Review of the Wholesale Demand Response Mechanism

Consultation

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About the EEC

The Energy Efficiency Council (EEC) is the peak body for Australia's energy management sector.

We are a membership association for businesses, universities, governments and NGOs that have come together to ensure Australia harnesses the power of efficiency, electrification and demand management to deliver a prosperous, equitable, net zero Australia with:

- People living and working in healthy, comfortable buildings;
- Businesses thriving in a decarbonised global economy; and
- An energy system delivering affordable, reliable energy to everyone.

The EEC works on behalf of its members to drive world-leading government policy, support businesses to rapidly decarbonise, and to ensure we have the skilled professionals to drive Australia's energy transformation.

The critical role of flexible demand in a net zero grid

Flexible demand plays a crucial role in the successful transition to a net zero emissions grid. The ability to shift, shape or shed electricity demand to match an increasingly variable energy supply from renewables can enhance the reliability of the grid and reduce the need for building new supply, storage and network assets.

Flexible demand resources – including technologies such as batteries, HVAC and refrigeration systems, pumps, and curtailable loads – can provide a range of system services. These resources can reduce gaps between supply and demand at critical times (particularly through demand shedding) and are highly valuable to the energy system.

Unfortunately, a two-sided market, where both the supply and demand side of the market actively participate, remains embryonic in Australia. The current energy system has been designed to ensure the efficient supply of energy and does not make the most of demand-side opportunities to reduce cost and emissions. A more a holistic view of the energy system, and a range of mechanisms, are required to adequately incentivise participation from the 'demand side'.

The consultation paper refers to recent decisions, including the CER benefits and the IPRR rule change (which will introduce the voluntary scheduled resources (VSR) mechanism), that have progressed two-sided market arrangements for the National Electricity Market (NEM).

While multiple mechanisms are starting to be implemented to encourage greater demand-side participation in the NEM, the EEC believes that the Wholesale Demand Response Mechanism (WDRM) has an ongoing, important role to play in the future energy market for the following reasons:

1. It is unique in allowing for parties *other than retailers* to aggregate demand-side resources and bid them into the NEM. This is important because there is an inherent split incentive problem preventing retailers from offering aggregated demand response services to the market.
2. It activates specific types of flexible assets (namely, load shedding) that other mechanisms currently under design (for example the VSR mechanism) are unlikely to activate. The is important from a cost perspective (avoiding investments in more expensive infrastructure such as storage) and a risk perspective (spreading the provision of grid services across different types of assets also spreads the risk).

The EEC supports continuing and expanding the WDRM so the NEM can benefit from the unique role it plays in the market. We encourage the AEMC and AEMO to support greater participation by implementing a range of design changes, but most importantly, by signalling that the WDRM is not a temporary measure and will continue to offer incentives for aggregated demand response for many years into the future.

The remainder of this submission is organised in three sections, corresponding to the main consultation topics: 1) Benefits of the WDRM; 2) Design changes to increase participation; and 3) Accuracy and suitability of baselines.

Please don't hesitate to contact me to discuss any of the content within this submission.

Thank you for the opportunity to provide feedback on the review.

Yours faithfully,

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Head of Policy

1. Benefits of the WDRM

The WDRM allows large electricity consumers and aggregators to participate directly in the NEM by offering demand reductions as a resource akin to a generator.

Benefits of the WDRM as one of the buildings blocks to a two-sided market include:

Increased market competition

The WDRM enables more participants (like large energy users or demand response aggregators) to register as a demand response service provider (DRSP) and participate in the wholesale energy market, offering more choice for consumers. It has been noted that some consumers may see value in engaging with a specialist in demand response, particularly large energy users. Without the WDRM, a retailer would be the only access point for consumers to the wholesale market (unless they have the capability to participate directly).

Supports a two-sided market

If the WDRM was not in place, unless spot exposed, customers would only be incentivised to participate in flexible demand opportunities through their retailer. A retailer incentivises customers to shift, shape or shed energy use to manage their own portfolio, not necessarily to respond to high wholesale prices. In contrast, DRSPs operating under the WDRM have a direct incentive for their customers to shed energy use in direct response to the wholesale price, providing a direct link from energy users to the wholesale price, a key criterion of a two-sided market.

