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# Updates to the ISP Methodology

## Flow Power submission

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## About Flow Power

Flow Power is an electricity retailer that works with energy customers throughout the National Electricity Market (NEM). Together with our customers, Flow Power is committed to our vision of creating Australia's renewable future.

We empower customers to take meaningful action. By providing energy knowledge and innovative technology, we are delivering smarter ways to connect customers to clean energy to make our renewable future a reality. We provide our customers with:

- + Engineering support, access to live data and transparent retail tariffs that reward demand flexibility and encourage electricity usage at times of plentiful renewable output.
- + Hardware solutions that equip customers with greater information, visibility, and control over energy use.
- + Access to renewable energy, either through distributed solar and storage installed on site, or through a power purchase agreement with utility-scale wind and solar farms and batteries.

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

## Overview of submission

We have focussed on three aspects of AEMO's consultation paper: consumer preferences, demand side participation and battery dispatch. The key points we would like to make regarding AEMO's consultation paper are:

- + AEMO needs to be explicit about how it plans to incorporate updated consumer preferences.
- + The two-hour duration limit on demand side participation for reliability events underestimates the diversity and duration of response on the demand side.
- + The proposed methodology to account for imperfect operation of batteries would underestimate the contribution of storage to reliability events.

We have provided additional comments on various aspects of the consultation paper below.

## Consumer preferences

AEMO has noted that it intends to update its consumer risk preferences to inform the selection of the optimal development pathway in the integrated system plan. AEMO noted that it did so for the final 2022 ISP, and intends to engage a consultant to determine an updated set of these preferences backed with more evidence.

Reflecting consumer preferences in ISP modelling is laudable – the optimal development pathway in the ISP should be a reflection of the pathway that provides the greatest benefits to consumers. However, as

noted by AEMO, it is also challenging to accurately reflect a diverse range of consumer preferences in long-term modelling, especially when those preferences may not be considered under the NEO.

The consultation paper notes the level of risk aversion consumers have as an example. However, there are layers between “risks” in the ISP modelling and the “risks” faced by consumers. Retail markets can act to smooth or decrease the volatility in the wholesale market, reducing the impact of risk averse consumers.

It will be important that AEMO is explicit regarding the types of consumer preferences they intend to incorporate into ISP modelling. How AEMO plans to translate these preferences into quantitative metrics needs to be well understood by stakeholders to interpret the ISP results.

## **Demand side participation**

AEMO is proposing to reduce the duration of the reliability response band of demand side participation to two hours.

We agreed with AEMO’s observation that the responsiveness of the demand side can be duration limited. Flow Power has a large portfolio of customers that response to prices in a myriad of ways, including:

- Load shifting, this involves moving consumption between time periods to reduce energy costs.
- Shutting down discretionary load processes and using behind-the-meter generation, such as batteries or distributed generation.
- Early closure of operations, for example where the customer will close the factory early and restart operations earlier the next day.

In addition, we have Flow Power customers participating in the RERT, providing reserves to help manage the supply/demand balance of the system when called upon by AEMO.

In our experience, it would be incorrect to assume customers can only provide a two-hour response to a reliability event as the duration of response from customers forms a wide range. We think AEMO should consider implementing different durations of response with the reliability response band. Based on our experience with commercial and industrial customers participating in demand response, more appropriate groupings would be:

- 40% at two hours, reflecting short term load processes that need to be restarted after two hours offline.
- 40% at four hours, reflecting loads that can stay offline for longer periods of time or when load shifting has allowed a customer to pre-empt and/or manage load for a reliability event.
- 20% at eight hours, when processes are closed for the day or distributed generation is used for extended periods of time.



In the longer term, AEMO should engage with customers, retailers, and aggregators to better understand the demand side behaviour in response to different event types.

## Battery operation

AEMO is proposing to update its methodology to reflect the real-world imperfections in how battery operators store and dispatch energy. AEMO proposes to account for this by limiting the amount of energy a battery will dispatch.

We agree it is important to account for the energy limitations of storage devices in long term modelling. However, we think AEMO's proposed approach overestimate the likelihood of battery capacity being unavailable during reliability events.

Imperfect foresight will result in storage devices withholding capacity for future events or dispatching too early and missing subsequent high wholesale prices. The "imperfect" optimisation described by AEMO attempts to account for how effectively storage assets can optimise their operations with respect to wholesale prices during periods of volatility. However, the ability of storage operators to anticipate reliability events and dispatch their stored energy would be far higher. Historically, reliability events (e.g., South Australia in 2017, Victoria in 2019) have been able to be anticipated with at least six hours of notice due to forecasts from AEMO. This amount of notice for future reliability events would provide battery operators with sufficient notice to preserve capacity for periods where any reliability event is likely to occur. As such, it is unlikely there would be such a significant underutilisation of battery capacity during a future an event of this nature.

We are concerned that AEMO's attempts to reflect imperfect foresight will underestimate the contribution of storage devices to help manage supply shortfalls, exacerbating forecasts of unserved energy.

## Conclusion

The updates proposed to the ISP methodology are important for improving the quality of the modelling outcomes. However, there could be more nuance to how storage and DSP is represented. Further, it will be critical for AEMO to explain how it has incorporated its updated consumer preferences into its selection of the optimal development path.

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

Yours sincerely,

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