



ENGINEERS  
AUSTRALIA

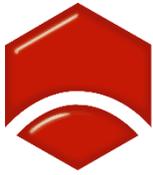
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# Engineering Vacancies Report

June 2018 Update

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August 2018



ENGINEERS  
AUSTRALIA

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## Introduction

This policy report investigates the current state of engineering employment in Australia by analysing the direction of change in engineering vacancy numbers. The Australian Government Department of Jobs and Small Business has released its July 2018 Vacancies Report which covers trends in job vacancies to the end of June 2018, including revisions for previous months. The statistics presented are the Department's revised and preferred trend series. All the vacancy numbers and graphs presented in this report are in trend terms.

Job vacancies can provide a valuable gauge of the state of the labour market as vacancies are a key indicator of unmet demand for labour in the economy<sup>1</sup>. When the demand for labour is strong, the levels of vacancies will also generally rise. Analysing movements in engineering vacancies can provide a broad indication of the direction of the engineering labour market. This report will present vacancy trends in Australia as well each state and territory as well as further analysis of engineering occupations trends. These are Australian and New Zealand Standard Classifications of Occupations (ANZSCO) four-digit unit group classifications.

This report will include trends in the following engineering occupations:

- *Engineering managers* (unit group 1332). This includes engineering managers only.
- *Chemical and materials engineers* (unit group 2331). This includes chemical engineers and materials engineers.
- *Civil engineering professionals* (unit group 2332). This includes civil engineers, geotechnical engineers, quantity surveyors, structural engineers and transport engineers.
- *Electrical engineers* (unit group 2333). This includes electrical engineers only.
- *Electronics engineers* (unit group 2334). This includes electronics engineers only.
- *Industrial, mechanical and production engineers* (unit group 2335). This includes industrial engineers, mechanical engineers and production or plant engineers.
- *Mining engineers* (unit group 2336). This includes mining engineers and petroleum engineers.
- *Other engineering professionals* (unit group 2339). This includes aeronautical engineers, agricultural engineers, biomedical engineers, engineering technologists, environmental engineers, naval architects and engineering professionals not elsewhere classified.
- *ICT support and test engineers* (unit group 2632). This includes ICT quality assurance engineers, ICT support engineers and ICT systems test engineers. It must be noted that for this occupation it can be hard to gauge how many of these occupations are engineering specific, so some caution should be taken with numbers for this occupation.
- *Telecommunications engineers* (unit group 2633). This includes telecommunications engineers and telecommunications network engineers.

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<sup>1</sup> Edwards. K, and Gustafsson. L, 2013. Reserve Bank of Australia, Bulletin, September Quarter, *Indicators of Labour Demand*. [www.rba.gov.au](http://www.rba.gov.au)

## Executive Summary

Engineering vacancies in Australia have been much more variable than general vacancies over the last decade. The engineering profession saw pronounced engineering job growth periods during the resources boom, and was able to recover strongly after the Global Financial Crisis (GFC). In 2013 engineering jobs deteriorated rapidly, and remained at low levels until signs of nation-wide recovery in late 2016.

That recovery began in NSW with a rising trend in engineering job vacancies appearing in early 2014 before progressing to Victoria a year later in early 2015. Queensland and South Australia followed with signs of improved conditions another year later still, in early 2016. Western Australia was somewhat slower, with indications of recovery starting to show in early-to-mid 2016. The cumulative effects of this progression of recovery is that a steady nation-wide recovery was evident by late 2016.

Over the course of 2017 engineering vacancies grew consistently, and this growth has been at a more reasonable pace when compared to the previous booms. In the last few months of 2018 the recent growth slowed and dropped back slightly. In June 2018 there were 4,308 vacancies recorded for engineers.

The majority of vacancies in all jurisdictions is for civil engineers, except for Western Australia where it is for mining engineers, and the ACT with ICT support and test engineers.

Engineering job vacancy numbers are still led by New South Wales, which recorded over 1,300 vacancies in June 2018. However, engineering vacancies in the state have fallen 5.4% over the first six months of 2018. New South Wales is followed in engineering vacancy numbers by Victoria which recorded over 1,000 vacancies for June 2018. Victoria's growth in engineering vacancies has continued through the first six months of 2018, with growth of 1.7%.

The first six months of 2018 has seen continued growth for Queensland and South Australia. Queensland engineering vacancies grew 4.5% over the six months to over 900 vacancies in June 2018, and South Australia grew 5.5% over the same time to record 212 vacancies.

Western Australian engineering vacancies grew 4% over the first six months of 2018, recording 746 vacancies in June 2018. Even though this is solid growth, there was a drop in numbers from the 790 vacancies recorded in April.

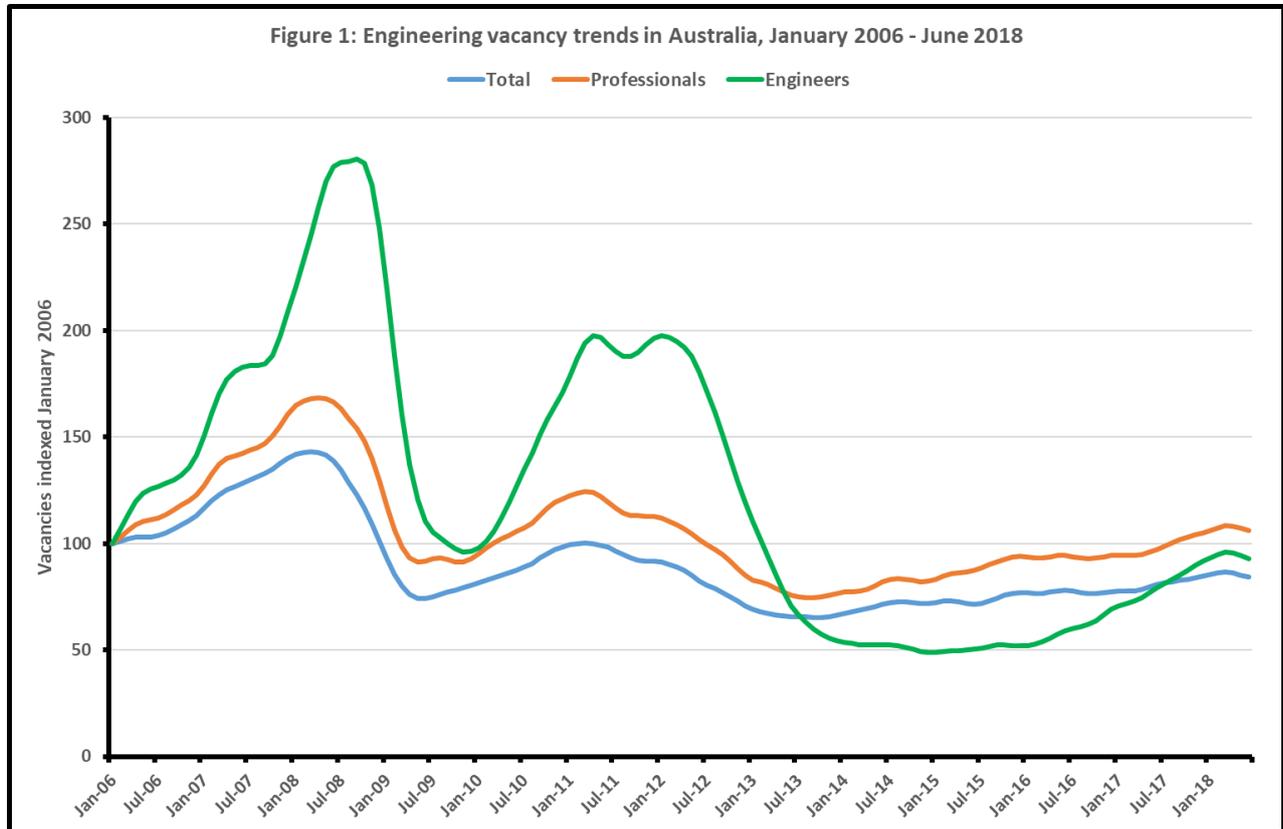
The smaller jurisdictions of Tasmania, the Northern Territory and the Australian Capital Territory usually record much more variable growth rates than the other jurisdictions due to their smaller size. Over the first six months of 2018 engineering vacancies in Tasmania grew 14.3% (35 vacancies), and the ACT also grew 14.3% (85 vacancies), while the Northern Territory fell 8.4% (49 vacancies).

