



## Minutes

<b>Meeting Title:</b>	Reserve Capacity Mechanism Review Working Group ( <b>RCMRWG</b> )
<b>Date:</b>	2 June 2022
<b>Time:</b>	9:30am – 11:30am
<b>Location:</b>	Microsoft TEAMS

<b>Attendees</b>	<b>Company</b>	<b>Comment</b>
Dora Guzeleva	Chair	
Paul Arias	Bluewaters Power	
Rhiannon Bedola	Synergy	
Oscar Carlberg	Alinta Energy	Subject matter expert
Zhang Fan	Collgar Wind Farm	Proxy for Rebecca White
Manus Higgins	AEMO	
Brad Huppertz	Synergy	Subject matter expert
Mark McKinnon	Western Power	
Wendy Ng	Shell Energy	
Jacinda Papps	Alinta Energy	
Toby Price	AEMO	Subject matter expert
Matt Shahnazari	Economic Regulation Authority	
Noel Schubert	Small-Use Consumer representative	
Andrew Stevens	Clear Energy	
Andrew Walker	South32 (Worsley Alumina)	
Nimish Trivedi	Synergy	Subject matter expert
Richard Bowmaker	Robinson Bowmaker Paul ( <b>RBP</b> )	
Ajith Sreenivasan	RBP	
Tim Robinson	RBP	
Stephen Eliot	Energy Policy WA ( <b>EPWA</b> )	
Laura Koziol	EPWA	
Shelley Worthington	EPWA	

Apologies	From	Comment
Peter Huxtable	Water Corporation	
Patrick Peake	Perth Energy	
Dev Tayal	Tesla Energy	
Dale Waterson	Merredin Energy	

Item	Subject	Action
1	<b>Welcome</b> The Chair opened the meeting at 9:30am.	
2	<b>Meeting Apologies/Attendance</b> The Chair noted the attendance as listed above.	
3	<p><b>Minutes of RCMRWG meeting 2022_03_17</b></p> <p>Draft minutes of the RCMRWG meeting held on 5 May 2022 were distributed in the meeting papers on 27 May 2022.</p> <p>The RCMRWG noted the tracked changes in the draft minutes.</p> <p>Ms Koziol noted the following additional changes to the minutes that had been requested after the circulation of the papers:</p> <ul style="list-style-type: none"> <li>• Page 5: <ul style="list-style-type: none"> <li>○ <a href="#">In response to questions from Mrs Bedola and Mr Stephens, Mr Bowmaker clarified that the model does not assess intra-interval ramping because this is a function of the ESS market and not the capacity mechanism.</a></li> </ul> </li> <li>• Page 11: <ul style="list-style-type: none"> <li>• Mrs Papps noted that Alinta Energy broadly supports the retention of a two-limbed Planning Criterion and asked how this will affect the fuel requirement for Scheduled Generators. <a href="#">Mrs Papps noted that the weakness of the current Planning Criterion is that it doesn't set an evidence-based period for how long capacity should be available.</a></li> </ul> </li> </ul> <p>The RCMRWG accepted the minutes, as amended, as a true and accurate record of the meeting.</p>	<p><b>Action: RCMRWG Secretariat to publish the minutes of the 5 May 2022 RCMRWG meeting on the RCMRWG web page as final.</b></p> <p><b>RCMRWG Secretariat</b></p>
4	<b>Action Items</b> The paper was taken as read.	

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	<p>The slides for agenda items 5 to 9 are available on the webpage for the RCM Review (<a href="https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review-working-group">https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review-working-group</a>).</p>	
5	<p><b>Project Timeline</b> Mr Robinson presented the timeline.</p>	
6	<p><b>Certified Reserve Capacity (CRC): Contribution to Resource Adequacy</b></p> <p>Mr Robinson presented the options for assessing resource adequacy (slides 10 to 21). The following issues were discussed:</p> <ul style="list-style-type: none"> <li>Regarding slide 11, Mr Price clarified that Non-Scheduled Facilities containing only Electric Storage Resources (<b>ESR</b>) will be assigned Certified Reserve Capacity (<b>CRC</b>) based on linear derating for the first five years, after which they will be assessed under the relevant Level Methodology (<b>RLM</b>).</li> <li>Mr Robinson explained the concepts of Effective Load Carrying Capacity (<b>ELCC</b>), Marginal Reliability Index (<b>MRI</b>) and Equivalent Firm Capacity (<b>EFC</b>).</li> <li>Mr Robinson noted that these methods to measure the contribution to reliability are very similar and that stakeholders have previously reviewed the ELCC method.</li> <li>Regarding the MRI, Mr Shahnazari considered that there is no order of entry in terms of contribution to the reliability of the system, so the MRI risks undercompensating facilities for their contribution. Mr Robinson noted that the MRI does not calculate the contribution to reliability as a MW value, but as a ratio of the increased reliability with an incremental increase in capacity from the assessed facility and the increased reliability with an incremental increase in perfect capacity. Mr Shahnazari noted that he is concerned that a Facility's MRI may be very low when there is over-capacity.</li> <li>Mr Robinson noted that, when compared with the ELCC, the disadvantage of the MRI is that it is more difficult to explain and less transparent, and the advantage is that less iterations are needed to determine a Facility's MRI.</li> <li>In response to a question from Mrs Bedola, Mr Robinson clarified that EFC can be determined on a facility or a fleet basis. Mrs Bedola asked whether the EFC method is applied on a fleet basis in any other jurisdiction and Mr Robinson noted that he is not aware of any such cases.</li> <li>Mr Robinson presented the proposed options for assessing the contribution to reliability on slide 19. The following points were raised:</li> </ul>	

