Electrical Utilities and Public Administration Training Council Industry Workforce Development Plan

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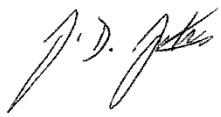
Signature:	
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FOREWORD

The **Electrical, Utilities and Public Administration Council (EUPA) Inc** is pleased to present the 2015 update to the Industry Workforce Development Plan.

EUPA is continuing to promote Vocational Education and Training as the means to supply industry with highly skilled labour both now and into the future. EUPA has established networks with influential industry peak bodies, industry leaders and associations as well as training providers across its scope of operations to deliver on this outcome.

EUPA has an industry coverage which provides the foundation for sustainable communities in Western Australia. The state relies upon the sectors EUPA services to provide social infrastructure, administer government services, ensure communities are safe, and provide energy, waste and water services.

This 2015 Industry Workforce Development Plan is founded on research and advice received throughout the year.

It is through this Workforce Development Plan that EUPA demonstrates how it will contribute to the strategic goals articulated by the Department *in version 2 of Skilling WA – A workforce development plan for Western Australia*.

Our work continues to inform the Department of Training and Workforce Development and the State Training Board of matters that impact on the industry sectors EUPA represents and the proposed strategies and actions to be championed by the Training Council on their behalf.

This year will require forethought and planning to prepare for new industry advisory arrangements in the 2016/17 financial year. Coupled with the changing national landscape, we envisage an opportunity to build on the success of the training council network by re-inventing and revitalizing the manner in which the State Training Board and the Department of Training receives strategic industry advice.

The training council network will continue to provide leadership and forward-looking industry advice to government for years to come.

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Overview

Issuing Authority

This plan is issued under contract between the Department of Training and Workforce Development and the Training Council in accordance with the requirements of Schedule 2 of the Service Agreement and is maintained by the Training Council.

Aim

The aim of the plan is to outline 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:

a Profiles for industry portfolios for the Electrical Utilities and Public Administration Training Council as follows:

I. Electrical

II. Utilities

a. Electricity Supply

i. Generation

ii. Transmission and Distribution

b. Gas Supply

c. Waste

d. Water

III. Public Administration

a. State Government

b. Local Government

c. Public Order and Safety

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

I. Economic trends and impacts on workforce planning;

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

III. Regional variations that may affect workforce planning;

IV. Training and education including VETiS;

V. Industry critical aspects that may impact on future planning.

c Identification of issues that impact on State Workforce Planning and that inform and are linked to Skilling WA strategies.

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

SECTION 1 EXECUTIVE SUMMARY

EUPA Training Council has a wide and varied industry coverage. The utilities sector, that provides essential services to all communities has just 1.9% of the total Australian Workforce. On the other side, the Public Administration workforce is 6.6% of the total Australian Workforce, and includes the state government which is Western Australia's largest single employer. Local Governments also provide a central source of employment in many regional areas of Western Australia. The electrotechnology sector provides another set of unique conditions, including the high number of micro and small contracting businesses, the regulatory oversight of the major occupation – the electrician – and the existence of electrotechnology occupations across the construction, manufacturing, utilities and resources sectors.

This report does not attempt to highlight every issue that affects our industries. We do not attempt to offer solutions to every issue either. Instead, EUPA's core focus is on the Vocational Education and Training Sector and its capacity to deliver a skilled and sustainable workforce.

Our work is focused on ensuring that industry's skilling needs are able to be met by our VET sector. To achieve this, we work with training providers, education sector stakeholders, government and industry to:

- Advise the State Training Board and the Department of Training and Workforce Development about strategic industry issues, labour and skilling needs.
- Establish or make variations to Australian Apprenticeships (qualifications that are gazetted by the Minister for Training and Workforce Development as Class A or Class B on the Public Register).
- Provide advice to national stakeholders in the development and review of nationally recognised training.
- Research and promote workforce development and skilling practices to industry.

Snapshot of Issues

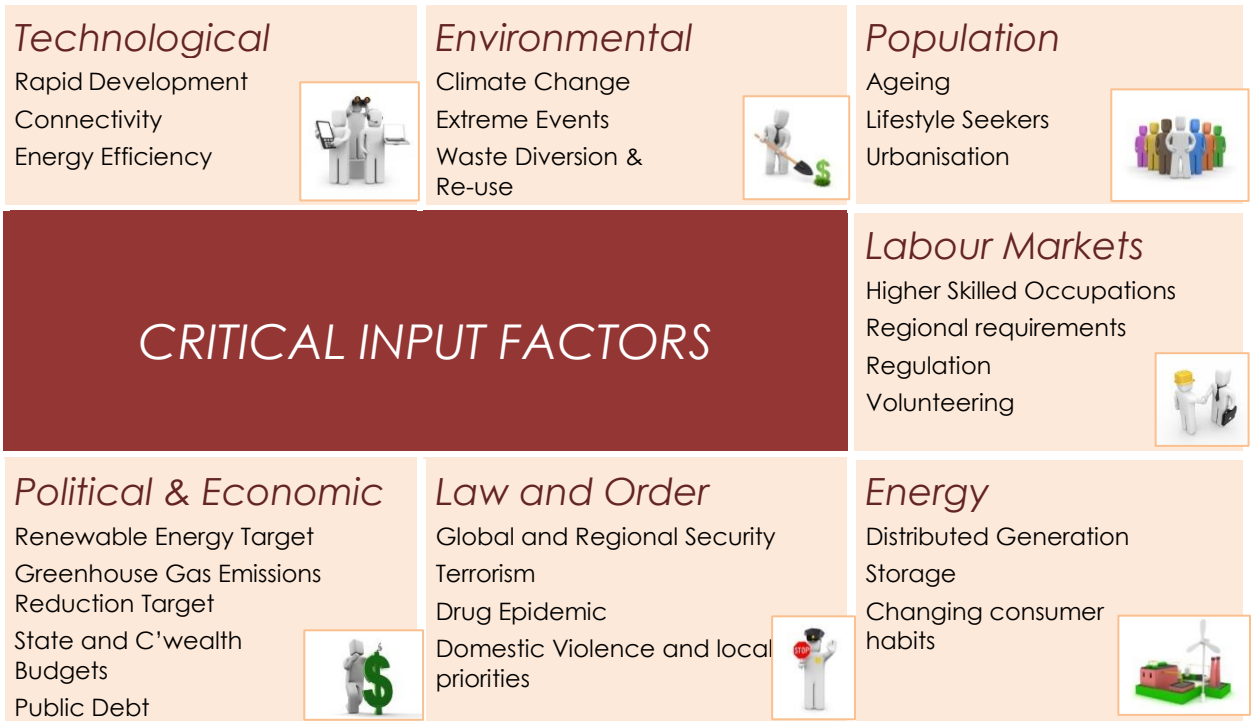
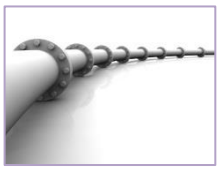


Figure 1: Critical Factors affecting Industry



Electrical

Dominated by micro/small contractors

Heavily regulated

Affected by transition of resources sector

New skills for renewable energy and connected systems

Thin market subsectors

Electricity Supply

Government monopoly

Small workforce

Reduced budgets and workforce size

Transition to contestable markets

Ageing and expensive assets

Distributed Generation, storage and connected networks

Changing demand patterns

Gas Supply

Dominated by large multi-national companies

Small workforce

Statewide networks

Water

Government monopoly

Reduced budgets and workforce size

Increasing public/private partnerships

Pressures from urbanization and climate change

Industry Features

Waste

Local Government and private contractors

Strategies to diverting waste from landfill

Pressure from urbanisation

Community engagement

State Government

Largest employer in WA

Reduced budgets and workforce size

Working to attract youth, & develop female leaders

Changing community expectations

Moving from service providers to facilitators

Local Government

Large employer in regions

Diverse size and complexity of organisations

Failed industry reform

Community service expectations

High cost of service delivery, pressure on revenue

Public Order and Safety

New models for service delivery & service delivery expectations

Emergency Management legislation reform

Population growth & urbanisation

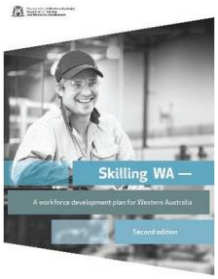
Complex social and mental health issues

Increasing prisoner populations

Figure 2: Industry Features (An overview)

Recommended Resources

The following resources are highly recommended:



Skilling WA – A workforce development plan for Western Australia Second Edition.

This is the Department of Training and Workforce Development's government-led plan for workforce development across the state. It contains information about the state's macro-economic and social issues that affect workforce sustainability.

This Industry Workforce Plan supports key strategies identified in Skilling WA.

Department of Training and Workforce Development

Dtwd.wa.gov.au

The Department's site will provide access to a range of strategic information as well as Skilling WA and Regional Workforce Development Plans.

State Training Board

Stb.wa.gov.au

The State Training Board is the statutory body established to provide advice to the Minister for Training and Workforce Development. It will provide information regarding strategic projects undertaken by the Board and the 'State Training Plan'.

EUPA Training Council

www.eupa.com.au

The main focus for EUPA's website is the blog. Blog postings have been noted in the 'trends' component of this report and serve to provide breaking news regarding issues that affect each industry's workforce.

Most updates are provided on LinkedIn (search for the Electrical Utilities and Public Administration Training Council Group) and regular newsletters are also provided by email.

The State Planning Strategy 2050

Developed by the WA State Planning Commission, it provides an excellent picture of Western Australia.

Directions 2031 and beyond: metropolitan planning beyond the horizon

This document, also released by the WA State Planning Commission concentrates on the metropolitan area.

Committee for Economic Development of Australia

CEDA is an independent organization that provides useful research material that is valuable for workforce planning and development.

ENERGY AND UTILITIES

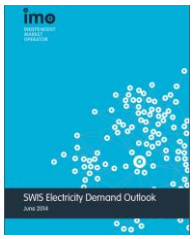
Public Utilities Office

https://www.finance.wa.gov.au/cms/Public_Utilities_Office/About_Us/About_Public_Utilities_Office.aspx.

This site provides very useful information about industry stakeholders and links to regulatory authorities.

Clean Energy Australia Report 2014

This report provides an excellent overview of renewable generation issues, uptake and its future across Australia.

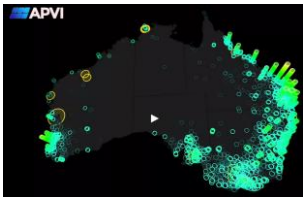


SWIS Electricity Demand Outlook June 2014

The largest electricity network in Western Australia is the South West Interconnected Network (SWIS). This document provides an excellent overview of issues affecting those in the energy sector.

Independent Market Operator

Imowa.com.au will provide you with live data for the SWIS.



The Australian PV Institute

Pv-map-apvi.org.au provides live solar data as well as market analysis and solar potential/generation by postcode.

PUBLIC ADMINISTRATION

WA Public Sector Commission

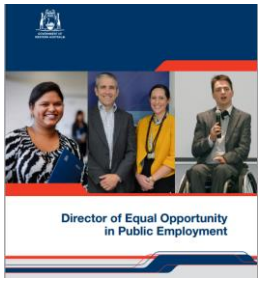
www.publicsector.wa.gov.au

Leaders for the public sector. See below for specific documents.

State of the WA public sector 2014.

This valuable annual report provides a snapshot of employment, key compliance areas and employee sentiment in the WA Public Sector.

In 2014, the report compares the performance of WA against the rest of Australia.



Director of Equal Opportunity in Public Employment: Annual Report 2014.

This document provides equity information across the public administration portfolio and is referenced in this workforce plan.

Australian Centre of Excellence for Local Government (ACELG)

ACELG provides some very useful publications that aim to directly assist local governments in their operations, as well as provide useful information for workforce planning and development.

Electrical

ANZSIC Division E Construction Services	
Subdivision 32 Construction Services	Group 323 Building Installation Services
Classes 3232 Electrical Services, 3233 Air Conditioning and Heating Services, 3234 Fire and Security Alarm Installation Services	

This industry installs

- electrical wiring or fittings in buildings or other construction projects;
- electrical work arising from the installation of appliances
- heating, air conditioning and duct work; and
- fire protection, detection and control systems.

ANZSCO

There are 8 occupations identified as the focus of this industry. Please refer to Attachment 1.

Regulatory Arrangements

This industry is regulated by government at both commonwealth and state levels. The major regulatory agencies are the Australian Government Electrical Regulatory Authorities Council, the Department of Environment (Australian Refrigerant Council) and the WA Department of Commerce (Energy*Safety* Division and the Electrical Licensing Board). An appropriate license must be held by individual workers and entities (companies, partnerships and individuals) to perform varying types of electrical work.

Features

The sector comprises a high number of micro/small businesses that serve projects through contractual arrangements in domestic, commercial or industrial settings. Whilst the majority of EUPA's work is related to the Electrician, a small but significant appliance servicing workforce has been brought into focus during 2014/15. The sector is currently unable to access suitable training which is impacting not only on the skills held by workers, but on the efficiency of work practices due to regulatory needs for licensed gas and electrical workers. Ultimately consumers feel the effect of this inefficiency through increased fees and time for multiple tradespeople to attend jobs.

As has been the case since 2010, the Refrigeration and Air-conditioning sector sources trade level qualifications from the Metals and Engineering Training Package. Western Australia sits alone in this practice, but regulatory conditions take this sector largely out of focus for EUPA Training Council. For trade level analysis and enquiries, the reader is directed to the Engineering and Automotive Training Council.

The electrotechnology sector also includes telecommunications cabling and electronics occupations. For information about the National Broadband Network and utility scale telecommunications (such as Telstra and Optus networks) the reader is directed to the Creative and Leisure Industries Training Council (FutureNow). EUPA maintains an interest in telecommunications cablers that work within building structures and may have accessed training from the electrotechnology training package, perhaps as electives in an electrician apprenticeship or post-trade or pre-trade through School-based Traineeship options that have now been established.

It may start to be apparent to the reader that the Vocational Education and Training, the sector is somewhat confusing to navigate. The principal training package (UEE Electrotechnology Training Package) is unfortunately not the sole pathway for occupations and licenses.

Utilities

Electricity Supply

Generation

ANZSIC Division Electricity, Gas, Water and Waste Services	
Subdivision 26 Electricity Supply	Groups 261 Electricity Generation
Classes 2611 Fossil Fuel Electricity Generation, 2612 Hydro-Electricity Generation, 2619 Other Electricity Generation	
The generation sectors generate electricity using: • mineral or fossil fuels in internal combustion-turbine conventional steam processes; • hydro-electric generation processes; and • biomass, geothermal, solar, tidal and wind energy.	
ANZSCO There are 9 occupations identified as the focus of this industry. Please refer to Attachment 1.	

Regulatory Arrangements

The Economic Regulation Authority (ERA) oversees this sector by issuing a license to generate electricity to the company. Individual workers do not require a license unless they undertake specific occupations (such as electricians). The ERA also monitors and enforces license conditions.

The Independent Market Operator (IMO) plays an important role in the Wholesale Electricity Market in Western Australia (more specifically in the South West Interconnected System)

Features

In accordance with the scoping of utilities by the Public Utilities Office of the Department of Finance, EUPA principally confines its engagement to power generation that supplies communities. That is, power generation for industrial purposes or micro scale generation on private land is out of scope.

The sector is dominated by two government enterprises (Synergy and Horizon Power) but also encompasses a large number of privately owned facilities that are used to supply power to communities. This is particularly evident in WA's regions where energy/resources activity is high. In those instances, the resources company may also provide power to the local grid.

Transmission and Distribution

Subdivision 26 Electricity Supply	Groups 262 Electricity Transmission, 263 Electricity Distribution, 264 On Selling Electricity and Electricity Market Operation

The transmission, distribution and on-selling sectors:

- operate high voltage electricity transmission systems including lines and transformer stations (from the generating source to the low voltage electricity distribution system);
- operate low voltage electricity distribution systems including lines, poles, meters and wiring that deliver electricity to the consumer; and
- on-sells electricity via power distribution systems operated by others.

ANZSCO

There are 9 occupations identified as the focus of this industry. Please refer to Attachment 1.

Regulatory Arrangements

The Economic Regulation Authority (ERA) issues a license for transmission, distribution and retailing electricity. Individual workers may be subject to other licensing requirements depending on their occupation.

Features

The sector is comprised of two major government entities (Western Power and Horizon Power). As is the case with the generation sector, EUPA focuses on the providers that deliver power to the public (communities) whilst recognizing that privately owned networks exist mainly in the resources sector servicing mine sites. EUPA's advisory networks include some private providers.

Therefore, EUPA focuses on the South West Interconnected System and the North West Interconnected System (the NWIS) and Horizon's role to operate smaller networks including the Esperance Network and 34 small networks[1] .

Synergy and Horizon Power are also major stakeholders in the provision of retail (on-selling) services, although other stakeholders operate in the 'contestable' energy market which relates to commercial/industrial customers with higher energy demands.

[1] Department of Finance - Public Utilities Office, *Horizon Power's Networks*, accessed 8 May 2014, <http://www.finance.wa.gov.au/cms/TwoColumns_Content.aspx?Pageid=17638&id=15086>

Gas Supply

Subdivision 27 Gas Supply	Group 270 Gas Supply
Class 2700 Gas Supply	
This industry distributes natural, liquefied petroleum, and other gas through mains systems.	
ANZSCO There are 16 occupations identified as the focus of this industry. Please refer to Attachment 1.	

Regulatory Arrangements

The sector is overseen by the Economic Regulation Authority (ERA), which issues a license for distribution of gas to the organization. Regulation of assets is divided between Energy*Safety* and the Department of Mines and Petroleum. Transmission of gas is regulated by the Department of Mines and Petroleum through the licensing of the pipeline. Individual workers may be subject to other licensing requirements depending on their occupation.

The Independent Market Operator also operates the Gas Information Services Project that affects gas supply, transmission and storage in Western Australia.

Features

The Department of Mines and Petroleum notes that there are 118 pipeline licenses granted, covering a total pipeline length of more than 8680 km.[2]

There are a number of operators in this industry; however APA Group has a near monopoly on the ownership and operation of the transmission pipelines in WA. ATCO Gas, Kleenheat and Esperance Power are major operators of distribution networks.

Alinta, Atco, Kleenheat and Synergy are major retail service providers to the general public in WA[3].

EUPA's coverage of the gas industry extends from the well-head to the letter-box. That is, after extraction and processing, EUPA's industry stakeholders carry gas over vast distances through pipelines and through urban areas by networks of underground pipes.

Readers are directed to the Construction Training Council for information about 'Plumbers and Gasfitters' who install and maintain gas plumbing found in households and commercial properties.

[2] Department of Mines and Petroleum, *Production and Pipelines*, accessed 17 July 2015 <http://www.dmp.wa.gov.au/855.aspx>
[3] Economic Regulation Authority (2014) *Gas Licensing – Licence Holders*, Accessed 17 July 2015 <http://www.erawa.com.au/licensing/gas-licensing/licence-holders>

Water

Subdivision 28 Water Supply, Sewerage and Drainage Services	Group 281 Water Supply, Sewerage and Drainage Services
Classes 2811 Water Supply, 2812 Sewerage and Drainage Services	
The water industry: • stores, treats, distributes water; • collects and treats wastewater; and • manages/operates water sources.	
ANZSCO There are 34 occupations identified as the focus for this industry. Please refer to Attachment 1.	

Regulatory Arrangements

The Economic Regulation Authority (ERA) licenses organisations to provide water related services (bulk water, drinking water and sewerage). Management, policy and associated planning of the allocation of water resources is the responsibility of the Department of Water. The Department of Health also monitors quality standards through its Office of Public Health whilst the Department of Environmental Regulation also overseas environmental conditions associated with this industry.

Individual workers are not licensed unless their specific occupation demands an additional license.

Features

The Water Corporation has the largest share and leads a number of public-private partnerships (alliances). Further, the Water Corporation provides all training to water industry stakeholders. Aqwest and Busselton Water also holding drinking water supply licenses.

Sewerage services are provided by the Water Corporation and a number of local governments. The remaining licensed providers are mainly involved in bulk non-potable (i.e. not drinking water) supply and irrigation[4].

[4] Economic Regulation Authority (2014) *Water Licensing – Water Licence Holders*, Accessed 6 July 2015 < http://www.erawa.com.au/licensing/water-licensing/licence-holders>

Waste

Subdivision 29 Waste Collection, Treatment and Disposal Services	Groups 291 Waste Collection Services, 292 Waste Treatment, Disposal and Remediation Services
Classes 2911 Solid Waste Collection Services, 2919 Other Waste Collection Services, 2921 Waste Treatment and Disposal Services, 2922 Waste Remediation and Materials Recovery Services	
Waste collection is primarily responsible for the collection and haulage of domestic, commercial or industrial solid and liquid waste (excluding sewers). Treatment, Disposal and Remediation includes the treatment or disposal of solid and liquid waste and the remediation, reclamation or clean-up of contaminated sites, including removal of hazardous and toxic materials.	
ANZSCO There are 22 occupations identified as the focus for this industry. Please refer to Attachment 1.	

Regulatory Arrangements

The Department of Environmental Regulation overseas environmental regulatory arrangements associated with this industry.

Features

The waste industry is categorized as:

- Municipal
- construction/demolition and
- commercial/industrial.

Local governments provide much of the municipal services and have established *Regional Councils* that manage waste facilities for member authorities. Other private firms provide services across all three categories.

Electrical and Utilities Sector Workforce Drivers

The sectors share many of the same drivers for workforce development and change including:

- Population growth, regional expansion, and urbanization.
- A shift in labour requirements for the resources sector.
- Increasing cost of energy through traditional generation, transmission and distribution.
- Energy efficiency
- Government policy including the Renewable Energy and Greenhouse Gas Emissions Reduction Targets
- Shift to renewable energy, including reducing costs and introduction of energy storage.
- Government policies in relation to workforce size and efficiency demands.
- Diversifying electricity generation including landfill gas, biogas, wave/tidal power and waste to energy
- The demand for gas from industry including gas for electricity generation.
- Environmental conditions, concerns and government policy in relation to waste diversion and water re-use.

EUPA Engagement

- Industry leaders must be supported to own and participate in workforce development
- The profile of industries can be raised through formal recognition of good practice
- EUPA can share knowledge and good practice to facilitate better workforce development outcomes across industry sectors
- Apprenticeship delivery strategies should be negotiated with training providers to meet specific industry needs and account for thin markets.
- The electrical pre-apprenticeship must be revised in light of new Department of Training and Workforce Development business rules and industry's preference for this entry pathway.
- The pre-apprenticeship can be implemented in the Wheatbelt to offer school students a new entry pathway to the electrical industry.
- Develop the electrical pathway as an Industry Specific Course for Secondary High School students to promote STEM development.
- Identify and develop material for delivery at schools specifically to support the waste sector to raise its profile and direct community behavior.
- Continue to assist the gas sector to develop a strategy to engage with school students, taking into consideration a 'whole-of-utilities' approach.
- Scope and explore the skills requirements of the future electricity supply workforce.
- Continue to liaise with peak bodies in the underground asset locating industry to identify barriers and enablers to further skills development.

Public Administration

State and Local Government

ANZSIC Division O Public Administration and Safety	
Subdivision 75 Public Administration	Groups 752 State Government Administration, 753 Local Government Administration and 754 Justice
Classes 7520 State Government Administration, 7530 Local Government Administration, 7540 Justice	

These sectors:

- set state and local government policy;
- oversee government programs;
- collect revenue;
- create laws (statute and/or by-laws);
- distribute funds; and
- operate or provide administration of judicial authorities.

ANZSCO

There are 56 occupations identified as the focus for this industry. Please refer to Attachment 1.

Features

State and local government sectors have an incredibly diverse workforce in metropolitan and regional settings with approximately 180 departments and agencies and 139 local government authorities.

'Public employment' is a unique environment that, whilst it shares many occupations with the private sector, experiences a set of drivers and conditions that are not experienced by other employers.

Government is a major employer in Western Australia, requiring the largest, most disperse and broadest range of skills of any employer. Whilst public employers value their people, community perceptions can be shaped through the media and an outdated, incorrect view of public sector workers. However, at this time the most influential of conditions for this sector is the direct intervention of government to address high public debt by controlling employment numbers and salary expenditure.

Public Order and Safety

Subdivision 77 Public Order	Groups 771 Public Order, Safety and Regulatory Services
Classes 7711 Police Services, 7713 Fire Protection and Other Emergency Services, 7714 Correctional and Detention Services, 7719 Other Public Order and Safety Services	
This industry sector is responsible for: • law enforcement; • preservation of order; • firefighting; • civil emergency services; and • operating correctional institutions.	
ANZSCO There are 13 occupations identified as the focus for this industry. Please refer to Attachment 1.	

Features

As an industry, this amounts to approximately 19,100 employees[5] and an estimated 29,000 volunteers[6]. Its major stakeholders include the WA Police, Department of Fire and Emergency Services and the Department of Parks and Wildlife. A number of occupations also fall into the broad category of 'public safety' as workers from public and private sectors perform public safety roles that include risk mitigation and business continuity planning. These occupations include Environment, Health and Safety Officers, Work Safety and Health Officers, Emergency Preparedness Officers and Support Officers, Community Safety Facilitators, Business Continuity Managers and Security Managers.

The WA Police, Department of Fire and Emergency Services and Department of Parks and Wildlife are all enterprise RTOs.

The Corrective Services Industry is more likely to employ mature age workers in prison officer roles. The sector is comprised of the Department of Corrective Services and a private firm (Serco) that operates a prison and court security services. Both stakeholders are enterprise RTOs.

The major industry stakeholders typically provide limited opportunities for EUPA to engage as many workforce issues explored by EUPA are dealt with at a national level. Further, core training needs are met by enterprise RTOs that are embedded within the structure of each organization.

[5] Australian Bureau of Statistics *Census 2011 – Public Order and Safety Sector, TableBuilder data file*, generated 16 January 2014, <http://abs.gov.au>
[6] Department of Fire and Emergency Services, *Volunteers* accessed June 2015, <http://dfes.wa.gov.au>

Regulatory Services

Subdivision 77 Public Order	Groups 772 Regulatory Services
Classes 7720 Regulatory Services	
Regulatory service providers: • enforce regulations; and • license and conduct inspections They are found in sectors such as consumer protection, licensing, motor vehicle testing and regulating roles.	
ANZSCO There are 13 occupations identified as the focus for this industry. Please refer to Attachment 1.	

Public Administration, Safety and Order: Workforce Drivers

Major drivers of workforce development include:

- A large scale effort to reduce the size of the workforce through voluntary redundancy
- Attraction of youth and culturally diverse sectors and a perceived low industry profile.
- Alternative training/employment pathways, including Australian Apprenticeships.
- Population and regional growth including urbanisation and prisoner population growth.
- Community and government expectations for service delivery
- Technology advancement in relation to policing practices and criminal activity
- Scrutiny over all aspects of conduct in public employment, including a change to minor misconduct investigations in the public sector.
- Issues surrounding drug and alcohol abuse and mental health remain in the broader community.
- Legislation reform in emergency management.
- Climate changes that is resulting in longer, more intense fire seasons and natural extreme events.
- Volunteer attraction, retention and skilling.

EUPA Engagement

- Evaluate cadetships in state government to improve access to training for specific occupations.
- Assist with the implementation of investigation training in government.
- Assist peak industry bodies to engage and promote workforce development strategies.
- Liaise with training providers to ensure industry needs are addressed.
- Explore the role of State Training Providers in the delivery of emergency management/response training in the regions.