The engineering occupation which recorded the most vacancies has consistently been civil engineering. In June 2018 there were almost 2,300 vacancies for this occupation, and the majority of these were in the major states of New South Wales, Victoria and Queensland. These states also have a large number of the industrial and mechanical engineering occupation vacancies, which is the second largest engineering occupation vacancy, recording over 760 in June 2018.

Mining engineering occupations are the next on the list with over 642 vacancies recorded, with almost half of these located in Western Australia. There were also strong numbers of this occupation in Queensland and the Northern Territory. ICT support and test engineering occupations also recorded over 600 vacancies, with strong numbers in New South Wales, Victoria and the ACT.

## Australia

Figure 1 shows the changes to the Australian labour force, the professional occupation labour force, and the engineering labour force over the last decade.

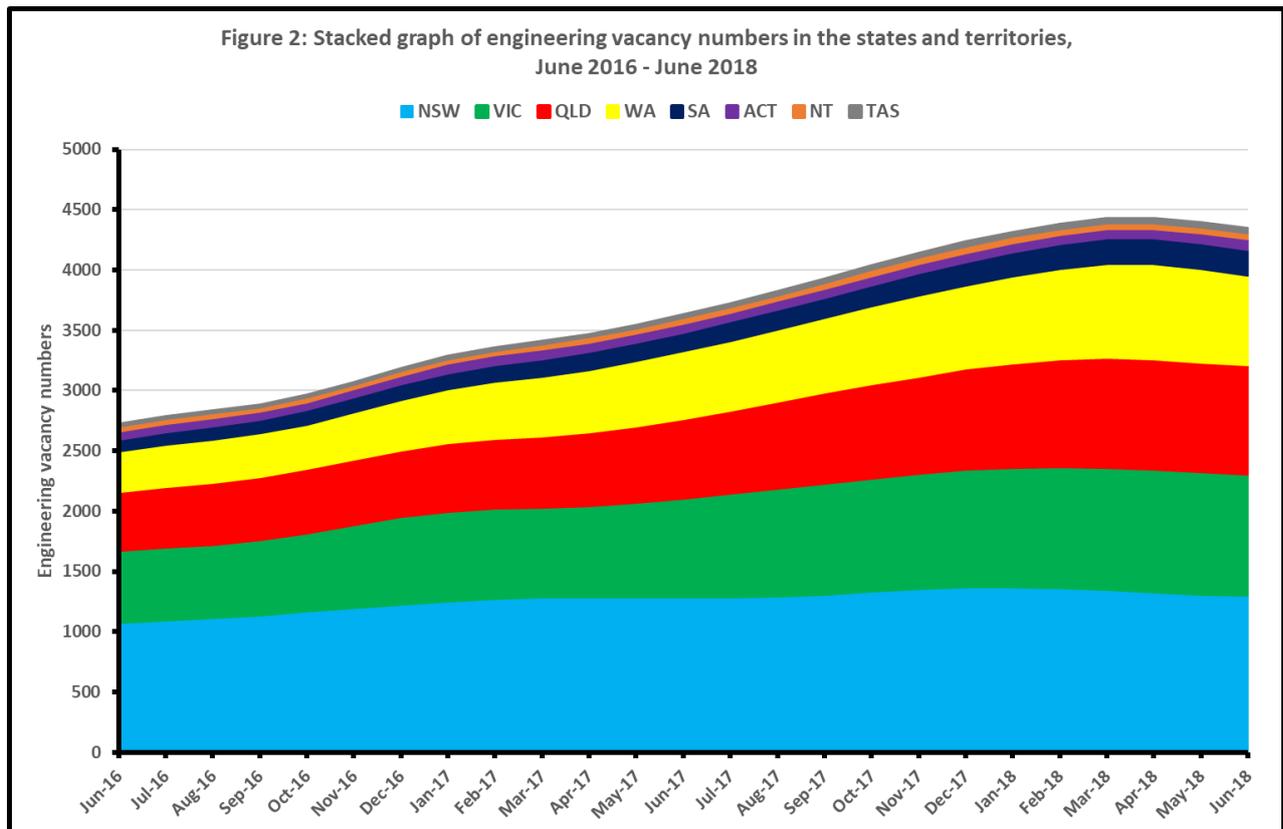


As demonstrated above, engineering vacancies have historically been considerably more influenced by economic forces compared to the broader labour market, and the professional occupation labour market. In 2006 Australia's engineering labour force grew significantly to meet the demand for engineers during the construction phase of the resources boom, peaking in 2008. The engineering labour force then weathered the GFC which soon followed, and a second period of strong job growth was seen in 2010 and 2011. At its peak in September 2008, there were 13,026 vacancies recorded for engineers.

This recovery was short-lived and the engineering labour market began to deteriorate rapidly from December 2012 as engineering vacancies began a 30-month slide. This deterioration continued through to 2014 and engineering vacancies remained at low levels, and at its lowest point in January 2015 there were only 2,270 vacancies for engineers. A slow recovery began in mid-2016, as vacancies climbed for an 18 month period, bringing the engineering vacancy level close to the levels seen just before the resources boom.

In the most recent three-month period vacancy numbers have slipped back slightly, although this broadly mirrors changes seen in the Australian labour market, and in the professional occupation labour market. In the last 12 months engineering vacancies grew 17.2% from 3,675 in June 2017, to 4,308 in June 2018. This compares to growth of just 4.3% for the total Australian labour force. However, in the most recent six months engineering vacancies actually fell 0.7%, as the majority of growth was seen in 2017. This compares to a fall of 1.7% for the total Australian labour market.

Figure 2 is a stacked graph which shows how engineering vacancies are shared throughout the states and territories over the last two years.

