##### Skills & Training Needs 2013



Victorian Electricity and Gas Industry

2 Skills & Training Needs 2013 – Victorian Electricity and Gas Industry

**Published by HESG**

**Department of Education and Early Childhood Development**

Melbourne May2014

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# Introduction

In the context of Victoria’s dynamic economy, a demand-led approach is the best way to ensure a responsive vocational training system that will help as many people as possible build skills that lead to better jobs. This is most evident in the results of the market approach embodied in the Victorian Training Guarantee, which has achieved positive outcomes for both students and the economy.

The *Refocusing Vocational Training in Victoria* reforms are designed to satisfy important criteria for a strong vocational training market. Through these reforms the Government is ensuring that the vocational training system continues to produce positive outcomes for students, businesses and Victoria.

Through *Refocusing Vocational Training*, there is a role for Government in monitoring, providing information and responding to the performance of the vocational training system. A key mechanism by which the Government exercises this role is through the Industry Participation Model. The Industry Participation Model is based on a new partnership approach between Government, industry and training providers. It increases industry influence within the training market by supporting more direct relationships between industry and training providers and by increasing direct consultation with Government.

An aim of the Industry Participation Model is to seek to improve information sharing about training provision, options, outcomes, gaps and associated barriers between industry, training providers and employers to improve alignment between industry needs and training delivery. A suite of information products and tools are being developed, of which this report is one, to support this aim and an overview of these is provided overleaf.

This report describes training and economic activity and developments related to Victoria’s Electricity and Gas industry, bringing together a range of qualitative and quantitative insights from desk research and industry engagement. It highlights both the challenges the industry faces in attracting the right skills, and the opportunities businesses, training providers and Government have to address these challenges. Key metrics used in this report include enrolments by sub-industry, qualification level, occupation, courses, age group, gender, learners facing barriers, provider type, reason for study and completions. The report also covers apprentices and trainees, and an analysis of the alignment between training delivery and specific industry skills needs. The report produces industry, sub-industry and region-specific findings and, wherever possible, presents comparisons to developments at the State level.

The purpose of this report is:

1. To provide a basis for understanding the Electricity and Gas sector in relation to employment levels, skills shortage occupations, current alignment and responsiveness of the vocational training market to the needs of the sector and to provide an overview of the challenges and opportunities in meeting industry vocational skills needs both now and into the future.
2. To give detailed information around vocational training enrolments by occupation, location, qualification levels and student characteristics, as it relates to the Electricity and Gas sector in order to gauge current trends in vocational training delivery.
3. To summarise the context of the Electricity and Gas sector in relation to the size and scale of the labour and training markets as well as the current policy, economic and social drivers that it is facing.

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|  |  |  |
| --- | --- | --- |
| **Suite of Information Products and Tools** | | |
| **Victorian Quarterly Training Market Reports**  On-going series of quarterly reports aimed at providing a summary of Victorian training market performance following the introduction of the student entitlement system. The report covers three sections – the first provides an overview of the performance of the Victorian training market, the second section examines the participation of learners facing barriers and the third examines the alignment of training to industry skills needs  <http://www.education.vic.gov.au/training/> providers/market/Pages/reports.aspx | **Vocational Training: Victoria’s Regions**  Annual publication examining training delivery in each of Victoria’s regions in the context of the local population, economy and workforce, building a picture of the relationship between the local training system and regional skills needs, training market performance and responsiveness  <http://www.education.vic.gov.au/training/> providers/market/Pages/regionaltrends.aspx | **Vocational Training: Victoria’s Industry Report**  Published annually, this report combines industry intelligence and economic analysis with training data to build a picture of the relationship between industry skills needs, employment opportunities and skills training. Each industry training profile provides economic context and a summary of training challenges and highlights from Industry Participation Model initiatives  <http://www.education.vic.gov.au/training/> employers/industry/Pages/marketinfo.aspx |
| **Industry Sub-sector Summary Reports and Industry Factsheets**  46 sub-sector summary reports which highlight labour and training market dynamics with an overview of current and forecast employment needs and vocational training patterns across the sectors and at the regional level  A series of factsheets are also available for 19 industries  <http://www.education.vic.gov.au/training/> employers/industry/Pages/marketinfo.aspx | **Business Toolkit and Case Studies**  Toolkit for employers providing information on how to get government subsidised training under the Victorian Training Guarantee; getting the best training for your business, with a helpful checklist; information of Recognition of Prior Learning; and a range of interesting employer and training provider case studies  <http://www.education.vic.gov.au/> training/employers/workforce/Pages/ marketfacilitation.aspx | **Portfolio Industry Reports**  These reports describe training and economic activity and developments related to key Victoria’s industry sectors. Highlighted are both the challenges the industry faces in attracting the right skills, and the opportunities businesses, training providers and government have to address these challenges. A range of key workforce and training metrics are also provided. There are two tiers of reports; detailed reports representing the focus industries for the Department in 2013, and summary reports covering other industry sectors  <http://www.education.vic.gov.au/training/> employers/industry/Pages/marketinfo.aspx |
| **Industry Blog**  A forum for people interested in industry skills and training issues in Victoria, the blog features a range of topics relevant to stakeholders, information on recent industry events, groups and forums and  new initiatives focused on enhancing market performance through facilitation activities  <http://skillsblogvic.wordpress.com/> | **Industry Skills Update - e-Alerts**  Regular email update featuring the latest news about Industry Participation Model activities; market facilitation and related government initiatives; reports; and training performance information  To subscribe contact: Department of Education and Early Childhood Development, [skills.online@edumail.vic.gov.au](mailto:skills.online@edumail.vic.gov.au) | **Web Pages – Industry Training Market Information**  19 webpages with information about the skills and training market for industry sectors. For each industry, there’s a training snapshot, information about skills in demand, training market intelligence reports and factsheets along with more detailed reporting for each industry sub-sector. Information is updated regularly  <http://www.education.vic.gov.au/>training/employers/industry/Pages/ marketinfo.aspx |
| **Rate Your Training**  Ratings tool for industry and employers which is a simple-to-use system where employers can rate the performance of a training provider in a particular study area against selected criteria, and review and compare the ratings of other employers  <http://rateyourtraining.com.au/> | **E-Marketplace (in development)**  Website which facilitates connections between employers and training providers. Employers can anonymously post their training requirements and training providers are able to provide structured response online. Employers are then able to review the response with no obligation, create a shortlist and follow up directly with their preferred providers | **Victorian Skills Gateway**  One-stop-shop of Victorian vocational education and training to help find the best option for students. Searches can be performed on occupations, courses, training providers, video and written case studies. This website is also viewable via a purpose- built smartphone interface  <http://www.education.vic.gov.au/> victorianskillsgateway/Pages/home.aspx |

# Industry and data scope

This section summarises the scope of the Electricity and Gas industry as well as key data sources.

## Products and services

The Electricity and Gas industry1 includes businesses engaged in the provision of electricity or gas through mains systems.

Electricity supply activities include the generation, transmission and distribution of electricity and the on-selling of electricity via power distribution systems operated by others.

Gas Supply includes the distribution of gas, such as natural gas or liquefied petroleum gas, through mains systems.

