



## Minutes

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| <b>Meeting Title:</b> | Reserve Capacity Mechanism Review Working Group (RCMRWG) |
| <b>Date:</b>          | 22 March 2023  |
| <b>Time:</b>          | 9:30 AM to 11:30 AM                                      |
| <b>Location:</b>      | Microsoft TEAMS  |

| <b>Attendees</b>    | <b>Company</b>                    | <b>Comment</b> |
|---------------------|-----------------------------------|----------------|
| Dora Guzeleva       | Chair                             |                |
| Manus Higgins       | AEMO                              |                |
| Toby Price          | AEMO                              |                |
| Oscar Carlberg      | Alinta Energy                     |                |
| Geoff Gaston        | Change Energy                     |                |
| Andrew Stephens     | Clear Energy Pty Ltd              |                |
| Jake Flynn          | Collgar Wind Farm                 |                |
| Matt Shahnazari     | Economic Regulation Authority     |                |
| Dale Waterson       | Merredin Energy                   |                |
| Patrick Peake       | Perth Energy                      |                |
| Tessa Liddelow      | Shell Energy                      |                |
| Paul Arias          | Shell Energy                      |                |
| Noel Schubert       | Small-Use Consumer representative |                |
| Rhiannon Bedola     | Synergy                           |                |
| Peter Huxtable      | Water Corporation                 |                |
| Mark McKinnon       | Western Power                     |                |
| Andrew Walker       | South32 (Worsley Alumina)         |                |
| Cameron Owen        | EnelX                             |                |
| Kiran Ranbir        | ATCO                              |                |
| Daniel Kurz         | SSCP Power                        | Until 10:30    |
| Tim Robinson        | Robinson Bowmaker Paul (RBP)      |                |
| Ajith Sreenivasan   | RBP                               |                |
| Stephen Eliot       | Energy Policy WA (EPWA)           |                |
| Laura Koziol        | EPWA                              |                |
| Shelley Worthington | EPWA                              |                |

| Item | Subject   | Action |
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| 1    | <p><b>Welcome</b></p> <p>The Chair opened the meeting at 9:30am.</p>  |        |
| 2    | <p><b>Meeting Apologies/Attendance</b></p> <p>The Chair noted the attendance as listed above.</p>   |        |
| 3    | <p><b>Minutes of RCMRWG meeting 2023_03_02</b></p> <p>The Chair noted that the draft minutes of the RCMRWG meeting held on 2 March 2023 were distributed for comment on 21 March 2023 and that one comment was received. The RCMRWG Secretariat would accept further comments until 29 March 2023 and then finalise the minutes.</p>  |        |
| 4    | <p><b>Action Items</b></p> <p>The paper was taken as read.</p>  |        |
| 5    | <p><b>Flexible Capacity – Additional Considerations</b></p> <p>Mr Robinson presented the proposals for certification and dispatch of flexible capacity, including the application of obligations, outages and refunds.</p> <p>The following was discussed.</p> <p>Mr Robinson explained that the dispatch engine:</p> <ul style="list-style-type: none"> <li>• does not distinguish between slow ramping and flexible capacity and cannot optimise dispatch to keep sufficient flexible capacity in reserve if it is needed in a later interval; but</li> <li>• currently slow ramping facilities are less expensive than flexible facilities so the dispatch engine would automatically hold flexible capacity in reserve until a higher ramp rate was needed.</li> </ul> <p>Mr Robinson noted that the proposal is to keep the dispatch process as is, to avoid unnecessary costs for changes to the dispatch engine.</p> <p>The Chair noted that it should be analysed how many slow ramping facilities would be synchronised on high ramp rate days in which demand is very low during midday.</p> <ul style="list-style-type: none"> <li>• Mrs Bedola noted that it should be assessed in what year flexible facilities could become cheaper than slow ramping facilities.</li> <li>• Mr Peake noted that slow ramping facilities could move up in the merit order if coal prices kept increasing.</li> </ul> <p>In response to a question from Mr Higgins, the Chair clarified that facilities providing flexible capacity would be suitable to provide all Essential System Services.</p> <ul style="list-style-type: none"> <li>• Mr Carlberg questioned if the flexible capacity product would actually provide the needed signal if there was a shortfall for peak capacity. Mr Carlberg suggested that a Non-Co-optimised</li> </ul> |        |

