COAG
Energy Council
Senior Committee
of Officials

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Dear Mr Pierce

The COAG Energy Council has agreed to submit a rule change request for the establishment of a Demand Response Mechanism within the National Electricity Market, and the unbundling of ancillary services from the purchase of energy.

This rule change request has been developed based on recommendations contained in the AEMC Power of Choice Review, a detailed design undertaken by the Australian Energy Market Operator and a cost benefit analysis commissioned by the Energy Council which was considered by Ministers at their December 2014 meeting.

The rule change proposal is attached for your consideration.

Sincerely

John Ryan
Chair
COAG Energy Council Senior Committee of Officials
25 March 15

Secretariat
GPO Box 9839
Canberra ACT 2601
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Demand Response Mechanism

Rule Change Request

March 2015

1. Name and address of rule change request proponent

COAG Energy Council

Senior Committee of Officials

Secretariat

GPO Box 9839

Canberra ACT 2601

2. Description of the proposed rule change

The proposed rule would create a demand response mechanism (DRM) in the National Electricity Market (NEM) and unbundle the provision of ancillary services from the sale of electricity.

The proposed rule would create a new class of market participant, a demand response aggregator (DRA), who will facilitate large energy users to act as though they were non-scheduled generators in the wholesale market, and receive reimbursement for reducing energy demand in response to high price events

The proposed rule would also allow a DRA to provide frequency control ancillary services to the wholesale market, in accordance with the existing Rules on ancillary services.

This will effectively unbundle the provision of ancillary services and demand response services from the sale of electricity, as the purchase of electricity in the wholesale market will not be required for a DRA to offer services to their clients.

Under the DRM, for a demand response event, the retailer would bill the customer on their baseline consumption. In the wholesale market settlement, generators would be paid for energy generated, and the DRA would be paid for the demand response energy. The DRA would pay the customer for their demand reduction based on commercial arrangements negotiated between the two parties.

To support the settlement process, retailers would be required to enable access to the DRM mechanism. To minimise costs, it is proposed the DRM is implemented on a voluntary basis. This will minimise the system development costs for retailers who do not offer services to large customers. For retailers with large customers, it is proposed they would make a commercial decision on whether to enable the DRM for their customers. To minimise costs, it is also envisaged that development and implementation of systems to support the DRM could also be staged to enable

businesses to use manual systems initially and implement more sophisticated systems when other major upgrades are occurring.

3. Background to the rule change request

In 2012, the Australian Energy Market Commission (AEMC) in its Power of Choice review recommended that a DRM be developed for the wholesale market:

- to address barriers faced by energy users to participate in the wholesale market and support the competitive provision of demand response services by unbundling it from the sale and supply of electricity, and
- to treat load reduction in a similar way to generation in the wholesale market including remuneration for the amount of demand response delivered at the prevailing wholesale spot price.

In early 2013 the then Standing Council on Energy and Resources (now COAG Energy Council) requested the Australian Energy Market Operator (AEMO) to develop a detailed design and draft rule change request for the DRM and unbundling of ancillary services. AEMO developed a detailed design of the DRM, in consultation with stakeholders through a reference group. Towards the end of this process, retailers raised concerns about the potential costs, and perceived lack of benefits of a DRM due to changed market conditions.

In November 2013 AEMO wrote to the COAG Energy Council seeking guidance on whether to continue with the DRM rule change request in light of changed market conditions. Ministers agreed to further work including directing officials to undertake a cost benefit analysis of the proposed DRM. Oakley Greenwood was engaged to undertake this cost benefit analysis.

The cost benefit analysis undertaken by Oakley Greenwood indicated that while there may be limited wholesale market benefits under current market conditions due to oversupply of generation in the market, all customer groups would benefit from a DRM through a lower average wholesale price. A DRM would also provide large customers with more options to reduce their energy costs and unlock demand response which has not been offered previously. The cost benefit analysis is provided at **Attachment A.**

On this basis, the COAG Energy Council assessed there was merit in considering a DRM, based on a voluntary, staged approach, which would enable the market to offer competitive demand response services on a voluntary basis and allow the market to develop over time.

4. Nature and scope of the issues the rule change is seeking to address

The rule change is seeking to address barriers for effective demand side participation for large customers in the wholesale market, and a lack of competition in the provision of ancillary services and demand response.

The rule change is also seeking to enable demand resources to compete with supply side solutions in balancing supply and demand in the wholesale market by treating load reduction in a similar manner to generation.

This would give large customers more competitive options to reduce energy costs in response to high spot price events in the wholesale market, resulting in lower generation and network costs which would benefit all consumers.

Barriers to demand side participation in the wholesale market

Under current arrangements, if large customers want exposure to the wholesale spot price, they essentially have two options: buying directly from the wholesale market without the assistance of a retailer by becoming a registered participant themselves, or taking some degree of spot price exposure through the retail contract.

Both these options involve significant costs to monitor and manage spot price exposure and, for most customers, is not a viable option as the risks involved in pool price exposure outweigh the potential benefit. As a result, most customers are unwilling to take exposure to the spot price.

