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**Submission to Wholesale Demand Response Mechanism Draft Determination
(ERC0247, RRC0023, ERC0248, RRC0025, ERC0250, RRC0027)**

AGL Energy Limited (AGL) is one of Australia's leading integrated energy companies and the largest ASX listed owner, operator, and developer of renewable generation. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources. AGL is also a significant retailer of energy and provides energy solutions to over 3.5 million customers in New South Wales, Victoria, Queensland, Western Australia, and South Australia.

We welcome the opportunity to comment on the Australian Energy Market Commission's (**AEMC**) Demand Response Mechanism Draft Determination (**DRM draft determination**). The DRM draft determination represents a significant body of work and involved the consideration of three rule change requests, plus additional solutions that were put forward during the consultation process. AGL was pleased to be involved in the Technical Working Group and to assist the AEMC with working through the technical complexities of the options.

The DRM draft determination introduces a new market participant, a Demand Response Service Provider (DRSP), which can register with the Australian Energy Market Operator (AEMO) and offer demand response loads into the National Electricity Market (NEM). Demand response loads will be scheduled by AEMO and receive the spot price, with the ability to set the market price. They would be on equal footing with generators.

AGL is supportive of steps to improve demand side participation. The most effective demand side services are likely to be developed by innovative businesses competing to provide bespoke arrangements for their customers and we support the consideration of the role of demand response in driving greater efficiencies in the NEM. We consider the draft determination to be a significant improvement on the model previously considered by the AEMC demand response rule change in 2015 and proposed in the rule change request. Specifically, we consider:

- The AEMC has attempted to minimise the market and financial distortions that would be caused by introducing the DRSP into the retailer-customer relationship. While the draft determination may not address the issue perfectly through the proposed "reimbursement payment", we consider the concept to be workable and a pragmatic starting point upon which industry can suggest improvements. AGL provides some suggestions later in this submission.



- The proposal to consider the participation of small customers at a later date will enable the AEMC to make sure that adequate customer protections are in place, if it is decided that additional protections are necessary. It would also provide an opportunity to test the DRM scheduling mechanism and performance of baselines on large customers, prior to rolling this mechanism out to large aggregated portfolios of small customers. This will ensure the DRM is working effectively before involving small customers in scheduled demand response. In the meantime, AGL notes that small customers can participate in demand response activities through their retailer or third-party providers providing network services or FCAS. Further, the “regulatory sandbox” and ARENA and government trials will provide opportunities to continue learning in this space. As noted in our submission to the consultation paper, the AEMC may decide that another type of mechanism is more appropriate to compensate customers for the value of their demand response or demand shifting activities, that does not rely on that customer needing an accurate baseline for AEMO scheduling and settlement purposes.
- The AEMC has taken on board industry’s concerns with implementing the DRM draft determination alongside the five-minute settlement reforms, which are a significant implementation task and high impact to the market and our customers should it not be completed in time. The DRM implementation date of 1 July 2022 allows AEMO and industry to focus on implementing the five-minute settlement reforms by 1 July 2021, prior to implementing the DRM reforms.

While AGL is broadly supportive of the DRM draft determination, there are several design elements that we consider could be improved, and we have several remaining concerns that we wish to re-iterate. Attachment A to this submission provides feedback on the different parts of the draft determination.

AGL also acknowledges the AEMC’s characterisation of the DRM as a transitional step towards a two-sided market, with both supply and demand actively involved in setting the market price. The DRM draft determination notes that the DRM may be limited in the volumes that can participate and that the energy market will outgrow the DRM. AGL would be happy to be involved in policy discussions about a two-sided market to investigate the merits and how such a market could be designed. However, we then reiterate that implementation costs for the DRM (particularly for AEMO) must not be significant.

If you have any queries about this submission, please contact Jenessa Rabone on (02) 9921 2323 or JRabone@agl.com.au.

