



To: Energy Security Board

Lodged online via info@esb.org.au

Re 2025 Market Design – Moving to a Two Sided Market

Dear ESB,

Neoen welcomes the opportunity to respond to the ESB's discussion paper regarding two sided markets (Apr 2020).

Neoen is one of the world's leading independent producers of renewable energy. Neoen is a responsible company with a long-term vision that translates into a strategy seeking strong, sustainable growth. We have over 3 GW of projects globally in operation and under construction, including in the NEM: Hornsdale Wind Farm (309 MW in SA); Parkes, Griffith, Dubbo, and Coleambally Solar Farms (combined 255 MW in NSW); Bulgana Green Power Hub (hybrid wind/battery system) and Numurkah Solar Farm (combined 314 MW in VIC); and the Degussa Hybrid Power System (10.6 MW in WA). Neoen is also the owner of Hornsdale Power Reserve (100 MW/129 MWh battery system) in SA.

Summary

Most markets are only two sided at the wholesale level. Sophisticated buyers and sellers come together to manage their spot and contract positions. Even for critical staples retail customers do not participate in trade other than the decision of how much to consume. For instance, a toilet paper consumer has no access to negotiate with logistics, the paper mill, or the forester.

The two sided market paper actually has two separate segments: one is distributed generation, and the other flexible demand.

The majority of load is not flexible. The load that is both price sensitive and flexible is likely already engaged with market. Customers can already contract a fixed amount and consume less to profit or make themselves exposed to spot prices. Another way for flexible load to easily participate is through controlled load tariffs.

Future demand like EVs is an excellent target for deeper engagement and coordination because they will one day become a large load in aggregate, and they are highly schedulable. We do have time to develop more sophisticated tariffs or markets before EVs become widespread.

Distributed generation is an excellent target for reform, but it is not a new market we need – these generators are enormous in aggregate yet avoid the responsibilities of large scale generation. This is already leading to control and security issues.

There is also a major equity issue associated with distributed generation. In general, distributed generation is owned by middle class homeowners and is not easily accessible to renters. Explicit

government subsidies, and implicit subsidies through not paying for distribution charges & FCAS results in wealth transfer from the most vulnerable customers to wealthier homeowners. Neoen estimates the wealth transfer to be around \$10,000 over the life of a 5 kW solar system. It is time for the rewards and responsibilities to be aligned.

Reform of tariff structures as suggested by the ESB is helpful for both encouraging good behaviour, reducing unfair advantages, and increasing customer engagement. This should be the first step undertaken before considering moving to unnecessarily complex markets. The subscription model described is a very good idea because it necessitates a minimum level of spending by each customer, but they also receive a certain level of service for free. This reduces the impact on low income households and reduces the opportunity for wealthy households to avoid paying their fair share.

Given the current economic situation calls for investment, and the greater transparency, control, and cost effectiveness that large scale solutions offer, the regulatory focus should mainly be on the supply side.

We have dozens of rule changes afoot, too many of which are microeconomic reform distractions.

There is a pressing need to replace and augment an aging generator fleet, and our decrepit transmission infrastructure. We are averaging one major transmission failure per year, with each event costing the economy hundreds of millions of dollars. There are ongoing system security issues, and AEMO does not have the tools to dispatch the services they need to keep the system secure. Addressing only these issues at the expense of all others would be an acceptable outcome.

The large increase in complexity desired by AEMC (and the ESB as a result) is not proportionate to the value provided. Industry and consumers desire certainty and stability – where this is eroded, trust in the market will decline. Bill shock or generator bankruptcy are not an acceptable outcome in pursuit of unquantified efficiency goals.

2.3.4 Benefits for distribution network operation

1. *Do stakeholders agree with our characterisation of the benefits of moving to a two-sided market? Are there other areas the ESB should be considering?*

A. In general Neoen agrees, but the benefits are overestimated. Retailers cannot offer lower prices and expect a level of customer participation that may not be possible. It is up to the customer to decide how they want to participate, and for the most part consumers are disinterested or disengaged.

DER does not affect transmission congestion. Ex-urban load is just too small to make a difference.

Relieving distribution congestion is a more likely accomplishment, but we should ask ourselves whether having AEMO dispatch someone's kettle to absorb their neighbour's solar is a practical or cost effective approach.

Controlled loads have long been used to modify demand profiles and are being effectively modified in NSW and QLD via ripple control. Improvements could be made with proportional

setpoint control. Sending a controlled load setpoint rather than a binary on/off signal increases the accuracy of response and also increases the stable sustainment of that response.

In general distribution level benefits accrue from avoiding augmentation, meaning costs and benefits should apply to only very specific locations.

The intersection of distribution and wholesale benefits means both cannot be fully realised. This reduces appetite from retailers and distributors if customers are not certain to provide the required behaviour.

4.7 Scheduling and bidding

1. What components of scheduling and dispatch should be expanded in the move to a two-sided market? That is, what processes should we expect more participation in out of MT-PASA, ST-PASA, pre-dispatch and dispatch?

A. Participation will decline with increasing timescale.

2. To what extent can self-submitted forecasts replace the need for centrally determined forecasts?

A. It is not likely that household level forecasts can cost effectively provide a better forecast than AEMO's aggregate forecast. Providing AEMO with more DPV information will help them manage their own forecasts.