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|      | <p>Essential System Service to incentivise flexible capacity might be needed after all.</p> <p>Mr Robinson clarified that, as stated in the stage one consultation paper:</p> <ul style="list-style-type: none"> <li>• if the shortfall of flexible capacity is greater than the shortfall for peak capacity, then flexible capacity will get paid a premium;</li> <li>• if the shortfall for peak capacity is greater than the shortfall for flexible capacity, then flexible capacity may not receive a premium; and</li> <li>• flexible capacity will always get paid at least as much as peak capacity.</li> </ul> <p>In response to a question from Mr Schubert, the Chair noted that:</p> <ul style="list-style-type: none"> <li>• the Benchmark Reserve Capacity Price (BRCP) for flexible capacity can be higher than for the peak capacity; and</li> <li>• the Economic Regulation Authority is responsible for annual setting the BRCP.</li> </ul> <p>Mr Robinson presented the proposed method for setting the Individual Reserve Capacity Requirement (IRCR) intervals for the flexible capacity product:</p> <p>In response to a question from Mrs Bedola, Mr Robinson noted that:</p> <ul style="list-style-type: none"> <li>• in recent years the afternoon ramp up has been markedly higher than the morning ramp down; and</li> <li>• a facility that would be able to meet the requirements for ramping up would also be able to meet the requirements for ramping down.</li> </ul> <p>The RCMRWG supported the proposed approach for setting the flexible IRCR intervals.</p> <ul style="list-style-type: none"> <li>• Mr Schubert questioned if it was really necessary to restrict the certification for flexible capacity for a facility so that it could not exceed the facility's peak Certified Reserve Capacity because the steepest ramp will never occur at the same time as peak demand. Some flexible facilities may be able to provide more capacity outside of high demand because the Network Access Quantities may not bind the same way.</li> </ul> <p>The Chair noted that the restriction is proposed because customers should not pay twice for capacity. Not applying this restriction would also make the certification process more complicated. However, the flexible capacity product will be reviewed once it is operational.</p> <p>In response to a question from Mr Schubert, Mr Robinson clarified that flexible capacity would be required to have short cold start times.</p> <ul style="list-style-type: none"> <li>• Mrs Bedola considered that batteries may not be able to provide peak capacity and flexible capacity because of the limited time they can operate without charging.</li> </ul> |        |

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|      | <p>The Chair noted that it must be considered if batteries should be exempt from their Electric Storage Resource Obligations if they are needed to address the evening ramp.</p>  |        |
|      | <p>Mr Robinson noted that, as long as the system stress from ramping did not occur at the same time as the peak demand system stress, it would not be a problem if batteries get certified for both services. However, if the ramping stress would coincide with the peak demand stress, this could endanger system reliability.</p>  |        |
|      | <p>The Chair considered that it was unlikely that the ramping stress and the peak demand stress would occur at the same time.</p>   |        |
|      | <ul style="list-style-type: none"> <li>• Mr Peake suggested that AEMO could advise whether ramping or peak demand is the critical issue on any critical day. This would advise batteries how to bid.</li> <li>• Mr Cameron suggested that batteries should be incentivised to charge before the beginning of the ramp, increasing the load. This would reduce the steepness of the ramp.</li> </ul>   |        |
|      | <p>Mr Robinson considered that the energy price should signal for batteries to charge at that time.</p>   |        |
|      | <p>The Chair noted that it might be necessary to introduce a service to address minimum demand.</p>   |        |
|      | <ul style="list-style-type: none"> <li>• Mrs Bedola considered that the proposed outage regime meant that facilities providing flexible capacity will be disadvantaged if the price for peak capacity is the same as for flexible capacity. In this case proponents may have no incentive to apply for flexible capacity.</li> <li>• Mr Schubert considered that autumn would be the best time to test flexible capacity because high ramps may occur in June.</li> <li>• Mr Peake considered that the proposed refund regime could cause problems where a facility incurs high refunds before the Hot Season that amount to their whole capacity payments. Then the Facility would have no obligations to be available during the Hot Season.</li> <li>• Mr Gaston considered that Reserve Capacity Refunds should not be distributed to available capacity providers but to customers that pay for the capacity. Because if a facility pays refunds, the customers do not receive the service they pay for and may even have to pay for Non-Co-optimised Essential System Services and supplementary capacity.</li> <li>• Mr Cameron, Mr Schubert and Mr Peake agreed with Mr Gaston.</li> <li>• Mr Arias disagreed with Mr Gaston.</li> <li>• Mr Higgins considered that as long system reliability is secured, customers would receive what they are paying for.</li> </ul> |        |

