Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Meeting Agenda

Meeting Title:	Market Advisory Committee (MAC)
Date:	Thursday 12 October 2023
Time:	9:30 AM – 11:30 AM
Location:	Online, via TEAMS.

Item	Item	Responsibility	Type	Duration
1	Welcome and Agenda • Conflicts of interest • Competition Law	Chair	Noting	2 min
2	Meeting Apologies/Attendance	Chair	Noting	2 min
3	Minutes of Meeting 2023_08_31	Chair	Noting	2 min
4	Action Items	Chair	Noting	5 min
5	Market Development Forward Work Program	Chair/Secretariat	Discussion	5 min
6	Update on Working Groups			
	(a) AEMO Procedure Change Working Group	AEMO	Noting	5 min
	(b) Reserve Capacity Mechanism Review Working Group (RCMWG)	RCMRWG Chair	Noting	3 min
	(c) Cost Allocation Review Working Group (CARWG)	CARWG Chair	Noting	3 min
	(d) Demand Side Response Review Working Group	DSRWG Chair	Noting	3 min
	(e) WEM Investment Certainty Review	WICRWG Chair	Noting	15 min
7	Rule Changes			
	(a) Overview of Rule Change Proposals	Chair/Secretariat	Noting	5 min
8	BRCP Reference Technology Review	Chair/Secretariat	Discussion	60 min
9	General Business	Chair	Discussion	10 min
	Next meeting: 9:00am (for 9:30 start) Thursday 23 November 2023 in person			

Please note, this meeting will be recorded.

Competition and Consumer Law Obligations

Members of the MAC (**Members**) note their obligations under the *Competition and Consumer Act 2010* (**CCA**).

If a Member has a concern regarding the competition law implications of any issue being discussed at any meeting, please bring the matter to the immediate attention of the Chairperson.

Part IV of the CCA (titled "Restrictive Trade Practices") contains several prohibitions (rules) targeting anti-competitive conduct. These include:

(a) **cartel conduct**: cartel conduct is an arrangement or understanding between competitors to fix prices; restrict the supply or acquisition of goods or services by parties to the arrangement; allocate customers or territories; and or rig bids.

(b) **concerted practices**: a concerted practice can be conceived of as involving cooperation between competitors which has the purpose, effect or likely effect of substantially lessening competition, in particular, sharing Competitively Sensitive Information with competitors such as future pricing intentions and this end:

- a concerted practice, according to the ACCC, involves a lower threshold between parties than a contract arrangement or understanding; and accordingly; and
- a forum like the MAC is capable being a place where such cooperation could occur.

(c) **anti-competitive contracts, arrangements understandings**: any contract, arrangement or understanding which has the purpose, effect or likely effect of substantially lessening competition.

(d) **anti-competitive conduct (market power)**: any conduct by a company with market power which has the purpose, effect or likely effect of substantially lessening competition.

(e) **collective boycotts**: where a group of competitors agree not to acquire goods or services from, or not to supply goods or services to, a business with whom the group is negotiating, unless the business accepts the terms and conditions offered by the group.

A contravention of the CCA could result in a significant fine (up to $500,000 for individuals and more than $10 million for companies). Cartel conduct may also result in criminal sanctions, including gaol terms for individuals.

Sensitive Information means and includes:

(a) commercially sensitive information belonging to a Member's organisation or business (in this document such bodies are referred to as an Industry Stakeholder); and

(b) information which, if disclosed, would breach an Industry Stakeholder's obligations of confidence to third parties, be against laws or regulations (including competition laws), would waive legal professional privilege, or cause unreasonable prejudice to the Coordinator of Energy or the State of Western Australia).

Guiding Principle – what not to discuss

In any circumstance in which Industry Stakeholders are or are likely to be in competition with one another a Member must not discuss or exchange with any of the other Members information that is not otherwise in the public domain about commercially sensitive matters, including without limitation the following:

(a) the rates or prices (including any discounts or rebates) for the goods produced or the services produced by the Industry Stakeholders that are paid by or offered to third parties;

(b) the confidential details regarding a customer or supplier of an Industry Stakeholder;

(c) any strategies employed by an Industry Stakeholder to further any business that is or is likely to be in competition with a business of another Industry Stakeholder, (including, without limitation, any strategy related to an Industry Stakeholder's approach to bilateral contracting or bidding in the energy or ancillary/essential system services markets);

(d) the prices paid or offered to be paid (including any aspects of a transaction) by an Industry Stakeholder to acquire goods or services from third parties; and

(e) the confidential particulars of a third party supplier of goods or services to an Industry Stakeholder, including any circumstances in which an Industry Stakeholder has refused to or would refuse to acquire goods or services from a third party supplier or class of third party supplier.

