

Chart of the Week

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“Perhaps no region better emphasises the intricate balance between demand, DER growth, and industrial/ population growth as much as NSW. Despite the shoulder periods seeing an average increase of 4% between FY 2013-14 and 2018-19, the demand in the middle of the day has fallen by an average of 3%”

SA is breaking records...but the ducks are everywhere!

There has been a lot of commentary in recent weeks on minimum demand levels/ the ‘duck curve’ in South Australia (SA) with the state breaking its minimum demand record three times in a month.

In this chart of the week, via a time-of-day analysis, we:

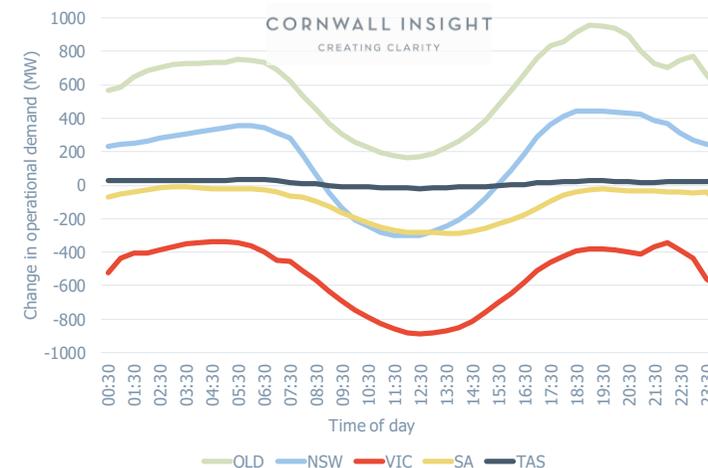
- analyse other regions of the NEM to determine if similar trends are present;
- establish drivers behind these trends; and
- investigate what these trends mean for the market.

In Figure 1, we compare the average time-of-day operational demand for FY 2013-14 to FY 2018-19. As shown in the chart, operational demand profiles have changed significantly over time across all mainland regions in the NEM. In Queensland, the advent of LNG operations in Gladstone has seen operational demand rise steeply on 2013-14 numbers. For shoulder periods in the state (early mornings/ late evenings), operational demand has increased by an average of 14% in the past five years. This increase drops to less than half (6%) for periods when rooftop PV is generating – emphasizing the growth of behind-the-meter rooftop solar in the state.

In SA, for the same shoulder periods, operational demand has actually dropped by an average of 2% on 2013-14 levels. For periods with rooftop PV penetration, this average drops a further 11pp to 13%. Similarly, in Victoria, between FY 2013-14 and 2018-19, industrial closures such as the Point Henry Smelter have resulted in operational demand during shoulder periods falling by an average of 7%. With the growth of behind-the-meter generation, this doubles to 14% (1pp greater than SA) during the day.

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Figure 1: Change in operational demand by region – FY 2019 vs FY 2014



What does this mean for the NEM moving forward and when are the impacts more likely to be seen in the system?

With current NEM-wide installed rooftop PV capacity over 8GW (up from 2.8GW in 2013) - Queensland being the highest with 2.7GW - this means within a few hours in the late afternoons to early evenings, non-solar technologies must ramp up to fill an ever-increasing supply gap in the market.

As discussed above, NSW in particular is currently experiencing lower demand troughs during the day, and higher peaks during the evenings when compared to just a few years ago. With the impending retirement of Liddell, and the introduction of a 5-minute market, this places extra value on flexibility in the state. It is however left to be seen if opportunistic hours of high prices in shoulder periods of the day are enough to attract (non-subsidised) investments in flexible technologies needed across the NEM going forward. There is also the question of just how long these signals will continue to exist as new players take advantage of these market trends.