#### Figure 1.1: Electricity and Gas ANZSIC breakdown

|  |  |  |  |
| --- | --- | --- | --- |
| **ANZSIC code** | **ANZSIC industry** | | |
| **26** | **Electricity Supply** | | |
|  | **261** | **Electricity Generation** | |
|  |  | 2611 | Fossil Fuel Electricity Generation |
|  |  | 2612 | Hydro-Electricity Generation |
|  |  | 2619 | Other Electricity Generation |
|  | **262** | **Electricity Transmission** | |
|  | **263** | **Electricity Distribution** | |
|  | **264** | **On Selling Electricity and Electricity Market Operation** | |
| **27** | **Gas Supply** | |  |

## Data

The main source of data on vocational training activities is the training activity database referred to as SV Training System (SVTS).

The report presents findings for the time period from 2008 to 2013, with an in depth analysis of developments and patterns in the 2013 calendar year. Data was extracted from SVTS as at March 2014 and subject to revision.

This report includes government subsidised vocational training enrolments only. Data on completions contain all government subsidised and fee for service enrolments at any course level by all providers.

Training data shown in the tables are rounded to the nearest 100 when the figures are greater than 1,000; to the nearest 50 when they are between 100 and 1,000; and to the nearest 10 when they are less than 100. Any percentages are calculated based on the original, unrounded data.

1 As defined by the Australian Bureau of Statistics, Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006.

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# Electricity and Gas trends and issues

This section focuses on the Electricity and Gas industry as a whole. It covers: key issues and challenges including economic conditions, new regulations, demographic changes, changing social attitudes, new technology/processes, changing consumer tastes, environmental sustainability and the direction of industry restructuring.

## Key messages, issues and challenges

* The Electricity and Gas industry has been undergoing significant changes in recent years. Demand for energy has been falling, partly as a consumer response to increasing energy prices but also because of structural shifts in the economy away from primary industries towards less energy-intensive service sectors.
* The nature of energy supply is also changing, as usage of renewable energy sources increases. While fossil fuel- fired power stations continue to supply the majority of Australia’s electricity, the growth of renewables will mean changing work practices with flow-through implications on industry skill needs. Ensuring the workforce has the necessary skills and training to adopt innovation and deal with change occurring in the industry will be key to the industry’s future.
* Attracting younger workers and new entrants to the industry will also be critical to the industry, given an ageing workforce profile. For an innovative and technology-driven industry experiencing expansion, this is cause for concern.
* Across Victoria, the Electricity and Gas industry was estimated to be worth around $2.7 billion to the State economy in 2012-13, with a workforce of approximately 17,500 workers, representing 0.6 per cent of Victorian employment.
* Future growth in output is expected to be slightly above the average for all Victorian industries, and is currently forecast at 17 per cent over the five years to 2017-18 (compared to an ‘all industry’ average of 14 per cent over the same period).
* At the end of June 2012, it was estimated that there were 217 businesses in the sector operating in Victoria. Around 67 per cent of Electricity and Gas business establishments were in either the Electricity Generation or Gas Supply sub-sectors.
* Nationally the average compound annual growth rate of labour productivity for the Electricity, Gas, Water and Waste Services industry over the period 2003 to 2013 declined by 3.6 per cent, while the all-industry average was 1.3 per cent.

## Industry trends and outlook

The following tables outline the trends and drivers for the main areas of activity within the Electricity and Gas sector.

### Electricity Supply

* + Demand for electricity has been falling in recent years, a trend distinct from long-term drivers such as population growth or business activity. In recent times retail electricity prices have been increasing, reflecting higher transmission and distribution charges and higher wholesale prices for electricity. These price increases have led consumers and businesses to become more energy efficient, reducing their consumption. Structural shifts in the Australian economy away from manufacturing towards less energy-intensive service industries are also likely to have been a contributing factor in slowing demand.
  + A number of factors are driving capital investment in the industry, these include: the need to replace ageing assets; the replacement of coal fired electricity generation with gas and renewable technology; a rise in peak demand for electricity; and regulatory changes aimed at stimulating investment.
  + The industry’s networks are vulnerable to damage during natural disasters such as floods and bushfires. The 2009 Black Saturday bushfires in Victoria, for example, resulted in considerable one-off repair bills and subsequent increases to insurance premiums, as well as a series of legal actions against industry operators.
  + Fossil fuel-fired power stations continue to supply the majority of Australia’s electricity, running predominantly on black coal, brown coal and increasingly on natural gas. The industry is emissions intensive and its performance is sensitive to carbon pricing policies.
  + In 2012 the Federal Government tasked the Productivity Commission with examining the investment and price outcomes of the current regulatory framework. The resulting report, *Electricity Network Regulatory Frameworks*, made recommendations for large changes to the industry, finding that the current structure of regulation promotes inefficiency.
  + The industry is operating in an environment that is changing on many fronts, not just regulation. The technology used for generating electricity is also changing, with renewables such as wind showing the fastest growth in terms of new installation. The growth of renewables, particularly the installation of small-scale solar power generation by households, is likely to challenge the structure of current electricity transport networks. The existing network is built to transfer electricity from generators to end users. New services may be required to support changing patterns in generation.
  + Renewable electricity generation is still in the early stages of growth within Australian markets, however, and significant barriers to commercial adoption of industry technology remain. The renewables segment is now faced with a shifting policy environment, with uncertainty surrounding the future of carbon pricing and other policies that affect both renewable energy generation and the Electricity Supply sub-sector more broadly.
  + The Electricity Supply sub-sector will be continue to be impacted by the deployment of integrated smart technologies, combined with network metering and management systems in the short term, with skill implications at trade, post-trade and para-professionals levels.
  + Ensuring the workforce has the skills and training to adopt innovation and deal with change occurring in the industry is important, including attracting younger workers given signs of an ageing workforce.

Source: Department of State Development, Business and Innovation, *Service Sector Industry Analysis: Electricity, Gas, Water and Waste Services,* 2013; Energy Skills Australia, Environmental Scan 2014; IBISWorld, *Electricity Distribution in Australia,* Mar-2014; IBISWorld, Electricity Transmission in Australia, Jan-2014; IBISWorld, *Fossil Fuel Electricity Generation in Australia*, Feb-2014; IBISWorld, *Hydro-Electricity Generation in Australia*, Sep-2013; IBISWorld, *Wind and Other Electricity Generation in Australia*, Mar-2014

### Gas Supply

* + The Gas Supply sub-sector consists of gas retailers, who buy and sell gas, and gas distributors, who operate the distribution networks that carry gas to end users.
  + Gas provides approximately a quarter of Australia’s primary energy needs. It provides fuel for transport and heating/cooling, as well as a low emission intensity source of electricity generation.
  + Victoria is the largest user of natural gas supplied via a gas distribution system, accounting for 28 per cent of total demand. The gas market and gas distribution networks in Victoria are well established, reflecting both the State’s relatively small size and the lengthy period during which gas has been available from the Bass Strait.
  + Growth in gas distribution volumes has been uneven over the past five years, with subdued demand during the global financial crisis offset in the intervening period due to stronger economic growth.
  + Over the next five years, developments in the upstream Oil and Gas Extraction industry are expected to dominate industry performance. The industry is expected to grapple with issues of supply and price as large-scale export-orientated projects come on-stream from 2015. These projects will see Australia becoming the world’s largest gas exporter within the next few years.
  + Augmenting existing supply networks to provide opportunities for the expansion of gas usage has been identified as a priority for the industry, with key skill areas including system operators for gas supply and the workers/builders responsible for the installation and maintenance of infrastructure, plant and equipment associated with new capital investment.
  + Ensuring peak network efficiency is achieved will also be key to the industry’s future. This will involve accurate measurement and process automation, and industry operators will need to ensure the workforce has the required skills to optimise productivity.
  + The Gas Supply sub-sector in Victoria has a relatively low proportion of young workers. For an innovative and technology-driven industry experiencing expansion, this is cause for concern. There may need to be a concerted effort by the industry and trainers to attract younger students and workers into Gas Supply sub-sector.

