

# Chart of the Week

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# The wind and the sun: an old age quarrel... or friendship?

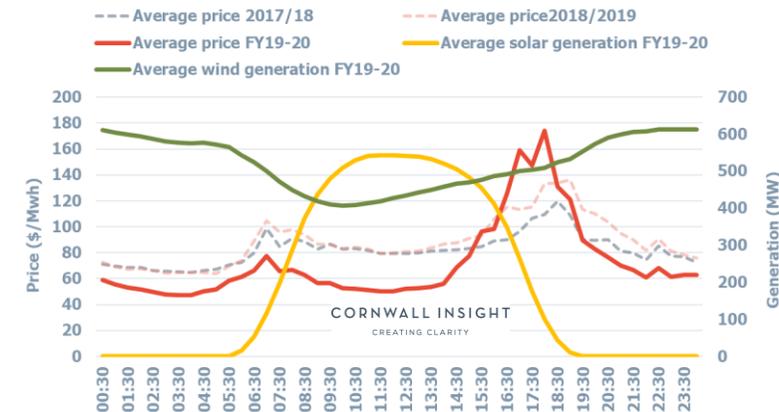
Last week, the Australian Energy Market Operator (AEMO) released the Q2 edition of its Quarterly Energy Dynamics (QED) report. A key finding in the report is the reduction in wholesale electricity prices seen last quarter. With government-supported Renewable Energy Zones (REZs) being proposed especially in New South Wales (NSW), what does this mean for renewable developers and their respective wind, solar and storage projects in the state?

In this Chart of the Week, we examine how wind and solar technologies are performing against (and impacting) the time-of-day price shape. We also provide commentary on what to expect going forward and the curious opportunities these trends might present to developers and investors.

As shown in Figure 1, the merchant market in NSW (and indeed all mainland states) is undergoing significant change. As covered in previous issues, we are seeing a continuing trend of steeper evening peaks, and lower day troughs. From FY19 to FY20, average prices between 7.30AM-3PM have dropped by 15-38% whilst prices between 4.30PM-6PM have increased by 10-40%. Although changing demand patterns due to COVID-19 restrictions and impacts are partly complicit in the extremity of this outcome, this trend is largely consistent with the previous two financial years (FY18 and FY19).

These daytime price troughs, whilst driven by increased (rooftop/grid) solar penetration, are beginning to create a clear divergence in the merchant fortunes of both solar and wind technologies. As seen in the chart, on average, solar delivers its peak volumes (11AM-1PM) entirely in the bottom quartile of prices. Strikingly, wind, on average delivers its lowest volumes in the day in this quartile. Whilst wind also delivers significant volumes during low-priced periods especially late at night and in the early mornings, its variability/coincident peak generation is clearly creating a divergence in the merchant outlook of both technologies.

Fig.1: NSW time-of-day renewable generation vs prices (FY17-20)



For every settlement period between 3PM-8PM, wind on average delivered over 90% of its peak generation in the top quartile of prices during the day. More tellingly, for every settlement period between 5PM-7PM, wind on average delivered over 90% of its peak output in the 90<sup>th</sup> percentile of price outcomes through the day. This trend may get more pronounced as more rooftop/grid solar connects, creating a steeper ramp in the evenings; potentially extending the value captured by wind at sunset.

Given the complementary shapes of the output from these technologies, it is left to be seen how many hybrid projects (with/without storage) will be developed in the announced REZs in NSW. These shapes could also create opportunities for collaborative models through which solar and wind developers can sell their output with reduced firming requirements.

Register for our upcoming free webinar: [Merchant Outlook for Renewable Projects](#) for more insights on NSW and other regions. Contact us at [enquiries@cornwall-insight.com.au](mailto:enquiries@cornwall-insight.com.au) to find out more about our Benchmark Power Curve price forecast.