ENERGY CONSUMERS AUSTRALIA

Submission to the Wholesale Demand Response Mechanism Review

Submission to the Australian Energy Market Commission

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Summary of recommendations

Energy Consumers Australia (ECA) welcomes the AEMC's Review into the Wholesale Demand Response Mechanism (WDRM) and generally supports the continuation of the WDRM given its potential to reduce electricity prices for all consumers. ECA has the following key recommendations for the Review, summarised from our submission.

Recommendation	Page details
The Review should consider that having demand response competing directly with peaking generation directly through the WDRM provides consumer benefits that are not fully achieved by the RERT or retailer flexibility products in isolation WDRM provides significant benefits to both participating customers through incentives for reducing load during peak demand events and for consumers generally by reducing peak wholesale spot prices and volatility, and ultimately lower retail prices. These benefits are best achieved through demand response directly participating in the wholesale market in addition to other mechanisms such as the RERT and retailer flexibility products.	3
The Review should revise the eligibility criteria for participation in the WDRM to ensure all cost-effective demand response can participate This includes, but is not limited to, customer size, number of connection points, and baselining requirements.	4
The Review should investigate how residential and small business load could participate in the WDRM Residential, small business, and small commercial and industrial customers have little incentive to reduce their load during periods of peak demand, which is a missed opportunity. The Review should examine how aggregated small customer demand response could participate in the WDRM to maximise value for all consumers.	5
The Review should investigate whether the WDRM has incentivised retailers to offer demand response products While incentivising retailers to develop their own demand response products is valuable, the interests of consumers are better served by demand response provided by a specialist demand response provider.	6
The move to a two-sided market does not negate the need for the WDRM A two-sided market should allow demand response to compete against supply as a way to meet energy needs.	6
The assessment criteria are broadly appropriate but should include emissions reduction	7
The Review should explore whether the WDRM could be well suited to enabling two-way demand response The WDRM could also provide an opportunity for participants to receive value for increasing their demand during minimum system load and minimum operational demand events.	7
The Review should consider that the WDRM needs certainty over its future to increase participation It seems likely that uncertainty about the future of the WDRM has contributed to lower than expected participation.	7

Introduction

ECA thanks the AEMC for welcoming views on the WDRM Review. ECA is the national voice for households and small business energy consumers. We advocate for an energy transition that benefits all Australians and provides opportunities for every household and small business to participate.

ECA believes that the WDRM, which commenced in October 2021, helps to bring down electricity costs for all consumers by reducing demand during periods of high wholesale prices, which results in the wholesale spot price being lower than it otherwise would be. For residential and small business consumers who are almost always experiencing electricity prices indirectly through a tariff from a retailer, this translates to lower energy bills through reduced retailer cost passthroughs due to lower average prices and less volatility in the wholesale market.

Despite the potential of the WDRM it has had relatively little uptake, with customers across two demand response providers (Enel X and VIOTAS) providing 103 MWh of demand response in Q4 2024, driven mostly by high-priced volatility events in New South Wales. This is down from 182 MWh in Q3 2024, but up from 1 MWh in Q4 2023.[1] As of June 2024, there is 63 MW of demand response capacity registered,[2] which is around 0.1% of total capacity in the NEM.[3]

The ratio of registered demand response capacity to total capacity in the NEM is extremely low compared to other markets. Demand response capacity in the California ISO market was 2.6%, or 1,400 MW, of the total system capacity over the summer of 2024.[4] In 2022 South Korea's demand response markets had around 4.9 GW of registered capacity,[5] around 3.6% of total system capacity.[6,7] ECA believes that increased certainty and targeted changes to the WDRM could increase uptake and result in more benefits to all consumers.

ECA supported the introduction of the WDRM[8] when the rule change request was introduced in 2018.[9] We also advocated for the inclusion of aggregated residential and small business demand, which did not appear in the final rule.[10] ECA believes that the WDRM results in benefits for all consumers regardless, but also that there is a missed opportunity by not allowing aggregated residential and small business load to participate. We have noted in this submission some considerations for how residential and small business load could participate in a future version of the WDRM.