Supports lower wholesale prices

The WDRM is designed to lower wholesale electricity prices by adding downward pressure during peak demand periods. Other forms of demand response are not necessarily designed to target high wholesale prices.

Enhanced Grid Reliability & Resilience

The WDRM reduces strain on the grid during high demand or supply shortages by enabling fast curtailments of demand. The WDRM is suited to reducing large amounts of load that isn't finely controllable, and which would not be suitable for inclusion in the VSR mechanism.

More effective use of the WDRM could reduce the need for emergency demand response programs (such as the Reliability and Emergency Reserve Trader), which should only be used by AEMO as a backstop.

Scheduled demand response

The WDRM requires the wholesale demand response units involved to be schedulable and dispatchable in the NEM. Without the WDRM, these units, if they are accessed at all for demand response, would most likely be used as unscheduled resources by retailers.

Some of these resources are not likely to participate in the VSR mechanism (i.e. load reductions), so unless retailers accessed them for portfolio management, or for RERT in limited circumstances, they would no longer provide the benefits set out above in the absence of the WDRM.

2. Design changes to increase participation

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 scheme that are preventing it reaching its full potential.

As stated in the consultation paper, when establishing the WDRM, the Commission considered that if there was a move to a two-sided market, this should replace the WDRM. Continuing to describe the WDRM as a temporary measure does not encourage investment from potential DRSPs. This has been a major stumbling block to increasing participation in the WDRM since its inception and an important step to increase future participation would be to provide market certainty that the WDRM will endure into the future.

Some of the most material changes that would increase participation relate to eligibility and baselines (see section 3). Some of these changes are likely to be addressed via the introduction of new baseline methods (as flagged in the consultation paper) but others are more fundamental to scheme design (e.g. the use of site, rather that portfolio level baselining).

Expanding the WDRM to allow the aggregation of smaller loads would also significantly increase participation.

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.

We understand that the reason for limiting participation to sites with a single NMI was a concern that a site could switch its entire load from the NMI registered under the WDRM to an alternative NMI and be rewarded under the WDRM (without reducing load). A solution to this would be to require sites with multiple NMIs to bid them all into the WDRM if they are to participate.

The EEC recommends the Commission prioritises the rule change request put forward by Enel X to allow sites with multiple connection points to participate in the WDRM and deliver the benefits set out above.

Examine ways to streamline DNSP endorsement

The WDRM can require approval from distributed network service providers (DNSPs) for loads to participate. DNSP endorsement is generally required when a proposed aggregation includes WDRUs at or behind a single transmission node with an aggregate maximum responsive component of 5 MW or greater.

The DNSP endorsement process is intended to help AEMO ensure that the proposed aggregation will not negatively impact the stability and security of the power system. However, it is noted this requirement does not apply to unscheduled loads. In practice this requirement leads to WDRM participants limiting aggregation to 5MW and over allocating resources over multiple DNSP regions.

The EEC recommends that the Commission 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 upcoming VSR mechanism.

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 (set out below), the EEC is confident that these issues can be resolved.

The risks for small consumers can be managed

One reason given for the exclusion of smaller loads was the lack of consumer protection between small customers and DRSPs (as opposed to retailers which are subject to the National Energy Retail Law and the associated National Energy Retail Rules). The consultation paper notes that it is likely that changes to the NERL and the NERR would be required to provide household consumers with the appropriate protections when participating in the WDRM through a DRSP.

The EEC supports the development of fit-for-purpose consumer protections. However, there are household flexible demand enabled appliances, the use of which carry no material risk to a consumer's health or wellbeing. These include assets such as pool pumps and household batteries which could be included in the WDRM. Australian Consumer Law already provides the key consumer protections people need for demand response with these loads.

Baseline methodologies for small customers can be established

The consultation paper sets out that as small customers consume energy at variable times, they are not suited to the baseline process. However, the consultation paper also sets out that some household devices are well suited to providing wholesale demand response and that pool pumps, batteries and electric vehicles are currently being used by retailers to provide demand response.