Yours sincerely,

Elizabeth Molyneux

General Manager Energy Markets Regulation



Attachment A

1. Participation of large and small customers

The draft rule applies only to large customer loads. The AEMC notes that it will consider whether appropriate consumer protections need to be applied to parties providing services behind the meter (which would include the DRSP) prior to considering whether the DRM should be available to small customer loads. The AEMC further notes that it could be possible for small customers to be included in the DRM by the proposed implementation date of 1 July 2022.

AGL is supportive of the AEMC reviewing small customer protections in light of the new types of service providers in the energy market. This question is wider than the services to be provided by the DRSP. As more types of companies become involved in providing energy related services, it will be important to make sure that appropriate protections are in place – whether through the Retail Law and Rules or other consumer protection laws.

To implement the DRM for large customers, AEMO will be required to develop a new scheduling and settlement system. AGL considers it prudent to ensure any issues with scheduling systems and with the use of baselines in settlement are largely resolved before allowing large portfolios of small customer loads to be scheduled in the DRM. Scheduling of small customer loads into the NEM will be a significant task.

We also note that there is no urgency for the inclusion of small customers with regard to achieving the objectives of the rule change - promoting greater levels of wholesale demand response and assisting with peak demand issues. There are large volumes of large customer load to achieve these outcomes. AGL suggests that the AEMC work towards the inclusion of small customers in a steady and thoughtful manner. As discussed in our previous submission, we do not necessarily believe the DRM is the right mechanism for encouraging small customers to shift demand from high demand to low demand periods.

In the meantime, small customer loads are able to participate in other programs that do not require scheduling and the use of baselines in AEMO settlement, such as through retailer led wholesale demand response, demand response for network services, FCAS or the RERT. AGL is enabling small customer participation through its VPP trial in South Australia and demand response trial in NSW. AGL has also recently launched a battery orchestration service across the NEM. We anticipate that improved Consumer Data Rights to share consumption and other energy data will increase competition for energy services and help small customers to make more informed choices.

DRM adaptations for small customers

Should small customers be included in the DRM, AGL considers it important that baselines that are used in settlement must still be accurate. However, retail pricing for small customers is approached differently than for large customers. Small customers loads are considered and hedged as a portfolio, unlike large customer loads which are typically priced individually. It may be possible that small customer demand response could be assessed and settled as a portfolio for each retailer. This may help to address the issue that small customer loads are unlikely to ever individually have an accurate baseline.

For example, if a DRSP has 10,000 customers in a portfolio and these are split between 5 retailers, the customers could be grouped by retailer and a baseline could be applied to each group. While the full 10,000 customer loads may form the “scheduled WDR unit”, there would be five “WDR unit” equivalents against



which the baseline is assessed. This way, the retailer is only being charged for the DR performed by its small customers.

There may be further adaptations or differences that AGL has not immediately identified and these would be worked through in a future rule change process.

2. Registration, Central Dispatch and Information Provision

AGL is supportive of the principle that demand response loads must comply with similar obligations as generators, including:

- Providing information about future availability to AEMO as part of the ESOO, MT PASA and ST PASA.
- Participating in central dispatch. While the demand response loads must provide availability in pre-dispatch, we agree that it would be onerous to require demand response loads to participate in every dispatch interval and support the proposal that they can choose when to participate.
- Should they choose to participate in a dispatch interval, following their dispatch targets.
- Being exposed to causer pays, should dispatch targets not be followed.

Under the draft determination, should a DRSP be dispatched to provide 0 MW of demand response it would be expected to not provide any demand response, however causer pays is not applied. AGL seeks clarification on whether there is any other incentive for the DRSP to follow the dispatch instructions (or penalty for not following a 0 MW instruction), or whether the DRSP is free to participate in other forms of demand response during those dispatch intervals (such as network services or FCAS). If a DRSP is expected to follow a 0 MW dispatch instruction, we suggest that auditing is performed to monitor compliance and identify circumstances where the demand response would have occurred anyway (the demand response is not “additional”).

