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Thursday, 11 February 2021

Mr Joel Aulbury  
Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

By email: <https://www.aemc.gov.au/contact-us/lodge-submission>

Dear Mr Aulbury

**RE: ERC0280– Integrating energy storage systems into the NEM, options paper**

ERM Power Retail Pty Ltd (ERM Power) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) Options Paper (the paper) which further examines issues related to integrating energy storage into the National Electricity Market (NEM).

**About ERM Power**

ERM Power (ERM) is a subsidiary of Shell Energy Australia Pty Ltd (Shell Energy). ERM is one of Australia's leading commercial and industrial electricity retailers, providing large businesses with end to end energy management, from electricity retailing to integrated solutions that improve energy productivity. Market-leading customer satisfaction has fueled ERM Power's growth, and today the Company is the second largest electricity provider to commercial businesses and industrials in Australia by load<sup>1</sup>. ERM also operates 662 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland, supporting the industry's transition to renewables.

<http://www.ermpower.com.au>

<https://www.shell.com.au/business-customers/shell-energy-australia.html>

**General Comments**

Whilst ERM Power is supportive of the proposed new options in the Paper, would like to reiterate that in our view the requirement for storage to register as both load and generation is not a material impediment to efficient investment. There are software packages available which can manage automated bidding within the load/generation framework with the costs being immaterial when compared with the overall storage project costs. It is also our view that managing dual DUIDs is no different to managing a portfolio of units with separate DUIDs. We note that the proposed new options maintain separate DUID's for generation and load.

We do not support the proposal for dynamic scheduling of a facility based on time of day or stored ESS capability. We believe this would be unnecessarily complex with the potential to lead to unintentional bidding and dispatch compliance errors. We instead propose a simpler alternative for the Commission's consideration.

We are generally supportive of the proposed change in the area of ancillary services registration; however we note that additional details must be provided for us to consider before we fully support the proposed change.

Responses to the specific questions raised by the AEMC in its options paper have been provided in the attached response template.

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<sup>1</sup> Based on ERM Power analysis of latest published information.

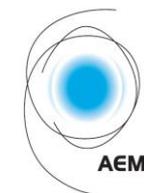


Please contact Carmel Forbes at [carmel.forbes@shell.com](mailto:carmel.forbes@shell.com) or 07 3364 2404 if you would like to discuss our submission further.

Yours sincerely,

[signed]

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## Integrating storage – options paper: stakeholder feedback template

The template below has been developed to assist stakeholders in providing their feedback on the questions posed in this paper and any other issues that they would like to provide feedback on. The AEMC encourages stakeholders to use this template to assist it to consider the views expressed by stakeholders on each issue. Stakeholders should not feel obliged to answer each question, but rather address those issues of particular interest or concern. Further context for the questions can be found in the consultation paper.

Organisation: ERM Power

Contact name: Carmel Forbes

Contact details (email / phone): carmel.forbes@shell.com

Questions		Feedback
<b>Chapter 1 – Registration and participation framework</b>		
<b>Question 1: Registration and classification (p. 17)</b>		
1	Is introducing a new participant category, an Integrated Resource Provider (option 4), to better facilitate entry and participation of storage and hybrid facility, more preferable than modifying existing participant categories (option 3)? Are either option 3 or 4 more preferable to options 1 and 2?	<p>ERM Power favours Option 3 or Option 4</p> <ul style="list-style-type: none"> <li>○ We support the 'lightest-touch' move from current market arrangements</li> <li>○ If 2SM is introduced per ESB's plans, Option 4 may provide the most consistent arrangements with this change. Option 4 would also be able to continue in the event 2SM is not introduced.</li> <li>○ Option 4 <i>may</i> have advantages over Option 3 in terms of lowered registration costs for participants, streamlined GPS processes, reduced administration costs for settlement etc, however this is currently unclear and any further consultation on Option 4 should be predicated on achieving these simplifying outcomes</li> <li>○ An approach that minimises investment uncertainty for large storage assets currently in development phase is in the interests of consumers, state governments who are prosecuting REZ investment and market participants</li> </ul>