The difficultly is therefore the use of a centrally determined baseline for small loads (as a retailer will also be using a threshold to determine demand response provided). The EEC considers that AEMO is capable of providing aggregated baselines for particular types of appliances which could be used to meet accuracy thresholds for smaller loads. AEMO is currently adept at forecasting supply and demand requirements and providing a baseline for some types of appliances would arguably be as accurate as these forecasts.

The risk of distorted small customer behaviour is low

The consultation paper notes that the use of centrally determined baselines for small customers may drive inefficient behaviour as consumers could move consumption to peak periods to establish a 'baseline' (as they could be on a fixed tariff so this would make no difference to them) and then be rewarded for reducing use during this time.

The EEC questions whether the pool pump scenario provided in the paper is reasonable. While one customer with a fixed tariff may choose to run equipment at a peak time, this behaviour at an aggregate level would soon become identifiable and could be easily preventable through a robust

baseline methodology. Indeed, this is one the primary advantages of aggregation: while there will always be some energy users whose behaviours exist at the 'margins', the aggregate behaviours of hundreds or thousands of energy users tend to be very predictable.

Continue to exclude DRSPs from frequency control ancillary services (FCAS) cost recovery

The original AEMC WDRM Rule determination set aside FCAS cost recovery for WDRM resources based on advice from AEMO regarding the complexity associated with incorporating DRSPs into the FCAS cost recovery processes with the AEMC concluding the costs would outweigh the benefits.

In the original determination AEMO also suggested that wholesale demand response units (WDRUs) were unlikely to create low frequency events triggering contingency raise responses.

The EEC suggests that limited value would arise from AEMO committing resources to implementing this functionality and greater benefits would be derived from investing in changes that facilitate greater participation in the WDRM.

The system benefits delivered through the WDRM, including better visibility and dispatchability of price responsive loads and reducing regulation FCAS costs by more efficient real-time modelling of regulation FCAS requirements provide a strong case for continuing to exclude DRSPs from FCAS cost recovery.

The wholesale demand response reimbursement rate (WDRRR),

The EEC does not have specific recommendations as to how the WDRRR should be changed. However, the Commission should apply the principle that any revision to the WDRRR should aim to minimise the risk of 'wealth transfers' between DRSPs and retailers stemming from inaccurate definitions of 'peak periods' balanced by implementation complexity.

3. Accuracy and suitability of baselines

Baselining is the tool required to measure the level of demand response delivered – that is the reduction in load in response to a signal. Any version of demand response will use a baseline, whether it is centrally determined by the market operator (as in the WDRM) or using a retailer's own formula.

The consultation paper suggests that as loads become more 'active' a baseline approach to measuring demand responsiveness may become less accurate.

This EEC disagrees with this supposition. As customers become more active, baselines can be developed that take into account this more 'active' energy use behaviour in aggregate – which as noted earlier, is far more predictable than at the individual level. The EEC considers that AEMO is capable of developing robust baseline methodologies that factor in the changing nature of demand as loads become more active and that there are numerous successful international examples to draw from.

In short, baselining will remain an appropriate way to measure and reward demand response, even as energy users become more 'active'.

Site-level accuracy thresholds are restricting participation

The consultation paper suggests that the accuracy and bias thresholds of 20% and ±4% respectively, are suitable for a variety of load types to participate in the WDRM.

However, while the bias threshold does not appear to pose any major barriers, the EEC understands that a far greater variety of loads would be able to participate if the accuracy thresholds were changed. In short, the 20% accuracy threshold when applied *at a site level* is overly restrictive.

In other jurisdictions, a 20% threshold is commonly applied at a *portfolio* level. This means that while an individual site may not meet the threshold, the aggregate impact of the sites in the portfolio results in the threshold being met.

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 EEC notes that a portfolio threshold approach would require a new method to calculate the retailer reimbursement rate.

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. The current framework puts the onus on the end-user to invest significant resources with low probability of successfully finding a path for participation.

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