Retailers argue that most customers are happy with current arrangements, where retailers manage the risks of exposure to wholesale market volatility. They also argue that retailers can, and do, offer demand response arrangements to their customers as part of their electricity contract.

During consultation processes to develop the cost benefit analysis, large customers did however argue that current arrangements create barriers to demand response being offered by retailers, because it is not in their interests to do so. As retailers make their money from selling electricity, energy users argue they do not have many incentives to induce customers to reduce their demand. As the Major Energy Users noted in its submission

> *"Retailing is a volume driven business and retailers make money by selling energy, not by limiting its use. Further, retailers are rewarded for taking the risk for accessing energy on behalf of end users and by doing so get a reward - the greater the risk, the greater the reward. This means that retailers have an underlying need to limit DR and unless the DR delivers them a reward greater than selling energy, the retailer will not be active in this area."*[1]

Large users have reported that when DR contracts are offered, the terms are not attractive, and if they are taken up, DR is rarely called when the wholesale price is above the strike price[2]. In particular, under the current arrangements the retailer calls for the demand response, rather than the customer, making demand response an option for the retailer. Energy users state they cannot be sure when or if the

[1] Major Energy Users submission to the Oakley Greenwood CBA consultation paper.
[2] Definition of the strike price: the price at which the customer has agreed to provide demand response.

response will be called, limiting the use of DR and the willingness of customers to agree to DR contracts, especially if additional investment is needed in order to provide DR.

In the absence of competitively priced offers, customers are unlikely to respond or invest in the equipment and skills required to respond to wholesale price peaks.

Treating demand in similar way to supply in the wholesale market
The current operation of the NEM wholesale market has bias towards the supply side in setting the market price. This is because generation is dispatched based on demand, but for most customers, demand is set in the absence of any time-based wholesale price signal. This means that generation bids determine the price of electricity, without customers being given the option to change their demand in response to the likely costs of supply.

In short, demand reductions are not valued in the same way as supply. While this may be appropriate in a physical market where the commodity can be stored, in a dynamic market where supply and demand must be balanced it devalues the demand side.

The lack of options to respond to wholesale price signals limits demand side participation as customers are unable to effectively evaluate their different consumption options, including reducing demand at particular times.

This limits the ability of DR to compete with generation to offer the most efficient option to balance the market and reduce wholesale costs for all users through greater market competition and the potential for deferring investment in peak generation.

Competition in ancillary services
Ancillary services are the services used by AEMO to safely, securely and reliably manage the power system. These services maintain key technical characteristics of the system, including standards for frequency, voltage, network loading and system restart processes.

Ancillary services are currently bundled with the sale of energy, limiting competition and diversity of supply for these services to those market participants that buy and sell electricity in the wholesale market. Additionally, while it is possible to aggregate load to provide ancillary services, currently this can also only be done by a market participant who buys electricity in the wholesale market.

Most market participants do not have the capacity to effectively and efficiently offer these services to customers. As such, the provision of ancillary services in the wholesale market is currently limited to generators and those customers registered in the wholesale market with large loads that can respond quickly such as aluminium smelters and pumped hydro.

5. How the rule change request intends to address the issues identified

The proposed rule would provide for the creation of the DRM by AEMO and empower it to create the procedures, accredit baseline methodologies to be used under the DRM and manage the scheme.

The proposed DRM is outlined further below, but would be broadly based on the AEMO detailed design for the DRM, and ancillary services, as outlined in **Attachment B**.

Aspects of the AEMO detailed design which will need to be reconsidered relate to how market systems and information is provided to market participants in a voluntary and staged approach to minimise the cost to non participants. This proposal also proposes changes to the reporting requirements for the DRM and a more explicit linking of the baseline consumption methodology to the metrology procedure. These differences are outlined in more detail below.

The proposed rule would create a new class of market participant, a DRA, who could provide ancillary services under existing market arrangements, and bid demand response into the wholesale market under the DRM. The creation of the DRA role will effectively unbundle the provision of ancillary services and DR services from the sale of electricity, as the purchase of electricity in the wholesale market will not be required for a DRA.

Under the DRM:

- the retailer would bill the customer on the baseline consumption during a DR event;
- the network operator would bill on actual consumption;
- generators would be paid for energy dispatched; and
- the DRA:
    - would receive the spot price for demand reduction by their customers as compared to a baseline; and
    - would pay the customer for the value of their demand reduction based on their commercial arrangements.

As the DRM is a market based mechanism, it will provide a clear signal to participants to consider reducing demand during high peak price events. Under the AEMO design, load reduction under the DRM will be unscheduled, maintaining the flexibility of the customer to decide when to offer DR. Being unscheduled, it will allow customers to respond to short term demand peaks and ensure that load reduction is treated in a manner consistent with generation, in which there is no requirement to schedule generation with a capacity under 30MW.

