



Labour Market Research – Engineering Professions and Technicians

Western Australia

April quarter 2018

Occupations in cluster		Rating
2332-11,12,14,15	Civil Engineering Professionals	Recruitment difficulty
2333-11	Electrical Engineer	Regional recruitment difficulty
2335-12	Mechanical Engineer	No shortage
2336	Mining Engineers*	No shortage

[* Occupation assessed at the national level, separate rating not available for the state]

Key issues

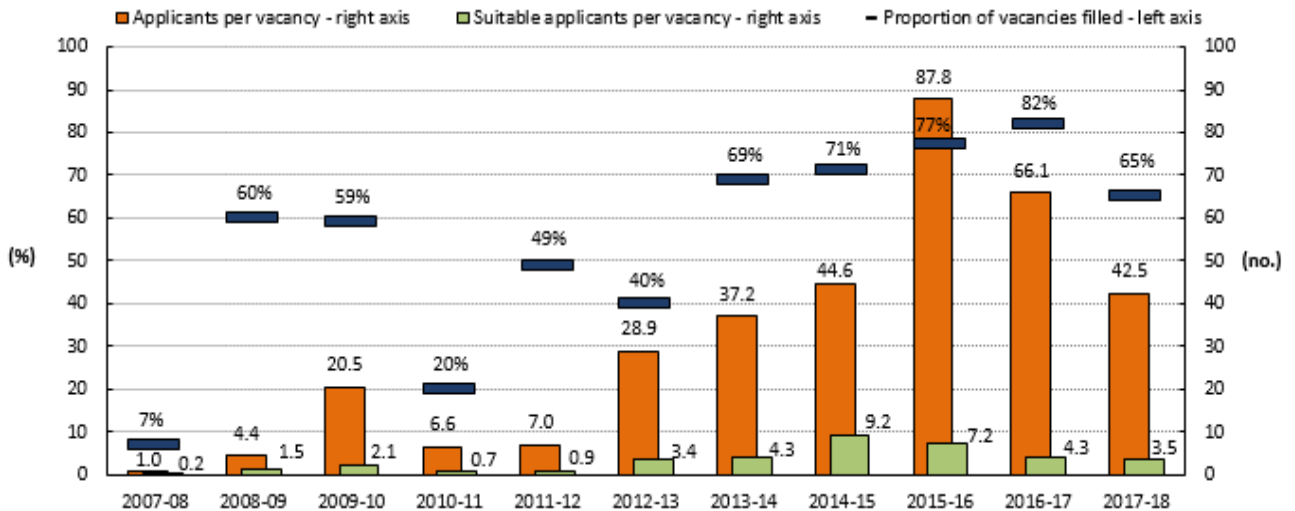
- Surveyed employers seeking professionals in this cluster of occupations filled 65 per cent of their vacancies with suitably qualified and experienced applicants. This year’s result represents a decline of 17 percentage points on the results of the previous survey.
- The proportion of vacancies filled ranged from 80 per cent (mechanical engineers) to a low of 54 per cent (electrical engineers).
- Employers seeking electrical engineers experienced considerable difficulty sourcing suitable applicants for senior roles in regional Western Australia. Surveyed employers seeking civil engineering professionals filled 64 per cent of their roles, sourcing suitable applicants for roles in construction with ease. However, they struggled to identify suitable applicants for roles in land development and transport.

Survey results

- Surveyed employers filled 65 per cent of vacancies in this cluster, a decline from the 82 per cent of vacancies filled in 2017.
 - Employers across the metropolitan and regional areas respectively filled 63 per cent and 67 per cent of their vacancies.
 - Employers with vacancies for electrical engineers filled 54 per cent of their roles - the lowest proportion filled for any occupation in this cluster and six percentage points below the five-year average for this occupation.
 - Surveyed employers seeking civil engineering professionals filled 64 per cent of their roles. Last year, surveyed employers filled 83 per cent of vacancies for this occupation. While the decline over the last 12 months has been substantial, the five-year average for this occupation is 66 per cent.

- Surveyed employers seeking mechanical engineers filled 80 per cent of their roles. This is the third consecutive year where surveyed employers have filled 80 per cent of more of their vacancies for this occupation. Prior to this period, the proportion of vacancies filled varied considerably.
- Overall, employers attracted an average of 42.5 applicants per vacancy, down from the average of 66.1 applicants per vacancy in 2017. The decline in the number of applicants was seen across all occupations in this cluster.
 - Employers seeking electrical engineers attracted the lowest average number of applicants per vacancy this year (28.5), and saw a 44 per cent decline in the average number of applicants per vacancy compared to the previous year.
 - Surveyed employers seeking mechanical engineers saw the average number of applicants per vacancy fall by 55 per cent on the previous year. Despite the substantial decline, these employers nevertheless attracted an average of 52.4 applicants per vacancy, the second highest average number of applicants of all occupations in this cluster this year.
 - Employers seeking civil engineering professionals attracted an average of 54.5 applicants per vacancy. This was the highest average number of applicants recorded of all occupations in this cluster, but 41 per cent below the average recorded for this occupation last year.
- Employers attracted an average of 3.5 suitable applicants per vacancy across the occupations in this cluster. This is the lowest average number of suitable applicants recorded for this cluster since 2012-13.
 - Employers seeking mechanical engineers attracted the highest average number of suitable applicants per vacancy (8.2), down from the average of 10.8 suitable applicants in 2017.
 - Employers seeking civil engineering professionals attracted an average of 3.5 suitable applicants per vacancy, on par with the results of the cluster as a whole and an incremental increase on the previous year.
 - Employers seeking electrical engineers attracted the lowest average number of applicants per vacancy (2.2), down from an average of 3.8 suitable applicants last year and the lowest average number of suitable applicants for this occupation since 2011-12.
- Surveyed employers seeking civil engineering professionals with experience in construction filled all their vacancies. Those requiring experience in land development and transport (including rail) experienced considerable difficulties finding suitable applicants, and many were unable to fill these vacancies. Consequently, a rating of recruitment difficulty has been allocated to civil engineering professionals this year to reflect the challenges specific to recruiting applicants with exposure to land development and transport projects.
- The majority of unfilled vacancies for electrical engineers occurred in regional areas. These unfilled vacancies were senior positions and required applicants with specialised experience in fixed plant electrical engineering, particularly in maintenance and upgrades.
 - Owing to the difficulty experienced by employers in filling these specific types of roles, a rating of regional recruitment difficulty has been allocated to this occupation this year.