Industry Sectors and Training Packages

EUPA provides specific advice and assistance to industry and government in relation to the training packages that have been developed by the relevant 'Industry Skills Council'. These are:

	Industry Sector	Training Package
Electrical	a) Electrotechnology	a) UEE11 Electrotechnology
Utilities	b) Electricity Generation c) Electricity Transmission Distribution and Rail d) Gas Transmission and Distribution e) Waste f) Water	b) UEP12 Electricity Generation c) UET12 Electricity Transmission, Distribution and Rail d) UEG11 Gas e) CPP07 Property Services f) NWP07 Water
Public Admin	g) Corrective Services h) Local Government i) Public Administration j) Public Safety	h) CSC12 Correctional Services i) LGA04 Local Government j) PSP12 Public Sector k) PUA12 Public Safety *

Table 1 EUPA Training Council industry sectors and training packages

* The Public Safety Training Package is being split. The Defence Training Package and Police Training Package are currently undergoing endorsement and should be implemented in 2015.

Using apprenticeship/traineeship commencement data from the Department's COGNOS database, EUPA identifies that the following *additional* training packages are utilized by the electrical, utilities and public administration industries:

- ACM – Animal care and management
- AHC – Agriculture, horticulture and conservation land management
- AUR – Automotive
- BSB – Business services
- CHC – Community services
- CPC – Construction, plumbing and services
- CUF – Screen and media training package
- CUL – Library, information and cultural services
- FNS – Financial Services
- HLT – Health
- ICA – Information and communications technology
- ICT – Integrated telecommunications
- MEM – Metals and engineering
- MSL – Laboratory operations
- MSS – Sustainability
- PMA – Chemical, hydrocarbons and oil refining
- PMB – Plastics, rubber and cable making
- RII – Resources and infrastructure
- SIR – Retail services
- SIT – Tourism, travel and hospitality
- TLI- Transport and logistics

The training packages above are the primary responsibility of other Training Councils.

Industry Skills Councils

Industry Skills Councils responsible for the industry's primary training package.

Summary of Issues Table

Issue	Recommended Priority Action(s)	Skilling WA Strategy	Lead Agency	Due Date:
Workforce development activities across all industry sectors should be industry owned.	Work collaboratively with peak industry associations to explore best practice workforce development strategies	1.1.02 1.1.08	EUPA Training Council	June 2016
The profile of utilities and government sectors is perceived to be low amongst job seekers, particularly school leavers.	Support and recognize workforce development and training excellence	1.1.06	EUPA Training Council	June 2016
Attraction of youth is key to workforce sustainability	Develop strategies and support VET for school students	1.3.03 4.3.01	EUPA Training Council	June 2016
Sharing knowledge and good practice will promote better outcomes across industry	Provide skills and workforce development advice to industry	3.4.05 3.4.07	EUPA Training Council	June 2016
The 2016 Pre-apprenticeship business rules are in draft.	Develop pre-apprentice pathways to comply with 2016 Business Rules and provide a foundation for success in apprenticeships.	1.1.06 4.5.05	EUPA Training Council	October 2015
Prioritisation of funding and policy decisions must reflect industry needs.	Advise government of industry workforce and development issues, opportunities, skilling and labour demands.	2.2.01 5.2.01 5.2.02	EUPA Training Council	June 2016
Apprenticeships must be negotiated to meet industry needs	Work collaboratively with stakeholders to explore, develop, improve and review apprenticeship delivery strategies.	4.5.05	EUPA Training Council	June 2016
Training providers must be supported to connect with industry	Assist training providers to interpret and apply training standards and policies; and Connect training providers to industry stakeholders.	4.5.05	EUPA Training Council	June 2016

Table 2: Summary of Issues and Priority Actions

SECTION 2 METHODOLOGY

This 2015 Industry Workforce Development Plan was produced by the Electrical, Utilities and Public Administration Training Council Inc. (EUPA) in accordance with its service agreement with the Department of Training and Workforce Development (the Department).

This plan is founded on EUPA's research and active participation in workforce planning and development initiatives.

EUPA Board members have been consulted to validate the plan and ensure that it reflects current industry requirements.

Intelligence has been gathered through:

- Board and industry leader consultations
- Industry Working Groups facilitated by EUPA
- Regional consultations and regional industry forums
- Engagement through eupa.com.au
- Face to Face meetings with employers, associations and other industry stakeholders
- Desktop research including annual reports, presentations, conference materials, Regional Workforce Development Plans and Investment Blueprints.
- National Industry Skills Councils' Environmental Scans from E-Oz Training Standards and Government Skills Australia
- Training data obtained from the Department of Training and Workforce Development's COGNOS database.
- Analysis of ABS data
- Inclusion of Labour Market Information from the Australian Government Department of Employment

SECTION 3 INDUSTRY PROFILE

Overview of the Electrical and Utilities Industries

The Industry

In 2015, EUPA has provided the overview of all utilities sector under one heading as the issues and drivers of workforce development are largely common.

The **electrical** industry installs

- electrical wiring or fittings in buildings or other construction projects;
- electrical work arising from the installation of appliances
- heating, air conditioning and duct work;
- telecommunication cabling; and
- fire protection, detection and control systems.

Electrical tasks can be undertaken in domestic, commercial or industrial premises. All tradespersons must obtain an electrical workers license to perform electrical tasks. The Department of Commerce through the Energy*Safety* Division maintains the state's electrical workers licensing system.

EUPAs focus is driven largely by the licensing arrangements. The largest component of the workforce is the electrician occupation. In recent times, EUPA has been addressing issues relating to electrical fitters, appliance servicing and electronic servicing trades workers.

The Office of Energy*Safety*[7] indicates that as at 30 June 2015 there were:

- 5,149 licensed Electrical Contractors currently registered in WA
- 36,774 Electrician's Licenses on issue
- 1,401 electricians endorsed "Electrical Fitting Work Only"
- Restricted Electrical Licence by Category:
    - 2,798 Refrigeration and Air-conditioning
    - 323 Instrument Process Control Equipment
    - 202 Plumbing and Gasfitter Workers License
    - 527 Disconnect and Reconnect License
    - 84 Domestic Appliance License.
    - 125 Miscellaneous
- 4,118 electrical training licenses issued to indentured apprentices
- 226 electrical training licenses issued to pre-apprentices

The Construction Training Fund reports that there are a total of 20,400 electrical workers in the construction workforce. The figure does not contradict numbers provided by EnergySafety as there are many variables that can explain the difference such as electricians working outside the construction sector and those that maintain their license while working in another occupation.

Due to the structure of Vocational Education and Training and the recognition afforded by regulators, the Engineering and Automotive Training Council provides oversight of the Refrigeration and Air-conditioning sector.

[7] Department of Commerce EnergySafety Division (2015*) Personal Communication*

The **Utilities sector** is comprised of electricity and gas supply, water and waste. It is the smallest sector by employment nationally, representing just 1.3% of the Australian workforce[8] but is capital intensive and essential to the sustainability of the economy. The Australian Local Government Association makes the following statement regarding the electricity supply system:

> *… is not defined as infrastructure but is instead included in the business capital stock because, although the industry is regulated, the cost of a supply shortfall is so great and its political consequences so dire that the industry maintains levels of capacity which are reasonably efficient from a short-term market point of view.*[9]

EUPA asserts that the gravity of failure can extend across all utilities sector.

The **Electricity Supply Industry** includes electricity generation, transmission, distribution and on-selling.

The **electricity generation** sectors generate electricity using:

- mineral or fossil fuels in internal combustion-turbine conventional steam processes;
- hydro-electric generation processes; and
- biomass, geothermal, solar, tidal and wind energy.

In Western Australia principal electricity generation is sourced from natural gas and coal fired power stations. However, the state also uses hydro, bagasse, biomass, landfill gas, sewerage gas, solar, wave and wind energy, totaling 553.7MW of power as at June 2013. In total, some 74 generation facilities are operating and 30 new generators are proposed across the state[10].

WA is also home to innovative projects and breakthrough technology. The Carnegie Wave energy project is probably the most unusual, however diversification continues through other projects such as waste to energy.

Fossil Fuel Plants: 66 (27 in the SWIS)

Proposed: 14

Renewable Plants: 8 (6 in the SWIS)

Proposed: 16

Operators: 37 Owners (18 in the SWIS)

The **electricity transmission, distribution** and **on-selling sectors**:

- operate high voltage electricity transmission systems including lines and transformer stations (from the generating source to the low voltage electricity distribution system);
- operate low voltage electricity distribution systems including lines, poles, meters and wiring that deliver electricity to the consumer; and
- on-sells electricity via power distribution systems operated by others

Western Australia's has three major electricity transmission networks: the South West Interconnected System (SWIS), North West Interconnected System (NWIS), and the smaller Esperance System. The SWIS is our largest covering some 255,000km^2 comprising of nearly 100,000km of powerlines and 250,000 streetlights. Western Power alone reports employing 3,726 people[11].

There are 32 non-connected systems as well as smaller connected networks that supply regional towns which also require operation and maintenance by Horizon Power. Comparing Horizon to Western Power, Horizon's coverage is 2.3 million km^2, nearly 8,000km of powerlines and has a workforce of 393 (FTE).

Figure 3: The SWIS and NWIS

[8] Australian Local Government Association (2014) State of the regions
[9] Australian Local Government Association (2014) State of the regions
[10] ESAA (2014), Electricity Gas Australia
[11] Western Power (2014), 2013-14 Annual Report

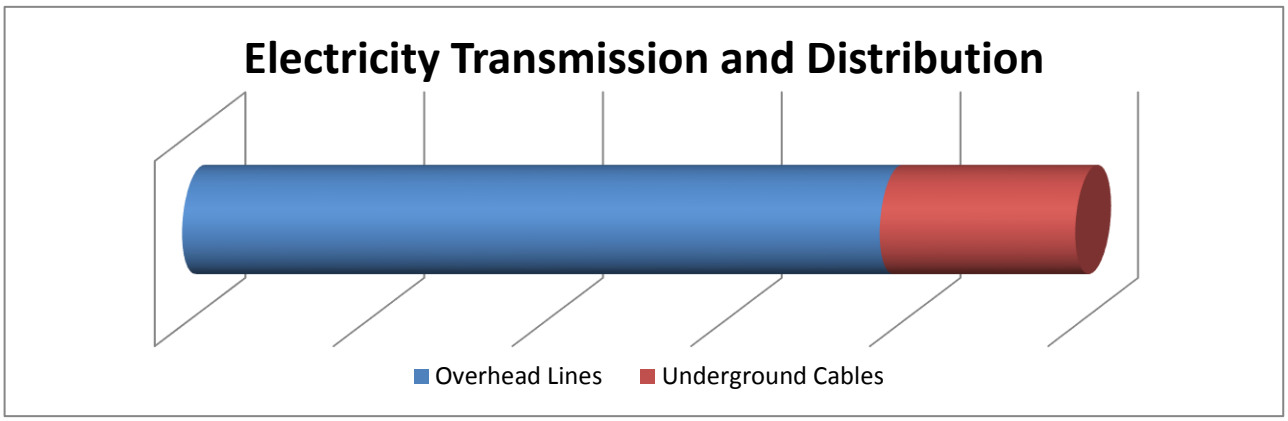


Figure 4: Overhead lines v Underground Cables

EUPAs engagement has extended to the construction, maintenance and operation of the metropolitan electrified rail system. The PTA owns and operates a rail network of more than 173km and a fleet of 198 railcars. The occupations in this specialisation that are of significance to the UET Training Package are the catenary lineworkers, signals technicians and rail communications technicians which translate to generic ANZSCO occupation titles.

The **gas industry** distributes natural, liquefied petroleum, and other gas through mains systems.

In West Australia, there are four major gas transmission pipelines and eight reticulated gas distribution networks[13] as follows:

Major Transmission Pipelines

- Dampier to Bunbury Natural Gas Pipeline –North West Shelf to Geraldton, Perth, Mandurah and Bunbury areas
- Goldfields Gas Pipeline –North West Shelf to the Pilbara and Eastern Goldfields regions
- Parmelia Pipeline –Perth Basin to South West
- West Pilbara Energy Pipeline –North West Shelf area to Port Hedland
- Others include Kambalda to Esperance Pipeline, the Mid West Pipeline and the Telfer Gas Pipeline.

Distribution Networks

- Kimberly
- Pilbara
- Gascoyne
- Wheatbelt
- Mid-West
- Goldfields-Esperance
- Great Southern
- Coastal

[12] ESAA (2014),Electricity and Gas Australia
[13] Department of Finance, Public Utilities Office, *Gas in Western Australia* <http://www.finance.wa.gov.au/cms/content.aspx?id=15097> accessed 18 May 2014

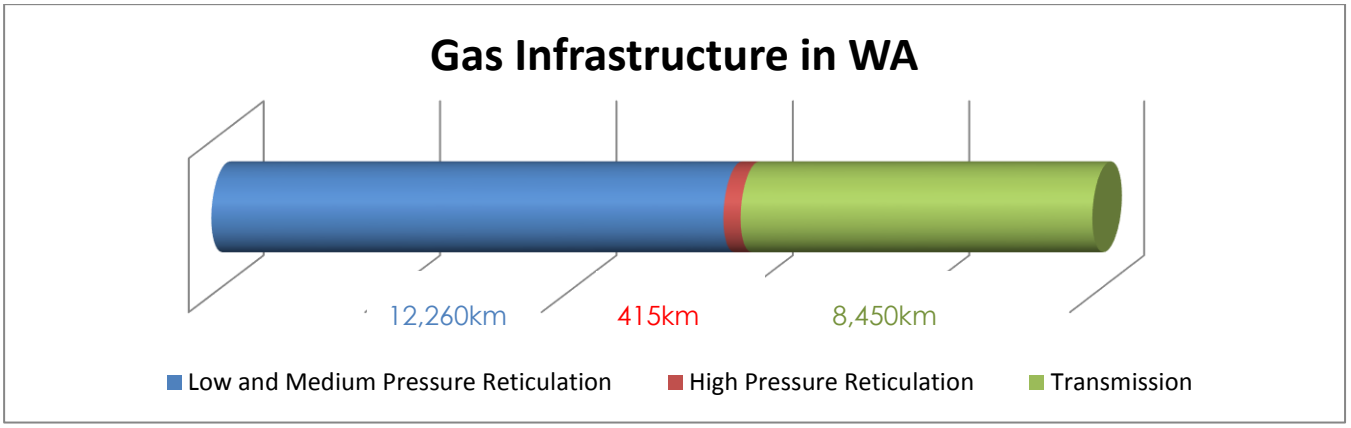


Figure 5: High and low pressure gas infrastructure WA[14]

The Mondarra gas storage facility is the only gas storage facility in Western Australia and is located near Dongara on the Parmelia Gas Pipeline[15]

The gas reticulation networks owned by ATCO Gas serve Geraldton, Kalgoorlie, Albany, Bunbury, Busselton, Harvey, Pinjarra, Brunswick Junction, Capel and the Perth greater metropolitan area including Mandurah.[16] These combined networks cover approximately 13,500km, connecting to about 683,000 end users[17].

The Gas Industry is a major supplier of energy to Australian homes and factories, supplying around 30% of industry energy needs and 20% of domestic needs. Gas has the potential to be a transitional fuel to help meet Australia's growing energy needs until renewable energy and clean coal technologies become more widely available. Government policies are likely to accelerate the implementation of natural gas technologies, which have lower carbon emissions than other fossil fuels.

Natural Gas: Western Australia is the most energy and gas-dependent economy in Australia and natural gas supplies more than half of WA's primary energy requirements as it fuels at least 60 percent of the State's electricity generation[18]. Gas has also been recognized as a much cleaner source of energy that can be used for quick response 'peaking' plants that are turned on to provide additional capacity during peak power demand cycles[19].

The State's two largest individual users of gas are Alcoa which operates three

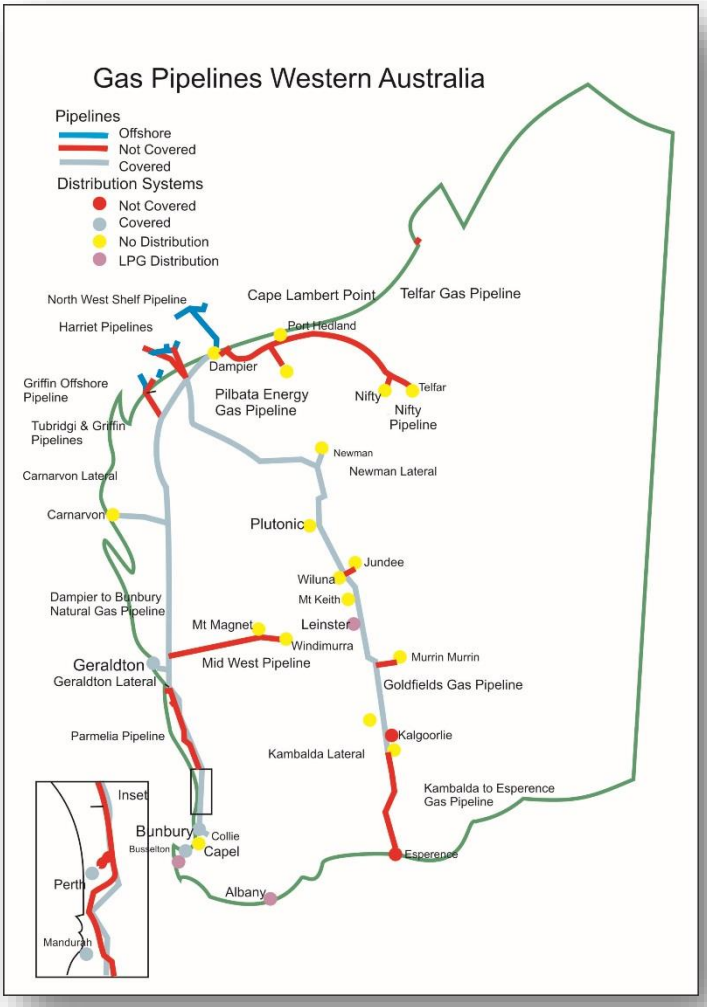


Figure 6: Gas pipelines Western Australia [16]

[14] ESAA (2014), Electricity Gas Australia
[15] Department of Finance, Public Utilities Office, *Gas in Western Australia*
[16] Department of Mines and Petroleum, (2010) *Energy Infrastructure map*
[17] ATCO Gas Australia, *Connecting WA to Natural Gas* < http://www.atcogas.com.au/Our-Stories/Connecting-WA-to-Natural-Gas>, accessed 18 May 2014
[18] Office of Energy (2011) *Strategic Energy Initiative, Energy 2031 Directions Paper*
[19] Merredin Energy, *About Us* <http://www.merredinenergy.com.au>, accessed 20 May 2014

alumina refineries in the south-west) and Burrup Fertilisers (which operates the world's largest ammonia plant on the Burrup Peninsula, near Dampier). Together they account for more than half of the natural gas consumed in WA.

Liquefied Petroleum Gas (LPG): Western Australia currently has two major domestic market production points for LPG. They are the BP Refinery located at Kwinana and Wesfarmers LPG also located at Kwinana. Western Australia also has the infrastructure to import LPG domestic supplies via ship and road tanker from other locations.

The **Waste Industry** is comprised of:

- Municipal solid waste: Domestic and local government activities
- Construction and demolition: Solid waste from civil works and domestic/commercial construction
- Commercial and industrial: Solid waste generated as a result of business, industrial activity and government establishments (such as hospitals and schools) [20].

Sectors and can be further categorized as collection, treatment and disposal.

Those in waste collection are primarily responsible for the collection and haulage of domestic, commercial or industrial solid and liquid waste (excluding sewers). The remaining sectors are engaged in the treatment or disposal of solid and liquid waste and the remediation, reclamation or cleanup of contaminated sites. This includes removal of hazardous materials and toxic material abatement.

The industry is comprised of private sector contractors including large multinational organisations and local government authorities. Regional Councils provide services to member local governments for landfill and waste disposal services.

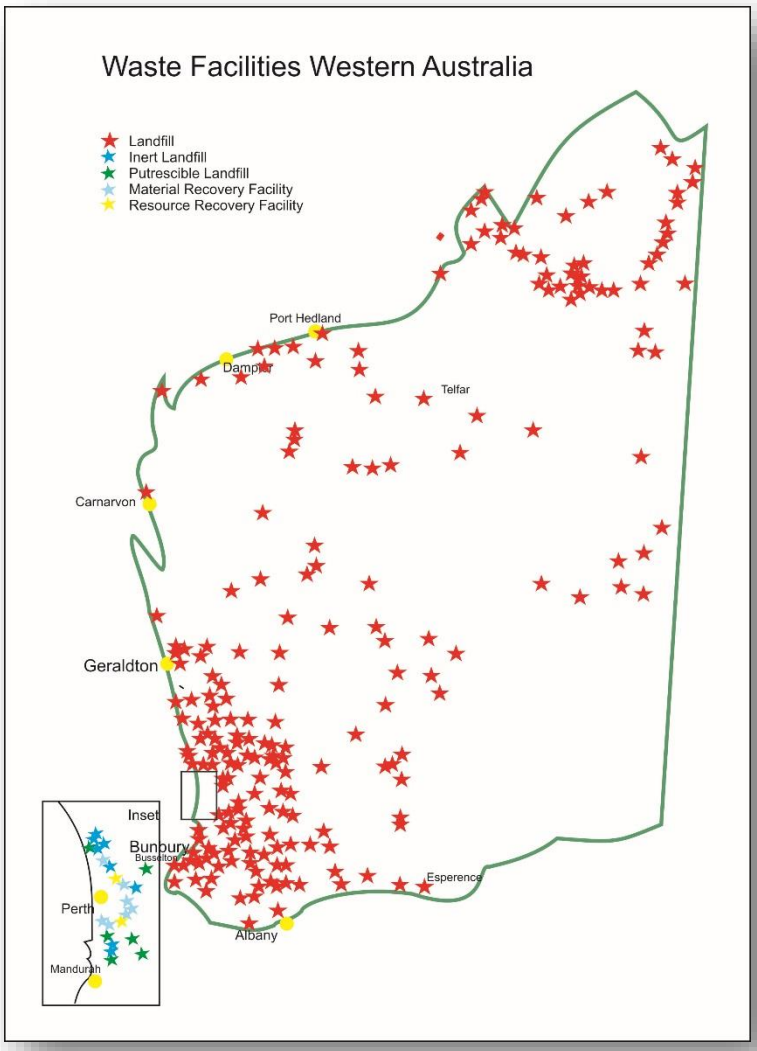


Figure 7: Waste treatment in Western Australia [20]

EUPA has worked closely with the industry over the past twenty four months to drive training effort. This has included the establishment of a traineeship for waste delivery drivers.

The waste industry also has 'resource recovery' as an alternative title which is becoming more appropriate as each year passes. Recycling continues to increase however the amount of waste generated also continues to climb. Electronic waste and inert construction waste are particular issues. The industry must develop further strategies to address the increase and changing nature of waste while focusing on environmental standards.

[20] WA Planning Commission (2014), *State Planning Strategy 2050*

The **water industry**:

- stores, treats, distributes water;
- collects and treats wastewater; and
- manages/operates water sources

EUPA's engagement has primarily been with the Water Corporation who provide the majority of services to the population in Western Australia. In 2013 it noted that it treated water through 277 treatment plants, transported water through 33,600km of water mains to 1.1 million customers and then collected waste water through 15,600km of sewer mains, treated it through 106 wastewater treatment plants and disposed/recycled the water at 80 sites across WA[21].

The sector has been in public focus since climate change, weather variability and the drying south-west climate were first raised as issues. Water source management continues to change as technology allows for new solutions. This includes aquifer recharge, stormwater re-use as well as continued use of reverse osmosis technology for processes such as desalination of sea water.

Other industry sectors, including the resources and agricultural industries also employ workers to perform similar roles; however issues affecting other industries are generally out of EUPA's scope. Where workers are employed in water-specific occupations in other industry sectors the needs of that sector are to be met by the appropriate training council.