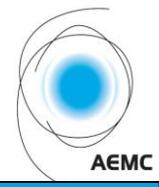
Questions		Feedback
<b>Question 2: Classifying MSGAs (p. 18)</b>		
1	Do you agree that, if an Integrated Resource Provider category (option 4) is established, battery aggregators should use that category and MSGAs should not be allowed to classify storage units exempt from the requirements to register as a Generator? And in that case, should the current arrangements regarding the provision of market ancillary services by MSGAs be maintained?	<p>Currently, MSGA does not participate in central dispatch. It is unclear for the Paper that registration as an IRP would necessitate scheduling of charge and discharge by NEMDE for MSGA.</p> <p>ERM Power is unsure if this approach would provide adequate precision in coordination of charge/discharge when applied to multiple, aggregated resources.</p> <p>Further, it may not be commercially efficient (given costs of IT and bid systems) to coordinate dispatch of aggregated resources from separate sites into a single set of bids/dispatch instructions.</p> <p>More details are required before a decision can be made by ERM Power to support this proposal.</p>
<b>Question 3: Existing storage participants (p. 19)</b>		
1	Should existing storage participants be transitioned to a single participant category (as they are currently registered as both a Market Generator and Market Customer)?	Any current or future change in market arrangements should have adequate 'grandfathering' provisions to protect ongoing investment certainty in the NEM. Any decision to transition from existing arrangements should rest with the relevant market participant. Costs to transition between registration categories in this scenario should be minimised.
<b>Question 4: Scheduling of hybrid facilities (p. 20)</b>		
1	What proportion of a hybrid facility's sent-out generation capacity would need to be dispatchable for the whole of the hybrid facility's sent-out generation to be able to follow dispatch instructions, under a single DUID?	ERM Power proposes that further consideration be given to the different types and mixtures of hybrid plant being connected in the NEM, in order to find a practical and achievable threshold for dispatchability. This may be as little as 20% of aggregate capacity coming from a schedulable resource, however further analysis is necessary in order to avoid creation of unnecessary barriers to entry for hybrid plant.
2	Would a dynamic approach to scheduling obligations, for example shifting between scheduled and semi-scheduled obligations based on the state of charge of the storage unit, be appropriate, and how should this operate?	<p>The proposed dynamic scheduling obligations that switch between scheduled and semi-scheduled status are in our view complex and likely to create excessive regulatory compliance requirements.</p> <p>We suggest that under either option 3 or 4 participants be able to register as non-scheduled, semi-scheduled or scheduled based on threshold limits as set by the rules.</p>

Questions		Feedback
		<p>For participants registered as semi-scheduled we propose a solution where a semi-scheduled participant self-forecasting is used to provide visibility of VRE resource availability plus any use of a co-connected schedulable resource. The dispatch instruction issued to the semi-scheduled participant registered under option 3 or 4 would always be a <i>semi-dispatch interval</i>. This would prevent a participant responding to a higher-than-expected price outcome by utilising schedulable capacity at a RRP lower than their offer. Actual output from a semi-scheduled participant would still be able to fall below the semi-scheduled dispatch cap based on input resource availability.</p> <p>Self-forecasting data would be monitored by AEMO for accuracy with the participant required to meet AEMO's accuracy thresholds.</p> <p>Where in the future the percentage of dispatchable assets behind the connection point increased, the participant would be required to advise AEMO of this change and where the percentage increased above the threshold, AEMO would be able to request the participant reregister the facility as a scheduled facility.</p>
3	<p>Could the same approach be taken to scheduling load where storage is added to a Market Customer's site, or should different considerations apply?</p>	<p>If the market customer is a scheduled load, then this principle seems reasonable. However, where the market customer is not a scheduled load, ESS and other assets should be able to be registerable as a separate facility and not affect operation of the load on site.</p> <p>Participants should be also able to register as a semi-scheduled or scheduled load.</p> <p>For participants registered as semi-scheduled load, we propose a solution where a semi-scheduled participant self-forecasting is used to provide visibility of both the load consumption and VRE resource availability plus any use of a co-connected schedulable resource. The dispatch instruction issued to the semi-scheduled participant registered under option 3 or 4 would always be a <i>semi-dispatch load interval</i>. In this case a cap on consumption This would prevent a participant responding to a lower-than-expected price outcome by utilising ESS charging capacity at a RRP higher than their bid. Actual consumption by a semi-scheduled load participant would still be able to fall below the semi-scheduled consumption cap based on input resource availability</p> <p>Self-forecasting data would be monitored by AEMO for accuracy with the participant required to meet AEMO's accuracy thresholds.</p>
<p><b>Question 5: Number of price bands (p. 21)</b></p>		
1	<p>Do you agree that 20 price bands would be appropriate for grid-scale batteries or would</p>	<p>We support the use of 20 price bands as appropriate for utility scale batteries on the basis of 10 bands allocated for generation and 10 bands for load. In addition to these 20 bands, the ESS or</p>

Questions		Feedback
	another number of bands be more appropriate?	hybrid regardless of registration method (Options 3 or 4) would need maximum availability entry and PASA availability entry fields for acting as either a generator or as a load. This may result in significant costs for AEMO and participant IT systems modifications. For this reason, the Commission should consider if maintaining 10 bands per DUID with separate bids for generation and load would result in lower initial costs for implementation
<b>Question 6: Dispatching hybrid facilities (p. 21)</b>		
1	Are there certain configurations of hybrid facilities that cannot, or should not, be dispatched at a single connection point?	A hybrid facility with a large and variable load may be difficult to schedule as a single connection point with ESS, VRE and other schedulable resources. In this case it may be more efficient for the load to retain its own connection point with only ESS load assigned as load to the hybrid connection point
2	What benefits are achieved by dispatching a hybrid facility at a single connection point, and what issues arise?	Ability to dispatch multiple resources behind a single connection point via the use of a single or potentially two bids, (one for generation and one for load), improves efficiency and flexibility of dispatch choices for a participant. So long as the active energy dispatch has the same technical characteristic this should not impact the power system. The only issue could be where the technical characteristic of active energy dispatch are different between individual asset behind a connection point would it warrant individual asset dispatch by AEMO. In this case these group of assets may not be suitable for hybrid dispatch. We believe the Rules should set out clear guidance for AEMO in this area in determining assets or asset grouping based on their technical characteristics than cannot be dispatched as a hybrid connection.
<b>Question 7: Performance standards (p. 22)</b>		
1	What issues may arise if performance and access standards are set at the connection point for hybrid facilities? Would these standards need to be amended to provide appropriate flexibility for hybrid facilities?	We agree that performance and access standards for a hybrid connection point may be challenging. In this case ERM Power considers that the technical requirements of the power system must be the principal factor for analysis. Hybrid connections should not result in an acceptance of a lower performance and access standard than that reasonably achievable by any of the stand-alone assets forming part of the proposed hybrid grouping. We believe the Rules should set out clear guidance for AEMO in this area

