Locked Bag 14051
Melbourne City Mail Centre
Victoria 8001 Australia
T: 1300 360 795
www.ausnetservices.com.au

15 January 2019

Ms Anne Pearson
Chief Executive
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Dear Ms Pearson

Response to Australian Energy Market Commission (AEMC) Consultation Paper (15 November 2018) - ERC0247

The rule change requests respond to the recommendation from the Commission's Reliability Frameworks Review, for integration of more demand response in the wholesale market. It recommended, amongst other reforms, enabling demand response aggregators and providers to be recognised on equal footing with generators in the wholesale market and so offer wholesale demand response transparently into the market.

AusNet Services supports the effective participation of demand response in the NEM, and we are accordingly pleased to have the opportunity to provide a response to the Commission's Consultation Paper exploring rule change request options and other options for enhancement of wholesale market participation. In preparing this submission we have consulted with commercial demand response providers to better understand how demand response can be efficiently provided.

We note that AusNet Services applies a cost reflective tariff, including a critical peak price, since 2010-11 for its largest commercial and industrial customers (greater than 160MWhr per annum). A high proportion of the 1,800 (approximate) customers respond when a peak pricing day is called, with very significant reductions to their demand. The tariff demonstrates that demand side pricing can be effective.

Close consideration to the inclusion of network services in the demand response framework is necessary. Distributed energy resources are expected to play a large role in the provision of demand response services. These resources will be in a prime position to assist networks with locational network constraint issues, likely to be driven by capacity limitations or power quality issues. We recommend that any proposed mechanism consider the impacts of load switching on networks and the application of operating limits to demand response that are similar to AEMO's application of ramp up and ramp down limits to registered generators and market customers.

AusNet Services supports the AEMC's proposed assessment framework. In addition, we have suggested some complementary guiding principles. These are outlined in our more detailed comments, refer the Attachment.

Since demand response already does occur in the wholesale market, and major shortcomings are lack of information transparency for participants, our conclusion is that a staged implementation plan for a demand response mechanism would be preferable. This would allow the AEMC to gather and use learnings to develop a non-distortionary, transparent, robust and efficient mechanism. The plan could incorporate:

- An initial stage aimed at developing a demand response register, as proposed by the Australian Energy Council. This provides a relatively low-cost opportunity to gather information on the availability of demand response services. The attachment identifies information that could be included in the register in the Attachment;

- A second stage aimed at implementing a separate demand response market, which appropriately considers network support service needs.

The Attachment provides a more detailed response to the questions posed by the AEMC in its consultation paper.

We would be pleased to respond to any queries regarding our submission and look forward to participation in the subsequent phases of the Commission's work.

Sincerely,

Kelvin Gebert
Manager Regulatory Frameworks

Attachment – Detailed Response

This attachment focuses on proposing key guiding principles for the development of a Wholesale Demand Response Mechanism and a staged process, as well as responding to some of the issues raised in the AEMC's consultation paper.

1. Guiding Principles for a Demand Response Mechanism

The following guiding principles are important for the design of a demand response mechanism, and complement the assessment framework proposed by the AEMC.

1. Transparency in the marketplace
    a. All participants in the broader demand response marketplace should have affordable and timely access to available market data where that facilitates the accurate and efficient settlement of demand response transactions.
    b. Demand response transactions rewarded by the market should be transparent to DNSPs and customers.
2. Resilient framework - technology neutral and adaptable
    a. Any technical requirements to register and participate in the marketplace should allow for a diverse range of device capabilities. Flexibility in this regard will increase the demand response market size and value, and bring forward market development.
    b. Any scheme should offer appropriate incentives and flexibility to innovators and encourage them to create novel consumer offerings.
3. Administrative and implementation costs
    a. Market and registration thresholds should be considered on a cost benefit basis, noting the penetration of different types of demand response and existing supply side thresholds already in place.
    b. Investment in demand response mechanisms should be proportionate to the opportunity for demand response and a staged approach will help achieve this.
4. Non-distortionary – efficient and robust market design
    a. The design of any market mechanism should balance complexity and efficiency. Higher levels of complexity risk higher implementation and compliance costs.
    b. Any proposal should consider how more value may be captured from any existing automated load systems.
    c. The early stages of implementation of any scheme should allow for later adaptation, particularly within the context of wholesale settlement.
    d. Market design should be cognisant of the impacts on competition in associated markets, for example, the electricity retail market.

2. Adopting a staged approach to the implementation of a Demand Response Mechanism

We believe a staged approach could be adopted in implementing a demand response mechanism. This will allow the gathering of demand response information, initially at low cost, to ensure that informed decisions can be made about:

- The types of demand response that should be included in the mechanism, and the technical characteristics and compliance requirements that should apply to different types of demand response services
- The inclusion of services for distribution networks, and the flexibility that can be provided by demand response, for example allowing for an increase and decrease in demand
- The extent of the systems required to increase the visibility of, and coordinate, demand response.

Our suggested approach includes the following steps:

1. Initially, gather information on demand response via a Demand Response Register, as proposed by the Australian Energy Council, to understand the penetration, location, types and behaviours of demand response available across the NEM.