Compliance Procedures for Meetings

If any of the matters listed above is raised for discussion, or information is sought to be exchanged in relation to the matter, the relevant Member must object to the matter being discussed. If, despite the objection, discussion of the relevant matter continues, then the relevant Member should advise the Chairperson and cease participation in the meeting/discussion and the relevant events must be recorded in the minutes for the meeting, including the time at which the relevant Member ceased to participate.

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Minutes

Meeting Title:	Market Advisory Committee (MAC)
Date:	31 August 2023
Time:	9:30am –11:30am
Location:	Microsoft Teams and Energy Policy WA Office.

Attendees	Class	Comment
Sally McMahon	Chair	
Martin Maticka	Australian Energy Market Operator (AEMO)	
Dean Sharafi	AEMO	
Kei Sukmadjaja	Network Operator	Proxy for Zahra Jabiri
Genevieve Teo	Synergy	
Noel Schubert	Small-Use Consumer Representative	
Christopher Alexander	Small-Use Consumer Representative	
Jacinda Papps	Market Generator	Left at 11am.
Adam Stephen	Market Generator	
Paul Arias	Market Generator	
Peter Huxtable	Contestable Customer	
Timothy Edwards	Market Customer	
Geoff Gaston	Market Customer	
Patrick Peake	Market Customer	
Noel Ryan	Observer appointed by the Minister	
Dr Matt Shahnazari	Observer appointed by the Economic Regulation Authority (ERA)	Proxy for Rajat Sarawat

Also in Attendance	From	Comment
Dora Guzeleva	MAC Secretariat	Observer
Bronwyn Gunn	MAC Secretariat	Observer
Shelley Worthington	MAC Secretariat	Observer
Bobby Ditric	Lantau Group	Observer
Dave Carlson	Lantau Group	Observer

Apologies	From	Comment
Zahra Jabiri	Western Power	
Rajat Sarawat	ERA	

Item	Subject	Action
1	**Welcome** The Chair opened the meeting at 9.33 with an Acknowledgement of Country. She noted the Referendum happening on October 14 and the importance of being informed on the matter to be decided. The Chair noted there was one major agenda item for the meeting, the Demand Response Review Consultation Paper. The Chair noted the meeting protocols. The Chair confirmed that she had no new conflicts of interest to report since the last meeting. The Chair noted the Competition Law Statement and reminded members of their obligations. The Chair noted that MAC members are to participate in the interests of the stakeholder group they represent. The Chair noted that any advice to the Coordinator from the MAC represents the views of the MAC and not necessarily the views of the Chair. The Chair noted that the meeting is being recorded for the purposes of Minutes.	
2	**Meeting Apologies/Attendance** The Chair noted the attendance and apologies as listed above.	
3	**Minutes of Meeting 2023_06_08** The Chair noted a mix-up in the Action Items paper – that it was 8 June 2023 minutes that had been published, not 20 July 2023 minutes. She invited feedback on the Minutes for 20 July 2023 meeting. Mr Edwards noted that he is listed as a Market Generator Representative, and that he should be a Market Customer Representative. The MAC accepted the minutes of the 20 July 2023 meeting as a true and accurate record of the meeting, subject to the above amendment. **Action: The MAC Secretariat to publish the minutes of the 20 July 2023 MAC meeting on the Coordinator's Website as final.**	**MAC Secretariat**

