AEMC
Australian Energy Market Commission
Level 15, 60 Castlereagh Street Sydney NSW 2000
GPO Box 2603 Sydney NSW 2001
T 02 8296 7800
E aemc@aemc.gov.au ABN 49 236 270 144
www.aemc.gov.au

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Mr James Hay
Deputy Secretary, Energy, Climate Change & Sustainability
Department of Planning, Industry and Environment
4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150

By email: energysecurity@environment.nsw.gov.au

Dear Mr Hay

AEMC submission on the NSW Energy Security Target and Safeguard Consultation paper

The Australian Energy Market Commission (AEMC or Commission) welcomes the opportunity to make a submission on the consultation paper regarding the NSW Energy Security Target and Safeguard.

The AEMC is the rule maker for Australian electricity and gas markets. We make and amend the National Electricity Rules, National Gas Rules and National Energy Retail Rules. We also provide market development advice to governments.

Our decision making is driven by the national energy objectives. We seek to promote efficient investment in energy services as well as their efficient operation and use. We do this with respect to price, quality, safety, reliability and security of supply in the long-term interests of energy consumers. Our submission addresses the consultation paper with this objective in mind.

Our submission provides input on the peak demand reduction scheme based on our recent work on the wholesale demand response mechanism and two-sided markets.

We note that the peak demand reduction scheme will place an obligation on liable entities to purchase and surrender peak demand reduction certificates in order to reward the deployment of dependable peak demand reduction capacity.

The AEMC agrees that the electricity system is becoming more dynamic. The role of consumers, and importantly the technology to enable consumer participation, is changing. Technology has evolved and become cheaper, such that more consumers want to participate directly in the energy market and are equipped to do so. There is capability and significant interest now to accommodate consumers who want to engage and participate.

As the sector continues to transform, there is increasing variability, not only on the supply side (with more weather-dependent, renewable generation), but also on the demand side. Increases in intermittent generation and the uptake of batteries and electric vehicles will make forecasting the demand side increasingly challenging, without more information being provided by the demand side.

The Commission considers that there need to be changes in the wholesale market to provide greater scope for consumers to participate in wholesale demand response.

Wholesale demand response mechanism

On 11 June 2020, the Commission made a final rule to introduce a wholesale demand response mechanism. From October 2021, large consumers will be able to sell demand response in the wholesale market either directly or through specialist aggregators for the first time. This rule represents an important reform for the NEM. It introduces a low-cost mechanism for transparently engaging the demand side in central dispatch.

The mechanism to facilitate wholesale demand response will unlock underutilised demand response and provide more opportunities for consumers to participate in the wholesale market by offering their demand reductions in as a supply resource. Wholesale demand response will be able to compete with peaking generation in times of tight supply and demand balance.

In electricity markets, active demand side participation promotes efficient consumption of electricity. Having more consumers participate in the market and respond to market price signals means consumption will better reflect consumer preferences. In the long-run, a greater level of demand side participation will improve the efficiency of the dispatch process by delivering the lowest combination of resources to achieve the supply-demand balance.

The peak demand reduction scheme could complement the wholesale demand response mechanism and provide additional incentives to consumers and demand response service providers (DRSPs) to provide wholesale demand response, as it allows for DRSP participants to also be rewarded under the scheme.

Two-sided markets

As part of our role on the Energy Security Board, the AEMC is working on a two-sided market design. A two-sided market is characterised by the active participation of the supply and demand side in dispatch and price setting. The Commission considers that moving to a two-sided market will assist the NEM in effectively evolving and transitioning to the future power sector, and that will provide enduring consumer benefits.

The Commission notes there is significant stakeholder interest in promoting demand response opportunities for residential customers, and facilitating small customer demand side participation would benefit consumers and the NEM. In seeking to engage small customer demand side participation and share the benefits with all consumers, care needs to be taken in selecting the right framework.

The Commission considers that the best approach is to develop a two-sided market, which is more suited to small customer involvement. The growing number of consumers equipped to actively participate in the market will eventually lead to the market outgrowing the wholesale demand response mechanism. In the meantime, the mechanism will be important for enabling a greater level of demand side participation in the wholesale market.

On 14 November 2019, the Commission published a paper on the impacts of digitalisation on the NEM. This paper sets out some thinking on digitalisation and the potential to move to a two-sided market. The ESB (which includes the AEMC) was tasked with providing COAG Energy Council with advice on a two-sided market at the Energy Council meeting on 20 March 2020. The ESB published a paper titled 'Moving to a two-sided market' on 20 April 2020. This paper set out a high-level overview of what a two-sided market could look like and its key foundations.

Design issues for the peak demand reduction scheme

1. *Target and certificate design*

There are a number of potential benefits to consumers from reducing peak demand, as set out in the consultation paper. We note that the maximum demand that occurs a few times a year, is a key driver of costs for consumers (through wholesale and networks components of bills), which can have different characteristics to the peak demand that occurs a couple of times per day.

