 1         | 1        | 1    | 34          | 1       | 3          | 2          | 47    |
| Automotive Glaziers               | 1        | 9          | 6              | 1         | 7        | 3    | 41          | 9       | 5          | 1          | 83    |
| Heavy Vehicle Mobile Equipment    | 1        | 28         | 14             | 0         | 26       | 2    | 151         | 37      | 9          | 15         | 282   |
| Motor Trimmers                    | 0        | 6          | 3              | 2         | 6        | 5    | 63          | 2       | 6          | 2          | 95    |
| Outdoor Power & Equipment         | 1        | 35         | 27             | 5         | 9        | 2    | 129         | 16      | 8          | 3          | 235   |
| Radiator Specialists              | 0        | 3          | 4              | 2         | 2        | 3    | 40          | 0       | 11         | 3          | 68    |
| Tyre Fitters                      | 4        | 18         | 15             | 12        | 10       | 11   | 189         | 13      | 28         | 26         | 326   |
| Vehicle Body Builders             | 0        | 1          | 4              | 0         | 5        | 1    | 96          | 1       | 4          | 6          | 118   |
| Vehicle Dealerships Light & Heavy | 3        | 16         | 19             | 14        | 24       | 24   | 299         | 8       | 42         | 29         | 478   |
| Vehicle Body Repairs              | 3        | 23         | 30             | 7         | 22       | 11   | 313         | 8       | 50         | 23         | 489   |

**NOTE: Automotive Air Conditioning Services can be found in other sectors, ie Auto Electrical, Light Vehicle Repair etc and are identified with a red asterisk in each sector.**

[Source: EATC Industry Database 2012]

### Light Vehicle

The light vehicle sector accounts for a large proportion of the automotive industry within WA and has within its scope a variety of occupations, from low skill levels to high skill levels.

The industry encompasses a wide spectrum of businesses:

- **Sole Trader** - this business model can be in the form of one person operating a mobile (come to you) workshop or it could be in the form of a small independent workshop.
- **Small to medium enterprise** - this model mainly encompasses service centres that may be independent or part of a franchise chain.
- **Corporate companies** - businesses within this area are mainly large dealerships or multi franchise companies.

Occupations within the light vehicle sector and the qualifications:

| Title                         | Qualification  |
|-------------------------------|--|
| <b>Vehicle Detailer</b>       | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Body Repair</li> </ul>  |
| <b>Trades Assistant</b>       | <ul style="list-style-type: none"> <li>• AUR20512 Certificate II in Automotive Servicing Technology</li> </ul>   |
| <b>Windscreen Fitter</b>      | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Body Repair Technology and AUR32212 Certificate III in Automotive Glazing Technology</li> </ul>   |
| <b>Automotive Technician</b>  | <ul style="list-style-type: none"> <li>• AUR30612 Certificate III in Light Vehicle Mechanical Technology</li> <li>• AUR40212 Certificate IV in Automotive Mechanical Diagnosis</li> <li>• AUR40812 Certificate IV in Automotive Mechanical Overhauling</li> <li>• AUR50212 Diploma of Automotive Technology</li> </ul> |
| <b>Automotive Electrician</b> | <ul style="list-style-type: none"> <li>• AUR20412 Certificate II in Automotive Electrical Technology</li> <li>• AUR30312 Certificate III in Automotive Electrical Technology</li> <li>• AUR40612 Certificate IV in Automotive Electrical Technology</li> </ul>   |



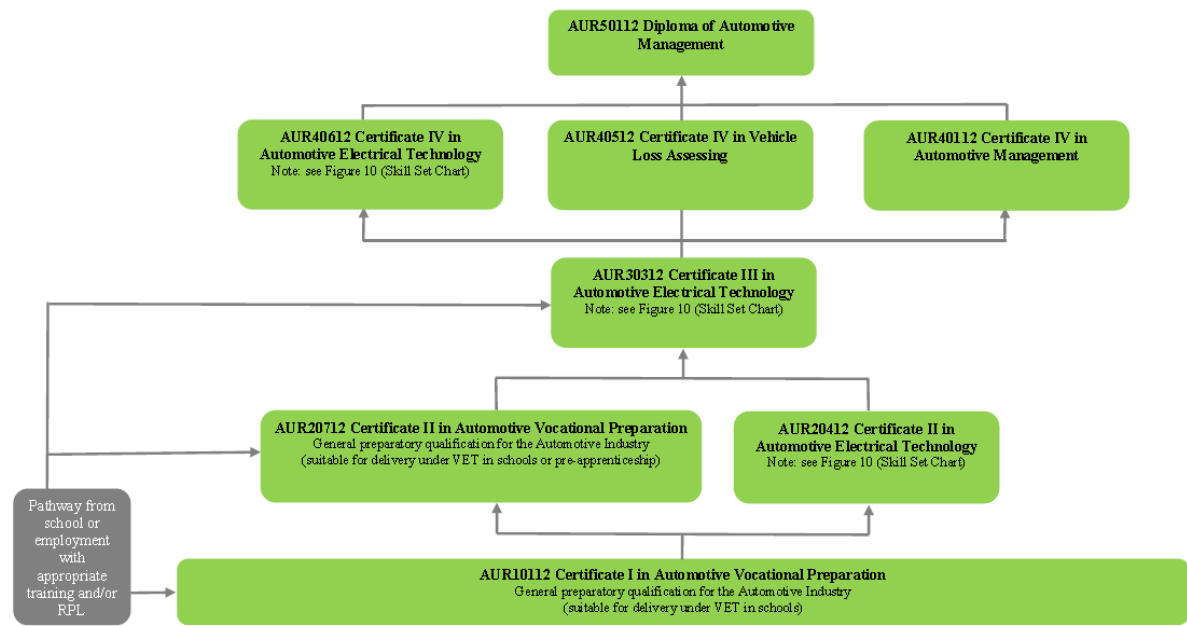
|                                     |  |
|-------------------------------------|--|
| <b>Automotive Vehicle Body</b>      | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Body Repair Technology</li> <li>• AUR32112 Certificate III in Automotive Body Repair Technology</li> <li>• AUR40712 Certificate IV in Automotive Body Repair Technology</li> </ul>  |
| <b>Automotive Specialist</b>        | <ul style="list-style-type: none"> <li>• AUR21912 Certificate II in Automotive Tyre Servicing Technology</li> <li>• AUR21812 Certificate II in Automotive Steering and Suspension System Technology</li> <li>• AUR21712 Certificate II in Automotive Exhaust System Technology</li> <li>• AUR21612 Certificate II in Automotive Driveline Technology</li> <li>• AUR21512 Certificate II in Automotive Cylinder Head Reconditioning</li> <li>• AUR21412 Certificate II in Automotive Cooling System Technology</li> <li>• AUR21312 Certificate II in Automotive Braking System Technology</li> <li>• AUR21212 Certificate II in Automotive Underbody Technology</li> <li>• AUR20212 Certificate II in Automotive Air Conditioning Technology</li> <li>• AUR32512 Certificate III in Automotive Underbody Technology</li> <li>• AUR32012 Certificate III in Automotive Alternative Fuel Technology</li> <li>• AUR31612 Certificate III in Automotive Drivetrain Technology</li> <li>• AUR31312 Certificate III in Automotive Engine Reconditioning</li> <li>• AUR31412 Certificate III in Automotive Diesel Fuel Technology</li> <li>• AUR40812 Certificate IV in Automotive Mechanical Overhauling</li> <li>• AUR40212 Certificate IV in Automotive Mechanical Diagnosis</li> <li>• AUR40412 Certificate IV in Automotive Performance Enhancement</li> <li>• AUR50212 Diploma of Automotive Technology</li> </ul> |
| <b>Administration</b>               | <ul style="list-style-type: none"> <li>• AUR20112 Certificate II in Automotive Administration</li> <li>• AUR30112 Certificate III in Automotive Administration</li> </ul>  |
| <b>Automotive Management</b>        | <ul style="list-style-type: none"> <li>• AUR40112 Certificate IV in Automotive Management</li> <li>• AUR50112 Diploma of Automotive Management</li> </ul>  |
| <b>Automotive Parts Interpreter</b> | <ul style="list-style-type: none"> <li>• AUR31012 Certificate III in Automotive Sales</li> </ul>   |
| <b>Automotive Sales</b>             | <ul style="list-style-type: none"> <li>• AUR21112 Certificate II in Automotive Sales</li> <li>• AUR31012 Certificate III in Automotive Sales</li> <li>• AUR40112 Certificate IV in Automotive Management</li> </ul>  |

**Table 12 - Businesses Currently Operating in Light Vehicle**

| INDUSTRY SECTOR                   | GASCOYNE | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEATBELT | TOTAL |
|-----------------------------------|----------|------------|----------------|-----------|----------|------|-------------|---------|------------|-----------|-------|
| Automotive Electrical             | 3        | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40        | 365   |
| Automotive Air Conditioning       | 0        | 1          | 3              | 1         | 1        | 1    | 34          | 1       | 3          | 2         | 47    |
| Automotive Glaziers               | 1        | 9          | 6              | 1         | 7        | 3    | 41          | 9       | 5          | 1         | 83    |
| Retail & Automotive Accessories   | 3        | 19         | 15             | 10        | 12       | 17   | 210         | 9       | 28         | 11        | 334   |
| Light Vehicle Repairers           | 9        | 56         | 71             | 27        | 54       | 81   | 981         | 31      | 96         | 69        | 1475  |
| Radiator Specialists              | 0        | 3          | 4              | 2         | 2        | 3    | 40          | 0       | 11         | 3         | 68    |
| Tyre Fitters                      | 4        | 18         | 15             | 12        | 10       | 11   | 189         | 13      | 28         | 26        | 326   |
| Vehicle Dismantlers               | 1        | 2          | 7              | 1         | 4        | 4    | 92          | 1       | 9          | 1         | 122   |
| Vehicle Dealerships Light & Heavy | 3        | 16         | 19             | 14        | 24       | 24   | 299         | 8       | 42         | 29        | 478   |

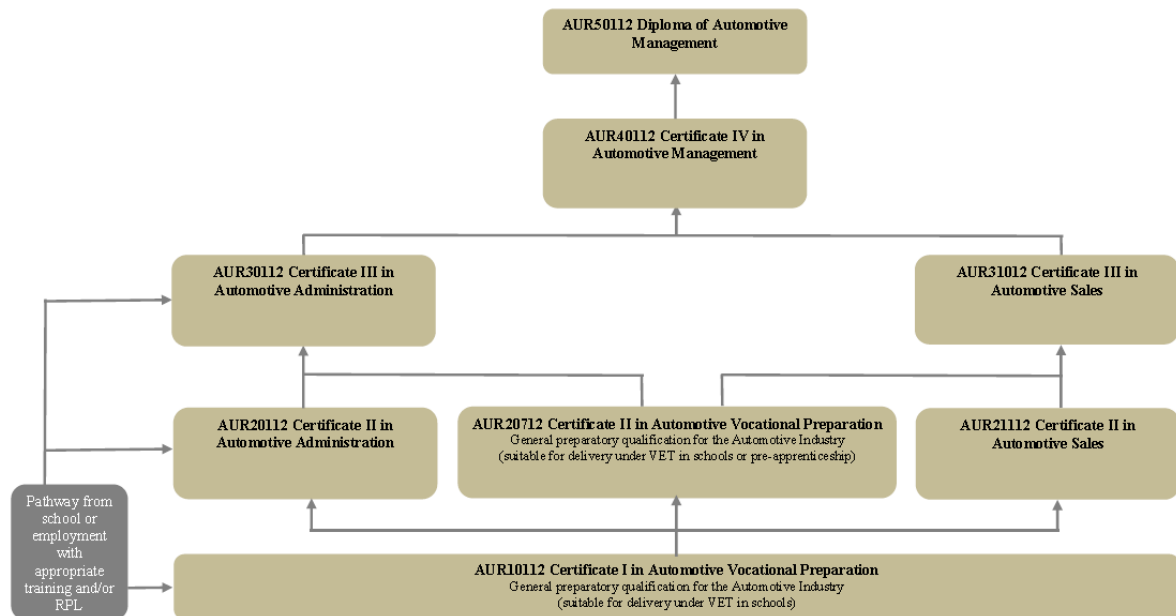
**NOTE: Automotive Air Conditioning Services can be found in other sectors, ie Auto Electrical, Light Vehicle Repair etc [Source: EATC Industry Database 2012]**

**Figure 5 – Pathway Chart for Automotive Electrical Sector**



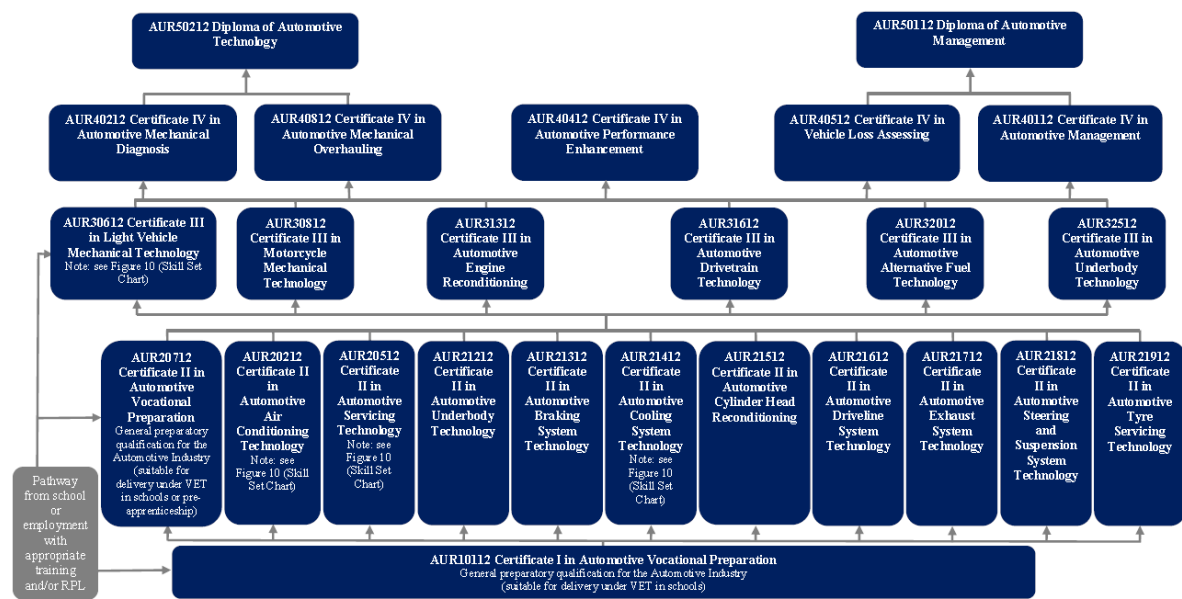
[Source ASA]

**Figure 6 – Pathway Chart for Automotive Administration and Sales Sector**



[Source ASA]

**Figure 7 – Pathway Chart for the Mechanical and Specialisation Sector**



[Source ASA]

### Skill shortages within the light vehicle sector

The light vehicle sector within WA continues to have some major issues with reported skills shortages in:

- Auto Electricians
- Diagnostic Technicians
- Automotive Technicians

Auto Electricians are in very high demand. The motor vehicle's reliance on complicated computer and electronic components has highlighted an area of motor vehicle repair that has, for some time, been ignored. This, coupled with the ever-increasing speed of technological change within the industry, has created a lack of suitably qualified people within this sector.

Diagnostic Technicians also fall into this category. The pace at which manufacturers are using new and sophisticated technologies to comply with government legislation for more fuel efficient, safer and greener vehicles has created an issue whereby nearly all workshops need to have at least one person with highly developed diagnostic and fault finding abilities.

*"Changing technology is a central skilling issue for automotive enterprises which need continual access to professional development and up-skilling opportunities. Environmental and safety compliance and performance targets are major drivers of this change".*

[Source: MSA Environmental Scan 2011]

Automotive Technicians are constantly in demand, apprentice intake has remained fairly steady throughout 2011/2012, but the apprentice intake will not fulfil the projected industry needs for future growth. A large portion of the industry have a reluctance to commit to taking apprentices this continues to have an adverse effect upon future employment needs.

The mining and resource sectors are now focusing on up-skilling light vehicle mechanics to heavy vehicle qualifications, with several large companies implementing programs during 2011/2012. This has created a further shortage of skilled Light Vehicle Mechanics who have been enticed into the mining and resource sectors.

## Automotive Vehicle Body Repair

The Automotive Vehicle Body Repair sector mainly comprises small to medium enterprises in Western Australia. Nationally there are 9,143 establishments that specialise in vehicle body repair. Most of the work is generated by the major vehicle insurance companies. The vehicle body repair sector deals mainly with accident repairs to light vehicles, ie cars, light trucks and vans.

The sector's main clients are the large insurance companies who subcontract the repair shops to repair accident damaged vehicles.

There are approximately 489 Vehicle Body repair Centres in WA with approximately 313 centred around the Perth metropolitan area.

The vehicle body repair sector mainly operates two types of business models:

- **Small to medium enterprise** - mainly workshops that may be independent or part of a franchise chain.
- **Corporate companies** - businesses within this area are mainly large workshops owned by insurance companies.

