

19 October 2020

Dr. Kerry Schott
Chairperson
info@esb.org.au

Dear Dr. Schott,

Re: Post 2025 Market Design Consultation Paper – September 2020

Flow Power welcomes the opportunity to make a submission in response to the ESB's Post 2025 Market Design Consultation Paper.

Flow Power is a licenced electricity retailer that works with business customers throughout the NEM. Flow Power an innovative retailer, focussed on providing low-cost and low-carbon retail solutions for our customers.

Our model aims to give customers control over their energy costs by helping them to respond to price signals from the wholesale market. We help our customers in managing exposure to price volatility though physical or financial hedges. For example:

- A physical hedge in the form of a demand response or onsite generation (supported by our in-house technology).
- A financial hedge may include purchasing financial hedges from markets such as ASX Energy Futures or entering into a PPA with renewable generators.

Our unique PPA model, Virtual Generation Agreement, plays an important role in supporting the development of large-scale renewables by providing price certainty and confidence to investors, and at the same time creating a product for business customers to access low electricity prices and take control of their energy cost.

Overview

The key points we would like to make regarding the ESB's consultation paper are:

- The NEM is transitioning to a power system that is characterised by renewable energy and demand side participation. Flow Power has successfully demonstrated that in this transition, customers can use demand side participation and renewable energy to access lower electricity costs and lower carbon footprint. This benefits our customers and the rest of the market. We support the emphasis the ESB has placed on customers being at the centre of the 2025 reforms.

NSW

Suite 2, Level 3
18-20 York Street
Sydney NSW 2000

ACT

Suite 2 Level 2
1 Farrell Place
Canberra ACT 2601

SA

Level 24 Westpac House
91 King William Street
Adelaide SA 5000

QLD

Level 19
10 Eagle Street
Brisbane QLD 4000

P 1300 08 06 08

E go@flowpower.com.au

W flowpower.com.au

- Reforms should be forward looking. We caution against embracing regulatory reform on the basis that similar reforms have been previously implemented in overseas jurisdictions. Not only does the NEM have its unique characteristics which makes transposing international models difficult, but the form of electricity markets worldwide is significantly changing. Improvements in metering, communications and control technologies, falling costs of DER and growing awareness is leading to a more decentralised power system. This change should be embraced by continuing to explore the role for new technologies and business models in these reforms.
- Promoting innovation will be key to ensuring new entrants and small retailers are able to develop options that work for customers. Regulatory reform should continue to promote opportunities for innovation in the interests of all consumers. In particular, we urge against reforms that enshrine existing business models and structures as they restrict innovation and limit competition in the market.
- We are always available to discuss our views in more detail with the ESB and the market bodies.

We have set out our responses to each Market Design Initiative below.

Resource adequacy mechanisms

The reliability framework in the NEM makes a trade-off between two costs:

1. The up-front costs of reliability. The higher the level of reliability, the higher the investment required in capacity (e.g. more generation, demand-side resources or network assets) and/or more stringent operating conditions are required, all which impose costs.
2. Ex-post costs of unserved energy or reliability related interventions. We allow for an expected level of supply interruptions to consumers or reliance on intervening with the RERT, both of which have a cost - reflecting either the cost of using the RERT or the cost of interrupting customers' access to electricity.

The reliability standard includes reliability settings and other related mechanisms. These features all give effect to the aforementioned trade-off.

With significant advances in technology, demand side participation is an increasingly pivotal element of the reliability framework. Historically, supply has been built and operated to account for fluctuations in demand. More and more, this relationship will invert as tech-enabled consumers are able to adjust their demand for electricity in response to fluctuations in the output of renewable generation.

Compared to investments in utility scale supply, investments in demand side participation have advantages including:

- They are not as impacted by network issues such as the grid connection delays faced by new, utility scale generators, or reductions in loss factors.
- They do not require large upfront capital investments and it can be relatively easy to incrementally scale up across a portfolio.
- The participating customers directly benefit from responding to price signals. Demand side participation empowers consumers to use energy when it is most valuable to them, and benefit from periods where energy is cheap.

As the ESB has acknowledged, the decentralisation and digitalisation of the power system will only grow. The advantages and growth of demand side participation should be reflected in the ESB's deliberations regarding resource adequacy.

Is there a problem with the current framework?

In short, we are not convinced the current reliability framework doesn't work.

The current framework has enabled us to invest in a business model that facilitates demand flexibility which improves reliability outcomes in the NEM. The figure below shows an example of how our South Australian portfolio responded to high wholesale prices in March 2019. This demonstrates how, with the right incentives, customers respond to signals from the wholesale market and act as a resource to help manage tight supply-demand conditions.

