



Pro forma for SOL 2013 Submission

The Australian Workforce and Productivity Agency (AWPA) (formerly Skills Australia) is currently updating the **Skilled Occupation List (SOL)** for 2013 and is seeking your input concerning the occupations/industry sectors represented by your organisation. In particular, we are seeking evidence of:

- demand and supply imbalance¹, both nationally and regionally
- medium-to-long term demand and supply trends which may impact upon the employment outlook
- formal licensing or registration requirements

(N.B. For the purposes of this exercise, 'medium-to-long term' is defined as a period of around 2 to 10 years).

Please note that the SOL is concerned *only* with medium-to-long-term skills needs rather than immediate skills shortages. As such, AWPA is only seeking to obtain information on longer term trends, rather than immediate shortages and costs.

1. The industry (or industries), and occupation(s) represented by your organisation, for the purposes of this submission, are:

Industry/industries:

- Electrotechnology

ANZSCO	Occupation
341111	Electrician (General)
341112	Electrician (Special Class)
341113	Lift Mechanic
342111	Airconditioning and Refrigeration Mechanic
342211	Electrical Linesworker
342212	Technical Cable Joiner
342313	Electronic Equipment Tradesworker
342314	Electronic Equipment Tradesworker (General)
342315	Electronic Equipment Tradesworker (Special Class)

2. Are there any occupations that you represent where there is evidence of imbalances in the demand for and supply of skills in the medium-to-long term?

(Can you please provide a quantified estimate of the demand and supply for your nominated occupation(s) out to 2020, if possible)

¹ **Skill demand and supply (im)balance** occurs when the quantity of a given skill supplied by the work force and the quantity demanded by employers diverge at the existing market conditions. Labour market supplies and demands for occupational skills are continuously fluctuating. At a certain point in time, there will be labour market imbalances and accompanying skill imbalances because of the disequilibrium between the demand for and supply of skills.



A technical paper released by the National Centre for Vocational Education Research (NCVER), *Tradespeople for the resources sector: Projections 2010-2020*, provides projections on expected employment growth to 2020 for specific trade occupations. The paper canvasses the best, worst and average case scenarios for each occupation based on historical apprenticeship commencement rates to population projections, incorporating assumptions about attrition. According to this report, in the average scenario, the workforce for electricians is expected to grow by close to 46,000 by 2020 increasing from 132,200 in 2010 to 178,150 in 2020. In contrast, the worst case scenario would see 5,915 fewer electricians employed in the sector in 2020 than there were in 2010. While there are notable differences between the average and worst case scenarios, it is certainly an indication of the potential critical under supply of electricians that could be facing the Australian economy out to 2020.

The *EE-Oz Enviroscan 2012* also confirms the potential for a looming undersupply, forecasting that when taking regular workforce attrition into account, the increase in the electrical workforce in 2013 will be half of the increase in 2012, which was itself insufficient to meet predicted workforce demand. For electrical apprentices this decrease represents 24% fewer apprentices or over 1500 fewer qualified electricians graduating in 2013. NCVER confirms this trend, anticipating a electrical workforce expansion of only 3%, with the 2013 cohort expected to represent a marked reduction in graduates, exacerbating labour shortfalls and worsening the skills shortages already affecting the industry.

These figures are particularly concerning in light of the projected growth in demand for those working in electrical occupations. NCVER projects that demand for electrotechnology workers will reach 6.8% over the next five years, well exceeding the national average rate of skills demand growth of 2.1%. Electricians in particular are expected to experience employment demand more than three times the national average over the next five years.

According to a report from DEEWR, *Australian Jobs 2012*, electrician is listed in the top five occupations expected to provide the largest number of new jobs over the next five years across Australia, with 23,800 new jobs projected to be created. Information from *Job Outlook* also confirms that the likely future employment growth for electricians Australia wide is very strong, with expectations it will grow by 56.4% over the next 10 years. *Job Outlook* also indicates that employment for refrigeration and air-conditioning mechanics over the next 5-10 years will grow strongly.

Another DEEWR Report, *Electrotechnology and Telecommunications Trades*, uses the internet vacancy rate as one indicator of the supply/demand disparity for electrotechnology occupations. According to DEEWR's research, the proportion of vacancies filled for electricians declined from more than 70 per cent in May 2011, to 61 per cent in September 2011. Electrical linesworker positions also appear to be difficult to fill, with less than 40 per cent of surveyed vacancies filled within four weeks of advertising, down from 55 per cent in 2010. While projections for the next decade are not available, these figures are an indication of a supply/demand imbalance.