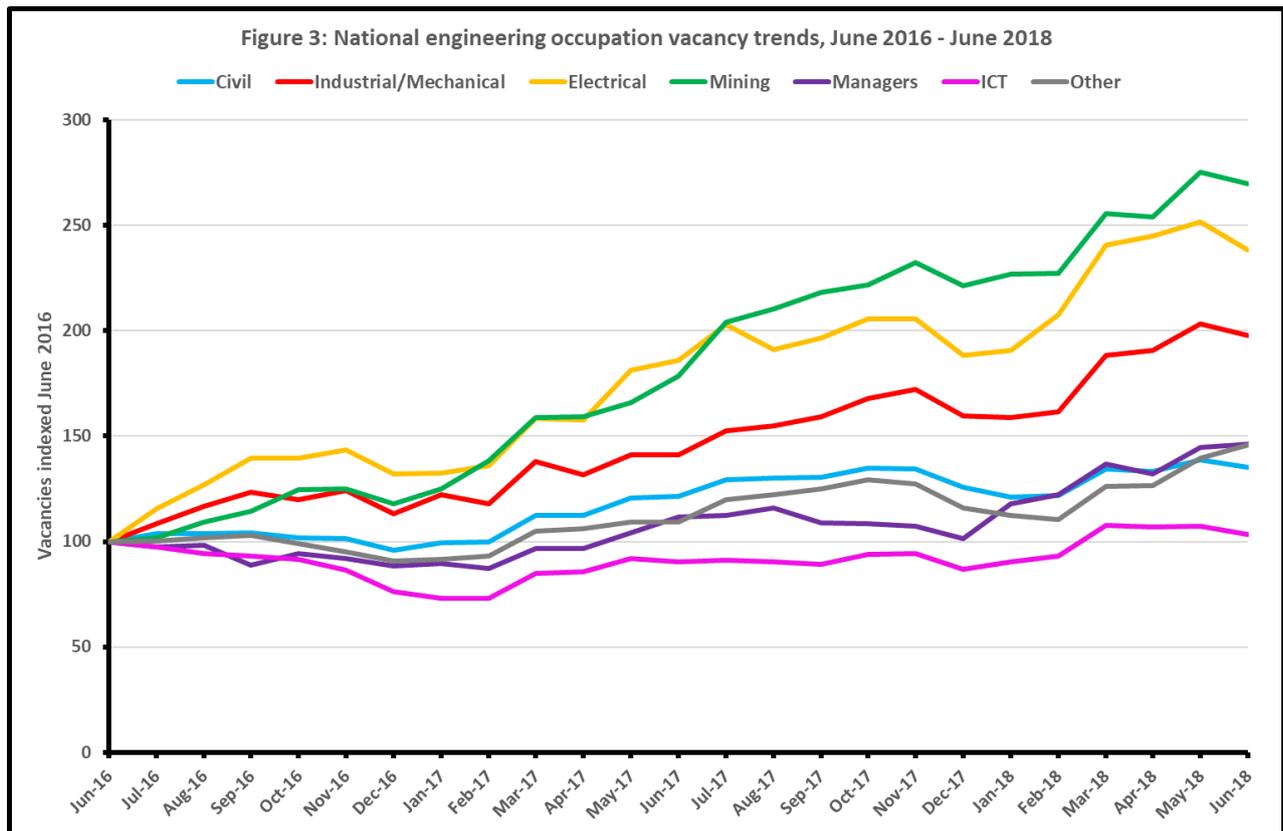


As seen in Figure 2 New South Wales is the state which has consistently recorded the largest amount of engineering vacancies, followed by Victoria, Queensland and Western Australia. Most of the growth seen in the Australian engineering labour market can be attributed to increasing vacancy numbers seen in these larger states. Growth which began in the second half of 2016 was the first real indication that a recovery may be underway in the engineering labour market, and this growth continued throughout 2017. In the most recent months of 2018 we have seen numbers fall away slightly and this includes idle numbers or slight falls in all of these major states.

What Figure 2 also tells us is that the recent growth we have seen in the past two years isn't concentrated in only one jurisdiction, and is more in standing with job vacancies after a boom in a sector which was so strong it masked growth in other sectors. During the resources boom we witnessed more significant growth in the states more dependent on resources.

The recent growth seen across all jurisdictions is more promising as we move away from a resources dependent vacancies growth towards more even engineering vacancies spread across the major states. In the following chapters this report discusses each state and territory in more detail including the engineering occupations which drive these numbers in each state.

Figure 3 provides further insight to the growth trends of engineering occupations which have fuelled the overall growth in engineering vacancies over the last two-year period.



Civil engineering occupations make up the majority of engineering vacancies throughout Australia. As expected the majority of these vacancies are in the largest states of New South Wales, Victoria and Queensland. Growth in this occupation has been slow but steady for the last two years, growing from 1,698 in June 2016, to 2,292 in June 2018.

Industrial and Mechanical occupations are the second largest engineering occupations, and the larger states are where most of these vacancies are located. Growth in vacancy numbers in this occupation have been strong over the last two years. In June 2016 there were 386 vacancies recorded, growing to 763 recorded in June 2018.