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	<ul style="list-style-type: none"> <li data-bbox="352 271 1230 528">○ Mrs Papps asked how the proposed approaches to determine contribution to reliability link back to the system stress analysis. Mr Robinson clarified that the system stress modelling links to the assessment of whether to include a flexibility product in the Reserve Capacity Mechanism (<b>RCM</b>). Mr Robinson noted that the ELCC accounts for any peak stress event in any reference period.</li> <li data-bbox="352 551 1230 719">○ Mr Shahnazari considered that the proposed options 1 and 2 need to be considered as mutually exclusive because ELCC can be a benchmark for all facilities but that the ELCC for some facilities such as non-intermittent facilities and ESR does not require a probabilistic determination.</li> <li data-bbox="352 741 1230 1413">○ Mr Carlberg noted his concern that under a probabilistic method it will not be clear for investors and system planners at which times availability is valued. Mr Carlberg suggested to explore a method that approximates a broader range of system stress intervals instead of an ELCC based on the system stress periods identified during the system stress modeling. Mr Carlberg considered that the key disadvantage of the current RLM is that it focusses on the highest load for scheduled generation and thus fails to recognize the contribution of intermittent generators to reduce the peak. Mr Robinson confirmed that one issue identified with ELCC (as shown on slide 21) is that it selects a small sample of historical system stress events, so a new system stress event may have a potentially large effect on the outcome from year-to-year. Mr Robinson noted that this issue will be assessed further. Mr Robinson suggested to explore alternative methods for assigning CRC to intermittent generators, that are not probabilistic.</li> <li data-bbox="352 1435 1230 1536">○ Mr Carlberg noted his concern that applying a marginal ELCC could duplicate the signal already provided by the demand curve setting the Reserve Capacity Price.</li> <li data-bbox="352 1559 1230 1693">○ Mr Schubert considered that wind can be reasonable on the south coast but light in the north during very hot weather. Mr Schubert asked whether this matters for assessing the wind fleet and individual wind farms?</li> <li data-bbox="352 1715 1230 1816">○ Mr Robinson clarified that the ELCC method would assess the performance of individual wind farms during system stress and their ELCC would reflect this.</li> <li data-bbox="352 1839 1230 1935">○ Mrs Papps raised concerns that the ELCC is volatile and not transparent and does not meet the guiding principles of the RCM Review.</li> </ul>	

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	<p>Mr Robinson noted that the ELCC is used in other jurisdictions, while the current RLM is not, and that, internationally, investors have been able to manage the issues raised by Alinta.</p> <p>The Chair acknowledged that certainty for investors and simplicity is important but noted that the most important objective of the RCM Review is to develop an RCM that ensures adequate system reliability. The Chair emphasised that, to achieve this objective, the RCM must recognise the actual contribution of various types of facilities to system adequacy and security.</p> <ul style="list-style-type: none"> <li>○ Mr Carlberg considered that a disadvantage of the ELCC is the uncertainty for investors because a Facility's ELCC can be affected by the entrance or withdrawals of other facilities.</li> <li>○ Mr Robinson noted that the ELCC would be recalculated every year.</li> <li>○ Mrs Bedola considered that it is also important to consider the interaction between ELCC and Network Access quantities (NAQ). Mrs Bedola noted that, even where the ELCC was reduced for only one year, this could have a long-lasting impact on a facility's NAQ.</li> <li>○ Mr Stevens considered that monthly weather variations will become increasingly relevant in the future and will result in different risks for each month and season. Mr Stevens considered that applying the RCM on an annual basis will oversimplify the problem and forego the benefits of a monthly approach.</li> <li>○ Mr Robinson suggested that monthly modeling results can be assessed to inform further investigations of this issue.</li> </ul>	

## 7 CRC: Outages

Mr Robinson presented the options for accounting for outages in the RCM (slides 22 to 25). The following issues were discussed:

- In response to a question from Mr Price, Mr Robinson clarified that, in general under the unforced capacity (**UCAP**) approach, it is not considered whether outages coincide with system stress events. Mr Robinson noted that it is possible to consider the timing of outages under the UCAP approach but that this would increase complexity.
- Mr Shahnazari noted that the ERA had reviewed the UCAP regime including the use of equivalent demand forced outage rate (**EFORd**)<sup>1</sup> in its review of the methodology for incentivising availability of generators.