Consumers are telling us that they are interested in demand response and having their flexible load be controlled in exchange for financial benefits. When asked about using smart appliances that can be controlled to run during periods of cheaper electricity, 39% of residential consumers said they would probably or definitely use them to help lower their energy bills. Among these, 56% were happy with full automation as long as they could override it when needed. 42% of residential customers said they would be willing to reduce their energy use as much as they could during a very hot period even if they were

[1] AEMO, 2025 – Quarterly Energy Dynamics Q4 2024 p. 40
[2] AEMO, 2024 – Wholesale Demand Response Annual Report p. 3
[3] AEMO, 2024 – 2024 Integrated System Plan p. 48
[4] California ISO, 2025 – Demand response issues and performance 2024, p.3
[5] Korea Power Exchange, 2023 – November 2022 demand resource trading market status and operation information, p. 3
[6] Statista, 2024 – Installed capacity of electricity generation in South Korea from 2008 to 2022
[7] More examples of demand response participation in other jurisdictions can be found on the IEA's demand response page.
[8] ECA, 2019 – Submission to the Wholesale Demand Response Mechanism – Draft Determination
[9] PIAC, TEC, and The Australia Institute, 2018 – Wholesale demand response energy market mechanism: Rule change request
[10] AEMC, 2020 – Wholesale Demand Response Mechanism Rule Determination

not offered a financial incentive.[11] 64% of survey respondents in Queensland said they are open to having their EV charging being managed by a third party.[12]

ECA has some recommendations for the WDRM Review based on our research and first principles. In preparing for this submission, we engaged in discussions with key stakeholders, including the Justice and Equity Centre, AEMO, Enel X, and VIOTAS.

Recommendations

Demand response competing with peaking generation directly through the WDRM provides consumer benefits

The WDRM provides benefits to all electricity consumers by reducing electricity demand, and therefore the marginal wholesale cost of electricity, at times of peak demand. This directly results in cheaper electricity for all consumers exposed to the wholesale market, and indirectly for all consumers that purchase electricity through a retailer by reducing both average prices and volatility, therefore reducing the retail prices that retailers pass on to consumers, as long as retailers pass on savings.

During periods of high demand supply is typically provided by peaking power plants such as gas and diesel, which are expensive (Figure 1). The value of demand response is primarily in reducing the need for peaking generation. If providing demand response is cheaper than providing peaking generation, this results in savings for all consumers.

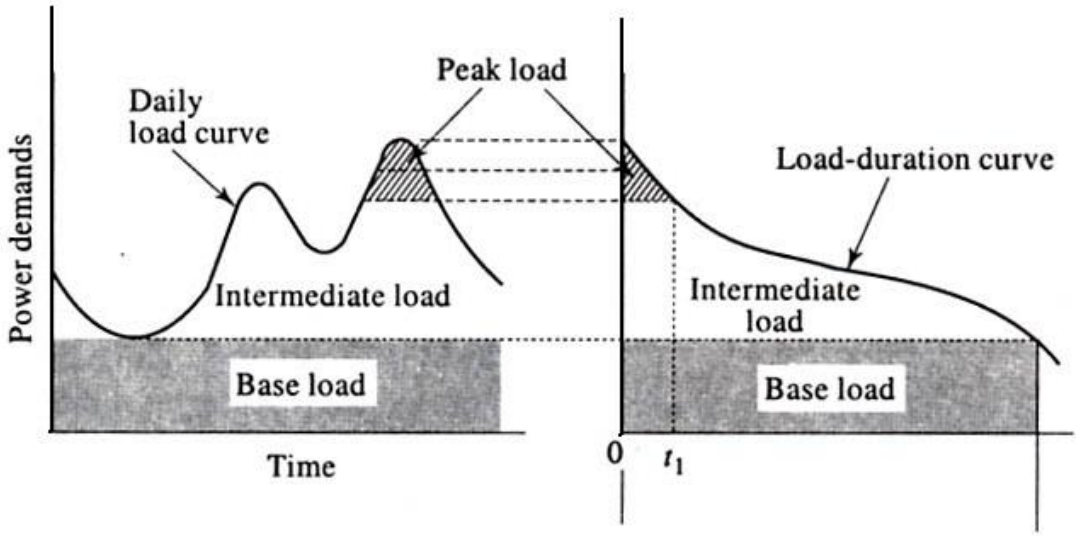

Figure 1 – A typical daily electricity load and load duration curve.[13]

In practice, the benefits of the WDRM are estimated through the estimated deadweight loss resulting from assumed price inelastic demand, which is forecasted by AEMO for every dispatch interval.[14] ECA generally supports this method.