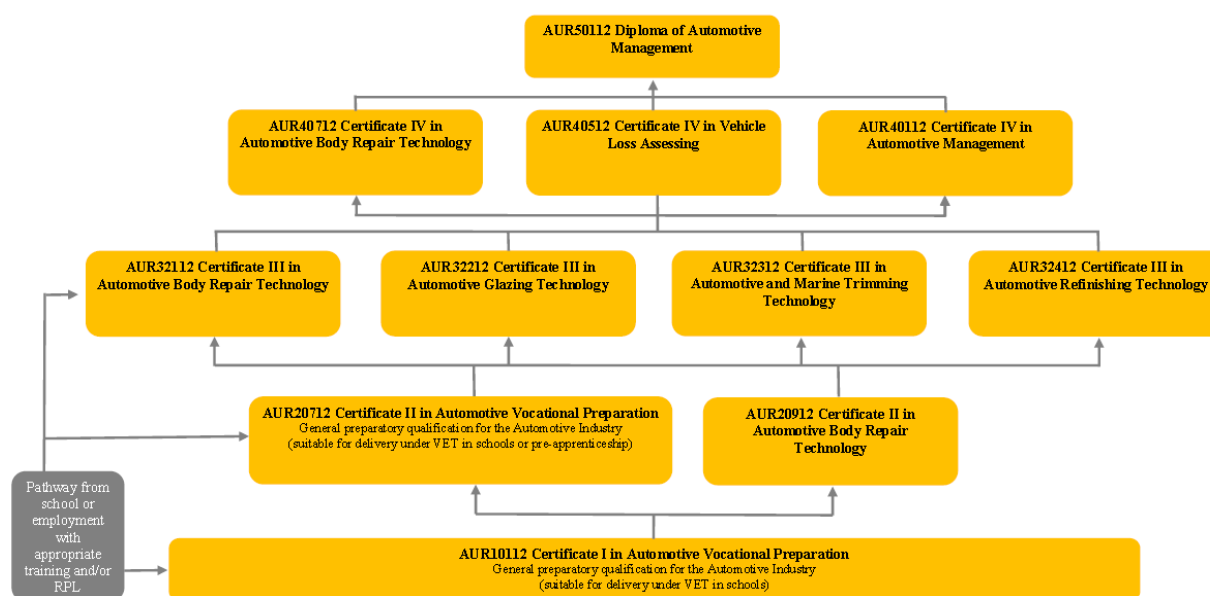
Occupations within the vehicle body repair sector and qualifications:

| Title                               | Qualification  |
|-------------------------------------|--|
| <b>Loss Assessor</b>                | <ul style="list-style-type: none"><li>• AUR40512 Certificate IV in Vehicle Loss Assessing</li></ul>  |
| <b>Trades Assistant</b>             | <ul style="list-style-type: none"><li>• AUR20912 Certificate II in Automotive Vehicle Body Repair Technology</li></ul>   |
| <b>Windscreen Fitter</b>            | <ul style="list-style-type: none"><li>• AUR20912 Certificate II in Automotive Body Repair Technology and AUR32212 Certificate III in Automotive Glazing Technology</li></ul>   |
| <b>Automotive Technician</b>        | <ul style="list-style-type: none"><li>• AUR30612 Certificate III in Light Vehicle Mechanical Technology</li></ul>  |
| <b>Automotive Electrician</b>       | <ul style="list-style-type: none"><li>• AUR30308 Certificate III in Automotive Electrical Technology</li><li>• AUR40208 Certificate IV in Automotive Technology</li><li>• AUR50205 Diploma of Automotive Technology</li></ul>  |
| <b>Automotive Vehicle Body</b>      | <ul style="list-style-type: none"><li>• AUR20912 Certificate II in Automotive Vehicle Body Repair Technology</li><li>• AUR32112 Certificate III in Automotive Body Repair Technology</li><li>• AUR40712 Certificate IV in Automotive Body Repair Technology</li></ul>  |
| <b>Automotive Specialist</b>        | <ul style="list-style-type: none"><li>• AUR21912 Certificate II in Automotive Tyre Servicing Technology</li><li>• AUR21812 Certificate II in Automotive Steering and Suspension System Technology</li><li>• AUR21612 Certificate II in Automotive Driveline Technology</li><li>• AUR21412 Certificate II in Automotive Cooling System Technology</li><li>• AUR21312 Certificate II in Automotive Braking System Technology</li><li>• AUR21212 Certificate II in Automotive Underbody Technology</li><li>• AUR20212 Certificate II in Automotive Air Conditioning Technology</li><li>• AUR32512 Certificate III in Automotive Underbody Technology</li><li>• AUR31612 Certificate III in Automotive Drivetrain Technology</li><li>• AUR32312 Certificate III in Automotive and Marine Trimming Technology</li></ul> |
| <b>Administration</b>               | <ul style="list-style-type: none"><li>• AUR20112 Certificate II in Automotive Administration</li><li>• AUR30112 Certificate III in Automotive Administration,</li></ul>  |
| <b>Automotive Management</b>        | <ul style="list-style-type: none"><li>• AUR40112 Certificate IV in Automotive Management</li><li>• AUR50112 Diploma of Automotive Management</li></ul>   |
| <b>Automotive Parts Interpreter</b> | <ul style="list-style-type: none"><li>• AUR31012 Certificate III in Automotive Sales</li></ul>   |

**Table 13 - Businesses Currently Operating in Vehicle Body Repair (Panel and Paint)**

| INDUSTRY SECTOR       | GASCOYNE | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEATBELT | TOTAL |
|-----------------------|----------|------------|----------------|-----------|----------|------|-------------|---------|------------|-----------|-------|
| Automotive Electrical | 3        | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40        | 365   |
| Automotive Glaziers   | 1        | 9          | 6              | 1         | 7        | 3    | 41          | 9       | 5          | 1         | 83    |
| Motor Trimmers        | 0        | 6          | 3              | 2         | 6        | 5    | 63          | 2       | 6          | 2         | 95    |
| Radiator Specialists  | 0        | 3          | 4              | 2         | 2        | 3    | 40          | 0       | 11         | 3         | 68    |
| Vehicle Body Repairs  | 3        | 23         | 30             | 7         | 22       | 11   | 313         | 8       | 50         | 23        | 489   |

**NOTE: Automotive Air Conditioning Services can be found in other sectors, ie Auto Electrical, Light Vehicle Repair etc** [Source: EATC Industry Database 2012]

**Figure 8 – Pathway Chart for the Body Repair Sector**

[Source: ASA]

### Skill shortages within the vehicle body repair sector

- Panel Beaters
- Spray Painters

The panel and paint sectors are reporting a significant skills shortage in panel beating and spray painting. The panel beating area is suffering particularly badly, with companies increasingly looking overseas for skilled Panel Beaters.

The lack of interest regarding a career within panel beating can be attributed to a few factors:

- The perception that the sector is dirty/dusty, noisy.
- Low pay rates and little or no career progression.

- The skills learned do not transfer easily to other industries, eg the mining and resource sectors.
- Lack of promotion/awareness.

Spray Painters are also in high demand and the lack of interest for this sector can be attributed to similar issues to panel beating.

*“A key concern is the reluctance of young people to take up opportunities in the panel area of the trade. The current demographic of the industry has an aging workforce and very low numbers of young people taking on apprenticeships. It is not an exaggeration to state that unless this pattern can be turned around the industry will collapse and on that basis urgent action is required”.*

*[Source: MTAWA 2011]*

On the whole, the vehicle body repair industry is not seen as being dynamic enough and the perceived lack of career progression further compounds the attraction issue.

With the ever-increasing use of new materials in the manufacture of motor vehicles such as high-strength steels, carbon composites, alloys and water-based paints, the demand for highly skilled panel beaters and spray painters will only increase.

### **Recreational Vehicles**

The recreational vehicle sector comprises of manufacturing, sales, service and repair of caravans and mobile homes. WA has one of Australia’s largest recreational vehicle manufacturers, Coromal Caravans. They are part of the Fleetwood Corporation group, which is a nationwide company. The recreational vehicle sector is the fastest growing sector within the automotive industry, with 96% of all vehicles produced being sold within Australia *[Source: MSA 10-02-2010 “Recreational Vehicles Project Report”]*.

There are approximately 58 recreational vehicle companies in WA with approximately 45 centred around the Perth metropolitan area.

- Growth driven by grey nomads and retirees
- Top four dealers nationally only account for 5% of market
- Caravan manufacturing \$3.4bn revenue, \$203.7m profit
- Annual growth forecast 0.6% 2011-2016
- Caravan retail \$2bn revenue, \$146.5m profit
- Annual growth forecast, 4.4% 2011-2016

The recreational vehicle industry mainly operates these types of business model in WA:

- **Sole Trader** - this business model can be in the form of a person operating a small independent workshop and retail outlet.
- **Small-to-medium enterprise** - this model mainly encompasses service and retail centres that may be independent or part of a franchise chain.
- **Corporate companies** - businesses within this area are mainly large manufacturing companies.

Occupations within the recreational vehicle sector and qualifications:

| Title                               | Qualification  |
|-------------------------------------|--|
| <b>Trades Assistant</b>             | <ul style="list-style-type: none"> <li>AUR20912 Certificate II in Automotive Vehicle Body Repair Technology</li> </ul>   |
| <b>Windscreen Fitter</b>            | <ul style="list-style-type: none"> <li>AUR20912 Certificate II in Automotive Body Repair Technology and AUR32212 Certificate III in Automotive Glazing Technology</li> </ul>   |
| <b>Automotive Technician</b>        | <ul style="list-style-type: none"> <li>AUR30612 Certificate III in Light Vehicle Mechanical Technology</li> </ul>  |
| <b>Automotive Electrician</b>       | <ul style="list-style-type: none"> <li>AUR30308 Certificate III in Automotive Electrical Technology</li> <li>AUR40208 Certificate IV in Automotive Technology</li> <li>AUR50205 Diploma of Automotive Technology</li> </ul>  |
| <b>Automotive Vehicle Body</b>      | <ul style="list-style-type: none"> <li>AUR20912 Certificate II in Automotive Vehicle Body Repair Technology</li> <li>MSA20610/MSA30610 Certificate II and Certificate III in Recreational Vehicle Manufacture</li> <li>AUR32112 Certificate III in Automotive Body Repair Technology</li> <li>AUR40712 Certificate IV in Automotive Body Repair Technology</li> </ul>  |
| <b>Automotive Specialist</b>        | <ul style="list-style-type: none"> <li>AUR21912 Certificate II in Automotive Tyre Servicing Technology</li> <li>AUR21812 Certificate II in Automotive Steering and Suspension System Technology</li> <li>AUR21612 Certificate II in Automotive Driveline Technology</li> <li>AUR21412 Certificate II in Automotive Cooling System Technology</li> <li>AUR21312 Certificate II in Automotive Braking System Technology</li> <li>AUR21212 Certificate II in Automotive Underbody Technology</li> <li>AUR20212 Certificate II in Automotive Air Conditioning Technology</li> <li>AUR32512 Certificate III in Automotive Underbody Technology</li> <li>AUR31612 Certificate III in Automotive Drivetrain Technology</li> <li>AUR32312 Certificate III in Automotive and Marine Trimming Technology</li> <li>AUR31812 Certificate III in Heavy Commercial Trailer Technology</li> </ul> |
| <b>Administration</b>               | <ul style="list-style-type: none"> <li>AUR20112 Certificate II in Automotive Administration</li> <li>AUR30112 Certificate III in Automotive Administration,</li> </ul>   |
| <b>Automotive Management</b>        | <ul style="list-style-type: none"> <li>AUR40112 Certificate IV in Automotive Management</li> <li>AUR50112 Diploma of Automotive Management</li> </ul>  |
| <b>Automotive Parts Interpreter</b> | <ul style="list-style-type: none"> <li>AUR31012 Certificate III in Automotive Sales</li> </ul>   |
| <b>Sales</b>                        | <ul style="list-style-type: none"> <li>AUR21112 Certificate II in Automotive Sales</li> <li>AUR31012 Certificate III in Automotive Sales</li> <li>AUR40112 Certificate IV in Automotive Management</li> </ul>  |

**Table 14 - Businesses Currently Operating in Recreational Vehicles**

| EATC - AUTOMOTIVE DATABASE SUMMARY |                         |            |                |           |          |      |             |         |            |           |       |
|------------------------------------|-------------------------|------------|----------------|-----------|----------|------|-------------|---------|------------|-----------|-------|
| INDUSTRY SECTOR                    | WEST AUSTRALIAN REGIONS |            |                |           |          |      |             |         |            |           |       |
|                                    | GASCOYNE                | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEATBELT | TOTAL |
| Automotive Electrical              | 3                       | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40        | 365   |
| Automotive Air Conditioning        | 0                       | 1          | 3              | 1         | 1        | 1    | 34          | 1       | 3          | 2         | 47    |
| Automotive Glaziers                | 1                       | 9          | 6              | 1         | 7        | 3    | 41          | 9       | 5          | 1         | 83    |
| Retail & Automotive Accessories    | 3                       | 19         | 15             | 10        | 12       | 17   | 210         | 9       | 28         | 11        | 334   |

|                       |   |    |    |    |    |    |     |    |    |    |     |
|-----------------------|---|----|----|----|----|----|-----|----|----|----|-----|
| Motor Trimmers        | 0 | 6  | 3  | 2  | 6  | 5  | 63  | 2  | 6  | 2  | 95  |
| Recreational Vehicles | 0 | 0  | 7  | 0  | 2  | 2  | 45  | 1  | 1  | 0  | 58  |
| Tyre Fitters          | 4 | 18 | 15 | 12 | 10 | 11 | 189 | 13 | 28 | 26 | 326 |
| Vehicle Body Builders | 0 | 1  | 4  | 0  | 5  | 1  | 96  | 1  | 4  | 6  | 118 |

[Source: EATC Industry Database 2012]

### **Skill Shortages within the recreational vehicle sector**

The continued popularity of caravanning and outdoor pursuits has highlighted the need for formal qualifications, particularly within the maintenance and repair sectors. Manufacturers such as Winnebago are requesting that their dealers employ formally qualified maintenance operatives. The ASA and MSA have created new qualifications for this sector, growth for qualifications within this sector will emerge over the next few years.

Industry is reporting skill shortages of maintenance technicians.

As with the marine sector, the recreational vehicle sector does not effectively portray itself as a viable career option. More promotion of the industry is required.

### **Outdoor Power Equipment**

The outdoor power and equipment sector comprises of companies who retail, service and repair and hire; chain saws, mowers, ground keeping equipment, building and construction tools, trailers and compactors.

This is an often overlooked sector of the automotive industry but with the advent of more technologically advanced mowers, cutters and chain saws, new skill requirements are beginning to emerge and the need for specialists within this sector will become more prevalent.

The outdoor power equipment sector mainly operates two types of business model in WA:

- **Sole Trader** - this business model can be in the form of a person operating a small independent workshop and retail outlet.
- **Small-to-medium enterprise** - this model mainly encompasses service and retail centres that may be independent or part of a franchise chain.

There are approximately 235 outdoor power and equipment companies in WA with approximately 129 centred around the Perth metropolitan area.

### **Skill shortages within the outdoor power equipment sector**

This sector has reported skill shortages in the area of Automotive Technicians (Outdoor Power Equipment). As with the marine light and the recreational vehicle sectors, lack of promotion from within the sector and the perceived low skill levels required lead to a lack of interest with regard to employment within this sector.

### **Vehicle Body Building**

There are 1,490 establishments nationally that specialise in vehicle body building. In WA there are 20 major manufacturers and approximately 50 small-to-medium repairers; two significant manufacturers in Western Australia are Volgren, who are a major producer of buses throughout Australia and Howard Porter, who produce large trailers and large bulk carriers.

As well as manufacturing, there are a number of large and small companies that carry out repairs and maintenance on buses, trucks and associated vehicles.

The Vehicle Body Building sector specialises in:



- Boat trailer manufacturing
- Caravan manufacturing
- Horse float manufacturing
- Motor vehicle conversion
- Stock crate manufacturing
- Trailer manufacturing
- Car, truck, bus body manufacturing

The vehicle body building sector mainly operates two types of business model:

- **Small to medium enterprise** - mainly workshops that may be independent or part of a franchise chain.
- **Corporate companies** - businesses within this area are mainly large workshops or multi franchise Pty companies.

Currently, there are approximately 118 Vehicle body building companies in WA with approximately 98 companies centred around the Perth metropolitan area.

Occupations that work within the vehicle body building sector's qualification structure (as commonly used in WA):

| Title                               | Qualification  |
|-------------------------------------|--|
| <b>Trades Assistant</b>             | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Vehicle Body Repair Technology</li> </ul>   |
| <b>Windscreen Fitter</b>            | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Body Repair Technology and AUR32212 Certificate III in Automotive Glazing Technology</li> </ul>   |
| <b>Automotive Technician</b>        | <ul style="list-style-type: none"> <li>• AUR30612 Certificate III in Light Vehicle Mechanical Technology</li> </ul>  |
| <b>Automotive Electrician</b>       | <ul style="list-style-type: none"> <li>• AUR30308 Certificate III in Automotive Electrical Technology</li> <li>• AUR40208 Certificate IV in Automotive Technology</li> <li>• AUR50205 Diploma of Automotive Technology</li> </ul>  |
| <b>Automotive Vehicle Body</b>      | <ul style="list-style-type: none"> <li>• AUR20912 Certificate II in Automotive Vehicle Body Repair Technology</li> <li>• AUM35108 Certificate III in Automotive Manufacturing (Bus/Truck/Trailer)</li> <li>• AUR32112 Certificate III in Automotive Body Repair Technology</li> <li>• AUR40712 Certificate IV in Automotive Body Repair Technology</li> <li>• AUM45108 Certificate IV in Automotive Manufacturing (Bus/Truck/Trailer)</li> </ul>   |
| <b>Automotive Specialist</b>        | <ul style="list-style-type: none"> <li>• AUR21912 Certificate II in Automotive Tyre Servicing Technology</li> <li>• AUR21812 Certificate II in Automotive Steering and Suspension System Technology</li> <li>• AUR21612 Certificate II in Automotive Driveline Technology</li> <li>• AUR21412 Certificate II in Automotive Cooling System Technology</li> <li>• AUR21312 Certificate II in Automotive Braking System Technology</li> <li>• AUR21212 Certificate II in Automotive Underbody Technology</li> <li>• AUR20212 Certificate II in Automotive Air Conditioning Technology</li> <li>• AUR32512 Certificate III in Automotive Underbody Technology</li> <li>• AUR31612 Certificate III in Automotive Drivetrain Technology</li> <li>• AUR32312 Certificate III in Automotive and Marine Trimming Technology</li> <li>• AUR31812 Certificate III in Heavy Commercial Trailer Technology</li> </ul> |
| <b>Administration</b>               | <ul style="list-style-type: none"> <li>• AUR20112 Certificate II in Automotive Administration</li> <li>• AUR30112 Certificate III in Automotive Administration,</li> </ul>   |
| <b>Automotive Management</b>        | <ul style="list-style-type: none"> <li>• AUR40112 Certificate IV in Automotive Management</li> <li>• AUR50112 Diploma of Automotive Management</li> </ul>  |
| <b>Automotive Parts Interpreter</b> | <ul style="list-style-type: none"> <li>• AUR31012 Certificate III in Automotive Sales</li> </ul>   |

**Table 15 - Businesses Currently Operating in Vehicle Body Building**

| INDUSTRY SECTOR                | GASCOYNE | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEATBELT | TOTAL |
|--------------------------------|----------|------------|----------------|-----------|----------|------|-------------|---------|------------|-----------|-------|
| Automotive Electrical          | 3        | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40        | 365   |
| Heavy Vehicle Mobile Equipment | 1        | 28         | 14             | 0         | 26       | 2    | 151         | 37      | 9          | 15        | 282   |
| Heavy Vehicle Road Transport   | 2        | 20         | 14             | 1         | 15       | 5    | 73          | 10      | 21         | 2         | 163   |
| Radiator Specialists           | 0        | 3          | 4              | 2         | 2        | 3    | 40          | 0       | 11         | 3         | 68    |
| Recreational Vehicles          | 0        | 0          | 7              | 0         | 2        | 2    | 45          | 1       | 1          | 0         | 58    |
| Vehicle Body Builders          | 0        | 1          | 4              | 0         | 5        | 1    | 96          | 1       | 4          | 6         | 118   |

**NOTE: Automotive Air Conditioning Services can be found in other sectors, ie Auto Electrical, Light Vehicle Repair etc** [Source: EATC Industry Database 2012]

### Marine (Light)

The marine (light) sector generally covers the leisure side of the industry, ie small day boats, jet skis, inflatable boats etc, and comprises of retail sales of new and used boats and equipment and service and maintenance of leisure craft. Western Australia has established itself as a niche industry, producing specialised vessels in high demand internationally.

Western Australia has a proud tradition as the foremost State in boat building and manufacture and over the past two decades Western Australia boasts:

- The highest boat ownership per capita of any State in Australia;
- The greatest wealth per capita of any State in Australia;
- The fastest growing coastal development of any State in Australia;
- New marina and canal developments occurring within the City and regional areas;
- Waiting lists on marina berths, and more launching facilities in the planning process.

