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Submission by email: PUOSubmissions@treasury.wa.gov.au

19 September 2018

Dear Mr Martin

RESPONSE TO DRAFT RECOMMENDATIONS REPORT: IMPROVING RESERVE CAPACITY PRICING SIGNALS – A PROPOSED CAPACITY PRICING MODEL.

NewGen Kwinana welcomes the opportunity to provide comments on the Draft Recommendations Report (Report) entitled "Improving Reserve Capacity pricing signals – a proposed capacity pricing model. This paper was published by the Public Utilities Office (PUO) on 22 August 2018.

Executive Summary

The impending changes to the WEM brought about by new technologies likely require a more significant review of the operation of the capacity mechanism, given its pervasive roles throughout the market's operations. The Report's narrow scope on pricing is acknowledged.

With the exception of the proposed treatment of DSM, NewGen Kwinana broadly supports the proposals. With regard to DSM, NewGen Kwinana supports the maintenance of the current capacity allocation process, or some variant of it. This more properly allocates value to this resource and is more consistent with its treatment in other jurisdictions.

NewGen Kwinana is concerned at the tight timeframes proposed for implementation. Linking a complex reform to another equally complex reform (in the form of constrained access) is not good practice. Not only is the issue of constrained access not widely accepted in the market, hurdles in implementing any reforms in a timely manner would impact the introduction of the proposed capacity pricing measures.

The Rationale for a Capacity Mechanism

The Report steps through the rationale for adopting capacity mechanisms within energy markets, as well as describing the operations of several capacity markets from other jurisdictions. NewGen Kwinana notes that in the previous government's Electricity Market Reform process, the idea of migrating the WEM to a NEM-style energy only market was floated and rejected. It is a given that the WEM will maintain a capacity mechanism for the foreseeable future as its primary tool for ensuring system adequacy.

In energy-only markets, very high price limits provide investment signals when system adequacy is tight (e.g. NEM price limits of $14,500/MWh and ERCOT approx. AUD$12,500/MWh). Participants contract for hedge products, typically with peaking generation or directly with demand itself (Demand Side Management, or DSM) to protect themselves from having to pay high generation prices. The investors in new peaking capacity typically require the hedge contract premiums to top up the earnings made in the wholesale market,. In other words, a pseudo reserve capacity payment is determined by the market (retailers) rather than a regulated pricing mechanism. In markets which deploy a capacity mechanism, wholesale energy price limits are lower. Investment in peaking generation (to meet peak demand system adequacy) is underwritten by formal capacity instruments, such as capacity credits. As the low energy price limits create less ability to earn money in the wholesale or ancillary markets, capacity payments are often referred to as 'missing money'.

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The 'Missing Money' Argument

Generation capacity typically has a number of avenues from which to generate revenue. The Report summarises these as the: wholesale energy market; ancillary services market; renewable energy target; and the capacity mechanism, which makes up the missing money. However, the pricing structure of these markets is important as it impacts the viability of different technologies. Assume for the moment that peaking capacity (and DSM) does not earn revenue from renewable schemes. This leaves wholesale energy, capacity and ancillary services from which revenue is derived. The wholesale energy market in the WEM is characterised by low price limits (Maximum STEM Price of $302/MWh[1]). And SRMC bidding, for those participants with market power, further acts to keep wholesale prices low[2]. Therefore, there is limited revenue available to facilities with an SRMC of energy at the higher end of the spectrum. The same can be said for ancillary services revenue. This then means that virtually all of the missing money is attributed to capacity payments. Even the building blocks used for formulating the Benchmark Reserve Capacity Price assumes 100% of revenue is met by the capacity payment. This is different to how other capacity markets operate in practice and creates some problems that have been seen in the WEM, such as attracting more versatile generation investment and correctly remunerating DSM. Because nearly 100% of the missing money is derived from capacity payments, then the capacity price averages around the $125,000 mark.