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|          | <p>In response to a question from Dr Shahnazari, the Chair clarified that it is not proposed to apply Reserve Capacity Obligations to intermittent generators unless they provide flexible capacity.</p> <ul style="list-style-type: none"> <li>• Dr Shahnazari noted that it would be possible to place Reserve Capacity Obligations on intermittent generators. The obligation could be based on the availability at any point in time.</li> </ul>   |        |
| <b>6</b> | <p><b>Penalties on High Emission Technologies</b></p> <p>Mr Robinson summarised previous proposal for the penalty:</p> <ul style="list-style-type: none"> <li>• an emission rate threshold of 0.4 tCO<sub>2</sub>e/MWh for new facilities from the 2026 Capacity Cycle;</li> <li>• an emissions quantity threshold of 1,000 tCO<sub>2</sub>e/MW for new facilities from the 2026 Capacity Cycle; and</li> <li>• an emissions quantity threshold of 7,000 tCO<sub>2</sub>e/MW for existing facilities from the 2026 Capacity Cycle, ratcheting down by 500 tCO<sub>2</sub>e/MW per year until it reaches 1,000 tCO<sub>2</sub>e/MW from the 2036 Capacity Cycle.</li> </ul> <p>Mr Robinson summarised the concerns raised by RCMRWG members:</p> <ul style="list-style-type: none"> <li>• there is a tension between the environmental considerations being targeted by the penalties and the other parts of the energy trilemma (cost and reliability);</li> <li>• the proposed rate thresholds might make it difficult to finance a new flexible thermal power station;</li> <li>• there is a risk of the thresholds changing after a facility is built; and</li> <li>• remaining generators' behaviour and dispatch will change as facilities retire in response to the penalties.</li> </ul> <p>Mr Robinson presented a revised proposal to address these concerns:</p> <ul style="list-style-type: none"> <li>• an emission rate threshold of 0.55 tCO<sub>2</sub>e/MWh: <ul style="list-style-type: none"> <li>○ the newest OCGT on the SWIS is about 0.7 tCO<sub>2</sub>e/MWh and new gas fired peakers are in the 0.5-0.6 tCO<sub>2</sub>e/MWh range, so a new peaker could be built under the revised rate threshold, which is also more consistent with the European thresholds;</li> </ul> </li> <li>• an emissions quantity threshold of 1,000 tCO<sub>2</sub>e/MW for new facilities (no change): <ul style="list-style-type: none"> <li>○ it would be feasible to build and operate a new peaker that meets this threshold, although a proposal still needs to be developed on how to deal with cogen facilities; and</li> </ul> </li> <li>• an emissions quantity threshold of 4,000 tCO<sub>2</sub>e/MW for existing facilities from the 2027 Capacity Cycle, ratcheting down by</li> </ul> |        |

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|      | <p>500 tCO<sub>2</sub>e/MW per year until it reaches 1,000 tCO<sub>2</sub>e/MW from the 2033 Capacity Cycle:</p> <ul style="list-style-type: none"> <li>○ this is aligned with the announced retirement schedule for Synergy facilities.</li> </ul> <p>The Chair explained that the emissions quantity threshold would result in retirement of the same facilities that have already been announced by the WA Government.</p> <p>Mr Robinson indicated that the WA Government announced the retirement of Synergy plant for environmental reasons, and the revised quantity threshold is designed to meet the same objective, retiring the same facilities in the same timeframe.</p> <ul style="list-style-type: none"> <li>● Mr Price asked if it has been considered whether a gas turbine would meet the proposed thresholds if it is used in short cycling conditions, where it is run at min gen with quick ramping.</li> </ul> <p>Mr Robinson indicated that the standard running profile for a peaker is to be called at short notice, run for a short period and turned off, so the question is whether the operation profile for a peaker will be more extreme in the future.</p> <p>The Chair noted that EPWA is considering the issues, which have been raised by both the MAC and RCMRWG.</p> <ul style="list-style-type: none"> <li>● Mr Carlberg indicated that he is opposed to the emissions quantity threshold because the amount that a generator is dispatched is out of its control.</li> </ul> <p>The Chair indicated that Alinta raised this concern at the MAC, but the intent of the penalty cannot be achieved without both thresholds because the internal emissions rate for a facility cannot change once it is built.</p> <p>Mr Robison pointed out that, if there was just an emissions rate threshold, then the penalty will not provide any incentive for existing facilities to change their operations to emit less.</p> <p>Mr Robinson indicated that he understands Mr Carlberg's concern that dispatch is impacted by the market power mitigation rules, but generators have some ability to manage total emissions and cannot change the inherent emission intensity of their facility.</p> <ul style="list-style-type: none"> <li>● Mr Carlberg suggested that the emissions rate penalty could change from year-to-year so that a facility does not get penalised for running more if it still has a low emissions intensity.</li> </ul> <p>The Chair pointed out that there are two factors – how much CO<sub>2</sub> a facility produces, which depends on its utilisation factor, and its emissions intensity, which will only vary slightly depending on how the facility operates.</p> <ul style="list-style-type: none"> <li>● Mr Carlberg indicated that he understands the need for an incentive to improve, but this could be done with a declining emissions intensity rate.</li> </ul> |        |

