

New wind and solar generation being built in spite of low prices

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Why, in spite of a glut, are new renewables still being built?

2020, like 2019, will see \$9 billion spent on new (large scale) wind and solar generators. That is over 6 GW in each year (Hazelwood was 1.6 GW but could run for 90 per cent of the time, whereas wind runs at 33 per cent and solar less).

An apparent anomaly is that, though the Commonwealth's Large-Scale Generation Certificate (LGC) subsidy for wind and grid-supplied solar continues to be paid to existing supplies, it is not available for new supplies. It is capped at 33,000 GWh, a level which will be surpassed by supply reaching 40,000 GWh in 2021. New supplies can only get a Commonwealth subsidy by buying out existing facilities.

Even so, the [Clean Energy Regulator](#) expects new supplies at half of the very high levels seen in recent years.

The composition of income received by a wind turbine

Wind turbines usually have a price contracted for the life of the turbine under a Power Purchasing Agreement (PPA). That price would be a combination of its market value and the subsidy it receives.

For wind turbines, a standard 3 MW unit operates a third of the time, generating 8760 Megawatt hours a year. The LGC subsidy paid to wind and grid-supplied solar is the equivalent of a Megawatt hour. The subsidy has been worth anywhere between \$40 and \$80 and has been higher. So, if an average turbine receives \$60, its annual subsidy (8760*\$60) is \$526,000 per year.

The turbine also earns the market price. Prior to the 2017 closure of Hazelwood this was around \$40 per MWh and in 2019 rose to \$90 per MWh. But the value of energy from a wind turbine or solar farm would be discounted by perhaps \$20 because its irregularity needs to be balanced by a "firming" contract from a gas or hydro plant. Even so, with half its income from subsidies, a standard turbine would have been grossing \$1.1 million a year; far greater than the \$750,000 rule of thumb for profitable break-even.

Future developments

In the present COVID world, lower demand, a re-direction of gas to the domestic market and a rapid growth of renewables has brought lower prices. Moreover, the massive build of variable (wind and solar) power is distorting price patterns frequently bringing negative prices during the day. The current average spot market price is \$45 per MWh (under \$35 in Queensland) but earnings for wind/solar supplies may be little more than \$10 per MWh. This is because they require hedge contracts to balance their output, which is predominantly during times when prices are low.

The "COVID normal" average price is likely to be something closer to \$80 but the panoply of subsidies and the consequent pattern of price distortions makes estimating that very difficult. The [AFR](#) reports, "JPMorgan's base case is for long-run wholesale power prices to recover to an average of \$75/MWh, based on the estimated contract price for renewable power plus firming, gas prices and the levelised cost of electricity." The AFR finds it unremarkable that the new normal price is twice that which prevailed prior to the "renewables transition". The main driver for new wind and grid solar now is State subsidies which include:

- Victorian Reverse Auctions with subsidies aimed at bringing the state's renewable supplies to 50 per cent by 2030.
- Queensland's Power Purchasing Agreements for new solar and wind.
- The ACT's "voluntary" additions of 2,200 GWh of renewables.

The 15 year power purchases are said to have been contracted at only \$55 per MWh by [Victoria](#) and \$64 per MWh in [Queensland](#), prices which are extraordinarily low, though far in excess of those presently available on spot markets.

The “COVID normal” subsidy to wind/solar is some [\\$13 billion](#) a year, which includes direct subsidies, renewable-driven transmission and Snowy 2 spending, and the boosting of long term prices due to subsidised renewables forcing closures of coal generators. The Commonwealth’s continues to subsidise to currently installed wind/solar facilities and is maintaining support to new roof top facilities, Snowy2 and myriad other programs. Together with state subsidies these policies continue to undermine the economics of coal generation, the cheapest form of electricity. Equally important, in pushing onto the market massive supplies of variable power, now almost 20 per cent of supply, the measures are causing parlous instability in the market.

Compounding the tragedy, not one of the eight Australian energy ministers and their most senior officials understands the damage they have done and continue to do.