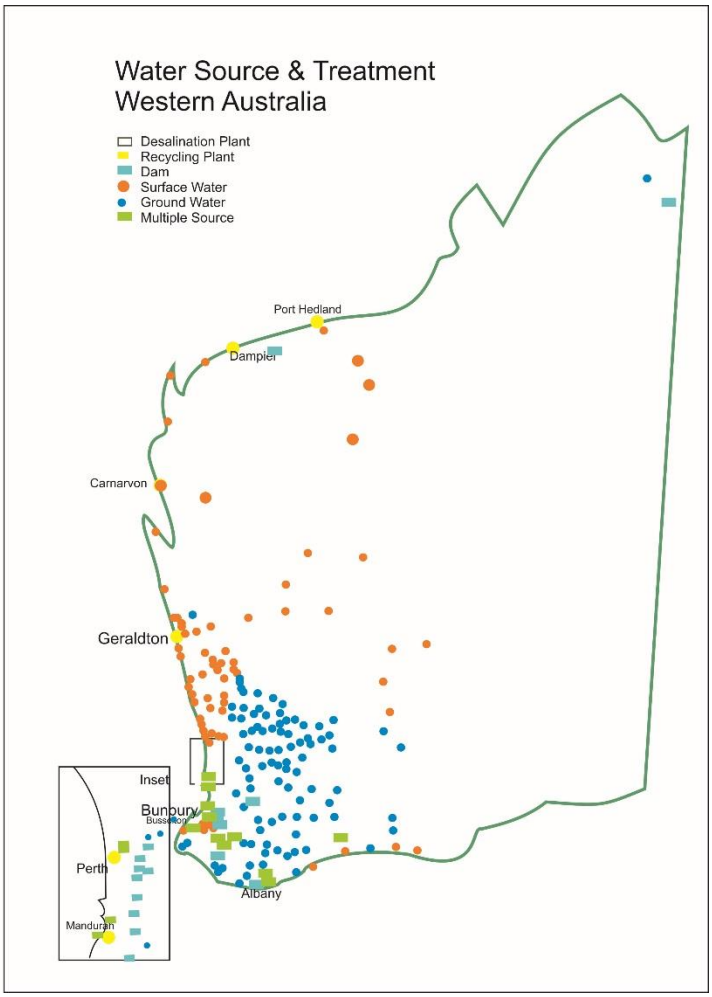


Figure 8: Water Resources Western Australia [22]

[21] Water Corporation (2013) *Statement of Corporate Intent 2013/14*
[22] WA Planning Commission (2014), *State Planning Strategy 2050*
[23] Water Corporation (2013) *Statement of Corporate Intent 2013/14*

Composition – Major Industry Stakeholders

Electrical

Regulatory and Government Oversight:

- Electrical Regulatory Authorities Council (ERAC)
- Electrical Licensing Board (ELB)
- Department of Commerce –Energy*Safety* Division
- Air-conditioning and Refrigeration Council (ARC)

Union:

- Electrical Trades Union (ETU)

Associations:

- National Electrical and Communication Association (NECA)
- Master Electricians
- Air-conditioning and Mechanical Contractors Association (AMCA)
- Refrigeration and Air-conditioning Contractors' Association (RACCA)

Major Employers

- Electrical Group Training (EGT) (Apprentice)
- Chamber of Commerce and Industry (CCI) (Apprentice)
- Domestic, Commercial and Industrial
- Small to medium contractors and large enterprises

Electricity Supply - Generation, Transmission, Distribution and Rail

Regulatory and Government Oversight:

- Standing Council on Energy and Resources (COAG)
- Independent Market Operator (IMO)
- Economic Regulatory Authority (ERA)
- Public Utilities Office
- Department of Mines and Petroleum
- Department of Commerce, Energy*Safety* Division

Union:

- Electrical Trades Union
- Australian Services Union
- Communications Union

Associations:

- Energy Supply Association of Australia
- Sustainable Energy Association
- Australian Institute of Energy
- Clean Energy Council
- Energy Retailers Association
- Energy Supply Association
- Australian Wind Energy Association

Major Employers

Generation	Transmission/Distribution	Retail
Synergy	Horizon Power	Synergy
Horizon	Western Power	Horizon Power
Alinta	Alinta	Perth Energy
Griffin Energy	Public Transport Authority	Alinta Energy
ERM Business Energy	West Rail	
Western Energy	BHP	
ATCO Australia	Rio Tinto	
APA Group		
Landfill Gas and Power		

Gas

Regulatory and Government Oversight:

- Standing Council on Energy and Resources (COAG)
- Economic Regulatory Authority (ERA)
- Gas Retail Energy Market Company (REMCo)
- Department of Finance, Public Utilities Office
- Department of Mines and Petroleum
- Department of Commerce, Energy*Safety* Division

Union:

- Electrical Trade Union (ETU)

Associations:

- Australian Gas Association
- Australian Institute of Energy
- Australian Pipeline Industry Association
- Energy Networks Australia
- Chamber of Minerals and Energy
- Energy Retailers Association Australia

Major Employers

Transmission	Distribution	Retail
APA Group Dampier Bunbury Pipeline (DBP)	ATCO Gas Esperance Power Station Wesfarmers Kleenheat	Alinta Synergy Perth Energy Wesfarmers Kleenheat Esperance Gas Distribution Company

Waste

Regulatory and Government Oversight:

- Waste Authority
- Department of Environmental Regulation

Associations:

- Western Australian Local Government Association (WALGA)
- Waste Management Association of Australia (WMAA)
  WA division sub groups:
  - Carbon, C&I, C&D, Compost, Landfill, Resource Energy Recovery, Waste Educators, Young Professionals, Pilbara Sub-branch

Union:

- Local Government, Racing and Cemeteries Employees Union (LGRCU)

Major Employers:

Municipal	Construction and Demolition	Commercial and Industrial
Local Governments Regional Councils Veolia Transpacific (Cleanaway) Perth Waste Sita Warren Blackwood	Instant Waste Management Capital Recycling All Earth	Perth Waste Toxfree Transpacific Warren Blackwood

Water

Regulatory and Government Oversight:

- National Health and Medical Research Centre
- Department of Water
- Department of Environmental Regulation
- Department of Mines and Petroleum
- Department of Health (Public Health Division)

Union

- Australian Workers Union

Associations:

- Australian Water Association
- Water Services Association Australia
- Water Industry Skills Taskforce (independent body)
- Water Industry Operators Association (WIOA)

Major Employers

- Water Corporation
- Busselton Water
- Aqwest (Bunbury Water)
- Southern Seawater Alliance (Tecnicas Reuindas and Valoriza)
- proAlliance (Degremont)
- Helena Water Consortium (ACCIONA Agua, TRILITY and Lloyds Bank Corporate Markets)
- Perth Region Alliance (Programmed)
- Aroona Alliance (Degremont & Transfield)
- Pilbara Clearwater Alliance (Tenix)
- City of Kalgoorlie Boulder (Waste Water only)

VET Sector - Major Training Stakeholders

- E-Oz Industry Skills Council
- Construction and Property Services Industry Skills Council
- Combined Skills Training
- Government Skills Industry Skills Council
- Central Institute of Technology
- Challenger Institute of Technology
- College of Electrical Training
- CY O'Connor Institute
- South West Institute of Technology
- Durack Institute of Technology
- Goldfields Institute of Technology
- Pilbara Institute
- Kimberley Institute
- Polytechnic West
- Great Southern Institute of Technology
- Industrial Training Institute (ITI)
- Moxi
- Project Management Vision
- The Apprenticeship and Traineeship Company
- Dalton Training Services
- West Coast Institute of Training
- Power Training Services
- Energy Skills Solutions
- Oakley Training Services
- Site Skills International
- Engineering Institute of Technology
- Franklyn Scholar

Electrical and Utilities Industry Trends, Challenges and Barriers

The electrical and utilities industries are subject to many of the same trends, given that the drivers for change result from many of the same forces. In the utilities sector, it is harder each year to separate discussion to individual sectors as the focus continues to highlight efficient and environmentally sustainable use and re-use of commodities.

In its recent report, the Australian Bureau of Statistics released findings for the utilities sectors stating that 'environmental pressure related to the production of waste, energy consumption and greenhouse gas emissions all increased, while water consumption fell'.

Headline figures include that between 1996/7 to 2012/13 period:

- Waste production increased 154%
- Energy consumption increased 30%
- Water consumption decreased 40% but is now increasing

The report goes on to measure 'intensity' of waste, water and energy consumption as it relates to environmental pressure for different industry sectors:

- The mining sector recorded a huge increase in waste intensity (164% over the 17 years). Rapid expansion as well as clean-up of laydown yards, historic waste stockpiling and demolition of closed mines produces large amounts of waste. Energy intensity is fairly static, but has changed depending on the commodity in focus (e.g. iron ore).
- Agriculture has contributed to the large decline in water intensity by becoming more efficient because of changing climatic conditions. However, you can see a spike upwards due to the increased rainfall and abundance of water on the east coast. Waste intensity was the highest to grow, but seems moderate by mining sector standards and overall the industry is seeing declining employment.

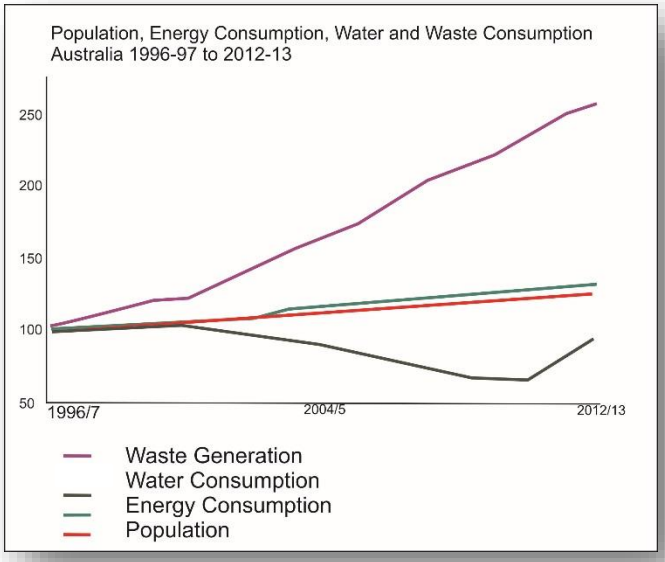


Figure 9: Energy, water and waste levels WA [24]

Budget Pressures Given that the major stakeholders in Western Australia are owned by government, it is of no surprise that the industry is under pressure to reduce expenditure. The sector will also be expected to increasingly utilize alliances and public-private partnerships to build, operate and maintain key utilities infrastructure.

Population Growth throughout Western Australia is predicted to continue over the long term, although recent data has identified that population estimates are now lower[25]. Growth will continue to have a direct effect as follows:

- The construction industry must meet the needs of the residential market providing more employment for electricians and refrigeration and air-conditioning tradespeople.
- The electricity generation industry will be required to meet the needs of customers. This includes the interaction required with small scale and dispersed generation.
- Gas and electricity transmission/distribution networks continue to grow along with the ongoing project to sink electricity supply assets underground.[26]

[2424] ABS (2015), Integrated Socioeconomic and environmental indicators, accessed 2 July 2015 < http://www.abs.gov.au/ausstats/abs@.nsf/mf/4655.0>
[25] Department of Planning, *Housing Industry Advisory Group, May 2015 Update*
[26] Department of Finance – Public Utilities Office, *State Underground Power Program (UPP)*, <http://www.westernpower.com.au/networkprojects/undergroundPower/upp/UPP.html> accessed 21 May 2014

- Water reticulation networks (drinking water and wastewater) are expanding due to new developments and must be upgraded for some housing 'infill' projects in the Perth metropolitan area due to increased capacity requirements.[27]
- The demand for treated water remains high, requiring advanced maintenance programs, education programs and new water sources[28]
- Programs and initiatives to divert waste from landfill such as the Waste Authority's Better Bins strategy[29].

Construction Activity: Installation of electrical systems accounts a large body of work in the sector (electricians or electrical installers). Those in the electrotechnology industry are heavily influenced by construction activity across the residential, commercial and industrial industries.

The major shift experienced in WA is the decline in construction activity in the resources sector. The total construction workforce in resources has been estimated to have fallen by 5,000 workers since 2013[30]. This is further supported by Kohler who reports on the ABC of big declines in construction in Western Australia due to the rapid decrease in industrial construction[31]. According to the Kohler, the residential and commercial markets have not increased enough to cover the gap, creating a flat construction sector. This has resulted in a decrease in competition for labour, particularly noticeable across electrotechnology industries.

Painting a brighter picture, the Housing Industry Forecast Group suggests residential construction continues to grow strongly[32].

Ageing EUPA Training Council has also reported that the ageing workforce has been a significant issue for industry for a number of years, and this continues to be a position supported by both Industry Skills Councils[33][34].

We have also previously reported on the ageing of infrastructure which must be kept in focus when considering the electricity generation, transmission and distribution networks.

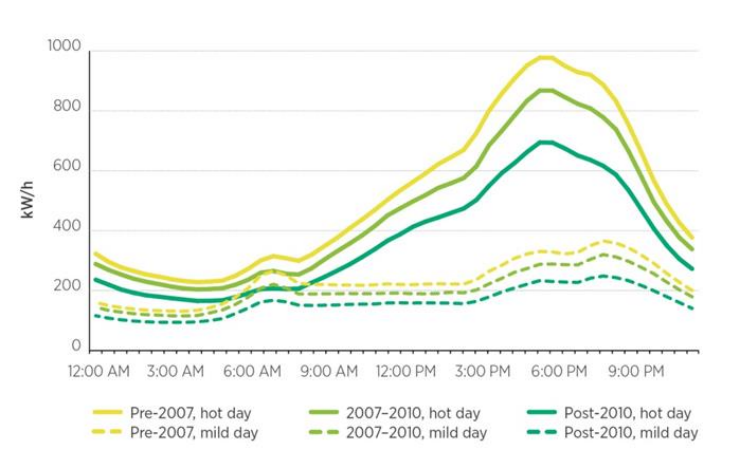


Figure 10: Effect of energy efficient houses and appliances [35]

Energy Efficiency: Building standards and increasing efficiency of electrical appliances are also having a dramatic effect on energy consumption. The case study presented below represents typical energy consumption for houses constructed prior to 2007 and post 2010 when building codes were amended to require additional energy efficiency. Houses build after 2010 are 30% more efficient than houses built before 2007[36]. The current NatHERS and NABERS tools, used to measure efficiency are earmarked for improvement.[37]

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[27] Department of Planning (2010) *Directions 2031and beyond: metropolitan planning beyond the horizon*
[28] WA Government *Media Statement, 4/4/2014*, < https://www.watercorporation.com.au/about-us/media/media-releases/media-release?id={385E9576-6131-4E9A-BC16-5709E1C23BA4}> accessed 20 May 2014
[29] Waste Authority WA, *Better Bins Funding Guide (2014*) <http://www.wasteauthority.wa.gov.au/media/files/documents/Better_Bins_Funding_Guide.pdf> accessed 20 May 2014
[30] Construction Training Fund, *Construction Industry Snapshot Western Australia May 2015*
[31] Australian Broadcasting Company, Alan Kohler Report 27 May 2015, http://www.abc.net.au/news/2015-05-27/australian-dollar-tumbles-home-construction-on-the/6502364
[32] Department of Planning, Housing Industry Forecasting Group; *Forecast Dwelling Commencements in Western Australia April 2015 Update*
[33] Energy Skills Australia (2014), *Environmental Scan, February 2015 and* Government Skills Australia (2015), *Environmental Scan*
[34] Government Skills Australia (2015), *Environmental Scan*
[35] Australian Government (2015), *Energy White Paper*, accessed July 2015 < http://ewp.industry.gov.au/sites/prod.ewp.industry.gov.au/files/EnergyWhitePaper.pdf>
[36] Australian Government, (2015), Energy White Paper
[37] Ibid.

Air-Conditioning: Energy Skills Australia highlights the growth in air-conditioning in line with construction activity. The reader should note however that the trade level qualification in Western Australia is sourced from the Metals and Engineering Training Package. Further detail should be sought from the Engineering and Automotive Training Council in that regard.

EUPA has recently been engaged in discussions with Energy Skills Australia regarding the use of the Certificate II in Split System and Heat Pump Systems. This qualification allows workers to gain a restricted ARC Refrigerant Handling license, but does not make workers eligible for the restricted electrical license required. EUPA understands that many electricians are diversifying their skills with this qualification, along with data and voice cabling which requires a license from the Australian Communications and Media Authority (ACMA). Whilst beneficial to the electrician, EUPA understands that a potential negative impact this is felt in some regions where qualified Refrigeration and Air-conditioning Mechanics have lost a component of their business.

Solar Power Generation: The sectors are significantly impacted by the increasing adoption of solar power, the main contributor to distributed generation. Growth of photovoltaic capacity in the South West Interconnect System (SWIS) is depicted below[38]:

	2009-10	2010-11	2011-12	2012-13	2013-14	Average Annual Growth
Number of Systems	17,571	58,113	89,834	122,298	136,329	66.9%
Average system size (kW)	1.5	1.9	2.1	2.2	2.3	11.3%

Table 3: Growth in system size and installations of PV in the SWIS

Generation Diversity: Small scale solar power (rooftop PV) is definitely an enormous growth area that impacts on the workforce – from the smallest electrical contractor to large utility companies. However, energy is now being sourced from multiple sources as illustrated for the SWIS network[39]: The blurring of industry boundaries is particularly evident here[40]:

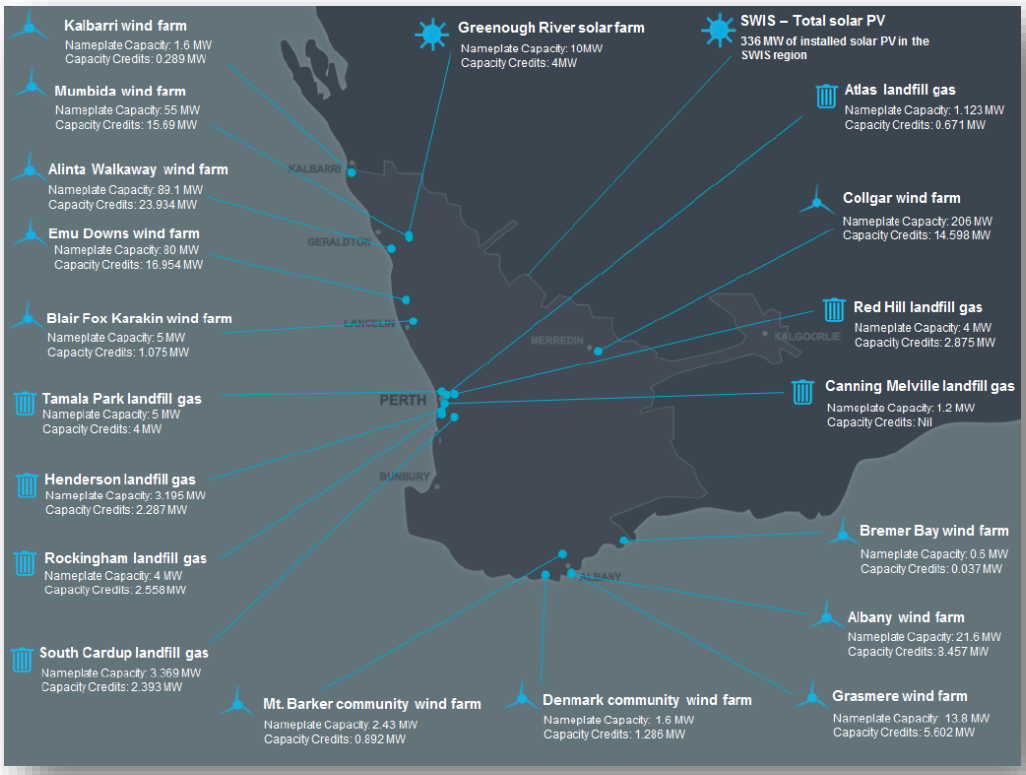

Figure 11: Large scale renewables in the SWIS

[38] Independent Market Operator, SWIS Electricity Demand Outlook June 2014
[39] Ibid.
[40] Ibid.

Since the publication of the illustration above, the Carnegie Wave Energy project has also achieved milestone successes as a pilot grid-connected generator that supplies power and desalinated water to Garden Island[41].

When considering Western Australia's largest network, the SWIS, authorities consider that there will be no need for additional generation capacity to be added to the network until 2023-24.

The reader is encouraged to visit www.imowa.com.au where live data is available for power stations (including renewable energy).

Cost of Energy: The sector is being shaped by market forces that are driving up the cost of electricity provided through the grid. This has been described as the 'death spiral' for the transmission and distribution industry who must recover the cost of maintaining expensive assets while electricity demand is falling. To complicate this issue, peak demand remains stable so assets (the towers, poles and wires) must be maintained to meet a short period of high demand.

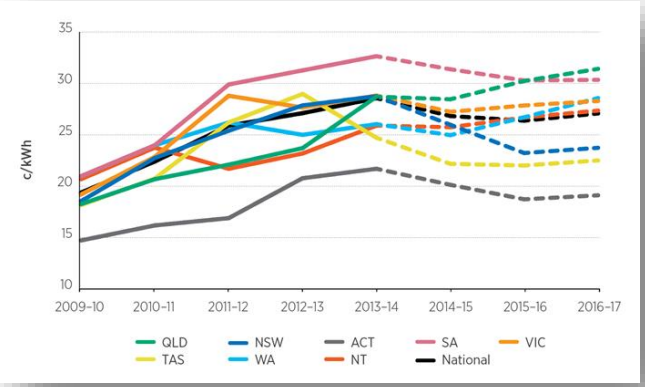

Figure 12: National Electricity Price Trends [42]

Likewise, gas prices have also been increasing at a rate much higher than CPI as represented at Figure 13. [43]

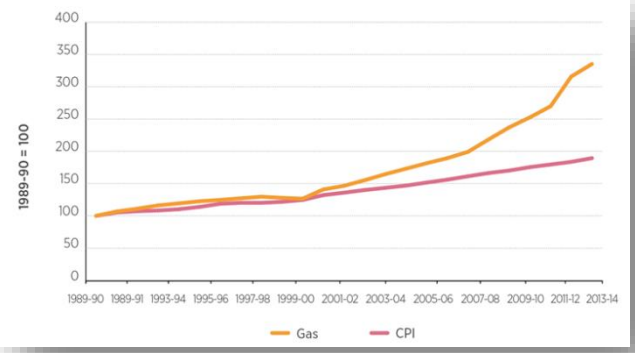

Figure 13: Retail household gas price index, 1989-90 to 2013-14 [43]

The market is also allowing consumers to take advantage of falling costs of PV installations. Figure 14 depicts the average cost per kW of power for typical installations across Australia[44].

Battery Storage: The energy sector is now facing the next major development in technology that will increase the uptake of renewable energy. This fact will again affect all sections of industry as small scale storage will enable some consumers to become energy independent, whilst utilities will likely look to large scale storage to reduce peak load.

Smart Grid: Utilities companies must soon tailor consumption needs to best fit the needs of the individual and the system. Energy auditing, advanced metering, integrated management systems and data management systems will be essential components of a smart energy grid.

Figure 14: System cost per KW by installation size [44]

[41] EUPA Training Council, Carnegie Wave Energy, http://www.eupa.com.au/2015/06/carnegie-wave-energy/, accessed 7 July 2015
[42] AEMC 2010, 2011, 2013a, 2013b, 2014
[43] Australian Commonwealth Government, Energy White Paper 2015
[44] Australian PV Institute, System Cost per kW since 2010, by installation size, accessed 2 July 2015, http://pv-map.apvi.org.au/analyses

Environmental Protection: An obvious connection applies to all industry sectors, drawing from many of the issues raised above. Further considerations also impact upon the water sector as follows:

- Water use is forecast to increase by 2.4%/annum to 2040, effectively doubling demand.
- Water quality and safety issues remain as key challenges as the state continues to mine resources near or below the water table and salinity continues to be problematic.

The waste sector also must address:

- Increasing volumes of waste including electronic and inert construction waste.
- Stringent regulation to protect the community when designing, locating and operating waste management facilities.
- Managing risks associated with polluting the environment and maintaining buffers to residential areas.

Industry Strategies and Policies

The Energy White Paper was released in April 2015 to focus on increasing competition, energy productivity and investment. The document provides the rationale for a National Energy Productivity Plan and the government's approach to ensuring the industry attracts investment and has the ability to adopt new technologies.

The white paper deals with transport fuels as well as electricity and gas.

It demonstrates the sharp increases in electricity and gas costs that we have all experienced over a number of years (despite a turnaround most recently), noting that network costs contribute the largest component to our bills. The carbon tax repeal brought with it some relief, but the paper predicts an upward trend for all states and territories as already reported in this plan.

Privatisation is also a driver to increase competition and provide consumers choice.

The major government strategies it notes are:

- The $5 billion Asset Recycling Initiative will encourage the states and territories to free up capital to invest in additional economic infrastructure through privatising state and territory-owned assets.
- The $188.5 million Industry Growth Centres will lift competitiveness and productivity by focusing on areas of competitive strength, including the oil, gas and energy resources sector and the mining equipment, technology and services sector.
- The $476 million Industry Skills Fund will enable Australia to have the highly skilled workforce needed to adapt to new business growth opportunities, rapid technological change and market-driven structural adjustment. The fund will prioritise the training needs of oil, gas and energy resources, and mining equipment, technology and services SMEs.
- The $484.2 million Entrepreneurs' Infrastructure Programme will provide Australian companies with structural and strategic support to capitalise on growth opportunities.

Renewable Energy Target (RET) The Commonwealth Government has only recently agreed on the new RET which will now provide certainty for investors. Whilst the small scale target is unchanged, large scale projects suffered enormously, decreasing 90% in the twelve months to 31 March 2015.[45]

WA Electricity Market Review On 6 March 2014, the Minister for Energy launched the Electricity Market Review. The Review examines the structures of the electricity generation, wholesale and retail sectors within the South West Interconnected System in Western Australia and the incentives for industry participants to make efficient investments and minimise costs.[46]

The Minister recently announced plans to change the retail electricity market to allow residential customers to choose their energy retailer.[47]

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[45] EUPA Training Council (2015), http://www.eupa.com.au/category/electricity-supply-2/page/2/, accessed 7 July 2015
[46] Department of Finance, Public Utilities Office, Electricity Market Review, https://www.finance.wa.gov.au/cms/Public_Utilities_Office/Electricity_Market_Review/Electricity_Market_Review.aspx accessed 9 July 2015
[47] EUPA Training Council, http://www.eupa.com.au/2015/04/residential-customers-to-get-choice-of-energy-retailer/ accessed 9 July 2015

The **National Strategy on Energy Efficiency (NSEE)** is also mentioned due to its goals including:

- Commercial Building Energy Efficiency
- Equipment Energy Efficiency
- Residential Building Energy Efficiency

The stated aim of the **State Waste Strategy**[48] is to "move Western Australia to best practice in Waste Management by 2020 and to drive a decade of significant improvement in the management of waste."

The Waste Strategy has specific strategies in the areas of Waste Avoidance, Resource Recovery, Waste Disposal and Data, Monitoring, Reporting and Review.

The Waste Strategy has the potential to significantly impact on the waste management industry, primarily by promoting the recycling and processing of an increasing amount of waste from the three waste streams.

The major drivers for change in the industry relate to the growth in quantities of waste generated and the methods used for collection, treatment and disposal.

The **National Water Initiative** was agreed to by Western Australia in 2006 and has shaped the sector in a number of ways.

Developed under the National Water Initiative, the **National Water Skills Strategy** identified strategies to ensure the water industry workforce takes full advantage of state and commonwealth government opportunities.

The **Carbon Emission Reduction Target** is another highly influential driver for industry change that is currently under revision. Having met previous targets set in 2005, known as the Kyoto Protocol, Australia must address its post-2020 target. In combination with renewable energy target, it is clear that the pace of change for the workforces EUPA represents will continue to escalate.

[48] Waste Authority (2012) *Western Australian Waste Strategy, Creating the right Environment*

Predicted Growth

The Australian Government Department of Employment provides estimates of expected growth for industry and occupations.

