

GREEN RENAISSANCE IN AUSTRALIA

AFTER MORE THAN THREE YEARS OF INERTIA, THE AUSTRALIAN RENEWABLE ENERGY INDUSTRY IS FINALLY SHOWING SIGNS OF RESURGENCE. BY **ROB WATT**, PARTNER, AND **PHILIP CORNWELL**, PARTNER, **ALLEN**.

A series of reviews of the Renewable Energy Target (RET) since 2012, and the abolition of the carbon tax in 2014, created a climate of uncertainty that meant investment in new large-scale renewable generation slowed dramatically. In the intervening period, new investment was largely driven by programmes initiated by State and Territory governments and their agencies.

With the Large-scale Renewable Energy Target (LRET) finally settled at 33,000MWh, the industry is now taking steps to meet the target. Prices for large-scale generation certificates (LGCs) have risen sharply, and the long-term power and LGC power purchase agreements (PPAs) essential for bankable new investments are starting to make a comeback.

RET under threat

When the RET was established in 2000, the target was set at 20% of Australian electricity generation by 2020. In 2010 the LRET was fixed at 41,000GWh, based on energy demand forecasts at the time. Subsequently, energy demand forecasts fell such that the 41,000GWh target was projected, when combined with renewable generation under the Small-scale Renewable Energy Scheme, to comprise around 26% of Australian electricity generation by 2020.

In response to the decline in electricity demand since 2010, excess generating capacity and falling wholesale prices, the Commonwealth government established a panel chaired by Dick Warburton to conduct a wholesale review of the RET in 2014. The review modelled five different options, including no change to the LRET, reducing the LRET to a “true” 20% of forecast 2020 demand (around 26,000MWh) and extending the target date to 2030 while increasing the target to 30%.

The Warburton Report concluded that, although the RET had encouraged significant investment in new renewable energy generation, it was not a cost-effective emissions abatement tool. The report proposed two options, both of which involved a substantial curtailment of the RET:

- Closing the LRET to new entrants while grandfathering existing and committed new projects at the time of closure. Annual targets under the LRET would be set at the output of these existing and committed projects. Under this option, renewable generation was forecast to settle at around 16% of 2020 generation.
- An additional demand option under which the LRET would be set each year at a level equal to

the previous year plus 50% of forecast growth in electricity demand in the relevant year. The rationale behind this approach, rather than setting the LRET based on long-term forecasts, was to avoid the risk of demand being lower than long-term forecasts, resulting in excess renewable generation capacity, lower wholesale prices and distortion in the rate of displacement of existing fossil fuel generation.

Both options contemplated a reduction in the LRET, which would most likely have resulted in downward pressure on LGC prices. The second option, of re-setting the target annually based on forecast demand for the following year, while in theory keeping the LRET alive to new entrants, in practice would have made it difficult for developers to respond effectively to the target from one year to the next, given the long lead times required for greenfield renewable energy projects.

Regulatory uncertainty created by the long-awaited review of the RET and then the outcome of the Warburton Report, together with the frankly hostile attitude of the then Prime Minister, meant that investment in new renewable generation had largely stalled. Demand for LGCs from retailers, whose long-term power purchase agreements had underpinned the project financing of new developments, had dried up, given the uncertainty surrounding the future of the LRET.

These factors culminated in new investment in large-scale renewable energy generation falling as low as A\$240m in 2014, the lowest level since 2002. No new wind farms commenced construction in 2015.

Investment in renewable energy generation was limited to small-scale generation, such as roof top solar PV, supported by government incentives and feed-in tariff programmes.

Alternative programmes

Investment in large-scale greenfield development since 2012 has largely been underpinned by State and Territory government-led programmes (such as the ACT reverse wind and solar auctions and the Ergon Energy tender process) and programmes supported by the Commonwealth government or its agencies, such as the Commonwealth government’s Solar Flagships Program, and large-scale renewable energy programmes supported by funding from the Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC).

These programmes have attracted new international players to the Australian market, as outlined below.

- *Solar Flagships* – The Solar Flagships programme was established by the Commonwealth government in 2009 to support the construction and demonstration of large-scale, grid-connected solar generators in Australia.

Following a protracted bidding process, in June 2012 the government announced A\$129.7m of grant funding (later increased to A\$166.7m to cover a fall in wholesale prices) to be provided by ARENA for the development by AGL Energy and PV panel manufacturer First Solar of a 159MW solar PV project across two sites in Nyngan and Broken Hill in NSW.