The DRM would only be accessed by the DRA, and existing market participants would be required to register as a DRA in order to access the demand response

mechanism. It is envisaged any existing market participant could register to be a DRA, along with new specialist aggregators, subject to requirements for registration.

As outlined in AEMO's detailed design, the DRM would only apply to load that has been accredited and classified with AEMO as DR load by the DRA.[3] This would include requirements that the load is not a scheduled load in the NEM and classified as providing ancillary services to the NEM via another participant. Sites with generation sold into the market as a market generator or by a small generator aggregator would also not be eligible to participate. Wiring requirements will also need to be assessed to ensure load could not be shifted from one National Meter Identifier (NMI) to another, allowing end users to receive demand response payments while keeping total consumption unchanged. The load must also be able to respond at all times to any relevant DR notifications.

The NMI must also have a predictable load for which baseline energy can be accurately estimated. The baseline would be calculated according to a baseline consumption methodology approved by AEMO. The baseline consumption methodology should give a reasonably accurate estimate of what the consumption would have been in the absence of demand response. AEMO would calculate the baseline and demand response energy as part of the settlement process.

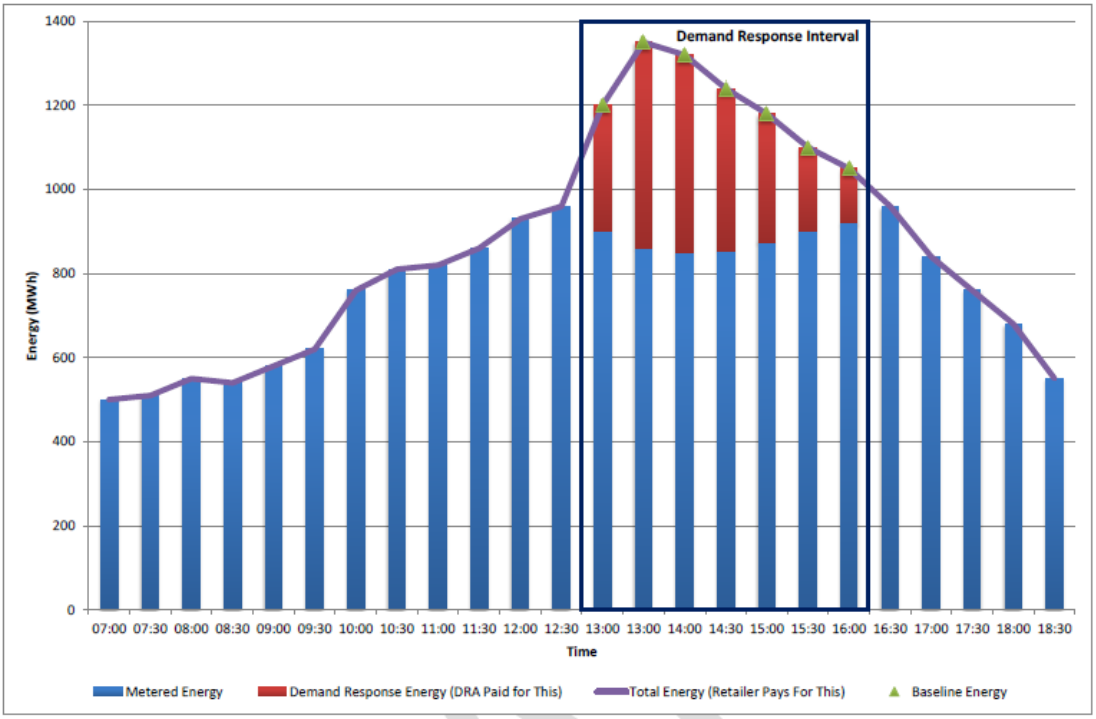
The DRA would be responsible for the DR energy, the difference between the baseline and metered energy consumption for a DR event. In the case of metered energy being above the baseline, the DRA would be liable for the energy above the baseline, which would be charged to the DRA. In this circumstance the customer that the DRA had contracted with to provide DR response (DR provider) would have failed to reduce their consumption during the DR event.

The operation of the DRM would be unscheduled. The DRA would inform AEMO of a DR event with the required form of notice, forming a Demand Response Interval, and the customer would take action to reduce demand. AEMO would inform other market participants of the DR event. Notice of a DR event may be given no more than 24 hours previously and up to the end of the trading period to which the event applies. Retrospective notice or amendments could not be made.

Under the proposed arrangements, billing would only be affected for those customers that participate in the DRM and billing would only be affected for those trading intervals where customers have provided a demand response. Similarly, settlement in the wholesale market would be unaffected for all other trading intervals where DR has not been called.

[3] AEMO (2013) Demand Response Mechanism and Ancillary Services Unbundling – Detailed Design p27-33

Illustration of the DRM



Source: AEMO detailed design.

Baseline methodology

As the DR mechanism relies on a baseline to estimate what the consumption would have been in absence of the DR, the baseline methodology is a critical part of the DRM.