The following table provides national data relating to occupations relevant to the electrical and utilities sectors. The table shows predicted growth across the occupations and can be used as a guide, noting that this is not specific to Western Australia. Care must be taken not to draw conclusions solely on this data as the information presented is aligned to ANZSCO at a four-digit level. For maximum accuracy, data would need to be made available at six-digit level and be specific to Western Australia.[49]

Code	Occupation	Employment level - November 2014 ('000)	Department of Employment Projections		
			Projected employment level - Nov 2019 ('000)	Projected employment growth - five years to November 2019 ('000)	(%)
	Engineers				
2331	Chemical and Materials Engineers	5.9	6.2	0.3	5.1
2332	Civil Engineering Professionals	41.7	45.0	3.2	7.7
2333	Electrical Engineers	19.9	21.5	1.6	8.2
2334	Electronics Engineers	7.7	9.5	1.7	22.1
2335	Industrial, Mechanical and Production Engineers	30.6	34.5	3.9	12.7
	Science Professionals and Veterinarians				
2342	Chemists, and Food and Wine Scientists	9.7	11.3	1.6	17.0
2343	Environmental Scientists	25.5	28.1	2.6	10.3
2344	Geologists and Geophysicists	14.3	14.3	0.0	0.2
2345	Life Scientists	12.9	14.2	1.3	9.7
	ICT Professionals				
2633	Telecommunications Engineering Professionals	10.4	11.9	1.5	14.4
	Engineering, ICT & Science Technicians, Inspectors				
3122	Civil Engineering Draftspersons and Technicians	11.9	13.1	1.2	10.1
3123	Electrical Engineering Draftspersons, Technicians	9.5	9.8	0.3	3.6
3124	Electronic Engineering Draftspersons, Technicians	2.2	2.0	-0.2	-7.0
3125	Mechanical Engineering Draftspersons, Technicians	5.7	5.7	0.1	1.3
3126	Safety Inspectors	5.8	6.3	0.5	9.1
3132	Telecommunications Technical Specialists	5.0	5.3	0.2	4.4
	Electrotechnology and Telecommunications Trades				
3411	Electricians	141.7	155.6	13.9	9.8
3421	Airconditioning and Refrigeration Mechanics	21.3	24.5	3.3	15.4
3422	Electrical Distribution Trades Workers	10.8	10.4	-0.5	-4.3
3423	Electronics Trades Workers	31.0	32.3	1.3	4.2
3424	Telecommunications Trades Workers	28.0	29.7	1.8	6.3
	Other Trades Workers				
3992	Chemical, Gas, Petroleum & Power Plant Operators	9.2	10.7	1.5	16.2
	Mobile Plant Operators				
7212	Earthmoving Plant Operators	43.2	39.4	-3.7	-8.6
	Drivers and Storepersons				
7331	Truck Drivers	189.3	206.4	17.1	9.0

Table 4: LMIP Occupational Growth Forecasts to 2019

[49] Department of Employment (2015), *Labour Market Information Portal Occupation Growth Projections* accessed July 2015

The table below provides workforce size by industry (not occupation), but represents estimations of workforce size by region of Western Australia.[50]

Level	Region	Industry	Employment level (Department of Employment Trend) - Nov-2014 ('000)	Department of Employment Projections		
				Projected employment level - Nov-2019 ('000)	Projected employment growth - five years to November 2019	
					('000)	(%)
4	WA	Electricity, Gas, Water, Waste	**16.3**	**17.5**	**1.2**	**7.4**
5	Greater Perth		***11.7***	***12.6***	***0.9***	***7.3***
6	Mandurah		0.4	0.4	0.0	-5.9
6	Perth - Inner		1.3	1.3	0.0	3.0
6	Perth - NE		1.6	1.6	0.0	1.6
6	Perth - NW		4.4	4.9	0.5	11.7
6	Perth - SE		3.7	3.8	0.2	4.4
6	Perth - SW		1.6	1.7	0.1	6.9
5	Rest of WA		***4.9***	***5.3***	***0.4***	***7.5***
6	Bunbury		1.6	1.7	0.2	11.4
6	WA - Outback		2.3	2.4	0.1	6.0
6	WA - Wheatbelt		1.0	1.1	0.1	8.4
4	WA	Construction	**149.4**	**174.7**	**25.3**	**16.9**
5	Greater Perth		***117.6***	***140.7***	***23.1***	***19.6***
6	Mandurah		6.6	7.8	1.1	17.3
6	Perth - Inner		5.1	6.1	1.0	19.1
6	Perth - NE		14.7	17.4	2.7	18.8
6	Perth - NW		40.4	49.0	8.5	21.2
6	Perth - SE		25.0	29.9	4.8	19.4
6	Perth - SW		24.8	29.7	4.9	19.7
5	Rest of WA		***30.4***	***32.6***	***2.2***	***7.2***
6	Bunbury		11.8	13.1	1.3	10.8
6	WA - Outback		14.2	14.8	0.6	4.4
6	WA - Wheatbelt		5.2	5.7	0.5	9.8

Table 5: LMIP Industry growth forecast to 2019

[50] Department of Employment (2015), *Labour Market Information Portal Industry Growth Projections* accessed July 2015

Major 2014 EUPA Utilities Blog Posts[51]

Industry

- Renewable Energy Target
- ESAA report on employment in utilities
- Clean Energy Council – Clean Energy Report 2014
- Aboriginal School Based Trainees in water
- Carnegie wave energy
- City of Wanneroo makes utility-scale solar plans
- New gas pipeline completed
- Inquiry into inhibitors to job creation and growth
- Tesla gets energy storage on front page
- Australian PV Institute provides real time data on Solar
- Training Activity in the waste industry
- Waste industry workforce development project
- Energy White Paper
- Energy supply and use – the ABS economic analysis
- Waste, energy and greenhouse gases increase; water consumption down
- Water consumption – the ABS economic analysis
- ABS report on waste generation and management
- License recognition website added to links
- Water legislation continues to reform
- Evidence of RET uncertainty
- Midwest energy project complete
- ESAA Solar PV report march 2015
- The most controversial of waste - radioactive
- Residential customers to get choice of energy retailer
- Large scale energy storage is here
- Future of electricity generation
- Wind energy snapshot
- The power is shifting
- Gas sector jobs creation
- I might like batteries more than cars – Tesla CTO. Home storage in 6 months?
- Decline in gas? What is the future?
- Possible Cert II in Utilities
- Large scale renewable energy investment plummets
- NWIS capacity planning needs improvement
- EUPA's waste industry workforce development project (career roles poster developed)
- COAG Energy Council communique
- Solar powered sewerage
- Certificate II in Water Operations: School Based Traineeship delivery approved
- A new industry is coming – Energy storage
- Battery storage is coming

[51] Electrical Utilities and Public Administration Training Council (2014) <http://www.eupa.com.au>

	• E Oz conference wrap up • Traineeship Cert III Waste Driving Operations (established) • Industry Growth Centres initiative • Snapshot of Australia's Energy Sector • Survival of the electronic servicing apprenticeship • School based delivery of the Certificate II in Water Operations? • The curious case of appliance servicing • More water = more opportunities • Waste industry workforce development project
VET	• Electrical pre-apprenticeship footprint on STARS revised • Critical information for training providers and schools – Electrical Licensing • New Pre-apprenticeship business rules • Good practice guide: Gathering workplace evidence in electrotechnology apprenticeships • Training Awards 2015 (CET awarded large training provider of the year, Adam Keilar awarded vocational student of the year) • Independent review into Trade Training Centres in Schools Program

Labour and Skill Demand

Labour markets have eased in line with conditions in Western Australia.

Electrotechnology skills are employed in the building and construction sector, manufacturing, utilities and the resources sector where specialisations such as electrical fitting, data and telecommunications, instrumentation and hazardous areas are seen as necessary to gain employment. Employment in electrical trades remains strong despite the downturn in resources sector construction.

Entry into electrotechnology apprenticeships is the most competitive of all apprenticeships. It is normal for applications to far outstrip available places. This is also the case with those that seek a place on an electrical pre-apprenticeship program. The completion rates for these apprenticeships are also high, which is definitely assisted by the regulatory condition that workers must hold a license.

EUPA is also working with the appliance servicing sector to implement delivery of the established apprenticeship. The industry is very small, with just five major employers, however due to increasing workloads, an ageing workforce and the ability to create new efficiencies in the workplace by obtaining restricted licenses the industry is keen to provide formal and specific skills to its workers and offer a valid entry pathway for new workers.

The utilities sector is comparatively small and suffers with a low public profile. Much of the training is also conducted internally by enterprise RTOs or through auspicing arrangements managed by internal training units. Training for most job roles specific to the sector, with the exception of waste, can only be completed after employment has been gained (through an apprenticeship) which further inhibits the ability for job seekers to prepare for entry into the utilities workforce.

Continuing from 2014-15, EUPA is working with the utilities sector to identify pathways suitable for school students. In the water industry, a pilot to increase professionalism is still progressing in the Eastern States that was also previously reported in the 2014-15 Industry Workforce Development Plan.

There are also many occupations or skills that are shared with other industry sectors. These issues all combine to make attraction a difficult process for most stakeholders.

The electricity generation sector has seen a reduction in workforce size as power stations are retired. The most recent retirement of Kwinana Plant Stage C occurred ahead of schedule due to the reduced demand.

The transmission and distribution sector is under pressure due to government budgetary policy that is reducing payments made to utilities to offset the cost of services. All government utilities are also undertaking massive workforce reform focusing on productivity and workforce size.

The gas sector has been slow to adopt the newly established Gas Technician Apprenticeship. This is also largely due to functional and workforce reviews by the large and dominant asset operators.

In future, EUPA suggests that the impact upon the size of the workforce for the energy sector will remain stable. In short, there are more questions than answers at this point in time. Some research suggests a slight reduction in workforce size as lower skilled jobs are replaced by technology (such as meter readers) whilst others predict a slight increase in the workforce due to higher skilled occupations[52].

EUPA continues to focus on the utilities industry in particular to develop a strategy to engage with school students. The attraction of youth and raising of the industry's profile is high on the priorities for all utilities sectors.

EUPA also highlights:

- Continued rounds of redundancies and organisational structural change across the utilities sector that is resulting in a substantial reduction in workforce size.
- Continued pressure from state and commonwealth budgets which are limiting growth of expenditure.
- The Public Transport Authority had specific needs for a small number of signal technicians, overhead catenary lines workers and rail technician which were reported to the Department of Training and Workforce Development in February 2015.

Regional Impact

Electrical tradespersons are distributed across all regions of the State. Whilst labour market conditions have changed substantially, Regional Workforce Development Plans each indicate that electricians are among the identified critical occupations. [53] [54] [55] [56] [57]

However, the number of electricians required in the regions has reduced due to the changing workforce structure for the resources sector.

For utility providers, all regional workforce development plans, with the exception of the Wheatbelt, report expectations of increasing population growth. Population growth in regional Western Australia requires an enormous investment in public utilities infrastructure involving construction, maintenance and operations of electricity and gas infrastructure. The existing utilities infrastructure spans the entire state, often spanning remote areas between major regional centres (such as gas pipelines) or existing as distinct isolated networks (such as the 32 distribution networks operated by Horizon Power).

Whilst the workforce size is small in total, the demand for workers in the electrotechnology field (particularly with specific skills such as those required in power generation and hazardous areas will continue as many resources projects are energy-intensive and require a workforce of their own to be self-sufficient in relation to energy and water management needs.

[52] Middleton A. EnergySkills Queensland, 2015, *A changing Electricity Industry, A changing workforce*
[53] Department of Training and Workforce Development (2012) *Goldfields-Esperance workforce development plan 2013-2016, Perth Western Australia*
[54] Department of Training and Workforce Development (2013) *South West workforce development plan 2013-2016*, Perth Western Australia
[55] Department of Training and Workforce Development (2013) *Great Southern workforce development plan 2013-2016*, Perth Western Australia
[56] Department of Training and Workforce Development (2013) *Pilbara workforce development plan 2013-2016*, Perth Western Australia
[57] Department of Training and Workforce Development (2013) *Kimberley workforce development plan 2013-2016*, Perth Western Australia

EUPA notes that regional workforce development plans do not pay particular attention to the utilities sector, with the exception of the Pilbara[58] which notes generic engineering and trade occupations as priority. This perhaps reflects the profile and size of the workforce. It fails to recognise the critical nature of the industry and criticality of market failure.

Curtin University details particular needs to ensure the long term sustainability of the Pilbara region. In that report, specific reference is made to the need for significant investment in utilities infrastructure to ensure the region survives for the long term.[59]

Regulatory Requirements

Due to safety and environmental risks, occupations in the electrotechnology industry are highly regulated and need a license to operate.

All electrical tradespersons must obtain an electrical workers license to perform electrical tasks. The Department of Commerce through the Energy*Safety* Division maintains the state's electrical workers licensing system.

The sector is directed nationally by the Electrical Regulatory Authorities Council (ERAC). Western Australia's regulatory body is the Energy*Safety* Division of the Department of Commerce. A key document governing workers in the sector is Energy*Safety*'s WA Electrical Requirements (WAER) which was amended in January 2014.

The Electrical Licensing Board, constituted under the provisions of the Electricity (Licensing) Regulations 1991 makes decisions about the competence of applicants for electrical licenses and permits.[60]

The Australian Refrigeration Council (ARC) regulates the refrigeration and air-conditioning industry in respect to refrigerant handling. Energy*Safety* regulates workers from the electrical point of view by requiring workers to hold restricted electrical licenses.

In relation to the utilities sectors, the Minister for Energy is responsible for administering the following legislation in Western Australia. The Coordinator of Energy supports the Minister in this role.

- Dampier to Bunbury Pipeline Act 1997
- Electricity Corporations Act 2005
- Electricity Industry Act 2004 (all parts other than Part 9A)
- Energy Arbitration and Review Act 1998
- Energy Coordination Act 1994 (all parts other than Parts 2 & 3)
- Energy Corporations (Transitional and Consequential Provisions) Act 1994
- Energy Operators (Powers) Act 1979
- Electricity Transmission & Distribution Systems (Access) Act 1994\
- Fuel, Energy and Power Resources Act 1972
- Gas Corporation (Business Disposal) Act 1999
- Gas Supply (Gas Quality Specifications) Act 2009 (Act other than Part 5, Division 2)
- National Gas Access (WA) Act 2009
- State Energy Commission (Validation) Act 1978

[58] Department of Training and Workforce Development (2013) *Pilbara Workforce Development Plan*
[59] Curtin University (2014) *Pilbara 2050: Ensuring the long-term viability of the Pilbara*
[60] Department of Commerce EnergySafety Division (2014) *Electrical Licensing Board*, Accessed 16 May 2014 <http://www.commerce.wa.gov.au/energysafety/Content/About_us/Boards_and_committees/Electrical_Licensing_Board.html>

The following Codes were established under the *Electricity Industry Act 2004:*

- Code of Conduct for the Supply of Electricity to Small Use Customers
- Electricity Industry Customer Transfer Code
- Electricity Industry Metering Code
- Electricity Industry (Network Reliability and Quality of Supply) Code
- Electricity Networks Access Code
- Code of Practice for Personnel Electrical Safety for Vegetation Control Work near Live Power Lines

In the gas sector, WA's independent economic regulator, the Economic Regulation Authority, has established the following industry-related Codes under the Energy Coordination Act 2004:

- Compendium of Gas Customer License Obligations (also known as the Gas Customer Code)
- Gas Marketing Code of Conduct

In the water industry, the following legislation is applicable:

- Country Areas Water Supply Act 1947
- Dangerous Goods Safety Act 2004 and associated Dangerous Goods Safety Regulations 2007
- Environmental Protection Act 1986
- Health Act 1911
- Land Drainage Act 1925
- Land Drainage (Validation) Act 1996
- Metropolitan Water Supply, Sewerage, and Drainage Act 1909
- Metropolitan Water Authority Act 1982
- Rights in Water and Irrigation Act 1914 Water Agencies (Powers) Act 1984
- Water Boards Act 1904
- Water Corporation Act 1995
- Water Efficiency Labelling and Standards Act 2006
- Water Services Act 2012
- Water Services Licensing Act 1995
- Waterways Conservation Act 1976

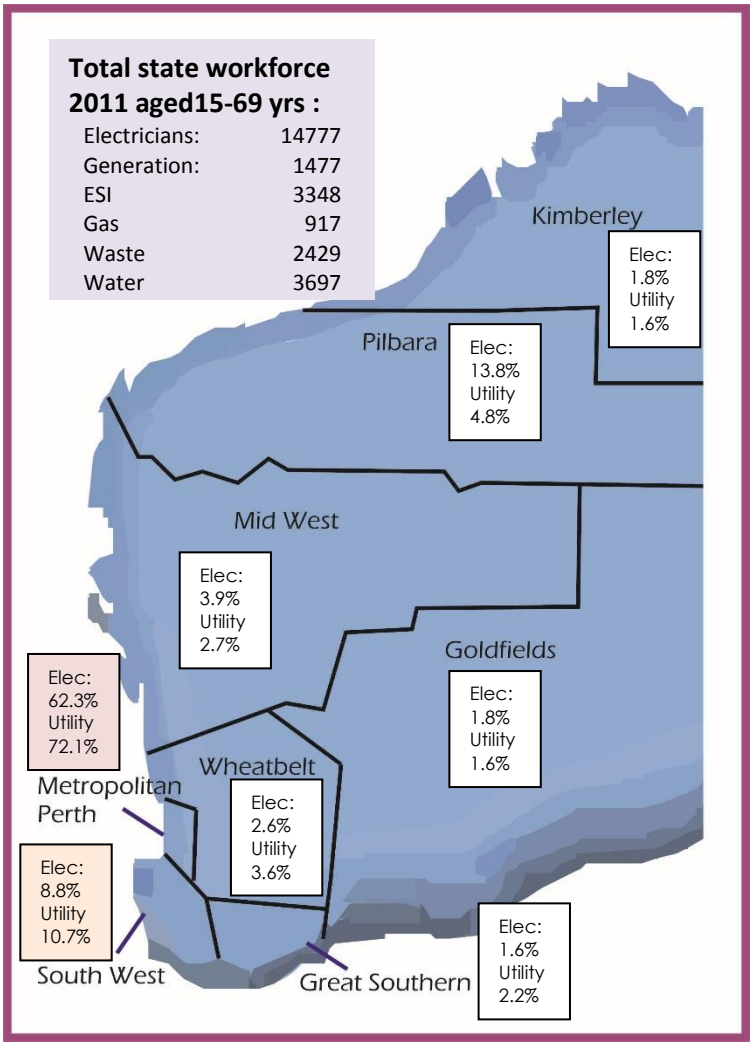
In the waste industry sector, the following legislation is of particular importance:

- Waste Avoidance and Resource Recovery Act 2007
- Waste Avoidance and Resource Recovery Levy Act 2007
- Environmental Protection Act 1986
- Environmental Protection (Landfill) Levy Act 1998

Participation

The following data is to be used as a guide. Information is sourced from the ABS 2011 Census. The workforce is ageing and given the physical nature of work, some loss of skilled labour is expected. However it should be noted that more than half of all electricians fall within the 20yrs to 39yr age bracket indicating that this sector is not so concerned with the prospect of an ageing workforce.

Figure 15 Census Data 2011 - for the 'Electrician' Occupation and Utilities Industries[61]



Age:

	Electrical	Utilities
15-19	8.8%	1.5%
20-29	34.0%	13.2%
30-39	20.3%	22.8%
40-49	18.0%	28.2%
50-59	13.6%	24.7%
60-69	5.1%	9.7%

Females:

199 identified in electrical

2,718 identified in utilities with approx. 1,000 in water.

Indigenous:

136 indigenous workers identified in electrical

156 workers across utilities with the highest in waste, followed by water.

Disability

19 identified in electrical

39 identified in utilities with the majority in waste, followed by water.

The energy workforce remains predominantly male – a common attribute of the traditional trades. There is a significant opportunity to grow female employment and increase participation in either full time or part time work.

The workforce is ageing and given the physical nature of work, some loss of skilled labour is expected. However it should be noted that more than half of all electricians fall within the 20yrs to 39yr age bracket indicating that ageing is not a critical concern for this sector.

[61] Australian Bureau of Statistics *Census 2011 – Electricians, Electrical Supply Industry, Gas Supply Industry, Waste Industry and Water Industry, TableBuilder data file*, viewed 5 March 2013, www.abs.gov.au

All sectors have continued to focus on employment of indigenous workers in particular. In particular:

- Horizon Power have indigenous employment programs in the regions and have invested in the pilot of a Certificate III qualification for very remote areas.
- Water Corporation have implemented a school based traineeship in water operations. The pilot course was offered to a cohort of Aboriginal students, building on other Aboriginal employment initiatives that have been offered.
- Local Governments, such as the City of Fremantle have strategic goals to increase the participation of Aboriginal people in their workforce.

New and Emerging Skills

For the electrical and energy utilities, emerging skills requirement are linked to the new network of energy generation, distribution, storage and consumption. For water and waste industries, the increasing re-use of products (diverting from landfill or re-using water) will drive skilling demand.

Rapid advances and adoption by the community of new technologies requires the electrotechnology workforce to engage in continued development of technical expertise to meet expectations in areas such as:

- Design and installation of grid connected photovoltaic (solar) systems
- Domestic and commercial/industrial 'integrated energy management systems'
- Installation of smart metering systems
- Energy efficiency management and auditing
- Co-generation and local distributed generation

Appliance servicing, electronic servicing, fire protection and electrical fitting have all been established as apprenticeships in Western Australia. EUPA does not suggest these occupations are 'emerging' in Western Australia, but the focus for skills development has shifted. The establishment of the apprenticeships as preferred pathways proposes to move the sectors away from employing fully qualified electricians where this is not necessary and to provide formal skills development pathways to replace ad-hoc training that currently occurs.

Energy Skills Queensland also offers some insight into future skills demand, noting the following skill areas and associated occupations[62]:

Technical Trades • Electrical Distribution Trades Workers • Electricians • Electrotechnology and Telecommunications Trades Workers • Technicians	Engineering • Power Systems Engineer • Electrical Engineer • Telecommunications Engineer • Technicians	Information and Communication Technology • ICT Security Specialist • Software and Applications Programmers • ICT Managers • ICT business and systems analysts
Data Analytics • Database and Systems Administrator • Data Scientist • Database Architect • Big Data Analyst	**Smart Grid Technology** includes meters, PV systems, energy management systems, energy storage, electric vehicles, brokering and energy auditing	Customer Services • Customer Services Manager • Public Relations • Smart Electricity Service Broker

Figure 16: Future demand for skilled occupations

[62] Middleton A. EnergySkills Queensland (2015), Electricity Industry, A Changing Workforce

For the water and waste industries, community engagement continues to be a focus. These industries are somewhat different to the energy sector that is being shaped by consumer behavior. Water and waste seem to be driven more by environmental conditions and compliance that require modification of consumer habits.

All industries are now reliant on higher level science, technology, engineering and mathematics (STEM) skills for the deepening skill requirements of higher level jobs. In a related manner, the preparation of school students for work is also highlighted as an area that industry generally believes must be addressed in a better manner by the education sector.

Finally, EUPA has worked closely with the **Underground Asset Locating Industry** to identify skills demands for the sector. Whilst the industry is aligned with civil construction, drivers for skilled workers rest with the asset owners – largely utility companies or local governments.

The sector has an important role in protecting cables and pipelines for safety and economic reasons.

At this stage, the industry does not appear to have matured to the point where further formal recognition of skills is possible, largely due to the small number of operators and the varying levels of compliance required by utility companies. However, the industry is raised in this plan as EUPA continues to work with major state and national peak bodies to explore a solution that will meet their needs.

Industry Issues Summary:

- Population growth in metropolitan and regional areas create growth in domestic housing sector and additional demand more services from all utilities.
- The rapid advancement in technology will shape the skills and labour needs of the future workforce.
- The cost of energy from traditional sources and using traditional infrastructure is increasing while new technology introduced to the sectors is decreasing in cost.
- Adoption of new technology is also changing consumption patterns and community/ government expectations.
- The appliance servicing sector seeks to implement the established apprenticeship.
- The profile of utilities industries is perceived to be low amongst job seekers, particularly school leavers.
- The utilities workforce is ageing. Attraction of youth is key to workforce sustainability
- Decreasing budgets, possible privatization of assets and increasing use of alliances/ public-private partnerships are driving measures to increase efficiency and shaping the workforce.
- The underground asset locating industry is exploring the establishment of formal entry pathways and recognition for skills specific to the sector.

Workforce Development Opportunities

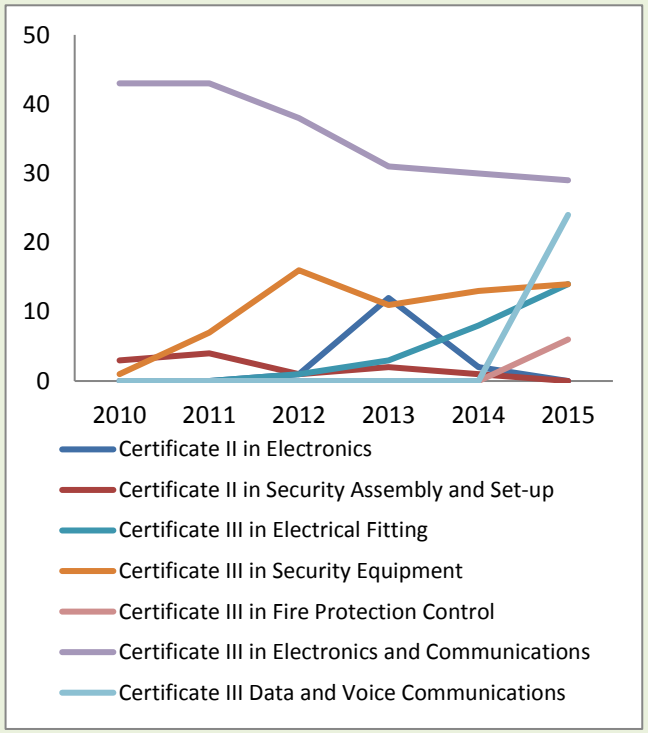
- Industry leaders must be supported to own and participate in workforce development
- The profile of industries can be raised through formal recognition of good practice
- EUPA can share knowledge and good practice to facilitate better workforce development outcomes across industry sectors
- Apprenticeship delivery strategies should be negotiated with training providers to meet specific industry needs and account for thin markets.
- The electrical pre-apprenticeship must be revised in light of new business rules and industry's preference for this entry pathway.
- The pre-apprenticeship can be implemented in the Wheatbelt to offer school students a new entry pathway to the electrical industry.
- Develop the electrical trade pathway as an Industry Specific Course for Secondary High School students to promote STEM development.
- Identify and develop material for delivery at schools specifically to support the waste sector to raise its profile and direct community behavior.
- Continue to assist the gas sector to develop a strategy to engage with school students, taking into consideration a 'whole-of-utilities' approach.
- Seek funding to develop VET in Schools strategies for the waste industry.
- Scope and explore the skills requirements of the future electricity supply workforce.
- Continue to liaise with peak bodies in the underground asset locating industry to identify barriers and enablers to further skills development.

