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AEMO SERVICES | Consumer Trustee

In a fast-changing energy landscape, innovation is the key to consumer value – by Paul Verschuer

The NSW energy transition is an extraordinary challenge, but it is by no means unique.

It is true that the urgency lent by the scheduled obsolescence of most of the state's coal-fired generation fleet over the next ten years has helped focus attention and secure bipartisan support for necessary action. In due course, however, other jurisdictions will face similar sets of decisions - and we're all aware of the potential for those scheduled closures to be brought forward as the economics and social licence of coal declines and the case for delaying the energy transition continues to erode.

So rather than viewing NSW as an outlier in its progress away from fossil fuels, we should consider it a precursor to other states following the same path, and it is in that spirit that I'd like to discuss the innovative approach we've taken to incentivising private sector participation in NSW's energy transition.

New solutions for NSW

Amongst our responsibilities in our foundational role as Consumer Trustee under the state's Electricity Infrastructure Roadmap, the NSW Government has entrusted us with bringing forward private investment in built energy infrastructure.

As our in-house team of infrastructure financing, energy systems modelling and financial markets leaders began to map out that journey, it became apparent that we would need to devise a different approach to incentivisation if we were to deliver on our mandate for consumer value. Our research showed that equivalent incentive schemes in other parts of the world had often achieved their energy objectives, but rarely their financial ones. To shift this paradigm, we knew we had to better target our own incentives.

Renewable energy is now the cheapest form of energy. The question that immediately arises from this fact is 'Why then is financial support for these technologies still required?'

Potentially, it is not, or at least won't be when the transmission builds NSW is planning are delivered. Risk for investors is high today, as the transmission network augmentations commence. Risk will be far lower for investors, as they approach completion.

We needed:

i. A product that would provide a larger incentive for those projects coming early (taking greater risk on transmission build delivery)
ii. A product that could be competed down to zero (enable the market to tell us when financial support was no longer required)
iii. A repeatable, consistent, process. The tenders run every six months, enabling projects to come forward as soon as their foundational requirements are in place

The traditional Contract for Difference (CFD) model used both in Australia and overseas did not meet these criterions. Given that it is essentially a zero-value risk transfer between investors and consumers on the future price to be paid for the energy produced, it will always be set close to the levelised cost of energy (LCOE). It was designed in a time when the economics of renewable energy were weak, and subsidies were required to stimulate innovation.

A number of the project proponents we engaged with supported this hypothesis, and suggested that if the state's Renewable Energy Zones (REZs) were delivered as designed, they would have no need of a financial support mechanism at all. If this proved true, the use of 20-year CFDs in our tenders would clearly be an unconscionable use of consumer money.

Instead, we developed innovative Long-term Energy Service Agreements for NSW, utilising swaptions (puts on swaps) as a financial support mechanism. They can be competed down to zero, and we expect that as the REZs become fully established, they will be. This is not just because of the increased certainty that will accompany better developed transmission infrastructure, but also because quality connection opportunities in high-renewable resource zones will be plentiful, and projects across the State will compete for a finite amount of financial support in each tender.

The generation LTESA in action

Suppose a wind project is proposed in the context of a $90 per MWh levelised cost of energy. Under a CFD at that strike price, if the price of electricity in the wholesale market falls below that point, consumers pay the difference to support the infrastructure owner. If wholesale prices rise, the owner receives no more than that strike price for electricity generated.

Under an LTESA struck below the LCOE (for example, at $50 per MWh), asset owners are able to capitalise fully on market upsides, and in exchange consumers only provide price support below that threshold. Essentially, it's an insurance product for new generation infrastructure projects to account for future price uncertainty, and - crucially – projects are able to set this threshold based on their own risk modelling. On behalf of consumers, we then select the projects with the lowest thresholds - and which offer best financial value - through a competitive tender process. By putting the onus back on the market and supporting competition, the LTESA model comes much closer to achieving an efficient incentive price than CFDs.

As an option which doesn't carry a premium, the swaption in this product has real and significant value. It provides proponents with choice and greater flexibility to maximise revenues and manage their own price risk. Whilst some investors and developers might prefer a CFD because it provides higher price protection – albeit at cost to the consumer – and offers direct compensation more frequently, most appreciate the flexibility to operate profitably with less need for direct subsidy. This sentiment has been reflected in robust participation rates for our early tenders.

Proof in participation

Right from the outset, it was clear that some proponents had thought deeply about our new mechanism and the ways in which they could maximise its benefits. These projects stood out amongst the crowd in our first competitive tender for generation infrastructure, which was five times oversubscribed. Three renewable generation projects with a capacity of 1,395MW, alongside one 8-hour battery, were successful, having comprehensively demonstrated their financial value to NSW electricity consumers and benefits to their host communities through our two-stage process.

Across our broader bidding group, we received innovative and considered initiatives from a number of proponents, including ambitious projects to secure employment outcomes for First Nations people, careful and creative site selection, and a range of other community benefits. We designed our processes to minimise friction and allow unsuccessful bids at one tender to

easily participate in the next, ensuring we capture the full value of these initiatives at the right point in the transition.

We are currently assessing bids for our firming infrastructure tender and our second competitive tender for generation and long duration storage. This will be followed by the commencement of another generation tender before the year is out.

The response thus far is proof of the market fit and financial attractiveness of the products we designed, as well as the relationships we have developed to drive interest in this once-in-a-generation investment opportunity. That said, we are dealing with a dynamic environment and adaptive mechanisms allow us to respond to market feedback on innovation and risk and adjust our settings appropriately.

Our approach to innovation and consultation led us to a tailored solution for the particular needs of NSW at this moment in the transition, and the lesson for other jurisdictions should be to leverage the expertise at their disposal to find solutions that work for their own set of circumstances.

We've demonstrated that things can be done differently, and we're now moving the dial on how and when government and consumers should incentivise new infrastructure. The transition moves quickly, innovation drives sweeping change, and consumers rightly expect that this will be reflected in the financial outcomes delivered for them.

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Leading AEMO Services