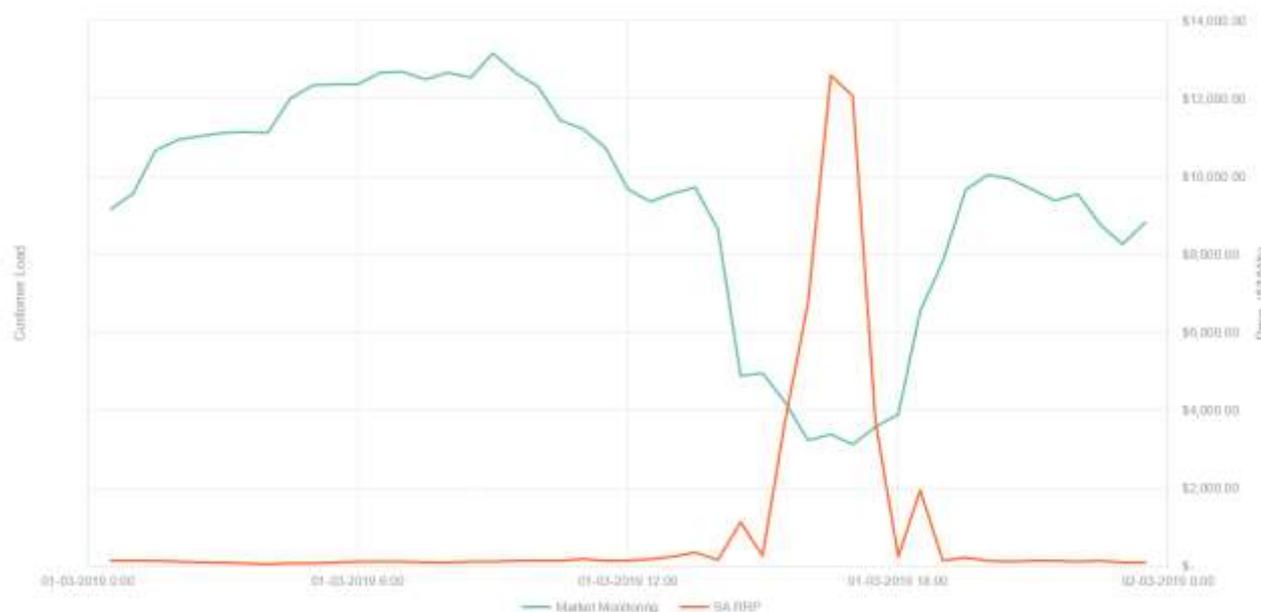


Figure 1: South Australian customers responding to wholesale prices.

If it would be valuable to the ESB's deliberations, we would be able to provide more information and examples demonstrating how our growing portfolio of customers respond across the NEM to provide additional capacity.

Given the current reliability framework is enabling Flow Power to develop demand flexibility, the ESB should clarify the extent of the problem before looking to make adjustments to the reliability framework, particularly where those adjustments would be detrimental to the continued development of demand side participation.

Reliability and resource adequacy do not appear to be imminent challenges for the NEM. Expectations of meeting the reliability standard are our most objective measure of whether reliability challenges should be anticipated. In its 2020 ESOP's Central Scenario, AEMO does not forecast the reliability standard being exceeded for the next 10 years. Indeed, even the tighter interim reliability standard is only forecast to be breached in New South Wales from 2023-24. This diminished risk of load shedding has resulted in a T-3 instrument being recalled in South Australia. This all suggests there are low risks to reliability in the NEM over the timeframe where more investment can be planned, financed and undertaken.

Whether these reliability risks will remain low depend on new investment in supply and demand. Unfortunately, the prospect and persistent threat of government intervention has made private

investment in new supply riskier than it otherwise would be. However, this has not stopped Flow Power and other companies investing in the capability of the demand side. We are equipping our customers to respond to price signals in the NEM. This benefits our customers through lower electricity costs and benefits the rest of the market by helping to align supply and demand. We are able to do this because the currently reliability framework sends strong price signals to us and our customers.

We also note a perception of a lack of investment or a challenging investment environment is not *necessarily* a problem. Markets should discourage inefficient investment. While we do not dispute there are some inefficient barriers to undertaking investment in new supply (in particular, those posed by the risk of future government intervention), the challenges faced by investors in putting together a business case for new projects should be at least partially attributed to efficient market signals including falling average wholesale prices, driven by growing renewable generation output.