Western Australia VET Statistics

Figure 17: VET Statistics for Electrical & Utilities Industries

UEE Training Package (except Certificate III in Electrotechnology Electrician)

Commencements



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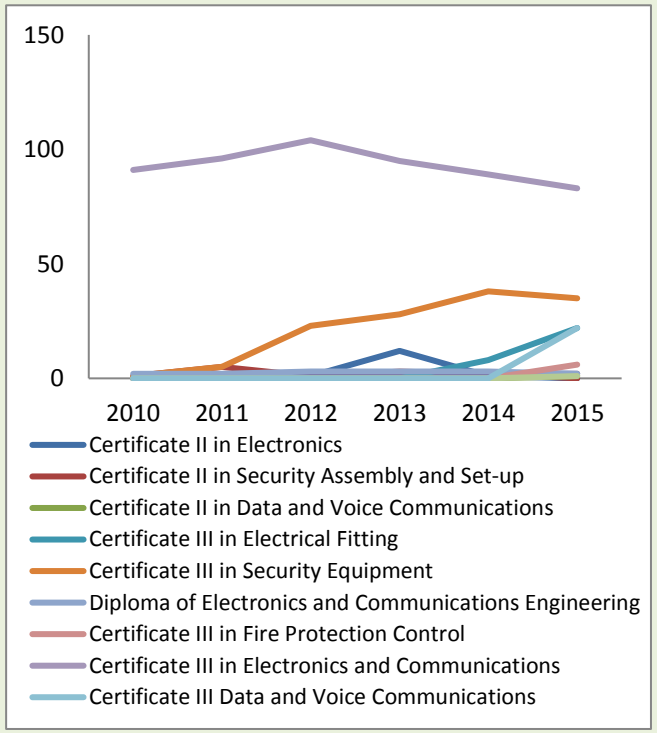

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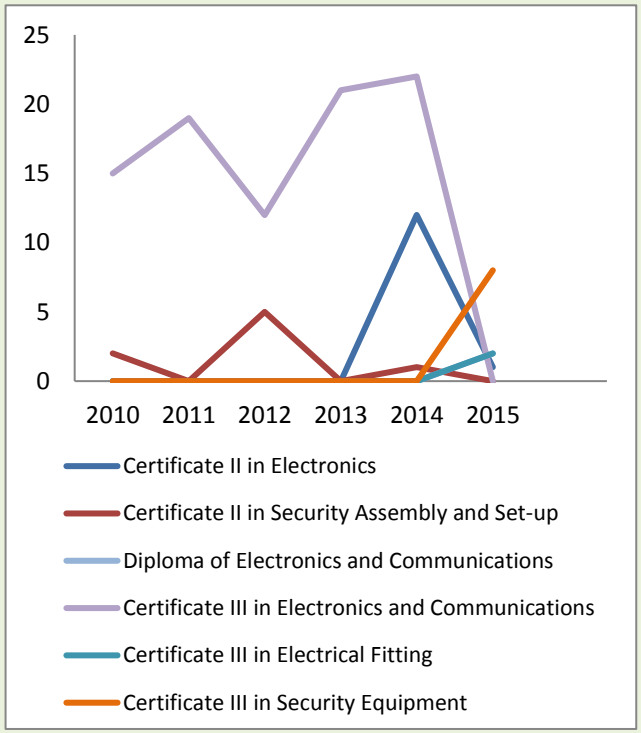
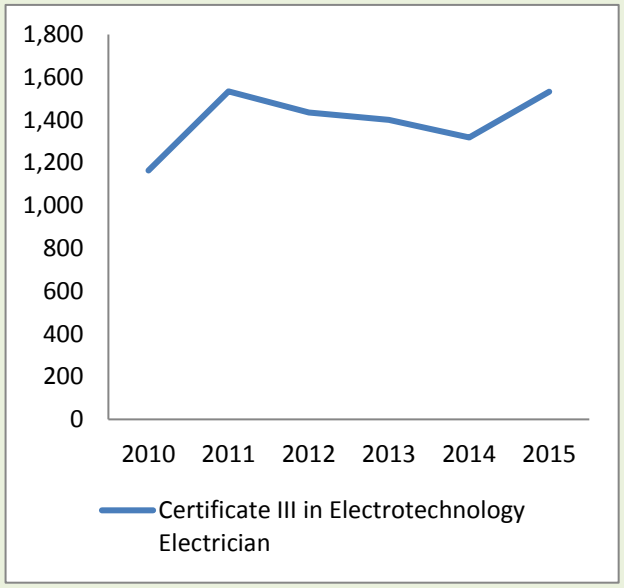
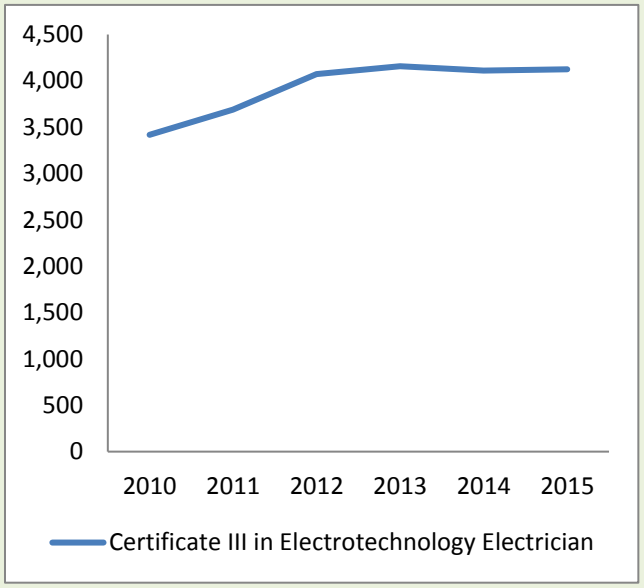
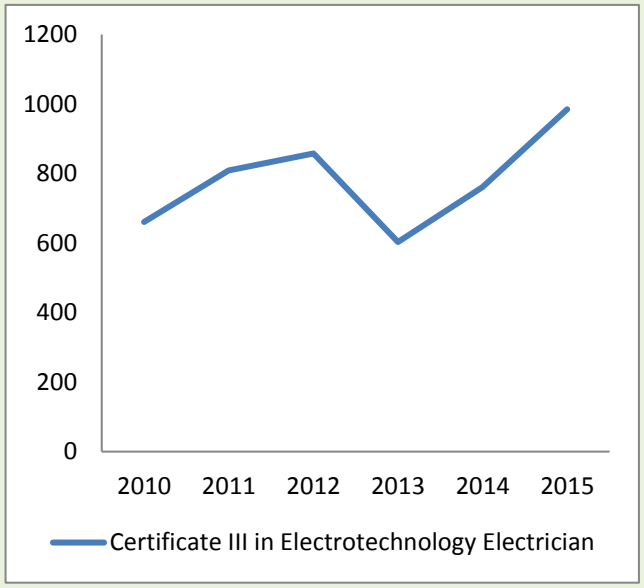


Graphs depict rolling comparative years (e.g. 2015 represents the period April 2014 to March 2015).





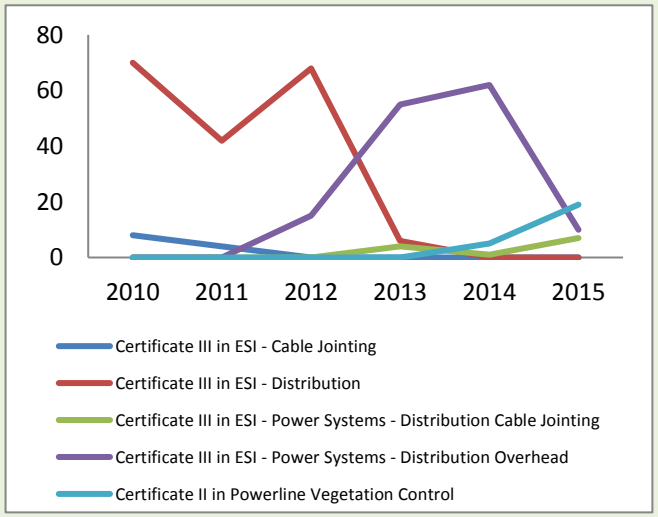


Graphs depict rolling comparative years (e.g. 2015 represents the period April 2014 to March 2015).

- EUPA is seeking to implement appliance servicing and electrical fitting
- EUPA is working to increase the value of electrical qualifications delivered to school students in the WACE
- The pre-apprenticeship for electrical industry is to be revised again to comply with 2016 Pre-apprenticeship business rules.
- Workplace experience for school students is a focus for EUPA as we work with industry to ensure students are provided with structured learning that inspires and promotes employers as an employer of choice, and that regulatory requirements for licensed occupations is complied with.
- The proposed implementation of a new 'industrial electrician' qualification may alter delivery of UEE qualifications in future. Career progression and credit transfer across qualifications should be considered.
- The implementation of electronic/appliance servicing apprenticeships is proposed to structure skills development, provide formal recognition for the occupations, provide opportunity for attainment of additional restricted licenses and to provide an alternative to employment of workers with a full electrician license.

Transmission and Distribution

Commencements



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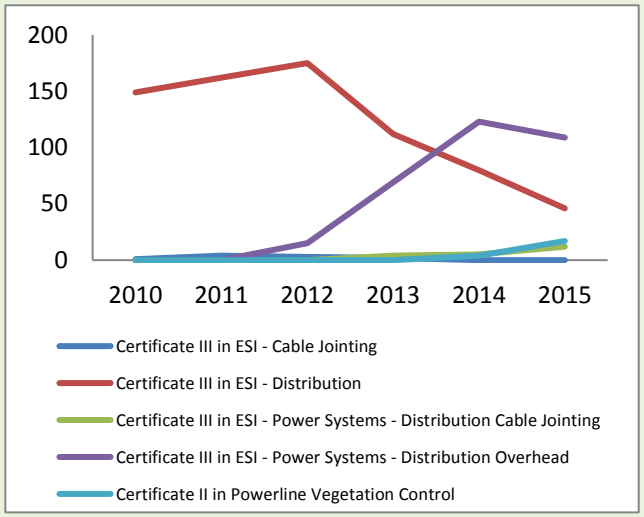

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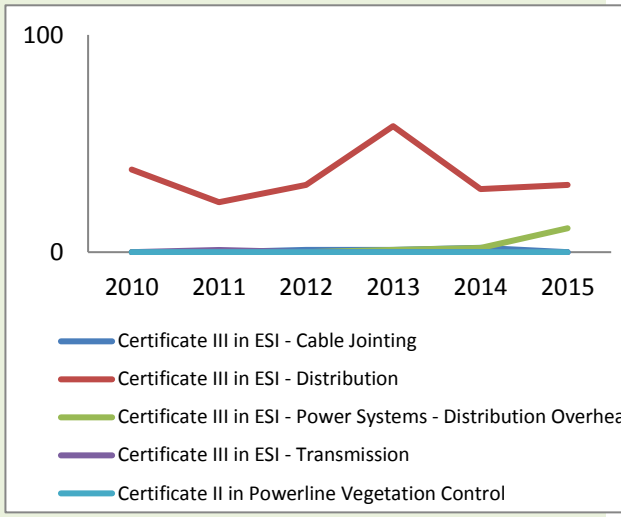
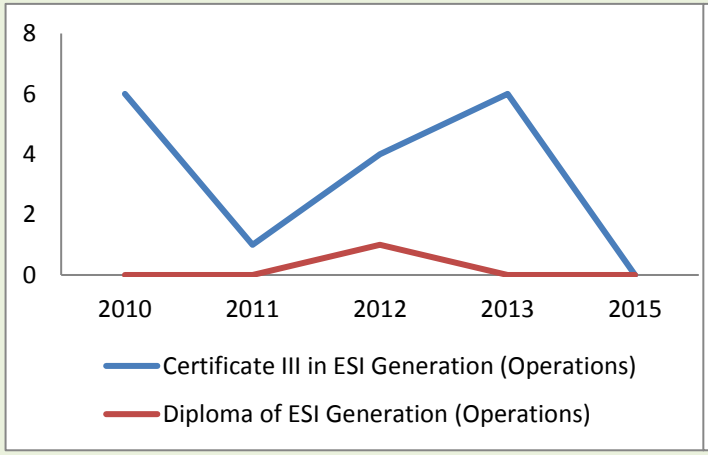


Electricity Generation

Commencements



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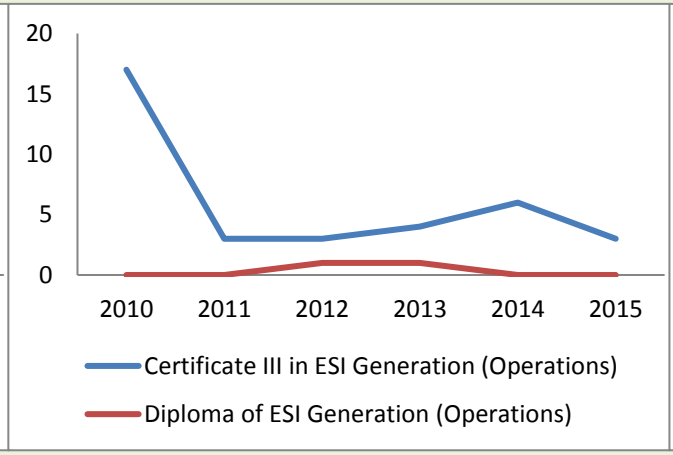

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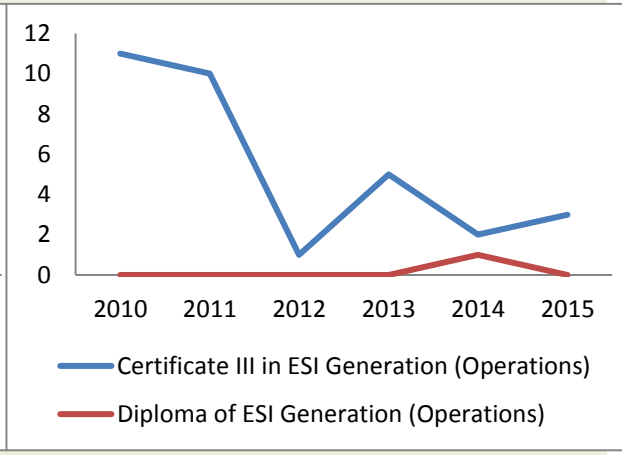
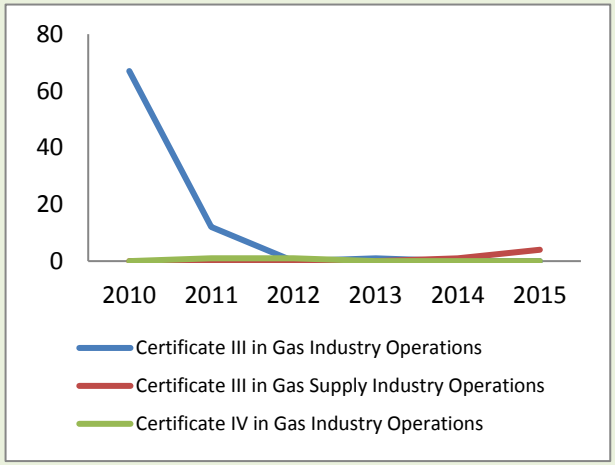


Gas Supply

Commencements



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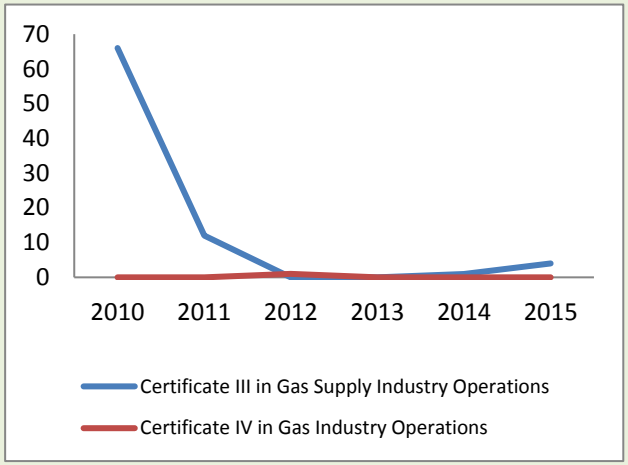
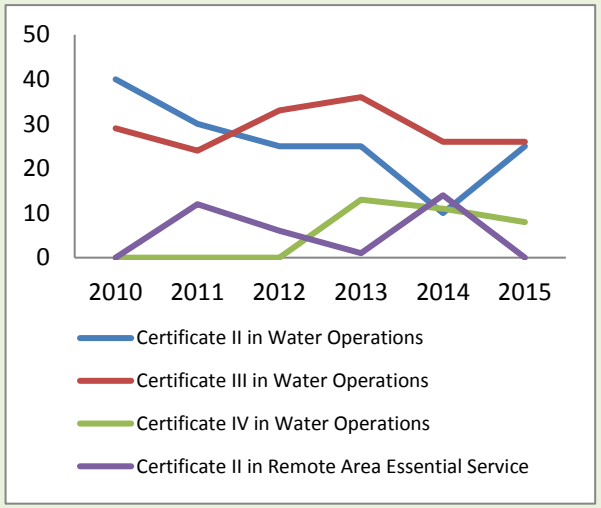


Completions

Nil

Water

Commencements



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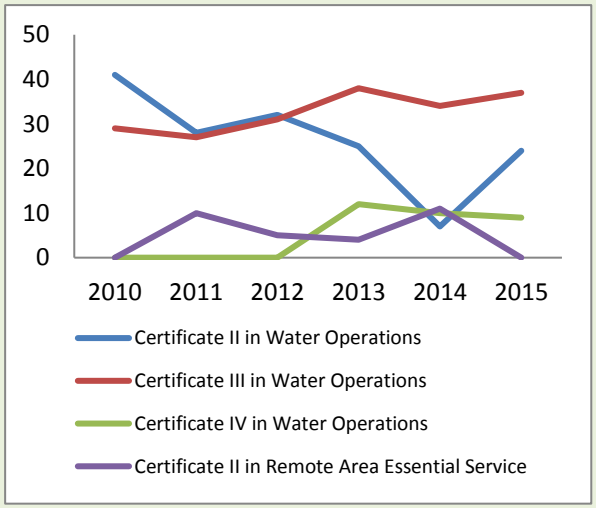

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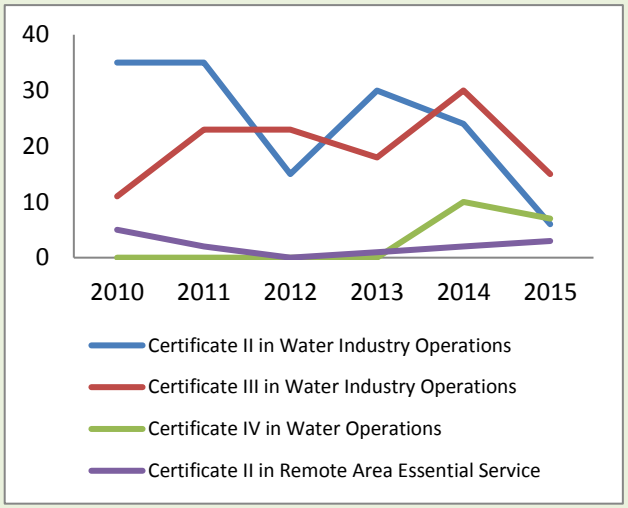
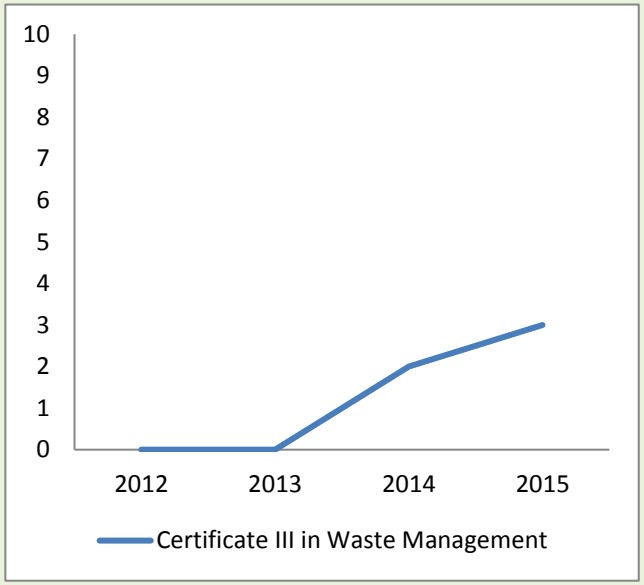


Waste

Commencements

In Training

Completions



- The utilities sector is undergoing massive reform and is under significant financial pressures. This is reflected in new training activity for the entire sector.
- The electricity supply industry is a relatively small workforce with the major training activity historically in overhead transmission lines.
- The gas industry is transitioning to a new apprenticeship in 2014. Implementation has been slow due to industry restructuring at national level.
- The water industry implemented a traineeship for school students with a small cohort of Aboriginal Students in 2015.
- The waste industry saw a spike in Certificate III enrolments due to a large intake of existing workers by one company.There have been no commencements to date in the newly waste truck driver traineeship.
- Despite low enrolments in utilitiy-specific qualifications, the utilities industry uses a large variety of training packages from other industry areas to meet their needs.

VET Trends and Issues

- EUPA is working to increase the value of electrical qualifications delivered to school students in the WACE
- The pre-apprenticeship for electrical industry is to be revised again to comply with 2016 Pre-apprenticeship business rules.
- Workplace experience for school students is a focus for EUPA as we work with industry to ensure students are provided with structured learning that inspires and promotes employers as an employer of choice, and that regulatory requirements for licensed occupations are complied with.
- VET programs for the utilities sector are of particular focus, including specific strategies to focus on waste and development of a new cross-sector program.
- There has been evidence of apprentices being indentured as electricians when performing the role of an electrical fitter. EUPA has worked with EnergySafety to ensure that apprentices are indentured into the correct trade.
- The proposed implementation of a new 'industrial electrician' qualification may alter delivery of UEE qualifications in future. Career progression and credit transfer across qualifications should be considered.
- The implementation of electronic/appliance servicing apprenticeships is proposed to structure skills development, provide formal recognition for the occupations, provide opportunity for attainment of additional restricted licenses and to provide an alternative to employment of workers with a full electrician license.
- EUPA continues to work with the utilities sector, and specifically the gas sector to look at new school-based delivery options.
- Training package review and streamlining continue to impose additional work on the industry sectors and the Training Council.
- The future training package landscape is very unclear. Whilst the Commonwealth has outlined a new system for training package development, there are substantial questions as to the involvement of employers and industry stakeholders in the new process.

Overview of the Public Administration and Safety Industry

The Industry

The **state and local government** sectors are responsible for:

- set state and local government policy;
- oversee government programs;
- collect revenue;
- create laws (statute and/or by-laws);
- distribute funds; and
- operate or provide administration of judicial authorities.

Their primary activities include financial and economic management, legislation enactment and enforcement, Policy formulation and administration and general government administration.

Governments significantly contribute to the economic development of Western Australia through direct employment of local people and through the provision of necessary support services that enable communities and the economy to function and grow. They do this by providing largely intangible outcomes known as 'public goods' and enabling higher levels, higher quality and/or more equitable consumption of services.[63]

Government exists at three levels. In accordance with our obligations, EUPA engages with and reports on the following:

- State Government – also known as the State Public Sector. This sector supports the elected government of the day in formulating and implementing policy; delivering services to the state; and regulating private sector activity where there are economic, social and environmental outcomes.
- Local Government – This sector sits closest to the communities that they serve. It delivers an enormous breadth of services that differ between each authority but often include:
  - The planning, construction and management of infrastructure, waste services, recreation and social infrastructure; and
  - Planning, monitoring and enforcement of environmental, health, animal, building and land use/development.

Please note that ABS census data has not been presented for government as the figures provided are clearly significantly different to those provided by government's own reports. This may suggest that many workers identify themselves at census time within the occupational role but not in the government sector.

Government agencies and authorities vary widely in relation to the size of individual entities. The Public Sector Commission identifies a total headcount of 138,307 against a Full Time Equivalent (FTE) of 108,979 as at March 2015[64]. Local Government employs approximately 14,500 FTE positions and 1,300 elected members across 139 local government authorities. The Public Sector Commission reported a total of 25,266 employees in local government[65].

Regulatory service providers enforce regulations and license and conduct inspections.

They are found in sectors such as consumer protection, licensing, motor vehicle testing and regulating roles performing roles such as:

- Consumer protection service
- Licensing and permit issuance
- Motor vehicle testing
- Regulating casino and other gambling
- Regulating food and agricultural standards
- Regulating qualification standards
- Weights and measures regulations

[63] Productivity Commission, *Report on Government Services*, 2014
[64] Public Sector Commission, *Western Australian public sector quarterly workforce report: March 2015*
[65] Public Sector Commission (2014), *DEOPE Annual Report*

The **Public Order and Safety industry** is responsible for:

- law enforcement;
- preservation of order;
- firefighting;
- civil emergency services; and
- operating correctional institutions.

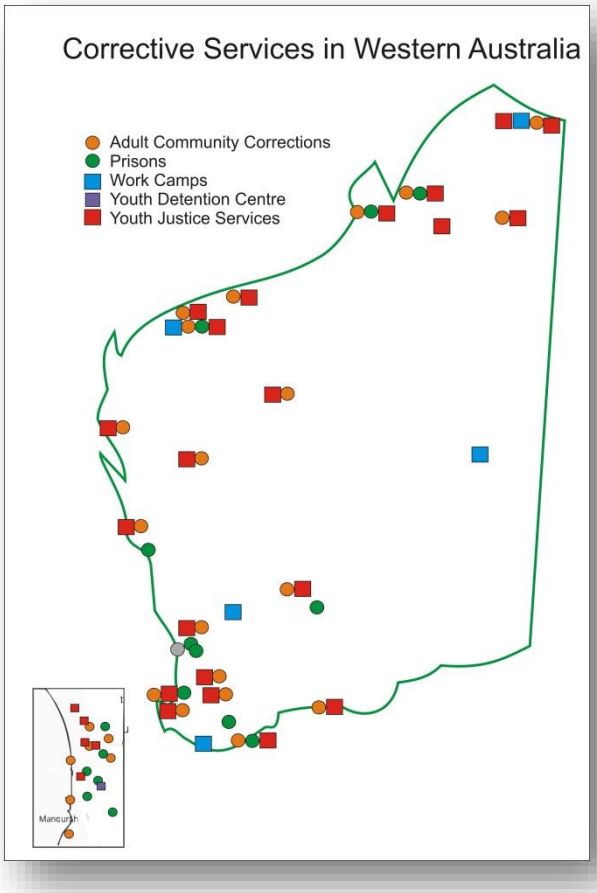
Primary activities include intelligence service operation, Policing, emergency services, fire prevention, firefighting and rescue services.

The public safety industry works to prevent and respond to natural and man-made threats and to provide the community with protection from those threats; seeking to ensure the security and safety of the state and its communities. The public safety industry requires a sustainable workforce of competent and capable career (paid) and volunteer personnel.[66]

The State Emergency Management Committee (SEMC) is Western Australia's peak emergency management body and is comprised of the WA Police, Department of Fire and Emergency Services, Department of Health, Department of Child Protection, Department of Premier and Cabinet, Department of Parks and Wildlife and the Western Australian Local Government Association.[67]

The WA Police reported a total of 6,189 Police Officers and 2,204 employees employed under public service conditions as at June 2014[68]. DFES reported a total headcount of 1,471 for June 2014[69] which, according to the Public Sector Commission's reporting has grown to 1,604 in March 2015.

In this plan, EUPA has highlighted specific agencies and organisations that operate in the public safety industry. It is important to recognise that other stakeholders also play significant roles in emergency management including local governments. The sector also relies heavily on a volunteer workforce. The Department of Fire and



[66] Government and Community Safety Skills Australia (2014) *2014 Environmental Scan*
[67] State Emergency Management Committee, *Member Profiles* <https://www.semc.wa.gov.au/about/committeestructure/memberprofiles/Pages/default.aspx> accessed 22 May 2014
[68] WA Police (2014), 2013-14 Annual Report
[69] Department of Fire and Emergency Services (2014), 2013-14 Annual Report

Emergency Services estimates the volunteer workforce to be in excess of 29,000 people.[70]

The **Corrective Services** Industry provides services that protect the community through offender management. The wider definition states that the sector implements the correctional sanctions determined by the courts and releasing authorities such as parole boards.[71] The CSC Training Package also includes roles that are wider than the ANZSIC definition. Job roles include direct prisoner supervision, facility management, offender rehabilitation and social services.

Organisations in this sector provide critical support services to offenders – diverting them from committing further crimes and assisting them to become more responsible citizens. This complex environment requires well-trained staff to ensure successful management of offenders in accordance with the regulatory requirements placed upon them.

In Western Australia, the sector is comprised of the Department of Corrective Services and Serco which manages Acacia Prison and prisoner transportation.

