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14 August 2025

Ms Anna Collyer
Chair
Australian Energy Market Commission
Sydney South NSW 1235

By online submission:

Dear Ms Collyer

AEMO Response to AEMC Review of the Wholesale Demand Response Mechanism

AEMO welcomes the opportunity to provide feedback on the Australian Energy Market Commission's (AEMC's) draft report regarding the review of the Wholesale Demand Response Mechanism (WDRM).

Australia's energy system is rapidly changing, with flexibility playing a key role in considering the ways both the demand and supply-side will deliver efficient market outcomes to consumers. AEMO considers frameworks that encourage demand-side participation to be a critical feature of future market arrangements, and that different schemes and mechanisms are required to enable more active participation and to accommodate the diversity of the demand-side.

AEMO notes that the National Electricity Market (NEM) Wholesale Market Settings Review has been considering the visibility and dispatchability of price-responsive resources as an opportunity for improving market efficiency, with one of the NEM Review's draft recommendations focussed on increasing the active participation of price-responsive resources in the market.[1] AEMO supports the underlying intention of these recommendations to enhance the visibility and predictability of resources that are participating in and/or responding to price signals. As these resources proliferate, having improved visibility and predictability of this aggregated price-responsiveness in operational timeframes will be essential to support an efficient market and its secure operation.

AEMO highlights that work is underway to facilitate participation of flexible resources in both the wholesale market and off-market flexibility services. For wholesale market participation, the Integrating Price-Responsive Resources (IPRR) rule change, once implemented in May 2027, will allow currently unscheduled price-responsive resources, including Consumer Energy Resources (CER) and flexible load, to participate in energy and Frequency Control and Ancillary Services (FCAS) markets through dispatch mode. Under Unlocking CER benefits, from November 2026, flexible load can be separately metered from passive load to support both large and small customer aggregations to participate in the wholesale market via IPRR. For off-market flexibility services, the Redefining Roles for Market and Power System Operations workstream [M3/P5] (under the National CER Roadmap) is aiming to clarify roles and responsibilities for establishing and using off-market mechanisms (Proposed Action 5).[2]

Alongside these reforms, WDRM provides another pathway for providing demand response services. Compared to out-of-market pathways like retailer-led demand response or participation in the Reliability and Emergency Reserve Trader (RERT), participation in WDRM enhances visibility and predictability of demand response in operational timeframes.

[1] https://consult.dcceew.gov.au/nem-review-draft-report-consultation
[2] https://consult.dcceew.gov.au/national-cer-roadmap-redefine-roles-m3-p5

This submission (Attachment 1) provides more detailed considerations from AEMO highlighting matters for the AEMC's consideration in the completion of this review.

Of these matters, AEMO notes that it has now concluded consultation on the three new baseline methodologies that were submitted by Enel X on 27 March 2024 under the baseline methodology development process in AEMO's Wholesale Demand Response Guidelines.[3] AEMO has approved two of the Enel X baseline methodologies to better accommodate seasonally varying loads and weather-sensitive loads and, after a further round of formal consultation, has approved a baseline methodology to better accommodate sites with solar PV.[4] In March 2025, AEMO also commenced a two-year trial of a higher accuracy threshold of 30%, and has outlined the evaluation criteria that will be used to determine whether the higher accuracy threshold should be retained long-term.

Following the AEMC's Review of the WDRM, AEMO will consider what, if any, recommendations could be implemented through AEMO's Wholesale Demand Response Guidelines. At that time, AEMO also plans to review the baseline methodology development process and the DNSP endorsement process for aggregation of WDR units (WDRUs) for the purpose of central dispatch.[5]

AEMO looks forward to continuing its collaboration with the AEMC and other stakeholders on this important consultation. Should you wish to discuss any of the matters raised in this submission, please contact Hannah Heath, Group Manager Strategic Market Reform, at hannah.heath@aemo.com.au.