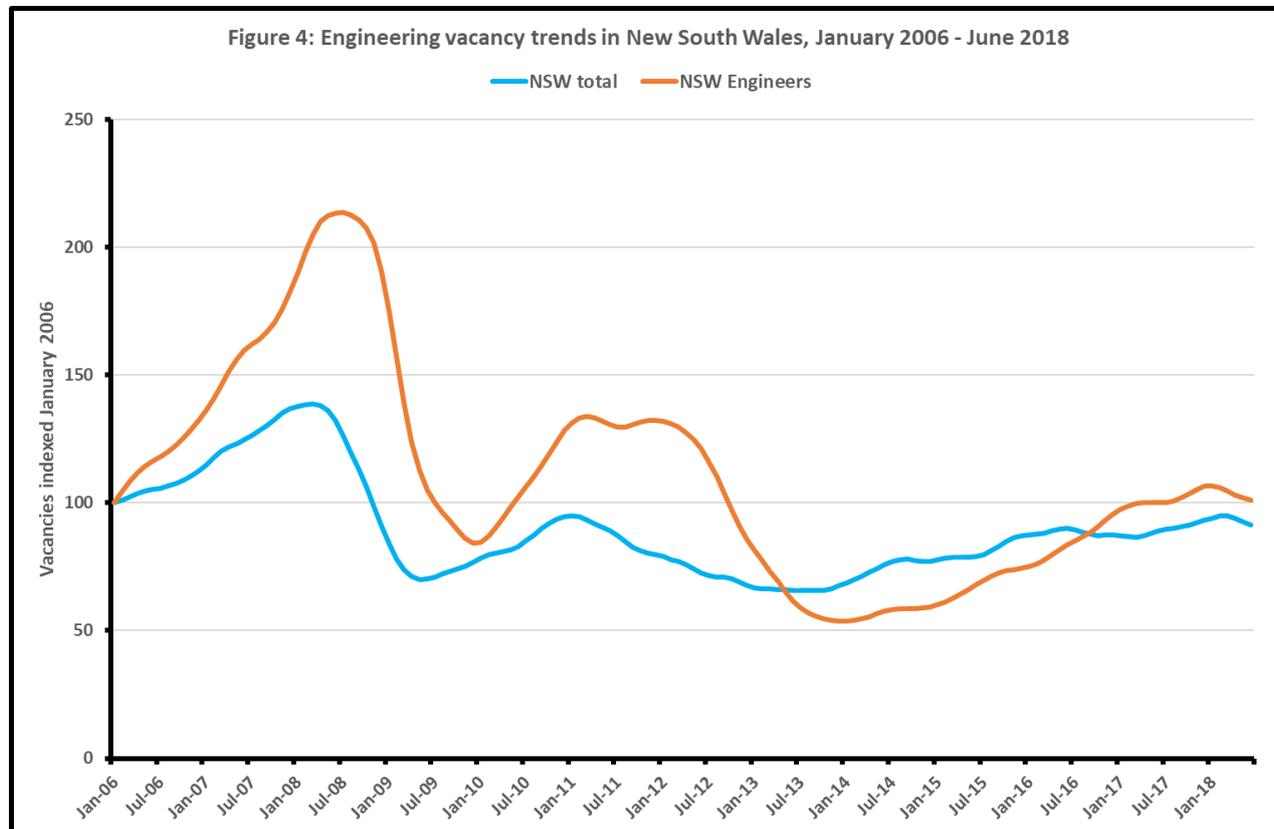
Mining occupations are the third largest engineering occupation, and they have also seen strong two-year growth, thanks to the resource-intensive states of Western Australia and Queensland. In June 2016 there were 238 vacancies recorded, growing to 642 in June 2018. Electrical engineering occupations have also grown strongly in the last two years as seen in Figure 3. In June 2016 there was 160 vacancies, growing to 381 in June 2018.

Engineering manager occupations have grown from 139 vacancies in June 2016 to 203 vacancies in June 2018. Meanwhile ICT test and support engineer vacancies have remained fairly stagnant, growing from 583 in June 2016 to 603 vacancies in June 2018.

There are other engineering occupations that are not shown in Figure 3 as they have consistently recorded much smaller numbers, and growth can be much more variable in these occupations. In June 2018 there was 103 vacancies for telecommunications engineers, 56 vacancies for electronics engineers and 31 vacancies for chemicals and materials engineers.

## New South Wales

New South Wales has consistently recorded the largest number of engineering vacancies in Australia over the last two years. Figure 4 below shows engineering vacancy trends in New South Wales in comparison to overall vacancy trends in the state since 2006.



Engineering vacancy growth trends in New South Wales have been more variable than general vacancies in the state. Since mid-2015 engineering vacancies in the state have grown strongly, and outpaced general vacancy growth in the state. In the more recent months there has been a dip in both engineering vacancies in the state, and total state vacancies.

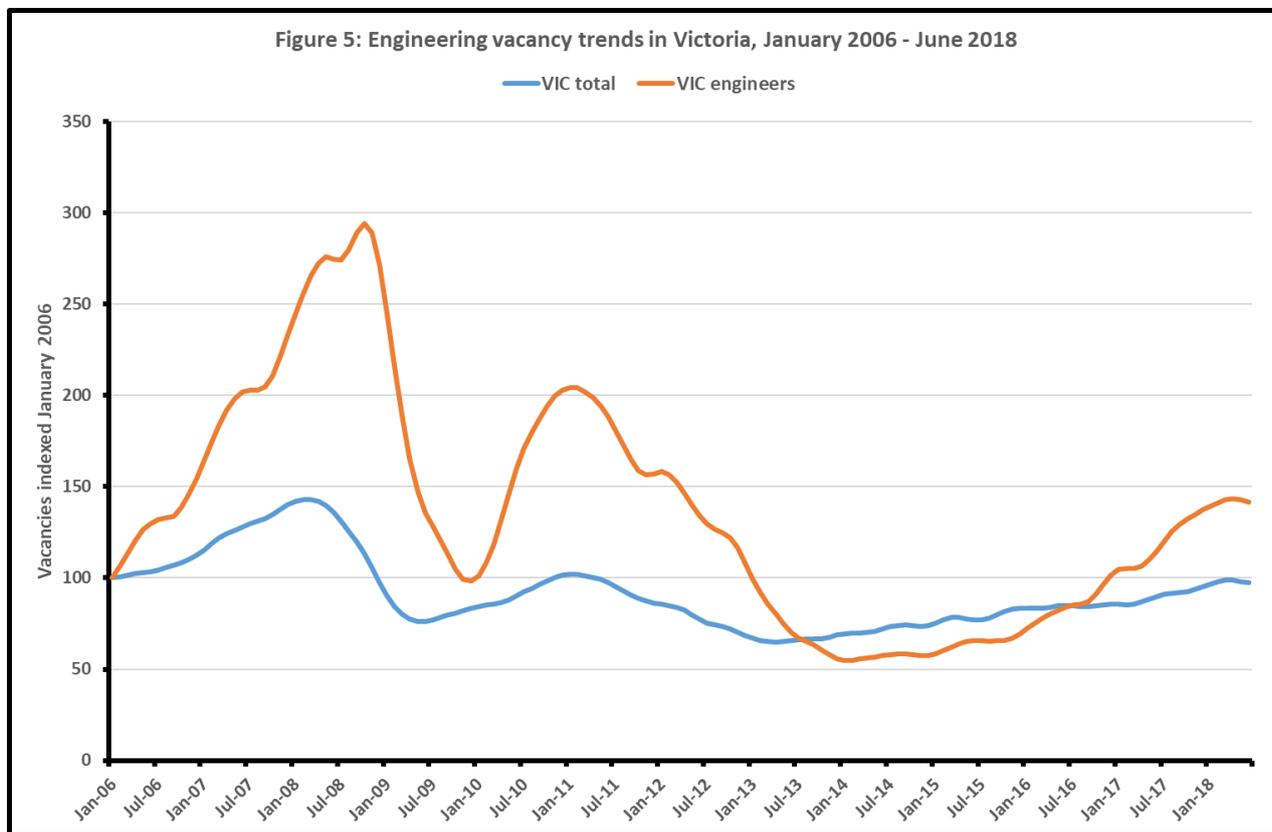
In June 2018 there was 1,303 vacancies recorded for engineers in New South Wales, up from 1,291 in June 2017, but down from 1,377 in January 2018.

This is growth of 0.9% for engineering vacancies over the 12-month period, and this compares to growth of 2.3% for general vacancies in the state. In the most recent six-month period between January and June we have seen falls in both categories. Engineering vacancy numbers have fallen 5.4%, while general state vacancies fell 3%.

The majority of engineering vacancies in the state are for civil engineers, which recorded 801 vacancies in June 2018 (there was 786 recorded in June 2016). At the same time there were 245 vacancies for ICT support and test engineers, 218 for industrial and mechanical engineers and 115 for electrical engineers (up from 61 recorded in June 2016).