The Department of Corrective Services reports a headcount of 4637 against an FTE of 4,250.[72] Serco employs a total of 438 personnel at Acacia Prison, of which 278 are custodial officers.[73]

Figure 18: Corrective Services in WA

Public Sector, Local Government and Public Safety Oversight Bodies:

- Public Sector Commission
- Office of the Auditor General
- Corruption and Crime Commission
- Office of the Western Australian Ombudsman
- Department of Immigration and Border Protection
- Office of the Information Commissioner.
- Office of Multicultural Interests
- Department of Local Government and Communities
- State Emergency Management Committee (SEMC)

Union

- Community and Public Sector Union/Civil Service Association WA Police Union
- Australian Services Union (ASU)
- Local Government, Racing, Cemeteries Employees Union (LGRCEU)
- United Firefighters Union Western Australia
- WA Prison Officers Union
- Health Services Union

Associations:

- Institute of Public Administration Australia (IPAA)
- Local Government Managers Association (LGMA)
- Western Australia Local Government Association (WALGA)
- Institute of Public Works Engineering Australia (IPWEA)
- Australian Centre of Excellence for Local Government (ACELG)
- Australian Local Government Association (Parent of WALGA)
    - Australian Local Government Women's Association (ALGWA)
- WA Rangers Association
- Emergency Management Australia
- Australia and New Zealand Police Advisory Agency (ANZPAA)
- Australasian Fire and Emergency Services Authorities Council (AFAC)
- Association of Volunteer Bush Fire Brigades Western Australia
- SES Volunteers Association of Western Australia (SESVA)
- WA Institute of Translators and Interpreters
- Professionals Australia (formerly APESMA)

Major Employers

State Government	Local Government	Public Safety and Order
• Departments and Agencies	• Local Government Authorities (Shires, Towns and Cities)	• Dept of Fire and Emergency Services • Dept. of Parks and Wildlife • Western Australia Police • Surf Life Saving WA

[70] Department of Fire and Emergency Services, *A Safer Community*, <http://www.dfes.wa.gov.au/aboutus/corporateinformation/Pages/default.aspx> accessed 22 May 2014
[71] Productivity Commission (2013), *Report on Government Services 2013*
[72] Public Sector Commission (2013) *Western Australian Public Sector quarterly workforce report: March 2015*
[73] Serco Asia-Pacific, (2013) *Acacia Prison Annual Report 2012-2013*
[74] Department of Corrective Services (2013), *2012-2013 Annual Report*

		• Department of Corrective Services • Serco-Asia Pacific

Training (Government-specific providers listed only)

- Government Skills Australia Industry Skills Council
- Department of Environmental Regulation
- Department of Parks and Wildlife
- Department of Fire and Emergency Services
- Department of Corrective Services
- Department for Child Protection
- Department of Transport
- Serco Australia Pty Ltd
- Public Transport Authority
- WA Police
- Western Australian Local Government Association (WALGA) (Elected member training mainly)

Participation

Participation for the Public Administration and Safety sectors is reported by the Director of Equal Opportunity in Public Employment annually. This section summarises key statistics from that report. This summary should not be read in isolation and the reader is encouraged to read full detail at www.psc.wa.gov.au. 'Other authorities include government trading enterprises, police and electorate offices.

Aboriginal Employment, 2014		Representation (%)				
		2010	2011	2012	2013	2014
Public Sector	All staff	2.9	3.1	3.3	3.0	2.9
Local Govt	Indoor	1.4		1.8	1.7	1.4
	Outdoor	6.4		6.1	6.3	4.6
Other Authorities	All staff	1.1	1.1	1.4	1.5	1.6

Table 6: Aboriginal Employment in Public Administration

The percentage of Aboriginal people in the public sector is 0.1% higher than the population of working age Aboriginal people. Whilst this is a positive outcome (and higher than the nationally agreed target of 2.6%), WA has committed to a 3.2% target.

58% of Aboriginal people work at Level 3 or below and 55% work in regional WA.

Disability		Representation (%)				
		2010	2011	2012	2013	2014
Public Sector	All staff	3.5	4.2	4.8	2.6	2.3
Local Govt	Indoor	1.8		1.7	1.7	1.4
	Outdoor	3.3		3.1	2.9	3.0
Other Authorities	All staff	1.7	1.5	1.5	1.6	1.4

Table 7: Employment of people with a disability in Public Administration

The percentage of people with a disability in the public sector is 0.4% higher than the estimated population of people with a disability in WA.

Employment at levels 1 to 6 is fairly consistent and 77% work in metropolitan Perth. However, 62% are over the age of 45.

Women		Representation (%)				
		2010	2011	2012	2013	2014
Public Sector	All staff	67	69	69	71	72
Local Govt	Indoor	83		79	81	78
	Outdoor	92		87	88	84
Other Authorities	All staff	77	65	66	65	71

Table 8: Employment of women in Public Administration

Public employers work hard to eliminate discrimination, including discrimination based on gender. In 2014, 30% of the Senior Executive Service was female. 48% of all women in the public sector work part time.

Culturally Diverse Workers		Representation (%)				
		2010	2011	2012	2013	2014
Public Sector	All staff	13.1	13.1	12.7	12.4	12.5
Local Govt	Indoor	14.6		19.6	21.4	18.0
	Outdoor	11.4		16.0	17.6	15.0
Other Authorities	All staff	16.0	17.8	19.6	13.5	12.3

Table 9: Employment of people from culturally diverse backgrounds in Public Administration

Estimations of Western Australia's working age population of people with culturally diverse backgrounds are 14%. Employment across public employment is fairly consistent with this.

Further, the report provides evidence that culturally diverse people are employed at pay levels that are consistent with the wider sector.

Youth		Representation (%)				
		2010	2011	2012	2013	2014
Public Sector	All staff	5.5	5.5	5.4	5.1	4.6
Local Govt	Indoor	15.0		11.4	14.2	15.5
	Outdoor	10.1		6.4	7.0	8.5
Other Authorities	All staff	6.8	6.1	5.6	6.3	6.2

Table 10: Employment of youth in Public Administration

20% of all working age people in WA are 15 to 25 years of age. Interestingly the representation of youth in the public sector fell 0.5% from 2013. This compounds a 1.5% increase in mature age workers (45 and over).

Key Workforce Development Strategies announced in 2015

- The Department of Fire and Emergency Services introduced a new strategy for 2015, providing an Aboriginal Firefighter Cadetship program that commenced in January.
- The Local Government Managers Association (LGMA) Western Australia announced the Lighthouse Project in May 2015 which will improve employment of people with a disability.
- Many authorities and agencies participate in coordinated programs or manage specific recruitment and support programs to attract and retain under-represented groups.

Figure 19: Workforce Development Initiatives new in 2015

Public Administration and Safety Industry Trends

State Government, Local Government, Public Safety & Corrective Services

The trends affecting the public administration and safety industries are broadly summarised as follows:

- Focusing on efficiency and productivity. All sectors operate in an environment where expenditure is under particular pressure and expansion of partnership arrangements between government, the not-for-profit and private sectors are being explored.
- Refocusing on core functions. All levels of government must meet changing expectations of communities for services but balanced with available budgets.
- Ensuring cooperation and interoperability between stakeholders. In the emergency services sector the capacity to operate effectively under current legislative conditions is under examination. A review of associated legislation is under way and the management of volunteers is in focus.
- Using technology to provide better services. Each sector is using advances in technology to assist internal and external communication and business processes.
- Adapting new practices and workplace strategies to meet demand for services due to climate variability and extreme events.
- Changes in minor misconduct investigations will require broad upskilling across the sector.

The financial pressure on agencies and departments has grown exponentially with the latest programs implemented across government. [75]

The illustration to the right identifies the measures implemented as a result of the WA Government mid-year review of the budget.

The Workforce renewal policy is highlighted as it alone requires most agencies and departments to reduce the wage expenditure for each worker that leaves by 40%. Combined with existing and additional efficiency dividends, infrastructure and ICT savings and voluntary redundancies the sector is under immense pressure.

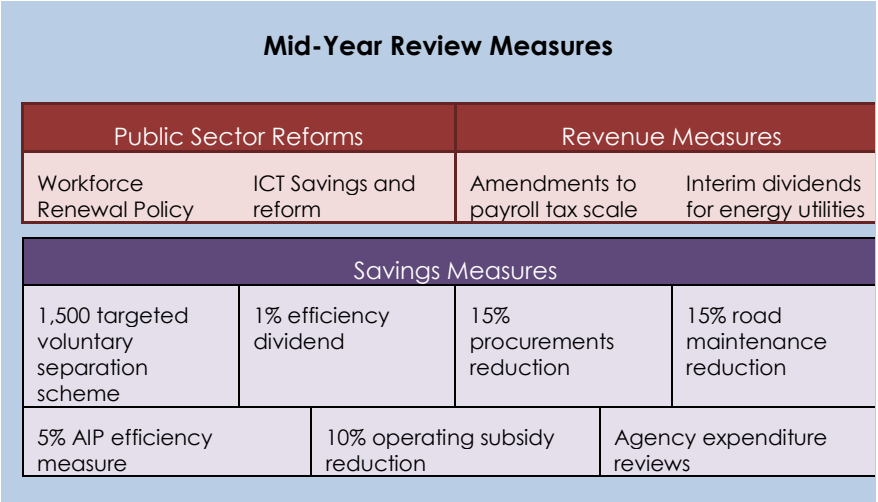


Figure 20: WA State Budget Mid-Year Review Measures

The following key policy and strategic documents contribute to shaping the public administration industries:

Government workforce is influenced by the following strategic initiatives:

- The Aboriginal Employment Strategy 2011–2015. This strategy seeks to assist the public sector to attain indigenous workforce participation rates that reflect the population of Western Australia.
- Employment Based Training Strategy 2013-2015. This strategy seeks to encourage the use of formal employment based training (including apprenticeships and traineeships) as a critical workforce development strategy.
- Equal Opportunity Commission substantive equality program
- Disability Employment Strategy 2013-2015
- ACELG/LGMA Future Proofing Local Government National Workforce Development Strategy 2013-2020

[75] WA Government (2014), Mid-Year Budget Review

Public Safety:

Frontline 2020[76]: This strategy builds on the Frontline First strategy. "It examines how to best deal with increasing demands in a climate of finite resources".

The underpinning principle is to adopt a new method of policing that redirects effort from administration to frontline services – effectively looking for more efficiency and effectiveness through larger local asset deployment. The program has been piloted in a single Perth region and is to be rolled out across the Metropolitan area now that some early evidence of success has been provided. The Peel region is to be transitioned next.

"Police are developing new operating model concepts… Response teams will be geared purely to deal with calls requiring more immediate assistance, leaving local policing teams free to operate at a grass-roots community level to solve local problems requiring a more consistent and sustained approach".

Department of Fire and Emergency Services – **New beginnings 2024[77]:** This strategy is predicated on inquiries that have been conducted into major incidents across Australia including the Perth Hills Bushfire Review and the Special Inquiry into the Margaret River bushfire. In its New Beginnings 2024 publication, DFES states:

"In Western Australia response demands are predicted to increase. *Changing weather patterns* are likely to elevate the frequency and severity of natural hazard emergencies including bushfire, cyclones, floods and storms. Coupled with *population growth* and *greater urbanisation* this means there is increasing potential for threat to life and property in affected communities".

Emergency Services Legislative Reform: The Department of Fire and Emergency has led work to develop a new legislative framework. The emergency management sector has operated with antiquated legislation and identified this as an area for reform. This legislation is still progressing through regulatory development processes.

Corrective Services Reform Program: The trend for the corrective services industry continues to focus on rising prison populations. The effect of mandatory sentencing has been raised recently in the media in relation to the expected increases in prison population and the current overcrowding already experienced in some facilities.[79]

The number of adult prisoners in Western Australian prisons was 5,484 in March 2015, an increase of 6% (378 prisoners) from 2014.

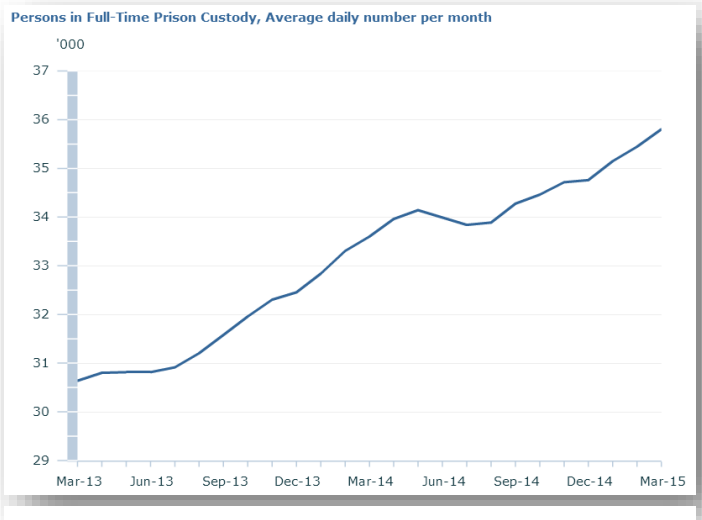


Figure 21: Prisoner Population Australia [78]

Local Government Reform: An interesting omission from this year's workforce plan is the impact of local government reform. The process, which initially concentrated on regional local governments before moving focus to metropolitan authorities has now stopped without success.

Predicted Growth

The Australian Government Department of Employment provides estimates of expected growth for industry and occupations.

The following table provides national data relating to occupations relevant to the electrical and utilities sectors. The table shows predicted growth across the occupations and can be used as a

[76] WA Police (2013) *Frontline 2020*, <http://police.wa.gov.au/Aboutus/Frontline2020/> accessed 23 May 2014
[77] Department of Fire and Emergency Services, *New Beginnings 2024*
[78] ABS (2015), *Prisoner Population Census* accessed July 2015
[79] Department of Corrective Services (2015), *Quick Reference Statistics for 31 March 2015 – Adult prisoners in custody*

guide, noting that this is not specific to Western Australia. Care must be taken not to draw conclusions solely on this data as the information presented is aligned to ANZSCO at a four-digit level. For maximum accuracy, data would need to be made available at six-digit level.[80]

Code	Occupation	Employment level - November 2014 ('000)	Department of Employment Projections		
			Projected employment level - November 2019 ('000)	Projected employment growth - five years to November 2019	
				('000)	(%)
1111	Chief Executives and Managing Directors	45.4	45.6	0.2	0.4
1112	General Managers	52.4	59.6	7.1	13.6
1321	Corporate Services Managers	9.1	10.9	1.8	19.8
1322	Finance Managers	51.8	53.5	1.7	3.2
1323	Human Resource Managers	44.9	47.4	2.5	5.6
1324	Policy and Planning Managers	23.6	26.1	2.5	10.7
	Business, Finance and Human Resource Professionals				
2211	Accountants	193.0	218.7	25.7	13.3
2231	Human Resource Professionals	56.1	61.7	5.5	9.8
2232	ICT Trainers	3.0	3.2	0.2	6.1
2233	Training and Development Professionals	26.8	28.9	2.0	7.5
2246	Librarians	12.0	12.8	0.7	6.2
2322	Cartographers and Surveyors	12.3	13.9	1.6	13.0
2326	Urban and Regional Planners	9.8	10.2	0.4	4.3
	Protective, Defence, Emergency Service Workers				
4412	Fire and Emergency Workers	18.5	22.3	3.8	20.3
4413	Police	53.5	59.5	5.9	11.1
4421	Prison Officers	15.9	17.0	1.1	6.9
	Office Managers, Administrators and Secretaries				
5111	Contract, Program and Project Administrators	125.0	131.7	6.7	5.3
5121	Office Managers	124.9	127.5	2.6	2.1
	General-Inquiry Clerks, Call Centre, Receptionists				
5311	General Clerks	252.1	327.7	75.6	30.0
5412	Inquiry Clerks	79.9	94.9	15.1	18.9
5421	Receptionists	162.2	175.0	12.8	7.9
	Numerical Clerks				
5511	Accounting Clerks	121.7	119.4	-2.3	-1.9
5512	Bookkeepers	111.3	121.7	10.3	9.3
5513	Payroll Clerks	33.6	34.5	0.9	2.7
	Other Clerical and Administrative Workers				
5994	Human Resource Clerks	7.8	8.4	0.5	7.0
5995	Inspectors and Regulatory Officers	30.7	29.7	-1.0	-3.2
5997	Library Assistants	6.9	6.3	-0.7	-9.5
	Machinery Operators				
7212	Earthmoving Plant Operators	43.2	39.4	-3.7	-8.6

Table 11: LMIP Occupation growth forecast to 2019

[80] Department of Employment, *Labour Market Information Portal, Occupation Growth Forecast to 2019*

The Department also provides industry data. The following table presents forecast employment numbers for each of the major industries:[81]

Level	Region	Industry	Employment level (Department of Employment Trend) - Nov-2014 ('000)	Projected employment level - Nov-2019 ('000)	Projected employment growth - five years to November 2019 ('000)	Department of Employment Projections (%)
4	WA	Public Administration and Safety	**79.7**	**84.1**	**4.4**	**5.5**
5	Greater Perth		*61.1*	*64.9*	*3.8*	*6.3*
6	Mandurah		1.0	1.1	0.1	15.3
6	Perth - Inner		4.4	4.7	0.3	7.5
6	Perth – NE		12.8	13.8	1.0	8.0
6	Perth - NW		16.9	18.0	1.0	6.1
6	Perth - SE		14.9	15.7	0.8	5.5
6	Perth - SW		11.1	11.9	0.8	7.0
5	Rest of WA		*19.1*	*19.7*	*0.6*	*3.1*
6	Bunbury		3.1	3.3	0.2	6.8
6	WA - Outback		9.3	9.7	0.3	3.4
6	WA - Wheatbelt		3.8	3.8	0.0	0.5

Table 12: LMIP Industry growth forecast to 2019

Major 2014 EUPA Public Administration & Safety Blog Posts[82]

- Public Safety role in Local Government
- City of Wanneroo makes utility-scale solar plans
- Financial focus in WA Government
- Employment people with disabilities in Local Government
- Australian Government Digital Transformation agenda
- Watson arrives in Australian Government
- Larger public service needed?
- Public Sector is an attractive place to work
- LGMA networks connect officers
- Public Sector IT strategies
- Internet of things to transform government
- Government Language Services policy
- Finance Cadetships for public sector
- WA State of the Sector report
- Immigration and Border Protection report: The people of Australia
- Outcome of Metropolitan Local Government reform
- 000 emergency operator review
- First meeting of the Law, Crime and Community Safety Council (COAG)
- Translators and Interpreters taskforce implemented

[81] Department of Employment, *Labour Market Information Portal, Industry Growth forecast to 2019*

[82] Electrical Utilities and Public Administration Training Council (2014) <http://www.eupa.com.au>

Labour and Skill Demand

Government

The public administration and safety sectors have a strong training and professional development culture.

Despite the current political environment, the state government continues focus on the need for human resource management skills as a priority. Due to recent legislative changes, the conduct and management of investigations is also a broad skills demand for the public sector.

The shift for government toward management of service providers rather than being a service provider itself has resulted in skills needs for finance, project and program administration. Budgets handed down by state and commonwealth governments have restated and reinforced a need for governments to engage with the not for profit and private sector to ensure services are sustainably managed.[83][84]Government sectors also continue to work hard to increase its profile to youth. This cohort is still represented at low levels, which when combined with the ageing of the existing workforce provides impetus for change.

The Public Sector Commission continues to offer valuable entry pathways which have been strengthened by the inclusion of new cadetships that were gazetted in 2014. Entry pathways now include Aboriginal and disability employment pathways, employment based training, internships, traineeships, graduate programs and the entry-level employment program.[85]

Local Government suffers a low profile among school leavers who tend to focus on their desired occupation without recognizing the occupation exists within a government setting. In the regions, local governments can be a major employer for the local community. The inability for some towns to keep youth in the area also affects local government staffing.

In addition to the skill requirements of state government, local governments have a need for workers with skills including building inspection, environmental health, regulatory compliance (roles such as rangers) and planning. These skills needs were reported to the Department of Training and Workforce Development in February 2015.

According to Government Skills Australia, occupations in demand include:

- Urban/Town Planners
- Environmental Health Officers
- Surveyors
- Community Customer Service roles
- Senior Management
- Accounting and Finance Roles
- Procurement specialists
- ICT professionals

Public Safety and Order

The public safety industry largely enjoys a positive profile in the community. Stakeholders have historically managed labour needs by implementing overseas recruitment through employer-sponsored visas and the training of their core operational staff without intervention from the Department of Training and Workforce Development.

EUPA continues to expend effort to better understand and provide for the volunteer workforce, which is continually under pressure to attract and retain workers. The Department of Fire and Emergency Services has sought to utilise alternative training methods such as e-learning to meet regional volunteer needs and state training providers are keen to work with DFES to provide skilling solutions in regional areas.

The demand for prison officers and health professionals who support the operations of prisons and rehabilitation of offenders remains high. The Department of Corrective Services specifically raised the need for additional prison officers to meet future demand at the May 2014 Public Administration Industry Working Group.

[83] WA State Government, *2015-2016 Budget* <http://ourstatebudget.wa.gov.au>
[84] Australian Government, *2015-2016 Budget* <http://budget.gov.au>, accessed
[85] Public Sector Commission, *Employment* <http://http://publicsector.wa.gov.au/workforce/employment>, accessed 23 May 2014

Government Skills Australia advises the following occupations are in demand:

- Volunteer and Auxiliary Firefighter
- Police Officer
- Correctional Officer
- Probation/Parole Officers

As emergency response and management is a shared function and one that involves a large proportion of volunteers located across the state, the skilling of the workforce presents particular difficulties. The volunteer workforce, currently managed by local governments also remains a focus for EUPA.

Regional Impact

Public administration and safety workforce planning is heavily influenced by the future growth of regional populations. All regional plans, with the exception of the Wheatbelt identify an expectation for population growth.

Figure 22: Map of Local Government regions

The main issues are:

- Population expansion in regional areas is creating demand for higher levels of governance, public safety and correctional services.
- Governance in some regions of Western Australia is still maturing. Local Governments are only now operating with integrated strategic plans that unite community governance with financial and workforce planning.[86] A focus on elected member skilling has commenced.
- Larger populations and urbanisation in the regions is causing public safety stakeholders to put in place strategies and plans to manage natural disasters and extreme events.
- The public safety industry relies heavily on volunteers for operational responses to emergency events. Complex issues surround the availability of volunteers to react to emergency events. Some issues, such as the incidence of fly-in-fly-out workers are particular to the regions.
- Population is highest in South West of WA resulting in a higher density of government agencies and authorities.

[86] Local Government Managers Association WA (2014) *Personal Communication*

Regulatory Requirements [87]

State Government

The following acts impact upon the public sector:

- Auditor General Act 2006
- Corruption and Crime Commission Act 2003
- Criminal Code Compilation Act 1913
- Disability Services Act 1993
- Equal Opportunity Act 1984
- Financial Management Act 2006
- Freedom of Information Act 2006
- Industrial Relations Act 1979
- Minimum Conditions of Employment Act 1993
- Occupational Health and Safety Act 1984
- Public Sector Management Act 1994
- Public Sector Management (General) Regulations 1994
- Public Sector Management (Redeployment and Redundancy) Regulations 1994
- Public Service Regulations 1988
- Public Interest Disclosure Act 2003
- Salaries and Allowances Act 1975
- State Records Act 2000
- Electoral Act 1907
- State Supply Commission Act 1991

In addition to the above legislation, the public sector is also required to act within the following regulatory framework:

- Premier's Circulars
- Commissioner's Circulars
- Labour Relations Circulars
- Treasurer's Instructions
- Approved Procedures and Administrative Instructions
- Public Sector Standards in HR Management
- Public Sector Code of Ethics

The WA Government is not only bound by legislation, but is often required to regulate other industries and activities on behalf of the State (e.g. electrical licensing, fisheries, environmental regulation, etc.).

Minor Misconduct: In December 2014, Parliament passed the Corruption and Crime Commission Amendment (Misconduct) Act 2014 (CCM Act). The changes make the Public Sector Commission (PSC) responsible for the oversight of minor misconduct of public officers and for misconduct prevention and education programs. The Corruption and Crime Commission (CCC) will now focus its attention on police misconduct, and on serious misconduct and corruption.

Local Government

Local Governments operate under a statutory framework and are also responsible for administering various legislation, policies and by-laws (totaling over 470 individual pieces of legislation).

As a government agency, the Department of Local Government is established under the Public Sector Management Act 1994.

Local Governments are enabled through the provisions of the Local Government Act 1995.

WA Police

Enabling Legislation:

- Public Service Act 1904
- Police Act 1892

Police Officers are sworn into service using powers provided in the Police Act 1892.

The WA Police administers 22 acts and their associated regulations.

[87] State Law Publisher WA (2015), *Acts and regulations in force*

Department of Fire and Emergency Services

The new department was established through the provisions of the Public Service Act 1904. It administers the following acts of parliament:

- Bush Fires Act 1954
- Emergency Management Act 2005
- Emergency Services Levy Act 2002
- Fire and Emergency Services Act 1998
- Fire Brigades Act 1942

It is further impacted by a further sixteen Acts. There were a number of changes to legislation that have allowed operational and structural changes to take effect. The Department recently released a discussion paper to progress the debate around new emergency services legislation.[88]

Corrective Services:

The following acts are administered by the Department of Corrective Services:

- Court Security and Custodial Services Act 1999
- Dangerous Sexual Offenders Act 2006 (s 18, 21 and 32 and Pt 2 Div 3 and 5 and Pt 5)
- Prisoners (International Transfer) Act 2000
- Prisoners (Interstate Transfer) Act 1983
- Prisons Act 1981
- Sentence Administration Act 2003 (Pt 1, Pt 2 Div 2, Pt 5 Div 1-3, Pt 6, 7 and 8 and Pt 10 [other than section 114 and 115 A])
- Sentence Administration (Interstate Transfer of Community Based Sentences) Act 2009
- Young Offenders Act 1994

Major Challenges and Barriers

Gender Balance: When considering both levels of government (state and local) women have a lower salary profile than men. Government has worked hard in recent years to address barriers that stand in the way for women to access leadership and 'elected member' positions. These gender equity issues continue to be addressed by government through coordinated efforts of the Public Sector Commission (state government) and associations in local government (e.g. WALGA, LGMA and ACELG).

For the public safety and corrections industries, male workers participate at higher levels in core operational roles.

Ageing Workforce: The Public Administration workforce has a high proportion of older workers and a low proportion of youth.[89][90]

For the public safety industry, the reasons for the loss of mature age workers align to those in the trade – i.e. that work is physically (and often mentally) demanding. However, for public administration roles in state and local governments, the same does not necessarily apply. The loss of corporate knowledge is likely to impact on provision of services if not managed in an effective manner.

Indigenous Employment Opportunity: The Public Sector Commission continues to roll out its Aboriginal Employment Strategy and specific reference is made to indigenous employment issues by the Director of Equal Opportunity in Public Employment.[91]

Public administration sectors are ideally placed to offer exceptional employment opportunities to indigenous persons. For example, local governments are geographically dispersed and offer an enormous variety of job roles that may attract a wide cohort of indigenous workers.

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[88] EUPA Training Council (2014) *DFES concept paper outlines preferred legislative reform <http://www.eupa.com.au/2014/04/dfes-concept-paper-outlines-preferred-legislative-reform/> accessed May 2014*
[89] Public Sector Commission (2013) *Director of Equal Opportunity in Public Employment 2013 Annual Report*
[90] Hastings, C., Ryan, R., Gibbs, M & Lawrie, A. 2015, Profile of the Australian Local Government Workforce 2015 Report, Australian Centre of Excellence for Local Government, University of Technology, Sydney
[91] Public Sector Commission (2013) *Director of Equal Opportunity in Public Employment 2013 Annual Report*

Identity of Occupations in ANZSCO: Most occupations across the public sector fall generically under ANZSCO codes that describe corporate managerial and administrative roles (private sector). This does not reflect the specific difficulties experienced by the public sector to attract workers. As such occupations in these industries are lost in the wider application of the ANZSCO.

EUPA's engagement with the Department of Training and Workforce Development has identified that the public administration sectors are not considered 'industries' in their own right. Instead, they have been labeled 'sub-sectors' of the wider business/private sector. Coupled with broader policy directives relating to the ineligibility of state government to access public funding at state and commonwealth levels, the industry is forced to consider allocating more of its budget (appropriation through treasury) to staff development. In the current political and economic environment this leads to severe pressures on the staff development budget.

