

24 April 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) consultation paper 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 that frameworks that encourage demand-side participation are a critical feature of future market arrangements. AEMO's 2024 Integrated System Plan (ISP) anticipates that 'coordinated Consumer Energy Resources (CER) storage' could provide around half the NEM's dispatchable capacity by 2050, subject to these resources being integrated into market scheduling processes, which sits alongside an additional 2.9 GW of demand side participation^{1,2}. Demand response projects are also participating in the Capacity Investment Scheme NSW tender in partnership with the NSW's Electricity Infrastructure Roadmap, with Enel X Australia announced as a successful bidder in November 2023 with a demand response project including three separate virtual power plants (VPPs) (95 MW (2 hours)).³

To accommodate for the diversity of the demand-side, different schemes and mechanisms are required to enable more active participation; there is no 'one-size-fits-all'. Alongside WDRM, there are a range of mechanisms in place that attempt to better leverage demand-side participation, including participation of VPPs to deliver contingency FCAS, arrangements with retailers, price-responsive tariffs, and participation of demand response loads in the Reliability and Emergency Reserve Trader (RERT). Recently, the Integrating Price-Responsive Resources (IPRR) into the National Electricity Market (NEM) and Unlocking CER benefits through flexible trading (Unlocking CER benefits) rule changes have been introduced to further unlock flexibility to enable and support demand-side participation in the market. Once implemented in May 2027, IPRR will allow currently unscheduled price-responsive resources, including CER and flexible load, to participate in the market as part of an aggregated Voluntarily Scheduled Resource (VSR). Under Unlocking CER benefits, from November 2026, flexible load can be separately metered from passive load to support both large and small customer aggregations participate in the market via IPRR.

WDRM has now been in operation for three and a half years, since 24 October 2021. WDRM has seen low participation, with 74 MW of WDR currently registered in the NEM.⁴ With the aim of increasing uptake, AEMO has recently consulted on and is currently implementing a range of adjustments to the settings for WDRM. This includes investigating better options for loads with solar PV, trialling a new accuracy threshold,

¹ Demand-side participation in the ISP is defined as: The capability of consumers to reduce their demand during periods of high wholesale electricity prices or when reliability issues emerge. This can occur through voluntarily reducing demand, or generating electricity.

² <https://aemo.com.au/-/media/files/major-publications/isp/2024/2024-integrated-system-plan-isp.pdf?la=en>

³ <https://www.dcceew.gov.au/energy/renewable/capacity-investment-scheme/closed-cis-tenders>

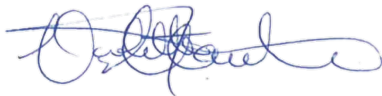
⁴ https://aemo.com.au/-/media/files/electricity/nem/participant_information/nem-registration-and-exemption-list.xlsx?la=en

introducing new baseline methodologies that better cater to weather-sensitive and seasonally-varying loads, and reviewing the DNSP endorsement and baseline methodology proposal process.

The AEMC's review of the WDRM is timely given the context of other reforms considering the important role the demand-side can play in supporting the energy transition. For example, the NEM Wholesale Market Settings Review is considering how best to enable consumers, ranging from large businesses to households with rooftop solar, to benefit from and contribute to the market. This includes how to facilitate better interaction between the demand-side, the spot market and any existing or future financial markets.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: Consultation questions

⁵ NEM Review, Terms of Reference Release Package, December 2024, p. 4. <https://consult.dcceew.gov.au/nem-review-initial-consultation>

Attachment 1 – Consultation questions

AEMO provides the following responses to key consultation paper questions.

Question 1: Benefits of the WDRM

- Do you agree with our proposed methodology to estimate the deadweight loss benefits of the WDRM?
- Is there an alternative approach that the AEMC should consider in measuring the impact of the WDRM on spot prices?
- Would the results from using a more sophisticated method significantly change the benefit calculation?
- Are there other benefits of the WDRM and what is their materiality?

AEMO is broadly comfortable with the options that the AEMC has put forward for approaching the estimated benefits and acknowledge that it is challenging to calculate the deadweight loss benefits of the WDRM given its limited participation to date.

