

Engineering Manager		New South Wales (NSW)
ASCO Code: 1332-11	April 2009	
Labour market rating:	Recruitment difficulty	
Comment: <i>Recruitment difficulties are for those with extensive experience in specialised areas such as dam construction, waste water management and component failure analysis.</i>		

Occupational demand

Demand for engineering managers has been mixed over the past year. The AIG-PricewaterhouseCoopers *Performance of Manufacturing Index* for March indicates that manufacturing activity in NSW declined for the eleventh consecutive month. The Construction Forecasting Council (CFC) expects the value of non-residential construction work in NSW to grow by 16 per cent in 2008-09, with most of the growth in engineering construction. However, non-residential building approvals have fallen considerably in recent months. Raw coal production in NSW grew by 7.0 per cent in 2008 but fell in January and February 2009 to its lowest level in almost three years.

Occupational supply

The supply of engineering managers is dependent on the number of engineers who progress to managerial roles or migrate as engineering managers. The number of students completing degrees in the major engineering disciplines was between 1000 and 1260 a year from 1998 to 2008. Course completions between 1998 and 2001 were fairly stable and therefore there has been no significant reduction in the cohort of graduates who would now have seven to ten years of experience. Supply from net overseas arrivals to NSW has increased sharply from 44 in 2003-04 to 265 in 2007-08.

Employer and industry comments/current labour market

A DEEWR survey of employers who had recently advertised for engineering managers found that 65 per cent of vacancies were filled within six weeks of advertising, which was an improvement on the figure of 36 per cent in 2007. The majority of employers and recruitment agencies surveyed for this report were able to fill vacancies for engineering managers with few difficulties across a range of industries including manufacturing, civil construction, local government, consulting and defence. In other cases, advertisements attracted a good field of suitable applicants but the employer suspended the recruitment process due to the economic downturn. A minority of employers, however, while stating that the number and quality of applicants for engineering manager positions had generally improved, still experienced recruitment difficulties in some areas. Recruitment difficulties were mainly confined to councils in inland NSW and to positions requiring extensive experience in specialised areas such as dam construction, building services, waste water management and component failure analysis. In a number of cases, such positions did attract suitable applicants but they failed to reach agreement with the employer on a remuneration package. Several recruitment agencies noted that some applicants had not adjusted their salary expectations to the lower market rates now prevailing. On the other hand, recruitment agencies also noted that some employers were hesitating to recruit less-than-ideal applicants in the hope that better applicants would become available in the current downturn.

Labour market outlook

Demand for engineering managers is likely to remain patchy over the next 12 months. Manufacturing activity will be constrained over the short-term by the weakness in the NSW and international economy, while mining activity will also be adversely affected by the large falls in contract and spot market prices for key commodities such as black coal. However, the CFC expects non-residential construction to grow by 12.5 per cent in 2009-10 which will help support demand for engineering managers with experience in relevant infrastructure projects. Recruitment difficulties over the short term are likely to remain confined to a small number of specialised areas.

Engineering Manager		Victoria
ANZSCO Code: 1332-11	April 2009	
Labour market rating:	No Shortage	
Comment:		

Occupational demand

Engineering managers plan and control the engineering and technical operations of an enterprise or project. ABS census data show there were over 2100 qualified engineering managers in Victoria with 40 per cent of these employed directly in manufacturing and 22 per cent working in engineering consultancy services. Because many engineering managers are directly employed in manufacturing, occupational demand is largely determined by the general level of economic activity. However, that part of the sector dealing with non-discretionary goods manufactures, such as food and other essential consumer items, will be less affected by general economic conditions than will manufacturing activities associated with discretionary spending. Victorian state government data show food production is the state's largest manufacturing sector with 21 per cent of manufacturing industry turnover and represents 30 per cent of total product exports. Dairy is by far the largest food export from Victoria and represents 84 per cent of Australia's dairy exports and 13 per cent of world dairy trade.

A demand source of growing importance in the outlook period is large scale public infrastructure projects; such projects may offer significant additional sources of demand, particularly at a time when the general level of economic activity is subdued, by providing counter-cyclical demand for engineering managers.