The US energy markets of PJM, NYISO and CAISO all deploy capacity mechanisms. However each of those markets has capacity prices roughly around the AUD$40,000 mark. And each has an energy price cap of around AUD$1,400/MW[3]. It seems likely that new-entrant generation in these markets would choose technologies that would be better able to capture more wholesale energy and ancillary service revenue, given it cannot just rely on the capacity revenue to meet returns. This appears to be a weakness of the WEM capacity mechanism. It incentivises pure ultra-peak capacity, which has no intention of seeking to operate in the wholesale and ancillary markets where it has little opportunity to earn revenues, thus denying these markets the benefits of competition[4]. And this is where the problems with properly remunerating DSM become evident.

[1] The Alternative Maximum STEM Price is currently $557/MWh, however this is seldom invoked as the generation able to bid at this price is by definition only used when capacity adequacy is very tight.
[2] According to the ERA's 2017 review into the 'Effectiveness of the Electricity Generation and Retail Corporation Regulatory Scheme', Synergy set balancing prices around 84% of the time in 2016.
[3] FERC Order 831 seems to set a USD$1,000/MWh price cap, with exceptions allowed up to a hard cap of USD$2,000/MWh where evidence can be provided this price level is cost based.
[4] Another way of incentivising more appropriate capacity, rather than changing the balance between capacity revenue and price limits, could be to apply differential capacity pricing. Those facilities with more flexibility to compete in, and hence bring competition to, wholesale and ancillary markets would be paid higher capacity prices. The NYISO uses this method to reward the location of capacity investment. Higher capacity prices are paid to capacity located where generation adequacy is tight.

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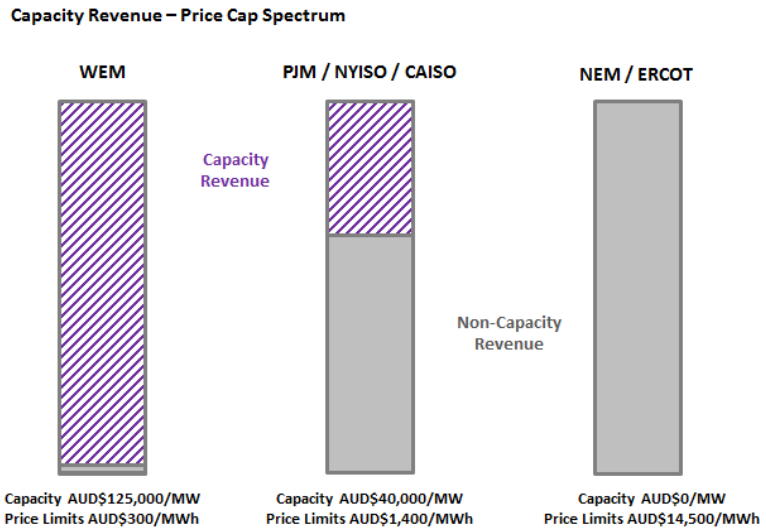

The Role of Demand Side Management (DSM)

The backers of DSM claim that there should be no differentiation between supplying an additional MW of generation and removing a MW of load when system adequacy is stretched. It follows that the capacity value of each unit of capacity is equal. In energy-only markets, a retailer may pay a DSM provider a capacity-like payment to hedge against high wholesale prices. This form of price hedge will compete against a peaking generator. But the peaking generator also has the ability to earn revenue in the wholesale (and ancillary) market(s). So in the energy-only market the missing money paid to the DSM provider for the hedge service is not the cost of meeting all the revenue required by the peaker. Similarly in the PJM/NYISO/CAISO markets, DSM and peaking capacity competes for capacity prices around a third of that in the WEM. The peakers are able to make further revenues in the wholesale and ancillary markets, which the DSM provider is less likely to participate in. The notion of capacity price equivalence between scheduled generation and DSM in these examples makes some sense. The generation options have less missing money to recover compared to DSM.

But in the WEM, to treat DSM and peaking generation equally is to pay DSM the same quantity of missing money as the peaker, where this quantity is the full revenue requirement of a peaking facility. This differs from the other two scenarios and is likely to over-compensate the DSM provider.