Source: Energy Skills Australia, *Environmental Scan 2014*; IBISWorld, *Gas Supply in Australia*, Nov-2013

## Economic contribution

Victoria’s Electricity and Gas industry contributed

|  |  |
| --- | --- |
| approximately $2.7 billion to the state economy in 2012-13, | 3,200 |
| around 0.9 per cent of total output. The industry directly |  |
| employed approximately 17,500 workers, representing 0.6 per |  |
| cent of Victorian employment. Gas Supply accounted for the | 2,400 |
| highest proportion of industry output, 67 per cent of the total. |  |

#### Figure 2.1: Electricity and Gas industry output ($ million), Victoria, 2012-13 and 2017-18

335

293

Looking forward, output growth of 17 per cent is anticipated in the five years to 2017-18, to around $3.1 billion. This is slightly higher than the anticipated state growth rate of 14 per cent across all Victorian industries.

A highly skilled workforce leads to increased productivity and economic growth. High quality education and skills

1,600

800

1,801

212 18

359

2,122

20

242

410

training is essential for Victorians to access the opportunities of a growing and changing economy, and an increasingly

sophisticated and information-rich society.

0

2012-13 2017-18

On Selling Electricity and Electricity Market Operation

Gas Supply

Electricity Transmission

Electricity Generation

Electricity Distribution

Source: Monash Centre of Policy Studies (CoPS) Employment Forecasts, June 2013

## Employer profile

At the end of June 2012, it was estimated that there were 217 businesses in the Victorian Electricity and Gas industry. Approximately 67 per cent of Electricity and Gas business establishments are either in Electricity Generation or Gas Supply.

The distribution of Electricity and Gas industry businesses by employment level is skewed towards micro (non-employing) and small sized employing businesses (between 1 and 19 employees). Sixty-one per cent of all Electricity and Gas industry businesses are non-employing, while 28 per cent employ between 1 to 19 employees, which is smaller compared with an all-industry average of 35 per cent.

#### Figure 2.2: Share of businesses by employment, Victoria, 2012

68%

63%

38%

44%

50% 50%

32%

54%

30%

19%

20%

9%

4% 5%

0% 0% 0% 0%

8% 8%

Electricity Distribution

Electricity Generation

Electricity Transmission

Gas Supply

On Selling Electricity and Electricity Market Operation

Non Employing 1 to 19 20 to 199 200+ Source: Australian Bureau of Statistics (ABS), Count of Australian Businesses, including entries and exits, 2012

With regards to turnover, Victoria’s Electricity and Gas Industry businesses are more likely to be in the low turnover ranges (zero to less than $50,000), and less likely than average to have a medium annual turnover of $50,000 to $200,000.

#### Figure 2.3: Share of businesses by turnover size, Victoria, 2012

45%

50%

50%

19% 19%

25%

38%

11%

17%

27%

21%

32% 33%

14%

30%

14%

22%

34%

Electricity Distribution

Electricity Generation

0% 0%

Electricity Transmission

Gas Supply

On Selling Electricity and Electricity Market Operation

Zero to less than $50k $50k to less than $200k $200k to less than $2m $2m or more Source: Australian Bureau of Statistics (ABS), Count of Australian Businesses, including entries and exits, 2012

## Labour productivity

* Labour productivity is defined as real gross value added per hour worked. Figure 2.4 shows the average annual compound rate of growth in labour productivity for the Electricity, Gas, Water and Waste Services industry over

#### Figure 2.4: Labour productivity measure by gross value added (GVA) per hour worked, average annual growth, Australia, 2003-2013

the period 2003 to 2013. Nationally the average compound annual growth rate of labour productivity was -3.6 per cent, while the all-industry average was 1.3 per cent.

* Upskilling the workforce continues to be an important focus for increasing productivity, and producing more with less. A well-trained, job-ready workforce is the life- blood of Victoria’s industry and business and the largest determinant of productivity in the State’s economy.

Electricity, Gas, Water and Waste

Services

All industries

##### -3.6%

##### 1.3%

Source: Australian Bureau of Statistics (ABS), Australian System of National Accounts, 5204.0.

# Electricity and Gas workforce and skills

This section focuses on the Electricity and Gas industry workforce. It covers employment levels and trends, as well as workforce characteristics such as age and skill level.

## Key messages, issues and challenges

* Approximately 17,500 people were employed in Victoria’s Electricity and Gas industry in 2012-13. The industry has seen employment grow by 18 per cent over the last five years, equating to approximately 2,700 employees. The outlook over the five years to 2017-18 is for employment to increase by 10 per cent, or 1,700 employees.
* A slightly lower proportion of the Electricity and Gas industry workforce is within the youth age cohort of 15-24 years – at 11 per cent, when compared to all Victorian industries (16 per cent).
* The Electricity and Gas industry employs a much higher proportion of men (78 per cent) than women (22 per cent).
* A lower proportion of the Electricity and Gas industry workforce (33 per cent) has no post school qualifications, compared to the all industries average of 40 per cent. The industry has a higher proportion of workers with Certificate III or IV or Higher Education qualifications.
* Nine occupations in the Electricity and Gas industry – including Electrical Engineering Technicians and Electrical Lineworkers – are considered to be experiencing skills shortages in Victoria.
* Technology is a major driver of workforce development and training needs in the Electricity and Gas industry. Examples
* Competition for skills within the industry is already strong and is further fuelled by competition with other industries, such as Mining, which require skills relating to electricity generation and distribution. The prevalence of contractors in the industry is a further contributing factor to the competition for skilled workers, since the length of individual contracts may not be conducive to taking on apprentices.

## Employment

Approximately 17,500 people were employed in Victoria’s Electricity and Gas industry in 2012-13. The industry has seen employment grow by 18 per cent over the last five years, equating to approximately 2,700 employees. The outlook over the next five years is for employment to increase by 10 per cent, or 1,700 employees.

Electricity Distribution is the largest sub-sector in terms of employment, accounting for 34 per cent of jobs in the industry.

#### Figure 3.1: Electricity and Gas employment, Victoria, 2012-13 and 2017-18

20,000

5,400

include the increasing role of renewable energies in power generation, including areas such as photovoltaics and large scale wind.

* As highlighted earlier, workforce ageing is one of the most significant issues facing the industry. Succession planning and knowledge transfer will be a key consideration for businesses as older workers retire, as will the attraction of younger workers into the industry.