Occupational supply

Engineering managers typically have considerable experience in a niche part of their relevant engineering discipline and often have specialised postgraduate education in engineering management and finance. Whilst there are many postgraduate qualifications that may lead to engineering management work, data that is indicative of the flow of engineering managers may be seen with the numbers of postgraduate qualifications specifically in some field of engineering management. These data show that relatively few people completed such studies with an average of 44 persons over each of the seven years to 2007. The number peaked in 2004 with 67 but declined to 33 in 2007.

Employer and industry comments/current labour market

A survey of employers who had recently advertised for engineering managers was conducted for this report. Almost 90 per cent of advertised positions were filled, with 3 suitable candidates per vacancy, suggesting the shortage identified in the 2007 survey (when 55 per cent of positions were filled) appears to have eased. A small number of employers suggested food industry positions were typically difficult to fill. More generally, and despite the high number of successfully filled positions, anecdotal evidence indicated some difficulty in filling positions for infrastructure projects in areas such as rail and other civil engineering disciplines.

Labour market outlook

Based on the survey data, there is no evidence to suggest a current or foreseeable shortage of engineering managers in Victoria.

Engineering Manager		Queensland
ANZSCO Code: 1332-11	March 2009	
Labour market rating	Shortage	
Comment:		

Occupational demand

Engineering managers plan, organise, direct, control and coordinate the engineering and technical operations of organisations across various engineering disciplines. While most engineering managers work in consultancy firms, employment opportunities can also be found in manufacturing, construction and in the public sector. Demand for engineering managers has been sustained in Queensland by the flow on effects of strong activity in the mineral resources sector and, more recently, solid investment in State-wide infrastructure projects. For example, there are more than 160 Government led 'major' infrastructure projects currently underway in Queensland, costing more than \$100 billion. Australian Bureau of Statistics (ABS) indicate that the trend volume of engineering construction work done over the year to December 2008 increased by 23.5 per cent.

Occupational supply

Formal entry to this profession is via the completion of an engineering degree and management studies or substantial engineering experience. Registration with the Board of Professional Engineers of Queensland is mandatory. While specific commencement figures for engineering managers are difficult to determine available figures from the Department of Education, Employment and Workplace Relations show that the number of students commencing dual degrees in management studies and an engineering discipline almost doubled between 2003 (54) and 2007 (99). The number of students completing their studies over the same time grew accordingly, with 53 students completing dual degrees or postgraduate engineering and management studies in 2006. Arrivals and departures data from the Department of Immigration and Citizenship indicate that international migration could be a significant source of supply to this profession as 168 self-identified engineering managers migrated to Queensland in 2007-08.

Employer and industry comments/current labour market

This year, only 43 per cent of vacancies for engineering managers in Queensland were filled within six weeks of advertising. Employers considered two in three applicants as unsuitable, mostly because they had insufficient industry experience or they lacked specific skills. Employers who received applications from overseas reported that they did not give these candidates serious consideration if they did not present with knowledge and experience in Australian engineering codes, standards and regulations. A number of contacts who failed to recruit through advertising reported they had subsequently filled their vacancies by directly approaching employees in other firms. They noted however, that encouraging engineering managers to move from existing positions is becoming increasingly difficult. Recruitment specialists reported the recent economic slowdown has resulted in employers insisting that shortlisted applicants possess specific skill sets and industry experience. These contacts also advised that engineering managers with experience in asset management or oil and gas are in shortage.

Labour market outlook

ABS data for Queensland indicate that the value of construction work still in the pipeline in the December Quarter was 20.6 per cent higher in 2008 than it was in 2007. At the same time, the mineral resources sector has reported that despite the recent downturn, resource companies in Queensland are pushing ahead with expansions. As such, demand for engineering managers looks set to continue. Although there has been an increase in the number of students studying dual engineering and management degrees, it will be some time before these students have gained enough experience to qualify for senior engineering manager roles and immigration does not appear to be making up any shortfall. It is likely then that the current shortage of engineering managers in Queensland will continue for the foreseeable future.