As such the baseline methodology used to estimate the consumption must be robust and provide a reasonably accurate estimate of the baseline consumption. The methodology must also be transparent and relatively simple to apply, so the DRA, retailers and DR providers can use the methodology to estimate the baseline with a reasonable degree of certainty in estimating and evaluating DR opportunities. The baseline methodology must be consistent with the principles underpinning the estimation and substitution methodologies in the metrology procedure, and the metrology procedure itself.

Under the proposal, AEMO would be responsible for developing, in consultation with stakeholders, the initial approved/accredited baseline methodology for use when the DRM is first made available to customers. AEMO would also be responsible for developing the assessment criteria for alternative baseline consumption methodologies, including accuracy, bias and variability and guidance on the selection of a baseline consumption methodology if two or more baseline methodologies meet the requirements.

The DRA should select the most appropriate baseline methodology. For example, a DRA may propose that different baselines apply at one connection point in different seasons, if the particular load has seasonal characteristics. Provision should also be

made for review of the baseline methodology chosen to confirm it continues to meet the criteria.

Retailers have flagged concerns about the potential gaming of the baseline, claiming that DR providers have a strong incentive to inflate the baseline energy consumption, in order to be paid for the demand reduction. Conversely, energy users suggest that the potential for gaming is small, as to inflate the baseline would require paying higher bills for weeks or months.[4]

The two baseline methodologies proposed in the detailed design by AEMO should be used as the basis for developing the methodology. The methodologies were recommended following assessment by DNV KEMA of existing methodologies used in United States schemes against a range of key metrics such as accuracy, bias, variability, ease of explanation and administrative costs. [5] Officials believe they are considered to be robust by most stakeholders, and provide an illustration of the application of the proposed criteria. The criteria will also provide certainty for retailers.

The AEMC should however consider the risks of gaming the baseline, and any appropriate measures to minimise this risk.

Eligibility Criteria

It is proposed that large customers, as defined in the National Energy Customer Framework, would be eligible to access the DRM, subject to meeting technical and load predictability requirements.

In the Power of Choice report, the AEMC proposed that the DRM be initially offered to commercial and industrial users as they would likely have the capacity and technology to offer their demand response to the wholesale market. In its cost benefit analysis, Oakley Greenwood considered research by ClimateWorks that suggested significant potential to offer demand response exists in a relatively small number of very large customers due to the nature of their load and ability to offer load reduction in response to high wholesale spot prices.

During the consultation process on the cost benefit analysis, consumer advocacy groups and some demand side aggregators argued that the DRM should be offered to residential and small business customers to allow demand response to be aggregated and bid into the market.

While it is acknowledged that eligibility to participate in the DRM could be broadened in future, the COAG Energy Council agrees with Oakley Greenwood's assessment that limiting the DRM to large customers initially will involve lower

[4] Craig Memery, ATA , Business Spectator 13 December 2014.
http://www.businessspectator.com.au/article/2013/12/13/agl-wrong-demand-response

[5] The 'CAISO 10 of 10' methodology is recommended for the weekday method and the 'middle 2-of-4' is recommended as the best performing weekend method. Note 3 p48

transaction costs for DRAs, lower costs for the systems to be required by retailers, and higher take-up rates per dollar of program implementation costs.

The design of the scheme should not prevent lowering the threshold of the DRM to smaller customers in future. This should only be considered once the scheme is successfully implemented and it can be demonstrated through a formal rule change process that lowering the threshold will be in the long term interest of consumers.

It is noted that the definition of a large customer varies by jurisdiction, with two jurisdictions (South Australia and Tasmania) having a higher consumption threshold than the other NEM jurisdictions[6]. While this anomaly may inadvertently exclude some customers from the DRM based on their location, to minimise complexity and the need for additional system changes, it is proposed that the existing definitions are used.

Voluntary participation

Unlike in the AEMO detailed design, the COAG Energy Council is proposing the DRM is introduced in a way which supports voluntary participation by market participants.

In its cost benefit analysis, Oakley Greenwood found that due to current market conditions where generation is oversupplied, the DRM would be unlikely to generate significant economic benefits through the deferral of generation investment.[7] It did however find that increasing competition in the provision of DR services would benefit all customers through lower average wholesale prices, and provide larger customers with more options to manage their energy costs.

Under the proposed AEMO DRM design, retailers would be required to implement systems to support the settlement of the DRM for their customers, by billing on baseline energy consumption. Given a mandatory scheme could impose significant costs on retailers to develop these supporting systems, the COAG Energy Council agreed to support an approach which would support competition and enable market development but do it in a way which minimises costs for non participants.

Under a voluntary approach, it is proposed that retailers could choose whether to enable their customers to offer DR through the DRM either through becoming a DRA themselves or allowing their customers to work through another DRA. This would minimise the system development costs for retailers who do not offer services to large customers. For retailers with large customers, they could make a commercial decision on whether to support the DRM for their customers, based on the opportunity it provides such as securing market share or increasing revenues. It is expected that under this approach there would be some retailers who see a

[6] SA has an upper consumption threshold of 160MWh/year, Tasmania 150MWh , while other jurisdictions set the upper consumption threshold at 100MWh/year.