   Information to be captured by the register should include:
   a. The dispatchability, response time, ramp rates, energy or duration limits and general ability of a demand response device or fleet to meet the technical requirements important to AEMO and NSPs.
   b. The inherent reliability of a demand response system, fleet or device to provide an agreed service. This should consider all devices from residential to commercial and industrial customers.
   c. The contract relationships including the contracting parties, their market registrations, services provided and selected settlement mechanism.

2. Specify the services that can be delivered by demand response, and a baseline methodology for predictable and controllable loads (likely to be Commercial, Industrial and Small to Medium Enterprise).
3. Augment this market to include residential loads, and define the requirements for providers of frequency control ancillary services via demand response.
4. Identify options, and quantify the cost, to incorporate the demand response market as part of the overall co-optimisation process within the NEM. The aim here would be to minimise the amount of changes required to existing NEM and retail systems.

3. Areas of focus for consultation paper

3.1. Demand response participation – classifications and compliance requirements

Demand response appetite appears to be strong amongst customers, based on our experience with current demand response programs led by AusNet Services. We also have a 20 MW commercial and industrial demand response portfolio associated with our cost reflective critical peak tariffs, and we have recently demonstrated a residential demand response of 30% across 700 participating customers.

We support the need for reform, given our experience with customer-elected demand response. All types of demand side participation should be provided for – scheduled, semi-scheduled and non-scheduled. Importantly:

- Participation should allow for decreases and increases in demand, depending on the nature of the issue we are aiming to address.

  This would also apply for operational imbalances in supply and demand within the wholesale market, potentially driven by intermittent generation.
- Where practical, demand response services should be treated similarly to generation services. Thresholds and criteria that apply to the classification and registration of generation services should also be applied to demand response.

  This would include the ability for demand response services to be classified as scheduled, semi-scheduled or non-scheduled depending on:
  - the type of services able to be provided
  - monitoring and control systems available
  - the amount of response (MW) available to the market, and
  - the amount of energy (MWh) expected to be offset in the market annually.

Demand response compliance requirements should have a common logical basis to that of generators.

3.2. Incorporating embedded generation and storage

Generation from embedded generators and storage can have the impact of either decreasing load through behind-the-meter supply or increasing generation (export from site). Given the equivalence of these outcomes, we believe the proposed mechanism should be designed to accommodate embedded generation and storage and coordinate with rules covering Small Generation Aggregation.

3.3. Baselines

In principle, risk should be allocated to the party best able to manage that risk. However, there are two major related baseline risks - baseline estimation uncertainty and demand response dispatch uncertainty. Statistically, it is difficult to estimate these quantities accurately and independently. Additionally, there are strong incentives for retailers and aggregators to exploit this uncertainty and game any wholesale demand response mechanism. In practice, this means that the issue of baseline risk allocation and the design of wholesale demand response incentives cannot be separated. By contrast, standard load and generation is measured precisely by a meter and there is little room for gaming.

Given this complexity, careful thought must be given to the incentive compatibility of any wholesale demand response mechanism and the statistical uncertainty inherent to baseline estimation and demand response dispatch. Again, the ideal design may vary with scale or technology and determining this would benefit from the real life information captured in the proposed demand response register.

Gaming and bias could undermine the intent and efficacy of any wholesale demand response mechanism. In a mandatory wholesale demand response mechanism, gaming and bias may also result in protracted and repeated complaints, inquires and potentially litigation. This cost should be considered in any consideration of a mandatory wholesale demand response mechanism.

Designing against bias and gaming is immensely important to the efficiency and effectiveness of the reform. When customers receive a benefit even though they have not altered their operation in response to a market signal (for example, during a public holiday or scheduled maintenance shutdown) it dilutes the value of demand response as a dispatchable wholesale resource.

Even without gaming, the estimation of baselines is not trivial. Baseline estimation typically relies on estimating baseline model parameters by training the model on historic interval data. The model would ideally include relevant variables such as temperature, time of day and day of week. However, exactly what variables are relevant would change from site to site. Variable selection and model training can no doubt be automated, however achieving and maintaining this accurately and at scale will be costly.

3.4. Separate Wholesale Demand Response Market

We agree that costs should be recovered across all Market Participants. We also believe the issue of speed to market, whilst important, is not as important as implementing a separate market that:

- Minimises the requirement to make costly wholesale changes to current NEM and retail systems, whilst still demonstrating the applicability of demand response in the NEM,
- which appropriately considers network support service needs.

As described earlier, this separate market could be implemented as part of a staged process. The net impact of wholesale demand response should be a net reduction in the wholesale cost of energy.

3.5. Wholesale Demand Response Register

As indicated earlier, we support the use of a demand response register to gather information about the penetration, location, and types of demand response available across the NEM. This would provide a greater depth of data for demand response providers and/or AEMO to build a representative baseline methodology for different types of customers.

This could be accompanied by standardised contracts that provide increased transparency and consistency of arrangements across retailers. It would also provide continuity for customers if they switch retailers.

As the AEMC has highlighted, the ability for customers to opt for wholesale spot price exposure is currently being activated by retailers according to customer needs.