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Record renewable investment growth puts RET in sight



The massive growth in small-scale solar energy is contributing a bigger chunk to the national grid. Justin McManus

by Josh Frydenberg

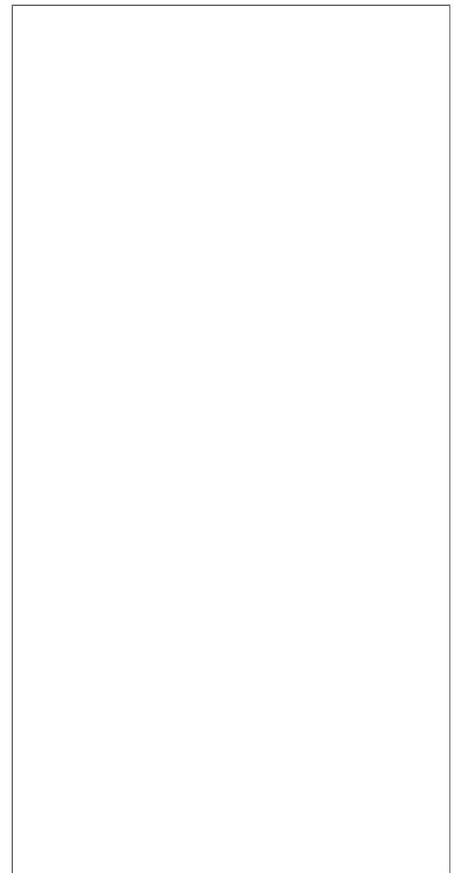
Today the Clean Energy Regulator has released its 2016 report detailing Australia's progress towards achieving its 2020 renewable energy target.

The report is very good news.

Large-scale renewable energy investment in 2016 was at a record high, five times greater than that of 2015. More than \$4 billion has been committed over the last year, which in time will add over 2000 megawatts of capacity to the grid. To put that in perspective, the total capacity of the National Electricity Market is under 50,000 megawatts.

Of the 98 new power plants accredited in 2016, 86 were solar, reflecting the rapidly declining cost and increased capacity of photovoltaics.

Small scale renewable investment was also strong with 182,000 new installations in 2016, many of which were in regional areas. There are now across the country 2.6 million small scale renewable systems covering nearly 15 per cent of Australian homes.



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These rooftop solar panels and household hot water systems generate over 5000 megawatts of power, nearly twice the size as the nation's largest power station.

Small scale installations to triple

The number of these will only grow over time, with the Australian Energy Market Operator predicting generation from distributed systems to more than triple by 2030.

The regulator's report references a study by Ernst and Young which found that, as a result of Australia's performance in 2016, we became a top 10 destination in the world for renewable energy projects. Australia ranked at number nine, ahead of other resource-rich economies like Norway and Canada.

This massive ramp-up in renewable investment is an inconvenient truth for the government's critics.

Labor's energy spokesman Mark Butler had even gone so far as to say there was an "investment strike" in Australia's power generation sector.

Nothing could be further from reality. Record investment is occurring not in spite of government, but because of it.

Case in point is the 2020 renewable energy target of 23.5 per cent – a target which the Clean Energy Regulator now says is in sight.

On track to hit RET

"If this investment momentum continues in 2017," the report emphatically states, "the 2020 RET can be achieved."

Investments by the Clean Energy Finance Corporation (CEFC) and the Australian Renewable Energy Agency (ARENA) are also making a difference.

Since its inception in 2012, the CEFC has made \$3.5 billion of loan and equity commitments in clean energy projects, ranging from a large scale solar investment with the potential for pumped hydro at a disused gold mine near Townsville, to smart grid software which gives consumers greater control over their energy consumption.

Nearly \$3 billion of these CEFC commitments have been made under a Coalition government.

ARENA has provided just over \$1 billion of grants across 308 projects, nearly half of which have been made under a Coalition government. These range from the design, construction and deployment of grid-connected wave power off Garden Island, Western Australia to the world's largest "virtual power plant" in Adelaide which links 1000 households and businesses with solar PV and batteries reducing the need to build out the grid.

Sometimes the renewables funded by CEFC and ARENA will be able to power the grid alone; other times they will need to partner with existing fossil fuel systems. A good example is the DeGrussa copper mine in Western Australia which now gets 20 per cent of its power from solar and batteries, reducing the use of diesel fuel by some 5 million litres a year. A good economic and environmental outcome.

Costs coming down



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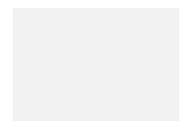
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What is remarkable is the how fast the cost of these new technologies are coming down. In 2014 ARENA ran a program to incentivise large scale solar investments and had to contribute the equivalent of \$1.60 per watt of generation. In 2015 it had dropped to 43¢ per watt and by September 2016 it had fallen to a low of 19¢ per watt with project costs nearly halved. Instead of in this latest round generating 200 megawatts of solar power for their \$100 million investment, ARENA secured for \$92 million some 480 megawatts of new generation while leveraging \$1 billion of private sector investment.

Australian researchers are at the forefront these technology breakthroughs.

For example, it is estimated that by 2020 around 40 per cent of the technology used around the world in solar PV can be traced back to discoveries at Australian universities. Indeed researchers at the UNSW and ANU alone have broken at least 14 solar cell efficiency world records.

Like solar cell technology, the developments in battery storage are equally impressive. In the last five years alone the price has decreased by around 50 per cent with some estimates that it could continue to fall by 10-20 per cent a year. With the increased penetration of renewables and being conscious of the key role storage will play, the Turnbull government has placed a major emphasis on new pumped hydro facilities funding a number of feasibility studies through ARENA.

Australia's energy market is undergoing an unprecedented and unstoppable transformation. Renewables are fundamental to this new dynamic. What is now clear from the Clean Energy Regulator's 2016 Report is that renewable investment in Australia has hit record levels and shows no sign of abating.

Integrating these renewables into the system will present some challenges but with the right planning energy security can be maintained and challenges overcome. Australia has reason to be proud of its role in these developments which are helping to drive better consumer, economic and environmental outcomes.

Josh Frydenberg is Australia's Environment and Energy Minister

AFR Contributor

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