[7] Oakley Greenwood (2014) Cost benefit analysis of a possible Demand Response Mechanism

competitive advantage in enabling the DRM for their customers, and they would do it in the most efficient way possible.[8]

Under a voluntary approach, billing arrangements would only be affected for those customers who participate in the DRM. AEMO has advised that market participants' systems, at a minimum, will be required to handle the new DRA market participant role when receiving data from AEMO but no other immediate changes would be necessary for non-participants. AEMO should also be able to provide relevant information for settlement and reconciliation in way that minimises the need for major system changes, including support of manual processes for billing a DR event by retailers. This will require a review of market systems and processes outlined in AEMO's detailed design, to ensure they minimise costs for participants and non participants.

Under the proposed model retailers would have to take an all or nothing approach to enabling their customers to participate. They would either be able to accommodate any existing eligible customer's participation in the DRM, or they would not support any participation in the DRM by any of their customers. For example, retailers would not have the discretion to decline an eligible existing customer's participation (as defined by the criteria set out in the DRM procedures) if their systems enabled participation, while allowing another customer to participate.[9]

While we believe competitive pressures will ensure at least some retailers will enable the DRM, we acknowledge there is a risk, if no retailer chooses to enable the DRM for their customers, that the proposed approach will not address the existing barriers in the market.

In the rule change process, the AEMC is asked to consider these issues and consider alternative options if the proposed approach is considered unviable.[10] Alternative options would need to support greater competition in provision of demand response services for large customers, but do it a way which minimises costs for market participants.

Staged implementation

It is envisaged that the DRM would be implemented in a way which minimises costs for the development of systems to support the DRM. The AEMC is asked to consider the timing of implementation to ensure it aligns with the implementation of related market reforms and system upgrades.

[8] Oakley Greenwood considered at least one retailer would be prepared to support the DRM, as several retailers currently market themselves as being interested in offering DR opportunities to their customers. Oakley Greenwood (2014) Note 7 p16

[9] Note, these arrangements would not prevent a retailer from agreeing on commercial arrangements with their customers to provide demand response which the retailer could use themselves without the requirement to bid into the market.

[10] One option considered by Oakley Greenwood was creating a DRM retailer of last resort and auctioning the role off.

A staged approach to implementation may not require retailers to have all systems in place for the commencement of the DRM rule change. Officials understand that it is common practice to use manual workarounds for some non-standard billing arrangements. In the early stages of the DRM, a manual workaround could be a viable option for retailers to allow customers to use the DRM without having to make major changes to the retailer systems in the short term. This would also provide retailers some flexibility to schedule changes into planned system updates and allow for coordination with other rule, process and system changes to allow synergies to be captured. Under this option, AEMO would need to be able to provide the relevant information on DRM events in such a way to support manual processes.

Other ways to minimise changes to retailer systems in the short term may be to use other alternative or non-standard billing options for customers, such as direct billing for network charges by the distributor. While the direct network billing option is currently available, not all distributors may be in a position to directly bill customer for network charges.

Ancillary Services

Unbundling the provision of frequency control ancillary services (FCAS) from the sale of energy will promote more competition in providing these services and allow for a more diverse supply of ancillary services.

Compared to market participants that are currently eligible to provide ancillary services, a DRA will be able to provide specialist support to customers providing FCAS, including aggregating load. This is expected to increase the number of potential suppliers of FCAS services and offer more options to consumers, including those customers who are ineligible for the DRM by reasons of an unpredictable load, or being below the eligibility threshold[11].

As outlined in AEMO's detailed design[12], the DRA will need to comply with the existing FCAS procedures, including conditions on accrediting ancillary services load, in the same way as existing participants.

Beyond unbundling the provision of ancillary services from the purchase of energy in the wholesale market, it is not proposed to change the regulation around the provision of ancillary services. Under the proposed rule, a DRA wanting to provide ancillary services to the market would be able to do so, in accordance with the existing ancillary services procedures. The load offered must meet the technical requirements for providing ancillary services.

[11] Energy users offering ancillary loads would not be required to meet minimum annual consumption thresholds.
[12] Note 5 p33-34

5.1 Proposed changes to rules and procedures

Due to the complex nature of this rule change request, and the considerations which the AEMC will undertake to finalise the nature and design of the mechanism, a draft rule has not been provided.

It is envisaged however that the following parts of the rules will be required to be changed to implement the proposal.

Chapter 2 (Registered participants and registration) would be amended to:

- Allow DRAs to register as market participants to provide demand response services, and ancillary services to the wholesale market, without the need to purchase electricity;
- allow for registration criteria for DRAs and for load to be classified as DR load by a DRA;
- allow for DRAs to classify ancillary service load;
- provide for obligations to comply for this class of market participant; and
- provide for payment and calculation of market fees for DRAs.

