

27 October 2021

Lodged via email: [Electricity.Roadmap@dpie.nsw.gov.au](mailto:Electricity.Roadmap@dpie.nsw.gov.au)

NSW Department of Planning, Industry and Environment

### Re: NSW DPIE Part 6 policy paper

Flow Power welcomes the opportunity to make a submission in response to DPIE's consultation on the Infrastructure Safeguard.

Flow Power is an electricity retailer that works with business customers throughout the NEM. Our vision is to redefine how customers manage energy, putting them at the centre of the market and accelerating Australia's progression towards a net-zero future.

We empower our customers to take control of their energy usage, lower their bills and reduce their carbon footprint. We provide customers with:

- Transparent retail tariffs that reward demand flexibility and encourage electricity usage at times of plentiful renewable output.
- Hardware solutions that provide greater visibility and control over energy use.
- Access to renewable energy, either through distributed solar and storage installed on site, or through a virtual generation agreement with utility-scale wind and solar farms.

We believe that by equipping customers with these tools, we can lower costs for all energy users and support the transition to a net-zero carbon future.

### The role of demand flexibility in NSW and the NEM

Flow Power works with customers to integrate demand flexibility and distributed energy resources into their operations. As a retailer, we pass through incentives to our customers to encourage them utilise their demand flexibility to use electricity at times of low prices and high renewable output. This improves outcomes for our customers and improves market wide outcomes by moving load out of peak periods into otherwise low demand periods, improving reliability and integrating grid-scale renewables.

Demand flexibility is an umbrella term for a highly varied range of services the demand side can provide, all of which will play key roles in supporting the transition to a net-zero power system.

Demand flexibility includes:

- Rapid short-term changes, usually in response to frequency deviations or sudden price spikes, which are generally automated.

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- Demand reductions for at least 30 mins and up to many hours. Usually used to avoid prolonged high prices or when participating in the Reliability and Emergency Reserve Trader.
- Dynamic load-shifting based on the expected price profile for a day or week. This might involve changing operational patterns to avoid high prices and to take advantage of low prices.
- Behavioural or long-term change can mean reorganising processes to take advantage of longer-term price trends. For example, maximising day time load to coincide with on-site solar or low wholesale prices.
- Energy efficiency means reducing the energy needed to run existing processes.

These facets of demand flexibility provide valued services and reduce the overall strain on the power system. Complexity often arises because energy consumers do not necessarily fall into specific buckets – the demand flexibility they provide will be highly dependent on numerous variables. However, some consistent elements to unlocking demand flexibility across the board include:

- Engaging with consumers. Direct engagement with customers is a precursor to any meaningful demand flexibility.
- Providing customers with choice. Energy customers engaged in providing demand flexibility need to be provided with choice regarding how, when and if they participate.
- Delivering value. Energy consumers need to be able to understand and access the value of demand flexibility. Without the appropriate incentives in place, consumers will not provide demand flexibility.

Demand flexibility should be a central facet of any plans to decarbonise the power system, and we are grateful the NSW Investment Roadmap has recognised its importance. Demand flexibility neatly complements high penetrations of renewable energy while maintaining reliability and helping improve energy affordability.

As part of the ESB's final advice to Ministers, the ESB commissioned a report by NERA to modelling the value of greater levels of demand flexibility. The study, which had been informed by a broad range of stakeholders, estimated \$6.3 billion in efficiencies available under a higher uptake of demand flexibility.<sup>1</sup> This was because demand flexibility is a cost-effective resource that reduces the amount of storage that would need to be developed, and reduces the levels of thermal generation necessary to maintain reliability.

## Demand flexibility in LTESAs

The Part 6 policy paper asked stakeholders about the role of demand response in LTESAs. We agree that demand response should be considered firming infrastructure under the EII Act. Demand response is an effective tool for avoiding reliability shortfalls and ensuring NSW meets its energy security target.

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<sup>1</sup> NERA, *Valuing load flexibility and resource adequacy mechanisms in the NEM – Prepared for the Energy Security Board*, p. v, July 2021. Available at <https://esb-post2025-market-design.aemc.gov.au/32572/1629945921-part-c-5-2-nera-economic-consulting-valuing-load-flexibility-and-resource-adequacy-mechanisms-in-the-nem.pdf>

The design and structure of the LTESAs have lent themselves to supporting long term capital expenditure investments. This is not consistent with the treatment of demand flexibility, which can be equated to a resource with variable capacity and relatively high operating costs. Providing demand response aggregators with long-term price certainty through an option contract can be useful for signing customers up for longer timeframes, but because demand response does not have high upfront costs, it is not as necessary for any required project financing. For these reasons, while Flow Power considers demand flexibility to currently be an undervalued source of firming, extending the standard LTESAs to demand response may not be the best way to support the development of demand response capacity.

If the NSW Government wanted to provide greater support for demand response, there are several options available, including:

- Offering long-term contracts that have a similar form to those offered to long-duration storage projects, where providers could tender for annuity payments, subject to some operational conditions. This contract structure would better suit demand response aggregators and their customers.
- Ensuring the range of available activities for creating peak reduction certificates under the peak demand reduction scheme include the demand-side activities that contribute to firming infrastructure.
- Encouraging network pricing reform. Flow Power has demonstrated that cost-reflective price signals (from both the wholesale market and the network) induce behavioural change in energy users, which in turn lower costs for all consumers.
- Extending support for demand flexibility beyond those scheduled through central dispatch, noting that this demand flexibility is likely to participate in a future two-sided market.

## In conclusion

Demand flexibility has a central role to play in supporting the transition of the NSW power system, and the NEM. LTESAs as they are currently described are unlikely to be applicable for participants who are developing demand response resources. We encourage DPIE to continue exploring ways of supporting investment in demand flexibility as firming capacity.

If you have any queries about this submission or about the role of demand flexibility, please contact me on [REDACTED]

Yours sincerely,

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Flow Power