15,000

10,000

5,000

4,900

2,700

3,600

6,000

300

3,000

3,900

6,600

300

0

2012-13 2017-18

On Selling Electricity and Electricity Market Operation

Gas Supply

Electricity Transmission

Electricity Generation Electricity Distribution

Source: Monash Centre of Policy Studies Employment Forecasts, June 2013

## Skills composition

The Electricity and Gas industry’s skill levels have shifted over the period from 2004-05, with highly skilled roles overtaking low skilled roles to account for the largest proportion of roles in the industry. Highly skilled roles as a percentage of the overall workforce are projected to make up 41 per cent of the workforce in 2020-21, an increase from 33 per cent in 2004-05. Medium skilled roles are expected to decline from 32 per cent of the workforce in 2004-05 to 25 per cent in 2020-21. The proportion of low skilled roles in the industry is expected to remain steady, at around 34 per cent in 2020-21.

## Job vacancies

Figure 3.3 opposite highlights the number of vacancies posted online in Victoria over the last two years for selected key Electricity and Gas occupations. The number of online job advertisements across Electricity and Gas occupations has fluctuated over the period and generally tracks the decreasing trend seen in the national Internet Vacancy Index.2

There were approximately 500 newly lodged vacancies in key Electricity and Gas occupational groupings in September 2013. Electrical Engineers were the largest occupations in terms of vacancies, followed by Plumbers.

#### Figure 3.2: Electricity and Gas industry skill levels, Victoria, 2004-05 to 2020-21

50%

Forecast 2012-13 to 2020-21

40%

30%

20%

10%

0%

2004-05

2006-07

2008-09

2010-11

2012-13

2014-15

2016-17

2018-19

2020-21

High Skill

Medium Skill

Low Skill

Source: Monash Centre of Policy Studies Employment Forecasts, June 2013

Note: High skill—managers and professionals. Medium skill—technicians and trades workers, community and personal service workers. Low skill—clerical and administrative workers, sales workers, machinery operators, drivers and labourers

2 Department of Education, Employment and Workplace Relations, DEEWR Vacancy Report, February 2013

#### Figure 3.3: Number of newly lodged online vacancies in key Electricity and Gas occupations, Victoria, 2011 to 2013

350 Electrical Engineers

300

250

200

150

Plumbers Electricians

Electrical Distrib. Trades Electrical Engineers/Technicians

Chemical, Gas, Petroleum Ops

100

50

0

Mar-11

Jun-11

Sep-11

Dec-11

Mar-12

Jun-12

Sep-12

Dec-12

Mar-13

Jun-13

Sep-13

Source: Department of Education, Employment and Workplace Relations (DEEWR) Internet Vacancy Index (based on a count of online vacancies newly lodged on SEEK, My Career, CareerOne and Australian JobSearch), major advertising occupations only. Note: caution advised when using monthly occupation data as it is susceptible to fluctuation from month to month.

## Labour market characteristics

### Employment by age

A slightly lower proportion of the Electricity and Gas industry workforce is within the youth age cohort of 15-24 years – at 11 per cent, when compared to all Victorian industries (16 per cent). Consequently, the proportion of the workforce falling within the cohort of 25-34 years is higher than the all industries average – 28 per cent compared to 24 per cent. The remaining cohorts are close to the all industries average.

#### Figure 3.4: Proportion of employment by age, Victoria, 2012-13

Electricity and Gas 11% 28% 25% 22% 15%

All industries

16%

24%

23% 21% 17%

15-24 25-34

35-44 45-54 55+

Source: Monash Centre of Policy Studies Employment Forecasts, June 2013

### Employment by gender

The Electricity and Gas industry employs a much higher proportion of men (78 per cent) than women (22 per cent). The all-industry average is 54 per cent male compared with

#### Figure 3.5: Proportion of employment by gender, Victoria, 2012-13

46 per cent female.

Electricity and Gas

### 22% 78%

All industries

### 46% 54%

Females Males Source: Monash Centre of Policy Studies Employment Forecasts, June 2013

### Employment by qualification level

A lower proportion of the Electricity and Gas industry workforce (33 per cent) has no post school qualifications, compared to the all industries average of 40 per cent. The industry has a higher proportion of workers with Certificate III or IV or Higher Education qualifications.

#### Figure 3.6: Proportion of employment by qualification level, Victoria, 2012-13

Electricity and Gas 33% 2% 22% 11% 32%

All industries

40%

3% 18% 11% 29%

No post school quals

Certificate I or II

Certificate III or IV

Diploma Higher Education

Source: Monash Centre of Policy Studies Employment Forecasts, June 2013

### Employment by region

In 2011, the bulk of employment in the Electricity and Gas industry was located in Metropolitan Victoria, with the highest proportion of employment (44 per cent) in the Western Metropolitan area.

#### Figure 3.7: Share of Electricity and Gas employment in metropolitan and regional Victoria, 2011

44%

14%

3%

2% 2% 3%

11% 9%

12%

Barwon South West

Gippsland

Grampians

Hume

Loddon Mallee

Northern Metropolitan

Southern Metropolitan

Western Metropolitan

Eastern Metropolitan

Regional Victoria

Metropolitan Victoria

Source: Department of State Development, Business and Innovation (2013) LGA Employment Forecasts

## Occupations in demand

Table 3.1 highlights the occupations at four-digit ANZSCO level (Australian and New Zealand Standard Classification of Occupations) that align to the Electricity and Gas industry. Note that while some occupations also align to other industries, the figures shown are specific to the Electricity and Gas industry.

Forecasts presented in the table estimate the employment growth and replacement demand in terms of the average number of jobs required for each occupation annually up to 2017-18.

Employment growth is the net number of new jobs that the occupation is currently forecasting within the industry.

Replacement demand is the number of existing workers that are forecast to leave each occupation through retirement, moving on etc. that require replacing to meet existing employment needs.

Across all occupations in the Electricity and Gas industry, the projected average annual employment needs between

2012-13 and 2017-18 are for around 780 workers per year to satisfy employment growth and replacement demand.

#### Table 3.1: Estimated annual employment growth and replacement demand for the top 20 occupations in the Electricity and Gas sector, Victoria

|  |  |  |  |
| --- | --- | --- | --- |
| **Occupation** | **2012-13 employment total** | **Average annual employment needs** | **Overall employment growth to 2017-18** |
| Electrical Distribution Trades Workers | 1200 | 160 | 110 |
| Inquiry Clerks | 960 | 50 | 70 |
| Electricians | 830 | 50 | 90 |
| Accounting Clerks | 720 | 30 | 80 |

Electrical Engineers 640 60 140

|  |  |  |  |
| --- | --- | --- | --- |
| Contract, Program and Project Administrators | 550 | 40 | 100 |
| Chemical, Gas, Petroleum and Power Generation Plant Operators | 550 | 100 | 70 |
| Accountants | 550 | 20 | 70 |
| Management and Organisation Analysts | 440 | 20 | 90 |
| Other Specialist Managers | 410 | 20 | 70 |
| Electrical Engineering Draftpersons and Technicians | 400 | 40 | 30 |
| General Clerks | 390 | 10 | 20 |
| Advertising and Sales Managers | 350 | 20 | 50 |
| Software and Application Programmers | 330 | 20 | 30 |
| Call/Contact Centre Workers | 330 | 10 | 30 |
| Metal Fitters and Machinists | 320 | 20 | 30 |
| Keyboard Operators | 320 | 10 | 20 |
| ICT Business and Systems Analysts | 260 | 20 | 30 |
| Structural Steel Construction Workers | 240 | 30 | 10 |
| Drillers, Miners and Shot Firers | 220 | 40 | 30 |
| Other | 400 | 10 | 10 |

\* VET occupations highlighted in green

Key messages at the occupational level are that there is currently forecast to be substantial employment growth and replacement demand to 2017-18 in:

* Electrical Engineers: average annual employment needs of +60, and an estimated overall employment growth of around 140 workers between 2012-13 and 2017-18.
* Electrical Distribution Trades Workers: average annual employment needs of +160, and an estimated overall employment growth of around 110 workers between 2012-13 and 2017-18.
* Electricians: average annual employment needs of +50, and an estimated overall employment growth of around 90 workers between 2012-13 and 2017-18.