An additional A\$64.9m of funding was provided by the NSW government towards the project cost of A\$450m. The terms of the ARENA funding provide for claw-back of part or all of the contribution if wholesale prices rise above agreed rates.

- *ARENA and CEFC programmes* – The Commonwealth government established ARENA in 2012, to provide funding to improve the competitiveness of renewable technologies and increase the supply of renewable energy in Australia. In the same year, it established CEFC to facilitate increased flows of finance into the clean energy sector, including renewable energy, energy efficiency and low emissions technologies, by providing direct funding to support investment by the private sector. CEFC has provided funding for a number of projects developed under ARENA programmes in conjunction with ARENA funding.

ARENA has conducted a series of programmes to support research and development, demonstration and deployment of renewable technologies. Most recently, in 2015 ARENA announced the large-scale photovoltaics competitive round, a A\$100m programme to support the development of 200MW of solar PV projects with the aim of supporting further cost reduction in large-scale solar PV.

This will almost double solar capacity in Australia to 440MW, which is still tiny compared with countries such as Germany, China and the USA. The programme calls for projects to demonstrate a levelled cost of electricity below A\$135 per MWh, with costs projected to decrease to A\$80–\$90 per MWh as scale is achieved and the Australian supply chain improved. In comparison, costs of US\$50–\$80 per MWh have been bid at solar auctions in India, the US and Chile.

ARENA received 77 expressions of interest from which 22 projects collectively seeking A\$322m of funding – more than three times the amount on offer – have been shortlisted to go through to final bids. The shortlisted projects are spread across Queensland (10), New South Wales (8), Victoria (2), South Australia (1) and Western Australia (1). They include a >100MW venture by Origin Energy in Queensland, and projects by Australian, Spanish, Chinese, French, US, Canadian and Thai developers, including APA, Infigen Energy, FRV, Genex, Neoen, Goldwind and Juwi. From the final

bids, ARENA expects to award funding of up to A\$30m to four to 10 winning projects.

In 2014, the Commonwealth government announced a proposal to scrap CEFC and ARENA but their abolition was averted by opposition from Labor, the Greens and cross-benchers in the Senate. As a result of a deal for cross-bench support for the abolition of the carbon tax, both agencies were retained but ARENA's funding was cut and CEFC's investment mandate was revised to preclude investment in wind projects.

- *ACT reverse auctions* – The reverse solar and wind capacity auction processes run by the ACT government invited tenders for feed-in tariff entitlements for solar and wind generation capacity towards the ACT's target of 90% renewable electricity generation for the Territory by 2020.

Two wind auctions were held. The first in 2014 delivered 200MW of wind capacity (or 24% of the ACT's forecast 2020 electricity demand), including RES's Ararat wind farm, Windlab's Coonooer Bridge wind farm and Neon/Megawatt Capital's Hornsdale wind farm. The second wind auction announced in 2015 secured a further 200MW of wind capacity from the second stage of Neon/Megawatt Capital's Hornsdale wind farm and CWP Renewables' Sapphire wind farm.

The solar auction in 2013 secured feed-in tariffs for 40MW of solar generation capacity, including FRV's Royalla solar farm, Maoneng Group's Mugga Lane solar park and Elementus Energy's OneSun solar farm. Subdued activity in the renewables industry at the time attracted a large number of bidders and competitively bid processes.

In the second wind auction, 1,100MW of capacity vied for the 200MW on offer and delivered a lowest bid price of A\$77 per MWh, considered to be a record low for the Australian market. Solar prices were bid closer to A\$180 per MWh. In retrospect, it's difficult to imagine better timing in terms of procuring significant, keenly priced renewable energy generation for the Territory.

While the solar projects in the ACT auction process are located in the ACT, none of the wind projects are. Instead, the wind bidders offered ancillary benefits to the ACT economy in the form of investment in energy innovation in the ACT, including renewable energy and battery storage training, relocation of headquarters or asset management facilities, and investment in micro-grid development and research.

- *Ergon Energy tender* – In May 2015 the Queensland Labor government announced a target of meeting 50% of the state's electricity demand from renewable sources by 2030. To that end, state-owned retailer Ergon Energy announced a tender for 150MW of electricity from renewable generation.

In response, Ergon received expressions of interest from 22 parties for a total of around 2,000MW of "shovel ready" renewable generation capacity, from which it has shortlisted seven projects to go through to final bid, including four solar, two wind and one biomass project totalling 500MW.

The shortlisted bidders include FRV, Ratch Australia, Lyon Infrastructure (solar), Infigen Energy and Ratch Australia (wind) and Cleveland Power – Darwalla (biomass). Announcement of the winning bids is expected shortly and ahead of the award of the ARENA large-scale solar PV funding.