The marine sector is continuing to report a decline in orders for small-to-medium marine craft. Factors that affect this are:

- The strong Australian dollar - potential purchasers are importing boats and equipment from overseas to save money.
- New fishing licensing laws in WA, which include restricted catches - each person fishing from a boat has to hold the relevant license. This has impacted negatively upon recreational boat purchases.
- The confidence has not returned to the market amid further global financial concerns.
- Shortage of suitable and affordable boat pens and storage facilities.

As a direct result of these issues, several WA Marine retailers have ceased trading or scaled down their operations during the period 2011-2012.

The marine sector mainly operates two types of business models in WA:

- **Sole Trader** - this business model can be in the form of a person operating a small independent workshop and retail outlet.

- **Small-to-medium enterprise** - this model mainly encompasses service and retail centres that may be independent or part of a franchise chain.

Occupations within the marine (light) sector and qualifications:

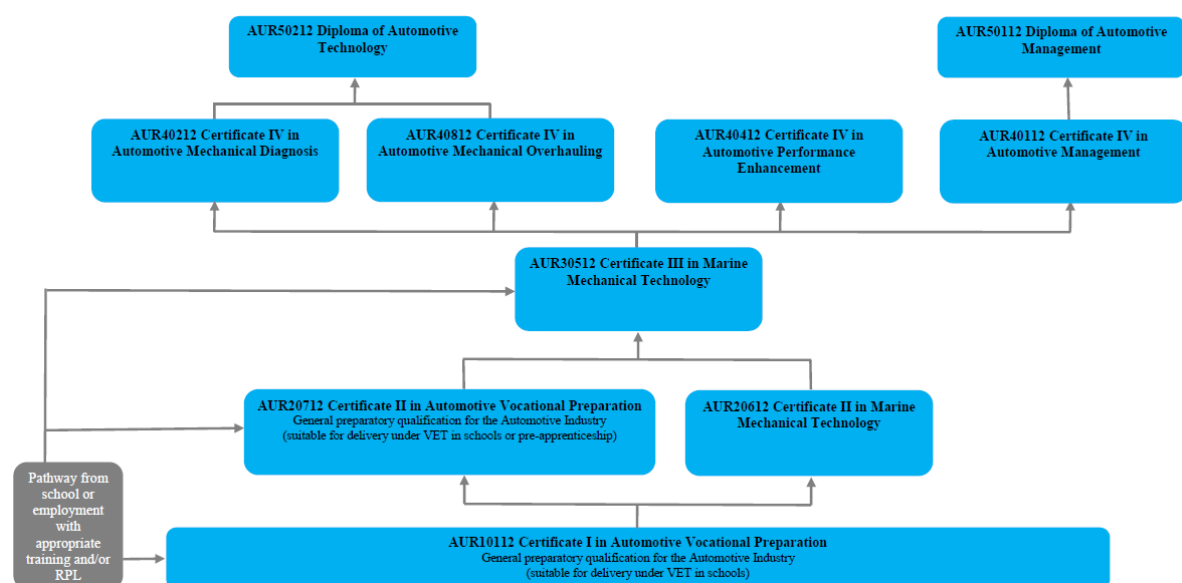
| Title                        | Qualification   |
|------------------------------|---|
| <b>Trades Assistant</b>      | <ul style="list-style-type: none"> <li>• AUR20612 Certificate II in Marine Mechanical Technology</li> </ul>   |
| <b>Marine Technician</b>     | <ul style="list-style-type: none"> <li>• AUR30512 Certificate III in Marine Mechanical Technology</li> <li>• AUR40812 Certificate IV in Automotive Mechanical Overhauling</li> <li>• AUR40212 Certificate IV in Automotive Mechanical Diagnosis</li> <li>• AUR50212 Diploma of Automotive Technology</li> </ul> |
| <b>Parts Interpreter</b>     | <ul style="list-style-type: none"> <li>• AUR31012 Certificate III in Automotive Sales</li> </ul>  |
| <b>Administration</b>        | <ul style="list-style-type: none"> <li>• AUR20112 Certificate II in Automotive Administration</li> <li>• AUR30112 Certificate III in Automotive Administration</li> </ul>   |
| <b>Sales</b>                 | <ul style="list-style-type: none"> <li>• AUR21112 Certificate II in Automotive Sales</li> <li>• AUR31012 Certificate III in Automotive Sales</li> <li>• AUR40112 Certificate IV in Automotive Management</li> </ul>   |
| <b>Automotive Management</b> | <ul style="list-style-type: none"> <li>• AUR40112 Certificate IV in Automotive Management</li> <li>• AUR50112 Diploma of Automotive Management</li> </ul>   |

**Table 16 - Businesses Currently Operating in Marine (Light)**

| INDUSTRY SECTOR            | GASCOYNE | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEATBELT | TOTAL |
|----------------------------|----------|------------|----------------|-----------|----------|------|-------------|---------|------------|-----------|-------|
| Automotive Electrical      | 3        | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40        | 365   |
| Boat Maintenance & Service | 2        | 0          | 9              | 5         | 8        | 4    | 57          | 6       | 7          | 0         | 98    |
| Motor Trimmers             | 0        | 6          | 3              | 2         | 6        | 5    | 63          | 2       | 6          | 2         | 95    |

[Source: EATC Industry Database 2012]

**Figure 9 – Pathway Chart for Marine Sector**



[Source ASA]

There are approximately 98 Marine light service and repair companies in WA with approximately 57 companies centred around Perth Metro.

## **Motor Cycle**

The motorcycle sector comprises of sales and service and maintenance of new and used motorcycles, scooters and quad bikes. Motorcycling continues to grow in Australia as a means of transport and a recreational pursuit.

Motorcycle sales in Australia increased in the first half of 2012, according to figures released by the Federal Chamber of Automotive Industries (FCAI).

In the six months to the end of June, 51,952 motorcycles were delivered to Australian customers, representing an increase of 1,331 units (or 2.6 per cent) over the same period in 2011.

Sales growth was mostly driven by the road bike segment, which increased 8.4 per cent (1,567 units) to 20,174 and the All-terrain Vehicle (ATV) segment, which increased by 3.4 per cent (357 units) to 10,951 compared with the first six months of 2011.

Scooter sales saw a big drop to 5,233 units, being 13.6 per cent or 832 less scooters sold year to date compared with last year.

The off-road segment accounted for 15,594 sales (to the end of June) for a 30 per cent market share.

The road bike segment remains the single largest by market share, with half-year sales representing 39% of all motorcycles sold.

ATV deliveries represented 21 per cent of the market, while scooters' share decreased to 10 per cent.

Honda was the number one brand, delivering 11,788 motorcycles to the end of June.

Yamaha was in second position to the end of June with 8,692 sales, followed by Suzuki (6,105), Kawasaki (4,612) and Harley-Davidson (3,643).

The overall market for motorcycles has continued to see growth during 2012 up 2.6% on 2011 figures. Growth in the All-terrain Vehicle (ATV) segments was of particular importance.

The growth in road bike sales suggests commuters are finding motorcycles to be a practical solution to continuing high fuel prices and inner-city traffic congestion. Seven of the top-ten motorcycles remain off-road bikes: testament to the ongoing popularity of motorcycling as a recreational sport and pastime in Australia.

*[Source: Federal Chamber of Automotive Industries (FCAI)]*

The motorcycle sector mainly operates two types of business model:

- **Sole Trader** - this business model can be in the form of a person operating a small independent workshop and retail outlet.
- **Small-to-medium enterprise** - this model mainly encompasses service and retail centres that may be independent or part of a franchise chain.

There are approximately 150 motorcycle businesses in WA with approximately 97 centred around the Perth metropolitan area.

Occupations within the motorcycle sector and qualifications:

| Title                               | Qualification   |
|-------------------------------------|---|
| <b>Trades Assistant</b>             | <ul style="list-style-type: none"> <li>AUR20705 Certificate II in Automotive Mechanical</li> </ul>  |
| <b>Automotive Technician</b>        | <ul style="list-style-type: none"> <li>AUR30812 Certificate III in Motorcycle Mechanical Technology</li> </ul>  |
| <b>Automotive Parts Interpreter</b> | <ul style="list-style-type: none"> <li>AUR31012 Certificate III in Automotive Sales</li> </ul>  |
| <b>Automotive Administration</b>    | <ul style="list-style-type: none"> <li>AUR20112 Certificate II in Automotive Administration</li> <li>AUR30112 Certificate III in Automotive Administration</li> </ul>   |
| <b>Automotive Sales</b>             | <ul style="list-style-type: none"> <li>AUR21112 Certificate II in Automotive Sales</li> <li>AUR31012 Certificate III in Automotive Sales</li> <li>AUR40112 Certificate IV in Automotive Management</li> </ul> |
| <b>Automotive Management</b>        | <ul style="list-style-type: none"> <li>AUR40112 Certificate IV in Automotive Management</li> <li>AUR50112 Diploma of Automotive Management</li> </ul>   |

**Table 17 - Businesses Currently Operating in Motorcycles**

| INDUSTRY SECTOR       | GASCOYNE | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEAT BELT | TOTAL |
|-----------------------|----------|------------|----------------|-----------|----------|------|-------------|---------|------------|------------|-------|
| Automotive Electrical | 3        | 17         | 23             | 9         | 17       | 22   | 176         | 14      | 44         | 40         | 365   |
| Motorcycle Repairers  | 1        | 6          | 6              | 4         | 9        | 5    | 97          | 3       | 15         | 4          | 150   |
| Motor Trimmers        | 0        | 6          | 3              | 2         | 6        | 5    | 63          | 2       | 6          | 2          | 95    |
| Tyre Fitters          | 4        | 18         | 15             | 12        | 10       | 11   | 189         | 13      | 28         | 26         | 326   |

[Source: EATC Industry Database 2012]

This continuing increase in motorcycle and scooters sales will lead to an increased need for more motor cycle service and repair trades people.

Most retailers specialise in the repair and maintenance of the products they sell and conduct in-house product specific training. There are a number of smaller repair shops that are run by motorcycle enthusiasts with little or no formal training. However, the motorcycle sector is increasingly using more high-tech components such as light alloys, carbon composites and electronic management systems for brakes, suspension, engines and fuel systems. With the ever-increasing use of these technologies, the need for structured formal training will increase.

Although the motorcycle sector is growing the take-up of apprenticeships is low. A career in the motorcycle sector is not considered by students as an area of importance when choosing a career. The industry is viewed as a recreational hobby and not a long-term career option.

### Skill Shortages within the motorcycle sector

- Motorcycle Technician
- Sales Persons

Pay rates (comparative to other industries) and lack of career progression are cited as major contributory factors for the current skill shortage within this sector.

### Bicycles

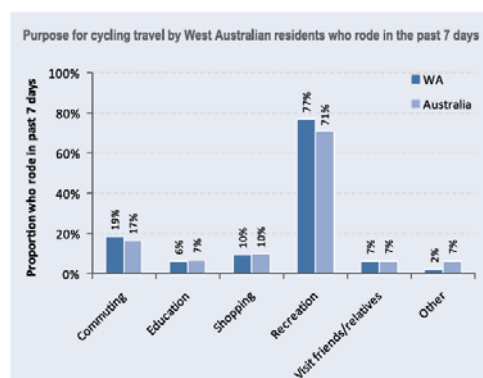
Cycling continues to grow across the country, particularly in WA. Australian bicycle sales have soared to record numbers in recent years. Australians have bought more bicycles than cars in recent years.

Western Australia has cycling participation rates significantly higher than the national average. Around 22% of WA residents ride in a typical week, increasing to 30% over a month and 45% over a year. WA has a significantly higher rate of recreational riders than the national average - 77% of people who ride in a typical week do so for recreation. About 159,000 people make at least one trip for transport in a typical week. Transport trips include riding to work, education, shopping or visiting friends or family. Nearly two-thirds of households in WA have access to a bicycle. [Source: Australian Bicycle Council 2011 National Cycling Participation Survey]

The State government announced in May 2012 that \$20 million of funding has been made available over the next two years to support the WA Bicycle Network (WABN) Plan. The plan is in response to a five-fold increase in the number of people cycling to work or for leisure in Perth. Nationally on average 300,000 cyclists per month take to the roads, but WA has a significantly higher user rate with up to 512,000 people cycling each week.

In August 2011, the Australian Bicycle Council released the results of the National Cycling Participation Survey. The survey found that in a typical week around 18% of Australians ride a bicycle for transport and recreation with around 3.6 million people riding for recreation, leisure or sport and 1.2 million people making at least one transport journey. Cycling is the fourth most popular physical activity for people fifteen years and older. It is more popular than golf or fishing, according to the Exercise, Recreation and Sport Survey (ERASS 2005). [Source: Australian Bicycle Council 2011 National Cycling Participation Survey]

**Figure 10 – WA Cycling Travel**



The Bicycle sector mainly operates two types of business model:

- **Sole Trader** - this business model can be in the form of a person operating a small independent workshop and retail outlet.
- **Small-to-medium enterprise** - this model mainly encompasses service and retail centres that may be independent or part of a franchise chain.

There are approximately 94 bicycle repair businesses in WA with approximately 73 centred around the Perth metropolitan area. (Note: figures do not include large retail only outlets).

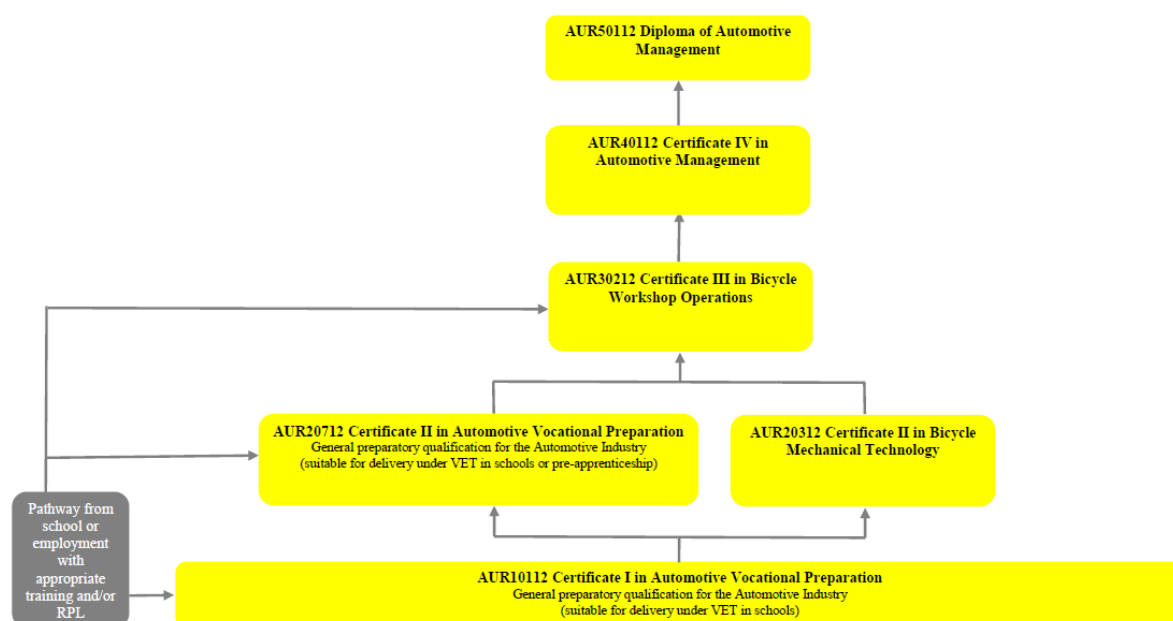
Occupations that work within the bicycle sector, qualification structure (as commonly used in WA):

| Title                     | Qualification   |
|---------------------------|---|
| <b>Bicycle Technician</b> | <ul style="list-style-type: none"> <li>• AUR20312 Certificate II in Bicycle Mechanical Technology</li> <li>• AUR30212 Certificate III in Bicycle Workshop Operations</li> </ul> |

**Table 18 - Businesses Currently Operating in Bicycles**

| INDUSTRY SECTOR   | GASCOYNE | GOLDFIELDS | GREAT SOUTHERN | KIMBERLEY | MID-WEST | PEEL | PERTH METRO | PILBARA | SOUTH WEST | WHEATBELT | TOTAL |
|-------------------|----------|------------|----------------|-----------|----------|------|-------------|---------|------------|-----------|-------|
| Bicycle Mechanics | 0        | 2          | 2              | 1         | 2        | 2    | 73          | 2       | 8          | 2         | 94    |

[Source: EATC Industry Database 2012]

**Figure 11 – Pathway Chart for the Bicycle Sector**

[Source: ASA]

ABS reports that independent specialist bicycle retailers sell the vast majority of parts and accessories and hold virtually 100% of the bicycle service market.

WA Specialist, The Bicycle Entrepreneur, is the second largest retailer in Australia of specialist bicycles.

The bicycle service market has seen considerable growth in recent years due to the increase in cycling participation and the considerable growth in cycling for transport, particularly in urban centres around Australia.

Despite the number of outlets carrying out repairs and maintenance, there is almost no interest in formal institutional training and qualifications. Most training is done in-house at enterprise level. This is evidenced by the number of apprentices enrolled in AUR20311 Certificate II in Bicycles for the period 30<sup>th</sup> June 2011 to 30<sup>th</sup> June 2012 amounting to only seven.

The need for formal training will gradually increase. This will be driven by the ever-increasing complexity of bicycle manufacture (bicycles are now using high-tech construction materials for frames and wheels and the increasing use of electronic components for gear shifting and the use of hydraulic braking systems). This will be further driven by the mining and resource sectors interest in the use of bicycles as an environmentally friendly means of

transport around mining sites, particularly on environmentally sensitive sites. Anyone contracted to carry out maintenance or repairs to bicycles on such sites will need a formal qualification.

The resource sectors are also looking at bicycles as a means of reducing their carbon emissions. This will, in future years, drive the need for formal bicycle maintenance training.

Some of the more specialist retailers are reporting difficulty in attracting people into the industry and also a shortage of skilled bicycle mechanics.

- **Industry Trends**

- The automotive industry is in a constant mode of change and adaptation. It is a hive of new and innovative technologies where changes are driven by legislation, fashion trends and an ever-increasingly competitive market.
- The increased use of complicated electronic and computer based systems is forcing the industry to constantly re-train its workforce. This, however, is proving increasingly difficult for the smaller independent workshops to gain access to training for these newer technologies.
- With more emphasis placed upon these new systems, this has driven industry requests for higher qualifications based at Certificate IV level, with an emphasis upon greater diagnostic skills.
- Training providers also find it difficult to gain access to current resource material to enable them to deliver training.
- There has been a sharp increase in heavy vehicle training which is mainly driven by the demand for skilled labour from the mining and resource sectors. The trend to upskill light vehicle mechanics into heavy vehicle mechanics is continuing to increase with several mining and resource companies already have programs in place.

- **Labour and Skill Demand**

The table below indicates the national projected skilled labour shortages for 2012-13 with a comparison for the years 2011-12. The labour shortage has risen by 20.3% on the previous year's labour shortage.

Currently, 47% of automotive businesses are experiencing skilled labour shortages, with most businesses reporting that they are operating at only 50% capacity within the skilled labour shortage areas.