Questions		Feedback
<b>Chapter 3 – Recovery of non-energy costs</b>		
<b>Question 8: Options for the recovery of non-energy costs (p. 27)</b>		
1	Which option do you consider to be the most appropriate for the recovery of non- energy costs from market participants? Please provide detail on why it would be the most appropriate option.	<p>We support Option 3 as proposed by the Commission. Going forward under 5-minute settlement we consider there may be little in the way of netting of consumption or generation in a trading interval. The Commission’s proposal results in a fair and equitable recovery of non-energy costs in line with the causer pays principle.</p> <p>This is based on consumption or generation being metered solely at the connection point. Our understanding of the Commission’s proposal is that behind the connection point exchange of active energy would not form part of the calculation process.</p>
2	Are there any other factors the Commission should consider when deciding how non-energy costs should be recovered from market participants?	
3	Are there any implementation issues the Commission should consider?	
<b>Chapter 4 – Additional issues relating to storage</b>		
<b>Question 9: Network service provider connection points (p. 34)</b>		
1	Do you support the solution outlined in this options paper for resolving the potential issues with establishing standards for NSP owned energy storage?	<p>The Rules already set out clear obligations for NSP’s in connecting new assets to their network. An NSP is not required to obtain a connection agreement to connect a synchronous condenser or a new switchyard. The Rules obligations require NSP’s to comply with all requirements of the Rules including Schedules 5.1a and 5.1 and NSP’s face civil penalties for failing to do so.</p> <p>Notwithstanding, for connection of a generator, load or MNSP, an NSP is required to advise and confirm with AEMO the suitability of some areas of the proposed connection agreement. ERM Power considers that where the Rules require advice to and confirmation from AEMO this should continue to form part of the connection process where a NSP is to connect generation or an ESS.</p> <p>In addition, where the connection of a generator or ESS is unable to meet the obligations of the automatic access standard and connection is to be approved under a negotiated access</p>

Questions		Feedback
		<p>standard, the NSP should be required to advise AEMO of its intent to use and details of any negotiated access standard.</p> <p>Where a system strength assessment process is required, this should be prepared by the NSP and then reviewed and approved by AEMO.</p>
2	If not, do you consider there to be other potential solutions for resolving this issue?	
<b>Question 10: DC coupled systems (p. 38)</b>		
1	What capital, operational or efficiency benefits do DC-coupled systems provide participants and the NEM as a whole, and how might these benefits help consumers in line with the NEO?	
2	Do you support amending the NER to permit the registration and operation of DC-coupled systems? If so, how should they register and operate?	<p>ERM Power supports the ability to register DC coupled systems. A DC coupled system should be able to be registered as non-scheduled, semi-scheduled or scheduled generating units or hybrid generator/load pairings under the options and threshold proposed for consideration under this rule change.</p> <p>The DC coupled system would be required to meet a single access and performance standard the same as any other generation, ESS or hybrid system at its connection point.</p> <p>Should AEMO consider that additional or modified access and performance standards should apply to DC coupled systems than that currently set out in the Rules, AEMO should prepare and submit these to be considered by the Commission as part of this rule change request.</p> <p>ERM Power does not support the proposed dynamic scheduling obligations that switch between scheduled and semi-scheduled status as in our view complex and likely to create excessive regulatory compliance requirements.</p>
<b>Question 11: Provision of ancillary services (p. 40)</b>		
1	Do you support AEMO's proposal to redraft ancillary services provisions in Chapter 2 of the NER to make it more consistent with the services approach to regulation currently being considered by the ESB's two-sided market work? Please explain why or why not.	<p>ERM Power does not object to AEMO's proposal to amend Chapter 2 to combine "ancillary services generating units" and "ancillary services loads" as an "ancillary services facility". However, the Commission should confirm the compatibility of the requirements set out in Chapter 2 for ancillary services generating units and ancillary services loads to confirm their suitability to be combined. In addition to Chapter 2, additional amendments will be required to Chapters 3, 4 and 10 of the Rules. The amendments should also require that the MASS should</p>



Questions		Feedback
		be technology neutral with regards to the provision of services from either a generating unit or load for the provision of ancillary services.