

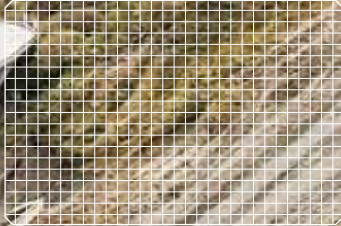


ENGINEERS IN NEW ZEALAND

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Department of Labour
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ANALYSING THE
SUPPLY AND
DEMAND FOR
NEW ZEALAND
ENGINEERS

ENGINEERS IN THE NEW ZEALAND LABOUR MARKET

'What will the demand for engineers be in the future?'

'Are we bringing in enough new engineers through training and immigration?'

'If I train now, what will my employment options be?'

The Department of Labour and the Institution of Professional Engineers New Zealand (IPENZ) in conjunction with the Association of Consulting Engineers (ACENZ) have co-authored a new report, Engineers in the New Zealand Labour Market, which seeks to answer these questions by presenting and analysing new information on the supply and demand for engineers.

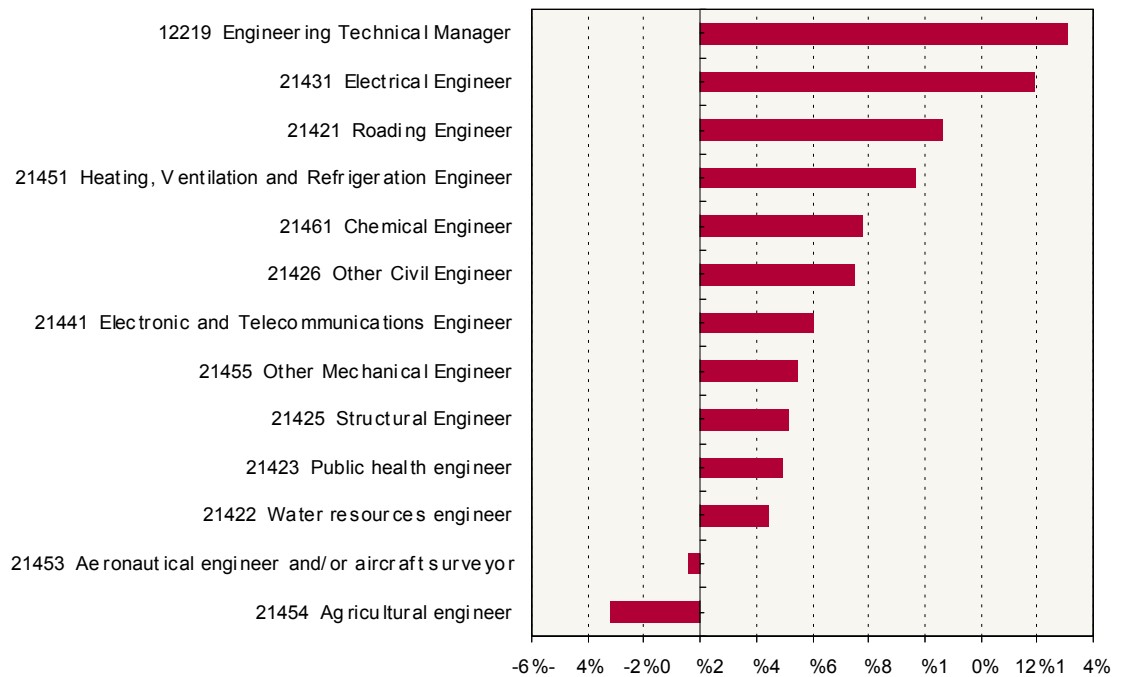
The aim of this report is to produce analysis that assists better matching between workers' skills and industry and regional needs.



DEMAND FOR PROFESSIONAL ENGINEERS HAS BEEN VERY STRONG

Past trends give an indication of the likely future demand for engineers. In the five years from 2003 to 2008, employment growth was close to 5% per year, far outstripping the overall rate of job growth across the economy. In 2008 there were 6,500 more professional engineers working than in 2003.

Employment of engineers: average annual growth rates 2003–08



Source: Department of Labour Employment Estimates

While the total growth was strong, it varied across the different engineering occupations – the number of engineering technical managers grew by 13% each year, but agriculture engineer employment declined by over 3% per year.



FURTHER EMPLOYMENT GROWTH IS LIKELY

Because of increased industry demand, employment of professional engineers is expected to grow at about 3.6% per year in the period 2008–13, according to Department of Labour projections. This is over twice the rate projected for the rest of the job market. These projections suggest that we will need around 1,200 to 1,300 additional professional engineers each year for the next five years. The story for engineering technicians is a little different – projections show that there will be little employment growth over this period.