As per the AEMO detailed design, DRAs would be required to pay a one off registration fee to register as a market participant and annual AEMO participant fees. The DRA should pay fees at a rate per MWh of demand response (whether above or below the baseline). This rate should be comparable with the rate paid by small generator aggregators and market customers. Under this arrangement, the market fees would be proportional to the energy each DRA is financially responsible for, in the same way as retailers and small generation aggregators.

Chapter 3 (Market Rules) would be amended to include DRAs, and make the DRA financially accountable for the DR load. The cost recovery rules for ancillary services also would need to be amended to take into account the DRA and DR energy.

Chapter 4 (Power system security) would be amended to place an obligation on the DRA to ensure that a DR provider takes reasonable steps to reduce load when a DR notice has been provided.

Chapter 7 (Metering) would be amended to include DRAs as a business to business (B2B) participant, and give them the right to obtain NMI standing data and metering data for their customers, consistent with access rights for other participants.

Chapter 8 (Administrative functions) The DRA as a market participant should be bound by the dispute resolution provisions in Chapter 8. Confirmation of a DRA's right to request a review of business to business (B2B) decisions should also be clarified, noting the current review of B2B governance procedures.

The proposed rule would require new provisions to create the DRM. The provisions would:

- Require AEMO to develop the DRM and publish DRM procedures;
- Outline the governance arrangements for the DRM procedures;
- Outline the roles and responsibilities of the retailer, distributor, market customer, DRA and meter data providers;
- Outline eligibility thresholds to support participation by large customers;
- Outline the content of the DRM procedures, including baselines and operations of the mechanism;
- Create an obligation to comply with, and an obligation to notify breach of the DRM procedures;
- Contain notice and reporting requirements; and
- Contain transitional arrangements for the introduction of the scheme.

The AEMC is asked to consider the best location in the rules for these provisions.

Procedures Governance

To effectively enable the DRM, AEMO must develop and publish the DRM procedures. Given the diverse stakeholders with an interest in these procedures, a clear decision maker with overall responsibility must be appointed. As the market operator, AEMO is best placed to take this role and balance the competing interests of stakeholders.

AEMO should develop and maintain the procedures in consultation with participants and other interested parties, including potential DRAs and DR providers. Consistent with other Chapter 7 procedures for which AEMO is responsible, AEMO should also have the power to make minor or urgent changes to the DRM procedures with limited or no consultation. Any interested party should be able to propose changes to the DRM procedures.

Consistent with the objective to reduce implementation costs for participants and non-participants, the AEMC should consider whether the rules could guide the way AEMO must develop its DRM procedures so as to limit the extent to which retailers need to change their systems.

The DRM procedures must contain:

- Details of the initial baseline methodologies;
- Minimum criteria for evaluating new baseline methodologies, including (but not limited to) requirements for accuracy, bias variability, transparency and administrative burden;
- Requirements for DRAs in selecting the baseline methodologies for a demand response load;
- Information DRAs must provide to AEMO in relation to the demand response load and notification of a DR event;

- Requirements for AEMO to calculate the baseline energy and the demand response energy for each demand response trading interval, and details of how AEMO would notify the DRA and financially responsible market participants of these amounts;
- Details of the information AEMO needs in order to process an application to classify a load as a demand response load;
- Details of information required to be provided to AEMO by participants in respect of impending DR events;
- Details of the operation of the mechanism; and details of any other matter required for the effective operation of the DRM;
- Circumstances in which a DR event cannot occur; and
- Circumstances in which AEMO may declassify a load as a demand response load.

Reporting
As part of the settlement process AEMO would publish a public report detailing the total demand response energy for each trading interval, and for each region. This report would only be required for trading intervals that included a DR event.

AEMO should be required to report annually on the operation of the DRM. The content of the DRM report would be detailed in the procedures and any changes to the content of the report would be subject to consultation. The report would be published by AEMO and would show whether the DRM is being used, to what extent and when. Annual reporting will also provide an evidence base for reviewing the effectiveness of the DRM and potential changes to the scheme.

Officials consider that the DRM will provide valuable information on demand side participation, and so do not consider there is a need for a proposed review of the need for this reporting after four years of operation, as outlined in AEMO's detailed design. However, AEMO should be given some flexibility to determine the best format to report this information, either as separate report or as part of an existing reporting structure. The content of the reporting should be reviewed on an as needed basis.

Prudentials
AEMO should have the ability to assess the DRA's prudential requirements. This should include assessment of the DRA's credit limit, in the same manner as other market participants. The credit support requirement is expected to be low, given DRAs are expected to be net creditors. However in the circumstance that DR energy is negative (metered energy above the baseline) the DRA would be liable for energy consumed above the baseline. Therefore it may be prudent to assess credit limits for the DRA.

Consequential changes
The AEMC is asked to make any additional consequential changes or transitional rules, as needed to implement the DRM, including any amendments to the glossary.

