

28 November 2023

To: AEMO – energy.forecasting@aemo.com.au

RE: Demand Side Participation (DSP) Forecasting Methodology and DSP Information Guidelines Consultation

Thank you for the opportunity for the Institute for Energy Economics and Financial Analysis (IEEFA) to provide input on the draft changes to the Demand Side Participation (DSP) Forecasting Methodology and Demand Side Participation Information (DSPI) Guidelines.

Please see IEEFA's view on the consultation in the following pages. We would welcome the opportunity to discuss our submission and the review with AEMO.

Regards,

Johanna Bowyer – Lead Analyst, Australian Electricity

Dr Gabrielle Kuiper – Guest Contributor, IEEFA

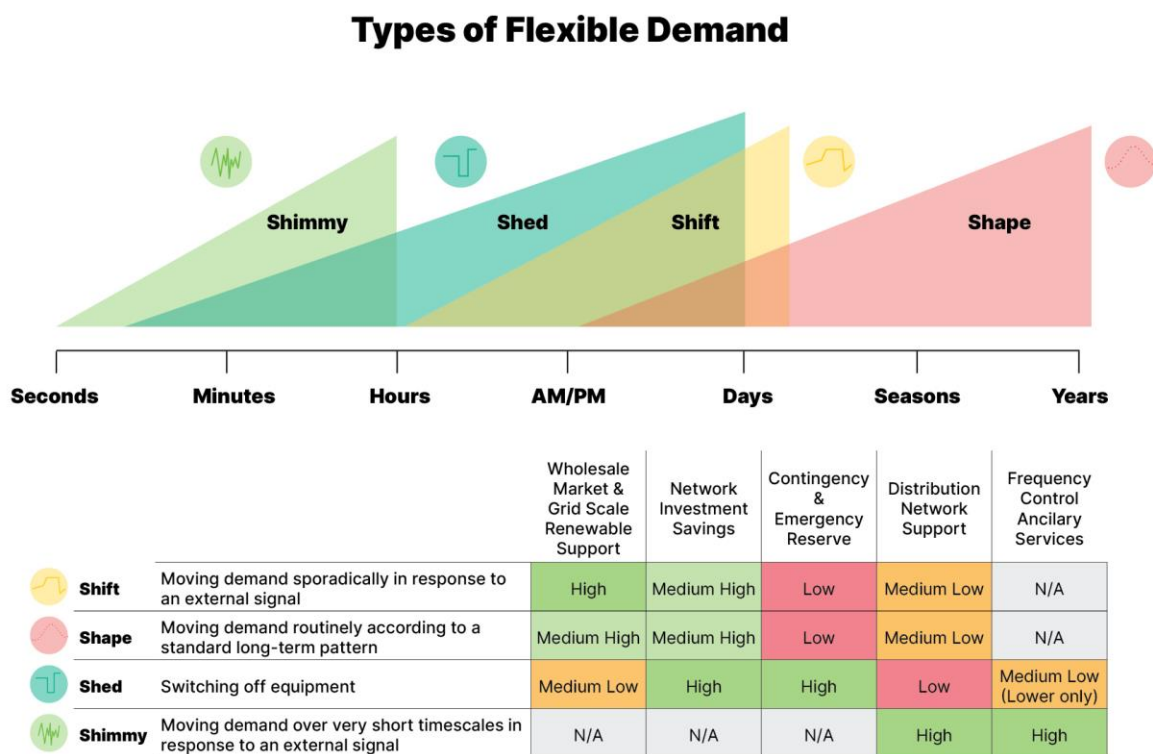
Amandine Denis-Ryan – CEO, IEEFA Australia

Overarching comments

In its October 2023 report ‘[Growing the sharing energy economy](#)’, IEEFA stated:

“As more and more renewable generation enters the NEM, demand flexibility becomes more and more important. Effectively we are going from a system where supply ramped up and down to match demand to one where supply is variable, based on the weather and the time of day, and demand needs to be able to be more flexible for the system to operate effectively and efficiently.”¹

This makes AEMO’s demand side participation (DSP) information gathering and forecasting more and more important and suggests that AEMO might need to consider both widening its search for and specificity of information on flexible demand. In particular, what is important is not merely ‘demand response’ in the traditional sense of load shedding, for example for the Reliability and Emergency Reserve Trader (RERT), but the availability of a range of types of flexible demand that vary by duration, and therefore the types of markets they are able to participate in, as shown in the figure below.