# Victoria

Victoria has recorded the second largest number of engineering vacancies in Australia. Figure 5 below shows the vacancy trends for engineering vacancies in Victoria in comparison to trends for all Victorian vacancies since 2006.



Engineering vacancy growth trends in Victoria have been more variable than general vacancies in the state. Since early 2016 engineering vacancies in Victoria have grown strongly, eclipsing growth rates for general vacancies in the state. More recently this growth has slowed, and there has been a very slight drop in the last two months.

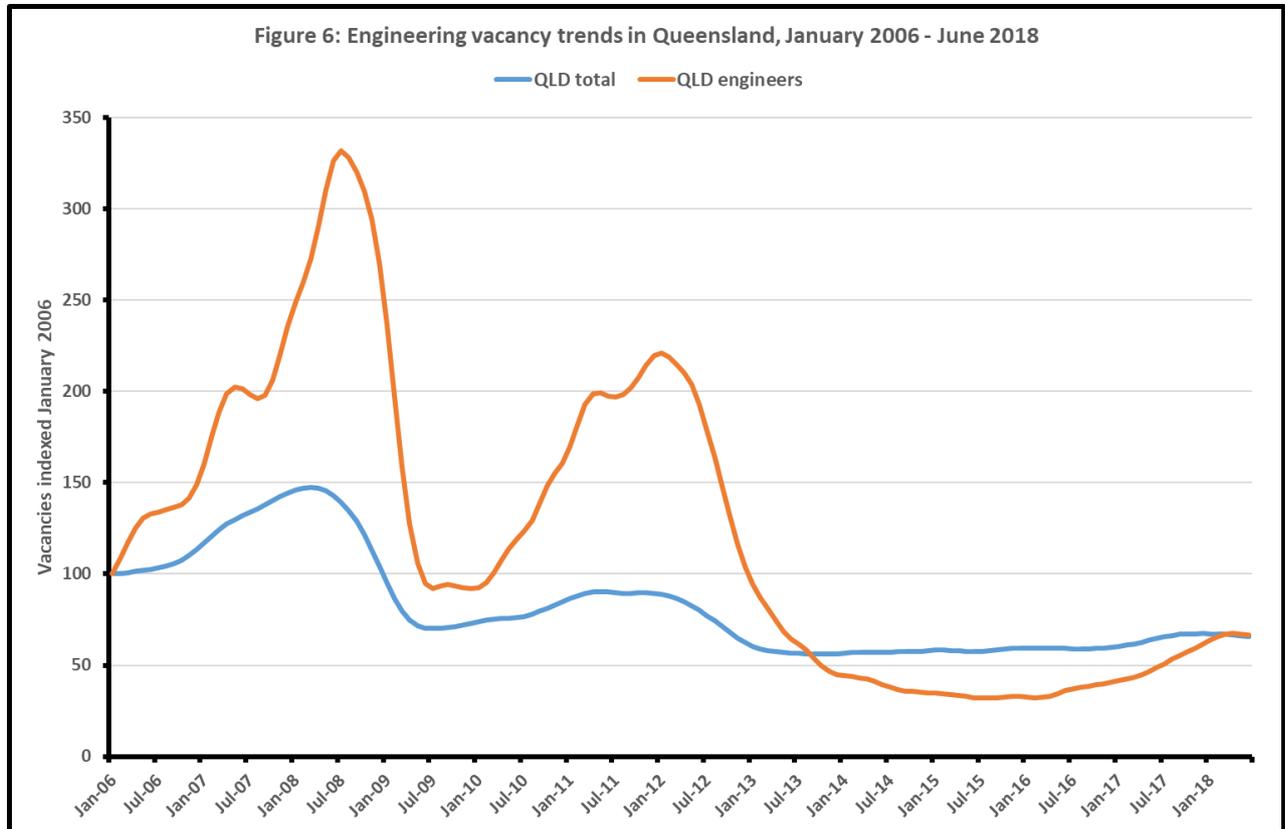
In June 2018 there was 1,006 engineering vacancies in Victoria, up from 817 in June 2017, and up from 990 in January 2018.

This is growth of 23.2% over the last 12-month period, and 1.7% in the last six-months for engineering vacancies in the state. This compares to growth of 8.3% for general vacancies in the state since June 2017, and growth of 0.9% since January 2018.

The majority of engineering vacancies in Victoria are for civil engineering occupations, which recorded 615 vacancies in June (up from 366 two-years ago). At the same time there were 197 vacancies for industrial and mechanical engineering occupations, 167 for ICT support and test engineering occupations and 88 for electrical engineering occupations.

# Queensland

Queensland engineering vacancies increased during the second half of 2016 after a long period of low numbers. Figure 6 below shows engineering vacancy trends in Queensland since 2006, in comparison to Queensland total vacancies.



Engineering vacancies in Queensland have been much more variable when compared to total vacancies in the state, as engineering occupations were more heavily influenced by the resources boom. Since mid-2016 engineering vacancies in the state started to recover after a period of low numbers, with growth up until April this year. Since April numbers have stalled and fallen very slightly.

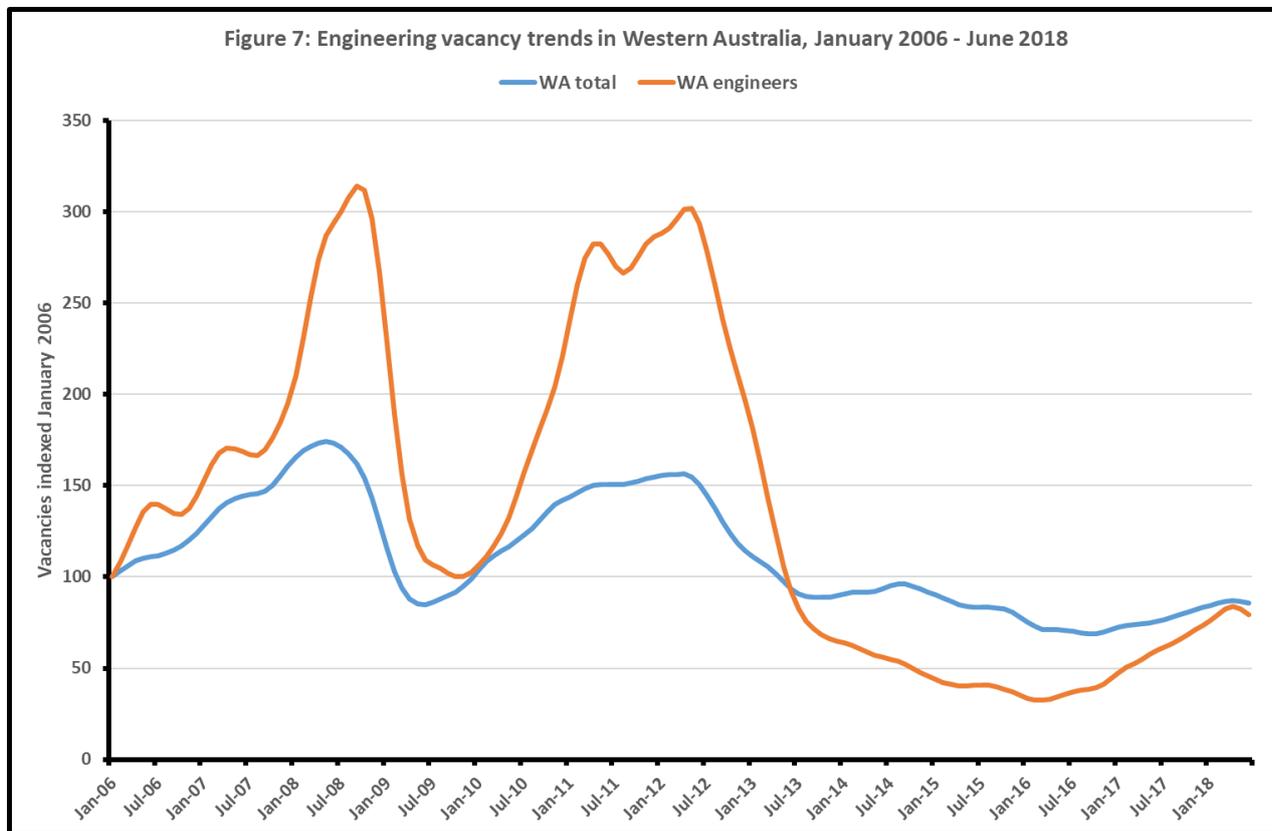
In June 2018 there were 905 vacancies for engineers in the state, up from 662 in June 2017, and up from 866 recorded in January 2018.