AEMO considers there are several other potential benefits of the WDRM that should be considered in the review. The WDRM may have encouraged greater competition in the demand response market, both on and off market, through incentivising retailers to develop competitive customer offerings compared to those being offered by Demand Response Service Providers (DSRPs). The WDRM also provides AEMO benefit through greater visibility and dispatchability of the demand-side.

Question 2: Costs of the WDRM

- What are ongoing financial and non-financial costs of facilitating the WDRM?
- What were the financial and non-financial costs of implementing the WDRM?

In AEMO's June 2020 WDRM High-Level Design⁶, the cost of implementing WDRM was estimated to be between \$13 million and \$17 million. The final cost for implementation of WDRM came to a total of \$14.8M. These implementation costs covered changes to processes, procedures and IT systems to facilitate the introduction of WDRM.

AEMO's total ongoing financial costs of facilitating the WDRM are in the range of \$350,000 to \$500,000 per annum. This costs range includes the following estimate breakdown:

- Base cost for operating the WDRM (excluding cloud costs): \$25,000 to 30,000 per annum
- Cloud costs: \$100,000 per annum
- Registration-related costs, including DRSP registration and WDR classification application fees (de-registrations or de-classifications are not cost recovered): \$40,000 to 45,000 per annum
- Broader ongoing costs associated with facilitating the WDRM, including training and availability of resources required to deal with WDR settlement and operational queries, and IT and settlements resourcing required to solve issues related to WDR queries

Question 5: DRSP exclusion from FCAS cost recovery

- Should DRSPs continue to be excluded from regulation and contingency FCAS costs?
- If not, how could they be effectively included in the cost recovery process?

⁶ <https://aemo.com.au/-/media/files/initiatives/submissions/2020/wdrm/wdrm-high-level-design-june-2020.pdf>

In its submission to the AEMC's WDRM Draft Determination in September 2019⁷, AEMO advised that DSRPs be excluded from regulation and contingency FCAS cost recovery. For regulation FCAS, under the previous causer pays process, AEMO noted that adding DSRPs to causer pays would add cost and complexity to implementation of WDRM in AEMO's settlements processes due to the different data granularity requirement for Wholesale Demand Response Units (WDRUs) compared to other market participants. For contingency raise, AEMO suggested there is a low likelihood of WDR resulting in a low frequency event and therefore costs should not be recovered from these loads. AEMO also advised that DSRPs should be excluded from the recovery of contingency lower costs as this would reduce the implementation costs of WDRM by allowing the settlement process for DSRPs to be undertaken separate from settlement for other market participants.

AEMO considers that the decision not to include WDRUs in the recovery of regulation or contingency FCAS costs in the final rule remain relevant under the current low uptake of the mechanism. However, in the future, if WDRM participation were to significantly increase, it may be prudent to review whether the current exemption continues to remain applicable.

Question 7: Should sites with multiple connections participate in the WDRM

- **Should sites with multiple connection points be able to participate in the WDRM?**
- **What are the potential benefits and costs of this change?**
- **Are there other changes that would have a greater impact on participation in the WDRM?**

AEMO believes that the eligibility of sites with multiple connection points to participate in WDRM should be considered further, weighing up the following:

- Benefits of additional participation in WDRM

To identify these potential benefits will require an evidence base that quantifies the additional participation that would be enabled by allowing sites with multiple connections to participate.

- Implementation costs and potential complexity

From an implementation perspective, allowing sites with multiple connection points would require changes to AEMO's registrations and settlement processes and Market Settlement and Transfer Solution (MSATS). This would include: (1) a requirement to clearly define a "site" providing WDR, which is not currently done within AEMO's systems, and (2) a new process for managing changes to a site, including the churn in and out of NMIs.

- Potential for arbitrage and load switching between connection points within a site

The AEMC will also need to consider what monitoring and controls would be required to avoid load shifting between two connection points within a site. This is to mitigate a party reducing consumption at one connection point, showing delivery against a baseline, while simultaneously increasing consumption at the second connection point. Deriving a way to mitigate against this potential arbitrage behaviour will be important given baselining is done on a NMI basis.

AEMO considers the eligibility of sites with multiple connection points should be subject to a cost benefit analysis that assesses the above potential benefits of additional participation in WDRM enabled by this change against the associated implementation and ongoing operational costs.