The current (transitional) methodology for remunerating DSM in the WEM, or some variation of it, appears appropriate. A lesser fixed-capacity payment is attributed to the 'expected value' of the DSM service. But if the DSM is called, it has the opportunity to earn the equivalent of very high energy payments[5], relative to WEM price limits, and recover revenue equal to what it might achieve at the full capacity price. As the likelihood of calling DSM increases[6], the expected value, or fixed capacity portion of revenue increases. This provides a stronger incentive for DSM to be available as its utility to the market increases. To pay a higher fixed price to DSM (such as the full capacity price) at all times provides an incentive for DSM to be available when it is least likely to be called, and exit the market when most likely to be called. A DSM provider has an opportunity cost to being called that is likely to be well above the value of energy earned (under the usual WEM price limits). A prudent risk strategy for DSM providers might be to withdraw from the market during years of tight capacity adequacy, exacerbating the situation.

[5] The Extra Consumption Dispatch Price, which can be set up to the DSM Activation Price, currently $33,460/MWh.
[6] When the amount of excess capacity is low or when there is no excess capacity.

NewGen Kwinana supports maintaining the current transitional pricing model for DSM, or some variant of it. Perhaps a review of the level of fixed payments might create a capacity price floor for DSM which more closely resembles the price received in the PJM/NYISO/CAISO markets. The capacity price might vary year-on-year according to the 'expected value' of the DSM. A capacity price cap might apply when system adequacy reaches a certain threshold. Such a floor and cap system should prevent DSM capacity from moving into and out of the market more frequently, lessening volatility. Additionally, the relationship between the annual 'expected value' capacity payment and the DSM Activation Price should be related. As one rises, the other falls.

Proposed Changes to the Capacity Pricing Model

While NewGen Kwinana considers that a review of the current capacity mechanism requires a broader framework to create a more flexible pricing mechanism, the limits of the pricing review are acknowledged. With the exception of pricing capacity for DSM, as noted above, NewGen Kwinana broadly supports the proposals. Specific comments include:

4.1 Administered Capacity Pricing

NewGen Kwinana supports the retention of the administered price curve. The use of Value of Customer Reliability (VCR) is probably overly theoretical to derive practical outcomes in a small market where capacity additions are typically lumpy and large compared to the load (relative to other markets). However the parameters proposed seem broadly sensible.

4.2.1 Price Cap

The price cap of 1.3 seems appropriate and consistent with other jurisdictions.

4.2.2 Absolute Zero Point

While an absolute zero point of 30% excess capacity is slightly more conservative than those in other international markets, there is some concern that it may lead to unintended consequences. The absolute zero point is where capacity is not remunerated (is worthless to the market). The signal this sends is that no new capacity will enter the market and existing capacity should retire. The WEM has typically experienced an over-investment in new capacity. That is, demand growth – and specifically peak demand growth, has not kept up with new capacity investment. Going forward however, there are possible scenarios where the continued adoption of behind-the-meter solar and particularly storage, coupled with energy efficiency and low economic growth conditions will see demand (and peak demand) decline. This could mean that, rather than new investment creating a greater capacity surplus and triggering an absolute zero capacity value, a lower reserve capacity requirement may do so. This might present a problem if the capacity that exits the market at this point is also a relatively low-cost energy producer. Unless the ancillary service market provides appropriate value streams, there might be times when extended periods of low solar irradiation place the system at higher risk, or at least increases price volatility.

Additionally, the proposed method of awarding capacity to DSM risks a large quantity of DSM re-entering the market. DSM capacity could influence the excess capacity in the system far more easily than conventional capacity.

4.2.3 Economic Zero Point

The assumptions underpinning the proposed economic zero point parameters appear reasonable.