## Specialised and in-shortage occupations

This section focuses on current skills shortages in specific occupations related to the Electricity and Gas industry as well as those occupations that are specialised.3 The Department’s analysis of skill shortages considers both quantitative evidence and intelligence gathered through industry consultation and related sources.4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Electrical Engineering Technicians** are identified as being a shortage occupation in Victoria and are also a specialised  occupation. Electrical Engineering Technicians conduct tests of electrical systems, prepare charts and tabulations, and assist in estimating costs in support of Electrical Engineers and Engineering Technologists. Labour market research has shown that employer expectations are for applicants to be additionally qualified or experienced in other occupations such as electricians or gas systems technicians. | | | | |
| **Electrical Engineering Technicians** | **Skills Shortage** |  | **Specialised Occupation** |  |

Highlighted below are the occupations within the Electricity and Gas industry that are deemed to be specialised and/or in- shortage. Table 3.2 then provides a summary of key Electricity and Gas occupations by specialised and in-shortage status.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Plumbers** are identified as being a shortage occupation in Victoria and are also a specialised occupation. Plumbers install and repair water, drainage, gas and sewerage pipes and systems. Skill Shortages associated with Plumbers in Victoria are driven by high trend levels in employment growth and replacement demand, training and graduate absorption. | | | | |
| **Plumbers** | **Shortage** |  | **Occupation** |  |

**Skills**

|  |  |  |
| --- | --- | --- |
| **Electrical Engineers** are identified as being a shortage occupation in Victoria and are also a specialised occupation. Electrical Engineers design, develop and supervise the manufacture, installation, operation and maintenance of equipment, machines and systems for the generation, distribution, utilisation and control of electric power. Skill Shortages associated with Electrical Engineers in Victoria are driven by high trend levels in replacement demand, wages, vacancies and graduate absorption. Industry intelligence is consistent in flagging this as a shortage occupation. Research has shown that employers found it difficult to recruit people with both technical and soft skills such as communication, English language skills and a positive work attitude. Particular challenges related to technical skills included smart meters, switches, surges and high voltage cables as well as AutoCAD. | | |
| **Electrical Engineers** | **Skills Shortage** | **Specialised Occupation** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gasfitters** are identified as being a shortage occupation in Victoria and are also a specialised occupation. Gasfitters install, maintain and repair gas mains, piping systems downstream of the billing meter, and appliances and ancillary equipment associated with the use of fuel gases, including liquefied petroleum gas systems. Skill Shortages associated with Gasfitters in Victoria are driven by high trend levels in employment growth and replacement demand. | | | | |
| **Gasfitters** | **Shortage** |  | **Specialised Occupation** |  |

**Specialised**

**Skills**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Electrical Engineering Draftspersons** are identified as being a shortage occupation in Victoria and are also a specialised  occupation. Electrical Engineering Draftspersons prepare detailed drawings and plans of electrical installations and circuitry in support of Electrical Engineers and Engineering Technologists. Key technical requirements for employability in the field include experience in design software packages, such as AutoCAD and Revit. | | | | |
| **Electrical Engineering Draftspersons** | **Skills Shortage** |  | **Specialised Occupation** |  |

1. DEECD uses the Australian Workforce and Productivity Agency Specialised Occupations List 2013. These occupations have a long lead-time for training, high economic value and a significant match between training and

|  |  |  |
| --- | --- | --- |
| **Electrical Linesworkers** are identified as being a shortage occupation in Victoria and are also a specialised occupation. Electrical Linesworkers install, maintain, repair and patrol electrical sub-transmission and distribution systems. Skill Shortages associated with Electrical Linesworkers in Victoria are driven by high trend levels in replacement demand, vacancy levels, working hours and graduate absorption. Labour market research has shown that employer expectations are for Lineworkers to have practical experience in installing, maintaining and upgrading overhead and underground electrical lines in both high voltage and low voltage environments, though there is a limited pool of applicants in the labour market with readily interchangeable skills between voltages. In relation to vocational training, most employers sought applicants with a Certificate III in Electrical Supply Industry Distribution. | | |
| **Electrical Linesworkers** | **Skills Shortage** | **Specialised  Occupation** |

employment.

1. Department of Employment, Labour Market Research and Analysis Branch (2013) Skill Shortage Occupations – various occupations

**Table 3.2: Occupations ‘in-shortage’ or ‘specialised’**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Technical Cable Jointers** are identified as being a shortage occupation in Victoria and are also a specialised occupation. Technical Cable Jointers join insulated electric power cables installed in underground conduits and trenches, and prepare cable terminations for connection to electrical equipment and overhead lines. Available labour market and recruitment data suggests that with growing replacement demand and high vacancy levels, working hours and graduate absorption, this occupation will continue to be in-shortage. This is further supported by DEECD industry consultations. | | | | |
| **Technical Cable Jointers** | **Shortage** |  | **Occupation** |  |

|  |  |  |
| --- | --- | --- |
| **Occupation** | **In-shortage** | **Specialised** |
| Electrical Engineers | Yes | Yes |
| Electrical Engineering Draftspersons | Yes | Yes |
| Electrical Engineering Technicians | Yes | Yes |
| Plumbers | Yes | Yes |
| Gasfitters | Yes | Yes |
| Electrical Lineworkers | Yes | Yes |
| Technical Cable Jointers | Yes | Yes |
| Fitters | Yes | Yes |
| Metal Machinists | Yes | Yes |

**Skills**

**Specialised**

**Skills shortage occupations also relevant to Utilities include:**

|  |  |  |
| --- | --- | --- |
| **Fitters** are identified as being a shortage occupation in Victoria and are also a specialised occupation. Fitters fit and assemble metal parts and subassemblies to fabricate production machines and other equipment. Skill Shortages associated with Fitters in Victoria are driven by high growth trends in employment and expanding average working hours. Labour market research has shown that specialist skills and experience in demand by employers includes hydraulics, pneumatics, welding and CNC-machining as well as exposure to industry sector specific working environments. English language skills were also a barrier for the successful recruitment of some candidates. Overall a lack of experience and limited skill ranges were the most common reason applicants were found unsuitable within this occupation. | | |
| **Fitters** | **Shortage** | **Occupation** |

