

... 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.

Indicative Skill Level

Most occupations in this unit group have a level of skill commensurate with a Bachelor degree or higher qualification. In some instances relevant experience and/or on-the-job training may be required in addition to the formal qualification (ANZSCO Skill Level 1).

Skilled Occupation Criteria

Long-lead time

Electrical Engineers meet the criteria for long lead time, as entry to this occupation requires a substantial training commitment.

- ▶ Employment as an Electrical Engineer generally requires the completion of a university qualification of at least four years study (full-time equivalent), such as a Bachelor of Engineering (Electrical Engineering).
- ▶ Of vocational education and training (VET) students, 55% took more than 1000 contact hours to complete their training (*NCVER Students and Courses*, 2010).

High use

Electrical Engineers meet the criteria for high use, showing that the skills which people have acquired through education and training are actually being deployed for the uses intended.

- ▶ Based on advice from Universities Australia, university courses in electrical engineering have a strong degree of match with eventual employment as Electrical Engineers.
- ▶ Of new graduates employed as Electrical Engineers, 86% had studied in a related field, such as engineering and related technologies (*Australian Graduate Survey*, 2009).
- ▶ As professionals, Electrical Engineers are expected to have a level of skill commensurate with a Bachelor degree or higher qualification. Of those employed as Electrical Engineers, 72% were found to possess this level of skill (*ABS Survey of Education and Work*, 2010).¹

High risk

Electrical Engineers also meet the criteria for high risk/high disruption. This indicates that the occupation is important for the effective operation of an enterprise and/or the broader economy.

- ▶ Electrical Engineers are required to be registered or licensed in some states and territories, such as Victoria, Queensland and Tasmania.
- ▶ Electrical Engineers are important to meet government policy priorities at both the Commonwealth and state level. These include the expansion of electricity infrastructure, the development of sustainable electricity systems and implementation of the National Broadband Network.

¹ Analysis for the Skilled Occupations List (SOL) was conducted using the latest available data, including the 2010 ABS Survey of Education and Work (SEW). Percentages may therefore differ from those cited in the 'Occupation Trends' analysis (over the page), which uses alternative sources in some instances (e.g. the 2008 ABS Survey of Education and Work). Small sample sizes for some occupations may also result in fluctuations in the SEW data between 2008 and 2010. The specific data sources used for the Occupation Trends analysis can be found on the Skills Australia website: <http://www.skillsaustralia.gov.au/SOLsummarysheets.shtml>.

Occupation trends

ANZSCO: 2333

Electrical Engineers

Employment level	19,100 Almost all workers are employed full-time (97.3%).
6 digit employment (2006 Census)	233311 Electrical Engineer 8870
Employment growth	Over the five years to August 2010, employment increased by 41.0% (compared with growth of 12.1% for all occupations). Employment is expected to increase by 22.8% over the next five years (compared with projected growth of 9.5% for all occupations).
Unemployment rate	Average (around 3.7%) compared with all occupations.
Educational profile	Around 64.6% have a Bachelor degree or higher qualification.
Vacancies	The Internet Vacancy Index (IVI) rose by 4.4% over the 12 months to September 2010 to 100.3 (March 2006=100). Vacancies for all occupations increased by 19.4%.
Gender	Around 4.3% of workers are female (compared with 45.4% for all occupations).
Labour turnover	Around 5.3% of workers leave this occupation in a year compared with 13.1% for all occupations.
Age profile	The median age is 38.5 years and 35.5% are aged 45 years and over (compared with 38.5% for all occupations).
Earnings	Median full-time weekly earnings (before tax) are high (\$1610).
Graduate outcomes	Graduate Careers Australia data show 87% of Bachelor degree graduates in electrical engineering seeking full-time work were working four months after graduation, 73% of whom were working as Engineering Professionals and ICT Professionals.
Skill shortages	National shortages of Electrical Engineers have been identified continually through DEEWR research since 2005.

Labour market

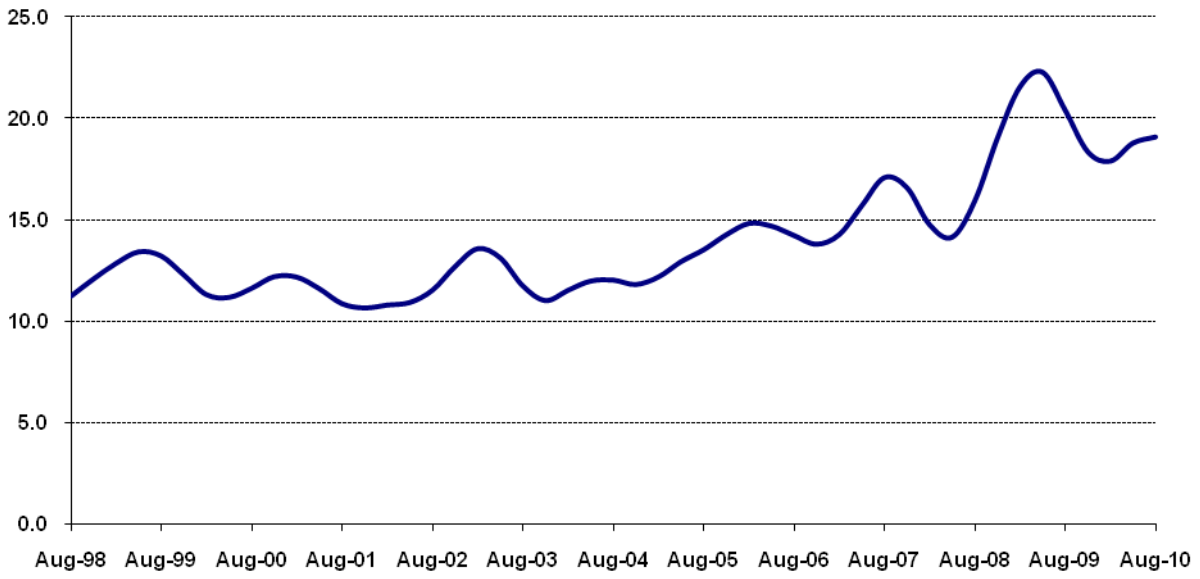
Shortages have been apparent since 2005. Research in late 2010 shows there has been an increase in the average number of applicants per vacancy considered by employers to be suitable from 1.5 in late 2009 to 3.0. However, the proportion of vacancies filled remains low, 40%, with employers reporting increased demand for services. Employers in larger states experienced significant difficulty filling positions. The unemployment rate is about the average for 'all occupations'. However, anecdotal information suggests some new graduates experience difficulty gaining initial employment as employers are generally seeking experienced engineers.

Most employers surveyed required applicants to have previous experience in a particular industry or role, such as experience in the water industry, rail industry or with HV electrical engineering projects. Many employers required a minimum of five years experience and most employers sought local knowledge. Lack of relevant experience and lack of appropriate qualifications were key reason for applicants being considered unsuitable.

Summary

Shortages have been relatively persistent and employment growth is expected to continue to be strong, although the level of advertised vacancies is low. However, employers have very specific requirements and low vacancy filling rates may not be due to a lack of qualified applicants, rather they may reflect the highly specialised nature of many positions and the consequent demand for particular skills and high levels of experience.

Electrical Engineers
Employed Persons ('000s) Aug 1998 to Aug 2010



Internet Vacancy Index (IVI) - 3 Monthly Average - Nov 2006 - Sept 2010
Electrical Engineers (March 2006 = 100)