Over the last 12-month period engineering vacancies have grown strongly at 36.7%, and for the last six months this slowed to growth of 4.5%. When compared to general vacancies in the state, engineering vacancies have performed well. In the last 12-months there has been growth of only 1.8%, and in the last six months total Queensland vacancy numbers fell by 2%.

Civil engineering occupations are the largest engineering occupation vacancy in the state, with 433 vacancies recorded in June 2018 (up from 284 in June 2016). At the same time there were 182 vacancies for mining engineering occupations (compared to only 59 in June 2016), 138 vacancies for industrial and mechanical engineering occupations, 81 for ICT support and test engineering occupations, and 79 for electrical engineering occupations.

# Western Australia

Western Australia engineering vacancies increased during the second half of 2016 and through 2017 after a period of falling numbers in late 2015. Figure 7 below shows engineering vacancy trends in Western Australia since 2006, in comparison to total vacancies in the state.



Engineering vacancies in Western Australia have been more variable when compared to total vacancies in the state, and much of this is due to the influence of the resources boom on the state’s engineers. Since late 2016, and throughout 2017 engineering vacancies recovered and showed strong growth numbers, before falling away slightly in the last few months.

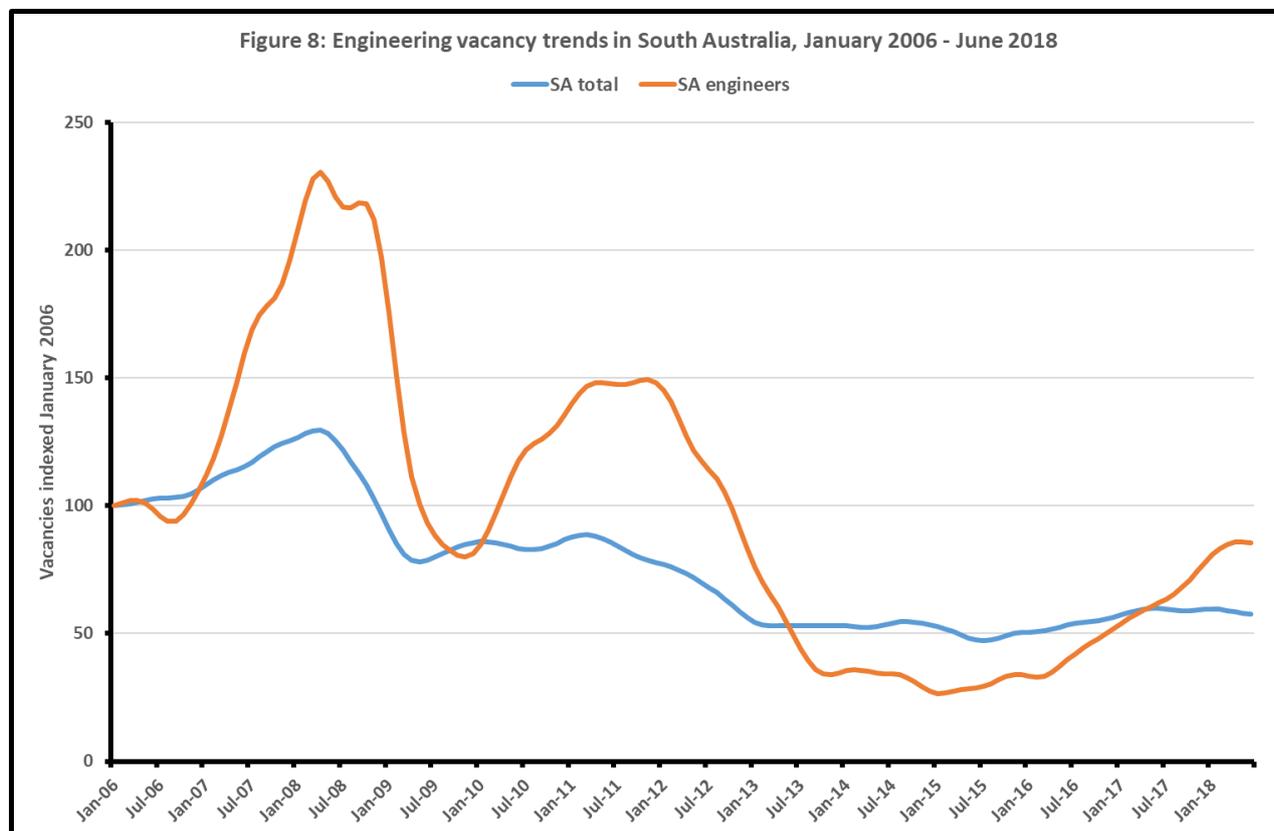
In June 2018 there were 746 vacancies for engineers in the state, up from 562 in June 2017, and up from 716 in January 2018. However, the June number has dropped from the 790 recorded in April.

This translates to growth of 32.8% in engineering vacancies in Western Australia over the past 12 months, and growth of 4.1% in the last six months. However, there has been a fall of 5.6% since April. Overall this compares to growth of 13% in total vacancies in the state over the last 12 months, and 1.6% in the last six months.

Mining engineering occupations are the largest engineering occupation in Western Australia, and in June 2018 there were 317 recorded (up from 117 in June 2016). At the same time there was 273 vacancies for civil engineering occupations, and 138 for industrial and mechanical occupations.