Source: IEEFA graphic based on Lawrence Berkley National Laboratory (LNBL) and Race For 2030 CRC

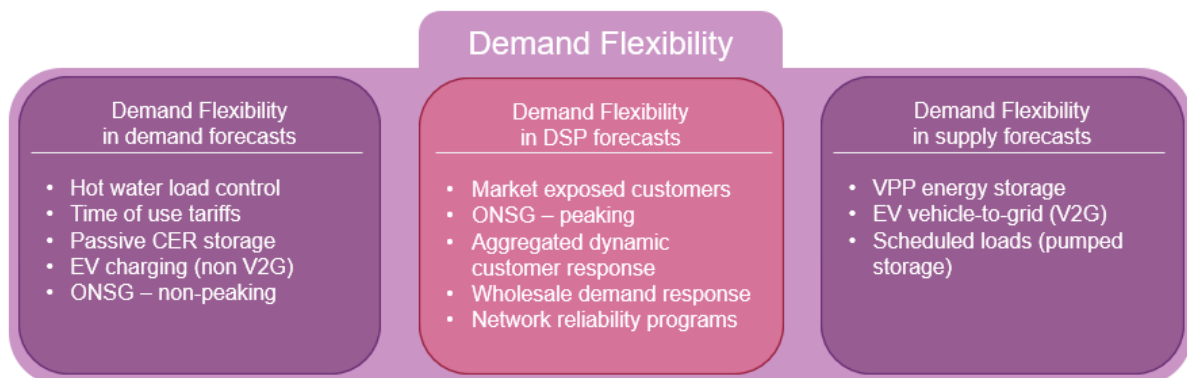
IEEFA

While the DSP only covers market-participating demand flexibility and reliability responses, not that which is contracted under the RERT, AEMO could also consider publishing data and analysis from the Demand Side Participation Information (DSPI) and other sources in a stand-alone report with downloadable data sets, like the 2020 ‘*Demand response in the*

¹ IEEFA. [Growing the sharing energy economy](#). 13 October 2023. Pages 37-38.

National Electricity Market’ Energy Synapse report.². In making this information available, it would be useful if it was clear which flexible demand capacity is a result of obligations under state government requirements (for example through South Australia’s Retailer Energy Productivity Scheme (REPS) and the NSW Peak Demand Reduction Scheme (PDRS)); which is participating in the Commonwealth’s Capacity Investment Mechanism; which is contracted under the RERT; and which is enrolled in other retailer or voluntary schemes.

In other words, the report would cover demand flexibility in all the forms below:



Demand Side Participation Information Guidelines

IEEFA supports the following proposed changes:

- The inclusion of increases in demand as well as decreases in demand in the DSP portal information collection.
- The portal being open throughout the year for registered participants to input information.
- The inclusion of requests for information on typical duration.

IEEFA further suggests that:

- While response duration is often difficult to assess, AEMO tests asking for a minimum and maximum response duration as part of the voluntary information it requests from participants.
- IEEFA suggests AEMO cross-checks information from ARENA-funded flexible demand projects to ensure they are included in the forecasts, given that *ARENA has allocated co-funding of \$180 million for 55 residential and commercial demand flexibility projects.*³
- AEMO seeks voluntary information from third-party demand response providers and aggregators.

² Energy Synapse (Report commissioned by AEMC) [Demand response in the National Electricity Market](#). 14 December 2020.

³ ARENA. [ARENA Knowledge Sharing Demand Flexibility Portfolio Retrospective Analysis Report](#). July 2023. Page 6.