6. How the proposed rule will or is likely to contribute to the achievement of the National Electricity Objective.

The establishment of a DRM is likely to contribute to the achievement of the National Electricity Objective by introducing more competition in the wholesale market and contributing to a lower cost combination of resources to meet demand. This will be done by encouraging more demand side participation in the market and appropriately valuing demand response.

Through a DRM, large energy users will receive price signals of the costs of electricity supply in the wholesale market, which will allow both the demand and supply sides of the market to respond to sustained high prices. Large energy users will be able to evaluate the value in using grid supplied electricity during these high price events, or reducing their load if it is of greater benefit to them. As outlined in the Power of Choice review, a consumer would provide a demand response when the difference between the spot price and the retail energy price is more than the opportunity cost of not consuming.[13] This will lead to a more efficient use of electricity services.

Load offered through the DRM will compete with peaking plants, potentially providing a lower cost and more efficient option to balance supply and demand during high price events. This could lower the average wholesale price, by lowering the wholesale peak price. A lower average wholesale price will benefit all consumers.

Oakley Greenwood's analysis suggested all consumers would benefit from lower prices. DR providers would have more options to manage their energy costs through the use of their DR capabilities.

Oakley Greenwood's analysis suggested a significant additional volume of demand response would be untapped through enabling a less risky mechanism for large customers to participate in the wholesale market, more competitive priced offers to DR providers and proactive DRAs calling for more regular dispatch of demand response. [14]

Under current market conditions, the DRM is not expected to defer any investment in generation in the short term, due to the current oversupply of generation capacity. However in an environment of constrained supply and growing demand, the DRM could have significant benefits in deferring generation investment in future. The current oversupply situation is not expected to last indefinitely and as market conditions change, the DRM will provide an option to meeting demand.

[13] AEMC (2012) Power of Choice Review p123
[14] Note 3, p4-5

In the interim, the DRM could improve reliability and security of supply. Customers deliberately reducing their demand during price spikes caused by high demand could reduce the likelihood of enforced load shedding by other customers.

Enabling DR in large customers could also help to moderate high prices created when generation is taken offline in particular areas for maintenance or withdrawn from supply. Allowing demand to compete in the wholesale market on the same footing as supply could also provide a counter to the market power of some market participants, reducing their ability to bid up prices.

The DRM will improve price signals being seen by large customers, and increase their ability to respond. By encouraging investment in DR capacity, these customers may be more willing to participate in network DR programs, putting downward pressure on network charges.

By unbundling ancillary services from the purchase of electricity in the wholesale market, the supply of these services will be diversified, helping to support the reliability and stability of the system.

The rule change will support market development by facilitating innovative service providers to work with their customers on a range of energy services, including energy advice and demand response services. This will provide a level of support to energy users not currently available from retailers, whose core business is selling energy. Increased DR services will help customers make informed choices about their energy consumption, reduce the costs of providing DR and ancillary services by reducing transaction costs, and support the identification of potential DR and ancillary services opportunities. By aggregating this DR, DRAs will be able to provide more reliable response which could reduce market volatility and reduce future investment requirements.

7. AEMO's declared network functions

The proposed rule will not affect AEMO's declared network functions.

8. Expected costs, benefits and impacts of the proposed rule

Energy Consumers

The Oakley Greenwood analysis indicated that all customer groups are better off under the DRM, due to lower average wholesale prices and sharing network cost reductions caused by lower peak demand. These benefits will offset any recovery of costs of the scheme that may be borne by these customers.[15]

DR providers will benefit the most through the wholesale market payments they receive when providing DR. Separating DR from the sale of energy will give large

[15] ibid

customers more choice over if and when to provide DR by stimulating competition for demand response services in the large customer market.

While DR providers will incur costs in accessing the DRM, it is considered that these customers will consider those costs in making a decision to participate.[16] Customers would only curtail load when they see a benefit in doing so. These customers will gain a better understanding of their energy use, and have more incentives to invest in DR capability to manage their energy costs, including participation in network DR programs.

In the first instance, low cost options for participation are expected to be taken up, with further investment in DR capabilities considered as part of broader plant and equipment updates.

Retailers

Seed Advisory estimated retailer costs under a mandatory scheme to be approximately $112 million over ten years.[17]

By introducing a DRM through a staged and voluntary approach, however, the rule change aims to introduce competition in the provision of demand response services in a way which minimises costs to retailers.

Costs for retailers who do not service large customers will be minimal. For retailers who deal with large customers, the decision to enable the DRM for their customers, and/or register as a DRA, will be a commercial decision based on an evaluation of the benefits a DRM offers against the implementation costs.

It is envisaged that system development costs to support a DRM could be staged, allowing lower cost manual processes to be used in the first instance. System upgrades could be coordinated with other process and system changes to capture synergies and reduce costs.

Retailers claim the DRM will impact their hedging costs, but this is only likely to occur in the short term. Once the DRM is operational for a period of time, the ability of retailers to forecast demand response at any particular price point should improve, as energy users respond to price signals and DRAs develop portfolios of aggregated load which provide a more reliable response. DRAs also indicate they could offer their own financial hedging products to the market to manage the financial risks of spot price volatility.

