

6 May 2024

Economic Regulation Authority  
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Submitted via the [Economic Regulation Authority online form](#)

**Submission on the Procedure Change Proposal: Benchmark Reserve Capacity Price (EEPC\_2024\_01)**

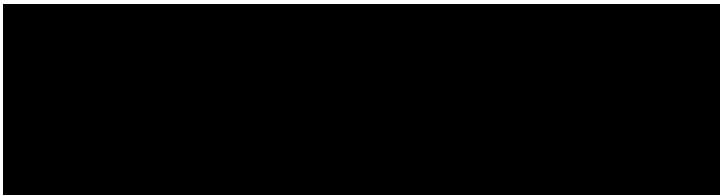
The Australian Energy Market Operator (AEMO) welcomes the opportunity to provide this submission in response to the Economic Regulation Authority's (ERA) Procedure Change Proposal for the Benchmark Reserve Capacity Price (BRCP).

The ERA requested feedback on the Procedure Change Proposal which advocates a re-write of the existing Wholesale Electricity Market (WEM) Procedure used by the ERA annually to determine the BRCP. The purpose of the re-write is to accommodate recent changes in the WEM Rules which include a change to the Benchmark Reference Technology to a lithium-ion Battery Energy Storage System (BESS).

AEMO's feedback, which is set out in Attachment 1, consists of responses to the 20 questions posed by the ERA in the BRCP Procedure Change Proposal.

If you would like to discuss any matters raised in this submission, please contact [redacted] at [redacted].

Yours sincerely,



Attachment 1: AEMO's responses to the BRCP Procedure Change Proposal questions



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## Attachment 1 – AEMO’s responses to the BRCP Procedure Change Proposal questions

BRCP Procedure Change Proposal questions		AEMO’s responses
<p><b>Question 1:</b></p> <p><b>Should the BESS sub-chemistry be specified in the WEM Procedure?</b></p>	<p>AEMO acknowledges the benefits and challenges of including the sub-chemistry within the BRCP Procedure. While AEMO does not have a firm view on the approach to be taken, our views on two alternative options are provided below.</p> <p>Including the sub-chemistry in the BRCP Procedure will provide transparency to investors. However, the current minimum review of the BRCP Procedure is five years under the WEM Rules. If this option is chosen, AEMO recommends more frequent reviews are undertaken to ensure that the sub-chemistry remains the most efficient choice as BESS technology advances. The corollary being that a more frequent review period will inherently reduce certainty for investors.</p> <p>An alternative approach is not to specify the sub-chemistry within the BRCP Procedure, and instead determine the sub-chemistry as part of the annual BRCP determination. This will provide a more responsive approach to changing technology, but may reduce certainty for investors.</p>	
<p><b>Question 2:</b></p> <p><b>Is the lithium iron phosphate BESS a reasonable lithium sub-chemistry for the WEM Procedure?</b></p>	<p>Nothing comments made in response to Question 1, AEMO believes this is a reasonable lithium sub-chemistry for the WEM Procedure based on current BESS technology.</p>	
<p><b>Question 3:</b></p> <p><b>Is the proposed approach for specifying that the Benchmark Capacity Providers must achieve 200 MW injection capacity and 800 MWh energy storage on day 1 of operation reasonable?</b></p>	<p>AEMO recommends that the BRCP Procedure clearly states the nameplate capacity (MW and MWh) capable of delivering 200 MW sent-out for 4-hours. It may be more representative (in order to align with the certification of Electric Storage Resources), to size the BESS so that it can achieve a 4-hour duration at all times within the first capacity year (rather than from day one).</p>	