Government is also commonly thought of as a machine and workers often do not receive the same recognition as workers in other sectors. For example, the political actions at state and commonwealth levels that focus on smaller leaner government through non-renewal of contracts and not replacing members who leave does not receive any compassionate reporting in the media. Conversely, a reduction in workforce size in a comparable magnitude in other industry sectors receives much greater community sympathy.

Population Growth: Population growth throughout Western Australia is predicted to be sustained over the long term with estimates between 5.4 and 7.7 million by 2061[92]. The public administration industry provides the essential governance and safety services that allow communities to grow. Pressure is expected within the metropolitan area to provide services to more people with fewer resources and in the regions where additional barriers may exist to attract workers to a particular location.

Improving Industry Profile: The Public Administration industry sectors seek to improve the means by which industry occupations are promoted to the community, school leavers and job seekers.

It is the industry's view that promotion of the Public Sector and Local Government across the community will need to continue to highlight the breadth of work, stability and the flexible employment conditions available as well as the wide range of employment opportunities in customer service, technical, para-professional and professional roles.

Competition for skilled labour: The labour market in Western Australia has relaxed in recent times. However, the Clarius Group notes that employers seeking lower skilled workers have benefited most. Highly skilled workers are considered to still be in relatively high demand.[93] Program and project management skills, finance, and human resource expertise will continue to be a focus for public administration.

Training Provider Capacity: The training sector still largely fails to react to the public administration industry's strategic direction to promote government qualifications over those that come from the generic business sector.

The sectors are also constrained by government policy in relation to the funding of training for core functions. That is:

- Public sector agencies cannot access funded training for professional development of their staff. Entry level training for government qualifications is limited to traineeships and a pilot for three Diploma level cadetships (no funded institutional delivery).
- Local Government – Due to the large number and geographic distribution of local governments the training sector has largely ignored the specific needs of this sector. The LGMA has provided direction to the sector by accessing commonwealth funds, however this program has now ceased.
- Public Safety and Corrections – Typically enterprise RTOs, these organisations also largely fund their own entry level and professional development training. Even where traineeships exist, the Department of Training and Workforce Development apply a policy position that excludes stakeholders from accessing funding.

[92] Australian Bureau of Statistics *Western Australia Population Size* <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/3222.0main+features112012%20(base)%20to%202101> Accessed 15 May 2014

[93] Clarius Group (2014) *Clarius Skills Indicator, March 2014*

Further, employers in the public administration sector have been unable to access commonwealth funding in the form of employer incentives, workplace English language and literacy and workforce development funding. EUPA notes that some programs have been identified to close in the latest Commonwealth Budget, but employer incentives remain out of reach for public administration stakeholders. In 2013, Government Skills Australia Industry Skills Council held approximately $4 million in federal workforce development funding that could not be accessed by the majority of the industries it represents.

Training Demand: There is a strong training culture in the public administration sector, however a large investment in training falls into short courses and unaccredited professional development activities. Training providers label public administration delivery as 'thin market'.

Three new cadetships have been conditionally established as an entry pathway that fills the gap between current traineeship and internship programs.

An interesting recent change is the decision by WA Police to stop offering nationally recognised qualifications. The sector believes it is best to align solely to nationally developed practice standards that were developed by the Australia New Zealand Police Advisory Agency.

Climate Change and Environment: Government climate change and carbon reduction policy is driving demand for additional workforce capabilities in environmental and sustainability policy, regulation and technology applications.

Disaster response: There is a continued trend of significant natural disasters and emergency events, although the Department of Fire and Emergency Services noted some relief in its 2013 annual report. Having said that, DFES still points out a number of large scale events that required multi-agency response. These events challenge the state's capacity to manage emergency response and the interoperability of agencies. Industry can expect continued pressure due to:

- Longer and more intense fire seasons
- Urbanisation at the fringes of metropolitan Perth and regional centres
- Public scrutiny of causes and management of emergency events
- Pressure on volunteer managers to maintain a sustainable workforce.

Government Workforce Planning: The Public Sector has made significant investment in workforce planning and development through the Public Sector Commission. In 2013 the Public Sector Commission established a Centre for Public Sector Excellence that aims to build the skill, behavior and expertise for a capable, future-focused and sustainable workforce.[94]

New and Emerging Skills

- The Public Administration Industry is focused on the skills of its human resource officers/managers, finance and program/project administration managers.
- In 2015, minor misconduct investigations have been moved from the Corruption and Crime Commission resulting in a need for skills development to manage and conduct investigations in the public sector.
- Local Government focuses on regional elected members who are operating in environments of increasing complexity and accountability.
- Technology continues to enable new ways of working across the sector that requires workers to be develop new digital literacy.[95]
- Emergency response training is being revised by the Department of Fire and Emergency Services to provide better pathways and recognition of specific roles. The finalisation of emergency management legislation will create better clarity regarding roles and functions, ultimately allowing external training providers to consider their capacity to assist the sector.
- Intelligence and investigative processes continue to evolve in light of new technological threats and opportunities.

[94] Public Sector Commission, *Centre for Public Sector Excellence* <http://www.publicsector.wa.gov.au/centre-public-sector-excellence>, accessed 24 May 2014
[95] Government and Community Safety Skills Australia (2014) *2014 Environmental Scan*

Industry Issues Bullet Points:

- Public administration, safety and order services are required state-wide; however there is a concentration of service delivery in the south west corner of the state.
- The Public Administration industry workforce is ageing and representation of youth remains low.
- Government seeks highly skilled human resource managers, finance and program/project managers to move toward smaller government.
- Minor misconduct investigations have been moved from the Corruption and Crime Commission.
- Cadetships have been implemented in the government sector to provide a new entry pathway between traineeships and internships.
- Local Government experiences demand for regulatory roles, environmental health and building inspection roles.
- Local Government Reform failed in 2015.
- Commonality of occupations and skills requirements with other industry sectors can hide industry-specific issues from VET policy makers.
- Public Safety industry strategies (Frontline 2020, New Beginnings and Corrective Services reform programs) are reshaping the workforce to meet government and community expectations.
- Women tend to be employed at lower salary levels in public administration. Males occupy a much larger proportion of positions in the public safety industry.
- Emergency Management Legislation is still yet to be finalised affecting volunteer management and training.
- Emergency management and response is shared across many stakeholders in the public administration sector requiring high levels of interoperability.
- The corrective services industry is facing higher prisoner populations due to community population growth and mandatory sentencing laws.
- Adoption of technology in nearly all aspects of service delivery is requiring additional digital literacy skills.
- All sectors are operating with reducing budgets and significant pressure to operate with capped resources (human and physical).

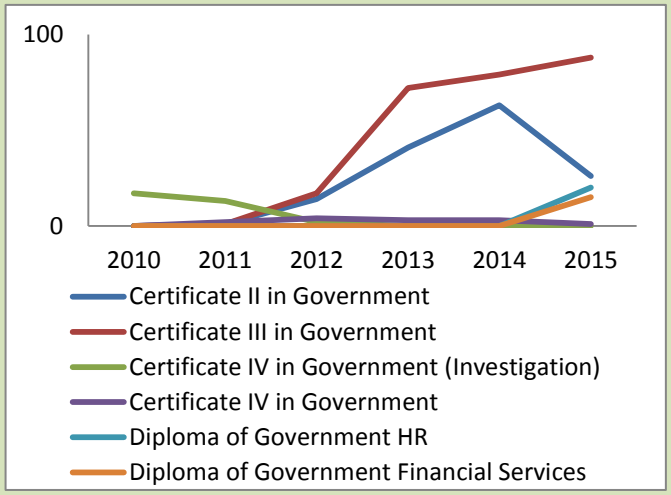
Workforce Development Opportunities

- Evaluate cadetships in state government to improve access to training for specific occupations.
- Assist with the implementation of investigation training in government.
- Assist peak industry bodies to engage and promote workforce development strategies.
- Liaise with training providers to ensure industry needs are addressed.
- Explore the role of State Training Providers in the delivery of emergency management/response training in the regions.

VET Statistics

[96]State Government

Commencements



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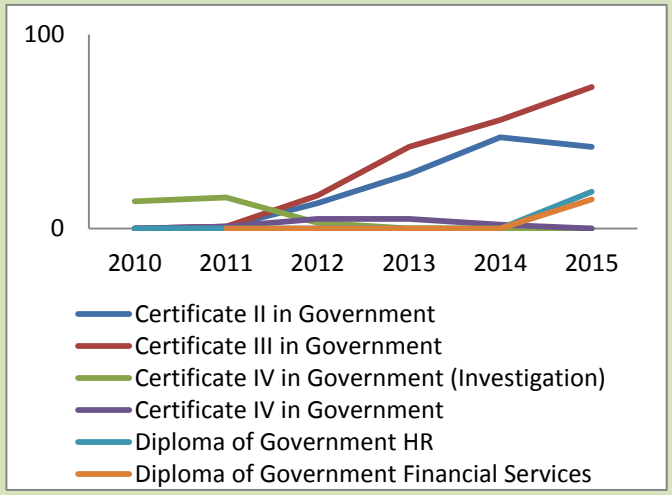

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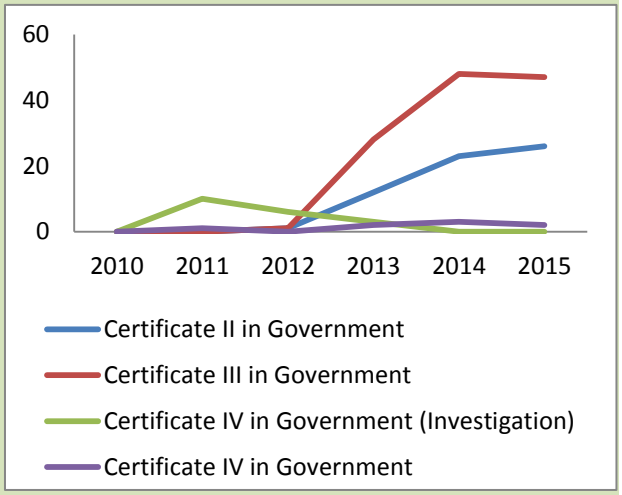

Local Government

Commencements

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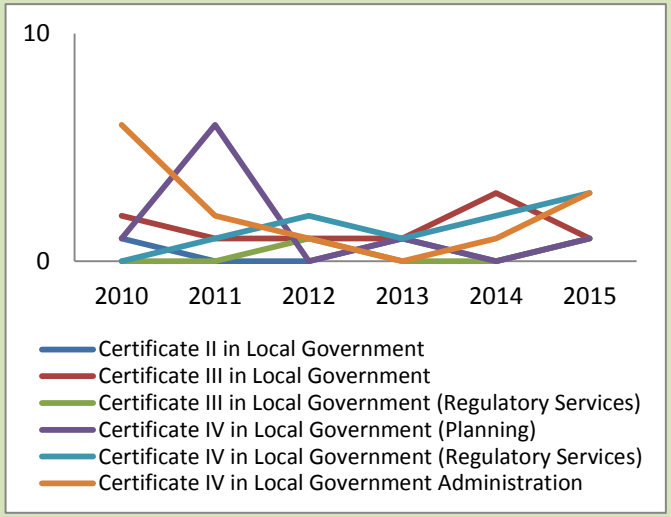
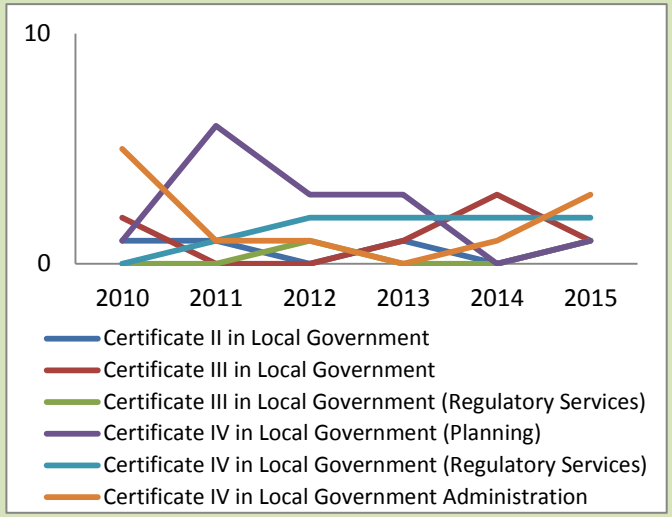
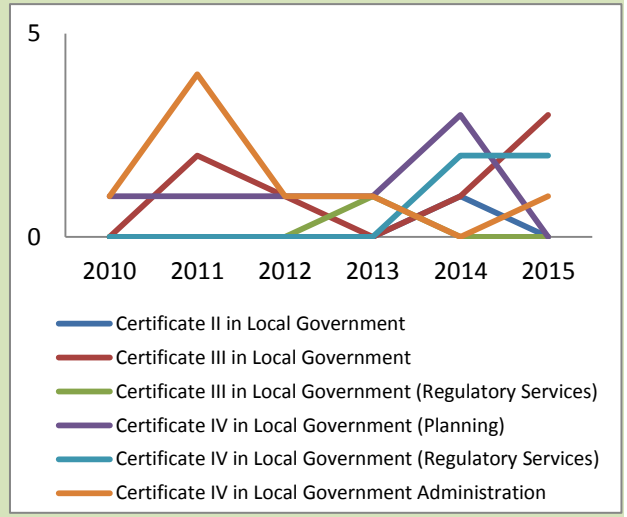
[96] Department of Training and Workforce Development, *COGNOS datacubes* accessed July 2015





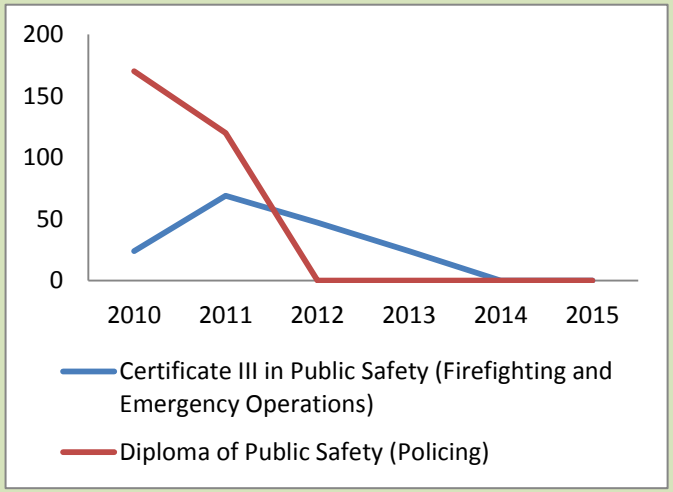


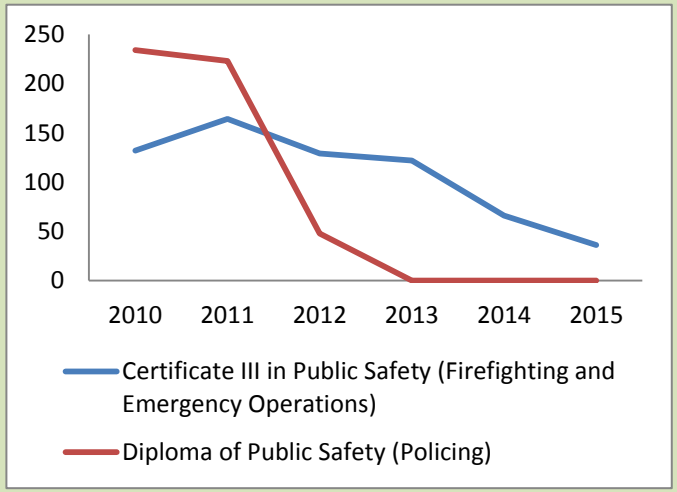
Public Safety

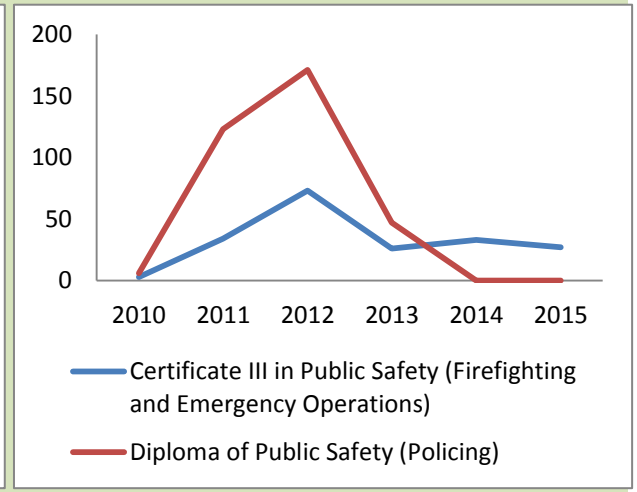
Commencements

In Training

Completions





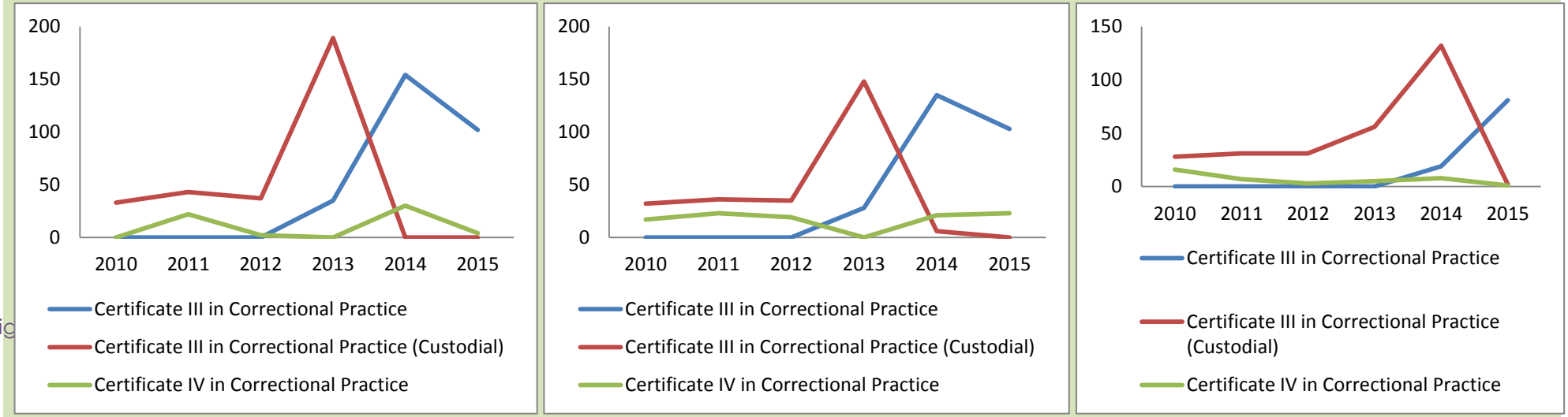


Corrective Services

Commencements

In Training

Completions



Fig

- Delivery of Government qualifications remains relatively strong considering the pressure on the sector. The Certificate III in Government remains the strongest performer.
- Additional 'Cadetships' continue to be implemented in the Public Sector through pilots of HR, Finance and Investigations qualifications.
- The public safety industry now does not use traineeships for core training needs due to restrictions on funding and incentives. Furether, the WA Police have now ceased delivery of all nationally recognised training as they move to Police Practice Standards.
- The CSC training package was amended to remove the separate 'custodial' qualification in 2013. New commencements do not differentiate between custodial and non-custodial as the 'prison officer' is now a stream of electives within one qualification.
- Local Governments continue to offer a broad range of qualifications from other training packages which reflects the scope of occupations available. Commencements in the LGA Training Package remain at very poor levels.

VET Trends

- The professionalisation of government across all levels is requiring higher skilled workers.
- Public funding of cadetships for government is being evaluated for effectiveness
- The public safety industry manages its own training requirements (including funding). The Police have now ceased to deliver nationally recognised training.
- The corrective services industry also has no access to funded training for its core functions due to the existence of government and enterprise training providers.
- Training Package streamlining will impose additional work on industry and the Training Council.
- The future training package landscape is very unclear. Whilst the Commonwealth has outlined a new system for training package development, there are substantial questions as to the involvement of employers and industry stakeholders in the new process.

SECTION 4 INDUSTRY ISSUES AND STRATEGIES

Skilling WA: 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		
Summary of Issues (from Section 3)	**Strategy**	**Skilling WA Priority Action**
Workforce development activities across all industry sectors should be industry owned.	Work collaboratively with peak industry associations to explore best practice workforce development strategies	1.1.02 1.1.08
The profile of utilities and government sectors is perceived to be low amongst job seekers, particularly school leavers.	Support and recognize workforce development and training excellence	1.1.06
Attraction of youth is key to workforce sustainability	Develop strategies and support VET for school students	1.3.03 4.3.01
The 2016 Pre-apprenticeship business rules are in draft.	Develop pre-apprentice pathways to comply with 2016 Business Rules and provide a foundation for success in apprenticeships.	1.1.06 4.5.05

Skilling WA: Strategic goal 2 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		
Summary of Issues (from Section 3)	**Strategy**	**Skilling WA Priority Action**
Prioritisation of funding and policy decisions must reflect industry needs.	Advise government of industry workforce and development issues, opportunities, skilling and labour demands.	2.2.01 5.2.01 5.2.02

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.

Summary of Issues (from Section 3)	Strategy	Skilling WA Priority Action
Sharing knowledge and good practice will promote better outcomes across industry	Provide skills and workforce development advice to industry	3.4.05 3.4.07

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.

Summary of Issues (from Section 3)	Strategy	Skilling WA Priority Action
Attraction of youth is key to workforce sustainability	Develop strategies and support VET for school students	1.3.03 4.3.01
Sharing knowledge and good practice will promote better outcomes across industry	Provide skills and workforce development advice to industry	3.4.05 3.4.07
The 2016 Pre-apprenticeship business rules are in draft.	Develop pre-apprentice pathways to comply with 2016 Business Rules and provide a foundation for success in apprenticeships.	1.1.06 4.5.05
Apprenticeships must be negotiated to meet industry needs	Work collaboratively with stakeholders to explore, develop, improve and review apprenticeship delivery strategies.	4.5.05
Training providers must be supported to connect with industry	Assist training providers to interpret and apply training standards and policies; and Connect training providers to industry stakeholders.	4.5.05

Skilling WA: Strategic goal 5 Plan and coordinate a strategic response to workforce development issues in Western Australia		
Summary of Issues (from Section 3)	**Strategy**	**Skilling WA Priority Action**
Prioritisation of funding and policy decisions must reflect industry needs.	Advise government of industry workforce and development issues, opportunities, skilling and labour demands.	2.2.01 5.2.01 5.2.02

SECTION 5 RECOMMENDED PRIORITY ACTION PLAN

Skilling WA: 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

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Work collaboratively with peak industry associations to explore best practice workforce development strategies	Develop relationships further with WALGA and the LGMA	High	June 2016
	Continue to assist Dial Before You Dig WA to navigate national training system and coordinate with national bodies such as the National Utility Locating Contractors Association.		
	Ensure peak industry bodies are aware and involved in any workforce development strategies implemented or assisted by EUPA where relevant		
Lead Agent: EUPA Training Council			

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Support and recognize workforce development and training excellence	Participate as Steering Committee Member on Workplace Essentials Project.	High	June 2016
	Promote annual training awards to individuals and organisations		February 2016
	Participate as judge in individual category for Training Awards.		
	Participate as a judge in organizational category		September 2015
Lead Agent: EUPA Training Council			

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Develop strategies and support VET for school students	Develop 'Industry Specific Course' to capture electrical qualifications delivered to school students	High	October 2015
	Continue work with the Utilities sector to identify and develop a suitable qualification for delivery in schools		June 2016
	Progress with the development of resources and strategies for the delivery of waste industry programs (conditional on funding from the Waste Authority).		June 2016
	Provide assistance to stakeholders to implement the electrical pre-apprenticeship in the Wheatbelt.		February 2016
	Promote VETiS pathways in schools		June 2016
Lead Agent: EUPA Training Council			

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Develop pre-apprentice pathways to comply with 2016 Business Rules and provide a foundation for success in apprenticeships.	Liaise with industry, RTOs and DTWD to revise the qualification structure of the Certificate II in Electrotechnology (Career Start)	High	October 2015
Lead Agent: EUPA Training Council			

Skilling WA Strategic Goal 2:
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

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Advise government of industry workforce and development issues, opportunities, skilling and labour demands.	Complete EVAC proposals as required.	High	June 2016
	Provide evidence of labour and skills needs for the development of the annual State Priority Occupations List.		August 2015
	Complete the Industry Workforce Development Plan as required by DTWD.		
	Maintain EUPA blog and internal documentation that forms our environmental scanning process.		
	Provide feedback on Occupational Profiles for the Career Centre		

Lead Agent: EUPA Training Council

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.

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Provide skills and workforce development advice to industry	Maintain and grow communication through the EUPA Blog and newsletters Implement consistent social media strategies Maintain key stakeholder relationships Seek advice from key industry and regional peak bodies Maintain Industry Working Groups for relevant sectors.	High	June 2016

Lead Agent: EUPA Training Council

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.

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Develop strategies and support VET for school students	Develop 'Industry Specific Course' to capture electrical qualifications delivered to school students	High	October 2015
	Continue work with the Utilities sector to identify and develop a suitable qualification for delivery in schools		June 2016
	Progress with the development of resources and strategies for the delivery of waste industry programs (conditional on funding from the Waste Authority).		June 2016
	Provide assistance to stakeholders to implement the electrical pre-apprenticeship in the Wheatbelt.		February 2016
	Promote VETiS pathways in schools		June 2016
Lead Agent: EUPA Training Council			

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Develop pre-apprentice pathways to comply with 2016 Business Rules and provide a foundation for success in apprenticeships	Liaise with industry, RTOs and DTWD to revise the qualification structure of the Certificate II in Electrotechnology (Career Start)	High	October 2015

Lead Agent: EUPA Training Council

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Work collaboratively with stakeholders to explore, develop, improve and review apprenticeship delivery strategies.	Provide advice and assistance to the Public Sector Commission to review pilot cadetships. Work with industry to implement a consistent training plan for the appliance servicing apprenticeship in Western Australia. Work with training provider(s) and industry to explore the sustainability of the electronic servicing apprenticeship. Liaise with VET regulatory bodies, the DTWD and training providers to ensure compliance to national quality standards and VET policy.	High	June 2016

Lead Agent: EUPA Training Council

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Assist training providers to interpret and apply training standards and policies; and Connect training providers to industry stakeholders.	Continue participation as member of the Trades North Committee. Continue participation in Challenger Business and IT Working Group. Support regional training providers who host industry forums Liaise with VET regulatory bodies, the DTWD and training providers to ensure compliance to national quality standards and VET policy.	High	June 2016

Lead Agent: EUPA Training Council

Skilling WA Strategic Goal 5:
Plan and coordinate a strategic response to workforce development issues in Western Australia

Recommended Priority Action(s)	Steps to Implement Actions	Priority	Date to be completed
Advise government of industry workforce and development issues, opportunities, skilling and labour demands.	Provide evidence of labour and skills needs for the development of the annual State Priority Occupations List. Complete the Industry Workforce Development Plan as required by DTWD. Maintain EUPA blog and internal documentation that forms our environmental scanning process. Provide feedback on Occupational Profiles for the Career Centre	High	June 2016

Lead Agent: EUPA Training Council

SECTION 6 PLAN ADMINISTRATION

Plan Contact

This plan is maintained by the <Insert Name of Responsible Officer> for the <Insert Training Council>. Feedback regarding this plan should be made in writing to:

a. Email: admin@eupa.com.au
b. Mail: PO Box 597 Balcatta, 6921
c. Office phone number: (Optional)(08) 9240 2688

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
1	2013	Major review and production utilizing DTWD approved template 2012.
2	2014	Major annual review of industry intelligence
3	2015	Major annual review of industry intelligence

Consultation for this Issue

The review of this issue of this plan was coordinated by the Chief Executive Officer for the Electrical, Utilities and Public Administration Training Council Incorporated. This issue was updated and re-written as part of the annual review process and the main round of consultation with industry representatives and the EUPA Training Council Board of Management occurred in July 2014.