[16] Assumption used in the cost benefit analysis of the DRM by Oakley Greenwood.
[17] Seed Advisory (2013) The case for a Demand Response Mechanism in the NEM: an assessment for the Energy Retailers Association of Australia, the Private Generators Group and the National Generators Forum.

DRAs

The proposed rule change will offer DRAs the opportunity to offer DR and ancillary services directly to energy users, rather than working through other market participants. It will therefore support market development and the provision of energy services.

DRAs will incur costs to enter the market, but this will be factored into the commercial arrangements offered to clients.

Generators

The DRM will not change the investment signals delivered through the wholesale market.

It will create a wealth transfer from generators to DR providers equivalent to the gross wealth transfer less the cost not spent on fuel for generation displaced by the DR. DR delivered through the DRM will most likely compete with peaking generation plant.

Unbundling ancillary services from the sale of energy is unlikely to have any significant impacts on generators. Ancillary services will continue to be provided under the current Rules. Market participants will continue to be able to register load as ancillary services load, without having to register as DRA.

Networks

Cost impacts on network businesses to support the introduction of a DRM are likely to be minimal.

The existence of the DRM may increase the availability and willingness of large customers to take part in network demand management programs, as energy users become more familiar with their ability to reduce load, and the potential impacts on their operations.

The DRM has the potential to reduce peak demand, and future network investment, but the extent of this will depend on the co-incidence of the DR provided by customers through the DRM aligning with localised peak demand and the nature of any constraints in those areas.

AEMO

AEMO will be required to set up new systems and procedures to operate and administer the DRM including the ability to determine baselines and implement

systems for settlement. AEMO estimated costs to set up and operate the DRM at between $8-14million NPV[18].

AEMO will incur some costs in registering DRAs to provide ancillary services, but unbundling the provision of ancillary services from the sale of energy will diversify the supply of ancillary services, and support AEMO's market operations.

AER

As a wholesale market mechanism it is not envisaged that the Australian Energy Regulator (AER) would have a major role in the scheme.

Its main role would be to assess and take action, where necessary, against market participants who breached DRM rules which had civil penalties attached.

9. Summary of consultation

As the DRM was first raised as part of the Power of Choice review, stakeholders have provided feedback on the concept, design and cost and benefits of the DRM on a number of occasions.

Stakeholders were involved in the AEMO design process, and also had the opportunity to comment on the approach and assumptions of the cost benefit analysis conducted by Oakley Greenwood.[19]

Stakeholder views on the DRM are mixed[20], with generators and retailers generally not supportive of the concept, saying it would distort pricing in an energy only market, and exert upwards pressure on costs. Retailers also felt a DRM should not be justified based on network benefits as these were more appropriately targeted through network regulation. Retailers also claim the benefits do not outweigh the costs of implementation, and the reason for the low level of DR in the market is due to subdued wholesale market prices in recent years and large customers being happy with the services and demand response offerings provided by retailers.

Demand aggregators are supportive of the DRM. Several network businesses have also expressed support for the DRM.

[18] Oakley Greenwood, 2014 Cost benefit analysis of a possible demand response mechanism
[19] Submissions on the CBA assumptions and methodology are available at: https://scer.govspace.gov.au/workstreams/energy-market-reform/demand-side-participation/wholesale-market-demand-response-mechanism-in-the-national-electricity-market/

[20] AEMC Power of choice review, 2012, Appendix G

Consumer representatives, including advocates for large and small customers, are supportive of the DRM[21]. Large user representatives consider that the DRM will remove existing barriers to providing demand response, including reducing the risks of providing demand response. Large users claim that the DR contracts offered by retailers are unattractive, with retailers usually retaining half the arbitrage, which customers see as disproportionate. User groups also considered that the length of retail contracts of 2-3 years is a disincentive to invest in DR capacity, and for customers, a competitive retail contract is valued more than DR capability.[22]

In commenting on the approach, assumptions and results presented in the cost benefit analysis, consumer representatives noted that if costs to consumers would not rise as a result of the DRM, barriers to competition in the provision of demand response services should be removed, consistent with competition principles. They also noted that the assumptions used were very conservative, and likely to understate the level of demand response available. The costs reported by retailers were also questioned, with consumer groups saying they are unsubstantiated and not credible[23]. The ATA put forward the view that no retailer would change systems in the short term, at a cost of millions, opting for manual processes instead at an annual cost in the tens of thousands[24].

Stakeholder comments on the unbundling of ancillary services have attracted little comment. As such this aspect is considered to be relatively uncontroversial.

Submissions made to the consultation process undertaken for the cost benefit analysis are available at the COAG Energy Council's website at www.scer.govspace.gov.au/workstreams/energy-market-reform/demand-side-participation/wholesale-market-demand-response-mechanism-in-the-national-electricity-market/.

[21] Ibid
[22] EUAA, MEU submission
[23] EUAA CBA submission, Major Energy Users CBA Submission
[24] ATA CBA submission