NEM Review – Draft Report

Energy Efficiency Council Submission

September 2025

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About the EEC

The EEC is a membership association for organisations working to harness the power of efficiency, electrification and energy flexibility to deliver a prosperous, net-zero future.

Our mission is to catalyse action from government and industry that delivers:

- Efficient, electric homes;
- Productive, net-zero businesses; and
- An optimised energy system powered by renewable energy.

We work with our members, governments and other experts to accelerate the deployment of efficient, electric and flexible products and services.

We deliver practical change by building the evidence base, making the case, informing policy, supporting skill and literacy, and shaping market outcomes.

Introduction

Dear NEM Review Secretariat,

Thank you for providing the opportunity to provide feedback on the National Electricity Market wholesale market settings review Draft Report (the Report).

The EEC commends the position taken in the Report that flexible demand will play a critical role in the energy system and that better integration of the demand side will unlock competition and deliver savings for consumers. Demand-side resources—including energy efficiency, large flexible loads, and Consumer Energy Resources (CER) such as rooftop solar, batteries and electric vehicles—can deliver significant system value. Realising this value requires the coordinated development of market, regulations and deployment mechanisms that support both the effective uptake and integration of distributed and flexible demand-side resources.

The Report focuses on demand-side price responsive resources but does not address the role of non-price responsive resources on the demand side (like thermal improvements to buildings) which could both enable greater responsiveness to price (by supporting building occupants to shift their demand) and reduce the need for new supply-side infrastructure by reducing overall demand.

As the world's "first fuel", energy efficiency plays a central role in delivering the global transition to a net zero energy system.[1] As the IEA notes, "energy-efficient technologies slow growth in energy demand and play a vital role in reducing fossil fuel consumption and emissions in all sectors of the economy.[2]" In Australia, energy efficiency presents the lowest-cost method to reduce energy-related emissions. Efficiency measures make the supply side's task smaller – every unit of energy demand avoided directly translates to a unit of new energy infrastructure that does not need to be built. Recent analysis by the EEC and Climateworks Centre suggests energy efficiency measures between 2025-2035 could reduce electricity demand by around 46 TWh, around one quarter of the possible growth in electricity demand under a high electrification scenario.[3]

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[1] IEA website – Net Zero Emissions by 2050 Scenario (NZE), https://www.iea.org/reports/global-energy-and-climate-model/net-zero-emissions-by-2050-scenario-nze

[2] IEA website – Energy Efficiency and Demand, https://www.iea.org/energy-system/energy-efficiency-and-demand

[3] EEC, 2025, Efficient electrification for Australia's 2035 target – Policy brief, https://www.eec.org.au/uploads/Projects/EmissionsModelling_PolicyBrief

Therefore, while fully supporting efforts to accelerate bringing new capacity into the National Electricity Market (NEM) to provide bulk energy, firming and other services, the EEC reiterates that this task will more manageable if Australia fully realises its energy efficiency potential.

Despite knowledge that demand and supply-side resources are equally capable of serving the energy market, decision makers have previously tended to have low confidence in demand-side resources' ability to deliver concrete outcomes for the energy market, and ultimately for consumers. The Report goes some way to addressing this supply side bias in noting that system security and strength can be delivered by a range of technologies – on both the supply side and the demand side.

However, the EEC does have some key concerns with assumptions made in the Report in relation to the ability of the demand side to participate in the wholesale market. For example, the Report appears to place significant weight on the Integrated Price Responsive Resources (IPRR) framework, characterising it as a 'fit-for-purpose' mechanism to encourage visibility and participation.

The EEC believes there may be limitations in the IPRR framework that must be addressed to enable greater participation, which are detailed in our response.

Similarly, the Wholesale Demand Response Mechanism (WDRM) also has limitations which need to be addressed to deliver the levels of participation anticipated in the Report.