## South Australia

South Australia engineering vacancies have been on the rise since the beginning of 2016, continuing to climb, until flattening in the last few months. Figure 8 shows the trend of engineering vacancies in South Australia in comparison to the trend of overall vacancies in the state.



Engineering vacancy trends in South Australia have been much more variable than total vacancies in the state. Although not a heavy resources state, Figure 8 shows how the resources boom influenced engineering vacancies in the state, compared to total state vacancies.

In June 2018 there were 212 engineering vacancies in the state, which is up from only 155 recorded in June 2016, and more than the 201 recorded in the first month of 2018.

This is growth of 37.5% in the last 12 months, and 5.5% in the last six months for engineering vacancies. Comparatively, in the last 12 months' growth in general vacancies in the state has fallen 3.3%, including a fall of 3% in the last six months. Over the course of the last year engineering vacancies have been bucking the overall state trend, regardless of the recent stagnation.

In South Australia, the engineering occupation with the most vacancies has traditionally been civil engineering occupations. In June 2018 there was 92 vacancies for civil engineering occupations, up from 68 in the same month in 2017. The second most engineering occupation vacancies was for industrial and mechanical engineers which recorded 47 vacancies in June 2018, followed by both mining engineering and ICT support and test engineering occupations with 25 each in the same month.

# Tasmania

Vacancy numbers for Tasmania are notably smaller than the other states, which means the variability in the vacancy trends can be much greater than in the larger states. Note that, as vacancy data in this jurisdiction is so small, only the two-year trend analyses is presented.

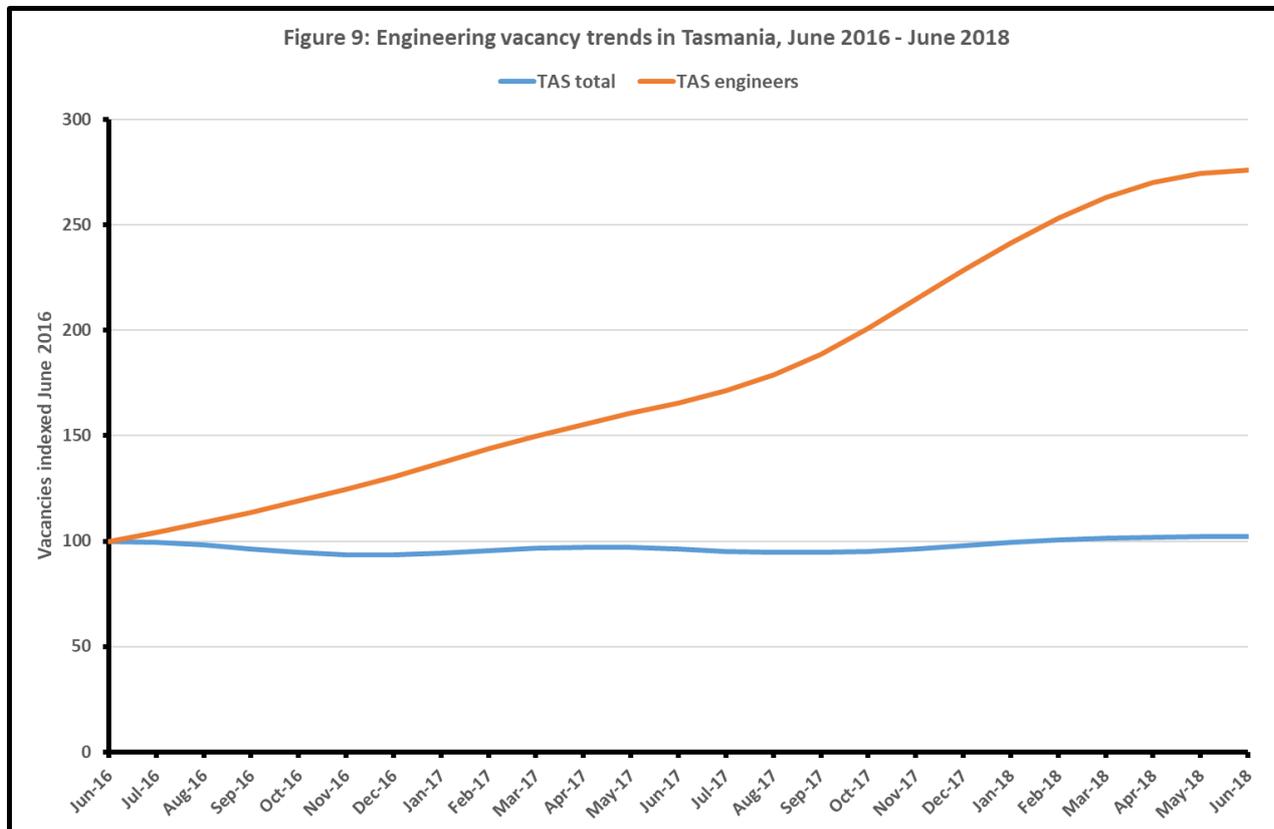


Figure 9 shows the two-year trend for engineering occupations in Tasmania in comparison to total Tasmanian vacancies. As seen in figure 9, engineering vacancies in Tasmania have been growing at a higher rate than overall Tasmanian vacancies since mid-2016. However, this growth has been from a small base number.

In June 2018 there were 35 vacancies recorded for engineers in Tasmania, up from 31 recorded in January 2018 (growth of 14.3%), and 21 recorded in June 2017.

The engineering occupation with the most vacancies in Tasmania has consistently been civil engineering occupations by a wide margin, followed by electrical engineering occupations and industrial and mechanical engineering occupations.

# Northern Territory

Vacancy numbers for the Northern Territory are notably smaller than the states, which means the variability in the vacancy trends can be much greater than in the larger states. Note that, as vacancy data in this jurisdiction is so small, only the two-year trend analyses is presented.

