Integrating Price Responsive Resources – Public forum

19 February 2024, 3:00 pm

The following document outlines responses to questions received during the *Integrating price-responsive resources into the NEM* public forum held on 19 February 2024. The forum provided an overview of the 'size of the prize' benefits modelling undertaken by IES and the alternative visibility model released in December 2023. The slides presented during the forum, as well as the supporting documents, are linked below. These responses should be read in conjunction with these documents.

- Public forum slides
- IES benefits modelling report
- A Scheduled Lite design to integrate Demand Response into NEM Pricing and Dispatch
- Further information can be found on the project page.

Topic	Public forum question	AEMC response
Consumer protections/ rights	1. How can consumers rights be removed for purchasing assets for their homes/businesses, to give it up to energy market participants to schedule into a market for their own purposes?	1. The rule change does not remove consumers' rights to control their resources. All it seeks to do is reflect the control and information that market participants have under existing relationships into the wholesale market. We note that the mechanisms being considered are voluntary.
IES Modelling - assumptions	1. what is the basis for the improvements in Reg FCAS dispatch and how are reg FCAS values calculated?	1. The baseline regulation FCAS requirements were estimated by scaling typical monthly raise regulation requirements in FY2023 by the annual increase in operational sent-out demand. Forecasting errors resulting from AEMO's lack of visibility of VPP operations are expected to lead to additional regulation procurement to address frequency fluctuations. The modelling profiled the additional regulation FACS required to cover the largest forecast error in the modelling. See section 3.6.2 of the IES report for more information.

	2. In the base case, AEMO's forecasting capability grows from 20% accuracy to 65% by 2050. Can you elaborate on these assumptions? 3. Why can't DSP be dispatched? 4. Is the 'size of the prize' directly related to AEMO's CER forecast? How does the IES size of the prize compare to AEMO? 5. Was there any consideration of NCA (network capacity allocation or DOEs) in the modelling results?	2. These assumptions were based on the ability of AEMO to improve its forecasting over time as it becomes more experienced with VPP operations as they increase in scale. We will look at doing further modelling relating to sensitivities around these assumptions as part of the full CBA. See section 4.2.2 of the IES report. 3. DSP typically operates infrequently and only during high-priced events. The generic 'dispatch' mode modelled in the IES report assumed that participants would operate continuously. This means that DSP would be more suited to the visibility design, however this modelling exercise did not assume a split of resources across both dispatch and visibility models. Based on this the DSP results from a visibility model were used in the dispatch case. See section 3.4.2 of the IES report for more information. 4. The IES modelling uses the 2022 ISP step change scenario as the basis for the forecast uptake of price-responsive resources. The ISP assumes that the PRR are visible and/or centrally dispatched which enables AEMO to dispatch the system optimally. See page 24 of the IES report. 5. The IES modelling uses the same CER dispatch as AEMO in the ISP and assumes that this dispatch would be within distribution limits.
IES Modelling - results	1. Are results linear with assumptions about the rate of improvement in the base case? Has any sensitivity analysis been conducted?	1. The IES results appear to be proportional to VPPs percentage of grid-scale capacity. We are looking to conduct additional sensitivity analysis as part of the full CBA to understand this relationship. See section 4.2.1 of the IES report.

	2. Which FCAS markets were modelled? 3. Does the modelling assume that VPPs will bid in at a price lower than grid-connected resources? Is bidding of these resources based solely on SRMC? 4. What is the logic underlying the emissions reduction estimates? 5. Have you allowed for the "self-correction" features of AEMO's "dispatch" calculation once demand response or adjustments occurred, or have you simply assumed that the forecast error will continue for a sustained period?	2. Raise regulation and raise 60s contingency services were modelled with all 10 services inferred from historical analysis of the prices and enablement quantities in relation to these two services. See section 4.3.1 of the IES report. 3. VPP modelling, including bids is consistent with AEMO's ISP modelling of aggregated coordinated storage. See section 3.6 of the IES report for more information on the assumptions. 4. The reductions are derived mainly from the VPP modelling outcomes which allow for lower dispatch of scheduled generators during the evening peaks which at the margins include peaking gas generation. See section 5.1.1 of the IES report. 5. The IES modelling assumed that AEMO will conservatively forecast the non-visible VPP capacity to operate in accordance with its non-Virtual Power Plant equivalent. However, the assumptions around AEMO's forecasting improvement abilities aim to capture some of the 'self-correction' in AEMO's dispatch forecasting model. We also note that the 'self-correction' element of the existing demand forecasting methodologies can lead to even greater errors in the face of price-responsive resources. As the resources respond to prices, forecasting based on the previous interval actual demand becomes less reliable. See section 3.4.1 of the IES report.
Alternative visibility model	1. For the alternative design, if there are no compliance obligations, won't the market be cleared on DR values that might not happen?	1. Conformance with quasi-bids is incentivised through the frequency performance payments and existing bidding rules. That is, where quasi-bids are inaccurate, participants face a higher FPP cost.

	2. AEMO splitting demand forecast by retailer would likely increase forecasting inaccuracy. 3. A true two-sided market implies symmetrical obligations. Surely, DSP needs to have similar obligations, i.e., bid your demand. A soft participation mechanism is no different from the current situation. Retailer options exist for VPP or equivalent participation. Is this an overly complicated regulatory response to emerging market responses?	It is also worth highlighting that, without a change to the current design, the market will routinely be cleared without incorporating demand response, which does happen, leading to the inefficiencies described in the IES report. See page 20 of the Alternative visibility design. 2. The split forecasts are not used for anything other than FPP allocations. 3. The key driver of the rule change request is to incorporate material price-responsiveness from aggregated resources. We consider that symmetrical obligations may be possible at some stage in the future, but there are significant practical barriers in the short term.