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29 September 2022

Ms Dora Guzeleva
Director, Wholesale Markets
Energy Policy WA
Email: energymarkets@dmirs.wa.gov.au

Dear Ms Guzeleva,

Reserve Capacity Mechanism Stage 1 Consultation Paper

The Australian Energy Market Operator (AEMO) understands the importance of the Reserve Capacity Mechanism (RCM) Review to ensuring there are sufficient incentives for investment in technologies needed to manage the future power system. AEMO welcomes the opportunity to provide this submission in response to the RCM Review Stage 1 Consultation Paper (the Consultation Paper), published on 28 August 2022.

The Consultation Paper provides an outline of the intended policy response to matters relating to the definition of reliability and characteristics of the capacity needed in future years. The outcomes provided are reasonably high-level, with detailed design and transitional arrangements to be considered further under Stages 2 and 3. With this in mind, AEMO provides general support for design proposals 1, 5, 7 to 13, and 17 and has no further comment on these proposals under this Stage 1 process.

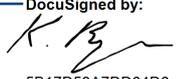
While AEMO generally supports the remaining design proposals, we have provided high-level comments in Attachment 1, which are primarily intended to draw attention to aspects of the proposals that AEMO considers may benefit from further detailed analysis and consideration under the following review stages.

AEMO will continue to work with EPWA and industry on the detailed design elements to ensure implementation can be achieved efficiently, in a timely manner, and with the minimal necessary complexity. Notwithstanding, the proposed timeframes for implementation of the RCM Review's findings may not be sufficient to incentivise entry of new capability in time to mitigate identified emerging shortfalls.

AEMO will continue to assess sufficiency of the fleet in the near term, leveraging the analysis conducted through the RCM Review, and where required, use existing options under WEM rules to maintain power system security and reliability.

If you would like to discuss any matters raised in this submission, please contact Mike Hales at mike.hales@aemo.com.au.

Yours sincerely,

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Kate Ryan

Executive General Manager WA & Strategy

Attachments

Attachment 1: Response to RCM Review Stage 1 Questions



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Attachment 1: Response to RCM Review Stage 1 Questions

Number	Conceptual design proposal/s	Consultation questions	AEMO response
2	<ul style="list-style-type: none"> The RCM will not include a specific product to manage minimum demand. The RCM design and the capacity certification process will seek to avoid incentives for new facilities that could make minimum demand more difficult to manage, such as facilities with high minimum stable generation, and/or long start-up, minimum running or minimum restart times. 	Do stakeholders support not including a product in the RCM to manage minimum demand?	<p>EPWA, Western Power and AEMO are progressing a program of work aimed at addressing the power system challenges associated with low load, with current indications being that a multi-faceted approach is likely to deliver the best outcome.</p> <p>AEMO agrees that implementation of the DER Roadmap is likely to be a significant contributor to overcoming low-load issues, although we note that the activities and timeframes for the market participation models are yet to be confirmed.</p> <p>While AEMO acknowledges that the RCM may not be the right mechanism to manage low load, until the activities under the DER Roadmap and wider low load work program are known, it may be premature to draw a definitive conclusion in this regard.</p> <p>Furthermore, AEMO considers that the modelling undertaken as part of the SWIS Demand Assessment is likely to provide important insights relevant to the impact of low load. As above, awaiting the outcomes of this work before forming a firm position on the potential for the RCM to contribute in managing low load issues could be beneficial.</p>
3	Introduce a new capacity product into the RCM (alongside the existing peak capacity product) to	Do stakeholders support inserting a new flexible capacity	AEMO supports the introduction of a flexible capacity product in the RCM but notes that the Consultation Paper does not consider how the product will be implemented alongside existing transitional pricing arrangements. EPWA may be proposing to address this issue further