The ESB has suggested that forward curves may not be encouraging new investment in firming capacity. There are price signals in the wholesale and forward market showing the value placed on firm capacity. For example, the falling strike prices in PPAs and the changes to costs of firming premiums to accompany those PPAs have indicated the value that the market places on dispatchable resources. In addition, it has been shown that the dispatchability/firming premium in South Australia has significantly grown with the influx of renewable generation (see figure below). Dispatchability and firmness are increasingly valuable to consumers of electricity and this will continue to drive investments in a range of resources including:

- Demand flexibility
- Increasing the flexibility of existing generators
- DER.

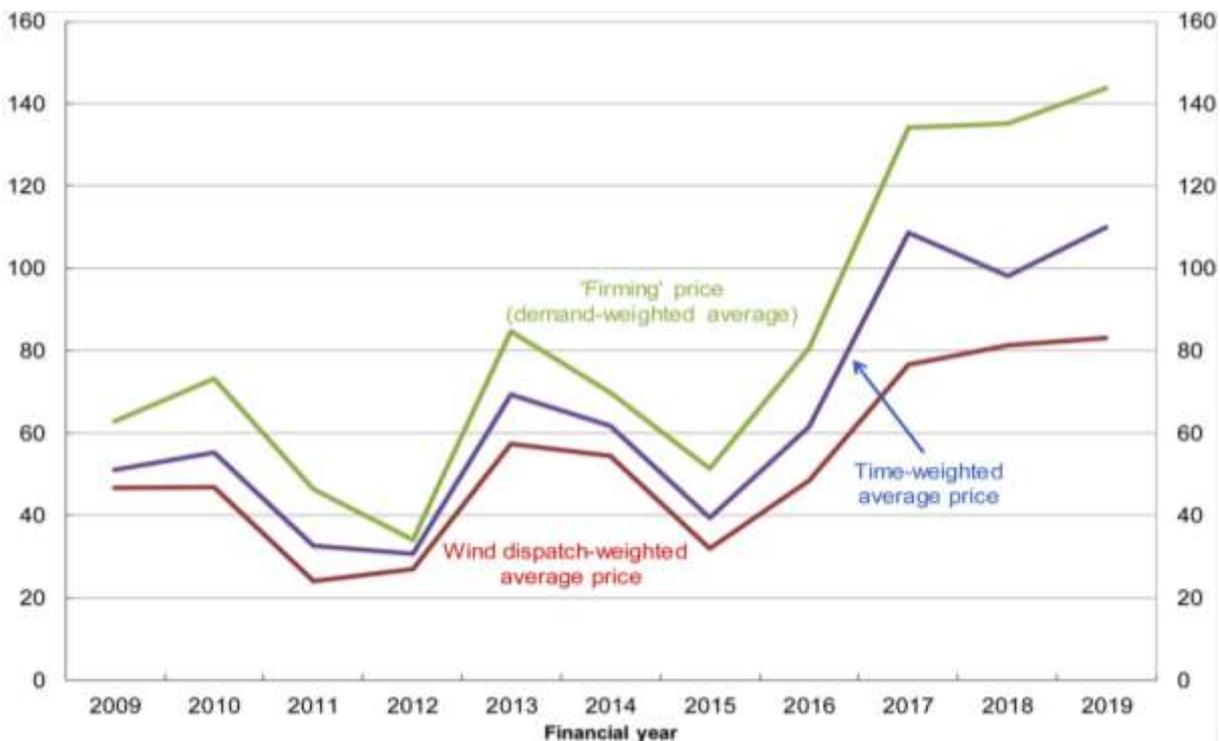


Figure 2: Three dispatch-weighted spot prices in South Australia (\$/MWh).¹

¹ Rai, A., Nunn, O., 2020. *Is there a value for "dispatchability" in the NEM? Yes**, The Electricity Journal, vol 33, no. 2, p. 7.

With the RERT in place and no forecast breach of the reliability standard, it is unlikely that there will be material involuntary load shedding in the next few years. Given there is less urgency, the ESB should continue to work to address the issues most materially impacting on investor confidence in the NEM:

- Issues relating to sufficient transmission infrastructure to address grid congestion and connection delays
- Policy uncertainty driven by governments and market bodies.

In the meantime, the reliability framework will continue to encourage parties to invest in the NEM.