<sup>1</sup> In the PJM EFORd is defined as a measure of the probability that a generating unit will not be available due to forced outages or forced deratings when there is a demand on the unit to generate

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	<ul style="list-style-type: none"> <li data-bbox="296 271 1241 450">• In response to a question from Mrs Papps, Mr Robinson noted that the ELCC of a Facility represents its capacity value under the UCAP approach. Therefore, intermittent generators would not get penalised twice for poor performance during system stress if both the ELCC method and the UCAP approach are applied.</li> <li data-bbox="296 461 1241 640">• Mr Huppertz asked whether the installed capacity considered under the ICAP approach is a facility's capacity at 41°C or if the approach would consider that certain facilities can generate more at lower temperatures considering that the SWIS is moving to a winter peaking system at times. Mr Robinson clarified that the adjustment to ambient conditions referred to the weather conditions expected at the time the capacity is needed and that this would be static.</li> <li data-bbox="296 651 1241 920">• Mrs Papps considered that the WEM already provides several mechanisms to incentivise availability of capacity and that these mechanisms should be reassessed if the UCAP approach is implemented. The Chair noted that, under stage 2 of the RCM Review, the treatment of outages and the capacity refund regime will be assessed against the outcomes of stage 1 of the RCM Review.</li> <li data-bbox="296 931 1241 1435">• Mr Carlberg asked what objective introducing the UCAP approach fulfills given that the current regime already penalises forced outages and incentivises participants to avoid forced outages. Mr Robinson noted that the objective of the UCAP approach is to increase certainty that sufficient capacity is procured. Mr Carlberg considered that outages cannot be forecast with sufficient accuracy to achieve this objective. The Chair noted that historically forced outages have occurred during system stress and that the objective is to provide certainty that system demand can be met adequately.</li> <li data-bbox="296 1447 1241 1771">• Mrs Papps asked whether the UCAP approach would be reflected in the Benchmark Reserve Capacity Price (<b>BRCP</b>) considering that: <ul style="list-style-type: none"> <li data-bbox="352 1536 991 1570">○ no facility would get to 100% availability; and</li> <li data-bbox="352 1581 1214 1659">○ more work to prevent forced outages may be undertaken with unintended consequences.</li> </ul> Mr Robinson confirmed that the UCAP approach would need to be reflected in the BRCP, and that assessing the BRCP is part of the scope of works for the RCM Review.</li> <li data-bbox="296 1783 1241 1962">• Mr Shahnazari noted that, in its review of the methodology for incentivising availability of generators, the ERA identified that the WEM Rules allow AEMO to discount the allocation of Capacity Credits to a generator for outages but that there is no clear guidance how to use this discretion.</li> </ul>	

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8	<p data-bbox="296 286 842 315"><b>CC: Preference for Resource Flexibility</b></p> <p data-bbox="296 340 1235 407">Mr Robinson presented the options for addressing the need for flexibility in the RCM (slides 27 to 32). The following issues were discussed:</p> <ul data-bbox="296 432 1235 2036" style="list-style-type: none"> <li data-bbox="296 432 1235 582"> <p data-bbox="352 432 1198 499">• Mr Schubert considered that start-up time, speed of ramping and restart time should be considered as part of the flexibility.</p> <p data-bbox="352 510 1185 577">Mr Robinson agreed that RCM should address these aspects of flexibility.</p> </li> <li data-bbox="296 593 1235 929"> <p data-bbox="352 593 1134 701">• Mr Shahnazari asked why ramping capabilities should be addressed through the RCM but not other Essential System Services (<b>ESS</b>).</p> <p data-bbox="352 712 1230 929">Mr Robinson clarified that the product would be a flexibility product, not a pure ramping product, but that the requirement would be set by the need for ramping capability, as the system stress modelling identified a particular need for ramping capabilities and it is expected that facilities that are capable of ramping will also be able to provide other ESS.</p> </li> <li data-bbox="296 945 1235 1095"> <p data-bbox="352 945 1222 1095">• In response to a question from Mr Price, Mr Robinson clarified that the requirement for the flexibility product would be set by the relevant system stress events that may not necessarily coincide with system peak demand.</p> </li> <li data-bbox="296 1111 1235 1328"> <p data-bbox="352 1111 1209 1178">• Mrs Bedola asked whether the flexibility product could be used as an RCM just for ESS requirements.</p> <p data-bbox="352 1189 1235 1328">Mr Robinson confirmed that a separate product could be defined for each ESS but noted that, based on the system stress modeling, the ramping capability was the only capability identified that may need long term investment signals.</p> </li> <li data-bbox="296 1344 1235 1568"> <p data-bbox="352 1344 1193 1411">• Mrs Bedola asked how the assessment of ESRs to provide the flexibility service would account for the ESR Obligation Intervals.</p> <p data-bbox="352 1422 1235 1568">Mr Robinson noted that the question applies to any facility providing peak capacity and flexibility and that he considered that, at the time of dispatch, the obligations for the flexibility product would overshadow the obligation for the peak capacity product.</p> </li> <li data-bbox="296 1583 1235 1955"> <p data-bbox="352 1583 1235 1760">• Mr Price considered that the interaction between the flexibility product and the Supplementary ESS Mechanism (<b>SESSM</b>) should be considered. Mr Price noted that the objective of the SESSM is to identify shortfalls in ESS services and underwrite the entry of the needed services.</p> <p data-bbox="352 1771 1225 1955">The Chair agreed with Mr Price and noted that the SESSM will be reassessed to remove any overlaps. The Chair considered that the current design of the SESSM could incentivise the withholding of ESS capacity until a SESSM is called, which could also lead to “double” recovery of costs in the RCM/SESSM.</p> </li> <li data-bbox="296 1971 1235 2036"> <p data-bbox="352 1971 1118 2036">• Mr Price asked whether there is an intent to harmonise the certification of ESR with the requirement for fuel storage.</p> </li> </ul>	