Other industry-sourced information in the report supports the positive picture from the Department of Labour projections, with expected high ongoing spend on infrastructure-related industries such as road, rail, gas, electricity and telecommunications. In contrast, the building and construction industry, especially residential construction, is expected to decline or remain relatively flat for two to three years.

If you are thinking of training as an engineer, this report indicates that the employment prognosis for this profession is good. Choosing an engineering specialisations may be important as some industries, as shown in the report, are expected to experience stronger growth than others.



HOWEVER, THE 2009 ECONOMIC OUTLOOK SUGGESTS A SLOWDOWN

Because demand forecasts in the report were completed at the end of 2008, they do not take into account the recessionary impacts of recent months. So far, employment for engineering occupations has remained good compared to other occupations. However, information that is just coming out indicates some softening is beginning to occur in the engineering labour market that has not yet been reflected in official statistics. At the same time, the government's commitment to future infrastructure spending will have a positive impact on employment in the engineering sector. Overall we think engineering occupations will fare better than most.

WE WILL NEED NEW ENGINEERS TO REPLACE THOSE WHO LEAVE THE PROFESSION

Even as we experience some slowdown in industry-led growth for engineering occupations, it is likely that the need for additional workers to replace retiring older workers will grow.

Currently, an estimated 500 additional professional engineers and engineering technicians are required each year to replace people who are moving out of engineering, mostly because of retirement but also because of shifts into other job areas. The term for this outflow is net replacement demand.

In the recent past, engineers have had lower net replacement demand rates than average workers. However, some occupations, especially certain engineering technicians, have had higher rates, mostly because they have a higher percentage of retirement-age workers.

As time goes on, new graduate engineers will increasingly be replacing older, more experienced engineers. When this occurs it will be critical that employers have succession systems in place to ensure an effective transfer of knowledge.



THE SUPPLY OF GRADUATES HAS BEEN STEADY OVER THE LAST FIVE YEARS

Between 2002 and 2006, an average of almost 1,300 people graduated with professional engineering qualifications. Graduate numbers were steady over most of these years, although there was a strong increase in 2006. A further 500 people per year graduated with diploma level qualifications in engineering and related technologies in the same period.

Graduation can also be expressed as a training rate, that is, the number of graduates as a percentage of total employment. In 2006, the training rate for engineering professionals was 3.3%, similar to the rate for all occupations (3.0%). The training rate for engineering technicians was slightly lower, at 2.5%.

Retaining new graduates in New Zealand is an issue. Anecdotal

evidence suggests around 30% of new engineering graduates leave New Zealand within a year. Although gaining overseas experience has always been welcomed, our existing information does not allow us to get a full picture of the work patterns and understand if and when graduates flow back into the New Zealand job market. Similarly, we do not have enough information about the fields of study within engineering or the work choices made after graduation.

Engineering graduates are likely to be in a strong position in the labour market in the next few years. Increasing competition for skilled engineers, both nationally and internationally, means that New Zealand employers will need to provide attractive working conditions to recruit and retain their staff. This is likely to result in above average wage growth for engineering professionals in upcoming years.



WE GAIN MORE ENGINEERS THAN WE LOSE THROUGH MIGRATION

In 2008, around 1,000 people who entered New Zealand as long-term or permanent arrivals indicated that they worked in engineering-related occupations. In the same year, about 800 people who left New Zealand permanently indicated that they worked in engineering, so there was a net gain of about 200 in engineering-related occupations. In each of the five years to 2008 there have been annual net increases in permanent and long term arrivals in engineering-related occupations, varying between 200 and 350.

In addition to permanent arrivals, each year a large number of temporary work permits are issued for engineering-related occupations, with approximately 2,300 being issued for engineering professionals and technicians in the year to June 2008.

FUTURE CHALLENGES

Findings presented in this report suggest that there may be too few engineers to meet future demands.

One of the biggest challenges in the medium term will be to make sure that engineering remains an attractive occupation in New Zealand. Although wages for engineers have risen steadily at 3% per year since 2005, average wages remain well below international levels, making it difficult to attract international engineering talent and keep New Zealand-trained graduates here.

Another issue is understanding whether or not overseas trained engineers have the specific skills required to function effectively as engineers in the New Zealand workplace.

WHAT ELSE ARE WE DOING?

The information in the report will be used by the engineering sector in its future engagements with the education sector and to inform strategic and workforce planning. The Department of Labour will produce similar reports for other sectors and will continue to improve its data sources and labour market forecasting capacity. An extensive range of labour market information on all occupation groups can be found on the *SkillsInsight* webpage:

www.dol.govt.nz/services/LMI/tools/skillsinsight.asp