AGL considers it to be an efficient outcome that companies provide multiple services from their investments. AGL sees no reason for the DRSP to be excluded from offering other services (apart from the proposed restrictions around participating in the RERT). The DRSP should be able to “value stack” services from their demand response capability, so long as they are not providing multiple demand response services in the same dispatch interval (which would not meet the requirements of being “additional”). We note that the parties buying the services often ask for exclusivity, for example networks seeking demand response agreements, and this would need to be managed by the DRSP.

Registration

The registration process outlined by the AEMC for both the DRSP and demand response loads is supported. We note the importance that individual customer loads are assessed against technical requirements and baselines, given the retailer of that customer will be required to pay for the demand response volumes provided by that customer. If this was assessed only at a portfolio level and the customers within the portfolio were with different retailers, there would be no transparency around which customers were providing the demand response and which retailers should be charged for the demand response.



The draft determination proposes that the existing MASP participant category would be combined with the new DRSP category, as they would both involve customer loads. Then, the DRSP could have its loads classified to provide FCAS (previously the MASP) or demand response. AGL does not have any concerns with this proposal, so long as existing MASP are deemed into the new framework and are not required to re-register.

Under the draft rule, DRSPs would not be subject to AEMO directions, as this could be an onerous requirement on the large customer. However, MASPs are currently subject to directions for the provision of FCAS. The AEMC could consider another option for the DRSP with demand response loads; that it could be subject to directions during dispatch intervals where it has previously indicated that it would participate in the market (ie it was available during pre-dispatch).

Information

AGL is supportive of the retailer being notified when one of its customers engages a DRSP and the baseline that will be applied to the customer. This should occur in a timely manner.

AGL would also request access to the following information, which could potentially also be made available through updates to MSATS:

1. The MW of the customer's load that is registered for demand response. This will help retailers to understand the potential risk of exposure to DR volumes.
2. Whether the customer will engage in load shifting as part of any demand response event. This will help retailers to understand the potential variability in the customer's load and to manage the risk of being unexpectedly short in the market.
3. When requesting historical data from AEMO for a prospective customer, receiving data on any demand response volumes in addition to meter data. This will be needed to inform pricing for large customers. If retailers only receive meter data going forward, that is not the complete picture of the customer's energy activities.

AGL is also supportive of the proposed improvements to AEMO's demand side participation portal, which will assist with improving transparency of the levels of demand response volumes available in the market.

3. Baselines

The Draft Determination involves the use of baselines in the calculation of settlement volumes, to estimate how much demand response has been provided. AEMO would be responsible for: determining appropriate metrics for the accuracy and bias of baselines; establishing or approving baseline methodologies; and testing of demand response loads against their chosen baseline.

Accuracy

AGL considers the way in which baselines are used in settlement could be the difference between a successful scheme and one that causes market distortions and costs.

The Draft Determination is based on the assumption that baselines will be "sufficiently accurate" and would create no additional costs on the market – what would have been paid to generators is instead being paid to the DRSP.



If the baseline is inaccurate, the DRSP will either be over-paid or under-paid the efficient amount. The AEMC notes that if the baseline is correct on average, then over time the fair value of demand response should be exchanged between the retailer and DRSP. However, we anticipate the DRSP will be monitoring the energy use of the customer against the baseline in real time, and only bidding into the market under favourable conditions. DRSPs would not necessarily be manipulating the baseline or using a biased baseline, but simply bidding in to maximise profits (as would be expected). Therefore, it is likely that any baseline inaccuracies will tend to overpay the DRSP.

For this reason, we consider it vital for the operation of the DRM that baselines be as accurate as possible.

The draft rule does not include the metrics for baseline accuracy, and these would instead be determined by AEMO, and potentially tightened over time. While we appreciate the greater flexibility that this approach provides, neither the AEMC nor AEMO have provided an indication of what they currently consider to be an appropriate level of baseline accuracy. This leaves AGL with concern about the efficacy of the DRM.