Operating reserve

The introduction of an operating reserve has more merit as an incentive to provide resource adequacy. We encourage the ESB to continue to explore the role of an operating reserve. Some details that require further consideration include:

- The participation requirements of the operating reserve. It will be important to design the operating reserve in a technology agnostic manner that allows reserves from the supply and demand sides to compete. If we are designing for a future power system, it will be key encourage demand side participation in the provision of these new services.
- How it will impact the wholesale price. In designing an operating reserve, careful consideration should be given to how it may change the dynamics of the wholesale price. If the operating reserve offers an explicit payment for reserves, this could impact on how wholesale market participants bid. It is possible that additional payments for reserves may reduce the prices bid by generators in wholesale market because short run costs can be recovered across the wholesale market and the operating reserve. Reduced wholesale prices would then reduce the ability of consumers to provide demand response. In effect, generators could receive the same revenue, but consumers would have a diminished price signal to respond to. If an operating reserve does impact on the wholesale price, it is unclear what flow on impacts may be in the contract market.
- Related to the above, whether the cost recovery for an operating reserve is something that can be effectively hedged. Currently, the cost recovery for some ancillary services are smeared across consumers, giving little opportunity to respond to a price signal to manage these costs. If an operating reserve is designed further, it should allow for parties to hedge against its costs if they are not participating in the operating reserve market. This would allow derivative products to develop, which would in turn could support investment in the ability to provide reserves.

Changes to the RRO or a decentralised capacity market

We strongly oppose any expansion of the RRO, or an introduction of a decentralised capacity market. Flow Power has consistently argued that the RRO favours traditional business models and hinders the development of innovative approaches to managing wholesale market exposure, particularly those that encourage demand side participation. Expanding the role of the RRO will exacerbate these issues for unclear benefits.

As the ESB explores more administrative approaches to providing for reliability (i.e., centralised or decentralised capacity markets, the RRO), there will increasingly be the challenge of trying to define nebulous concepts such as 'firmness' of different resources. In practice, firmness can be provided by a range of resources with very different characteristics, including generation, demand response and distributed energy resources. The firmness of these resources vary with resource availability,

production schedules, contract market positions etc. There is a risk in trying to prescribe market participants meet a level of firmness or capacity that oversimplifies the differences between these types of resources, and favours a particular approach. This introduces an uneven playing field between different resource types. In addition, this introduces significant administrative and compliance burdens on market participants. Instead, it should be left to the market to determine the value of different types of firm resources and appropriately use them.

We also think any changes to the RRO would be pre-emptive given:

- The RRO has only recently been introduced;
- The only T-3 instrument issued so far has been withdrawn;²
- The trigger for the RRO has recently been tightened to an interim reliability standard, far tighter than the pre-existing reliability standard.

Thermal generator exit strategy

We agree that the lumpy nature of the retirement of coal-fired power stations can pose challenges as was the case with the relatively sudden closure of Hazelwood Power Station. However, the notice of closure obligations provide appropriate forewarning of impending retirements. We think any residual challenges are best picked up in other MDIs.

Essential system services

We agree that system security is the primary source of the challenges faced by the NEM. We encourage the ESB, in its continued exploration of the future provision of essential system services, to also consider how these services could be provided by the demand side.

Regarding the more immediate system security issues, we support expeditious resolution of system strength and inertia shortfalls that are most frequently causing AEMO to intervene. While more efficient procurement mechanisms for these services may be desirable, they come with significant complexity, likely significant implementation costs and timeframes, and aren't assured to be viable. As such, it may be more appropriate to address the immediate concerns through network investment and long term contracting, as has been the approach used in South Australia to manage inertia and system strength.

It is unclear what role there may be for an operating reserve as an essential system service. It would be confusing to have an operating reserve providing both resource adequacy and security related services. If there are concerns that a reserve product is needed, the ESB should specify what that relates to in terms of managing power system security. If it relates to frequency control, this may be more appropriately managed through adjustments to the frequency control frameworks. Otherwise, there is a risk that this service ends up being procured as a 'safety net' with unclear purpose and unclear benefits, the costs of which would need to be recovered from consumers.

Scheduling and ahead markets

We are not convinced the need for an ahead market similar to those in place overseas has been made. We support the ESB's decision to cease consideration of a mandatory ahead market.

Generally, we would support the development of a Unit Commitment for Security (UCS) if the intention is to:

² See: <https://www.aer.gov.au/node/68467>

- Provide greater transparency to the market regarding the process followed by the market operator in making a decision to intervene. The greatest value that UCS could provide is greater transparency and forewarning of AEMO's intent and rationale to issue directions or instructions.
- Reflect the activation of longer-term contracts and network services necessary to maintain system security in NEMDE.