Many of the demand-side resources discussed in the Report are connected to the low-voltage distribution network. Therefore, while the scope of the National Electricity Market wholesale market settings review (NEM Review) is explicitly on the wholesale market, discussions on activating demand-side resources cannot avoid addressing the topic of whether distribution network regulations are still fit for purpose.

While being beyond the scope of the NEM Review, the EEC strongly advocates for the Energy and Climate Change Ministerial Council (ECMC) to undertake a full review of the economic regulation of distribution networks and proposes that the NEM Review Panel could draw attention to the need for such a review. The NEM Review, which has been widely lauded for its efficacy and speed, could be a model for such a review.

More broadly, the EEC has long advocated for reforms to energy market governance to support greater demand-side participation. To this end, the EEC, supported by the RACE for 2030 Cooperative Research Centre (RACE), is currently reviewing energy governance in the NEM region. The review, which builds on the Green Paper released in July 2025, is wide-ranging but particularly focuses on two issues:

1. Decision-making governance - improving how we decide to introduce, retain, or reform policies and market settings.
2. Whole-of-system approach - to ensure decision-making considers both supply- and demand-side measures, including generation, storage, networks, CER, and demand management.

The EEC is currently carrying out public consultation, including with the NEM Review Panel directly, and will liaise with federal and state governments directly later this year.

For further information about anything in this submission, please don't hesitate to contact me via email at jeremy.sung@eec.org.au.

The EEC looks forward to continuing to work closely with you on this important review.

Yours faithfully,

Jeremy Sung

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Recommendation 1: Maintain the real-time regional energy-only spot market as the core market for efficient dispatch and rewarding the provision of physical energy services

EEC Response: Conditional support

The EEC tentatively supports the position set out in the Report that the existing spot market is generally fit for purpose, noting that more can be done to integrate CER. The EEC also supports the position that integrating CER within the existing market is preferable to creating new distribution-level wholesale markets. However, this support is on the condition that market mechanisms are explicitly designed to deliver benefits for consumers, competition between market participants is increased, and that Distribution Network Service Providers (DNSPs) are incentivised to provide non-network solutions.

The wholesale market as envisioned by the NEM Review Panel relies on mechanisms such as the Wholesale Demand Response Mechanism (WDRM) which can be accessed by independent aggregators and retailers, and Voluntary Scheduled Resources (VSR) engaging in 'Dispatch Mode' through the IPRR framework which can generally only be accessed by retailers for smaller loads.

As discussed below, there are limitations in the design of both mechanisms, which need to be addressed to enable greater participation from the demand side.

Recommendation 2: Energy ministers should require a broader range of price-responsive resources to be visible or dispatchable to participate in price formation

EEC position: Conditional support

In relation to Recommendations 2A and 2B, the EEC supports the principle of changing energy market rules to increase the visibility and participation of price responsive resources. However, as discussed below, there are limitations in the design of the IPPR framework, which need to be addressed to enable greater participation from a broader set of demand side resources.

The thresholds for imposing 'active mode' on market participants should be discussed with concerned EEC members to ensure that any obligations are not passed onto consumers and thereby reduce the number of price-responsive resources that are able or willing to participate in aggregation services (see further discussion below).

The EEC fully supports recommendation 2C on establishing a structured support framework to encourage greater participation in the IPRR framework, WDRM or as scheduled loads. Our members report that it can be difficult to engage large energy users to participate in virtual power plants (VPPs) given uncertainty over future revenue streams so longer-term support may help to drive increased participation. We note that one option flagged in the Report is to incentivise new demand response resources under the ESEM. We support this idea in principle, noting some uncertainty as to whether the ESEM can be designed to accommodate demand response resources (see response to Recommendation 8).

EEC Recommendations:

1) **The NEM Review Panel to engage with EEC members to discuss appropriate thresholds and resources that should be included in any mandatory application of the IPRR framework**

EEC members have some concerns on the thresholds for requiring visibility and the methods for participation envisaged. As discussed above, the IPRR framework and the WDRM have limitations in encouraging participation which need to be addressed.