Engineering Manager		South Australia
ASCO Code: 1332-11	March 2009	
Labour market rating	No Shortage	
Comment		

Occupational demand

More than forty per cent of engineering managers are employed in the manufacturing industry. A further twenty six per cent work in the business services sector. Demand for engineering managers is largely dependent on the level of manufacturing activity, although other sectors such as construction, mining and energy also contribute to overall demand. A monthly survey undertaken by the Engineering Employers Association of South Australia shows a steady decline in SA manufacturing activity from mid-2008 onwards. Media reports indicate a significant number of manufacturing jobs have been shed in the past year, especially in the automotive manufacturing and printing industries. Demand for engineering managers to work on specific mining and water treatment/supply projects has created a small number of new positions in SA, although overall demand conditions in the mining industry have declined in response to slowing global demand for commodities. DEEWR's Skilled Vacancy Index data show that newspaper vacancies for engineering managers were relatively stable over the twelve months to February 2009.

Occupational supply

Employer requirements vary in terms of the qualifications and experience needed for specific roles. As such, there are no mandatory qualifications for this occupation. ABS 2006 Census data show that around fifty five per cent of engineering managers hold a bachelor degree, nineteen per cent have diploma-level qualifications, and almost twenty per cent have a qualification equivalent to an AQF Certificate III or IV. Given the diverse means of entry into the occupation, estimates of supply are not available. Supply to the occupation from net overseas immigration numbered 59 in 2007-08, compared to 35 in 2006-07.

Employer and industry comments/current labour market

A survey of employers who had recently advertised for engineering managers showed that 83 per cent of vacancies were filled within six weeks, compared to 60 per cent in 2008. On average, there were approximately 19 applicants per vacancy, more than double the number twelve months earlier. However, the number of suitable applicants per vacancy declined from 2 to 1.6 over the same period, largely due to the highly specialised skill sets required by those employers included in the survey. Nonetheless, there was a noticeable improvement in the percentage of successful recruitment outcomes compared to a year ago, and a shortage of engineering managers was not apparent. Employers and recruitment agencies contacted for this report indicated that more than half of the vacancies advertised in recent months were new positions, the majority related to upcoming water treatment and supply projects in various parts of Australia. At the same time, there was evidence that some employers had deferred recruitment decisions due to the economic downturn. Overall, a high proportion of recently advertised vacancies for engineering managers were filled without difficulty and the occupation is not regarded as being in shortage at this time.

Labour market outlook

Demand for engineering managers is likely to be weak over the short-term given the unfavourable outlook for industries which are major employers, especially manufacturing, non-residential construction and mining. A shortage of engineering managers is therefore not expected to emerge over the next twelve months.

Engineering Manager		Western Australia
ANZSCO Code: 1332-11		March 2009
Labour market rating:	No shortage	
Comment		

Occupational demand

The 2006 Australian Bureau of Statistics (ABS) census data regarding engineering managers show that in WA, the majority of engineering managers work in the industry divisions of Professional, Scientific and Technical Services (31 per cent) and Manufacturing (22 per cent). The main specific industry of engineering manager employment is Engineering Design and Engineering Consultancy Services. Demand for engineering managers can be linked to activity in the oil and gas industry and infrastructure projects in WA. Industry bodies report that currently there are several liquefied gas projects and a major port development in the advanced planning and implementation phase in WA. ABS data show the number of engineering managers in WA has increased by 29 per cent between 2001 and 2006. The ABS Labour Force Survey shows that between November 2007 and November 2008, the level of employment of this occupation has been steady.

Occupational supply

There is no simple measure of the supply of engineering managers because it is seen as a requirement that an engineer may only advance to the position of manager after a number of years experience. Although a number of engineering students complete double degrees with subject areas such as business management, commerce, banking and finance, and accounting, they will not enter the workforce at this level of management. It is expected that management skills will be developed in a variety of project management roles. The net gain from overseas migration of engineering managers to Western Australia was recorded as 454 persons in 2007-08 which was more than the net gain of 323 in 2006-07.

