

25 February 2022

NSW Dept. of Planning, Industry and Environment

Energy.consumerpolicy@dpie.nsw.gov.au

Re: Enabling the transformation of the Energy Sector

Flow Power welcomes the opportunity to make a submission in response to the Departments review into supporting the transformation of the energy sector.

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. Flow Power is also preparing to join the residential and SME markets in the near 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.

Overview

The key points we would like to make regarding the issues raised in the consultation paper are:

- **Unlocking and rewarding demand flexibility is a key component of a cost-effective transition to a renewable power system.** Governments have a role to play in:
 - Lending legitimacy and policy support to promote the links between more flexible, price responsive demand and more renewable energy supply.
 - Providing direct support to enablers of demand flexibility.
- **The process of upgrading meter boards could be improved.** There are significant administrative burdens associated with basic electrical upgrades necessary to help

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customers modernise their electricity supply. Streamlining this process could reduce timeframes and costs associated with supply upgrades.

- **Feel free to give us a call.** We are always available to discuss our views in more detail and would welcome the opportunity.

We've provided some additional comments on various aspects of the consultation paper below.

The role of demand flexibility in supporting renewables

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.

Types of demand flexibility

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.
- 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. A key component of this engagement includes providing customers with live data on their electricity usage. Flow Power does so by providing customers with a hardware solution called a kWatch that is able to read the energy usage in real time, and a portal for customers to observe their consumption and load shape in real time.
- 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. All five types of demand flexibility listed above neatly complement high penetrations of renewable energy, either by helping to adjust for short-term changes in renewable output, or decreasing the reliance of energy storage to maintain reliability. At the same time, demand flexibility offers energy users with the opportunity to improve their energy affordability and productivity.

The benefits of demand flexibility

Numerous reports and studies have found the benefits of demand flexibility in a transitioning power system.

As part of the Energy Security Board's (ESB) 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.¹ 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.

A similar study from the United States found that combining efforts to introduce new renewable energy generation alongside demand-side solutions would almost double the reduction in greenhouse gases, when compared to just supply-side solutions.²

Energy management and demand flexibility also support job creation and economic growth. The Energy Efficiency Council, the Australian industry body representing energy management, produced a report that noted:³

"Energy efficiency improvements increased global GDP by an estimated AU\$2.8 trillion in 2017... Raising the EU's ambition on energy efficiency has been estimated to increase GDP growth by 4.1%, and generate an additional 4.9M jobs"

These studies highlight the critical importance of demand flexibility in creating economic opportunities, integrating renewables, and supporting decarbonisation.

What could governments do to help?

There are several options available the NSW Government to support greater demand flexibility. For example, it could:

- Accelerate activities under the peak demand reduction scheme that support demand flexibility. The intention of the scheme is to promote peak reductions; however, we believe the long-term goal of the scheme should be to enable greater flexibility. This would lead to

¹ 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>

² Brattle Group, *The customer action pathway to national decarbonisation* – Prepared for Oracle, p. 4, September 2021. Available at: <https://www.oracle.com/a/ocom/docs/industries/utilities/customer-action-pathway-report.pdf>

³ Energy Efficiency Council, *The world's first fuel – How energy efficiency is reshaping global energy systems*, p. 12, June 2019. Available at: <https://www.eec.org.au/uploads/Documents/The%20Worlds%20First%20Fuel%20-%20June%202019.pdf>

reductions in peak demand alongside providing support for incoming renewables, and helping to address minimum demand issues.

- Provide direct support for sub-metering and building management systems (BMS) installations on commercial and industrial sites. This could be through the PDRS, or more directly.
- Provide direct support for improved visibility and control of energy use at a residential level. For example, in Victoria, the Victorian Energy Upgrades program has activities that credit the installation of in-home displays that increase the information available to consumers. The NSW Government should explore activities through the PDRS that reward in-home visibility and demand flexibility in devices.
- Explore opportunities to put NSW Government energy usage on dynamic tariffs and explore opportunities for demand flexibility with its own usage. Having government lead the way with adoption of dynamic tariffs and demand flexibility will help with the development, adoption and acceleration of these solutions.
- Support updates to metrics and accounting practices for energy and carbon to account for demand flexibility. There are a number of government supported metrics (e.g. NABERS, Climate Active) that help customers make informed, transparent decisions regarding their approach to reducing carbon footprints and adopting energy efficiency. However, these metrics do not account for *when* a customer uses electricity when attributing a rating. As renewables uptake grows and the carbon intensity of the grid becomes more variable, it will be increasingly important to include time of use. Doing so will reward demand flexibility and help drive the demand-side to accommodate greater levels of variable renewable energy.

Streamlining the service order process

The NSW Government should also consider whether improvements can be made to the processes in place for energy consumers raising service orders related to their electricity supply.

Energy customers typically need to raise a service order when undertaking work to upgrade their meter board, or their network connection, for example to increase amperage. If the energy transition is going to leverage demand-side opportunities, it is likely that customers will continue to review and upgrade their interface with the grid.

The process for completing these works is currently cumbersome and administratively complex. It involves the customer, the retailer and the DNSP, as well as any service providers and metering providers who have been engaged or impacted. The paperwork and timeframes associated with carrying out service orders are involved and resource-consuming. We believe there is scope for these processes to be improved by:

- Promoting greater consistency between DNSPs in their requirements/treatment of service orders raised with them.
- Requiring DNSPs to provide greater guidance and transparency with respect to their requirements and processes for assessing and approving service order requests.

In conclusion

The NSW Government can play a pivotal role in supporting innovation in energy by supporting demand flexibility. This will contribute to the state's net-zero goals, as well as empowering customers through the energy transition. The NSW Government could also look at streamlining the processes relating to energy works undertaken on customer sites.

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

Yours sincerely,

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