However, with respect to the other options being considered in this MDI, it is not clear what their use would be. The paper referred to the ahead trading of system services. While it may be useful for AEMO to procure some services in an ahead market timeframe, it is not clear what role there would be for market participants in buying and selling these services. Currently, AEMO is generally responsible for maintaining system security and buys the services it needs to in order to maintain power system security. Market participants do not buy these services, and this makes it unclear why a platform might be needed to enable this.

It is also unclear whether a voluntary ahead market for energy would be useful for demand side participation. The ESB notes that it could provide an option for demand side participants to achieve price certainty in the short term. The AEMC recently decided against the introduction of an ahead market because it found there was little appetite.³ The ESB hasn't provided any additional evidence to explain why this wouldn't be the case with a voluntary ahead market, or what may have changed since the AEMC decided against introducing a short term forward market. We would be keen to further explore the potential value of a voluntary ahead market for energy with the ESB.

Two-sided markets

We support the ESB's focus on the role of the demand side of the market. Promoting greater demand side participation will be integral to the lowest-cost transition to a low-carbon power system.

A number of the reforms being considered by the ESB relate to trying to address uncertainty in market outcomes. A two-sided market would be a market-based solution to addressing some of these uncertainties. By better integrating the price responsiveness of the demand side into the market, it has the potential to:

- Reduce system costs by deferring investments in supply and network capacity
- Improve dispatch efficiency by improving short term forecasts and unit commitment decisions by all participants
- Reduce the reliance of other potentially costly mechanism used to manage uncertainty, such as the RERT.

Our business model as a retailer revolves around enabling our customers to respond to price signals from the wholesale market. In our experience, most barriers to demand side participation exist outside of the regulatory framework. For example:

- There is generally education needed to empower a customer to start load shifting and providing demand response.
- For some consumers, demand response may not be currently commercially viable. The costs of providing demand response will change as technology and transaction costs fall but for the time being, it may not be commercially viable for some consumers to engage in demand response for what they would consider to be an appropriate level of compensation.

³ See: <https://www.aemc.gov.au/rule-changes/short-term-forward-market>

We note that policies such as the RRO that discourage retailers for developing innovative retail products that would encourage further demand side participation.

The structure of network tariffs can also pose a challenge to enabling greater levels of demand response. For example, non-cost reflective network tariffs may discourage consumers load shifting, even if they have price signals from the wholesale market encouraging them to do so. More cost reflective distribution tariffs for C&I customers would further incentivise efficient load shifting and demand response.

We also agree that as the role for the demand side in the wholesale market grows, it will impact on operation of the wholesale market. For example, demand response is not currently accounted for in pre-dispatch forecasts and in clearing the wholesale market. The challenge will be determining the time or materiality at which more transparent participation should be sought, and what this looks like. We support the consideration of scheduled light and suggest there will also need to be some trial and error in determining the best methods for integrating more demand side participation.

Valuing demand flexibility and integrating DER

We support a focus on integration of DER. Wherever possible, DER and demand flexibility should be treated similarly in the regulatory framework. The two concepts are closely related. For example, DER can be used to by a customer as a means of providing demand flexibility.

To enable efficient participation from demand flexibility and DER, a key element is allowing the short-run marginal price from wholesale market and networks to be passed to willing consumers. These efficient price signals will enable consumers to respond and benefit.

An opportunity that could be explored through this MDI is how services apart from energy may be able to be provided within a distribution network. For example, the ability for voltage regulation to be provided to DNSPs from within the distribution network. Managing voltages within acceptable limits is important for enabling greater hosting capacity and DER exports.

Transmission access reform

Flow Power has made a separate submission to the AEMC on its *Transmission access reform* update paper.

In general, we:

- Agree that there are significant challenges with transmission infrastructure needed to facilitate the growth of renewable energy.
- Are not convinced that the proposed transmission access reforms are the appropriate solution to the most pressing issues relating to the coordination of transmission and generation assets.
- Are particularly concerned with the implications associated with making adjustments in existing contracts to account for dynamic regional pricing, and the potential reduction in contract market liquidity. Flow Power has signed agreements with 12 solar and wind farms around the NEM, so the implications would be material.

In conclusion

We support the ESB's 2025 work program. The growing role of customers in managing the transition to a reliable, affordable and low-emissions power system cannot be understated. We look forward to further engagement and always welcome discussions on the points raised in our submission.

If you have any queries about this submission, please contact me on (02) 9161 9068 or at Declan.Kelly@flowpower.com.au.

Yours sincerely,

Declan Kelly

Regulatory Policy Manager

Flow Power.