Businesses experiencing skilled labour shortages are expected to rise by a further 8% to 55% for 2012-13.

Western Australia currently has 11.5% of the total automotive market share. This is shown in the total Australian context in Figure 12 overleaf.



**Figure 12 – WA Automotive Market Share**

| Forecast Labour Shortages by Occupation and Financial Year |               |               |
|--|---------------|---------------|
| Occupation   | 2011-12       | 2012-13       |
| Motor Mechanic (General)                                   | 13,080        | 16,000        |
| Automotive Electrician                                     | 2,280         | 2,642         |
| Panel Beater   | 4,596         | 5,411         |
| Vehicle Painter  | 2,193         | 2,596         |
| <b>Total</b>   | <b>22,149</b> | <b>26,649</b> |

[Source: ASA environmental Scan 2012]

The figures above are estimated for the automotive industry in general. They do not include projected figures for the mining and resource sectors, which utilise the skills of light and heavy vehicle mechanics, tyre fitters, automotive electricians (see engineering section Labour and Skill Demands).

The main areas of skill shortage in WA will be:

- Heavy Vehicle Technicians (all sectors)
- Light Vehicle Technicians
- Automotive Electricians
- Panel Beaters
- Spray Painters

ABS labour force data shows that employment has not grown in the automotive industry over the past decade. Employment of motor mechanics, which constitute approximately one-quarter of the total automotive workforce, has remained around 94,000 persons since 2001. Similar flat trends are observed for many other automotive occupations, including automotive electricians, panel beaters, vehicle painters and vehicle body builders and trimmers.

The quantity of labour entering the industry is largely matched by the quantity of labour exiting the industry, resulting in no real employment growth. [Source: ASA Environmental Scan 2012]

- **Regional Impact**

Industry is reporting considerable problems retaining or attracting skilled workers, with the advent of fly-in, fly-out jobs being offered by the resources sector that are now employing local tradespeople, and flying workers out from small regional airports.

The regional businesses cannot compete with the salaries that the resources sector can offer. Even long-established businesses are finding it increasingly difficult to remain in business. The attraction and retention situation also creates a longer term effect whereby businesses are reluctant to train apprentices, knowing that once they have completed their apprenticeship they will lose them to the more lucrative jobs on offer by the resource sector. This further inhibits regional enterprises from operating at full potential or growing the business to create further employment.

Another issue that impacts heavily upon regional or remote areas is the ability for repair shops to gain access to technical information regarding the repair of new technologies. This places considerable emphasis upon the service and repair sector to select and train suitable employees for these new technologies. This can create problems for the aftermarket or independent operators who cannot gain access to the technical software information required to service or maintain the newer vehicles. The MTAWA and IAME are lobbying for more data to be made available.

The issue of training infrastructure and resource material is also a major limiting factor for regional training providers who find it increasingly difficult to maintain industry currency with their training resources.

Industry is indicating this is increasingly becoming an issue.

Further issues are arising, particularly with the use of gas-only and hybrid electric vehicles relative to licensing of individuals and companies to perform maintenance on these vehicles. Training is also becoming an issue with regard to these new technologies with the reluctance of the OEMs (Original Equipment Manufacturers) to release technical information, which impacts heavily upon smaller regional training providers.

- **Regulatory Requirements**

Regulatory requirements within the automotive sector in WA involving Retail Service and Repair businesses require that all businesses be licensed with the Department of Commerce.

Further licensing requirements apply to individual business owners or persons involved in the application or supervision of vehicle repair work and also require certification. Other regulatory requirements are based around OH&S (Occupational Health and Safety) and Environmental Regulations with regard to the handling and disposal of waste products (oils, fluids, tyres, vehicle components, noxious emissions from accident repair shops).

Licensing is also required for service and repair work on LPG (Liquid Petroleum Gas) equipped vehicles and vehicle airconditioning, which require that the business and the person working with these systems be individually licensed.

The recreational vehicle and mobile plant and equipment sector also has to be licensed for electrical work (disconnect/reconnect) for both the business and the individual working on these systems.

- **Gender/Age Participation**

Mature skilled workers are often overlooked when considering long-term workforce strategies. This valuable skill base finds it difficult to access training to upskill or to learn new technologies and techniques. This, in turn, leads to disenchantment and this valuable skill base ends up leaving the industry.

*“Changing technology is a central skilling issue for automotive enterprises which need continual access to professional development and upskilling opportunities. Environmental and safety compliance and performance targets are major drivers of this change”.*

*[Source: MSA Environmental Scan 2011]*

There is a very low participation rate of females in the trades. Females are not well represented in the engineering and automotive industries in a trade's capacity.

*“Occupational segregation between men and women continues to exist, and male dominated occupations tend to earn more than female dominated occupations. Women are more likely to be clerical, sales, community and personal service workers, while men are more likely to be technicians, trades workers, machinery operators, drivers and labourers. Women are still substantially under-represented in the manual trades in Australia, with the number of women in manual trades being less than 2 per cent”. [Source: The Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) The review of the Equal Opportunity for Women in the Workplace Act 1999. (2009)].*

In an industry sector where men make up the majority of workers, it is to be expected that men also make up the majority of enrolments. Just over 96% of all commencements in the Metal and Engineering Training Package were male, with the largest course enrolment (2,386) being males enrolling into Certificate III in Engineering – Mechanical Trade. [Source: MSA/NCVER VOCSTATS accessed September 2010].

ABS6202.0 May 2010 data shows that only 1.1% of the automotive trade workers are female. This is the lowest of all the trades in Australia.

- **Under-Represented Groups Participation**

There is a large cohort of potential workers who are not well represented within the automotive industry that could be trained for various automotive sectors.

The groups that make up this cohort are:

- Aboriginal participation within the automotive and associated industries is low throughout WA. School programs currently in place rarely translate to real employment outcomes; other industries also experience this same effect.
- Female participation within the automotive sector is very low, the industry is still perceived as male dominated.  
*“Around 1.3% of workers in this occupation are female (compared to 45.6% for all occupations)”.* [Source: Australian Government (Jobs Outlook)]
- Participation of people with disabilities is low within the automotive industry.
- Discouraged job seekers comprises of a large cross-section of potential workers.

In September 2010, there were 1.3 million Australians who were not in the labour force but wanted to work according to figures by the Australian Bureau of Statistics (ABS). This group makes up more than one-in-five (22%) of all people who were not in the labour force.

Amongst them were 102,100 discouraged job seekers. These are people who wanted to work and were also available to start work in the next four weeks, but were not actively looking for a job because they believed they would not find one.

The most common reason discouraged job seekers gave for not actively looking for work was because they believed they were considered too old by employers (38%). More than half of all discouraged job seekers were aged 55 years and over. Over half the discouraged job seekers said that they intend to, or might, enter the labour force in the next year.

In September 2010, there were almost 5.9 million people aged 15 years and over who were not in the labour force. This represented 33% of the civilian population aged 15 years and over. Since September 2007, people aged 15 years and over who were not in the labour force comprised approximately one-third of the civilian population.

Of those people not in the labour force [Source: ABS]:

- 61% were women
  - 22% wanted to work (23% of women not in the labour force and 21% of men not in the labour force)
  - 30% were aged 70 years and over and a further 17% were aged 15-24 years
- [Source: DEEWR. Media release March 2011]

Encouraging aboriginal people into the job market will produce a ready workforce and could possibly reduce the reliance upon migrant workers.

To overcome barriers to Aboriginal participation in engineering and automotive training in WA, the EATC has completed a comprehensive study and report of the issues relating to Aboriginal employment entitled "Aboriginal Employment Strategy."

## Major Challenges and Barriers

Recruitment amongst school leavers is a major issue and the industry suffers from the following preconceived views:

The main barriers to recruitment within automotive sectors are:

- The perception that the industry has no career pathway.
- The perception that only low academic achievers work in the automotive industry
- The industry is not seen as attractive enough, particularly by the young.
- Schools do not promote careers within the automotive industry.
- The image that some businesses portray to the public.
- Lack of promotion by the automotive industry.

The main and underlying perception of the automotive industry is that it is a dirty and greasy profession, with little or no career pathways. . This perception is fostered by the general public who view the industry as a "non-profession" and it is promoted by parents to their offspring in this manner, thus placing a permanent disenchantment for the industry within the minds of school age students.

*"Arguably, more so than the other industries, automotive suffers from a poor image of long hours, dirty working conditions, low pay and an insecure future, with limited career options".*

[Source: MSA Environmental Scan Update 2009]

Another perception that needs to be addressed is the view that "the trades" are for under achievers or the "not so academically adept" students. This erroneous perception needs to change. The school system heavily promotes University as the only avenue for academically advanced students while ignoring modern trade-based professions. A change must take place or this practice will continue to flourish within the education system and will continue to place a major barrier to student career choices.

The perception that the industry is mainly staffed by academically low achievers is borne from the old image of the Automotive Mechanic working out of a dark and dirty workshop. This image is "out of tune" with the modern, clean and technically advanced workshops of today where the majority of work is conducted by highly skilled technicians using computer and diagnostic technology on a daily basis.

The perception that the industry has "no career pathways" is a complete misnomer given the automotive industry has ample career pathways, but it is simply not given enough promotion.

The industry has a major image problem relative to attracting and retaining workers. The historically low pay rates are a major issue, but in recent years due to the skill requirements wages are, in most cases, comparable with other industries.

Apprentice pay rates are still an issue with the first-year rate being so low that the apprentices are eligible for CentreLink payments because the wage is deemed below the poverty line. This is a major disincentive for a young person to consider a career within the industry, and is further compounded by the other industry perceptions to the point that a young person does not see the automotive industry as a viable career path.

The education and VET systems also play a part in discouraging students who are high achievers from choosing a career in the automotive or associated industries, with teachers perpetuating the perception that “the trades” are for the under achieving students. The automotive industry requires high levels of literacy and numeracy skills and employers are reporting that a very high percentage of school leavers are lacking these basic skills.

*“This lack of interest from young applicants has raised the question as to whether the message is getting to school leavers about the changes in the sector and the plethora of new technologies and opportunities which are available”.*

*[Source: MSA Environmental Scan 2011]*

A major challenge industry face is the retention of skilled workers. They face a constant battle to retain highly skilled staff, who sees the mining and resource sectors as a more lucrative employment avenue. This has a knock on effect because employers are also reluctant to take on an apprentice for the same reasons, this further increases skills shortages over a longer time frame.

*“The first is that there is no certainty that the apprentice will stay with the employer upon completion and in fact many employers are stating that their apprentices have simply used them to get the qualification and then head straight into the mining sector. The second factor, and this is particularly relevant to smaller workshops is with the continued economic uncertainty; employers simply don’t want to take the risk of committing to a four year term. They are managing their businesses on a much shorter timeframe”.*

*[Source: MTAWA 2011]*

## **New and Emerging Skills**

The automotive industry has now become heavily reliant upon electronic and computer based systems. The idea of the “traditional mechanic” who could fix most vehicles with a few simple tools has now become a thing of the past.

With the ever-increasing complexity of motor vehicles, trucks and buses, new occupations are emerging such as Diagnostic Technicians (workers with the skills necessary to read and interpret diagnostic computer data).

Another area that will experience growth in the future will be workers with the ability to work on hybrid vehicles (this may lead to a dual trade outcome - Mechanical/Electrical).

Areas of particular growth will be with electrical fault diagnosis, water based paint application, composite vehicle panel repairs, high strength steel repair techniques, hybrid vehicle systems and alternative fuel systems.

With the changing nature of the industry due to technological advancement, key areas of growth within the industry are:

- Hybrid and Electric Vehicles
- Alternative Fuels
- High Strength Steels
- Composites
- Electronic Vehicle Controls and Fuel Management
- Analytical and Diagnostic Skills
- Technological Upgrades
- Gas Technology
- Dual fuel Technology
- Heavy vehicle driverless control systems

The automotive industry will need to adapt to the training and employment needs of these new technologies and systems, to create a workforce ready for these new emerging technologies.

*One of the emerging challenges for the automotive sector is the arrival of new technologies which are now requiring the industry to look to potential apprentices with higher skill sets. Young people who are tech savvy and who want a career in an industry that will see them move along with the technology are now in urgent demand. The challenge is to promote these opportunities to potential apprentices so that they are fully aware of the opportunities that are available to them. [Source MTAWA 2012]*

### Occupations In Demand

| ANZSCO6 | Occupation               | Priority Memo   |
|---------|--------------------------|---|
| 321111  | Automotive Electrician   | The automotive electrician is a Priority 1 occupation. The ever increasing complexity of modern motor vehicles has created a national shortage of automotive electricians, who have the ability and skills to repair or service complicated electrical/electronic systems. This shortage affects all sectors of the industry  |
| 321212  | Diesel Mechanic          | <p>The diesel mechanic operates in four distinct sectors:</p> <ol style="list-style-type: none"> <li>1. Heavy Mobile Equipment</li> <li>2. Agricultural Equipment</li> <li>3. Heavy Road Transport</li> <li>4. Marine Diesel</li> </ol> <p>Diesel mechanic is a Priority 1 occupation. The agricultural and heavy road transport sectors are losing skilled workers to the resource sectors. This has a knock on effect with employer's reluctant to take on apprentices knowing that once they are qualified they will be enticed into the resource sectors, thus further compounding the skill shortages.</p> |
| 321211  | Motor Mechanic (general) | Skill shortages within this sector are Very High. Skilled motor mechanics are increasingly moving to the mining and resource sectors, who now offer upskilling to a diesel qualification, or they are abandoning their trade to take a career change within the resource sector, attracted by the high rates of pay on offer.   |

|        |                 |  |
|--------|-----------------|--|
|        |                 | <p>The skill shortage is further compounded by industries reluctance to take on apprentices and school leavers disinterest for a career in automotive.</p> <p>Motor Mechanic (general) is a Priority 1 occupation.</p>   |
| 324111 | Panel Beater    | <p>The vehicle body repair sector has a major crisis in regard to retaining skilled panel beaters, who often retrain for a career in the mining and resource sectors.</p> <p>Panel beating has evolved into a highly specialised occupation, but industry pay rates do not, in general, reflect upon this, thus the attrition rate of skilled trades people is very high.</p> <p>Attracting new entrants into the industry is also proving difficult, the body repair sector is not seen as an attractive career prospect.</p> <p>Panel Beater is a Priority 1 occupation.</p> |
| 324111 | Vehicle Painter | <p>As with the panel beater, the same issues affect the ability to retain skilled workers or attract new entrants into the body repair sector.</p> <p>Vehicle Painter is a Priority 1 occupation.</p>  |

## Workforce Development Opportunities

### Engagement of Aboriginal Workers in the Automotive Sectors

See Engagement of Aboriginal Workers in the Engineering Industries

### Industry appetite for training

The automotive sector has a very high attrition rate amongst apprentices. More effort should be placed upon highlighting the reasons for this attrition rate which will help to maintain a sustainable workforce. Apprentice intake has remained fairly steady throughout 2012, but the apprentice intake will not fulfill the projected industry needs for future growth. A large proportion of the industry has a reluctance to commit to employing apprentices and this continues to have an adverse effect upon future employment needs.

The EATC will be working throughout 2013 with MTAWA and the IAME to promote the long term benefits of apprenticeships to the automotive sectors.

ASA conducted a recent national survey regarding the reasons the automotive industry is reluctant to provide training these are the findings:

**Table 19 – National Survey Outcome**

| REASON FOR NOT PROVIDING TRAINING                                     | % OF EMPLOYERS |
|---|----------------|
| Cost  | 68.4           |
| Insufficient employee language, literacy or numeracy skills           | 14.8           |
| Lack of employee interest   | 42.0           |
| Lack of flexibility in course delivery                                | 41.6           |
| Employees already have the required skills                            | 21.6           |
| Benefits of training cannot be applied to my business                 | 08.4           |
| Concern that employees will become more attractive to other employers | 30.0           |
| Administrative requirements too complex                               | 20.4           |
| Productivity lost due to time off-the-job                             | 61.2           |
| Lack of access or choice of training providers in my location         | 42.4           |
| Likelihood of employees not completing the training                   | 27.6           |
| Other   | 14.0           |

[Source ASA Environmental Scan 2012]

The traditional areas of automotive trades are still experiencing difficulty in attracting apprentices. This fact will place significant pressure on the sector into the future as there is an urgent need to recruit adequate numbers of apprentices to fill the vacancies that are occurring as a result of an ageing workforce. [Source MTAWA 2012]

### **Promotion of new and innovative career opportunities**

With the advent of new skill requirements within all sectors of the automotive industry, this has transformed how each sector operates, the industry is evolving into highly specialised areas of expertise such as:

- Electronic diagnosis
- Composite repairs
- Battery Electric Vehicle repairs/diagnosis

The workforce will need to attract future workers with high analytical and academic qualifications to work on these new and emerging technologies.

The EATC are working collaboratively with ASA, MTAWA and the school networks to promote future career opportunities to school students, through the National Workforce Development funded Advisor Program.

### **VET Training Data by Qualification – Enrolments and Completion**

There are two national vocational training packages that reflect the vocational qualification requirements for the industry. These are Automotive Manufacturing (AUM08), (AUM12) and Automotive Retail, Service and Repair (AUR05). AUR05 ranks as the sixth most used training package out of the 72 training packages offered within the Australian VET system.

The following information is sourced from the DTWD Training Records System (TRS) Data Cube for Providers. It covers information on pre-employment, apprenticeships and traineeships and VET in Schools qualifications; course enrolments June 2011 to June 2012. All of the Training Packages covered by the automotive industries are shown.



