

Chart of the Week

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“The trends in gas generation paints a different picture than the “transitional fuel” argument we hear. In the NEM context, gas is more of a buffer fuel, meaning that gas will increasingly be utilised as a reserve to be called upon when there is a shortfall in supply on short notice – a contingency plan.”

GPG: From middle of the order to the nightwatchman?

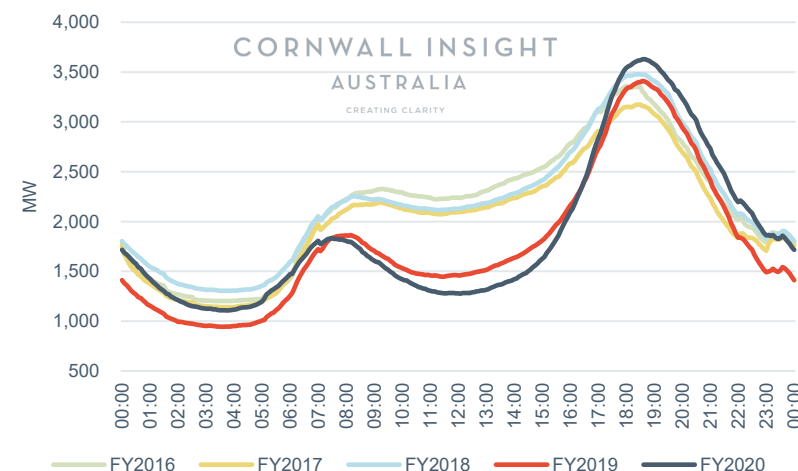
Across multiple reports published in recent weeks, the topic of changing supply dynamics has been a key focus as more renewable energy resources continue to enter the system including both grid-scale and behind-the-meter assets. Much of the commentary has focussed on the changing operation of coal generation in the face of increased solar penetration, however, the need for flexible generation profiles has also significantly impacted the manner in which gas powered generation (GPG) has been managed.

In our [Energy Spectrum Australia](#) Perspective piece this month, we unpacked AEMO’s ISP and the future projections for gas generation. In the first year of the ISP, CCGT generation sent out is expected to drop by ~76%, to only 24% of FY2020 generation levels. This is a significant decline considering that the daily profile for GPG has shifted considerably over the last five years. This is clear when we look at Figure 1 and the shifting daily profile of GPG from a more typical flat profile to one that is much more flexible with dispatch more focussed on peak demand periods.

One impact of such a shift is that capacity factors for GPG will be much lower meaning that the opportunities for these assets to recoup their fixed costs will be fewer. This would likely result in the need for higher captured prices for generation to be financially viable. However, as renewable energy continues to increase (and by association lower prices) in the short to medium term, it is likely that this profile will continue to drop across the day, except for the peak period where output will be focussed as prices will be at their highest. However, CCGTs are going to have to become more flexible in order to continue to operate profitably in the NEM irrespective of how quickly the potential drop in midday prices comes.

The trends in gas generation paints a different picture than the “transitional fuel” argument we hear. In the NEM context, gas is more of a buffer fuel, meaning that gas will increasingly be utilised as a reserve to be called upon

Figure 1: Average NEM gas-powered generation by time of day



when there is a shortfall in supply on short notice – a contingency plan.

The exception to this of course is South Australia. There is still demand for these units to remain online for system strength when directed by AEMO, however, this requirement is likely to fade as synchronous condensers are brought online likely resulting in a significant loss of revenue for these units. However, there is the potential for a number of rule change proposals currently underway to be of significant long term benefit for CCGTs by introducing system strength requirements, synchronous service markets, operational reserves and ramping services. CCGTs may have to become more like traditional ‘peaker’ assets in the same manner that the hydro units (like Upper Tumut) have changed their generation profiles over the last few years.

We will be talking about this in more detail in our webinar, [‘Revenue streams for flexible generation’](#) on 16 September. Join us as we explore the drivers in the market for this change and how different technologies can best capitalise on the changes – both now and in the future.