In addition to the Ergon Energy process, the Queensland government is itself auctioning 20-year PPAs for 60MW of solar capacity under its Solar60 programme.

Other state governments have announced their own renewable energy targets and are pursuing procurement programmes directly or through agencies. Victoria is seeking at least 100MW of renewable load. South Australia is seeking 140MW–180MW of wind and solar energy. Transport for NSW has called for expressions of interest to provide 137GWh per annum of renewable energy for its Sydney Metro North West Project. And Western Australian state-owned retailer Synergy is seeking 500,000GWh per annum of LGCs.

In addition, Western Australian-based energy retailer Alinta has also recently called for tenders for renewable capacity.

Return of the RET

Meanwhile, political opposition to the substantial curtailment of the LRET recommended by the Warburton Report (including from within the government), and lack of government control of the Senate, led to protracted political negotiations on the future of the RET scheme.

As the negotiations continued, Parliament passed legislation to establish an emissions reduction fund to purchase carbon abatement through a reverse auction process, a key plank in the government's emissions reduction policy. The fund initially was opposed by opposition parties, who widely saw it as an alternative to carbon pricing and therefore to the RET scheme. The government garnered support for the legislation by tying it to survival of the RET.

The ACT wind and solar auction processes, Solar Flagships, and investment in energy innovation programmes supported by ARENA and CEFC largely sustained investment in renewable energy through this period of uncertainty as to the future of the RET.

Finally, in June 2015, after almost a year of political negotiation following the release of the Warburton Report, the LRET was settled at 33,000GWh. This is almost at the mid-point between the previous target of 41,000GWh and a “true” 20% target of 26,000GWh based on reduced 2020 forecast demand. An exemption was introduced for emissions-intensive, trade-exposed industries (such as aluminium smelters that may be unable to pass on costs associated with the RET due to international competition for their product).

In October 2015, at the All Energy Conference in Melbourne, Commonwealth Environment Minister Greg Hunt announced the cessation of government attacks on the RET and called for an end to the renewable energy industry's “capital strike”.

New mandate for ARENA and CEFC

A change in prime minister has heralded the survival of ARENA and CEFC, albeit with a modified mandate. In March 2016 the Turnbull government announced that ARENA and CEFC will continue to support the renewables industry. Under their new mandate, CEFC will provide debt and equity funding out of a A\$1bn Climate Energy Innovation Fund (CEIF), while expanding its ambit to include energy efficiency and low carbon projects in addition to renewable energy.

The fund has been allocated out of CEFC's existing A\$10bn grant budget and will be administered with ARENA serving in an advisory role. ARENA's separate unallocated grant budget of A\$1.3bn will be cancelled after the end of its current A\$100m funding round for solar projects.

Prime Minister Turnbull has indicated that the CEIF will focus on early-stage clean energy projects exploring innovative financing methods. However, it is unclear how much support research and start-up technology projects will receive, given the new focus on obtaining a return for taxpayers through debt and equity investments, rather than grant funding, given the inherently speculative nature of such projects.

The CEIF has been criticised by some renewable energy groups for delivering a net reduction in funding available for renewable projects, given that A\$1.3bn in allocated and unspent funds available to ARENA will be cancelled and A\$1bn allocated to the CEIF from the CEFC's budget, and for the curtailment of grant funding.

That the announcement did not spark more widespread opposition says much about the relief felt in the industry at the end of a regime that was openly hostile to wind farms and to government support for renewable energy projects.

The race is on

With the RET settled, some forecasts show as much as 4,400MW of new renewable energy capacity needs to be committed in 2016 for the market to be on track to meet the interim 2018 target. By comparison, 448MW of new capacity was added by projects commenced in 2015, with half coming from the ACT reverse auctions. The industry is scrambling to catch up. The Clean Energy Council has indicated that renewable energy developers have projects with at least 6,000MW of capacity ready for development, suggesting that the problem is one of funding – or, rather, given there are plenty of investors and banks keen to fund renewable energy projects, a lack of bankable PPAs.

LGC prices at the end of January 2016 were trading at A\$83.50 per MWh, continuing their rise towards the after-tax penalty level of A\$92.86 per MWh. The price is above the statutory pre-tax shortfall penalty of A\$65 per MWh.

This contrasts with prices of around A\$39 per MWh in February last year, and reflects market certainty regarding the continuation of the RET and anticipation of a looming supply shortage. It appears the market may have priced in failure to meet the new target.