A report from SkillsInfo *Employment Outlook for Construction* confirms that in 2011-12, employers recruiting electricians experienced significant difficulty, especially if they were seeking electricians who had specific licences and experience. Considering that 57% of electricians and 42% of airconditioning and refrigeration mechanics are employed in the construction industry (see *2012 EE-Oz Environmental Scan*), this is evidence of the demand and supply imbalance throughout Australia.

3. Is there evidence of non-metropolitan imbalances in the demand for and supply of skills in the medium-to-long term?

(If so, can you indicate in what part of Australia and the number in the occupation in over- or under-supply)

The shortage of electricians is generally state wide throughout Australia. However, according to data from *Skills Info*, there are specific regional areas of concern in NSW, Queensland and Tasmania. Over the last 12 months in New South Wales the Hunter region experienced particular difficulty and the same could be said in Queensland around the Darling Downs, Mackay and northern Queensland and Tasmanian regional areas in general.

For the other occupations in the electrotechnology industry, skill shortages are evident in both regional and metropolitan areas Australia wide.

4. Are there any occupations which require formal licensing or registration arrangements in order to practice/perform in this occupation?

For example:

- *Midwives are required to register with the nurses board in their state or territory;*
- *Panelbeaters are required to be registered or certified with the state Motor Vehicle Repair Industry Authority*

Currently each state and territory in Australia has separate licensing arrangements for persons working in electrical occupations. The following electrical occupations represented by Master Electricians Australia require an electrical licence to be issued by the relevant state or territory electrical regulatory body:

Electrician (General)
Electrician (Special Class)
Lift Mechanic
Electrical Linesworker
Technical Cable Joiner
Electronic Equipment Tradesworker
Electronic Equipment Tradesworker (General)
Electronic Equipment Tradesworker (Special Class)



There are also various classes of restricted and/or higher level licences applicable for these occupations in various state/territory jurisdictions.

Refrigeration and air-conditioning mechanics are subject to some jurisdictional licensing which differs amongst the states and territories. There is also a national licensing arrangement requiring any person who handles refrigerant or works on refrigeration and air-conditioning equipment to hold a Refrigerant Handling Licence, issued by the Australian Refrigeration Council.

In early 2013, a new national occupational licensing system is scheduled to commence. Those in electrical and air-conditioning and refrigeration occupations will only need to apply for a single national licence that will allow them to work in their particular occupation anywhere in Australia.

5. Is your employment sector expected to be impacted by any medium-to-long term trends (excluding costs associated with training, labour hire, and international sponsorship) which will impact upon demand and/or supply?

Please provide evidence (e.g. data source, policy document) which substantiates these claims.

National Broadband Network

The labour demands from the \$43 billion National Broadband Network (NBN) will further add to the demand for skilled electrical workers. The NBN will require electrotechnology skilled workers through the construction phase and subsequently, where electricians will be involved in installing, maintaining and controlling a number of technologies facilitated by the network. The NBN Co. has advised that the skills demand generated by the NBN will now begin to rapidly increase with an estimated workforce of 30,000 required and maintained for eight years. The current work plan is for 758,000 premises by the end of 2012.

As well as the roll out of cabling, there will be demand on customer premises side of the NBN. Skilled electrical and communications workers will be required to assist customers with installation of digital televisions, home security systems and forms of interactive entertainment.

Resources Boom

The mining and resources boom in Australia is having a significant impact on the electrical and telecommunications labour markets. Information from SkillsInfo in *Employment Outlook for Mining* indicates that electrician is in the top five of occupations employed by the mining sector and this is set to continue. The resources sector provides demand for electricians in both the construction phases and the on-going operations of mine sites and processing plants. Shortages of electricians are already widespread, with employers attracting relatively small numbers of suitable applicants for their vacancies, specifically in the key mining states of Western Australia, Queensland and the Northern Territory.



The electrical contracting industry employs personnel particularly suited to occupations within the resources sector, in terms of skills and knowledge but also in terms of work ethic, occupational health and safety consciousness and industry culture. Consequently, electrical workers are attractive to the resources industry and employers in local business will find it increasingly difficult to match the wages and conditions typical of the resources industry. Electrical workers may also be lured away from the electrotechnology industry to work in other occupations because of the sizeable wages on offer.

The importance of the electrotechnology workforce is such that the current limited availability of these skilled tradespeople (specifically electricians) could potentially constrain the establishment of Australia's mining infrastructure (*Resourcing the Future*, Department of Resources, Energy and Tourism, 2010).

NCVER and ABS also predict that growth in the electrical workforces of the resource rich states of Queensland and Western Australia will be below the national average over the next five years. This is due to comparatively small increases in training intakes despite escalating demand, which has the capacity to constrain infrastructure development with negative, potentially long term, effects.

The Carbon Price and Renewable Energy Technologies

The Australian Government's Clean Energy Future Legislative Package provides a long-term target to reduce Australia's carbon pollution by 80% below year 2000 levels by 2050.