Yours sincerely,

Violette Mouchaileh
Executive General Manager – Policy & Corporate Affairs

Attachment 1: Detailed Response

[3] https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/wdr-baseline-methodology-consultation---enelx-proposals/decision-notice---enel-x-baseline-methodology-consultation.pdf?la=en
[4] https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/wdr-baseline-methodology-consultation---enelx-proposals/final-decision-report---further-consultation-items---enel-x-baseline-methodology-consultation.pdf?la=en
[5] https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/wdr-baseline-methodology-consultation---enelx-proposals/final-report-enelx-baseline-methodology-consultation.pdf?la=en

Attachment 1 – Detailed Response

1. WDRM could continue to play a role in facilitating wholesale market participation from a subset of large loads

AEMO agrees with the AEMC that WDRM continues to play a role in facilitating wholesale market participation from large loads. There would be benefit from more active participation of these demand-responsive loads in the market, as provision of demand response via WDRM can assist in reducing the need for AEMO intervention in the market, such as enacting the RERT or issuing directions. As set out in the NEM Wholesale Market Settings Review draft report, greater visibility of demand-responsive large loads are important for ensuring efficient system operations and lower costs for consumers.[6]

Unlocking these benefits will be particularly important in the context of new and emerging large loads, like data centres.[7] Data centre demand is growing rapidly, being driven by growth in cloud computing and artificial intelligence-based applications.[8] AEMO forecasts data centre electricity demand growth to increase from around 2% of NEM grid-supplied electricity in FY2025 to around 6% by 2030.[9] It is important to ensure the right market settings and mechanisms are in place to incentivise and support demand response from both existing and new and emerging load areas.

Understanding and addressing the existing barriers to demand-responsive large loads participating in WDRM is important in being able to unlock the value of demand flexibility for the benefit to end use consumers. Clearly identifying those barriers and distinguishing between what may be an underlying missing incentive or constraint of the market versus a mechanism design feature will inform what further action is required to enable greater demand participation. As the range of potential solutions differ depending on the underlying cause, AEMO encourages the AEMC to expand on its existing analysis to consider and identify the underlying barriers to providing demand response, leveraging existing work underway, like that through the NEM Wholesale Market Settings Review[10] and overseas.[11]

2. Eligibility of sites with multiple connections to participate in the WDRM

As outlined in AEMO's submission to the review's consultation paper, AEMO considers the eligibility of sites with multiple connection points to participate in WDRM should be subject to a cost benefit analysis to assess the potential benefits of additional participation in WDRM enabled by this change against the associated implementation and ongoing operational costs. AEMO notes the AEMC's draft recommendation to progress Enel X's *Expanding eligibility under the WDRM* rule change request, which proposes to allow such sites to participate in the WDRM. While initiating this rule process can provide the opportunity for this cost benefit

[6] Tim Nelson, Paula Conboy, Ava Hancock, Phil Hirschhorn, National Electricity Market wholesale market settings review Draft Report, August 2025, pp. 79-80.
[7] In FY25, data centres are estimated to have consumed 3.9 TWh of energy across Australia. For the NEM, where the vast majority of data centres are located, this currently represents 2% of grid-supplied electricity. Under AEMO's Step Change scenario, data centre energy consumption is forecast to grow 25.1% p.a. to reach 12.0 TWh by FY30, with NEM connected data centres representing 6% of the NEM's grid supplied electricity. Over the subsequent two decades, growth is expected to slow to 5.4% p.a. to reach 34.5 TWh, with NEM connected data centres representing 12% of the grid by FY50.
[8] https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/2025-inputs-assumptions-and-scenarios-report.pdf?la=en
[9] Oxford Economics Australia, Data Centre Energy Demand Final Report, July 2025, p. 50. https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2025-iasr-scenarios/final-docs/oxford-economics-australia-data-centre-energy-consumption-report.pdf
[10] Tim Nelson, Paula Conboy, Ava Hancock, Phil Hirschhorn, National Electricity Market wholesale market settings review Draft Report, August 2025, pp. 83-84.
[11] For instance, the North American Electric Reliability Corporation has established a Large Loads Task Force that is considering the market behaviour of large loads. See: https://www.nerc.com/comm/RSTC/Pages/LLTF.aspx

assessment, this should be considered in the context of what broader barriers the AEMC identifies to demand response, as recommended in the section above.[12]

3. Expanding WDRM to facilitate two-way demand response

AEMO notes that some stakeholders suggested that WDRM could be used for 'two-way' demand response to encourage consumption during negative prices and help mitigate minimum system load (MSL) events.