**Table 26 – Automotive Enrolments by Qualification (AUR05)**

| Enrolments by Qualification 12 months to 30 June 2012                    |      |
|--|------|
| AUR30405 Certificate III in Automotive Mechanical Technology             | 1300 |
| AUR3030805 Certificate III in Automotive Vehicle Body                    | 216  |
| AUR30308 Certificate III in Automotive Electrical Technology             | 182  |
| AUM35108 Certificate III in Automotive Manufacturing (Bus/Truck/Trailer) | 49   |
| AUR31005 Certificate III in Automotive Sales                             | 54   |
| AUR20505 Certificate II in Automotive Vehicle Servicing                  | 47   |
| AUR31205 Certificate III in Automotive Retail, Service and Repair        | 21   |
| AUR20905 Certificate II in Automotive Vehicle Body                       | 9    |
| AUR20311 Certificate II in Bicycles                                      | 7    |
| AUR30308 Certificate II in Automotive Electrical Technology              | 4    |
| AUR21105 Certificate II in Automotive Sales                              | 3    |
| AUR40105 Certificate IV in Automotive Management                         | 3    |
| AUR20105 Certificate II in Automotive Administration                     | 1    |

**Table 27 – Automotive Commencements/Completions (AUR05)**

| Automotive Commencements and Completions 12 months to 30 June 2012 |       |       |       |             |       |       |       |
|--|-------|-------|-------|-------------|-------|-------|-------|
| Commencements  |       |       | Total | Completions |       |       | Total |
| Perth  | Rural | Other | 1775  | Perth       | Rural | Other | 816   |
| 1118   | 655   | 2     |       | 526         | 289   | 1     |       |

Automotive Apprentices/Trainees currently in training up to 30 June 2012 **Total 3618**

**Table 28 - VET in Schools Enrolments by Qualification (AUR05 and AUM08)**

| Qualification Code | Qualification Name   | 2011     | 2010     | 2009     | 2008     | 2007     |
|--------------------|--|----------|----------|----------|----------|----------|
| AUM25108           | Certificate II in Automotive Manufacturing (Bus/Truck/Trailer)   |          |          |          |          |          |
| AUM35108           | Certificate III in Automotive Manufacturing (Bus/Truck/Trailer)  |          | 1        | 1 (1)    |          |          |
| AUR10105           | Certificate I in Automotive                                      | 795      | 822      | 785      | 793      | 494      |
| AUR20105           | Certificate II in Automotive Administration                      |          |          |          | 2        | 13 (1)   |
| AUR20311           | Certificate II in Bicycles                                       | 1        | 4        | 1 (2)    |          |          |
| AUR20408           | Certificate II in Automotive Electrical Technology               | 4 (1)    | 2 (3)    | 15       | 5 (7)    | 8 (5)    |
| AUR20505           | Certificate II in Automotive Vehicle Servicing                   | 268 (18) | 103 (39) | 105 (13) | 84 (47)  | 130 (47) |
| AUR20611           | Certificate II in Marine   | 1 (1)    | 1        |          |          |          |
| AUR20705           | Certificate II in Automotive Mechanical                          | 305 (47) | 349 (69) | 370 (31) | 372 (79) | 272 (25) |
| AUR20811           | Certificate II in Outdoor Power Equipment                        |          | 1        | 1        |          | 4 (1)    |
| AUR20905           | Certificate II in Automotive Vehicle Body                        | 12 (5)   | 2 (2)    | 4 (2)    | 9 (5)    | 5 (8)    |
| AUR21011           | Certificate II in Motorsport                                     | 15       | 12       | 36       | 23       | 9        |
| AUR21105           | Certificate II in Automotive Sales                               |          |          |          |          | 1        |
| AUR21205           | Certificate II in Automotive Warehousing/Distribution Operations |          |          |          |          |          |
| AUR30308           | Certificate III in Automotive Electrical Technology              | 2 (2)    | 2        |          | 2        | 9 (5)    |

|          |   |        |         |         |         |         |
|----------|---|--------|---------|---------|---------|---------|
| AUR30405 | Certificate III in Automotive Mechanical Technology | 49 (9) | 50 (51) | 44 (14) | 55 (28) | 29 (18) |
| AUR30511 | Certificate III in Marine                           |        |         |         |         |         |
| AUR30711 | Certificate III in Outdoor Power Equipment          | 1      |         |         |         |         |
| AUR30805 | Certificate III in Automotive Vehicle Body          | 3 (1)  | 1 (2)   | 1       | 1 (2)   |         |

- Numbers in black = numbers from AVETMISS data collection. (As stated above, this should also include SBA and SBT course enrolments).
- Numbers in red = numbers of SBA/SBT course enrolments from TRS.

## Higher Education Pathways

The automotive sector uses mainly trade based qualifications with little or no take up of post trade qualifications, but with the ever increasing complexity of motor vehicle construction and the use of innovative technologies the need for post trade qualifications will rise.

There are currently Certificate IV and Diploma qualifications in the following:

- Certificate IV in Automotive Management
- Diploma of Automotive Management
- Certificate IV in Vehicle Loss Assessing
- Certificate IV in Automotive Body Repair Technology
- Certificate IV in Automotive Mechanical Diagnosis
- Certificate IV in Automotive Mechanical Overhauling
- Certificate IV in Automotive Performance Enhancement
- Certificate IV in Automotive Electrical Technology
- Diploma of Automotive Technology
- Certificate IV in Motorsport Technology
- Diploma of Motorsport Technology

Tertiary courses are available in:

- Bachelor of Engineering (Mechatronics)
- Bachelor of Technology (Motorsports)

## Industry Issues

- **Attrition rate for automotive apprentices and trainees is a major issue.** More than one-quarter (26%) of automotive apprentices and trainees withdraw from their training in the first year and 43.5% exit over the first three years. This not only impacts upon industries ability to grow, but a more serious issue of State funded training has been effectively wasted. What is not often understood is that modern vehicles now contain sophisticated technologies such as computerised engine management, fuel injection systems, passenger safety devices and sophisticated brake steering and suspension technologies. These technologies require candidates with mathematics, science and information technology skills that will be capable of understanding and working with such technology. Arguably, many new entrants and apprentices do not possess such skills, which may be a contributing factor towards the high attrition rates that are being experienced.

Career advice given to school students also impacts upon the current attrition rate, students that are pushed towards an automotive career pathway are generally underachievers who lack the skill requirements that the automotive industry now require.

*“One of the emerging challenges for the automotive sector is the arrival of new technologies which are now requiring the industry to look to potential apprentices with higher skill sets. Young people who are tech savvy and who want a career in an industry that will see them move along with the technology are now in urgent demand. The challenge is to promote these opportunities to potential apprentices so that they are fully aware of the opportunities that are available to them.” [Source MTAWA 2012]*

Career advice within the school system needs to be accurate and detailed, to enable students and their parents/ guardians to make informed career choices.

- **Accurate and relevant career advice in schools** is vital for students who aspire to enter the engineering or automotive industries. It is the responsibility of the education system and VET practitioners to ensure that students are fully aware of the knowledge and skill requirements for entry into our industries. Feedback from industry regarding school leavers seeking employment, cites lack basic literacy and numeracy skills and that their general knowledge, competency and capability within the trade is not consistent with industry requirements. These employer perceptions are widespread and this highlights two important issues. The first issue is whether many apprentices are actually suited to the trade in the first place, and the second issue, is whether VET teaching is of a sufficient quality to meet industry needs. Many teenagers who are not academically inclined are often guided towards automotive trades by school career advisers, irrespective of their suitability or desire to enter the industry.

Appropriate career counselling at schools is vital and it is the responsibility of both industry and VET providers to ensure that contemporary knowledge and advice concerning automotive trades is disseminated widely to schools. [Source: ASA Environmental Scan 2012]

- **The syphoning of skilled heavy road transport technicians** to the mining and resource sectors has created a major skill shortage issue for employers within the heavy road transport repair sector and they are finding it increasingly difficult to attract and retain skilled workers. Industry are finding it increasingly difficult to compete with the incentives that the mining and resource companies can offer, the inability to attract and retain skilled workers also impacts upon the sectors ability to train apprentices and trainees, this results in long term skilled labour issues.
- **Attracting skilled workers and new entrants into the vehicle body repair sector** is having a major impact within the (Panel and Paint) sector. Skill shortages and a significant image problem relative to attracting people into the industry are having a noticeable affect with many long established businesses closing down as a direct result of not being able to maintain a steady workforce. With the volume of motor vehicles increasing on the roads every year, it is essential that the industry sector grows to keep pace with demand. Unfortunately, with chronic skill shortage issues now confronting this sector, the industry is on the brink of contracting in size resulting in industries inability to meet customer demands.
- **Lack of skilled trade’s people entering the VET sector as lecturers.** The issue of ageing lecturers is probably more serious than in the industry workforce. Unless there is constant renewal, we will have an even more serious shortage of skilled lecturers. Concerns have also been raised by industry relative to the currency of lecturing staff’s knowledge. Many lecturing staff delivering automotive subjects, have on average, had little or no current industry experience for over five years and, in an industry where technology is constantly evolving, this currency and understanding of new processes is soon lost leaving the lecturers and consequently students at a disadvantage. This issue is more evident in the light and heavy automotive sector due to the rapid technological changes taking place within motor vehicles.

## SECTION 4 – INDUSTRY ISSUES AND STRATEGIES

### Engineering

#### Skilling WA: Strategic Goal 3

Attract workers with the right skills to the Western Australian workforce and retain them by offering access to rewarding employment and a diverse and vibrant community and environment to live in.

| Issue (from Section 3 – page 54 )   | Strategy   | Skilling WA<br>Priority Action  |
|---|--|---|
| <p><b>Employers not indenturing apprentices due to lack of work in WA engineering metal fabrication companies as resources companies' are not allocating work to local companies.</b> Local content is the term used in the engineering industry to highlight the lack of work being allocated to local metal fabrication companies in particular is an issue requiring urgent attention to ensure that local labour and local companies are used in the resources boom. It is reported that Australian engineering capability is diminishing as engineering design work goes overseas. There is also concern that training of new trade workers is under threat due to the use of overseas workers in Australia on working visas. Particularly, there is major concern amongst WA engineering metal fabrication companies over low levels of local content on major resource projects. It is widely believed that WA's skilled engineering and fabrication jobs are in danger of collapse.</p> | <ul style="list-style-type: none"> <li>• Develop more flexible training contracts to allow more than one employer to be a named party to a training contract for an individual apprentice. This will overcome the fear of employers not having enough work available for the duration of the apprenticeship. Apprentices could be shared between employers based on availability of contracts in their workshops.</li> <li>• Lobby government for alternative arrangements for incentives to be offered to employers to employ additional apprentices.</li> <li>• State and Federal governments need to ensure that any contracts which are supported by public funding have a provision for a suitable amount of local content allocation being made to local engineering companies.</li> </ul> | <p>3.1.1<br/>3.1.2<br/>3.1.3<br/>3.2.1<br/>3.2.2<br/>3.2.3</p> <p>4.1.1<br/>4.1.2<br/>4.1.3<br/>4.2.3</p> |

### Skilling WA: Strategic Goal 3

Attract workers with the right skills to the Western Australian workforce and retain them by offering access to rewarding employment and a diverse and vibrant community and environment to live in.

| Issue (from Section 3 page 54)  | Strategy   | Skilling WA<br>Priority Action                                      |
|---|--|---|
| <p><b>Lack of training opportunities for engineering electricians due to withdrawal of engineering training package qualification for a full electricians licence.</b> From mid-2013, national licensing will commence for electrical trades, state and territory licenses will be transferred across to the new system at this time. The Electrical Regulators Advisory Committee (ERAC) made a decision not to recognise the MEM30405 qualification for licensing as a trade electrician (electrical mechanic). ERAC also advised that from 30 September 2015 the MEM30405 qualification will not be recognised as eligible for an Electrician's licence. Only the EE-Oz Training Package qualification will be recognised.</p> <p>This issue is critical to the resources and engineering construction and maintenance industry sectors. The skills gained by enrolment in the EE-Oz qualification/apprenticeship are not sufficient for these sectors as the emphasis is on domestic wiring and not heavy industrial electrical work. The MSA Environmental Scan indicates a skills shortage of electrical tradespersons at base and advanced trade levels, including skill areas of HV/DC motor control and industrial electricians.</p> | <ul style="list-style-type: none"><li>• Lobby industry employers to establish if they want or need electrical mechanics or if electrical fitters are sufficient. However, they should not be forced by a regulator or government decision to take a person with a licence that does not meet their needs.</li><li>• EATC is continuing to assist Manufacturing Skills Australia and Industry. Consultations are ongoing with all affected parties and companies.</li></ul> | <p>3.1.1<br/>3.1.2<br/>3.1.3<br/><br/>4.1.3<br/>4.1.4<br/>4.2.1</p> |

## Skilling WA: Strategic Goal 4

Provide flexible, responsive and innovative education and training which enables people to develop and utilise the skills necessary for them to realise their potential and contribute to Western Australia's prosperity.

| Issue (from Section 3 – page 54)  | Strategy  | Skilling WA<br>Priority Action   |
|---|---|--|
| <p><b>Poor “work readiness” of job applicants for the engineering trades</b>, which includes reading and numeracy skills, is a major barrier to employment and training, particularly with school leavers, migrants, and other potential candidates.</p> <p>Many reports have identified this serious issue and it is difficult to undo many years of primary and secondary school neglect of numeracy and literacy skills, but this problem does not seem to be getting any better. A major complaint from employers is the lack of basic literacy and numeracy skills in school leavers and other candidates who apply for apprenticeships. The perception that trades are a low achievers' destination is one that seems to be perpetuated by many in the teaching profession. Engineering is a profession that requires high applied numeracy skills and all tasks require, to some extent, measurement and computations. Being able to read and understand complex instructions is fundamental to productivity.</p> <p>Accurate and relevant career advice in schools is vital for students who aspire to enter the engineering and automotive industries.</p> | <ul style="list-style-type: none"><li>• Encourage and inform employers to address this problem with both existing and new workers is to access the Workplace English Language and Literacy (WELL) program. This has been very effective over many years, but our research has shown that the service is not as widely known as it should be. A more concerted effort to promote this service is required.</li><li>• Introduce dedicated communication and literacy classes for first year apprentices rather than embed these subjects into the trade specific classes. These classes to be delivered by communication specialists not trade lecturers.</li></ul> | <p><b>4.1.3</b><br/><b>4.1.4</b><br/><b>4.1.5</b><br/><b>4.2.1</b><br/><b>4.2.2</b><br/><b>4.3.4</b></p> |

#### **Skilling WA: Strategic Goal 4**

Provide flexible, responsive and innovative education and training which enables people to develop and utilise the skills necessary for them to realise their potential and contribute to Western Australia's prosperity.

| <b>Issue (from Section 3 – page 53)</b>  | <b>Strategy</b>  | <b>Skilling WA<br/>Priority Action</b>                                       |
|--|--|--|
| <b>Skill and labour shortages in engineering trades</b><br>are at critical levels. There is skill and labour shortages in a number of trades, particularly experienced and highly skilled machinists, engineering electricians with instrumentation skills and mechanical fitters with hydraulic skills, heavy fabricators and welders with high level coded welding skills. Intensive specialised training may be carried out in a post-trade capacity. | <ul style="list-style-type: none"><li>• Promote flexible delivery as the key to increasing workers specialist skills and the willingness of the employer to allow sufficient time during working hours for the up-skilling to take place.</li><li>• Support government policy to encourage the attainment of higher level qualifications. The MEM40105 Certificate IV in Engineering is a qualification designed to provide an industry recognised skills profile related to trade work as a Higher Engineering Tradesperson or a Special Class Engineering Tradesperson. Skills development would be undertaken through post-apprenticeship training or as part of an Australian Apprenticeship arrangement where the mix of on and off-the-job training would be specified in the Training Plan associated with the Contract of Training between the employer and apprentice.</li><li>• Support and encourage eligible trades people to undertake skills recognition to facilitate entry into higher skill qualifications. This Certificate IV qualification may be accessed by direct entry provided the applicant can provide evidence of relevant trade qualifications or demonstrate equivalence through a skills recognition process.</li></ul> | <b>4.1.1</b><br><b>4.1.2</b><br><b>4.1.3</b><br><b>4.1.4</b><br><b>4.2.3</b> |

## **Skilling WA: Strategic Goal 5**

Plan and coordinate a strategic State Government response to workforce development issues in Western Australia.

| <b>Issue (from Section 3 – page 55)</b>   | <b>Strategy</b>   | <b>Skilling WA<br/>Priority Action</b>   |
|---|---|--|
| <p><b>Very low industry recognition of higher level Vocational Education and Training (VET) engineering qualifications.</b> In August 2011, EATC completed a report on the findings of a research project into the demand for and use of higher level (post-trade) engineering qualifications by industry in Western Australia. To establish the level of industry need and demand for higher level engineering qualifications at the Diploma, Advanced Diploma and Associate Degree level.</p> <p>With the exception of the two government agencies, there was virtually no industry knowledge or recognition of higher level Vocational Education and Training (VET) engineering qualifications and, consequently, no need or demand factors were identified.</p> <p>EATC conducted a follow-up survey to validate the findings of the first part. The combined projects have identified a lack of knowledge and understanding of higher level VET engineering qualifications in the industry and an almost total lack of demand for these qualifications in relation to typical positions above the base trade level.</p> <p>The combined projects also identified a high level of</p> | <ul style="list-style-type: none"><li>• Consider further work to identify and define employment pathways for VET higher level engineering graduates.</li><li>• Seek specific advice from public VET institutes on the industry demand for Associate Degrees in Engineering before supporting the development and establishment of these courses.</li><li>• Examine the industry concerns in relation to the inflexibility of the current MEM05 Training Package rules for higher level qualifications and identify a process to improve the flexibility and responsiveness of these qualifications.</li></ul> | <p><b>5.1.2</b><br/><b>5.2.3</b><br/><b>5.2.5</b><br/><b>5.2.6</b><br/><b>Crossover</b><br/><b>4.1.2</b><br/><b>4.1.5</b><br/><b>4.1.6</b><br/><b>4.2.3</b><br/><b>4.3.5</b></p> |



|  |  |  |
|--|--|--|
| regard and recognition within industry for trade level qualifications and the use of these qualifications as the base for further skills development and progression into above trade occupations. |  |  |
|--|--|--|

**Skilling WA: Strategic Goal 5**

Plan and coordinate a strategic State Government response to workforce development issues in Western Australia.

| Issue (from Section 3 – <b>page 55</b> )  | Strategy  | Skilling WA<br>Priority Action  |
|---|---|---|
| <p><b>Lack of a suitable declared trade for apprentice recruitment in the composites industry.</b> The composites sector is currently growing in importance as an employer as well as a supplier of fabricated component and products. Its reach goes from marine to aerospace as well as covering a wide range of everyday products. Composites are steadily replacing many traditional materials as well as allowing movement into areas where traditional materials would not be suitable. There is a severe shortage of suitably skilled workers available in WA to service the composites industry, employers have been forced to seek skilled workers from overseas, but this is made difficult with the trades not being listed on the SPOL.</p> <p>The composites industry have been advocating for a number of years that a new trade is required for workers in the use of composites, but have had difficulty in identifying suitable training material.</p> | <ul style="list-style-type: none"><li>• Manufacturing Skills Australia (MSA) registered in March 2012, a new qualification MEM3112 Certificate III in Engineering – Composites Trade for the composites industries.</li><li>• EATC will endeavour to raise the profile of the composites industry to highlight the skills shortage and have it listed on the SPOL and the WASMOL. EATC rates this occupation at Priority 1 level. EATC have registered a new apprenticeship pathway named Engineering Technician (Composites) – Trade, which may go some way to address this issue.</li></ul> | <p><b>4.1.1</b><br/><b>4.1.2</b><br/><b>4.1.4</b><br/><b>4.2.1</b><br/><b>4.2.3</b></p> <p><b>3.1.3</b></p> <p><b>1.1.1</b><br/><b>1.1.2</b><br/><b>1.2.2</b></p> |

## Automotive

### Skilling WA: Strategic Goal 2

Supplement the Western Australian workforce with skilled migrants to fill employment vacancies unable to be filled by the local workforce and address those factors which support a growing population.