A key element of the Clean Energy Future Legislation is the introduction of a national price on carbon, which commenced on 1 July 2012. Businesses subject to direct carbon pricing will need to recruit for electrical skills in order to update existing infrastructure, implement industrial control techniques and account for energy usage (as required under a carbon price).

As energy retailers also begin to pass on the cost of the carbon tax via higher electricity bills, there will be strong incentive for consumers to actively consider their energy consumption decisions and look for more energy efficient alternatives. Renewable energy options are likely to be in high demand from large businesses to individual householders. In fact, this demand can already be seen with the growing popularity of solar photovoltaic (PV) panels. The uptake of small scale solar PV has increased significantly in the past few years supported by various Australian and state/territory government programs, such as rebates and feed-in tariffs. From 2001 to 2009, 86,000 solar panel systems were installed in Australian homes, while in 2010 this rose to over 158,000 solar panel installations (*Energy in Australia 2012*, Bureau of Resources and Energy Economics). This uptake will only increase as electricity prices escalate and will undoubtedly be matched with heightened demand for the electrical workers who will be required to perform the installations and ongoing maintenance. Electrical and communications workers with new and existing skills in renewable energy technology will be uniquely placed to ensure a smooth transition to a low carbon economy. The technical skills of an electrician underpin every aspect of energy production and usage, meaning that this transition can only occur on the shoulders of electrical workers.



In addition to increased demand for the design and construction of energy and water efficient buildings and infrastructure, the installation and maintenance of efficient appliances and machinery, renovations and retrofits, moving to a more energy conscious future will require electricians trained in energy auditing and reporting techniques. The services of qualified energy auditors will only grow in demand from the businesses required to account for their carbon usage down to the consumers seeking to lower their rising power bills.

6. Please provide any other information you consider relevant evidence to support your submission

(for example, you may know of some independent studies about your occupation that supports your advice to us).

NVCER, *Tradespeople for the Resources Sector: Projections 2010-2020*

[\(<http://www.innovation.gov.au/Skills/National/Documents/TradesProjResourcePaper.pdf>\)](http://www.innovation.gov.au/Skills/National/Documents/TradesProjResourcePaper.pdf)

EE-Oz Enviroscan 2012

[\(<http://www.ee-oz.com.au/files/EE-Oz%202012%20Environmental%20Scan.pdf>\)](http://www.ee-oz.com.au/files/EE-Oz%202012%20Environmental%20Scan.pdf)

DEEWR, *Australian Jobs 2012*

[\(<http://www.deewr.gov.au/Employment/ResearchStatistics/Documents/AustralianJobs.pdf>\)](http://www.deewr.gov.au/Employment/ResearchStatistics/Documents/AustralianJobs.pdf)

Job Outlook - Electricians

[\(<http://joboutlook.gov.au/pages/occupation.aspx?search=&tab=prospects&cluster=&code=3411>\)](http://joboutlook.gov.au/pages/occupation.aspx?search=&tab=prospects&cluster=&code=3411)

DEEWR, *Electrotechnology and Telecommunications Trades*, September 2011

[\(<http://www.deewr.gov.au/Employment/LMI/SkillShortages/Documents/ElectrotechnologyandTelecommunicationsPaper.pdf>\)](http://www.deewr.gov.au/Employment/LMI/SkillShortages/Documents/ElectrotechnologyandTelecommunicationsPaper.pdf)

SkillsInfo, *Employment Outlook for Construction*

[\(<http://www.deewr.gov.au/lmip/default.aspx?LMIP/Publications/IndustryReports>\)](http://www.deewr.gov.au/lmip/default.aspx?LMIP/Publications/IndustryReports)

SkillsInfo, *Employment Outlook for Mining*

[\(<http://www.deewr.gov.au/lmip/default.aspx?LMIP/Publications/IndustryReports>\)](http://www.deewr.gov.au/lmip/default.aspx?LMIP/Publications/IndustryReports)

Department of Resources, Energy and Tourism, *Resourcing the Future*, 2010

[\(<http://www.innovation.gov.au/Skills/National/Documents/NRSETReport.pdf>\)](http://www.innovation.gov.au/Skills/National/Documents/NRSETReport.pdf)

Bureau of Resources and Energy Economics, *Energy in Australia 2012*

[\(<http://www.bree.gov.au/documents/publications/energy-in-aust/energy-in-australia-2012.pdf>\)](http://www.bree.gov.au/documents/publications/energy-in-aust/energy-in-australia-2012.pdf)

7. Please provide the name, position and contact details of a person within your organisation who is willing to be contacted if any further information or follow-up is required.

Name: Malcolm Richards

Position: Chief Executive Officer

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Please attach additional pages if needed.