AEMO supports initiatives to consider how MSL events can be mitigated and managed and, as a result, reduce the need for AEMO market intervention. For example, greater demand activation could play a key role in managing MSL conditions, and therefore consideration of the pathways available for incentivising demand activation are important.

AEMO notes that there are numerous works underway exploring ways to enable greater demand activation to manage MSL events. This includes the AEMC's Pricing Review, which is considering incentives for demand flexibility for small customers,[13] the Clean Energy Council (CEC)'s proposed rule change request to establish an ancillary service to address MSL events,[14] and the AEMC's Reliability Panel Reliability Settings and Standards Review, which is considering the suite of settings and standards, including the role of the market floor price.[15] As with enabling demand response, AEMO considers that likely a combination of options and incentives will be required to support demand activation, and supports consideration of these options and incentives at a holistic level.

One aspect of this broader context includes considering the role negative spot prices may play in providing incentives for greater demand activation. The coincidence of periods of negative spot prices with periods of low demand, and potential MSL events, means that exposure to the prevailing spot price could provide a signal to increase demand in response to MSL events.

AEMO however notes the AEMC's analysis that indicates the wholesale price would need to be less than -$200/MWh to offset the increased retail costs for customers to consume more, and that prices at such low levels have not historically occurred very frequently.

AEMO's analysis has similarly shown that over FY2023-24 and FY2024-25, the average regional reference price for dispatch periods where native demand[16] was in the 0.5% percentile[17] was -$85.6/MWh in South Australia and -$110.5/MWh in Victoria. The average hours per financial year for this native demand 0.5% percentile was 44.4 hours in South Australia and 44.2 hours in Victoria. Further, in South Australia, the average regional reference price for dispatch periods where native demand was negative was -$111.8/MWh. This suggests that over the last two financial years, on average, the prevailing spot price during MSL events has not been sufficiently negative to offset the increased retail costs for consumers to consume more.

In the context of the WDRM design, AEMO considers the implementation of two-way demand response through this mechanism could require substantial changes to AEMO's dispatch, settlement, metering and baselining systems. These could include:

[12] https://www.aemc.gov.au/sites/default/files/2022-05/ERC0345%20Rule%20change%20request%20-%20Expanding%20eligibility%20under%20the%20WDRM%20-%20FINAL_0.pdf
[13] https://www.aemc.gov.au/market-reviews-advice/pricing-review-electricity-pricing-consumer-driven-future
[14] https://www.aemc.gov.au/sites/default/files/2025-07/New%20rule%20change%20proposal%20-%20Clean%20Energy%20Council%20-%2020250620.pdf
[15] https://www.aemc.gov.au/market-reviews-advice/2026-reliability-standard-and-settings-review
[16] Native demand in a region is demand that is met by local scheduled, semi-scheduled, non-scheduled and exempt generation, by generation from scheduled bidirectional units (BDUs), and by generation imports to the region, excluding the demand of local scheduled loads and scheduled bidirectional units, and including WDR. https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Policy_and_Process/Demand-terms-in-EMMS-Data-Model.pdf
[17] 0.5% percentile is the demand level at which demand falls below that level for just 0.5% of the time.

- WDRUs are currently treated similar to generators for the purposes of dispatch (as the impact of a reduction in demand has the same effect as increasing generation). For two-way demand response to be facilitated, WDRUs would likely need to be registered as bidirectional units (BDUs), which would introduce numerous system changes and complexities that would need to be addressed to appropriately include these units in AEMO's systems and processes, including in the NEM Dispatch Engine (NEMDE).
- Changes to the use of baseline methodologies. For example, a WDRU may wish to increase load during the middle of the day and decrease load in the evening peak. This may require dual baselining, or some other alternative that would need to be considered.
- Complexity regarding how a Demand Response Service Provider (DRSP) would define their version of the Maximum Responsive Component (MRC) for a Wholesale Demand Response Unit (WDRU). MRC is already the maximum component of the load that can be responsive, so consideration would need to be given to how the maximum consumption component of a load could be determined compared to the MRC.

AEMO looks forward to the AEMC's further consideration of these matters in the completion of this review and welcomes further engagement on these matters with the AEMC.