| Issue (from Section 3 - page 91)  | Strategy   | Skilling WA Priority Action  |
|---|--|--|
| <p><b>The syphoning of skilled heavy road transport technicians</b> to the mining and resource sectors has created a major skill shortage issue for employers within the heavy road transport repair sector. All companies are reporting increasing difficulties in attracting and retaining skilled workers.</p> | <ul style="list-style-type: none"> <li>Promote the benefits to overseas heavy vehicle technicians of migrating to Western Australia through EATC coordinated overseas employment expos supported by social media outlets.</li> <li>Promote the awareness to employers of the benefits in utilising the sub-class 187 company sponsored Regional Skilled Migration Scheme (RSMS) visa (all of WA is now designated regional for immigration purposes).</li> <li>The utilisation of skilled migrants will enable employers to further increase the number of apprentices within their business (tradesperson/apprentice ratio) which will assist with future workforce skill requirements.</li> <li>EATC will lobby all employers within the heavy road transport repair sector to actively employ additional apprentices.</li> <li>Promote flexible working arrangements/lifestyle choices to attract and retain skilled workers within this sector.</li> </ul> | <p>2.1<br/>2.1.1<br/>2.1.2<br/>2.1.3<br/>2.1.4<br/>2.1.5<br/>2.1.9<br/>2.1.11<br/>2.1.12<br/>2.1.13<br/>2.1.15<br/><b>Cross over</b><br/>3.1.1<br/>3.1.2</p> |

### Skilling WA: Strategic Goal 3

Attract workers with the right skills to the Western Australian workforce and retain them by offering access to rewarding employment and a diverse and vibrant community and environment to live in.

| Issue (from Section 3 - <b>page 91</b> )   | Strategy   | Skilling WA<br>Priority Action   |
|--|--|--|
| <b>Attracting skilled workers and new entrants into the vehicle body repair sector</b> , is a major issue within the panel and paint sector. Skill shortages and a significant <u>image problem</u> relative to attracting people into the industry are having a noticeable affect with many long-established businesses closing down as a direct result of not being able to maintain a steady workforce. With the volume of motor vehicles increasing on the roads every year, it is essential that the industry sector grows to keep pace with demand. Unfortunately, with chronic skill shortage issues now confronting this sector, the industry is on the brink of contracting in size resulting in the industry's inability to meet customer demands. | <ul style="list-style-type: none"><li>• The EATC will work collaboratively with all industry stakeholders to develop strategies to attract new workers to the panel and paint sectors.</li><li>• Develop initiatives to enable under-represented groups to enter the vehicle body repair sector.</li></ul> | <b>3.1.2</b><br><b>3.2.5</b><br><b>3.2.7</b><br><b>3.2.10</b><br><b>3.2.12</b><br><b>3.1.1</b><br><b>3.1.2</b><br><b>3.2.10</b><br><b>3.2.12</b> |

### Skilling WA: Strategic Goal 3

Attract workers with the right skills to the Western Australian workforce and retain them by offering access to rewarding employment and a diverse and vibrant community and environment to live in.

| Issue (from Section 3 – page 91)   | Strategy  | Skilling WA Priority Action  |
|--|---|--|
| <p><b>Lack of suitable and sufficient VET trainers/lecturers.</b> There is a serious shortage of skilled tradespeople entering the training sector as trainers/lecturers. The issue of ageing VET lecturing staff is probably more serious than the skill shortages faced by industry. This issue is more prevalent in regional areas with RTOs finding it increasingly difficult to attract suitable staff. Consideration should also be given to mentoring of new lecturers by the soon-to-retire experienced staff.</p> <p>If this issue is not addressed we will have no-one to teach apprentices/trainees that are attracted to the automotive industry.</p> <p>Concerns have also been raised by industry relative to the currency of lecturing staff's knowledge. Many lecturing staff delivering automotive subjects have, on average, had little or no industry experience for many years. In an industry where technology is constantly evolving, this currency and understanding of new processes is soon lost leaving the lecturers, and consequently the students, at a disadvantage.</p> <p>This issue is more evident in the light and heavy automotive sectors due to the rapid technological changes within motor vehicles.</p> | <ul style="list-style-type: none"> <li>• To promote the benefits of a career as a training practitioner at venues such as SkillsWest Expo and industry forums.</li> <li>• To promote a culture of collaboration between industry and training providers to enable lecturers to obtain up-to-date skills and understanding of current automotive technology/practices enabling the RTO networks to facilitate the continual development of lecturing staff.</li> </ul> | <p>3.1.2<br/>3.2.5<br/>3.2.7<br/>3.2.10<br/>3.2.12<br/>3.1.1<br/>3.1.2<br/>3.2.10<br/>3.2.12</p> |

## Skilling WA: Strategic Goal 4

Provide flexible, responsive, and innovative education and training which enables people to develop and utilise the skills necessary for them to realise their potential and contribute to Western Australia's prosperity.

| Issue (from Section 3 – page 90)   | Strategy  | Skilling WA<br>Priority Action   |
|--|---|--|
| <p><b>Attrition rate for automotive apprentices and trainees is a major issue.</b> More than one-quarter (26%) of automotive apprentices and trainees withdraw from their training in the first year and 43.5% exit over the first three years. This not only impacts upon the industry's ability to grow, but a more serious issue of state-funded training has been effectively wasted. What is not often understood is that modern vehicles now contain sophisticated technologies, such as computerised engine management, fuel injection systems, passenger safety devices and sophisticated brake steering and suspension technologies. These technologies require candidates with mathematics, science, and information technology skills that will be capable of understanding and working with such technology. Arguably, many new entrants and apprentices do not possess such skills, which may be a contributing factor towards the high attrition rates that are being experienced.</p> <p>The automotive industry is very much reliant on the education system to provide suitably prepared new candidates for the industry sectors.</p> <p>The level of career advice in schools relative to the automotive industry and associated career paths is poor, inaccurate and conveys a negative image towards the industry. <i>[Source: Auto Skills Australia (ASA 2011)]</i></p> | <ul style="list-style-type: none"> <li>• To work collaboratively with education and training and workforce development practitioners to identify and implement initiatives to reduce the apprentice attrition rate.</li> <li>• EATC to assist in promoting apprentice/trainee mentoring services to the automotive industry.</li> <li>• EATC to continue production of industry specific career introductory videos that can be used by VET and school career advisers, to accurately portray the current high-tech nature of the automotive industry.</li> <li>• The automotive industry stakeholders to work closely with the Education and VET sectors to improve suitability of candidates for automotive apprenticeships.</li> </ul> | <p><b>4.1</b><br/><b>4.1.1</b><br/><b>4.1.2</b><br/><b>4.1.3</b><br/><b>4.1.4</b><br/><b>4.1.5</b><br/><b>4.1.6</b><br/><b>4.2.1</b><br/><b>4.2.2</b><br/><b>4.3.2</b><br/><b>4.3.3</b><br/><b>4.3.6</b></p> |

## SECTION 5 – RECOMMENDED PRIORITY ACTION PLAN

### Engineering

#### Skilling WA Strategic Goal 3:

**Strategy from Section 4** - Develop more flexible training contracts to allow more than one employer to be a named party to a training contract for an individual apprentice.

| Recommended Priority Actions   | Steps to Implement Actions  | Priority | Date to be Completed |
|--|---|----------|----------------------|
| EATC to continue to work cooperatively with the industry stakeholders such as CCIWA, UnionsWA and the Australian Steel Institute, to develop strategies to increase locally manufactured content leading to more training and employment of apprentices. | <ul style="list-style-type: none"><li>EATC will conduct negotiations between industry stakeholders and organisations and relevant government departments to facilitate more flexible training contracts to be developed. These contracts would allow more than one employer to be a named party to a training contract for an individual apprentice. This will overcome the fear of employers not having enough work available for the duration of the apprenticeship. Apprentices could be shared between employers based on availability of contracts in their workshops.</li></ul> | High     | November 2013        |
| Lead Agency: EATC  |   |          |                      |

**Skilling WA Strategic Goal 3:**

**Strategy from Section 4** – Lobby industry employers to establish if they want or need electrical mechanics or if electrical fitters are sufficient. However, they should not be forced by a regulator or government decision to take a person with a licence that does not meet their needs.

| Recommended Priority Actions  | Steps to Implement Actions  | Priority | Date to be Completed |
|---|---|----------|----------------------|
| Continue to address the issue of national licensing for electrical trades, where state and territory licences will be transferred across to the new system at this time. The Electrical Regulators Advisory Committee (ERAC) made a decision not to recognise the MEM30405 qualification for licensing as a trade Electrician (Mechanic). ERAC also advised that from 30 September 2015 the MEM30405 qualification will not be recognised as eligible for an Electrician's licence. | <ul style="list-style-type: none"><li>• EATC and Manufacturing Skills Australia (MSA), to continue with its introduction of the new, rewritten engineering electrical qualification which addresses all the Electrical Regulators Advisory Committee (ERAC) objections.</li><li>• Industry consultations are to be convened and ongoing to ensure industry understanding and support for the new qualification. MSA has completed a new electrical licensing pathway and have written 19 new units of competency for a new specialised Certificate III MEM electrical qualification to meet industry and ERAC requirements.</li><li>• Bridging provisions to be put in place up to September 2015.</li><li>• Explore the option to sign apprentices up in both qualifications and present the one that leads to the full licence to the ELB.</li></ul> <p>MSA to continue to lobby all relevant state and federal government ministers to address this issue.</p> | High     | June 2013            |
| Lead Agency: EATC and MSA   |   |          |                      |



**Skilling WA Strategic Goal 4:**

**Strategy from Section 4** - Encourage and inform employers to address this problem with both existing and new workers is to access the Workplace English Language and Literacy (WELL) program.

| Recommended Priority Actions  | Steps to Implement Actions  | Priority | Date to be Completed |
|---|---|----------|----------------------|
| Work with employers and RTOs to develop strategies to overcome the poor work readiness of apprentices and trainees in the engineering industry. | <ul style="list-style-type: none"><li>• Promote the opportunity among employers with both existing and new workers to access the Workplace English Language and Literacy (WELL) program. .</li><li>• EATC to continue with its initiative of producing and distributing video promotional films highlighting the benefits of our trades, using real apprentices and employers as the principle performers.</li><li>• Highlight the responsibility of the education system, industry and VET practitioners to ensure that the capabilities and understanding of the requirements and skills of our industries are addressed. Accurate and relevant career advice in schools is vital for students who aspire to enter the engineering and automotive industries.</li></ul> | High     | November 2013        |
| Lead Agency: EATC   |   |          |                      |

**Skilling WA Strategic Goal 4:**

**Strategy from Section 4** - Promote flexible delivery as the key to increasing workers specialist skills and the willingness of the employer to allow sufficient time during working hours for the upskilling to take place.

| Recommended Priority Actions  | Steps to Implement Actions  | Priority | Date to be Completed |
|---|---|----------|----------------------|
| <b>Assist industry and RTOs to address up skilling of existing and disengaged engineering trades workers.</b> There are skills and labour shortages in a number of trades, particularly experienced and highly skilled machinists, engineering electricians with instrumentation skills and mechanical fitters with hydraulic skills, heavy fabricators and welders with high level coded welding skills. Intensive specialised training may be carried out in a post-trade capacity. | <ul style="list-style-type: none"><li>• Assist training providers to develop flexible delivery strategies and materials through the engagement with industry and government agencies.</li><li>• Liaise and engage with Department of Training and Workforce Development sections to promote funding of flexible delivery methods and materials.</li><li>• Engage with Manufacturing Skills Australia to develop and promote new training package qualifications that are relevant and promote flexibility of delivery, while still maintaining the integrity of the engineering trades.</li></ul> | High     | November 2013        |
| Lead Agency: EATC   |   |          |                      |

**Skilling WA Strategic Goal 5:**

**Strategy from Section 4** – Seek specific advice from public VET institutes on the industry demand for Associate Degrees in Engineering before supporting the development and establishment of these courses.

| Recommended Priority Actions   | Steps to Implement Actions  | Priority | Date to be Completed |
|--|---|----------|----------------------|
| <p>Promote and increase industry recognition of higher level Vocational Education and Training (VET) engineering qualifications.</p> <p>The combined projects also identified a high level of regard and recognition within industry for trade level qualifications and the use of these qualifications as the base for further skills development and progression into above trade engineering occupations.</p> | <ul style="list-style-type: none"><li>• Consider further work to identify and define employment pathways for VET higher level engineering graduates.</li><li>• EATC will monitor the level of industry need and demand for higher level engineering qualifications at the Diploma, Advanced Diploma and Associate Degree level.</li><li>• Participate in expert committees convened by Manufacturing Skills Australia to address and rectify the industry concerns in relation to the inflexibility of the current MEM05 Training Package rules for higher level qualifications and identify a process to improve the flexibility and responsiveness of these qualifications.</li><li>• EATC will promote the use of and benefits of higher engineering qualifications and skills sets with the industry and their positive effectiveness on enterprises.</li></ul> | High     | November 2013        |
| Lead Agency: EATC  |   |          |                      |

**Skilling WA Strategic Goal 5:****Strategy from Section 4** - Promote the new EATC registered apprenticeship pathway - Engineering Technician (Composites) – Trade

| Recommended Priority Actions   | Steps to Implement Actions   | Priority | Date to be Completed |
|--|--|----------|----------------------|
| Continue ongoing liaison with the various sectors in the composites industry to promote the new trade recently registered by EATC. | <ul style="list-style-type: none"><li>Assist the composites industry to conduct skills recognition for existing workers aligned to the new qualification MEM3112 Certificate III in Engineering – Composites Trade for the composites industries.</li><li>EATC will work cooperatively with all government agencies and the industry to raise the profile of the composites industry to highlight the skills shortage and have it listed on the SPOL and the WASMOL. EATC rates this occupation at Priority 1 level.</li></ul> | High     | November 2013        |
| Lead Agency: EATC  |  |          |                      |

## Automotive

### Skilling WA: Strategic Goal 2:

**Strategy from Section 4** - Promote the benefits to overseas heavy vehicle technicians of migrating to Western Australia through EATC coordinated overseas employment expos supported by social media outlets.

| Recommended Priority Actions   | Steps to Implement Actions   | Priority  | Date to be Completed |
|--|--|-----------|----------------------|
| <p>Develop and implement a working strategy for a delegation of West Australian employers to attend targeted employment seminars in the UK and Ireland.</p> <p>The focus will be on attraction and employment offers to Heavy Road Transport Technicians, Vehicle Body Repair Technicians and Vehicle Spray Painters, which are currently skill shortage priorities.</p> | <ul style="list-style-type: none"> <li>The EATC will, through the working group which consists of Industry stake holders, MTAWA, the Commercial Vehicle Industry Association of WA (CVIAWA), continue with the project (started in 2012) to assess the viability of an employer delegation, and formulate a structured approach to achieving a successful outcome for the proposed delegation.</li> <li>Identify employment expos in the UK and Ireland.</li> <li>Identify employers willing to participate in the delegation.</li> <li>Broker assistance from automotive associations within the UK and Ireland.</li> <li>Invite the involvement of both Federal and State agencies to assist with the overseas expos.</li> </ul> | Very High | December 2013        |
| Lead Agency: EATC  |  |           |                      |

**Skilling WA: Strategic Goal 3:****Strategy from Section 4 – The EATC will work collaboratively with all industry stakeholders to the panel and paint sectors**

| <b>Recommended Priority Actions</b>  | <b>Steps to Implement Actions</b>   | <b>Priority</b> | <b>Date to be Completed</b> |
|--|---|-----------------|-----------------------------|
| <p>To promote the vehicle body repair sector and work towards addressing the image problem associated with vehicle body repair. Highlighting the high tech nature of the automotive industry and the attractive career options available.</p> <p>Continue with proposed pilot vehicle body repair traineeship programs, to attract school leavers and mature age entrants into the vehicle body repair sector.</p> | <ul style="list-style-type: none"><li>• The EATC will assist the MTAWA with the implementation and coordination of the Australian Apprenticeship Advisor Program for 2013-2014.</li><li>• The EATC will continue the work started in 2012 with the promotion of its “Day in the Life” panel and paint promotional video through industry promotions in schools and employment expos.</li><li>• The EATC is working with industry stakeholders to roll out a pilot traineeship program, to address current and future skill shortages within the Panel and Paint sector.</li><li>• The promotional campaign and retraining initiatives may need to attract special government funding.</li></ul> | <b>High</b>     | <b>2013-2014</b>            |
| Lead Agency: MTAWA/EATC  |   |                 |                             |

**Skilling WA: Strategic Goal 3:****Strategy from Section 4** – To promote the benefits of a career as a training practitioner at venues such as SkillsWest Expo and industry forums

| <b>Recommended Priority Actions</b>   | <b>Steps to Implement Actions</b>  | <b>Priority</b> | <b>Date to be Completed</b> |
|---|--|-----------------|-----------------------------|
| Formulate agreed strategies to encourage skilled tradespeople into the training sector. | The EATC will coordinate the formation of a working group comprised of industry representatives, government agencies, and RTOs to provide a strategic long-term plan for attracting and retaining skilled tradespeople into the training sector. | High            | 2013                        |
| Lead Agency: EATC   |  |                 |                             |

**Skilling WA: Strategic Goal 4:**

**Strategy from Section 4 –** (a) To work collaboratively with education and training and workforce development practitioners to identify and implement initiatives to reduce the apprentice attrition rate and (b) EATC to assist in promoting apprentice/trainee mentoring services to the automotive industry.

| Recommended Priority Actions  | Steps to Implement Actions   | Priority | Date to be Completed |
|---|--|----------|----------------------|
| The EATC will convene a working group comprised of industry stakeholders and invite representatives from government agencies and Industry Training Councils to develop the job description necessary for the profession of Career Vocational Advisor. | <ul style="list-style-type: none"><li>The proposed working group will provide a strategic long-term plan for the creation of professional career advisors in schools with industry knowledge.</li></ul>  | High     | July 2013            |
| EATC to continue with the production of the “Day in the Life” series of automotive promotional videos.  | <ul style="list-style-type: none"><li>EATC to seek additional funding to continue production of industry specific career introductory videos that can be used by VET and school career advisers, to accurately portray the current high-tech nature of the automotive industry.</li></ul>  | High     | 2013-2014            |
| Promote the varied career options available to school students, through organised events.   | <ul style="list-style-type: none"><li>EATC will coordinate a Try-a-Trade and Automotive information expo during the 2013 Automotive WorldSkills National finals, which will be coordinated by EATC in conjunction with DTWD.</li><li>Schools will be invited to attend an open day during the WorldSkills events.</li><li>Promote automotive career options and pathways at the SkillsWest Expo and school career presentations.</li></ul> | High     | 2013                 |
| Lead Agency: EATC   |  |          |                      |



## SECTION 6 – PLAN ADMINISTRATION

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### Plan Contact

This plan is maintained by the Chief Executive Officer for the Engineering and Automotive Training Council. Feedback regarding this plan should be made in writing to:

- (a) Email: dhicks@eatc.com.au
- (b) Mail: P O Box 1820, OSBORNE PARK, 6917
- (c) Fax: (08) 9444 6986
- (d) Office number: (08) 9201 2999

### Review Requirements and Issue History

Schedule 2 of the Service Agreement requires that this plan is reviewed and updated annually.

This issue entirely supersedes the previous issue of the plan. Superseded issues should be destroyed, or clearly marked as superseded and removed from general circulation and the Training Council website.

| Issue No | Year Approved | Comments/Summary of Main Changes |
|----------|---------------|----------------------------------|
|          |               |                                  |
|          |               |                                  |
|          |               |                                  |

### Distribution List

This plan is issued electronically on the Training Council website after it is approved. Print/paper copies are provided as follows (if applicable).

| Organisation | Position |
|--------------|----------|
|              | •        |
|              | •        |
|              | •        |

### Consultation for this Issue

The review of this issue of this plan was coordinated by the Chief Executive Officer for the Engineering and Automotive Training Council. This issue was rewritten at the request of DTWD as part of the annual review process and the main round of consultation with industry representatives and the Engineering and Automotive Training Council's Board of Management will occur in June, 2013 following DTWD approval.