The regulated accuracy of measured energy in the NEM is generally between +/- 0.5% and +/- 2.0% at rated load, depending on the size of the customer. AGL suspects that current assessments of an "accurate" baseline in literature on demand response would be in the order of +/- 20% to +/- 30%. This may be acceptable to parties in bilateral agreements to provide demand response but is a significant risk and cost to the NEM if used in centralised settlement. AGL considers the baseline accuracy for the DRM should be an order of magnitude lower than this.

The temporal aspect of baseline accuracy is also important and will need to be defined. A baseline may be +/- 5.0% accurate over the course of a year, whereas the maximum inaccuracy over the course of any day could be significantly higher. From a retailer perspective, the baseline accuracy should reflect the maximum amount that a retailer could be over or under-hedged for that customer (not an average). It would also ideally be accurate within a five-minute market.

AGL suggests that the AEMC indicate the minimum expected level of accuracy on which the decision to proceed with the DRM is being based. This could be a statement in the final determination to provide a starting point for AEMO's procedures, or the Rules could include a minimum accuracy requirement which could still be tightened over time in AEMO procedures.

Process

AGL is supportive of baselines being assessed against the accuracy and other metrics during classification and ongoing periodically. As discussed above, the performance of baselines will be key to the success of the DRM.

AGL is also supportive of AEMO reviewing baselines and tightening the metrics to increase accuracy over time. This provides an incentive for other participants (non-DRSPs) to submit baselines that provide greater accuracy. While under the draft rule there would be no immediate obligation on DRSPs to use these baselines, over time the DRSP may switch to these more accurate baselines as AEMO's metrics tighten.

The Draft Determination is silent on whether there should be any restrictions around how often baselines can be changed, or any timing requirements between a baseline being applied to a customer and that baseline taking effect. Baselines will feed into retailer forecasting systems and potentially will be used to inform the retail contract with a customer. If a new baseline takes effect immediately upon request to AEMO, retailers would not have sufficient time to incorporate the new baseline into its systems. We anticipate that



incorporating new baselines into forecasting systems could take several weeks and therefore suggest a delay of up to a month. AGL appreciates that such detail may not be appropriate for inclusion in the rules. If this is the case it should be considered for inclusion in AEMO's procedures.

AGL also suggests that there should be a dispute mechanism for retailers should they disagree with the baseline being applied to its customer, for example if we consider it does not meet the accuracy or other requirements for that customer.

4. Settlement and cost recovery

The Draft Determination includes a payment that flows from the DRSP to the customer's retailer. This 'reimbursement' payment aims to compensate retailers for the revenue foregone from the customer participating in the demand response.

AGL is supportive of this concept. The retailer manages the spot price risk for the customer and provides a tariff that reflects the costs of managing that spot price risk. Risk management could include the purchase of forward contracts (swaps and caps), running generation assets, or taking on the risk of spot price exposure. The consumption profile of the customer is examined to determine the best combination of risk management strategies to use. When a customer unexpectedly reduces demand, or shifts demand to another time in the day, the retailer can find itself under or over-hedged, at unnecessary cost. The reimbursement rate addresses the scenario where a customer reduces demand but does not address the risk of being under-hedged should the customer shift its load.

In the Draft Determination, the reimbursement rate is proposed as an average wholesale spot price. While AGL agrees that it is not practical or necessary for the reimbursement rate to be at the customer's actual retail tariff rate, we consider the average spot price does not reflect the typical costs of managing price risk for the customer during times where demand response under the DRM is likely to occur – that is, times of high spot price and peak demand.

AGL suggests the reimbursement rate should be based on the costs of peak forward contracts in each jurisdiction. This is necessary to reflect the different hedging costs in different NEM regions. At the start of each quarter, the AER could determine the average cost of the peak forward contracts for that upcoming quarter.

The peak forward contract price is a more appropriate proxy for the costs of hedging a customer with relatively flat and predictable load, who is participating in demand response during peak demand times.