The Report anticipates that CER will participate in central dispatch through the VSR and that retailers providing price-passthrough contracts could use the IPRR framework in active, or inactive mode.

This casts a wide net in terms of resources captured and required to follow the IPRR framework. This could be seen as imposing obligations on consumers (via their retailer) based on assumptions of an issue caused by these smaller resources. Some members have noted that the obligations imposed by the IPRR framework could discourage consumers from participating in a VPP. Larger assets under direct control are potentially more appropriate resources to participate in active mode.

2) **The NEM Review Panel should recommend AEMO modernise NEM systems (particularly NEMDE) to allow smaller minimum bid sizes**

Updating NEM systems – particularly the NEM Dispatch Engine (NEMDE) – is critical to unlocking the potential of smaller aggregations of demand-side resources to participate.

The Report suggests Australia could allow aggregations of 100kW to participate in the spot market, akin to the United States where market operators must accommodate aggregations of 100 kW or more in dispatch[4].

The EEC strongly supports allowing aggregations smaller than 1MW to participate in the NEM and research shows that minimum bid thresholds of 100kW or less are a common feature of international markets which have led to the effective integration of the demand side.[5]

However, a major barrier to smaller aggregations from participating in the NEM is NEMDE, which requires a minimum 1MW bid size to limit the complexity of its optimisation.[6] AEMO has acknowledged that a 1 MW increment may pose a barrier to the participation of small aggregators but supports maintaining this limit. This should be reconsidered, and the minimum viable bid size should be investigated as the current 1MW threshold substantially limits demand side access and competition.

We strongly support updates to the NEMDE that would facilitate smaller aggregated loads bidding into the market and urge the NEM Review Panel to include this recommendation as part of its final report to energy ministers.

3) Enable independent aggregators to participate in the spot market as Voluntary Scheduled Resource Providers via an update to the Flexible Trading Relationship rule.

The IPRR framework as set out limits the role of aggregator to retailers, particularly in relation to the orchestration of residential CER. This is because small customers must retain a singular Financially Responsible Market Participant (FRMP) which is also the retailer in the case of small loads. There is no opportunity for small customers to contract an independent aggregator to manage their flexible resources. This may not always lead to the best outcome for the energy system, or consumers.

As retailers are generally not exposed to the spot market due to their hedging arrangements, when providing the services of an aggregator (for example via a VPP) they understandably tend to prioritise using consumers' demand-side resources to manage their own portfolio, which is not necessarily always aligned with system needs. Independent aggregators, in contrast, are incentivised through

[4] Under the Federal Energy Regulatory Commission Order 2022.

[5] Kuiper and McConnell, 2025, NEM Reform: Unlocking the demand side in future energy markets, https://www.eec.org.au/news/eec-news/article/media-release-experts-find-reform-required-to-unlock-the-demand-side-in-future-energy-markets-

[6] Ibid.

exposure to high spot price volatility to maximise the value of wholesale demand response – both for participating energy users and the wider market.

Expanding the FTR rule would allow equivalent access for third-party aggregators and households, as is possible with large users.

4) The NEM Review Panel should support expansion of the WDRM

The EEC has long advocated for expansion of the WDRM mechanism[7]. The AEMC has recently[8] reiterated the value of the WDRM as the only market mechanism in the NEM wholesale market that facilitates demand response, that is, payment for reducing load and which allows non financially responsible market participants to participate in the electricity market.

The potential for large energy users' participation in the WDRM is several times larger than current participation, but there are problems with the design of the mechanism that are preventing it reaching its full potential. Design changes required to increase participation include:

- Allow sites with multiple connection points to participate in the WDRM - many commercial and industrial loads, with potentially large flexible loads, are served by multiple, electrically interconnected connection points and are restricted from participating in the WDRM.
- Examine ways to streamline DNSP endorsement - the EEC recommends that the AEMC examine ways streamline the process for DNSP endorsement to ensure that it does not provide a barrier to greater participation in the WDRM or the VSR mechanism to be introduced under the IPRR framework.
- Expand the WDRM to smaller loads - the WDRM is currently only available to large commercial and industrial users, excluding smaller businesses and households. While there are several reasons provided for this (including consumer protection), the EEC is confident that these issues can be resolved.
- Streamline the process for developing baseline methodologies - the EEC recommends that the process to develop new baselines should be streamlined by allowing market participants to work directly with AEMO, rather than requiring consultation.
- Review the accuracy and bias thresholds of 20% and ±4% respectively - the EEC understands that a far greater variety of loads would be able to participate if the accuracy thresholds were

[7] For example, please see the EEC's submission to the AEMC's Review of the Wholesale Demand Response Mechanism consultation – April 2025.

[8] AEMC, Review of the Wholesale Demand Response Mechanism, Draft report, 10 July 2025,

changed. In short, the 20% accuracy threshold when applied at a site level is overly restrictive. Options for improving participation would ideally involve allowing portfolios of sites to be assessed against accuracy thresholds, rather than requiring individual sites to meet the test, which is common practice in other markets.

The AEMC recently rejected consideration of many of these design changes citing implementation costs as a key factor, noting 'facilitating small customers would require significant implementation costs for the AEMO and retailers.'

The EEC encourages the NEM Review Panel to advocate for the expansion of the WDRM to increase participation and support the evolution of a 'two-sided' market.

5) **The NEM Review Panel should recommend the ECMC undertake a review of the economic framework of regulated network businesses**

Unlike supply-side infrastructure, most CER are connected to the low voltage (LV) distribution network. There is a large opportunity for demand-side resources to provide non-network solutions at the LV level. However, the current economic regulation of DNSPs favours traditional network infrastructure investment over demand-side solutions including aggregated CER.

Some DNSPs are providing an increasingly diverse set of services and value for customers by evolving their operations to achieve greater productivity, efficiency, utilisation and flexibility. However, without system-level reforms to regulation and incentives, the vast majority of DNSPs will have no commercial or regulatory driver to change their current business models.

The EEC strongly advocates for regulatory reforms to incentivise DNSPs to consider how the network can best facilitate whole of system benefits. Reforms should aim to improve network utilisation and consider other objectives. DNSPs currently have very little incentive, beyond reputational risk, to increase network utilisation. The EEC considers that changes to incentives are needed to link network utilisation to commercial returns.

Recommendation 3: Governments should focus reforms and support for CER on facilitating market participation to enable consumers to benefit from being price-responsive

EEC position: Support

The EEC supports recommendation 3A and agrees that the most pressing workstreams are those identified in the Report (particularly on interoperability standards and establishing the technical

regulatory framework for CER). The EEC also supports recommendation 3B, and notes that there is also scope to build on the foundation provided by existing state and federal incentive programs that currently target energy efficiency and distributed generation and storage, by adding new activities that support flexible-demand capable devices and participation in VPPs.

Additional recommendations are provided below.

EEC Recommendations:

1) **The NEM Review Panel should recommend that energy ministers allocate sufficient resources to accelerate updates to the Greenhouse and Energy Minimum Standards (GEMS) Act to require flexibility capability in major household appliances**

Energy ministers have already agreed that the GEMS Act should be updated to allow for mandatory demand response capabilities in key appliances, in response to a 2019 review of the GEMS Act.[9] However, progress has stalled on these reforms, partly due to a lack of resourcing and disagreements between jurisdictions on priorities.

Urgent reforms to the GEMS Act should be undertaken to embed minimum flexibility capability requirements across major appliances, including reverse cycle air conditioners, electric hot water heaters, and potentially pool pumps.

2) **The NEM Review Panel should recommend that energy ministers consider options for coordinating GEMS and CER regulatory frameworks**

The EEC has identified that better coordination is needed between GEMS Act reforms to incorporate flexibility capability and the establishment of a new CER technical regulatory framework as part of the CER Roadmap. While each regulatory function is to some extent distinct, there are particular appliances that will be affected by both regimes (e.g. air conditioners) and potential opportunities for regulatory streamlining. A spectrum of options exists for better coordination and energy ministers should explore options while in the process of designing a new regulatory regime for CER connectivity.