3. What is an appropriate mechanism for encouraging dispatch targets to be followed and complied with?

A. There are two main mechanisms now in place which could be refined.

Firstly, exposure to spot price multiplied by the deviation. If a load did not turn off during high price it pays spot price. If a solar system did not shut off during negative price it pays the difference. This can be managed between the Trader and Customer.

The second mechanism is FCAS Causer Pays, at least for large scale generation. DPV is a major cause of frequency deviations and the cost of this is distributed amongst all customers. Attribution to individual DPV generators would be onerous given the sheer volumes of data required. It may be possible for larger aggregations though.

Note that there are issues with settling against intent, rather than meter data. There is anecdotal evidence of small scale DR participants either being paid for non-activity, or not being paid for true activity depending on the interpretation of baselines and intent to respond. This outcome reduces trust in small scale demand response schemes.

4. What transitional approach should be taken with moving to a two-sided market? How can we increase the level of participation in bidding and dispatch?

A. Describe intent to AEMO. Engaged players in the space like Enel X and Amber Electric could provide AEMO with information on how their customers respond to price. This would at least improve AEMO's forecasting without moving to bidding. This would also help avoiding double dipping for consumers who apply for RERT, but already turn off for high prices.

This is the major benefit from a two sided market – better demand forecasts.

Note that aggregate participants necessarily have more variability in their response. Their potential resource availability is not known, but statistically inferred leading to variance in magnitude or duration of a response. This will increase the need for balancing services.

6.5 Charging for access to the two-sided market

Comment: Why has LMP been presumed after still no quantification of its benefits? Given that the benefits are at this point no more than conjecture, empirical evidence to support the claims must be produced.

A diagram of an archer's target should not underpin radical market reform.

The lack of accountability in the NEM's regulatory process is shocking.

“Locational marginal pricing is a necessary feature of a two-sided and formal ahead market.

Generators and retailers can hedge against the risk that their ahead positions, may not come to pass because of outages or congestion. **Without such a means of managing these risks, parties may not be willing to provide as much capacity as they could in a two-sided and ahead market. Therefore, the changes recommended in COGATI are critical elements for achieving a two-sided and ahead market.”**

Please demonstrate these claims.

Short term markets have transparency over constraints and network maintenance. FTRs provide long term hedging of a position. Neither explicitly requires LMP.

1. Do you think locational marginal pricing would encourage behaviours to help manage congestion in distribution networks? Are there other options that would be preferable?

A. COGATI does not propose LMP down to such a small scale. It would be impractical for AEMO to dispatch millions or hundreds of millions of devices.

There are other ways to incentivise daytime consumption without LMP.

2. What do you think is the most efficient method for recovering network costs to support a level playing field for participants in a two-sided market?

A. Fixed costs penalise low income households because they cannot consume less to avoid it. Energy based charges incentivise DPV and transfer wealth from renters to DPV owners as distribution costs are fixed in total. For example, a household with solar and battery may import very little energy over the year, yet they are just as reliant on the grid as any other consumer. They need the network to export their power, and on the cold, cloudy week where their own generation does not suffice.

Energy based charges also penalise high energy users who have consistent load. Energy based charges do encourage energy efficiency though.

Demand charges target bad behaviour well. They can be volatile however, and lead to bill shock for disengaged customers. Commercial customers have had an effective reaction to demand based tariffs by buying DPV and batteries to manage their peak demand.

The subscription model described by the ESB is an excellent plan as it could combine the charge types with a minimum cost. This is similar to other subscription style models in other

industries, such as telecommunications.

For example: a minimum daily charge of \$2 could get a household a peak demand of 5 kW, and an import of 5 kWh. Additional kW, kWh and wholesale charges would be extra.

Another note: many customers can choose their distribution tariff structure; this means they can avoid paying for bad behaviour by selecting another tariff structure.

7.4 Interactions with ahead markets

3. Are there any interactions between an ahead mechanism and a two-sided market that weren't identified in the chapter?

A. There is significant scope for gaming ahead markets with loose compliance requirements for aggregated entities. A vertically integrated retailer with control of a sufficiently large aggregation could influence ahead prices, contract coverage of an event, then decommit the aggregation. Even without decommitting, it may be attractive to increase consumption where supply conditions are tight and a retailer is long.

Another method is to aggravate negative prices when the retailer is short by activating demand response. Inflexible generators have to bear the cost of either restarting or paying to generate. Similar behaviour contributed to the closure of Northern Power station.

Signals from predispatch and ahead markets are likely to frustrate consumers as extreme prices often do not materialise after many hours of threatening to.

8.4 Incentives for reliability?

1. Do stakeholders agree with our characterisation of reliability under a two-sided market noting this would be a long-term goal for an ultimate two-sided market?

A. Specifying service level reductions is tantamount to requiring low income customers to accept a lesser service.

Customers cannot easily gauge the level of reliability they need, and the standard measure does not adequately distinguish between a 4h long outage, or eight half hour long outages.

Start with tariffs and increasing exposure to wholesale spot prices before pressing on reliability metrics.



Neoen welcomes further discussions at the ESB's behest.

Should you have any questions or seek to follow up this submission at any time, please feel free to contact Tom Geiser via email at tom.geiser@neoen.com.

We look forward to engaging with the ESB and stakeholders further on this and future reviews.

Kind regards,

A handwritten signature in black ink, appearing to be 'TG', positioned above a horizontal line.

Tom Geiser,
Senior Market Manager,
Neoen Australia