Employer and industry comments/current labour market

A DEEWR survey of employers who had recently advertised for engineer managers found that all vacancies were filled within six weeks of advertising. There were almost seven applicants per vacancy of whom around two applicants per vacancy were considered by employers to be suitable. Employers commented that this was often a difficult position to fill as every job or project was different and the skills needed for the implementation of each project had to be closely aligned to the skills of a manager. They noted that for any major project they would require a manager with specific technical skills and well developed business skills with the ability to manage people, resources, budgets and time. Employers and recruitment specialists said this made advertised positions difficult to fill even with several applicants and that it was a matching process as well as a recruitment exercise. Employers said the varying nature of engineering manager positions and roles had often resulted in applications that were very generic.

Employers suggested the current labour market was very different from that of a year ago, indicating it used to be very difficult to attract applicants but that since late 2008 advertisements attracted a large response and that they now have potential employees cold calling them. Recruitment companies indicated employers could now obtain a much better fit between the skills they needed and the applicants for the positions. Several employers commented that filling an engineering manager position was crucial to their longer term workforce planning and they were therefore keen to get the right person for their company. They were happy to be able to be selective in their recruitment and indicated this was a building block to their company's future.

Labour market outlook

The labour market outlook is expected to remain unchanged in the short to medium term.

Engineering manager		Tasmania
ANZSCO Code: 1332-11	March 2009	
Labour market rating	Shortage	
Comment: Shortages are evident for engineering managers in the electrical fields.		

Occupational demand

The number of engineering managers in Tasmania appears to have barely changed between the last two Censuses, with 191 recorded in 2001, and 189 in 2006. However it is the view of the professional association, Engineers Australia, that there are definitional issues which affect the accuracy of the ABS count. Expressed concerns include that there are significant numbers of people classified in these occupations who have their highest qualification in a business or commerce field. It is the view of Engineers Australia that these are often engineers who have subsequently added to their management skills by acquiring additional non-engineering qualifications.

The largest proportion of those who are classified as engineering managers work in the manufacturing industry at 35.1 per cent. The next largest groups are in business services at 18.9 per cent, electricity gas and water at 17.8 per cent, followed by government and construction at 9.2 per cent each. Demand factors depend very much on the industry in which engineering managers work, with manufacturing for example, dependant upon domestic or overseas demand for the product being manufactured. Industry sources advise that even during economic downturns, engineering or production managers are still required to oversight production, maintenance and general plant management.

Occupational supply

Industry sources advise that most engineering managers are senior engineers with many years experience, who have often acquired further qualifications such as an MBA. As such there is no easily measurable pathway into the occupation. However, it is perhaps significant that according to ABS census data, approximately 19 per cent of engineering managers arrived in the State from interstate and overseas between 2001 and 2006, emphasising the national and international nature of the engineering labour market, particularly at senior levels.

Employer and industry comments/current labour market

A survey of employers who had advertised for engineering managers was conducted for this report. Positions in the mechanical engineering field were filled, with employers reporting a good range of applicants from which to choose. Advertised positions in the electrical field all remained unfilled, with contacts indicating they generally failed to attract suitable applicants. Industry sources contacted stated that it was always difficult to attract experienced, highly skilled engineers in management roles to Tasmania, and that this has not changed despite the economic downturn.

Labour market outlook

Shortages of engineering managers are likely to persist for at least the next 12 months as Tasmania has always had difficulty attracting people who are sufficiently skilled and experienced to fill managerial roles, and there is no evidence this is likely to change in the short term.

Engineering Manager		Northern Territory
ANZSCO Code: 1332-11		March 2009
Labour market rating	Recruitment difficulty	
Comment: Recruitment difficulties exist for vacancies where capital city fly-in-fly-out is not available.		

Occupational demand

The Australian Bureau of Statistics (ABS) Census recorded 80 engineering managers employed in the Northern Territory (NT) in 2006, a marginal decline from the 2001 level. Expenditure on mineral exploration (excluding petroleum) in the NT increased to a record level in December 2008, continuing an upward trend that began in 2003 (ABS 8412.0). The value of engineering construction work done in the NT increased throughout 2008 (ABS 8762.0), after declining during 2007, to surpass 2006 levels. The NT Government spending on infrastructure programs has grown each year since 2001 and increased by 33 per cent in 2007-08 to \$711 million. The NT has, at least initially, been somewhat shielded from the global economic crisis and its impact on engineering demand.