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|      | <ul style="list-style-type: none"> <li>Mr Carlberg pointed out that a situation may arise where more emissions intensive units are running more often, but under the quantity threshold, leading to higher total emissions.</li> <li>Mr Peak pointed out that there is a risk that CCGTs will be restricted and that generation will be pushed to open cycle generation.</li> </ul>  |        |
|      | <p>The Chair indicated that it is understood that CCGT will try to run less, but the current proposal appears to be the best option to implement the Government policy for a penalty on high emission technologies.</p>  |        |
|      | <ul style="list-style-type: none"> <li>Mr Carlberg suggested that facilities can control their emissions intensity and that a declining emissions intensity threshold can be a signal to drive change, such as installing scrubbers.</li> <li>Mr Peak indicated that CO<sub>2</sub> cannot be scrubbed – if it could, then the current problem with emissions would be completely different.</li> </ul>  |        |
|      | <p>The Chair indicated that this policy is about reducing emissions, so unless a different option to address this issue is provided, the solution must adhere to the policy constraints.</p>   |        |
|      | <ul style="list-style-type: none"> <li>Mr Higgins asked if it would be possible to apply a cap and trade arrangement to allow participants to manage their emissions across all of their facilities – so that they can efficiently manage their operations under a global cap on emissions.</li> </ul>   |        |
|      | <p>Mr Robinson indicated that the intent is to introduce a simple and more targeted approach, without a full emissions pricing regime.</p>   |        |
|      | <p>The Chair pointed out that reliability is paramount for the Minister and that EPWA’s objective is to find a penalty regime that will not undermine this.</p>  |        |
|      | <ul style="list-style-type: none"> <li>Mr Schubert pointed out that the policy is about reducing actual emissions, not emissions rates, which is why a quantity threshold is necessary, and that the Expert Consumer Panel (ECP) is keen on making sure that as much as possible is done to reduce emissions. Some ECP members would not want to see any more fossil fuel plant built in the SWIS, even gas plant.</li> <li>Mr Schubert suggested that there may be difficulty meeting the Government's coal retirement plan for reliability reasons.</li> <li>Mr Cameron asked if the thresholds will only apply to large scheduled generators or whether DSP aggregators might be required to prove their emissions for backup diesel plants.</li> </ul> |        |
|      | <p>The Chair indicated that there is no proposal to treat diesel differently, but that a DSP that only runs backup diesel for a few intervals per year will not be caught by the quantity threshold.</p>   |        |
|      | <p>Mr Robinson pointed out that a DSP could only register and aggregate loads with backup diesel plants if all of the plants are small enough that they do not need to be registered.</p>  |        |

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|                 | <ul style="list-style-type: none"> <li>Ms Bedola asked how the penalties will impact the energy market. Market Participants can control how they bid, within the market power mitigation restrictions, but cannot control how they are dispatched, so how can they manage risks of hitting the emissions threshold.</li> </ul> <p>The Chair indicated that this is a good question and that EPWA will need to think about this and the rest of the concerns raised by members.</p> <p>Mr Robinson presented the preliminary analysis of the impact of the thresholds on facilities and indicated that the analysis needs to be refined to account for changes in dispatch as facilities enter and exit the market.</p> |                              |
| <p><b>7</b></p> | <p><b>Outages and Refunds</b></p> <p>Mr Robinson indicated that:</p> <ul style="list-style-type: none"> <li>there will be some changes to outages and refunds for DSP, as previously discussed;</li> <li>the question of who rebates will get rebated to is still under discussion; and</li> <li>no other changes are proposed to the outages and refunds regime.</li> </ul> <p>The Chair asked RCMRWG members to contact EPWA directly if they feel strongly about any aspect of refunds.</p>   | <p><b>RCMRWG Members</b></p> |
| <p><b>9</b></p> | <p><b>Next Steps</b></p> <p>Mr Robinson indicated that the next steps are to develop and publish a paper that includes:</p> <ul style="list-style-type: none"> <li>an information part for phase one of the review;</li> <li>a consultation part for phase two of the review; and</li> <li>some more commercial analysis on revenue adequacy for the entry of storage, wind and solar.</li> </ul>  |                              |
| <p><b>9</b></p> | <p><b>General Business</b></p> <p>No general business was discussed</p>  |                              |

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