Over this period, the EATC invited comment from:

- (a) All EATC industry members
- (b) All relevant industry associations
- (c) Industry Skills Councils

## **Communications Plan Summary**

Once the plan is approved, its update will be:

- (a) Endorsed by the Engineering and Automotive Training Council's Board of Management
- (b) Noted by the Department of Training and Workforce Development
- (c) Sent to all persons listed on the Distribution List (paper copies)
- (d) Posted on the [www.eatc.com.au](http://www.eatc.com.au) website

## **Validation of this Plan**

The EATC Board of Management intends to validate arrangements in this plan by undertaking the following actions:

- Regular review of data.
- Validation of data via extensive consultation with industry stakeholders.
- Update of sections.
- Invite comment(s) via website as part of the process.

## SECTION 7 – APPENDICES

### SURVEY TOOLS

To be Completed by EATC Interview Staff



**ENGINEERING & AUTOMOTIVE  
TRAINING COUNCIL INC.**

### WORKFORCE DEVELOPMENT QUESTIONNAIRE

**Date:** \_\_\_\_\_

**Industry:** \_\_\_\_\_

**Industry Sector:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Contact Person:** \_\_\_\_\_

**Contact Number:** \_\_\_\_\_

**Position:** \_\_\_\_\_

1. How many employees does your company employ?
2. Do you have difficulty in recruiting suitable staff?
3. Do you have difficulty in retaining staff?
4. Do you have succession plans for staff?
5. Are you prepared for the projected surge of the resource industry and the effect this will have upon the workforce?
6. What is the age range of your staff?
  - a. Management
  - b. Fully-skilled key staff
  - c. Non-trade

|                              |                             |
|------------------------------|-----------------------------|
|                              |                             |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| a.<br>b.<br>c.               |                             |

|  |  |
|--|--|
| 7. How many trades people do you employ and in which trades?   |  |
| 8. Do you employ apprentices?<br>a. If yes, how many do your currently employ?   | Yes <input type="checkbox"/> No <input type="checkbox"/><br>a.       |
| 9. Will you be taking on any apprentices in the next year?<br>a. If yes, how many?   | Yes <input type="checkbox"/> No <input type="checkbox"/><br>a.       |
| 10. Are apprentice wages an issue in decisions to employ them?   | Yes <input type="checkbox"/> No <input type="checkbox"/>             |
| 11. Would you be interested in more on-the-job training for apprentices:   | Yes <input type="checkbox"/> No <input type="checkbox"/>             |
| 12. Do you view the current apprenticeships to be of long-term value and are the skills relevant to the changing face of industry? |  |
| 13. Will you be taking on any skilled tradespeople in the forthcoming year?<br>a. If yes, how many?<br>b. In which trades?         | Yes <input type="checkbox"/> No <input type="checkbox"/><br>a.<br>b. |
| 14. What general attributes do you seek when employing tradespeople and apprentices?   |  |
| 15. What new skill requirements are emerging within your industry?   |  |
| 16. What areas (if any) do you foresee a skills shortage in relation to your industry?   |  |
| 17. Do you agree with a proposal to conduct fully institutional trade training?  | Yes <input type="checkbox"/> No <input type="checkbox"/>             |
| 18. Are you satisfied with the off-the-job training given to your apprentices?   | Yes <input type="checkbox"/> No <input type="checkbox"/>             |
| 19. If not, what would you like to see implemented or changed?   |  |

20. What are your views on educational standards of current school leavers?

21. What challenges do you foresee for your industry within the foreseeable future?

22. What issues currently affect your business?

23. How do you access information with regards to training?

24. Do you budget for the training requirements of your staff?

Yes ☐

No ☐

25. Are you aware of new government initiatives regarding training, such as the Fast Track Apprenticeships system, in relation to mature skilled but non-qualified staff and Transforming the Trades?

Yes ☐

No ☐

Would you like more information on these topics?

Yes ☐

No ☐

**COMPANY NAME:** \_\_\_\_\_

**CONTACT PERSON:** \_\_\_\_\_

**ANY OTHER COMMENTS**



## APPRENTICESHIP SURVEY 2011

The current nominal term for apprenticeships is three and a half years, but if credits are applied for example, if a student has completed a Pre apprenticeship then the nominal term can be further reduced by up to six months.

The apprenticeship model is also competency based, meaning a student could complete the apprenticeship in a very short time frame, if they were deemed competent, having fulfilled the "on the job/off the job" criteria.

The Engineering and Automotive Training Council (EATC) are seeking industry feedback regarding the nominal term of an apprenticeship, and the impact the current arrangement has upon industry.

The results of this survey will form the basis of a review of the current apprenticeship program, this is your chance to have input into the framework for apprenticeships in the future.

|   |  |                             |  |
|---|--|-----------------------------|--|
| 1. What sector do you represent?  | Automotive <input type="checkbox"/> Engineering <input type="checkbox"/> Marine <input type="checkbox"/> |                             |  |
| 2. Do you currently employ apprentice(s)?   | Yes <input type="checkbox"/>   | No <input type="checkbox"/> |  |
| 3. If no to question 2, are you considering taking on an apprentice in the future?  | Yes <input type="checkbox"/>   | No <input type="checkbox"/> |  |
| 4. If no to questions 2-3, what are your reasons for not considering an apprentice? |  |                             |  |
| 5. Do you consider the current nominal term appropriate?                            | Yes <input type="checkbox"/>   | No <input type="checkbox"/> |  |
| 6. If yes to question 5, please explain why   |  |                             |  |
| 7. If no to question 5, please explain why  |  |                             |  |
| 8. Do you have any other suggestions regarding the apprenticeship term?             |  |                             |  |

## SECTION 8 – LIST OF TABLES

This section should be used to provide a list of tables and figures used within the main body of the document.

### Tables

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| Table 2  | • ANZSIC subdivision: 21 Primary Metal and Metal Product Manufacturing                         |
| Table 3  | • ANZSIC subdivision: 22 Fabricated Metal Product Manufacturing                                |
| Table 4  | <b>ANZSIC subdivision: 23 Transport Equipment Manufacturing</b>                                |
| Table 5  | <b>ANZSIC subdivision: 24 Machinery and Equipment Manufacturing</b>                            |
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| Table 7  | <b>Other sectors covered by MSA Training Packages</b>  |
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| Table 19 | <b>National Survey Outcome</b>   |
| Table 20 | <b>Electrical Apprenticeships (combined Engineering and Utilities &amp; Electrotechnology)</b> |
| Table 21 | <b>Metals, Manufacturing &amp; Services Apprenticeships</b>                                    |
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| Table 23 | <b>MEM05 Qualifications</b>  |
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## Figures

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|-----------|--|
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| Figure 2  | • Geographic Spread  |
| Figure 3  | Automotive Market Share                                      |
| Figure 4  | Pathway Chart for Mechanical Heavy Vehicle Sector            |
| Figure 5  | Pathway Chart for Automotive Electrical Sector               |
| Figure 6  | Pathway Chart for Automotive Administration and Sales Sector |
| Figure 7  | Pathway Chart for the Mechanical and Specialisation Sector   |
| Figure 8  | Pathway Chart for the Body Repair Sector                     |
| Figure 9  | Pathway Chart for Marine Sector                              |
| Figure 10 | WA Cycling Travel  |
| Figure 11 | Pathway Chart for the Bicycle Sector                         |
| Figure 12 | WA Automotive Market Share                                   |

## SECTION 9 – GLOSSARY

The following terms that are used in this plan are particular to this Training Council.

### Acronyms

Table 29 lists acronyms that are used in this plan.

**Table 29 – Acronyms**

| Acronym | Full Title   |
|---------|--|
| ABS     | Australian Bureau of Statistics  |
| AME     | Aircraft Mechanical Engineer   |
| AMWU    | Australian Manufacturing Workers Union                                       |
| ASA     | Auto Skills Australia  |
| ASI     | Australian Steel Institute   |
| ASQA    | Australian Skills Quality Authority  |
| ATO     | Australian Taxation Office   |
| BIA     | Boating Industry Association of Australia                                    |
| CASA    | Civil Aviation Safety Authority  |
| CCIWA   | Chamber of Commerce and Industry Western Australia                           |
| CEPU    | Communication, Electrical, Plumbing Union                                    |
| CIAB    | Composites Industry Advisory Board   |
| COAG    | Council of Australian Governments  |
| CVIA    | Commercial Vehicle Industry Association (a division of MTAWA)                |
| DIISRTE | Department of Industry, Innovation, Science, Research and Tertiary Education |
| DoE     | Department of Education  |
| DTWD    | Department of Training and Workforce Development                             |
| EATC    | Engineering and Automotive Training Council (Inc)                            |
| ELB     | Electrical Licensing Board of WA   |
| ERAC    | Electrical Regulators Advisory Committee                                     |
| ERASS   | Exercise Recreation and Sport Survey   |
| FaHCSIA | Department Families, Housing, Community Services and Indigenous Affairs      |
| FCAI    | Federal Chamber of Automotive Industries                                     |
| FIFO    | Fly-In Fly-Out   |
| FMIA    | Farm Machinery and Industry Association of WA (Inc)                          |
| GFC     | Global Financial Crisis  |
| GTO     | Group Training Organisation  |

| Acronym  | Full Title  |
|----------|---|
| IAME     | Institute of Automotive Mechanical Engineers        |
| ISC      | Industry Skills Council                             |
| IWDP     | Industry Workforce Development Plan                 |
| JSA      | Job Service Australia                               |
| LAME     | Licensed Aircraft Maintenance Engineers             |
| LLN      | Language, Literacy, Numeracy                        |
| MarineWA | Marine Western Australia Inc                        |
| MSA      | Manufacturing Skills Australia                      |
| MTAWA    | Motor Trade Association of Western Australia        |
| NSSC     | National Skills Standards Council                   |
| NQC      | National Quality Council                            |
| OEM      | Original Equipment Manufacturers                    |
| OTR      | Off-the-Road  |
| RTO      | Registered Training Organisation                    |
| RITC     | Resource Industry Training Council                  |
| RSMS     | Regional Skilled Migration Scheme                   |
| SPOL     | State Priority Occupations List                     |
| STB      | State Training Board                                |
| SWA      | Skilling WA   |
| SWP      | State Workforce Planning                            |
| TAC      | Training Accreditation Council                      |
| TRA      | Trades Recognition Australia                        |
| VET      | Vocational Education and Training                   |
| VETiS    | Vocational Education and Training in Schools        |
| WA       | Western Australia                                   |
| WABN     | West Australian Bicycle Network                     |
| WASMOL   | Western Australia Skilled Migration Occupation List |
| WCA      | Watch and Clock Association of Australia            |
| WELL     | Workplace English Language and Literacy             |

## Acronyms – Training Packages

| Acronym     | Full Title  |
|-------------|---|
| AUM08       | Automotive Manufacturing Training Package                       |
| AUR05-AUR12 | Automotive Industry Retail, Service and Repair Training Package |
| MEA11       | Aeroskills Training Package                                     |
| MEM05       | Metals and Engineering Training Package                         |
| MSS11       | Sustainability Training Package                                 |

## SECTION 10 - OCCUPATIONS IN DEMAND PROFILES

| 342111 Air conditioning and refrigeration mechanic |      |                |      |       |               |        |        |          |       |
|--|------|----------------|------|-------|---------------|--------|--------|----------|-------|
|  |      | Occ            |      | W/A   |               |        | Occ    | W/A      |       |
| OPI:   | 0.34 | Employment:    | 1566 | 7.26  | AWOTE:        | 1233.4 | 1410.8 | Aug Age: | 36 40 |
| Rank:  | 273  | Labour_demand: | 261  | 153.9 | AWOTE growth: | 160.9  | 103.8  |          |       |

5/10/2012

**This occupation is a critical occupation** ☒ Yes ☐ No ☐ Unsure

The Airconditioning and Refrigeration Mechanic is a critical occupation within this ever increasing industry, both domestic and commercial requirements for the skills of this trade person.

There is a reasonable demand for this occupation, should be listed as critical.

**This occupation has experienced high or unmet demand** ☒ Yes ☐ No ☐ Unsure

In some sectors of the industry there is higher than normal demand for experienced Mechanics.

**Overall, this occupation is:**

☐ Of the highest priority ☒ A priority ☐ Not a priority

With the growing population, airconditioning and refrigeration skills are in every increasing demand both on a domestic and commercial basis. Current apprenticeship training numbers will not keep up with the industry demand for this occupation.

**The issues associated with this occupation are expected to continue for the:**

☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

Long training lead times is also an issue for this occupation

|               |   |                |     |       |               |        |        |          |     |    |
|---------------|---|----------------|-----|-------|---------------|--------|--------|----------|-----|----|
| <b>323111</b> | <b>Aircraft maintenance engineer (avionics)</b> |                |     |       |               |        |        |          |     |    |
|               |   |                | Occ | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:          | -0.24   | Employment:    | 117 | 726   | AWOTE:        | 1703.6 | 1410.8 | Avg Age: | 42  | 40 |
| Rank:         | 562   | Labour_demand: | 13  | 153.9 | AWOTE growth: | 208    | 103.8  |          |     |    |

5/10/2012

This occupation is a critical occupation ☒ Yes ☐ No ☐ Unsure

Aircraft Maintenance Engineers(avionics) is a very specialist occupation within the aerospace industry in WA. The size of sector is relatively small and is confined to specialist companies associated with military and civilian airports operations.

■

This occupation has experienced high or unmet demand ☒ Yes ☐ No ☐ Unsure

Overall, this occupation is:

☐ Of the highest priority ☒ A priority ☐ Not a priority

Numbers within training in WA are very small, an increasing demand for this occupation is starting to appear.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

Insufficient apprenticeship numbers associated with a small number of companies operating in WA ensures this occupation has long term issues to address.

**321111 Automotive electrician**

|       |       |                |     |       |               |        |        |          |     |    |
|-------|-------|----------------|-----|-------|---------------|--------|--------|----------|-----|----|
|       |       |                | Occ | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:  | -0.30 | Employment:    | 981 | 726   | AWOTE:        | 1446.2 | 1410.8 | Avg Age: | 35  | 40 |
| Rank: | 613   | Labour_demand: | 141 | 153.9 | AWOTE growth: | -5.4   | 103.8  |          |     |    |

5/10/2012

**This occupation is a critical occupation**☒ Yes ☐ No ☐ Unsure

Automotive Electricians are in very high demand currently, in a variety of industry sectors, for example - Mining, Marine, Road Transport repairs, Light and Heavy Vehicle Retail Service and Repair and Agricultural Machinery repair, etc

Current demand for this occupation in most sectors is critical.

**This occupation has experienced high or unmet demand**☒ Yes ☐ No ☐ Unsure

Skill shortages especially in the resource sector is an issue

**Overall, this occupation is:**☒ Of the highest priority ☐ A priority ☐ Not a priority

Automotive Electricians operate in most automotive sectors, for example, Light and Heavy Vehicle industry sectors, Agricultural Equipment, Vehicle Body Repair and Motor Cycles. This diversity across most sector of the automotive industry ensure this occupation remains in high demand.

**The issues associated with this occupation are expected to continue for the:**

☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

As above

|        |                       |                |     |       |               |        |        |          |     |    |
|--------|-----------------------|----------------|-----|-------|---------------|--------|--------|----------|-----|----|
| 321212 | Diesel motor mechanic |                |     |       |               |        |        |          |     |    |
|        |                       |                | Occ | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | -0.77                 | Employment:    | 522 | 726   | AWOTE:        | 1446.2 | 1410.8 | Avg Age: | 33  | 40 |
| Rank:  | 851                   | Labour demand: | 75  | 153.9 | AWOTE growth: | -5.4   | 103.8  |          |     |    |

5/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

This occupation is covered under the new occupational title of Automotive Technician Heavy trade and relates directly back to the Motor Mechanic occupation. Specialist Diesel Mechanics are in critical skill shortage in a variety of industry sectors, like - Mining, Marine and Heavy Road Transport.

As summarised above.

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

This occupation is used in the automotive heavy sectors, for example Road Transport and Heavy Vehicle Mobile Equipment- Mining and Civil. Currently supply is not keeping up with the demand for this occupation.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

Training lead times are 4+ years



| 323211 Fitter ((general) - including mechanical fitters and plant mechanics) |      |                |      |       |               |        |        |          |     |    |
|--|------|----------------|------|-------|---------------|--------|--------|----------|-----|----|
|  |      |                | Occ  | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | 7.06 | Employment:    | 9554 | 726   | AWOTE:        | 1703.6 | 1410.8 | Avg Age: | 37  | 40 |
| Rank:  | 23   | Labour_demand: | 1090 | 153.9 | AWOTE growth: | 208    | 103.8  |          |     |    |

5/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

The principal occupation underpinning the "Fitter (general) ANZSCO 323211 is the trade of "Mechanical Fitter". This trade is employed in virtually all industry sectors within WA, see page 56 of the EATC IWDP. A second critical occupation listed under the Fitter (general) ANZSCO is the occupation of "Plant Mechanic" or "Automotive Technician Heavy (mobile equipment)" same occupational outcome achieved from two different Training Packages. These trades are equally as critical in terms of skill demand within the resource sector and civil construction industry.

☐

Both Mechanical Fitter and Plant Mechanic occupation must be rated as being the most critical occupations within the engineering industry across a variety of industry sector like- Mining, Engineering Maintenance(all industry sectors), shipbuilding etc.

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

Most industry sectors are indicating skill shortages for experienced Fitters and Plant Mechanics, especially ones with hydraulic skill sets.

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

The Mechanical Fitter trade is recognised within the engineering sector as a critical occupation. The supply of skilled labour is not keeping up with the very high demand for this occupation.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

The extreme skill shortage of both the Mechanical Fitter and the Plant Mechanic trades that exist in WA, coupled with the long training lead times ensures these occupations have long term issues 5+ years.

| 323212 Fitter and turner |  |                |  |     |       |               |  |          |        |
|--------------------------|--|----------------|--|-----|-------|---------------|--|----------|--------|
| OPI: 0.01                |  | Employment:    |  | Occ | WA    | AWOTE:        |  | Occ      | WA     |
| Rank: 387                |  | Labour_demand: |  | 63  | 153.9 | AWOTE growth: |  | 208      | 103.8  |
|                          |  |                |  |     |       |               |  | Avg Age: | Occ WA |
|                          |  |                |  |     |       |               |  |          | 41 40  |

5/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

The EATC IWDP refers to the engineering industry sectors this occupation is utilised in. This occupation is regarded by the engineering industry as a critical trade and is very similar to Fitter (general) in its operation and in terms of demand.

Experienced Fitter and Turners are in short supply in most industry sectors

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

As above

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

This occupation is in critical demand across most engineering industry sectors.