4.2.4 Demand Management

The requirement for DSM to effectively invest capital, in the form of a security deposit, into a non-capital intensive asset seems counter-intuitive. Requiring the holders of DSM to have more 'skin in the game' may deter some prospective DSM providers. But unless the quantum of the security deposit, plus whatever other capital requirements are required to operate a DSM program, is comparable to the capital deployed in a peaking generator, then the 'return on investment' of the security will be higher than equivalent peaking assets. This would suggest the portion of the capacity revenue that would be required as a security deposit would be very large, if equivalence between capacity types was the intention. Otherwise, the ability of a market participant with a reasonable balance sheet to make super-normal returns on capacity by 'investing' in DSM over other forms of capacity could well lead to an over-investment in this capacity type (as has been seen in the past).

As noted above, NewGen Kwinana supports the previous changes made to DSM (implemented in 2016) and prefers to see DSM remunerated based on a more sophisticated revenue allocation between capacity credits and equivalent energy price limits.

4.2.5 Capacity Withdrawal Notice

This is a sensible inclusion and is wholly consistent with the concept of a capacity mechanism. Consideration should be given to how the ability for a capacity provider to reduce its capacity credits in an actual capacity year would impact this proposal.

4.2.6 Price Lock-in for New Capacity

A price lock in for new capacity is a rational approach to mitigate some portion of new investment risk. Five years appears to be an appropriate term.

4.2.7 Energy Storage Technologies

The Report contemplates large-scale energy storage facilities. It is agreed that once parameters around the operation of these are considered (possibly as part of broader market reform), then it should not be too difficult for such facilities to enter the market.

A larger concern is the potential rapid uptake of behind-the-meter battery storage. Other jurisdictions are already in the process of trialling Virtual Power Plants (VPP), where aggregated behind-the-meter storage is dispatched into the market. This seems to require high energy price limits or energy-only markets such as the NEM. In capacity markets, other mechanisms for valuing the contribution of behind-the-meter storage are required. In the WEM, this could possibly be managed via the IRCR– an important component of the capacity mechanism. Aggregated behind-the-meter storage could be awarded tradeable IRCR credits, up to some determined (and measurable) relevant level. Retailers would value such credits as they lower IRCR obligations. Such a methodology has the benefit of permitting third parties to aggregate behind-the-meter storage, rather than requiring a retailer to manage the dispatch of its energy, which is an impediment to the VPP concept in other markets.

While outside the reserve capacity pricing scope, any treatment of behind-the-meter storage will likely have to interface closely with the capacity mechanism.

5.1 Transitional Measures

It is true that the proposed capacity pricing model parameters introduce significant potential changes to the existing reserve capacity mechanism. NewGen Kwinana supports a 10 year transition period as proposed.

The price band limits of $105,000 to $130,000 are reasonable given the variation in capacity price since market start.

5.2 Implementation Considerations

The proposed timeframe for implementing these reforms is very tight. Linking the reforms with the separate proposal to move the WEM to a constrained access arrangement is not appropriate. A business case for constrained access has yet to be made; and the legislative hurdles of implementing constrained access, should such a case be acceptable to the market, could prove problematic. Any proposed reforms to the capacity pricing model should be able to be implemented independently of other potential reforms.

The complexities of some of the concepts outlined in the Report require careful consideration. This is particularly so with the decisions around remunerating DSM. Poor design could lock in major structural adjustments to the capacity mix which would be difficult to alter again, given the recent history of changes to date. There is no urgency to implement these proposed reforms. NewGen Kwinana believes it would be prudent to increase the tight timeframes proposed in the Report, perhaps by 12 months, to ensure better market outcomes.

Conclusion

NewGen Kwinana is generally supportive of the proposed capacity pricing measures outlined in the Report. However the proposed treatment of DSM is both inconsistent with its value to the market and how other jurisdictions value it. Additionally, the proposed treatment raises the likelihood of the repeat of excessive quantities of DSM entering the WEM. Such a repeat will likely have a greater impact on the market given the raft of other proposals, which create a more dynamic pricing paradigm.

NewGen Kwinana does not regard these reforms as urgent and supports a more relaxed timeframe for implementing the complex pricing reforms. The proposed reforms should not be linked to other separate processes.

Should you have any questions regarding this submission please contact Daniel Kurz on 08 9261 2881 or daniel.kurz@sscpower.com.au.

Yours sincerely

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