Occupational supply

Employers found there were very few engineering managers within the NT looking for work. They commented that existing engineering managers tend to be stable in their roles and that little movement between companies occurs. There was a reliance on interstate recruitment but employers had difficulty sourcing candidates who were willing to relocate to the NT. Candidates commonly sought a fly-in-fly-out option from other capital cities. Some employers considered international candidates but were reluctant to employ them due to the sponsorship requirements and the lack of Australian experience.

Employer and industry comments/current labour market

All employers contacted were able to fill advertised engineering manager vacancies. However, there were difficulties securing suitable applicants with negotiations for conditions and start times causing considerable delays and resulting in some vacancies being filled outside the survey period. Vacancies attracted multiple applicants, with applicants from overseas most common. Some employers commented that it had been difficult to attract people to the NT because it tends to be perceived as an unattractive location due to its small size and relative isolation. Unsuitable candidates were rejected as they lacked project management qualifications or experience and some employers sought local or Australian candidates only due to their demonstrated experience with Australian conditions.

Employers noted a lack of local and Australian applicants was a factor making their engineering manager vacancies difficult to fill. They did not consider wage pressures to be an issue and one employer stated that people were flexible enough to consider pay cuts if required due to the economic climate. Vacancies generally arose due to the previous occupant moving either within the same company or to the private sector for higher remuneration. Although staff turnover did occur, retention rates for engineering managers were considered to be good.

Labour market outlook

The global economic crisis has affected demand for engineering manager roles across Australia in the mining and construction sectors freeing extra supply for vacancies that do arise. Less demand interstate for these roles creates more potential to attract suitable people to the NT. It is expected that when the global economy recovers the labour market rating for engineering manager roles will shift back to shortage.

Engineering Manager	Australian Capital Territory
ANZSCO Code: 1332-11	March 2009
Labour market rating	Shortage
Comment Vacancies required very specific skill sets and industry experience	

Occupational demand

Engineering managers plan, administer and review engineering and technical operations. ABS 2006 Census data show that 210 engineering managers were employed in the Australian Capital Territory (ACT), an increase of 11 per cent from 2001. The largest employers in the ACT of engineering managers are the defence sector and engineering design and consulting services sector, each accounting for around one quarter of employment. Government administration other than defence accounts for a further ten per cent of employment.

Increased demand for engineering managers in the ACT in recent years has most likely been driven by an increase in defence related activities and the significant number of infrastructure and construction projects taking place in the ACT. Between 2003 and 2007, the Construction Forecasting Council recorded an annual average increase of nearly 40 per cent in the value of non-residential and engineering construction in the ACT. However, this activity was expected to plateau from 2008, and ABS buildings approval data indicate there was a substantial decrease in building activity in the ACT during the fourth quarter of 2008.

Occupational supply

There is no specific educational qualification for this occupation with a number of apparent entry paths. ABS Education and Work Survey data show that nationally nearly 60 per cent of engineering managers hold degrees or postgraduate qualifications but given the diverse mechanisms for entry to this occupation, estimates of supply are difficult to quantify.

Department of Immigration and Citizenship net migration data show there was a minimal inflow of self identified engineering managers to the ACT between 2005-06 and 2008-09.

Employer and industry comments/current labour market.

A survey of employers who had recently advertised for engineering managers in the ACT was undertaken for this report. Around one fifth of surveyed vacancies were filled within six weeks of advertising, lower than the fill rate of around one third recorded in June 2008. On average, there were slightly more than four applicants per vacancy, with less than one applicant per vacancy considered by employers to be suitable.

Employer comments suggest there is a very small pool of candidates meeting the requirements of engineering manager positions in the ACT, especially for the infrastructure, building services and construction industries. All of the positions surveyed required specific skills and engineering qualifications, technical skills and experience in particular industry sectors, as well as several years experience in senior engineering or management roles. Applicants were considered to be unsuitable mainly due to inadequate relevant experience.

Labour market outlook

There is no evidence to suggest there will be substantial changes in the labour market for engineering managers in the ACT in the next six months.