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	<p>Mr Robinson clarified that the intent is to assess this in the future, but that it was not intended to change the assessment of ESR now. The Chair noted that the certification of ESR will be reviewed but is not in the scope of the RCM Review as the recent decisions were aimed at providing investment certainty for this new technology.</p> <ul style="list-style-type: none"> <li>Mr Huppertz considered that a low minimum generation level should not be part of the requirement for a flexibility product because it is more important that a facility can come on and off quickly. The Chair noted that turning on and off a facility with high minimum generation can lead to step changes in supply and how this contributes to the requirements for flexibility products will need to be assessed.</li> <li>Mr Carlberg considered that capability classes are more complex than defining a minimum availability period and discounting facilities that are less available. Mr Robinson noted that the main distinction is between firm capacity and non-firm capacity based on probabilistic availability. However, all else being equal, capacity that is available for longer will be more valuable than capacity that is available for a shorter duration. The Chair noted that, in any case, the current availability classes needed to be reviewed because they do not appropriately account for hybrid facilities. In response to a question from Mr Shahnazari, the Chair clarified that the capability classes were proposed to address the peak capacity product and that the flexibility product would be addressed separately. Mr Schubert suggested to identify the need for different capability classes instead of prioritising capacity from one class over another. Mr Schubert considered that prioritising capacity that is available all the time may lead to over-procurement, to the detriment of capacity that provides other benefits, such as low emissions. The Chair noted that emissions are assumed to be addressed through Government policies and are not currently within the scope of the RCM Review. Mr Robinson acknowledged over-procurement of one class of capacity should be avoided if there is a more efficient way of procuring the needed capacity.</li> </ul> <ul style="list-style-type: none"> <li>In response to a question from Mr Price, Mr Robinson noted that the CRC would be determined separately for the peak capacity and the flexibility product.</li> <li>Mrs Bedola asked whether discounting capacity for intermittent generators through the ELCC method and then giving them a lower priority based on the capability class will penalise intermittent generators twice for the limited availability.</li> </ul>	



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	<p>Mr Robinson clarified that the ELCC would be used to assign CRC and the capability classes would be used to prioritise procurement of capacity.</p> <ul style="list-style-type: none"> <li>• Mrs Papps asked whether a Facility with a lower capability class that is assigned Capacity Credits in one year could not be assigned Capacity Credits in a subsequent year.</li> <li>• The Chair clarified that, once a facility received Capacity Credits in one year it would be eligible, subject to its performance, in subsequent years to provide certainty to investors.</li> </ul>	
<b>9</b>	<p><b>Next Steps</b></p> <p>The RCMRWG agreed that, based on the discussion, the MAC should be advised that the following issues should be investigated further:</p> <ul style="list-style-type: none"> <li>• alternative methods for assigning CRC to intermittent generators, other than ELCC;</li> <li>• a more granular assessment of the capacity requirement, such as monthly or quarterly;</li> <li>• whether generation at 41°C is still adequate; and</li> <li>• whether minimum generation needs to be considered as part of the flexibility product.</li> </ul>	
<b>10</b>	<p><b>General Business</b></p> <p>No general business was discussed.</p>	

**The meeting closed at 11:30am.**