

# Skills shortage claims backed up by surveys

by Andre Kaspura

Over the past decade Engineers Australia has been a strong advocate of policies that lead to increases in the number of engineers in the Australian labour market. These policies range from strengthening the place of science and mathematics in school curricula, increasing the number of funded places in engineering courses and ensuring that skilled migrant engineers coming to Australia have the attributes necessary for a seamless transition into the engineering labour force.

There are shortages of skilled individuals across most professional disciplines and to be heard it is essential that policy advocacy is supported by evidence that can be substantiated. Engineers Australia has accumulated a broad range of statistical evidence to overcome the endemic shortage of occupational information in Australia. This article describes the most recent results from Engineers Australia's skills shortage survey.

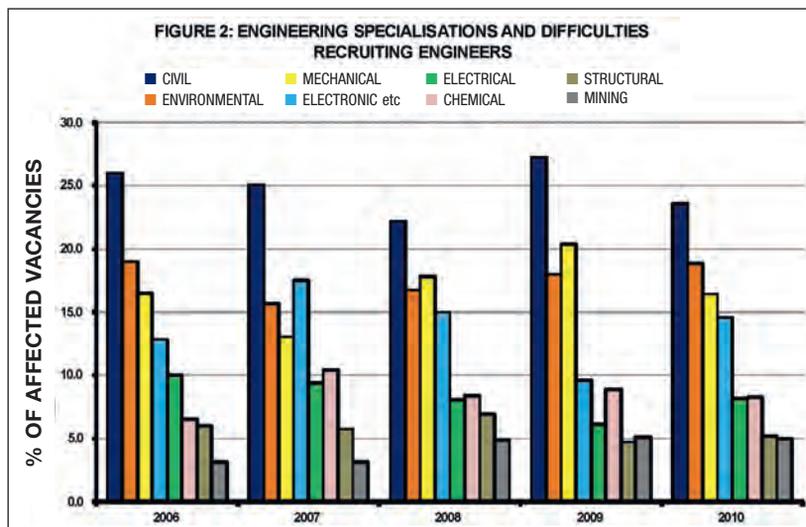
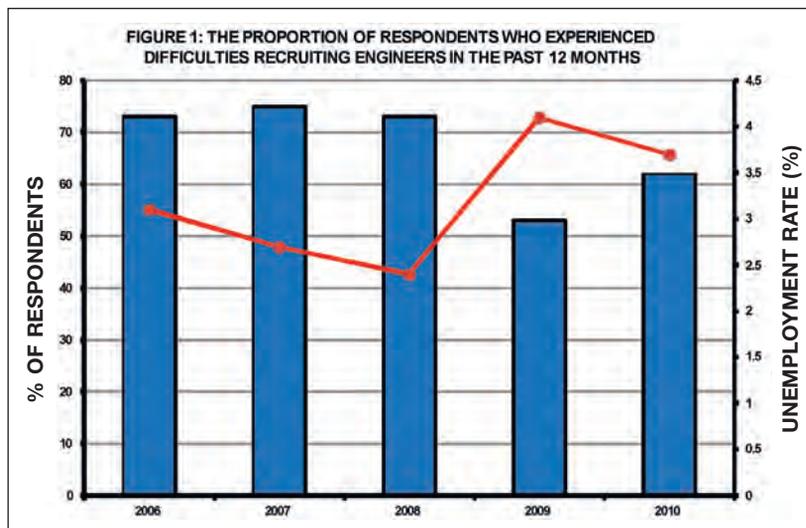
Engineers Australia conducts an annual salaries survey to track trends in engineering salary and benefits packages (see [www.engineersmedia.com.au](http://www.engineersmedia.com.au)). The skills shortage survey is

the result of adding several questions on skills shortages into the salaries survey questionnaire. This practise has now been undertaken for five consecutive years, building up a substantial body of understanding about the difficulties experienced by corporate entities when recruiting engineers in both the public and private sectors.

Figure 1 shows an overview of survey results and compares them with the corresponding unemployment rate for the engineering labour force. Statistics on the engineering labour force were described in the February edition and were obtained from the ABS Education and Work survey. During the first three years of the Engineers Australia survey, Australia experienced chronic shortages of skilled engineers. The survey showed that over 70% of employers had experienced difficulties recruiting engineers in the 12 months preceding the survey. Figure 1 shows that the unemployment rate fell steadily through this period and was down to 2.4% in 2008.

The 2009 survey results reflected the impact of the global financial crisis. There was a sharp drop in the number of employers who experienced difficulties recruiting engineers in the preceding 12 months accompanied by a sharp increase in the unemployment rate. But it is important to appreciate that recruiting difficulties were still being experienced by over half of employers surveyed and the higher unemployment rate, 4.1%, was still low compared to conventional benchmarks. By 2010, economic growth resumed. Although the proportion of employers experiencing recruiting difficulties was below the levels experienced in the first of the three years shown, the increase between 2009 and 2010 was pronounced and together with the lower unemployment rate of 3.7%, suggest that should growth continue, the tight conditions experienced by the engineering labour force up until 2008 are not far away.