The issues associated with this occupation are expected to continue for the:

- ☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Skill demand and long training lead times ensure this occupation has issues for 5+ years

| 312911 Maintenance planner |      |                |      |       |               |        |        |          |     |    |
|----------------------------|------|----------------|------|-------|---------------|--------|--------|----------|-----|----|
|                            |      |                | Occ  | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:                       | 0.90 | Employment:    | 1035 | 726   | AWOTE:        | 1839.8 | 1410.8 | Avg Age: | 43  | 40 |
| Rank:                      | 176  | Labour demand: | 279  | 153.9 | AWOTE growth: | 92.9   | 103.8  |          |     |    |

4/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

Experienced Maintenance Planners are hard to find and retain, recruitment retention problems are always an issue. This occupation is utilised in virtually all industry sectors where maintenance occurs.

This occupation is regarded as a specialist position in all engineering companies, poaching of personnel within the industry occurs. Good Maintenance Planners are hard to find and retain. Demand always outstrips the current supply of trained personnel.

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

As above

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

There is an ongoing shortage of experienced Maintenance Planners, most Planners are recruited from top trades people with shop floor knowledge being a critical component with the skill needs of this occupation.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Ongoing demand and long training lead times ensure this occupation has long term demand issues.

|        |                     |                |      |       |               |        |        |          |     |    |
|--------|---------------------|----------------|------|-------|---------------|--------|--------|----------|-----|----|
| 233512 | Mechanical engineer |                |      |       |               |        |        |          |     |    |
|        |                     |                | Occ  | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | 2.22                | Employment:    | 1189 | 726   | AWOTE:        | 2505.2 | 1410.8 | Avg Age: | 38  | 40 |
| Rank:  | 102                 | Labour demand: | 369  | 153.9 | AWOTE growth: | 358.6  | 103.8  |          |     |    |

4/10/2012

**This occupation is a critical occupation**

☒ Yes ☐ No ☐ Unsure

Mechanical Engineers are utilised across many industry sectors like, Mining , Oil & Gas, Transport, Water Treatment, Engineering/Civil/Building Construction and Manufacturing.

Newly qualified Mechanical Engineers are finding it difficult in some cases to get employment due to the Companies wanting applicants to have prior experience as a Mechanical Engineer.

Demand for mechanical engineers across all industry sectors is greater than the number of new graduates qualifying.

**This occupation has experienced high or unmet demand**

☒ Yes ☐ No ☐ Unsure

Current skill shortages exist in a number of industry sectors, ie - Mining, Oil & Gas and Engineering Construction for Mechanical Engineers with practical experience.

**Overall, this occupation is:**

☒ Of the highest priority ☐ A priority ☐ Not a priority

The Mechanical Engineer is the dominant occupation amongst all of the professional Engineering occupations covered by the EATC. This occupation in a lot of cases is utilised in lieu of the following occupations : Industrial Engineer, Material Engineer, Structural Engineer, in most industry sectors including heavy engineering construction, ie Resource Projects.

**The issues associated with this occupation are expected to continue for the:**

☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

Training and obtaining experience for Mechanical Engineers determines the long term nature of this occupation.

| 312511 Mechanical engineering draftsman |      |                |     |       |               |        |        |          |       |
|---|------|----------------|-----|-------|---------------|--------|--------|----------|-------|
|   |      | Occ            |     | WA    |               | Occ    |        | WA       |       |
| OPI:                                    | 0.24 | Employment:    | 543 | 726   | AWOTE:        | 1839.8 | 1410.8 | Avg Age: | 42 40 |
| Rank:                                   | 299  | Labour demand: | 146 | 153.9 | AWOTE growth: | 92.9   | 103.8  |          |       |

5/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

The recent decision by many resource companies to delay or defer new projects has seen a temporary decline in the demand for this occupation. Many draftpersons have been laid off in recent weeks.

It is expected the demand for this occupation will increase over the next 12 month period.

Supply of new recruits to the industry is not keeping up with the long term demand.

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

Overall, this occupation is:

☐ Of the highest priority ☒ A priority ☐ Not a priority

There remains a steady demand for the skills associated with Drafters occupation, however a large degree of drafting contracts are performed overseas, ie Philippines, Singapore etc

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

As per the above comments.

**322311 Metal fabricator**

|       |      |                |      |       |               |        |        |          |     |    |
|-------|------|----------------|------|-------|---------------|--------|--------|----------|-----|----|
|       |      |                | Occ  | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:  | 3.69 | Employment:    | 6051 | 726   | AWOTE:        | 1432.7 | 1410.8 | Avg Age: | 37  | 40 |
| Rank: | 61   | Labour_demand: | 565  | 153.9 | AWOTE growth: | 59.9   | 103.8  |          |     |    |

5/10/2012

**This occupation is a critical occupation**☒ Yes ☐ No ☐ Unsure

Metal fabricators are employed in virtually every industry sector in WA, the current number of apprentices in training will not meet the demand for this key occupation. Engineering Construction especially in the resource sector require far more skilled workers than what is being trained by industry in WA.

☐

Metal Fabricators (Boilermakers) are utilised in all maintenance across all industry sectors, in addition to this they are the key occupation in terms of Engineering Construction and Engineering Fabrication industry.

**This occupation has experienced high or unmet demand**☒ Yes ☐ No ☐ Unsure

In certain industry sectors like Mining and Oil & Gas skill shortages for this occupation are occurring.

**Overall, this occupation is:**☒ Of the highest priority ☐ A priority ☐ Not a priority

As mentioned above

**The issues associated with this occupation are expected to continue for the:**

- ☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Lack of apprentices in training and the long training lead times ensures this is long term in nature.

| 323214 | Metal machinist (first class) |                |     |       |               |        |        |          |     |    |
|--------|-------------------------------|----------------|-----|-------|---------------|--------|--------|----------|-----|----|
|        |                               |                | Occ | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | -0.02                         | Employment:    | 614 | 726   | AWOTE:        | 1703.6 | 1410.8 | Avg Age: | 39  | 40 |
| Rank:  | 403                           | Labour_demand: | 70  | 153.9 | AWOTE growth: | 208    | 103.8  |          |     |    |

5/10/2012

This occupation is a critical occupation ☒ Yes ☐ No ☐ Unsure

Metal machinist (first class) occupation is strategic in terms of importance for the general engineering sector. The current demand for this occupation is at a critical level, especially for experience Machinists with CNC programming skills.

☐

Machinists (first class) with experience in NC programming are in short supply.

This occupation has experienced high or unmet demand ☒ Yes ☐ No ☐ Unsure

As above

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

For the reasons mentioned above.

The issues associated with this occupation are expected to continue for the:

- ☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

Long training lead time and post trade experience ensures this occupation is at 5+ years status.

|        |                                       |                |      |       |               |        |        |          |     |    |
|--------|---------------------------------------|----------------|------|-------|---------------|--------|--------|----------|-----|----|
| 312912 | Metallurgical or materials technician |                |      |       |               |        |        |          |     |    |
|        |                                       |                | Occ  | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | 0.49                                  | Employment:    | 1065 | 726   | AWOTE:        | 1839.8 | 1410.8 | Avg Age: | 37  | 40 |
| Rank:  | 242                                   | Labour_demand: | 287  | 153.9 | AWOTE growth: | 92.9   | 103.8  |          |     |    |

4/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

A very small niche market for this occupation exists in Western Australia, however there is always a demand for this occupation.

This occupation is critical in terms of it's strategic importance to various industry sectors

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

As above

Overall, this occupation is:

☐ Of the highest priority ☒ A priority ☐ Not a priority

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues



|        |                          |                |      |       |               |        |        |          |    |    |
|--------|--------------------------|----------------|------|-------|---------------|--------|--------|----------|----|----|
| 321211 | Motor mechanic (general) |                |      |       |               |        |        |          |    |    |
|        |                          |                |      | Occ   | WA            |        |        | Occ      | WA |    |
| OPI:   | 5.93                     | Employment:    | 7995 | 726   | AWOTE:        | 1446.2 | 1410.8 | Avg Age: | 37 | 40 |
| Rank:  | 36                       | Labour_demand: | 1152 | 153.9 | AWOTE growth: | -5.4   | 103.8  |          |    |    |

5/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

The occupation of Motor Mechanic (general) covers a variety of automotive Technician professions in Western Australia, ie Automotive Technician- Light, Heavy Mobile Equipment, Agricultural and Heavy Road Transport.

With the growth in the resource sector over the past 5 years, there has been a migration of light vehicle and road transport technicians to the mining industry, this syphoning effect is causing skill gaps within the light vehicle and road transport sectors.

The current training numbers are not keeping up with the industry demand.

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

light vehicle dealership networks have expressed concerns relative to filling job vacancies for automotive Technicians

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

Motor Mechanics ( new title is "Automotive Technician"- light and heavy) are being poached by the Mining industry, this is causing significant shortages in the automotive retail service repair sectors, both light and heavy vehicle technicians.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Medium term training lead times is a major issue.

|        |             |                |      |       |               |        |        |          |     |    |
|--------|-------------|----------------|------|-------|---------------|--------|--------|----------|-----|----|
| 324111 | Panelbeater |                |      |       |               |        |        |          |     |    |
|        |             |                | Occ  | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | 0.50        | Employment:    | 1140 | 726   | AWOTE:        | 1501.2 | 1410.8 | Avg Age: | 38  | 40 |
| Rank:  | 237         | Labour demand: | 214  | 153.9 | AWOTE growth: | 453.2  | 103.8  |          |     |    |

5/10/2012

**This occupation is a critical occupation**

☒ Yes ☐ No ☐ Unsure

Of all the occupations the EATC covers the Panel Beater trade is suffering the most chronic skilled short issues in WA. The sector has a major image problem relative to attracting young people in the industry. With the dramatic increase in vehicle numbers in WA over the past decade, the industry is struggling to cope with the volume of repairs required.

There is currently a critical shortage of Panelbeaters in Western Australia, this occupation is not attractive to school students or mature age worker. The industry has a major image problem and is perceived to be a low paying dirt job with little career path progression available.

**This occupation has experienced high or unmet demand**

☒ Yes ☐ No ☐ Unsure

There is a constant high demand for this occupation.

**Overall, this occupation is:**

☒ Of the highest priority ☐ A priority ☐ Not a priority

As stated above

**The issues associated with this occupation are expected to continue for the:**

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

For the reasons mentioned above and long training lead times.

| 322312 Pressure welder |       |                |     |       |               |        |        |          |     |    |
|------------------------|-------|----------------|-----|-------|---------------|--------|--------|----------|-----|----|
|                        |       |                | Occ | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:                   | -0.61 | Employment:    | 23  | 726   | AWOTE:        | 1432.7 | 1410.8 | Avg Age: | 41  | 40 |
| Rank:                  | 797   | Labour_demand: | 2   | 153.9 | AWOTE growth: | 59.9   | 103.8  |          |     |    |

5/10/2012

This occupation is a critical occupation ☒ Yes ☐ No ☐ Unsure

Pressure Welders can also be identified as other occupational titles such as - Coded Welder, Welder (first class). Pressure Welders when not welding pressure vessels, pipes, etc are utilised to do other tasks like coded welding and first class welding. In most cases this occupation is just a Welder (first class) with very high skill levels.

■

Pressure Welders are identical in terms of skill application as a Welder (first class), both occupations should be classified as Priority 1.

This occupation has experienced high or unmet demand ☒ Yes ☐ No ☐ Unsure

This occupation is utilised in the manufacture of pressure vessels, furnace equipment and any high pressure equipment application. Pressure Welders are also used in the maintenance sector.

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

As this occupation is amalgamated in with Welder (first class) and Coded Welders in Australia, it should be classified as Priority 1 category

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

Training time needed for a First Class Welder to achieve very high skill levels associated with pressure welding is deemed to be long term.

**322211 Sheetmetal trades worker**

|            |                | Occ | WA    |               | Occ    | WA     |          | Occ | WA |
|------------|----------------|-----|-------|---------------|--------|--------|----------|-----|----|
| OPI: -0.30 | Employment:    | 886 | 726   | AWOTE:        | 1432.7 | 1410.8 | Avg Age: | 36  | 40 |
| Rank: 617  | Labour_demand: | 83  | 153.9 | AWOTE growth: | 59.9   | 103.8  |          |     |    |

5/10/2012

**This occupation is a critical occupation**☒ Yes ☐ No ☐ Unsure

Sheetmetal manufacturing companies employ this occupation for the manufacture of many products associated with the following industries- Air Conditioning & Refrigeration, Mining processing plants, Engineering Construction installation work, stainless steel products for many industries, for example - winemaking vats, hospital products, meat processing industry etc.

☐

Sheetmetal Workers are in critical skill shortage status, mainly as a result of be recruited into the Heavy Metal Fabrication sector to fill the vacuum

**This occupation has experienced high or unmet demand**☒ Yes ☐ No ☐ Unsure

In some sectors like airconditioning ducting manufacturing there is skill shortages for Sheetmetal Workers.

Overall, this occupation is:

☐ Of the highest priority ☒ A priority ☐ Not a priority

With the critical skill shortages in the Heavy Engineering Fabrication sector, Sheetmetal Trade Workers are being enticed into the heavy fabrication sector.

The transition from working on sheetmetal to heavier steel plate is minimal, the skill sets for both trade areas is very similar.

This syphoning affect of skilled workers to the heavy fabrication sector has caused a critical shortage of experienced Sheeetmetal Workers to undertake the ever increasing demand for sheetmetal products, especially for the resourse projects under construction now and in the future. The EATC would recommend that this occupation be elevated to Priority 1 status.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Long training lead time and the small number of apprentices under training in WA.

**399999 Technicians and trades workers not elsewhere classified**

|      |      |                |     |       |               |       |       |          |     |    |
|------|------|----------------|-----|-------|---------------|-------|-------|----------|-----|----|
|      |      |                | Occ | WA    |               | Occ   | WA    |          | Occ | WA |
| OPI: | 0.25 | Employment:    | 500 | 7.26  | ANOTE:        | 2026  | 14108 | Aug Age: | 41  | 40 |
| Rank | 289  | Labour_demand: | 54  | 153.9 | ANOTE growth: | 388.9 | 103.8 |          |     |    |

3/12/2012

**This occupation is a critical occupation**☒ Yes ☐ No ☐ Unsure

The occupation of - Composites Technician is in critical shortage with employers reporting their inability to recruit suitably skilled staff in Australia. Employers have identified suitably skilled workers overseas, but are unable to recruit due to visa restrictions, these being due to the occupation not being identified on both the SOL and SPOL.

**This occupation has experienced high or unmet demand**☒ Yes ☐ No ☐ Unsure

See above

**Overall, this occupation is:**☒ Of the highest priority ☐ A priority ☐ Not a priority

Lack of skilled people available within Western Australia.

**The issues associated with this occupation are expected to continue for the:**

- ☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Do to the medium term lead times associated with training apprentices in this newly declared trade/occupation, this justifies that this occupation be entered into the SPOL as a priority 1 category.

|        |                      |                |     |       |               |        |        |          |     |    |
|--------|----------------------|----------------|-----|-------|---------------|--------|--------|----------|-----|----|
| 324211 | Vehicle body builder |                |     |       |               |        |        |          |     |    |
|        |                      |                | Occ | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | -0.38                | Employment:    | 422 | 726   | AWOTE:        | 1501.2 | 1410.8 | Avg Age: | 35  | 40 |
| Rank:  | 684                  | Labour demand: | 79  | 153.9 | AWOTE growth: | 453.2  | 103.8  |          |     |    |

5/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

The EATC IWDP refers to the Vehicle Body Building industry sector and the crucial need of this occupation within the sector. Vehicle Body Builders skill set is extremely close to that of a Metal Fabricator tradeperson and as such are very often attracted to the high salaries paid in the Engineering Construction sector. The end result for the Vehicle Body Building sector is acute skill shortage issues.

Vehicle Body Builders is a critical shortage occupation due main as a result of their skills being closely aligned to that of a Metal Fabricator, this results in this occupation be attractive to the resource sector and the syphoning effect to mining.

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

Overall, this occupation is:

☒ Of the highest priority ☐ A priority ☐ Not a priority

Based on the evidence above, the EATC would recommend that this occupation be elevated to Priority 1 status.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☒ Long term (5+ years) in nature?  
☐ Medium Term (3-5 years) ☐ No issues

Long apprentice training lead times are an issue.

|        |                 |                |      |       |               |        |        |          |     |    |
|--------|-----------------|----------------|------|-------|---------------|--------|--------|----------|-----|----|
| 324311 | Vehicle painter |                |      |       |               |        |        |          |     |    |
|        |                 |                | Occ  | WA    |               | Occ    | WA     |          | Occ | WA |
| OPI:   | 0.25            | Employment:    | 1051 | 726   | AWOTE:        | 1501.2 | 1410.8 | Avg Age: | 36  | 40 |
| Rank:  | 294             | Labour demand: | 198  | 153.9 | AWOTE growth: | 453.2  | 103.8  |          |     |    |

5/10/2012

This occupation is a critical occupation

☒ Yes ☐ No ☐ Unsure

The EATC IWDP refers to the Vehicle Body Repair industry sector, this sector is where Vehicle Painters are employed. The occupation continues to have skill shortage issues, demand for experienced Vehicle Painters is an ongoing issue within the industry.

Experienced Spray Painters is a critical skill shortage occupation.

This occupation has experienced high or unmet demand

☒ Yes ☐ No ☐ Unsure

Constant demand for experienced Spray Painters exists.

Overall, this occupation is:

☐ Of the highest priority ☒ A priority ☐ Not a priority

State Priority 2 level accurately represents the demand for this occupation.

The issues associated with this occupation are expected to continue for the:

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Long training lead times, and poor industry image problems ensures this occupation has long term issues to resolve.

|               |                             |                |      |       |    |               |        |        |          |       |
|---------------|-----------------------------|----------------|------|-------|----|---------------|--------|--------|----------|-------|
| <b>322313</b> | <b>Welder (first class)</b> |                |      |       |    |               |        |        |          |       |
|               |                             |                |      | Occ   | WA |               |        | Occ    | WA       |       |
| OPI:          | 2.07                        | Employment:    | 3760 | 726   |    | AWOTE:        | 1432.7 | 1410.8 | Avg Age: | 38 40 |
| Rank:         | 105                         | Labour_demand: | 351  | 153.9 |    | AWOTE growth: | 59.9   | 103.8  |          |       |

5/10/2012

**This occupation is a critical occupation** ☒ Yes ☐ No ☐ Unsure

Welders (first class) are associated with manufacturing, maintenance and construction work of metal fabricated products in virtually all industry sectors, for example- Shipbuilding, Mining, Oil & Gas, Water supply and treatment, building and engineering construction. Along with Metal Fabricator, Welders (first class) are a critical occupation.

The summary outlines the importance of this critical occupation

**This occupation has experienced high or unmet demand** ☒ Yes ☐ No ☐ Unsure

Experience welders with coded welding standards are in critical demand in most sectors of industry.

**Overall, this occupation is:**

☒ Of the highest priority ☐ A priority ☐ Not a priority

Currently Welder (first class) apprentices numbers in training will not even replace the current "Baby Boomer" retirement figures for Welders. The State is facing a critical skill shortages associated with this occupation.

**The issues associated with this occupation are expected to continue for the:**

☐ Short term (1-2 years) ☐ Long term (5+ years) in nature?  
☒ Medium Term (3-5 years) ☐ No issues

Training lead times and time taken to be proficient at higher level skills are an issue.