**Skills**

|  |  |  |
| --- | --- | --- |
| **Metal Machinists** are identified as being a shortage occupation in Victoria and are also a specialised occupation. Metal Machinists set up and operate machine tools to shape and form metal stock and castings to fine tolerances, using detailed drawings and specifications. Shortages associated with Metal Machinists in Victoria are driven by high growth trends in employment and expanding average working hours. Labour market research has shown that although most positions required a qualification, employers noted the most important factor was high level experience of at least two years when recruiting for specialist positions within the industry. | | |
| **Metal Machinists** | **Shortage** | **Occupation** |

**Specialised**

**Skills**

**Specialised**

## Workforce skills needs

* Technology is a major change driver in the Electricity and Gas industry, with flow-through implications for workforce development and industry skills needs. Examples include the increasing role of renewable energies in power generation, including areas such as photovoltaics and large scale wind.
* Consultations with industry stakeholders have confirmed that one of the biggest issues facing the industry is an ageing workforce. This is an issue experienced across all sub-sectors of the industry, which is faced by imminent loss of skills and experience as older workers retire. Succession planning and knowledge transfer will be a critical consideration for businesses with a high proportion of older workers, as will be the attraction of younger workers into the industry.
* Competition for skills within the Electricity Supply sub- sector is being fuelled in part by the Mining industry. Resources companies build, own and operate significant off-grid electricity generation and distribution networks operating at both high and low voltages. These often supply mining operations and co-located communities. This competition has increased the demand of up-skilling and cross skilling of electrical workers to install, operate and maintain these systems.
* A high proportion of employers in the industry are contractors. The short-term nature of many contracts can act as a deterrent to taking on apprentices or trainees, as the length of an individual contract is often shorter than the duration of apprenticeship. This compounds issues relating to workforce ageing, contributing to a situation whereby new employees are poached from existing employers rather than being trained from scratch.
* The Gas Supply sub-sector has highlighted gaps in the current Australian Bureau of Statistics ANZSCO classification of occupations in terms of specific coverage of job roles and skills relevant to the industry. This makes analysis of the workforce and skills requirements difficult, where relevant skills are hidden within broader occupational classifications and job roles.

# Electricity and Gas vocational training provision

This section focuses on training provided for the Electricity and Gas industry. It covers training activity including a regional analysis, courses, providers and student characteristics.

## Key messages, issues and challenges

* Government subsidised enrolments in Electricity and Gas industry courses have increased marginally over the five years between 2008 and 2013, up by 12 per cent to approximately 600 enrolments.
* A relatively high proportion of Electricity and Gas industry enrolments were apprenticeships – 52 per cent of industry enrolments in 2013, compared with an average across all industries of 10 per cent.
* The largest occupations in terms of 2013 training delivery were Electrical Linesworker and Electrical Engineering Technician, which accounted for 60 per cent and 20 per cent of industry enrolments respectively. The Certificate III in ESI - Distribution attracted the most enrolments, representing approximately 30 per cent of total industry enrolments.
* The majority of training is with TAFE training providers, who accounted for over 99 per cent of industry enrolments in 2013. This has increased from 98 per cent in 2008.
* In 2013, the largest region in terms of Electricity and Gas industry training delivery was Southern Metropolitan, accounting for 56 per cent of industry enrolments.
* Culturally and Linguistically Diverse (CALD) students represented 13 per cent of all Electrical and Gas industry enrolments in 2013. Three per cent of 2013 enrolments were by students reporting a disability.
* The age profile of Electricity and Gas industry students was younger than the average student age profile across all industry training. Forty-five per cent of enrolments aligned to this industry were by students aged 25 or older compared with an all-industry average of 56 per cent.
* The Electricity and Gas industry suffers from thin training markets, where few training providers offer relevant training. In the Gas Supply sub-sector, for example, there are very few training providers offering qualifications within the current UEG Gas Industry Training Package.
* Industry training is highly specialised and is serviced by training providers who either have technical training expertise and can access the highly expensive capital equipment necessary to provide industry training, or can enter into strong industry partnerships with energy network and generation enterprises who give them access to the resources and equipment needed to deliver training. Many of the latter deliver training on the basis of long-standing relationships. However, there remains an issue when such relations cease to exist and the training providers retain these qualifications on their scope of delivery – despite no longer having ready access to the required resources.
* Cost can be an inhibiting factor for apprenticeship training in the industry, particularly factoring in the travel and accommodation costs required for classroom-based training. Alternative delivery methods (such as online training) may present opportunities here, although this needs to be carefully balanced with the requirement to maintain standards in terms of training outcomes and safety.
* A high proportion of training in this industry is delivered on a fee for service basis, meaning the analysis in this report only offers a partial view of industry training delivery. Opportunities for a more complete analysis of training delivery in the Electricity and Gas industry will be presented as mandatory reporting of fee for service training activity by all providers is implemented in 2014.

## Training activity

Table 4.1 overleaf gives a summary of training activity for the Electricity and Gas industry over the period 2008 to 2013.

### Enrolments

Government subsidised enrolments in Electricity and Gas industry courses have increased markedly between 2008 and 2013, by 12 per cent to around 600 from 550 in 2008.

Between 2012 and 2013, government subsidised enrolments in Electricity and Gas industry courses declined by five per cent. This shift reflects the realignment of training under the Refocusing Vocational Training (RVT) in Victoria reform package in May 2012. Under RVT, government subsidies have been rebalanced to direct public investment in training to where it is most needed.5

### Apprentices and trainees

There were approximately 300 apprentice enrolments in courses aligned to the Electricity and Gas industry in 2013, 52 per cent of all enrolments in this industry. All apprentice enrolments were aligned to the Electrical Linesworker occupation in 2013.

Compared to the average across all industries, apprenticeships represented a relatively high proportion of enrolments in the Electricity and Gas industry – 52 per cent of training delivery compared with an all-industry average of 10 per cent.

There were approximately 60 trainee enrolments in courses aligned to the Electricity and Gas industry in 2013, nine per cent of all enrolments in this industry. Power Generation Plant Operators accounted for all trainee enrolments in 2013.

Compared to the average across all industries, traineeships represent a relatively low proportion of enrolments in Electricity and Gas industry – nine per cent of training delivery compared with an all-industry average of 13 per cent.

1. The highest subsidy levels are allocated to courses where their contribution to the economy is assessed as high, and where government subsidy is seen as essential to enable delivery of and participation in training. Lower subsidy levels may indicate evidence of over-supply, or that less government support is required to promote training in these areas. For example, diplomas often

attract lower subsidy rates in recognition of the greater private benefits flowing to students from completing these qualifications and because students can access financial support through VET FEE-HELP to meet upfront costs.

### Specialised and in-shortage occupations

Approximately 85 per cent of Electricity and Gas industry enrolments were linked to specialised occupations or those considered to be in shortage in Victoria. This has increased marginally from 2012, when 84 per cent of enrolments were aligned to specialised or in-shortage occupations.

### Qualification level

A high proportion of Electricity and Gas industry enrolments were at the Diploma and above level (33 per cent). This is higher than the all-industry average (15 per cent).

### Completed qualifications

In 2013, Electricity and Gas industry completions increased by 23 per cent when compared with 2012, to 900 in total.