⁷ <https://www.aemc.gov.au/sites/default/files/2019-09/Wholesale%20Demand%20Draft%20Consultation%20Response%20v1.0%20FINAL%2027Sept19.pdf>

Question 8: Is the baseline methodology working as intended

- Are the current baseline methodologies producing accurate baselines for WDRUs?
- Is the process for requesting new baselines sufficient to ensure that baselines can accommodate a wide variety of loads?
- Are there any aspects of the baselining process impacting further participation in the WDRM?

As presented in AEMO's 2024 WDR Annual report⁸, baseline compliance testing conducted on the 30th and 31st of May 2024 resulted in an average accuracy score well below the 20% accuracy threshold: 11% for Baseline Methodology (BM) 1, and 8% for BM4. These statistics exclude NMs that failed to pass baseline compliance testing which are done using AEMO's predictability of load tool. Failure of these tests mean that NMs no longer meet the required accuracy and/or bias thresholds set for WDRM. NMs that failed the baseline compliance testing, which initially included eight out of 38 NMs for summer 2024 and two out of 26 NMs for winter 2024, did so not due to underlying compliance issues but rather because the baseline methodology was unable to accommodate loads with seasonal or changing load patterns.

In December 2024, AEMO made its first baseline methodology determination that introduced two new baseline methodology options to better accommodate weather-sensitive loads, and an alternative baseline methodology accuracy metric of 30% on a trial basis.⁹ AEMO is currently implementing these changes. This was in response to baseline methodology proposals from Enel X. The submissions to the consultation also gave rise to some additional considerations, which AEMO have actioned in its Further Consultation Paper.¹⁰ This includes the challenges of baselining solar PV sites.

Question 9: Are baselines suited for increasing levels of CER?

- Does the increased volume of investment in CER result in fewer loads able to meet a baseline?
- Does the combination of CER benefits and IPRR mean that the demand side is appropriately catered for in dispatch?
- Is there a role for the WDRM in facilitating access to the wholesale market by third-parties?

The uptake of distributed solar PV installations introduces challenges for the baselining of loads due to the volatility it introduces at solar PV sites. As discussed above, AEMO is working with industry on this issue and has decided to implement an alternative baseline methodology focussed on loads with solar PV. AEMO anticipates that the fundamental challenge the uptake of solar PV represents will require further consideration however beyond an alternative baseline methodology.

The IPRR and Unlocking CER Benefits rule changes have been introduced to enable and facilitate demand-side participation in the market. Under IPRR, loads that can be price-responsive, including residential and small customer loads, would be eligible to participate as a qualifying resource as part of an aggregated Voluntarily Scheduled Resource (VSR). VSRs will be treated as bidirectional units (BDUs), which caters to participation of both generation and consumption bids. Unlocking CER benefits offers the ability to separately meter passive and flexible loads, which will make it easier for energy service providers to use the mechanisms envisaged under IPRR to participate in dispatch with unscheduled price-responsive resources, particularly in the case of residential and small customer sites. AEMO notes that these mechanisms will not be live until November 2026 for Unlocking CER benefits, and May 2027 for IPRR.

⁸ <https://aemo.com.au/-/media/files/initiatives/wdr/2024-wdr-annual-report.pdf?la=en>

⁹ 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

¹⁰ https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/wdr-baseline-methodology-consultation---enelx-proposals/enelx-bms---further-consultation-paper.pdf?la=en

RERT is an alternative mechanism to WDRM currently in the market that allows for demand response loads to participate as unscheduled reserves. AEMO can activate reserves under the RERT during LOR events to improve the supply-demand balance and avoid involuntary load shedding. AEMO considers there would be benefit from more active participation of these demand response loads in the market as it could allow AEMO to avoid the need to activate RERT. AEMO however understands there are reasons why these demand response loads may not have the right incentives to do so.

Question 10: Proposed assessment framework

- **Do you agree with the proposed assessment criteria for this review?**
- **Are there additional criteria that the Commission should consider or criteria included here that are not relevant?**

AEMO is broadly comfortable with the AEMC's proposed assessment criteria for this review. As mentioned in AEMO's response to Question 9, AEMO believes the AEMC's review of the WDRM needs to consider how it is striking the right balance between factors, including balancing risks with broader participation, and balancing the costs and complexity of implementation with those of alternative market measures, like RERT.