[9] Australian Government Department of Environment and Energy, 2019, The Independent Review of the GEMS Act 2012 Final Report, https://www.energyrating.gov.au/sites/default/files/2022-12/gems-review-final-report-revised.pdf

Recommendation 6: Energy ministers should establish an always-on market making obligation (MMO) in the National Electricity Law/National Electricity Rules (NEL/NER) for a small number of key derivative contracts in each NEM region, with contract types determined through a co-design process with the AER and industry

EEC Response: Conditional support

The EEC supports increasing competition through improved liquidity, transparency and access to derivatives markets to enable smaller retailers, businesses and investors hedge efficiently, using co-designed contracts.

However, if contract structures evolve without explicitly considering the needs and characteristics of demand-side resources, these resources risk being left out of contracting markets which limits their ability to manage price risk and weakens their business case.

EEC Recommendations

1) **Develop standardised forward products or exchange-traded hedges that work for flexible demand aggregators and the demand side more broadly.**

To ensure that the demand-side is represented in contract design, a range of demand-side participants must be involved in the process. Please also see the EEC response to Recommendation 8 in relation to contract design.

2) **Ensure the correct entities are responsible for leading on contract design.**

EEC members have questioned the suitability of the AER leading on the co-design of these contracts. The AER should be involved in these discussions as it will be concerned with how the derivative markets are supporting competition and efficient outcomes in the NEM, but as a body, but it should maintain independent regulatory oversight on performance post implementation, rather than having a leading or facilitatory role in policy and contract design.

Recommendation 8: Energy ministers should establish an ESEM within the National Electricity Law (NEL) to facilitate investment in the NEM

EEC position: Conditional support

The structure of the ESEM implicitly favours supply-side, utility-scale, wholesale market assets and fails to accommodate the distributed and short horizon nature of demand-side investments. It does not relate to the realities of investing in demand-side resources, which are fundamentally different in their characteristics, value drivers and financing needs, as set out below[10]:

- Demand-side investments are often self-hedging: they provide value by reducing exposure to high retail prices, enhancing resilience, or maximising onsite generation not by earning revenue in the wholesale market (for example, behind-the-meter batteries)
- Demand-side resources are typically financed over shorter timeframes, often aligned with retail contracts or customer investment cycles, and are operated to meet customer preferences rather than to maximise spot market returns.
- Smaller energy providers and distributed energy resources often cannot commit to or readily access long-term contracts.
- Demand-side resources are often aggerated and operate as a portfolio of assets.

EEC recommendations

1) **Create contracts suitable for a portfolio of assets.**

Aggregation of a portfolio of smaller demand-side resources which move in and out of a pool of assets depending on a consumer's requirements can provide significant value to the energy system. Contracts written on a portfolio basis would enable the entities orchestrating these resources access the ESEM but could also assist other market participants who could create portfolios of a mix of generation (such and wind and solar) and flexible assets.

2) **Create a firming instrument that addresses a limited number of hours in the year.**

Including a cap of the number of hours of operation required would enable participants who need to manage uncertainty for their customers in relation to their operation to access the ESEM.

[10] Kuiper and McConnell, 2025, NEM Reform: Unlocking the demand side in future energy markets, https://www.eec.org.au/news/eec-news/article/media-release-experts-find-reform-required-to-unlock-the-demand-side-in-future-energy-markets-

3) **Provide clarity on the governance arrangements for the ESEM**

The governance of the entity must be independent and transparent. There should be a clear separation of the role of administering the ESEM, and the strategic role of planning the size and types of contracts required (bulk, firming and shaping).

4) **Build in robust mechanisms for reviewing ESEM contracts.**

The energy market is in a state of rapid change and the ESEM needs to build in flexibility to keep up with the rate of innovation in technology and business models which should feed through to derivative markets.

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