[11] Energy Consumers Australia, 2023 – Energy Consumer Behaviour Survey – Household topline results October 2023 p. 7-8
[12] Energy Queensland Group, 2024 – Queensland Household Energy Survey 2024
[13] P. K. Nag, 2008 – Introduction: Economics of Power Generation, *Power Plant Engineering*, New Delhi: Tata McGraw-Hill Publishing Company limited p. 1–40
[14] AEMC, 2025 – Review of the Wholesale Demand Response Mechanism consultation paper p. 9-10

When considering the benefits of the WDRM in comparison to other services such as retailer flexibility products and the Reliability and Emergency Reserve Trader (RERT), AEMC should compare these on the basis of how many MWh of demand response have actually been provided in addition to nameplate capacity in MW to better reflect their ongoing value to the system.

Because the RERT is only used during critical periods, consumers' interests are best served by also having a demand response mechanism that is participating in the wholesale market in an ongoing basis and competing with peaking generation.

Retailer flexibility and demand response products are not a direct replacement to WDRM either. These products are used at least in part to hedge retailer and gentailer positions against volatile wholesale market prices and allow them to respond to changing market conditions[15] rather than maximise consumer benefits. Retailers are generally incentivised for customers to consume and pay for more energy except in these cases of hedging, which is in contrast to demand response providers who are incentivised for customers to consume less energy at a time which benefits both parties, thus maximising consumer benefits. Therefore, the WDRM results in a better outcome for demand response consumers.

The Review should revise the eligibility criteria for participation in the WDRM to ensure all cost-effective demand response can participate

ECA would like to see the Review reexamine the eligibility for participation in the WDRM; particularly customer size (covered separately below), number of connection points, and baselining requirements. The goal should be for cost-effective demand response to be able to participate, accounting for implementation costs of increasing the eligibility criteria.

Currently, customers with more than one connection point are not eligible to participate. This represents a missed opportunity, with demand response provider Enel X estimating that ~300 MW of demand response capacity could be unlocked if this criterion were removed, as many large commercial and industrial customers have multiple connection points.[16] ECA appreciates that reasons for the inclusion of this criterion may include concerns around being able to track the total demand of a customer across multiple connection points/National Meter Identifiers (NMIs) or concerns around the possibility of distortionary behaviour by shifting load between connection points to make it appear as though demand response has been provided. However, we believe that these issues could be resolved by treating the site as a 'common connection point', as pointed out in Enel X's rule change request.[17] This would require a further rule change given the restriction placed on AEMO by clause 2.3.6(m)(1)(i) of the National Electricity Rules (NER). We acknowledge that this will result in some implementation costs to AEMO, and so we ask that AEMC estimates and considers the potential costs and benefits of this change.

Ensuring that baselines are appropriate is important. If baselines are too high, consumers will pay too much, and if they're too low, there will not be sufficient incentive to participate in the WDRM. Currently, participants may apply one of four baseline methodologies to apply to their historical demand:

- All days baseline
- Business days baseline
- Non-business days baseline
- Business + non-business days composite baseline methodology

[15] AER, 2024 – State of the energy market 2024 p. 17
[16] Enel X, 2022 – Expanding eligibility under the WDRM rule change request p. 3
[17] Enel X, 2022 – Expanding eligibility under the WDRM rule change request p. 2

The ability for demand response providers and customers to develop and propose additional baseline methodologies is likely to increase participation without risking consumers paying too much for the WDRM. Three additional baseline methodologies have been proposed and are under consideration by AEMO.[18] We also understand that AEMO is investigating baselining for sites with solar PV generation and for seasonally variant load such as in the commercial sector and welcome this.[19]

A potential risk with baselining is that proactive customers would already reduce their load during peak demand events and therefore not receive any benefit for this through the WDRM as their baseline is already low. We request that AEMC consider the extent to which this is occurring in their Review and consider whether any measure should be taken as a result. Additionally, it may be worth the Review exploring whether there is benefit to having separate NMIs for flexible and passive loads so that the flexible load NMI is an accurate measure for baselining.[20]

It is worth keeping in mind that the impact of baselining errors for individual customers, which to a certain degree are inevitable, will be mitigated with additional demand response participation — unless baselining is systematically over or underestimated — due to the law of large numbers.