As noted in the consultation paper, it is challenging to create a homogenous tradeable certificate for peak demand response that takes account of energy, timing and availability. This challenge is added to when considering the differences between peak demand savings, peak demand response and peak demand shifting.

We also note the consultation paper emphasises the role of the scheme focuses on rewarding the deployment of dependable peak demand reduction capacity, rather than the peak demand reduction delivered.

It will be important to focus on the primary objective of the scheme in designing the scheme's certificate and managing the risk of non-delivery. Where there are multiple objectives, multiple types of certificates could be considered.

For example, where peak demand response is the focus this is challenging to estimate in an upfront way; it may be appropriate to have greater emphasis on after the event verification with rewards linked to delivery at the peak time. A further payment (e.g. activation payment) may be required to ensure the demand reduction is delivered at the right time. This may be of less concern in rewarding general peak savings, where an approach that is more aligned to the current NSW energy savings scheme may be more appropriate.

Further where there is a specific target to reduce peak (or maximum) demand at a certain time in a certain area a targeted approach to procure demand reductions from large providers or aggregators is worthy of consideration as an alternative to a broad-based scheme.

It is important for the peak demand reduction scheme to work in a complementary way with the wholesale demand response mechanism and the dispatch process in relation to demand response; for example, by supporting capacity that is capable of meeting the requirements of NEM processes.

2. *Additionality*

Maintaining additionality is an important challenge in demand reduction and other certificate-based policy mechanisms. This was an important factor in the wholesale demand response mechanism design. Demand response should only be rewarded when it is additional to the activities that that load was already going to undertake. That is, consumers should not pay for a demand reduction that was already going to occur.

As noted in the consultation paper, the peak demand reduction scheme can contribute to additional demand reductions by providing incentives to capacity that would not be available based on incentives in the NEM alone. We also note that the detailed design will define eligibility rules to ensure non-duplication of incentives and we would be happy to provide further input at that stage.

In developing the wholesale demand response mechanism, the Commission considered it important that if a customer was already going to reduce its consumption, and paying that customer more would not provide additional demand response, this payment should not occur. For example, additionality provisions should prevent:

- a payment being made to a factory that had already decided to shut down for maintenance
- a payment being made to a customer if that customer had already decided to respond to a peak network event and a payment from the wholesale market would not elicit any more wholesale demand response.

3. *Example of encouraging inefficient behaviour*

A further challenge is to avoid encouraging inefficient behaviour through scheme design. If small customers were being paid for peak demand reduction capacity relative to a baseline weighted towards recent consumption patterns, it is possible it would encourage consumption during peak periods.

For example, an aggregator could sign up a number of customers with pool pumps that normally clean pools in the middle of the day. Because the customers do not mind what time the pool pumps are operated (both in terms of impact on the pool and because the retail rate is flat), the aggregator is given full control in exchange for the providing the largest peak demand reduction. The aggregator would be encouraged to move the consumption of the pool pumps out of the middle of the day and into peak periods. The aggregator may do so if there is an opportunity to demonstrate peak demand reduction capacity through the ability to switch off pool pumps operating in the peak.

Therefore, in this example, inefficient behaviour could be encouraged as:

- the pool pumps are no longer being operated during the day when solar output is its greatest

- the pool pumps consume electricity in the evening which increases system demand in the wholesale market and pushes up wholesale prices at this time
- when peak demand reductions are funded the pool pumps will be turned off and will consume overnight or in the middle of the day.

In the end, consumers could pay to turn off pool pumps that would have never been on in that peak period in the first place.

This example highlights the need for the detailed design to careful consider how to avoid non-additional savings. We note the NSW Government's experience in this area through the design and operation of the energy savings scheme.

4. Cost recovery

We note that under allocating the target, the consultation paper lists liability based on total liable electricity purchases less exemptions (option 2) as the preferred option. This approach may disadvantage some retailers that primarily serve commercial and industrial customers that have high consumption but do not contribute significantly to peak demand (though this may be affected by exemptions). More consideration could be given to the feasibility of basing liability on the contribution to peak demand. As the desired behaviour is for demand to moved away from peak periods, this would provide a clearer incentive for liable parties. In the case of electricity retailers, this may allow them to pass on more benefits to customers. For example, if customers that consume less during peak periods are lower cost for a retailer to serve then retailers may be able to pass on cost savings to these customers, separate to any payments associated with the certificate scheme. This in turn could encourage customers to consume outside of peak periods.

5. Consumer protections

We agree that it will be important to protect consumer rights where consumers participate or are impacted by the scheme and note that the consultation paper indicates the policy will adopt the principles the AEMC is developing in its consumer protections review. The AEMC will publish further information on this review on 30 June 2020. The AEMC will continue work in this area and we would be happy to provide further input to the detailed design.

We would be happy to provide more information on any matters that may assist the NSW Government's policy development. Please do not hesitate to contact me directly on [redacted]

Yours sincerely

Benn Barr
Chief Executive