Civil engineers consistently featured as the largest group of vacancies where recruiting difficulties were experienced, even during the global financial crisis. Mechanical, electrical and structural engineers were other specialisations where large groups of vacancies were affected by recruiting difficulties. In the case of structural engineers, the reduction of commercial building during 2009 is reflected in a sharp fall in recruiting difficulties. In the case of electrical engineers, the upsurge of infrastructure work, particularly in electricity transmission and distribution, is reflected in an increase in recruiting difficulties from 2007, peaking in 2009. Mining engineers in all years resulted in comparatively low levels of recruiting difficulties. This result points to the importance of a neglected aspect of engineering skills short-



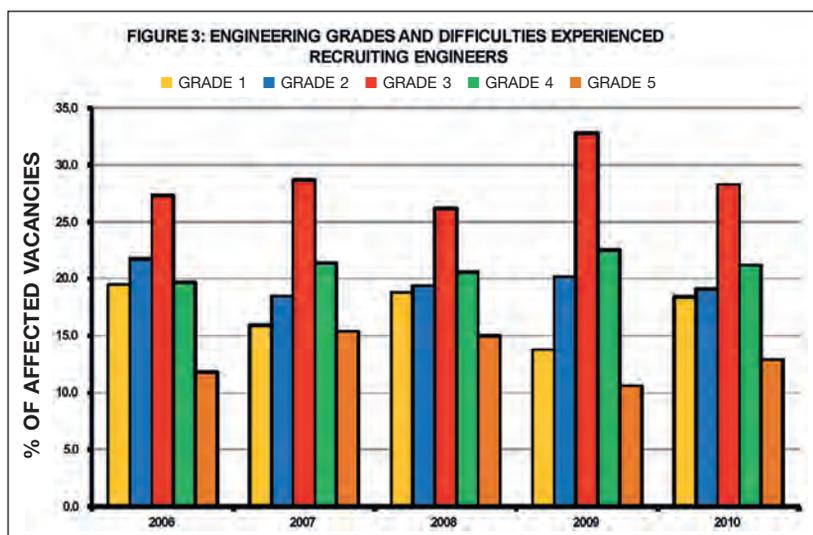
ages. In many occupations the unavailability of a preferred specialist can be accommodated by an individual with generic skills. In engineering this practice is not feasible.

An important aspect of Australia's skilled migration program has been a points test that allocates points to predetermined characteristics and attributes of prospective migrants. Unless a pass mark is achieved, the likelihood of a permanent visa being granted is negligible. The points test has recently been significantly revised. One attribute that is scored is an applicant's age and until the change, higher points being awarded to applicants in their early twenties, rapidly falling in value with age, so that by age forty years no points were awarded. This approach biased selection of migrant engineers towards relatively less experienced engineers and against more experienced engineers who were necessarily older.

Figure 3 shows that the largest group of vacancies affected by recruiting difficulties was for Engineers Grade 3 where typically mean ages are in the upper thirties and 14 to 17 years experience are the norm. The operation of the points test exacerbated the shortage of engineers at this level by restricting the supply of suitable migrant engineers. Engineers Australia consistently argued this issue and the points test has now been changed to deal with the problem. Two changes were made; first, the eligible age for prospective migrants was increased from 40 to 45 years; and second, a new category of points are awarded for Australian and overseas work experience. Points increase with length of experience so that the disadvantages of older age are offset. Future surveys will be used to examine whether these changes have lessened the difficulties of recruiting senior engineers.

Figure 4 shows that while difficulties in recruiting engineers were consistently experienced in the resource states of Western Australia and Queensland, there were also significant difficulties in NSW and to a lesser degree in Victoria. What figure 4 reminds us is that the demand for engineers arises from infrastructure developments as well as commodities and as economic growth proceeds, tensions between them will arise. Insufficient supply will inevitably mean curtailment or slow progress on some projects.

Multiple difficulties were experienced by respondents recruit-



ing engineers with the most common being an inability to recruit the desired skills set. Between 2006 and 2008, at least 80% of respondents raised this issue. During the global financial crisis the proportion fell but only to 72% and by 2010 it had risen back to 77%. There was a similar pattern for experiencing longer than expected recruitment periods. In the early years of the survey about two-thirds of respondents reported this experience and even after reduced economic activity in 2008 and 2009 about half of respondents reported this issue.

Two symptoms of a tight labour market are that in 2010 30% of respondents reported they could not recruit engineers at all and 31% paid higher than expected salaries to recruit engineers. Retraining engineers with an inappropriate skills set is on the rise again. In 2010, 24% of respondents reported this issue, up from 20% in 2009.

For society as a whole there are costs involved with shortages of engineers. While around 10% of respondents (20% during the global financial crisis) described the consequences of the recruiting difficulties they experienced as minor irritations with no monetary issues, over three-quarters reported that some monetary consequences were involved. The proportion that experienced moderate problems with some monetary problems has trended upwards from 39% in 2006 to 57% in 2010. The proportion that experienced major problems that involved project delays and cost blow-outs has trended downwards from 43% in 2006 to 29% in 2010. The suggestion here is that employers are adapting to the difficulties of recruiting engineers but the proportion of respondents in both categories remains too high. A small minority of projects (4% in 2010) did not proceed.

Government policy processes require advocacy be evidence based. When official statistics are largely inadequate it becomes necessary to develop the material needed. This is what Engineers Australia has done with the skills shortage survey with the collaboration of Engineers Media. When taken together with the material made available in the annual Statistical Overview, a substantial body of evidence is now available to support Engineers Australia's policy position. Work is now under way to devise a methodology to estimate the future demand for engineers given announced infrastructure and commodities project investments. ■