Communications Plan Summary

Once the plan is approved, this update will be:

a. endorsed by the EUPA Training Council Board of Management
b. noted by the Department of Training and Workforce Development
c. posted on the EUPA Training Council website

Validation of this Plan

Arrangements in this plan will be validated within the annual review cycle by conducting a desktop review during 2015/16. Endorsement of the Plan shall occur at the first available sitting of the Board of Management

SECTION 7 APPENDICES

Appendix 1: ANZSCO Occupations within EUPA Industries

Skill Level	Definition
1	Commensurate to **Bachelor Degree or higher**. At least five years of relevant experience may substitute for the formal qualification. In some instances, relevant experience and/or on-the-job training may be required in addition to the formal qualification.
2	Occupations at Skill Level 2 have a level of skill commensurate with one of the following: • NZ Register Diploma or • AQF **Associate Degree, Advanced Diploma or Diploma.** At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.
3	Occupations at Skill Level 3 have a level of skill commensurate with one of the following: • NZ Register Level 4 qualification • **AQF Certificate IV or** • **AQF Certificate III including at least two years of on-the-job training.** At least three years of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification.
4	Occupations at Skill Level 4 have a level of skill commensurate with one of the following: • NZ Register Level 2 or 3 qualification or • **AQF Certificate II or III.** At least one year of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience may be required in addition to the formal qualification.
5	Occupations at Skill Level 5 have a level of skill commensurate with one of the following: • NZ Register Level 1 qualification • **AQF Certificate I or** • **compulsory secondary education.** For some occupations a short period of on-the-job training may be required in addition to or instead of the formal qualification. In some instances, no formal qualification or on-the-job training may be required.

ANZSCO Code	Title	Skill Level	ANZSCO Code	Title	Skill Level
				ANZSIC 3232 Electrical Services	
341111	Electrician (General)	3	341113	Lift Mechanic	3
341112	Electrician (Special Class)		899914	Electrical or Telecommunication Trades Assistant	5
				ANZSIC 3233 Air conditioning and Heating Services	
342111	Air-conditioning and Refrigeration Mechanic	3			
				ANSZIC 3234 Fire and Security Alarm Installation Service	
341411	Cabler (Data and Communications)	3	399918	Fire Protection Equipment Technician	3
342313	Electronic Equipment Trades Worker (includes security technician)	3			
				ANZSIC 2611 Fossil Fuel Electricity Generation	
233311	Electrical Engineer	1	312911	Maintenance Planner	2
233512	Mechanical Engineer	1	323211	Fitter – General (plant, fitter machinist, fitter mechanic)	3
233513	Production Engineer (specialisations include automation and control)	1	341111	Electrician	3
312312	Electrical Engineering Technician	2	399213	Power Generation Plant Operator	3
312412	Electronic Engineering Technician	2			
				ANZSIC 2612 Hydro-Electricity Generation	
233311	Electrical Engineer	1	312911	Maintenance Planner	2
233512	Mechanical Engineer	1	323211	Fitter – General (plant, fitter machinist, fitter mechanic)	3
233513	Production Engineer (specialisations include automation and control)	1	341111	Electrician	3
312312	Electrical Engineering Technician	2	399213	Power Generation Plant Operator	3
312412	Electronic Engineering Technician	2			
				ANZSIC 2619 Other Electricity Generation	
233311	Electrical Engineer	1	312911	Maintenance Planner	2
233512	Mechanical Engineer	1	323211	Fitter – General (plant, fitter machinist, fitter mechanic)	3
233513	Production Engineer (specialisations include automation and control)	1	341111	Electrician	3
312312	Electrical Engineering Technician	2	399213	Power Generation Plant Operator	3
312412	Electronic Engineering Technician	2			
				ANSZIC 2620 Electricity Transmission	
233311	Electrical Engineer	1	312911	Maintenance Planner	2
312311	Electrical Engineering Draftsperson	2	341111	Electrician	3
312312	Electrical Engineering Technician	2	342211	Electrical Linesworker (includes Switcher)	3
312412	Electronic Engineering Technician	2	342212	Technical Cable Jointer	3
				ANSZIC 2630 Electricity Distribution	
233311	Electrical Engineer	1	312911	Maintenance Planner	2

312311	Electrical Engineering Draftsperson	2	341111	Electrician	3
312312	Electrical Engineering Technician	2	342211	Electrical Linesworker (includes Switcher)	3
312412	Electronic Engineering Technician	2	342212	Technical Cable Jointer	3
ANSZIC 2640 On Selling Electricity and Electricity Market Operation					
561912	Meter Reader	5			
ANSZIC 2700 Gas Supply					
133211	Engineering Manager	1	234312	Environmental Consultant (Alt title: Environmental Officer)	1
133512	Production Manager	1	312211	Civil Engineering Draftsperson	2
233111	Chemical Engineer		312412	Electronic Engineering Technician	2
233211	Civil Engineer (includes planning/design of pipelines and gas supply)	1	312512	Mechanical Engineer Technician	2
233311	Electrical Engineer	1	312911	Maintenance Planner	3
233512	Mechanical Engineer	1	322313	Welder (First Class)	3
233513	Production/Plant Engineer	1	334114	Gasfitter (Only included as it is used in TP)	3
233612	Petroleum Engineer	1	341111	Electrician	2
ANSZIC 2811 / 2812 Water Supply & Sewerage and Drainage Services					
133211	Engineering Manager	1	311415	Hydrographer	2
133512	Production Manager (Includes operations manager)	1	311419	Science Technical Officer NEC	2
232212	Surveyor (Specialisation: Hydrographic / Engineering Surveyor)	1	312116	Surveying or Spatial Science Technician	2
233111	Chemical Engineer	1	312211	Civil Engineering Draftsperson	2
233211	Civil Engineer (Specialisation: Hydraulics Engineer)	1	312212	Civil Engineering Technician	2
233213	Quantity Surveyor	1	312311	Electrical engineering Draftsperson	2
233311	Electrical Engineer	1	312312	Electrical Engineering Technician	2
233411	Electronics Engineer	1	312511	Mechanic Engineering Draftsperson	2
233511	Industrial Engineer	1	312512	Mechanical Engineer Technician	2
233512	Mechanical Engineer	1	312611	Safety Inspector	2
233915	Environmental Engineer	1	312911	Maintenance Planner	2
233999	Engineering Professionals NEC	1	322311	Metal Fabricator (Boiler maker/ Welder)	3
234211	Chemist	1	323211	Fitter - General	3
234313	Environmental Research Scientist (Water Quality Analyst)	1	342315	Electronic Instrument Technician (Special Class)	3
234411	Geologist	1	344111	Electrician	3
234413	Hydrogeologist	1	712921	Waste water or water plant operator	4
311412	Earth Science Technician	2	821112	Drainage, Sewerage and Stormwater Labourer	1

ANSZIC 2911 Solid Waste Collection Services

733111	Truck Driver (Specialisation - compactor driver (rubbish collector))	4	899611	Recycling and rubbish collector	5
891112	Truck Driver Offsider	5			

ANSZIC 2919 Other Waste Collection Services

733111	Truck Driver (Specialisation - compactor driver (rubbish collector))	4	899611	Recycling and rubbish collector	5
891112	Truck Driver Offsider	5			

ANSZIC 2921 Waste Treatment and Disposal Services

233111	Chemical Engineer	1	721213	Bulldozer Operator	4
139912	Environmental Manager	1	721214	Excavator Operator	4
233915	Environmental Engineer	1	721215	Grader Operator	4
234312	Environmental Consultant	1	721216	Loader Operator	4
234313	Environmental Research Scientist	1	712922	Weighbridge Operator	4
721999	Mobile Plant Operator (Mulcher Operator)	4	323211	Fitter - General	3
721211	Earthmoving Plant Operator	4	341111	Electrician (Electrical Fitter)	3
721212	Backhoe Operator	4			

ANSZIC 2922 Waste Remediation and Materials Recovery Services

233111	Chemical Engineer	1	711999	Machine Operators NEC (Asbestos Remover)	4
233915	Environmental Engineer	1	323211	Fitter - General	3
234312	Environmental Consultant	1	341111	Electrician (Electrical Fitter)	3
234313	Environmental Research Scientist	1	712999	Stationary Plant Operators	4
621911	Materials Recycler (Under sales but includes Waste Recycler)	5	899999	Labourers NEC	5

ANSZIC 7520 State Government Administration

111111	Chief Executives and Managing Directors (Director General, Executive Director, Secretary)	1	232213	Cartographer	1
111211	Corporate GM Chief Operating Officer	1	261111	ICT Business Analyst	1
132111	Corporate Services Manager Administration Manager, Business Services Manager	1	261112	Systems Analyst	1
132211	Finance Manager Chief Financial Officer, Finance Director	1	511111	Contract, Administrator Contract officer	2
132311	Human Resource Manager Includes OSH, Training and Development and Workplace Relations Manager specialisations	1	511112	Program or project administrator Project Coordinator	2
132411	Policy and Planning Manager Public Policy Manager	1	512111	Office Manager	2
132511	Research and Development Manager	1	521111	Personal Assistant	3
135111	Chief Information Officer Chief Technology Officer	1	521211	Secretary (General)	3
221111	Accountant	1	531111	General Clerk	4
221211	Company Secretary	1	532111	Data Entry Operator	4

221212	Corporate Treasurer	1	541111	Call or Contact Centre Team Leader Call or contact centre workforce planner	3
221213	External Auditor	1	541112	Call or contact centre operator	4
221214	Internal Auditor	1	541211	Information Officer	4
223111	Human Resource Advisor Personnel Officer, Workforce Planning Analyst	1	542111	Receptionist	4
223113	Workplace Relations Adviser Industrial Relations Officer	1	551111	Accounts Clerk Accounts payable/receivable	4
223311	Training and Development Professional Training Officer	1	551211	Bookkeeper Financial Administration Officer	4
224214	Records Manager FOI Officer	1	551311	Payroll Clerk Payroll Officer	4
224311	Economist Economic Analyst	1	561311	Filing or registry clerk Records Clerk	5
224412	Policy Analyst Policy Advisor	1	561611	Switchboard Operator Telephone Operator	5
224511	Land Economist Property Economist	1	561999	Other Clerk	5
224912	Liaison Officer Aboriginal, community, disability liaison	1	591113	Purchasing Officer	4
225311	Public relations professional Media Liaison Officer, PR Consultant/Officer	1	599411	Human Resources Clerk Employment Office, HR Records, Personnel Records Clerk	4

ANSZIC 7530 Local Government Administration

111311	Local Government Legislator Councillor including Mayor	1	251311	Environmental Health Officer	1
134111	Child Care Centre Manager	1	362211	Gardener (General)	3
149113	Sports Centre Manager	2	399312	Library Technician	2
224611	Librarian		421111	Child Care Worker	4
232611	Urban and Regional Planner Land/Town Planner	1	423111	Aged or Disabled Carer	4

Local Government also includes all management/administrative roles from the State Government sector.

ANSZIC 7540 Justice

442217	Security Officer (Court Security)	5	599214	Law Clerk	3

ANSZIC 7711 Police Services

139113	Commissioned Officer Police	1	441312	Police Officer	2
111211	Corporate General Manager Specialisation - Assistant Commissioner	1	441311	Detective	2
223311	Training and Development Professional Training Officer	1	342312	Communications Operator	3
224411	Intelligence Officer Specialisation - criminal intel	1			

ANSZIC 7713 Fire protection and other emergency services					
139112	Commissioned Officer Fire	1	441212	Fire Fighter	
441211	Emergency Service Worker Industry specialisation Oil Spill	1	223311	Training and Development Professional Training Officer	1
ANSZIC 7714 Correctional and Detention Services					
223311	Training and Development Professional Training Officer	1	442111	Prison Officer	4
242211	Vocational Education Teacher Lecturer	1			
ANSZIC 7719 Other public order and Safety Services					
251312	Occupational Safety and Health Advisor Various roles in WHS, EHS, Community Safety				
ANSZIC 7720 Regulatory Services					
311311	Fisheries Officer	2	599514	Noxious Weeds and Pest Inspector	4
311312	Meat Inspector	2	599517	Train Examiner	4
311313	Quarantine Officer	2	599518	Transport Operations Inspector	4
311399	Primary Products Inspectors fruit and veg inspector, Dairy QA.	2	599521	Water Inspector	4
312115	Plumbing Inspector Drainage, gas, sanitary/water supply inspector	2	599599	Inspectors and Regulatory Officers NEC Includes LG rangers	4
312611	Safety Inspector Gas Examiner; Lifts/Cranes, OSH, Mines Inspector	2	599611	Insurance Investigators	3
599513	Motor Vehicle License Examiner	4			

Appendix 2: Summary of Licensing/Regulatory Arrangements

Name of Occupation	Name of License/ Registration/ Permit	Name of Licensing/Regulatory Authority	Title of Act	What does this license enable the holder to do?
Electrician	Electrical Worker License Types of License: • Electrician • Electrical Contracting, • Electrical Training, • Restricted Electrical	Electrical Licensing Board Energy*Safety* carries out technical and safety regulation of electrical and most gas activities throughout Western Australia, including the activities of electricity supply network operators and gas distribution license holders	Electricity Act 1945 Electrical (Licensing) Regulations 1991 *Energy Co-ordination Act 1994* Energy Co-ordination (Designation of Inspectors) Regulations 1995	Electricians are licensed for up to 5 years and must carry their license card with them and produce it when required.
Electrical Fitter	Electrical Worker (restricted to fitting)	Energy*Safety*/ Electrical Licensing Board	As above	Electrical Fitters make and repair electrical equipment, motors, instruments and appliances. Fitters differ from electricians in that they can also perform machining and overhauling of equipment.
Electrical Contractor	Electrical Contractors License	Energy*Safety*/ Electrical Licensing Board	Electricity Act 1945 Electrical (Licensing) Regulations 1991	Electrical contractors carry on a business as an electrician
Electrician - for the installation of solar panels	Clean Energy Council Accreditation	Clean Energy Council	Clean Energy Council	Must have completed the relevant units of competency from the trade related training package. Must have been an electrician initially with further training for installation of solar panels.
Apprentice Electrician	Electrical Training License	Energy*Safety*/ Electrical Licensing Board (see1 above)	Electricity Act 1945 Electrical (Licensing) Regulations 1991	Training License
Apprentice Electrical Fitter	Electrical Worker (restricted to fitting)	Energy*Safety*/ Electrical Licensing Board	Electricity Act 1945 Electrical (Licensing) Regulations 1991	Training license

Name of Occupation	Name of License/ Registration/ Permit	Name of Licensing/Regulatory Authority	Title of Act	What does this license enable the holder to do?
Instrumentation Technicians Air-conditioning and Refrigeration Mechanics	Restricted Electrical License/s (various)	Energy*Safety*/ Electrical Licensing Board	Electricity Act 1945 Electrical (Licensing) Regulations 1991	To carry out electrical work related to the Air-conditioning or refrigeration equipment – restricted by license type For an individual who carries out work in relation to RAC equipment (this includes installing, commissioning, servicing and maintaining RAC equipment
Air-conditioning and Refrigeration Mechanics	Refrigerant handlers license / registration	Australian Refrigeration Council Energy*Safety* (See 1 above)	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* Regulations 1995	To handle a refrigerant for any work in the refrigeration and air conditioning industry, other than the automotive industry.
Apprentice Air conditioning and Refrigeration Mechanics	Refrigerant handlers license and registration training license	Australian Refrigeration Council (ARC)	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* Regulations 1995	To handle a refrigerant while undertaking training and/or assessment in a classroom setting and at your work place under supervision. The supervisor must be the holder of a license that entitles them to engage in work for which the licensee is being trained. This license is valid for the period of training, which can be up to one year.
Domestic Refrigeration and Air Conditioning Appliance	Domestic Refrigeration and Air Conditioning Appliance License (2 years)	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* Regulations 1995	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* Regulations 1995	To handle a refrigerant for either or both of the following: • any work on domestic refrigeration or air conditioning equipment • any work on commercial stand-alone refrigeration equipment
Data and Telecommunication Technicians (Cabler)	ACMA Open Registration Cabling License Requires authorisation by asset owner if	Energy*Safety*/ Electrical Licensing Board Australian Communications and Media Authority	Electricity Act 1945 Electrical (Licensing) Regulations 1991	Install, maintain and repair data transmission, aerial lines, conduits, cable, radio antennae and telecommunications equipment and appliances.

Name of Occupation	Name of License/ Registration/ Permit	Name of Licensing/Regulatory Authority	Title of Act	What does this license enable the holder to do?
	connected to electricity distribution network (i.e. Horizon, Western Power)			
Electricity Power Plant operators	HRW License to operate A STEAM TURBINE	WorkSafe	Occupational Safety and Health Act 1984	**Pressure equipment operation** - basic, intermediate and advanced boiler operation; turbine operation; reciprocating steam engine operation.
Electricity Power Plant operators	STEAM BOILER High Risk License	WorkSafe	Occupational Safety and Health Act 1984	**Pressure equipment operation** - basic, intermediate and advanced boiler operation; turbine operation; reciprocating steam engine operation.
Lineworker	Requires authorisation by asset owner (i.e. Horizon, Western Power)	Network operator	Electricity Act 1945 Electricity (Supply Standards and System Safety) Regulations 2001 Electricity Regulations 1947 - Network operator service standards, line-worker and electrical worker safety, appliance energy efficiency	Electricity Supply Transmission / Distribution: Cable Jointers. EWP; Pole top rescue; Confined space
Powerline Vegetation Controller	Compliance with Code of Practice	Energy*Safety*	Electricity Regulations 1947	Perform various roles (dependent on competencies held) to manage vegetation near live powerlines.

Name of Occupation	Name of License/ Registration/ Permit	Name of Licensing/Regulatory Authority	Title of Act	What does this license enable the holder to do?
Waste Operators	Asbestos Control License • Restricted • Unrestricted Over 10 sqm asbestos must be removed by a licensed and trained individual /business	WorkSafe (Asbestos Removal)	Code of Practice for Management and Control of Asbestos in Workplaces (NOHSC:2018(2005)	Unrestricted – allows removal of all types of asbestos. Restricted – Commenced June 2010 allows removal of amounts exceeding 10square metres of bonded (non-friable) asbestos.
Waste Operators	Demolition License	WorkSafe (Demolition license)	Occupational Safety and Health Regulations 1996	The following are general conditions applicable to all demolition licences: • every employee engaged to do demolition work has, or will be trained before the demolition work commences, in safe methods of demolition work by a registered training organisation • all demolition work will be directly supervised by a competent person.
Restricted heat pump (split system) installation and decommission	Restricted heat pump (split system) installation and decommissioning License (2 years)	Australian Refrigeration Council (ARC)	Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* Regulations 1995	To handle a refrigerant for the installation and decommissioning of any of the following: • a single-head split system air conditioner of less than 18kW; • a 2-part hot water heat pump of less than 18kW; • a 2-part swimming pool heat pump of less than 18kW.

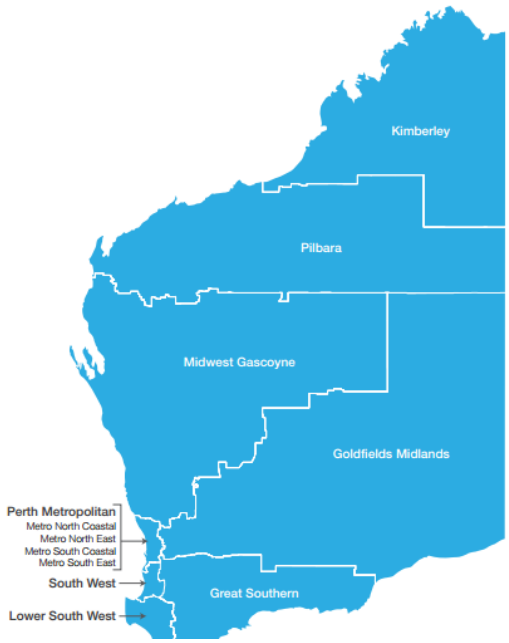
Appendix 3: Organisations licensed by the Economic Regulatory Authority (ERA)

Electricity generation licenses	
Alcoa of Australia	Merredin Energy
Alinta Cogeneration Pinjara	Mubida Wind Farm
Alinta Cogeneration Wagerup	New Gen Neerabup Partnership
Alinta Energy Transmission (Roy Hill)	New Gen Power Kwinana
ATCO Power Australia (Karratha)	Ord Hydro
BHP Billiton Worsley Alumina	Perth Power Partnership
Bluewaters Power 1	RATCH Australia Kemerton
Bluewaters Power 2	Rottnest Island Authority
Collgar Wind Farm	South West Cogeneration Joint Venture
CSBP Limited	Southern Cross Energy Partnership
EDL NGD (WA)	Synergy
Emu Downs Wind Farm Joint Venture	Tronox Management
Eneabba Energy	Walkaway Wind Power
Goldfields Power	Western Energy
Horizon Power	WR Carptenter No. 1
Electricity transmission and distribution licenses	
Alinta Energy Transmission (Roy Hill)	Ord Hydro
BHP Billiton Nickel West	Rottnest Island Authority
Horizon Power	Southern Cross Energy Partnership
Karara Power	Western Power (Electricity Networks Corporation)
Newmont Power	
Electricity Retail License	
AER Retail Pty Ltd	ERM Power Retail
Alinta Sales	Goldfields Power
Amanda Energy	Landfill Gas and Power
BHP Billiton Nickel West	Newmont AP Power
Blair Fox Energy	Newmont Power
Blue Star Energy	Perth Energy
BlueWaters Power 1	Premier Power Sales
Clear Energy	Southern Cross Energy Partnership
Community Electricity	Synergy
EDL Pilbara	

Gas Distribution licenses	
ATCO Gas Australia	Wesfarmers Kleenheat Gas
Esperance Power Station	
Gas Trading Licenses	
Alinta Sales	Synergy
Esperance Gas Distribution Company	Wesfarmers Kleenheat Gas
Perth Energy	
Drinking water licenses	
Aqwest – Bunbury Water Corporation	Peel Water
Busselton Water	Rottnest Island Authority
Hamersley Iron	Water Corporation
Sewerage Licenses	
City of Kalgoorlie	Shire of Jerramungup
Hamersley Iron	Shire of Kent
Moama Lifestyle Villages	Shire of Lake Grace
Rottnest Island Authority	Shire of Moora
Shire of Brookton	Shire of Ravensthorpe
Shire of Coolgardie	Shire of Victoria Plains
Shire of Dalwallinu, Dowerin & Dumbleyung	Shire of Wickepin
Shire of East Pilbara	Shire of Yilgarn
Shires of Gnowangerup & Goomalling	Water Corporation
Bulk Water and Irrigation Licenses	
City of Kalgoorlie	Shires of Gnowangerup & Goomalling
Gascoyne Water Co-operative	Shire of Jerramungup
Harvey Water (South West Irrigation Management Co-operative)	Shires of Kent & Koorda
Moama Lifestyle Villages	Shire of Lake Grace
Ord Irrigation Co-operative	Shires of Moora & Morawa
Peel Water	Shire of Ravensthorpe
Preston Valley Irrigation Co-operative	Shire of Victoria Plains
Shire of Brookton	Shire of Wickepin
Shire of Coolgardie	Shire of Yilgarn
Shires of Dalwallinu, Denmark, Dowerin & Dumbleyung	Water Corporation
Shire of East Pilbara	
Drainage	
Rottnest Island Authority	Water Corporation

Appendix 4: Emergency services volunteer workforce by region

Midwest Gascoyne Region	
Area (km²)	625,157
Career Fire and Rescue Stations	1
Volunteer Brigades / Groups / Units	110
Total Number of Volunteers	3,241
Perth Metropolitan Region	
Area (km²)	10,064
Career Fire and Rescue Stations	24
Volunteer Brigades / Groups / Units	88
Total Number of Volunteers	4,773
South West Region	
Area (km²)	7,206
Career Fire and Rescue Stations	1
Volunteer Brigades / Groups / Units	51
Total Number of Volunteers	1,569
Lower South West Region	
Area (km²)	19,395
Career Fire and Rescue Stations	0
Volunteer Brigades / Groups / Units	125
Total Number of Volunteers	4,748



Kimberley Region	
Area (km²)	431,028
Career Fire and Rescue Stations	0
Volunteer Brigades / Groups / Units	19
Total Number of Volunteers	569
Pilbara Region	
Area (km²)	518,036
Career Fire and Rescue Stations	0
Volunteer Brigades / Groups / Units	30
Total Number of Volunteers	888
Goldfields Midlands Region	
Area (km²)	805,921
Career Fire and Rescue Stations	1
Volunteer Brigades / Groups / Units	133
Total Number of Volunteers	3,750
Great Southern Region	
Area (km²)	141,584
Career Fire and Rescue Stations	1
Volunteer Brigades / Groups / Units	244
Total Number of Volunteers	9,495

Figure 24: DFES Regional Volunteers[97]

[97] Department of Fire and Emergency Services, 2013-14 Annual Report,

SECTION 8

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SECTION 9 GLOSSARY

Acronyms

Table 13 Acronyms

Acronym	Full Title
ABS	Australian Bureau of Statistics
ACELG	Australian Centre of Excellence for Local Government
ALGA	Australian Local Government Association
ANZSCO	Australia and New Zealand Standard Classification of Occupations
ANZSIC	Australia and New Zealand Standard Industry Classification
ASU	Australian Services Union
C&D	Construction and Demolition Waste
C&I	Commercial and Industrial Waste
CaLD	Culturally and Linguistically Diverse
CEPU	Communications, Electrical and Plumbing Union
COAG	Council of Australian Governments
CSA	Civil Services Association
DBP	Dampier Bunbury Pipeline
DEOPE	Director of Equal Opportunity in Public Employment
DFES	Department of Fire and Emergency Services
DTWD	Department of Training and Workforce Development
EATC	Engineering and Automotive Training Council
ELB	Electrical Licensing Board
E-Oz	Energy Skills Australia Industry Skills Council
ERA	Economic Regulation Authority
ETU	Electrical Tradeworkers Union
EUPA	Electrical Utilities and Public Administration Training Council
EVAC	Establishment and Variation of Apprenticeships Committee
FTE	Full Time Equivalent
GSA	Government and Community Safety Industry Skills Council trading as Government Skills Australia
ISC	Industry Skills Council
LGMA	Local Government Managers Association
LGRCEU	Local Government, Racing, Cemeteries Employees Union
LPG	Liquid Petroleum Gas
MSW	Municipal Solid Waste
NECA	National Electrical Communications Associations
NOLA	National Occupational Licensing Authority
PSC	Public Sector Commission

Acronym	Full Title
RTO	Registered Training Organisation
SEI	Strategic Energy Initiative
SES	State Emergency Service
SPOL	State Priority Occupation List
STB	State Training Board
TAC	Training Accreditation Council
WALGA	WA Local Government Association
WAPOL	Western Australian Police