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<p><b>Question 4:</b></p> <p>Is it reasonable for the WEM Procedure to not specify the degree of oversizing required for the Benchmark Capacity Providers to achieve 200 MW injection capacity and 800 MWh energy storage?</p>	<p>AEMO believes this approach is reasonable.</p>
<p><b>Question 5:</b></p> <p>Is the process outlined in section 3.4 of the proposed WEM Procedure a reasonable approach for estimating transmission costs of the Benchmark Capacity Providers?</p>	<p>AEMO believes this approach is reasonable.</p>
<p><b>Question 6:</b></p> <p>Is estimating land costs as single, average land cost based on average land prices across the Kwinana and Pinjar regions a reasonable approach for the WEM Procedure?</p>	<p>AEMO believes this approach is reasonable.</p>
<p><b>Question 7:</b></p> <p>What is a reasonable approach to account for the treatment of expected degradation of the Benchmark Capacity Providers?</p>	<p>AEMO is of the view that a strong case has not yet been made for including battery degradation within the BRCP.</p> <p>If battery degradation is to be included, AEMO is of the view that allowing for greater land size in the BRCP calculation to accommodate additional batteries in the future may not be an appropriate response to account for battery degradation.</p> <p>Land size is not directly related to battery degradation. Land cost also represents a material cost component of the BRCP, and therefore should be supported by analysis that compares this option to any other options available to the facility (including a 'do nothing' option if this represents the most likely outcome until such time that battery replacement is cost effective).</p> <p>Furthermore, the inclusion of additional land has benefits beyond addressing the impact of declining capacity credits. For example, addressing battery degradation also allows for higher outputs and therefore revenues through the Real Time Market, costs which the ERA recognises should be recovered through a Market Participant's bids into the Real Time Market.</p>
<p><b>Question 8:</b></p> <p>Is it reasonable for the WEM Procedure to specify a 15-year capital annuity period?</p>	<p>AEMO believes this approach is reasonable and agrees this is an important component to provide certainty for investors and appropriate price signals for future capacity investment.</p>



<b>Question 9:</b>	
Is it reasonable to retain the nominal pre-tax weighted average cost of capital (WACC) for the purpose of estimating a long-term required rate of return?	AEMO believes this approach is reasonable.
<b>Question 10:</b>	
Is it reasonable to retain the Annual Components (risk free rate, debt risk premium and corporate tax rate) and Fixed Components (market risk premium, equity beta, debt issuance costs, franking credit value and gearing ratio) of the WACC?	AEMO believes this approach is reasonable.
<b>Question 11:</b>	
After considering new information and sources related to BESS projects, is it reasonable to increase the equity beta?	AEMO believes this approach is reasonable.
<b>Question 12:</b>	
Is the annuity tilting approach a reasonable method to account for the expected decrease in BESS capital costs?	AEMO believes this approach is reasonable.
<b>Question 13:</b>	
Is it reasonable to specify the value of the tilt multiplier (1.24) in the WEM Procedure?	AEMO believes this approach is reasonable.
<b>Question 14:</b>	
Is it reasonable to estimate capital costs of the Benchmark Capacity Providers as at 1 April of Year 3 of the Reserve Capacity Year?	AEMO believes this approach is reasonable.
<b>Question 15:</b>	
Is it reasonable to estimate fixed O&M costs of the Benchmark Capacity Providers as at 1 October of Year 3 of the Reserve Capacity Year?	AEMO believes this approach is reasonable.
<b>Question 16:</b>	
Is it reasonable to use the WACC to account for the cost of capital in the period between the investor raising the capital and receiving revenue from capacity credits?	AEMO believes this approach is reasonable, including the proposal to use a six-month time period.



<p><b>Question 17:</b> Please provide your views on the procedure change proposal, including any objections or suggested revisions.</p>	<p>AEMO has no objections or suggested revisions beyond those previously stated in this submission.</p>
<p><b>Question 18:</b> Please provide an assessment whether the Procedure Change Proposal is consistent with the WEM Objectives and the WEM Rules.</p>	<p>AEMO has not identified any inconsistencies with the WEM Objectives or WEM Rules.</p>
<p><b>Question 19:</b> Please indicate if the procedure change proposal will have any implications for your organisation (for example changes to your IT or business systems) and any costs involved in implementing these changes.</p>	<p>Based on the consultation paper AEMO does not foresee significant changes to implement the new BRCP</p>
<p><b>Question 20:</b> Please indicate the time required for your organisation to implement the changes, should they be accepted as proposed.</p>	<p>Based on the consultation paper AEMO does not foresee significant time requirements to implement the new BRCP.</p>