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	incentivise flexible capacity that can start, ramp up and down, and stop quickly.	product in the design of the RCM?	under Stages 2 and 3, in which case AEMO looks forward to working with EPWA and industry to develop a framework that provides the appropriate incentives, while seeking to minimise complexity.
4	It is not proposed that the Planning Criterion includes reference to volatility in the output of intermittent facilities. Volatility in operational load and intermittent generation over short timeframes can be managed through Essential System Services (ESS) and re-dispatch. The addition of the flexible capacity product, proposed under the Conceptual Design Proposal 3, is expected to provide adequate capacity that is capable of providing these services.	Do stakeholders support not amending the Planning Criterion to include consideration of the volatility of intermittent generators?	<p>While AEMO supports the design proposal, we note that there may be other system stress events which drive the quantity (MW) and capability (MW/min) of flexible capacity in the WEM. Specifically, the analysis currently considers only the evening ramp event which may determine lower ramping capability (MW/min) than required by AEMO to manage ramping events associated with volatility.</p> <p>While the primary mitigation of volatility within a dispatch interval is through FCESS (via regulation), ramping events across multiple dispatch intervals require regulation quantities to be replenished through 5-minute energy dispatch of the fleet. The needs of the fleet to replenish regulation quantities should be considered in quantifying the flexible capacity product to ensure that volatility requirements do not erode the ability to manage the evening ramp.</p> <p>While larger quantities of FCESS (regulation and contingency reserve) can be procured to manage volatility across multiple dispatch intervals, this could lead to inefficient market outcomes and should be avoided where market mechanisms are identified to deliver better results.</p> <p>AEMO can provide data to support the current volatility challenges, which emerge in shorter timeframes than undertaken in the presented modelling, i.e., over 15-30 minutes, which may not have been captured in the hourly assessments undertaken in this work.</p> <p>AEMO looks forward to working with EPWA and industry under Stage 2 of the RCM Review on this matter.</p>
6	Amend the reserve margin so that:	Do stakeholders support amending the reserve margin	AEMO supports the design proposals to remove the hardcoded percentage under clause 4.5.9(i) and allow for the potential that the largest system contingency is not a generator under clause 4.5.9(a)(ii).



	<ul style="list-style-type: none"> • sub-clause 4.5.9(a)(i) uses the (AEMO determined) proportion of the generation fleet expected to be unavailable at system peak due to forced outage, rather than a hardcoded percentage; and • sub-clause 4.5.9(a)(ii) refers to the largest contingency on the power system, rather than the largest generating unit. Introduce the proposed amendment to clause 4.5.9(a)(ii) to change the determination of the largest contingency for the calculation of the reserve margin, in time for the 2023 Reserve Capacity Cycle (for the Capacity Year starting on 1 October 2025). 	<p>as indicated in Conceptual Design Proposal 6?</p> <p>Do stakeholders have any concerns about the proposed amendments to clause 4.5.9(a)(ii)?</p> <p>Do stakeholders support commencing the proposed amendments to clause 4.5.9(a)(ii) for the 2023 Reserve Capacity Cycle?</p>	<p>AEMO also strongly supports the amendment of clause 4.5.9(a)(ii) in time for the next capacity cycle.</p> <p>However, AEMO does not support the drafting proposed. Specifically, we have concerns regarding the proposed removal of the following text from clause 4.5.9(a) “while maintaining the SWIS frequency in accordance with the Normal Operating Frequency Band and the Normal Operating Frequency Excursion Band.” The practical effect of this change is that the Reserve Capacity Target (RCT) calculation will no longer include an additional amount of capacity required to provide Minimum Frequency Keeping Capacity and ensure that Load Following Ancillary Service (LFAS) is maintained. As a result, it will likely reduce the RCT determined (for example, this would reduce the RCT by 110MW in the 2024-25 Capacity Year).</p> <p>The Consultation Paper does not provide the rationale for this change and AEMO believes this is not aligned with the RCM Review’s condition (page 2 of the Consultation Paper) that any changes to the RCM should not erode the level of system reliability currently provided for by the WEM Rules. AEMO recommends maintaining these words in the final drafting to implement the intention of design proposal 6.</p> <p>AEMO also notes that the changes to 4.5.9(a)(i) will require we undertake an assessment of historical outages, for which there should be sufficient guidance. This could be achieved through the provision of high-level principles under the WEM Rules, with a requirement on AEMO to develop a WEM Procedure that accords with the principles.</p>
14	<ul style="list-style-type: none"> • AEMO will determine an availability duration requirement for new Capability Class 2 facilities, based on the capacity of the existing and committed fleet, and publish it in the ES00, including forecasts for subsequent years. 	<p>Do stakeholders support the proposal for AEMO to calculate the availability duration</p>	<p>While AEMO supports this design proposal, we note that significant further work is required to ensure that we can confidently determine an availability duration in the context of a system that is comprised of majority intermittent and storage facilities.</p>