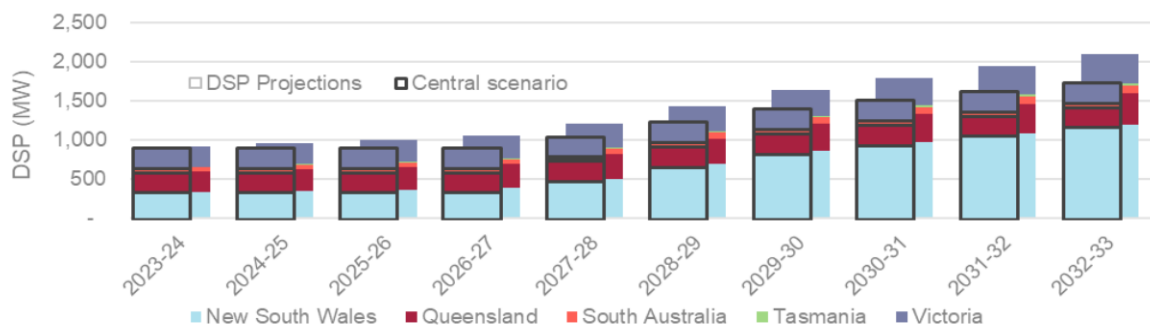


Demand Side Participation Forecasting Methodology

By way of general comment on DSP forecasting in the Energy Statement of Opportunities (ESOO), please see the below extract from the IEEFA report 'Growing the sharing energy economy':

"The demand side projections in the ESOO are also conservative, with only 900MW currently and only about 1,600MW by 2030 (Figure 10).⁴ This compares with 1,400MW of existing demand response that IEEFA has baselined in Table 4.⁵ AEMO seems to assume in the ESOO that none of the electrification of appliances will be demand responsive, which would be an enormous missed opportunity to get flexible demand into the NEM, as discussed below."⁶

Figure 1: AEMO's Sensitivity on Demand Side Participation – Not Included in the Central Scenario



Source: AEMO

⁴ AEMO. [2023 Electricity Statement of Opportunities](#). September 2023.

⁵ Includes 850MW Energy Queensland flexible demand, 250MW Enel X VPP, 200MW Origin Loop VPP business demand response.

⁶ IEEFA. [Growing the sharing energy economy](#). 13 October 2023. Page 25.



Table 1: Scale of DER in the NEM

Type of DER capacity	MW capacity	MWh
Energy Queensland flexible demand	850MW	not available
Enel X VPP (largely demand response, but some storage, includes 67MW enrolled in the WDR mechanism)	350MW	not available
Origin Loop VPP (includes 200MW business demand response) Spike household demand response program has 133,000 customers and a 66% response rate but it is unclear from Origin's reports if this is included in this figure or not)	815MW	not available
AGL VPP	210MW	not available
Reposit VPP (storage, <i>estimated</i>)	41MW	81MWh
Tesla South Australian VPP (storage, <i>estimated</i>)	28MW	54MWh
ShineHub – 2,311 homes (2022)	9.4MW	23.7MWh
Simply Energy - 1,361 energy storage systems (as of 2021)	6MW	not available
Other assorted VPPs (<i>estimated</i> , based on the fact there are another 15 household VPP offerings established with say 2MW on average each – EnergyAustralia, Sonnen, Energy Locals, Mondo, Discover Energy, amber, netc, Powershop, SolarHub, arcstream/qcells, Tesla (outside SA), Project Edge, Project Symphony, Rheem-CET, Ausgrid) Figures from Sunwiz: Ausgrid has 750 customers with 3.4MW/7.3MWh as at December 2021 (but this is likely to have some overlap with Reposit's VPP numbers)	30MW	not available
VPPs (flexible demand and storage)	2,339MW	
Household rooftop solar	14,300MW	not available.
C&I rooftop solar	7,690MW	not available
Total rooftop solar capacity	21,500MW	
Household battery storage capacity – 180,000 systems noting that some of these will be included in VPP capacity above (Sunwiz 2022 numbers) estimating 6kW average size	not available	2,093MWh
C&I battery storage capacity (Sunwiz 2022 numbers)	not available	191MWh
Total distributed battery storage capacity	not available	2,284MWh

Source: IEEFA analysis from varied data sources

It is understood following the publication of the aforementioned IEEFA report that AEMO includes daily/regular network-controlled load (like that of Energy Queensland) in demand forecasts, not demand side participation forecasts. However, the third 'Committed DSP' category of 'other initiatives providing a similar level of certainty of the DSP progressing' is surprisingly vague and needs clarification. Does it, for example, include companies' commitments to shareholders to expand demand response? IEEFA suggests this area of AEMO's forecasting methodology requires further refinement.