The Review should investigate how residential and small business load could participate in the WDRM

The vast majority of residential, small business, and small commercial and industrial customers (collectively considered 'small customers' here) do not have direct visibility of wholesale prices — they have little incentive to reduce their load during periods of peak demand, which is a missed opportunity.[21] Demand response providers being able to aggregate the load of small customers and have it participate in the WDRM would provide value to both the customers participating as well as all consumers through lower energy prices. Consumers are interested in demand response and can provide more value to the broader electricity market with their existing assets if the value stream is created and their trust is gained.

Flexible/controllable residential loads such as pool pumps, hot water heating, and smart electric vehicle (EV) charging would be particularly well suited to participation in the WDRM due to having less uncertainty than uncontrolled loads. These flexible loads currently have little to no incentive to avoid periods of high demand, which is a missed opportunity. We note that AEMC has pointed out a potential risk of distortionary consumer behaviour if small customers are paid to reduce flexible consumption relative to a baseline weighted towards recent consumption patterns, which would encourage consumption during peak periods.[22,23] We request that this Review determine the magnitude of this risk. We find it likely that demand response is sufficiently valuable to the system that the benefits of small customer participation in the WDRM outweigh the costs regardless of this risk. This is particularly true in the context of high wholesale market prices and volatility.

The fact that residential load is challenging to incorporate into the WDRM should not be a reason to not implement it without consideration of the benefits. Other jurisdictions — such as South Korea with its Energy Pause Program[24] since 2019 and France through its NEBEF mechanism since 2014 — have been able to implement aggregated residential demand response. Notably, the Energy Pause Program

[18] AEMO, 2024 – Wholesale Demand Response Annual Report p. 9-10
[19] AEMO, 2024 – EnelX Baseline Methodology Proposal p. 4
[20] This is further discussed in the context of smaller customers below.
[21] Note that customers on a time of use (TOU) tariff will have incentives to shift load from one part of the day to another, but not to reduce load during peak spot price events, which is when there is the most value to the system from their load shifting.
[22] AEMC, 2025 - Review of the Wholesale Demand Response Mechanism p. 27
[23] AEMC, 2020 – Wholesale Demand Response Mechanism rule determination p. 82-83
[24] KPX, 2020 – Power Exchange

has registered a more than fourfold increase in electricity reduction in 2022 compared to the previous year.[25] In France, the NEBEF allows any approved operator to shed load from any customer — including residential consumers — who agrees to temporarily reduce their electricity usage and is connected to the public distribution network.[26] These load shedding operations can then be traded by operators on the day-ahead and intraday markets.[27]

The system used by AEMO to manage the WDRM was designed with the initial WDRM rule in mind. Enabling aggregated small customer load to participate in the WDRM through a rule change would require changes to this system by AEMO. The WDRM Review should estimate the costs and benefits of such a change, with an emphasis on the benefits received by consumers, which would include the benefits to all consumers from cheaper electricity as well as the added benefits to participating consumers. There would be consumer protection implications that need to be considered, but this could be mitigated with a staged release where low risk demand response offerings are implemented first while consumer protection work is done to later expand to higher risk offerings.

The applicability of baselines to small customer load is a valid consideration. Baselining might be inaccurate for any individual small customer, but as an aggregated cohort it will be sufficiently accurate on average. The churn of individual customers within an aggregated cohort, which could potentially affect even aggregated baselines, is a valid factor that may need to be overcome. ECA recommends that the WDRM Review considers whether a portfolio approach to aggregating small customer demand response could be a viable option for participation in the WDRM.

Similar to the role that the Voluntarily Scheduled Resource (VSR) incentive mechanism[28] is expected to play for the Integrating price-responsive resources (IPRR) into the NEM, there may be value in an upfront additional incentive mechanism with a sunset date for aggregated residential load with relaxed baseline and other eligibility requirements to boost initial participation in aggregated small customer load. In particular, this would help demand response providers and customers get over the initial investment hurdle of participating.