	<ul style="list-style-type: none"> • Capability Class 2 facilities will receive CRC equal to their maximum instantaneous output pro-rated by the number of hours they can sustain this output divided by the availability duration requirement. • Proponents can request a five-year fixed availability duration requirement for a Class 2 facility but this request will only be accepted if the facility is needed to meet the reserve capacity target. 	<p>requirement for each capacity cycle?</p> <p>Do stakeholders support prorating the CRC for Capability Class 2 facilities in proportion to the availability duration requirement?</p> <p>Do stakeholders support allowing proponents to request a 5-year fixed availability requirement?</p>	<p>In such a system, the ability for storage to charge will be dependent on renewable energy fuel availability. Therefore, an availability duration will need to consider more than the overnight load and storage capability. It will require sophisticated understanding of the meteorological inputs (over all timeframes) that drive most renewable generation sources. This is a significant 'leap' in understanding and AEMO suggests that guidance (informed by further modelling) is provided to ensure the risks and costs are appropriately balanced, particularly while practical experience is being obtained.</p> <p>AEMO looks forward to working with EPWA and industry under Stage 2 of the Review on this matter.</p>
15	<ul style="list-style-type: none"> • CRC allocation will remain on an installed capacity (ICAP) basis, with refunds payable for any forced outage. • The reserve margin in the first limb of the Planning Criterion will be set at the greater of the fleet-wide Equivalent Forced Outage Rate (EFORd) and the largest contingency expected at system peak, with AEMO assessing both each year. • Where, over a three-year period, a facility has an EFORd higher than 10%, AEMO will be required to reduce its CRC by the EFORd. • The method for calculating EFORd will also account for forced outages reported at times the relevant facility had not been called to run. 	<p>Do stakeholders support continuing to allocate CRC on an ICAP basis?</p> <p>Do stakeholders support the conceptual design proposal for treatment of outages?</p>	<p>AEMO supports continuing to allocate CRC on an ICAP basis.</p> <p>AEMO recommends being provided with discretion (to be outlined in a WEM Procedure) in relation to the reduction in CRC for facilities with an EFORd higher than 10%, noting that in some cases outages may be a result of exceptional circumstances (e.g. a very unusual weather event), which would not reasonably be expected to present a risk to the capacity provider's ability to provide CRC into the future.</p>



	<ul style="list-style-type: none"> A facility whose CRC has been reduced under clause 4.11.1(h) will be excluded from the calculation of fleet outage rate for the purposes of setting the planning criterion reserve margin. 		
16	To ensure independent estimates of intermittent generator output, AEMO will procure expert reports to derive estimates of performance on behalf of participants.	Do stakeholders support requiring AEMO to procure expert reports on behalf of participants?	<p>AEMO agrees that procurement of consultants will provide for some independence in the process, although we note that some data and other inputs will continue to be required from the proponent, with some inevitable limitations on the quality assurance that can be undertaken by the consultant and AEMO.</p> <p>We also note the following matters for further consideration and look forward to working with EPWA and industry in Stages 2 and 3 of the RCM Review to achieve an appropriate scheme design:</p> <ul style="list-style-type: none"> any implications for the timeframes in determining Certified Reserve Capacity; procurement practices required to ensure AEMO meets industry expectations of value for money; and payment arrangements for the independent reports. Consistent with the Cost Allocation Review objective, AEMO supports a causer-pays approach.