#### Table 4.1: Key training activity in the Electricity and Gas industry, 2008 to 2013

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Government Subsidised Enrolments** | | | | | | |
| **Industry sub-sector** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Electricity Supply | 550 | 500 | 600 | 750 | 600 | 550 |
| Gas Supply | 10 | <10 | 10 | 40 | 60 | 50 |
| **Total** | **550** | **500** | **650** | **800** | **650** | **600** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Apprentice or trainee** | | | | | | |
| **2008** | | **2009** | **2010** | **2011** | **2012** | **2013** |
| Apprentice | 200 | 200 | 200 | 250 | 250 | 300 |
| Trainee | 10 | <10 | 30 | 60 | 70 | 60 |
| **Total** | **200** | **200** | **250** | **300** | **300** | **400** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Specialised or in-shortage** | | | | | | |
| **Industry sub-sector** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Electricity Supply | 400 | 350 | 400 | 650 | 500 | 500 |
| Gas Supply | 10 | <10 | 10 | 40 | 60 | 30 |
| **Total** | **400** | **350** | **450** | **700** | **550** | **500** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Completed qualifications** | | | | | | |
| **Industry sub-sector** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Electricity Supply | 250 | 500 | 600 | 750 | 700 | 850 |
| Gas Supply | <10 | 20 | 30 | 20 | 30 | 50 |
| **Total** | **300** | **500** | **600** | **800** | **750** | **900** |

|  |  |  |
| --- | --- | --- |
| **Qualification levels – 2013** | | |
| **Enrolments** | | **% total** |
| Certificate I-II | 30 | 4% |
| Certificate III-IV | 400 | 63% |
| Diploma + | 200 | 33% |
| **Total** | **600** | **100%** |

## Courses

The top ten courses aligned to the Electricity and Gas industry accounted for 90 per cent of enrolments in 2013. The Certificate III in ESI - Distribution attracted the most enrolments, representing approximately 30 per cent of total industry enrolments.

#### Table 4.2: Top 10 Electricity and Gas industry courses ranked by 2013 enrolments, government subsidised, 2008 to 2013

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Course Name** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Certificate III in ESI - Distribution | 60 | 100 | 150 | 200 | 200 | 200 |
| Advanced Diploma of Engineering Technology - Electrical | - | - | - | 30 | 150 | 100 |
| Certificate III in ESI - Power Systems - Distribution Overhead | - | - | - | - | - | 90 |
| Advanced Diploma of ESI - Power Systems | 40 | 60 | 90 | 60 | 50 | 40 |
| Diploma of ESI - Power Systems | 50 | 60 | 100 | 60 | 40 | 40 |
| Certificate IV in ESI - Substation | - | - | - | 40 | 40 | 30 |
| Certificate III in ESI - Cable Jointing | - | 20 | 30 | 70 | 50 | 30 |
| Certificate III in Gas Industry Operations | 10 | <10 | 10 | 20 | 40 | 20 |
| Certificate IV in Gas Supply Industry Operations | - | - | - | - | - | 10 |
| Certificate III in ESI - Transmission | <10 | <10 | <10 | 10 | 20 | 10 |

Note: course totals include equivalent superseded courses.

## Enrolments by occupation

The largest occupations in terms of 2013 training delivery were Electrical Linesworker and Electrical Engineering Technician, which accounted for 60 per cent and 20 per cent of industry enrolments respectively. Electrical Linesworker enrolments showed growth over the period 2012 to 2013 (increasing by 22 per cent), while Electrical Engineering Technician enrolments declined by 34 per cent over the same period.

Power Generation Plant Operators and Gasfitters were the third and fourth largest occupations, with around 80 and 30 enrolments respectively in 2013. Together, the top four occupations accounted for 98 per cent of training delivery aligned to the Electricity and Gas industry in 2013.

#### Table 4.3: Electricity and Gas industry occupations ranked by 2013 enrolments, government subsidised, 2008 to 2013

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Occupation** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Electrical Linesworker | 200 | 200 | 200 | 400 | 300 | 350 |
| Electrical Engineering Technician | 250 | 150 | 200 | 250 | 200 | 100 |
| Power Generation Plant Operator | 90 | 150 | 200 | 100 | 100 | 80 |
| Gasfitter | 10 | <10 | 10 | 40 | 60 | 30 |
| Earthmoving Plant Operator (General) | - | - | - | - | - | 10 |
| Electronic Engineering Technician | 40 | 30 | 10 | <10 | - | - |

Please see Appendix A for occupations and associated qualifications with funding bands (available for 2012 and 2013).

## Training providers

A total of seven training providers delivered government subsidised Electricity and Gas industry training in 2013, with two providers delivering more than 100 enrolments.

The number of providers delivering government subsidised training has remained fairly stable since 2008.

The majority of training is with TAFE training providers, who accounted for almost all industry enrolments in 2013 (over 99 per cent). This has increased from 98 per cent in 2008.

#### Table 4.4: Proportion of enrolments by provider type, government subsidised, 2008 to 2013

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Provider Type** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| TAFE | 98% | 98% | 97% | 97% | 98% | 100% |
| Private | 2% | 2% | 3% | 3% | 2% | <1% |
| Learn Local | - | - | - | - | - | - |

## Funding patterns

From July 2012 funding bands for government subsidised training were introduced. The allocation of funding within these bands is designed to better target areas of greatest

#### Figure 4.1: Enrolments by subsidy band, government subsidised, 2013

public benefit and future jobs growth. Where there is not a strong need for Government support the training subsidies are lower.

Electricity and Gas

63% 2% 35%

### Enrolments by funding band

Sixty-three per cent of enrolments in Electricity and Gas industry courses in 2013 were in subsidy Band A. A further 37 per cent were in Band B and Band C.

All industries

19% 34% 30%

8% 9%

See Appendix A for a list of courses and associated subsidy bands.

Band A Band B

Band C Band D Band E

## Regional training activity

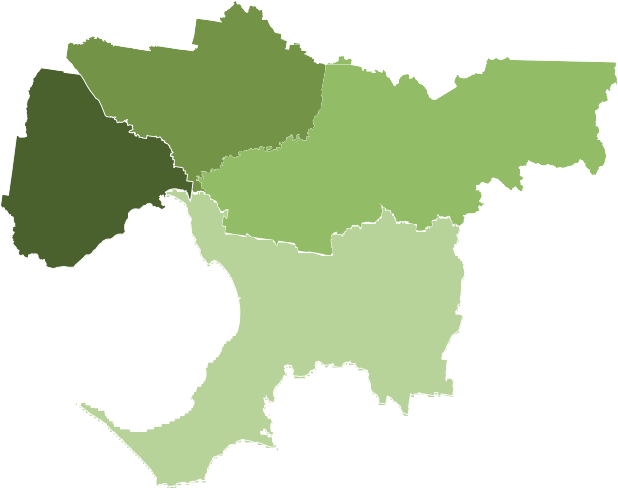
In 2013, the largest region in terms of Electricity and Gas industry training delivery was Southern Metropolitan, accounting for 56 per cent of industry enrolments. Western Metropolitan was the next largest region with 16 per cent. Gippsland was the only regional area delivering training in 2013.