The Review should investigate whether the WDRM has incentivised retailers to offer demand response products

Investigating whether the WDRM has incentivised retailers to offer more demand response products since its conception is worthwhile. However, as we've noted above, the interests of consumers are not directly aligned with the interests of retailers in the case of demand response. Demand response reduces energy consumption, and so participation in demand response directly reduces the amount of electricity that retailers sell. Consumer interests are better served by having access to demand response provided by specialist providers.

The move to a two-sided market does not negate the need for the WDRM

ECA does not believe that the move to a two-sided market — through changes such as the Unlocking CER benefits through flexible trading[29] and Integrating price-responsive resources into the NEM[30] rule changes — negates the need for the WDRM. A two-sided market should allow demand response to compete against supply as a way to meet energy needs, and as we've discussed above, there is value in

[25] IEA – Demand Response
[26] Enedis – Je souhaite participer au mécanisme NEBEF (‘*NEBEF: I wish to participate*’)
[27] Ibid.
[28] AEMC 2024 – Integrating price-responsive resources into the NEM rule determination p. 112-115
[29] AEMC, 2024 – Unlocking CER benefits through flexible trading rule determination
[30] AEMC, 2024 – Integrating price-responsive resources into the NEM rule determination

having demand response competing directly with peaking generation in the wholesale market provided by a non-retailer entity due to the better alignment of incentives.

Large energy consumers are becoming increasingly active, including through the increased uptake of behind the meter solar and battery, time of use (TOU) tariffs, or spot price exposure.[31] This does present additional challenges for producing accurate baseline measurements for these customers, but the costs of addressing these challenges should be weighed against the benefits.

The assessment criteria are broadly appropriate but should include emissions reduction

The assessment criteria proposed by AEMC for the Review are:[32]

- Principles of market efficiency
- Outcomes for consumers
- Implementation considerations
- Principles of good regulatory practice

ECA believes that these assessment criteria are appropriate. We see the primary expected benefit of the WDRM as being the reduced wholesale spot prices, which is covered by the first criterion, and note that the second criterion is primarily about outcomes for consumers participating in the WDRM. Emissions reductions associated with reducing the need for gas and diesel peaking should also be included in the assessment criteria, given its inclusion in the National Electricity Objective (NEO).[33]

The Review should explore whether the WDRM could be well suited to enabling two-way demand response

The WDRM provides an opportunity for customers to receive value for reducing their demand during periods of high demand/low supply. There is also an opportunity for customers to receive value for increasing their demand during periods of low demand/high supply such as during minimum system load (MSL), minimum operational demand, or during negative wholesale pricing, thereby reducing curtailment of renewable generation. Minimum operational demand typically occurs during shoulder months, and the forecast minimum operational demand is generally decreasing over time across the NEM, driven largely by increased rooftop solar uptake.[34]

Customers directly exposed to the wholesale market will generally be incentivised to shift load to periods of negative pricing where possible, however many commercial and industrial customers are not wholesale market exposed. As the vast majority of smaller customers do not have direct visibility of negative wholesale prices or MSL through their retailer tariff, there is a missed opportunity for these consumers to receive value by shifting load to such periods. Flexible residential loads such as pool pumps, hot water heating, and smart EV charging are particularly well suited for this. This Review should therefore explore whether the WDRM could be used to provide such an incentive.

The WDRM needs certainty to increase participation

We suspect that uncertainty about the future of the WDRM has contributed to the lower than expected participation. The upfront costs of participating in the WDRM for a large customer are non-trivial, and given the possibility of the WDRM being dismantled after this Review, it is understandable that some

[31] AEMC, 2025 - Review of the Wholesale Demand Response Mechanism p. 18
[32] AEMC, 2025 – Review of the Wholesale Demand Response Mechanism p. 19-20
[33] AEMC, 2025 – National Energy Objectives
[34] AEMO – Maximum and minimum demand

customers may choose to wait. If the Review identifies that the WDRM should remain in some form, our view is that there should be some certainty around its continuity which gives potential participants confidence to participate.

Conclusion

We thank the AEMC for the opportunity to provide feedback and make ourselves available for further discussion throughout the Review process. Overall, ECA welcomes the AEMC's Review of the WDRM. We see that the WDRM provides substantial benefits, and has untapped potential that we hope the Review will be able to unlock through targeted changes.

For any questions or comments about our submission, please contact Michael Dello-Iacovo at Michael.d@energyconsumersaustralia.com.au.

Yours sincerely,

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