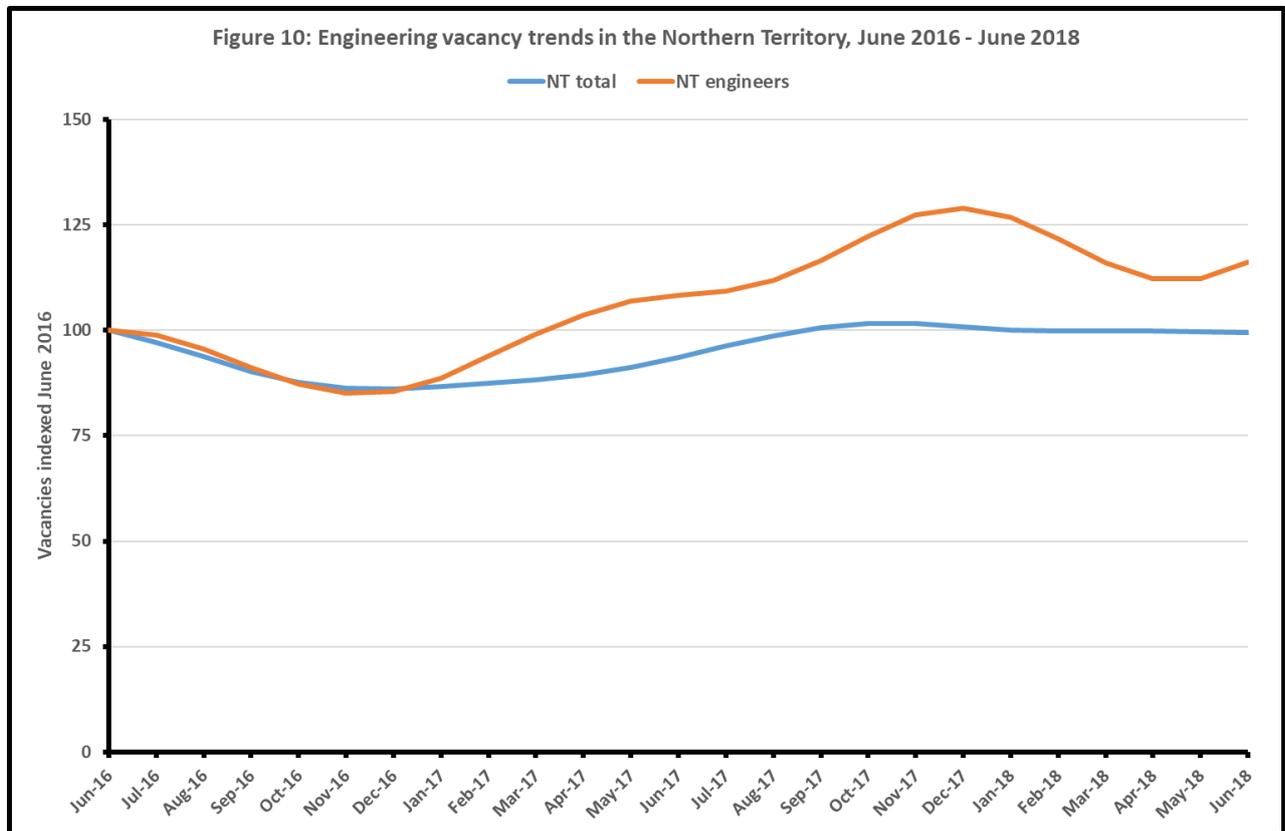


Figure 10 shows the two-year trend for engineering occupations in the Northern Territory in comparison to total Northern Territory vacancies. Engineering vacancies in the Northern Territory have been variable, but this is most likely due to the small number of engineering vacancies.

In June 2018 there was 49 engineering vacancies for engineers in the Northern Territory, slightly down from 54 recorded in January 2018 (a fall of 8.4%), but up from 46 recorded in June 2017.

The engineering occupation with the most vacancies in the Northern Territory is civil engineering, closely followed by mining engineers.

# Australian Capital Territory

Vacancy numbers for the Australian Capital Territory are notably smaller than the states, which means the variability in the vacancy trends can be much greater than in the larger states. Note that, as vacancy data in this jurisdiction is so small, only the two-year trend analyses is presented.

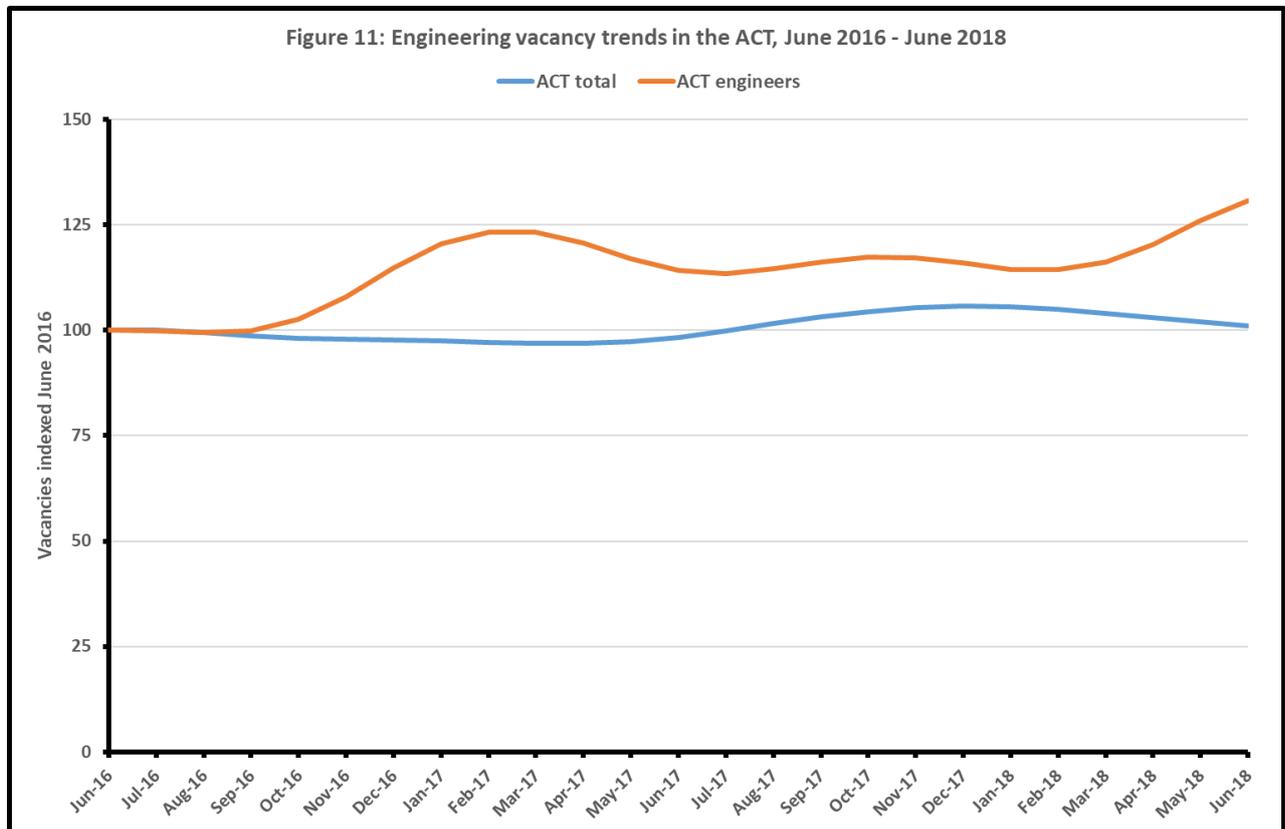
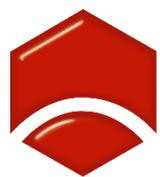


Figure 11 shows the two-year trend for engineering occupations in the ACT in comparison to total ACT vacancies. Engineering vacancies in the ACT have been more variable than overall ACT vacancies, but this is likely due to the smaller number of engineering vacancies.

In June 2018 there was 85 engineering vacancies recorded in the ACT, up from 74 recorded in January 2018 (growth of 14.3%), and up from 74 recorded in June 2017.

The engineering occupation with the most vacancies in the ACT is ICT support and test engineers, closely followed by civil engineering occupations.



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