Figure 1: Proportion of vacancies filled (%), average number of applicants and suitable applicants per vacancy (no.), Engineering Professions, Western Australia, 2007-08 to 2017-18



Source: Department of Jobs and Small Business, Survey of Employers who have Recently Advertised

Unsuitable applicants

- Employers required applicants with experience that was relevant to the advertised vacancy, such as experience in construction, mining, land development, fixed plant, design and the skills to lead and manage a team.
 - The main reason employers deemed applicants as unsuitable for their vacancies was due to applicants lacking a background in this field.
- Employers also cited the need for applicants with well-developed soft skills, including the ability to work effectively in a team, time management skills and the ability to communicate effectively with others. Applicants who could not demonstrate these qualities were considered unsuitable for advertised roles.
- Employers also cited poorly written applications and underperformance at interview as reasons applicants were deemed unsuitable.

Demand and supply trends

- Activity levels in the construction, manufacturing and mining industries influence demand for engineering professions.
- The total value of engineering construction work done in Western Australia increased 68 per cent over the four quarters to March 2018.¹
 - The heavy industry sector experienced the largest growth in this period, rising 96 per cent due to a spike in the September 2017 quarter. The value of work done in this sector since the September 2017 quarter has declined to the lowest point since the March 2010 quarter.
 - Energy generation, transmission etc. and pipelines; water storage and supply, sewerage and drainage; and telecommunications sectors grew by around 20 per cent over the year. The value of work done on by the roads, highways and subdivisions sector grew by five per cent.
 - The recreation and bridges, railways and harbours sectors suffered the greatest losses over the year, falling 22 per cent and 13 per cent respectively.

¹ ABS, Engineering Construction Activity, Cat. No. 8762.0, Table 22

- Data on the total value of engineering construction activity commenced in Western Australia for the four quarters to March 2018 is not available. However, a comparison of the March 2017 and March 2018 quarters show a 33 per cent decline.²
 - The value of engineering construction work commenced for all sectors identified in this data set declined over the year to March 2018, except telecommunications (which rose 19 per cent) and heavy industry (which jumped almost 240 per cent).³
 - While engineering construction work for on bridges, railways and harbours fell 54.5 per cent over the year to March 2018, the value of work commenced in the March 2018 quarter jumped by 570 per cent.⁴
 - Work is currently underway on the Forrestfield - Airport rail link, with completion anticipated in 2020. Tenders for other rail projects in the Perth metropolitan area are planned for release on a progressive basis starting mid-2018.⁵
- Internet vacancy data shows that job vacancies for this cluster of occupations increased by almost 55 per cent this year (albeit from a low base), indicating recovering demand for these occupations in the state.⁶
 - While this rise follows four successive years of declining numbers, the number of vacancies recorded over the year to April 2018 remains 92 per cent below the all-time high recorded for this cluster of occupations in 2012-2013.
- The most recent Counts of Australian Businesses shows that the number of Engineering Design and Engineering Consulting Services increased by 2.4 per cent over the 2016-17 financial year. This growth was in businesses with no salaried employees suggesting an increase in the number of engineers self-employed as consultants and contractors.⁷
- The most current higher education data show that over the last 12 months there was an overall decline in the number domestic students completing bachelor degrees in occupations in this cluster.⁸
 - Undergraduate completions in civil engineering fell 26 per cent. Completions in mechanical engineering and mining engineering fell 18 per cent.
 - The only increase in completions was recorded for electrical engineering, which increased by 26 per cent, albeit from a small base.

² ABS, *Engineering Construction Activity*, Australia, (cat No 8762.0) March 2018, original, Table 24

³ Ibid

⁴ Ibid. ABS data notes that this data has a relatively standard error of 10% to 25% and should be used with caution.

⁵ <https://www.metronet.wa.gov.au/>

⁶ Department of Jobs and Small Business, Internet Vacancy Index, April 2018

⁷ ABS Counts of Australian Businesses, Cat. No. 8165

⁸ Department of Education and Training, Higher Education Student Data Collection, 2016, customised tables