#### Table 4.5: Victorian regions ranked by 2013 enrolments, government subsidised, 2008 to 2013

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Southern Metropolitan | 200 | 200 | 250 | 450 | 300 | 350 |
| Western Metropolitan | 150 | 100 | 150 | 150 | 100 | 100 |
| Northern Metropolitan | 200 | 150 | 200 | 200 | 150 | 100 |
| Eastern Metropolitan | 30 | 40 | 20 | 40 | 60 | 60 |
| Gippsland | - | <10 | - | - | - | <10 |
| Barwon South West | - | - | - | - | 10 | - |

Note: regional enrolment figures sum to slightly more than the overall Victoria-wide figures due to a small number of students undertaking training in campuses in more than one region

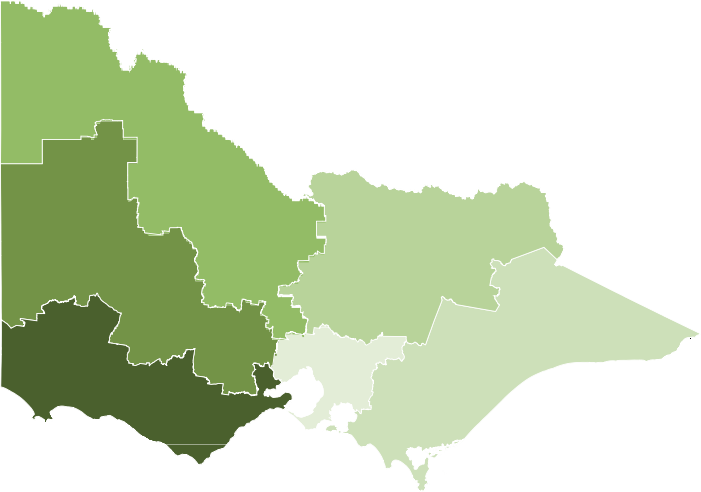
#### Figure 4.2: Electricity and Gas industry training providers and enrolments, 2013



**Loddon Mallee**

**Northern Metropolitan**

2 providers



100 enrolments

**Western Metropolitan**

(inc. CBD)

2 providers

100 enrolments

**Eastern Metropolitan**

1 provider

60 enrolments

**Grampians**

**Hume**

**Barwon South West**

*See metro inlay*

**Gippsland**

1 provider

<10 enrolments

**Southern Metropolitan**

350 enrolments

## Student characteristics

Students from diverse backgrounds engage in vocational training in Electricity and Gas industry fields. Students from a Culturally and Linguistically Diverse (CALD) background represented 13 per cent of enrolments in this industry, while unemployed students accounted for five per cent of the total. Three per cent of enrolments were by students with a disability.

The age profile of Electricity and Gas industry students is relatively young when compared with the average student age profile across all industry training. Forty-nine per cent of enrolments in this industry were by students aged 25 or older compared with an all-industry average of 56 per cent.

#### Table 4.6: Learners Facing Barriers enrolments, government subsidised, 2008 to 2013

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Learner Groups** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Indigenous | <10 | <10 | <10 | <10 | <10 | - |
| Disability | 20 | 10 | 20 | 20 | 20 | 20 |
| CALD | 100 | 90 | 90 | 100 | 150 | 80 |
| Unemployed | 30 | 30 | 40 | 60 | 50 | 30 |
| Aged 25+ | 250 | 200 | 250 | 400 | 350 | 300 |

At the time of enrolment, students enrolling in Electricity and Gas industry courses were slightly more likely than the average across all industries to have completed Year 12 or Certificate II, but less likely than average to have a highest prior qualification of Year 11 or below.

Within the industry, 38 per cent of enrolments were by students with a highest prior qualification of Certificate III or above, compared with an average 23 per cent across all industries (see Figure 4.3).

#### Figure 4.3: Enrolments by highest prior qualification,

The main reasons students were enrolling in vocational training related to Electricity and Gas industry were ‘Job Requirement’ (56 per cent), ‘Get a Job’ (nine per cent), ‘Extra skills’ (five per cent) and ‘Better Job/Promotion’ (four per cent).

#### Figure 4.4: Enrolments by reason for study, government subsidised, 2013

It was a requirement of my job

#### government subsidised, 2013

26%

To get a job

I wanted extra

Bachelor Degree or Higher Degree level

Advanced Diploma, Diploma or Associate Degree

Certificate III - IV

Year 12 or Certificate II

0.6%

1%

3%

2%

20%

34%

42%

4%

5%

9%

47%

56%

skills for my job

To get a better job or promotion

Other

Certificate I

Year 11 or below

0.7%

1%

15%

35%

Note: ‘Other’ includes ‘To get into another course of study’, ‘For personal interest or self-development’, ‘To try for a different career’, ‘To develop my existing business’, ‘To start my own business’.

Electricity and Gas

All Industries

# Appendix A

#### Table 5.1: Enrolments by occupation, course and subsidy band, 2012 and 2013

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Occupation** | **Course name** | **Funding band** | **2012** | **2013** |
| **Earthmoving Plant Operator (General)** | Certificate II in Gas Industry Pipeline Operations | Band B | - | 10 |
|  | **Total** |  | **-** | **10** |
| **Electrical Engineering Technician** | Advanced Diploma of Electrical - Technology | Band C | 40 | <10 |
|  | Advanced Diploma of Electrical Engineering | Band C | <10 | - |
|  | Advanced Diploma of Engineering Technology - Electrical | Band C | 150 | 100 |
|  | Advanced Diploma of Engineering Technology - Renewable Energy | Band C | - | <10 |
|  | Diploma of Electrical Engineering | Band C | <10 | <10 |
|  | Diploma of Electrical Project Management | Band C | 10 | <10 |
|  | **Total** |  | **200** | **100** |
| **Electrical Linesworker** | Certificate II in Asset Inspection | Band C | 10 | 10 |
|  | Certificate III in ESI - Cable Jointing | Band A | 50 | 30 |
|  | Certificate III in ESI - Distribution | Band A | 200 | 200 |
|  | Certificate III in ESI - Power Systems - Distribution Cable Jointing | Band A | - | <10 |
|  | Certificate III in ESI - Power Systems - Distribution Overhead | Band A | <10 | 90 |
|  | Certificate III in ESI - Power Systems - Transmission Overhead | Band A | - | <10 |
|  | Certificate III in ESI - Transmission | Band A | 20 | 10 |
|  | Certificate IV in ESI - Substation | Band A | 40 | 30 |
|  | **Total** |  | **300** | **350** |
| **Gasfitter** | Certificate III in Gas Industry Operations | Band A | 40 | 20 |
|  | Certificate III in Gas Supply Industry Operations | Band A | <10 | <10 |
|  | Certificate IV in Gas Industry Operations | Band A | 10 | <10 |
|  | Certificate IV in Gas Supply Industry Operations | Band A | - | 10 |
|  | **Total** |  | **60** | **30** |
| **Power Generation Plant Operator** | Advanced Diploma of ESI - Power Systems | Band C | 50 | 40 |
|  | Certificate IV in ESI Generation (Operations) | Band C | 10 | - |
|  | Diploma of ESI - Power Systems | Band C | 40 | 40 |
|  | **Total** |  | **100** | **80** |