While AGL is supportive of the concept of the reimbursement payment, we note that any reimbursement rate will not accurately accommodate the costs of hedging for all customers (who naturally have different usage and risk profiles) and all retailer models. We suggest the AEMC consider whether there are any specific scenarios that lead to inequitable outcomes or provide the wrong incentives.

For example, loads on spot price pass through contracts already have a strong incentive to reduce demand when spot prices are high. If these customers participate in the DRM and are paid for demand response, the retailer would be charged for demand response volumes, but was not asked to managed the spot price risk for that customer. AGL suggests that customers on these types of contracts be excluded from the DRM.

AGL also seeks clarification on the financial flows should a customer consume higher energy volumes than their baseline while being dispatched to provide demand response. The draft determination noted that the



DRSP would be exposed to negative financial flows, but it's not clear whether this involves a complete reversal of payments between the DRSP and retailer, and whether it involves the spot price payments and/or the reimbursement rate payments.

5. Implementation and system changes

Implementation

AGL is supportive of implementing the DRM after the five-minute settlement reforms are complete. The five-minute settlement reforms are a significant change to the current operation of the NEM. Industry and AEMO must focus on finalising that reform and ensuring the market is operating properly, given the implications should there be issues with those systems on the go-live date.

We note that while five-minute settlement will be implemented on 1 July 2021, it will not be completed. With a reform of that size and significance, there will be a substantial amount of work following the go-live date to address issues as they arise. There will also be continued work to implement the global settlements changes by February 2022. This should be taken into account when considering an appropriate implementation date for the DRM. There will be high levels of overlap between five-minute settlement, global settlement and the DRM, with regard to AEMO's resources and for participants.

AEMO will be required to develop a scheduling and settlement system for the DRM, as well as changes to MSATS and other systems. We anticipate that to meet the implementation timeframe of 1 July 2022, some aspects of the DRM would need to be designed and commenced building by AEMO well before five-minute settlement commences. However, other aspects may not be able to be changed by AEMO until after five-minute settlement commences, as to not interrupt those systems while they are still being rolled out. We suggest that prior to making the final determination, AEMO should outline the potential timeframes and key milestones with industry to provide some confidence that the proposed DRM implementation date provides adequate time.

In addition to the technical and system changes, there are commercial reasons for preferring a longer lead time for implementing the DRM. Contracts with large customers often run for several years and AGL will need to start acknowledging the DRM and DRSP in contracts now to ensure those provisions are in place in 2022. Timing wise, if a final rule is made in November 2019, contracts that run from January 2020 to December 2022 could just be accommodated. If the DRM commencement date is moved forward, large customer contracts may need to be amended using a change of law provision to enable them to participate freely in the DRM. Triggering re-negotiation using the change of law provision is not a preferred outcome as this can be disruptive to customers and the supply cycle.

Retailer system changes

The AEMC notes that the Draft Determination has been designed in a way to minimise retailer system changes. Compared to the rule change proposal, the Draft Determination does not require changes to retailer metering and billing systems, which would have been necessary if customers were to be billed at their baseline levels of consumption when participating in demand response. This avoids a significant implementation cost.

To implement the DRM as proposed in the Draft Determination, AGL anticipates it will need to make the following types of systems changes:



- Systems that interface with AEMO and MSATS to accommodate the new DRSP role and communications and notifications about DRM customers.
- Settlement and reconciliation systems to accommodate payments for demand response volumes.
- Load forecasting systems to incorporate potential demand response volumes and baselines.
- Pricing systems to accommodate demand response volumes and baselines.

6. Other interactions

The introduction of a new market participant will have implications for other reforms that are currently being considered by the AEMC. While we understand the AEMC may not be able to directly consider these other reforms in designing the DRM or the merits of the DRM through the rule change process, AGL considers it important that the AEMC keep these interactions in mind.

For example, the AEMC will need to consider the role of DRSPs under the COGATI framework, which we anticipate could be complicated or problematic. For example, it is unclear how the DRSP would set the price/hedge their position under a Dynamic Regional Pricing regime. We look forward to working with AEMC on these more detailed issues.