PPAs make a comeback

Historically, project financing of renewable energy projects in Australia has been underpinned by long-term PPAs with the major retailers (which are vertically integrated and have investment-grade credit ratings). Uncertainty with respect to the RET scheme over the past four years has seen the PPA market all but disappear. The added certainty and increasing LGC prices have seen PPAs begin to return, albeit with a trend towards shorter tenors than those that historically underpinned investment in renewables projects. A number of factors are constraining the availability of long-term PPAs for developers:

- Expiry of the RET scheme at the end of 2030. Given the relatively short time horizon, energy users are purchasing LGCs in the wholesale market, rather than locking themselves into long-term contracts to support developments.
- A perception in some sections of the market that, in light of the development freeze during the prolonged period of political uncertainty, concessions are likely to be granted for shortfall penalties while the industry catches up (despite contrary signals from Canberra).
- A view that shortfall penalties (initially set to kick in from 2018) will not provide adequate incentive for retailers, as that cost may be perceived as less risky than committing to PPAs extending beyond 2020, in particular if all the major retailers (the market is concentrated) face the penalties and so the cost can largely be passed on to consumers.

That said, Origin Energy recently signed a 15-year PPA for 100% of the electricity and LGCs from FRV's Moree Solar Farm. Although, interestingly, that PPA was signed with an operating solar farm (developed by FRV without a PPA), rather than a new development.

What next

The long period of uncertainty regarding the RET finally appears to be over, with the RET enjoying apparent bipartisan support. Now, industry is grappling with how to meet the new target.

The response to the State and Territory government programmes (including the competitive programmes run by ARENA and CEFC) demonstrate that developers with shovel-ready projects are out there. One of the key issues will be funding the required development. Currently, industry participants appear to be having a stand-off as to the next step.

Sponsors, financiers and other investors are looking to retailers to come back into the long-term PPA market to underpin investment, but retailers have been slow to take the plunge. Innovative funding solutions will be critical.

One approach will be to encourage investment funds to align with sponsors and retailers. AGL's Powering Australian Renewables Fund was launched in February 2016, and aims to combine A\$200m of seed equity from AGL with contributions by infrastructure funds and leverage from debt markets to build a A\$2bn–\$3bn fund. The fund will purchase AGL's Nyngan and Broken

Hill Solar plants. Future acquisitions may include AGL's Coopers Gap and Silverton wind projects, in Queensland and NSW respectively.

The fund aims to develop 1,000MW of large-scale renewables projects, equivalent to AGL's forecast RET obligations. AGL has indicated that it will offer PPAs of between five and 10 years for assets expected to have a 20-plus-year life, which may impact the tenor of debt that can be carried against the assets. AGL hopes that by offering diversified investment over a number of projects, the tail generation risk will become acceptable to investors.

Separately from the retailers, private funds are being formed to invest in renewable projects such as the Lighthouse solar fund. Similar funds, which take a portfolio approach, have been used to fund renewables in the US.

In the absence of long-term PPAs, sponsors, financiers and other investors may need to accept some degree of merchant risk. This may require structures that will attract financial investors and possibly also mezzanine lenders with appetite for price volatility, perhaps by taking a portfolio approach, to fill gaps created by lower senior debt leverage. Government agencies such as CEFC will also have a role to play here.

Moree Solar Farm and Woodlawn Wind Farm were developed and financed on a merchant basis, albeit with significant ARENA and CEFC funding alongside bank funding. As mentioned, post-completion, Moree Solar Farm has signed a PPA with Origin Energy and is now seeking to refinance.

Recently, Chinese developers Goldwind and CECEP Wind Power Corporation announced commencement of construction of the first stage of the 175MW White Rock Wind Farm. When complete, it will be the largest operating wind farm in NSW and the first large wind farm development since the reset of the RET. It will also be developed without a PPA. In their announcement, the developers noted the importance of bipartisan support for the RET to their decision to proceed with the development.

State and Territory procurement programmes are likely to continue, albeit less likely to realise the rock-bottom prices seen in the ACT reverse auctions, given competition from the array of government programmes and RET-driven development.

The role of governments in streamlining project approvals processes to support the required rate of development will also be critical. NSW and Victoria have already taken steps to address this. In addition to new projects, in a number of cases development approvals obtained by developers before the hiatus have expired and will need to be renewed. Governments will also need to coordinate required upgrades to the grid to facilitate additional connections.

Finally, from the Commonwealth government's perspective, although the time for tinkering with the target itself may be over, consideration may need to be given to adjusting the timetable and extending the term of the RET beyond 2030, to encourage a more robust PPA market and to give industry a better chance to make up for lost time. ■