Item	Subject	Action
4	**Action Items** The Chair noted that there were 2 closed action items: • 8 June 2023 minutes have been published • AEMO circulated email to MAC members on 22 August about how it dispatches Demand Side Programs (DSPs). Ms Guzeleva noted there was a follow up email from Mr Stephen asking whether DSPs would be dispatched in the same way in the new market, to which Mr Sharafi has provided a response. • Mr Sharafi confirmed that DSP dispatch would still be done manually in the new market, and be dependent on the forecast. • Mr Stephen stated that he considers it is worth reviewing the assumptions made in the DSM modelling as it assumes 86MW is dispatched in a scenario but, given the way AEMO dispatches DSPs, it is unlikely to be all dispatched (as much of it is held in reserve to provide essential system services). • Mr Sharafi reiterated that dispatch would depend on conditions on the day and the situation the power system is in, and that he was happy to discuss detail offline. • Mr Schubert noted that DSPs dispatched to provide contingency reserve services would reduce the demand that remaining generators have to meet and, therefore, the available spinning reserve will remain the same.	
5	**Market Development Forward Work Program** The Chair noted the updates in the paper.	
6	**Update on Working Groups**	
	(a) AEMO Procedure Change Working Group (APCWG) The Chair noted the updates in the Paper. Mr Maticka noted the updates to the WEM Procedure on Reserve Capacity Security – one administrative update and one update to allow security deposit deeds and guarantees to be submitted electronically. The changes are due to commence on 18 September.	
	(b) Reserve Capacity Mechanism Review Working Group (RCMRWG) Update Ms Guzeleva provided a verbal update, noting that: • Energy Policy WA is in the final stage of the RCM Review, drafting amending rules and consulting on them. • The RCM Review Working Group met yesterday and will meet again on Monday. • Yesterday, the Working Group discussed the draft rules related to the new flexible capacity product and its certification, the rules	

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around IRCR for the peak and flexible capacity products, and the new capability classes. There was also a discussion about a new policy item about how separately certified components that were commissioned after 2018 should be priced. There was an agreement to draft rules to treat separately certified components as "new facilities" even if they are co-located with a Transitional Facility.

- On Monday, the Working Group will discuss changes related to DSPs, outages and refunds, and the new relevant level method.
- The draft amending rules will be published in the next two weeks after comments from the Working Group have been incorporated.
- Consultation will be open for four weeks, and then any necessary amendments will be made before submitting the relevant WEM Amending Rules to the Minister for Energy for his approval.
- Energy Policy WA is yet to meet with the AEMO about the sequencing of the WEM Amending Rules implementation, as many will require systems development work by the AEMO. There may need to be another Working Group meeting about when the rules are implemented and commenced.

The Chair sought clarification on when this was coming back to the MAC.

Ms Guzeleva noted that it had been agreed that discussion on detailed rules was not a good use of the MAC time and that this would be a matter for the Working Group.

- Mr Edwards sought clarification on the links with the WEM Investment Certainty Review.

Ms Guzeleva confirmed that the outcomes from the RCM Review are the starting point for the WEM Investment Certainty Review.

(c) Cost allocation Review Working Group

Ms Guzeleva provided a verbal update, noting that:

- The Working Group met on Tuesday to go through a set of draft Rules in 3 parts as per the outcomes of the Review.
- The three areas were changes to the regulation raise and lower services cost allocation, changes to the contingency raise runway model and a new appendix to introduce a similar runway methodology for contingency lower.
- Next steps will be to take into account comments from the Working Group and publish an Exposure Draft of the relevant WEM Amending Rules.
- The Working Group requested not to publish these draft rules until 9 October, given that industry is busy with the commencement of the new market and the RCM draft rules that will come out for consultation during that time.

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	• The Cost Allocation changes will not commence until October 2025 in any case, so these are less urgent than the RCM Rules which need to commence soon.	
7	**Rule Changes** **(a) Overview of Rule Change Proposals** The Chair noted the updates in the paper. She noted that this is a clean-up of rule change proposals that have been there for a while and have been picked up by other reviews. Ms Guzeleva noted that the two rule change reports will hopefully be published prior to 30 September. Most likely to be rejections as the subject matter is picked up by the various reviews underway.	
8	**Update on the WEM Guideline: Non Co-Optimised Essential System Services and the WEM Procedure on dispute resolution** The Chair confirmed that the MAC is being asked to note both documents. Ms Guzeleva noted the closing dates for consultation and encouraged members to review the draft documents and provide any comments. She noted that Mr Schubert has already provided feedback on some cross-referencing errors. The guideline and the WEM Procedure need to be in place on 1 October.	
9	**Demand Side Response (DSR) Review Consultation Paper** The Chair noted that the paper is in draft form and the purpose of today is to provide guidance to the Coordinator on each of the proposals. She invited Ms Guzeleva to take the MAC through the proposals. Ms Guzeleva noted that the minutes from the 2 August DSR Review Working Group meeting are now published and members can look at these for more detail on some of the proposals. <u>Proposal 1</u> Ms Guzeleva provided a summary of the proposal and the rationale. Ms Guzeleva noted that a comment was received from Western Power via email on the day before the MAC meeting and invited Ms Sukmadjaja to cover that. • Ms Sukmadjaja confirmed Western Power's view that the paper could be further refined to note that information is currently shared with AEMO despite the WEM Rules not requiring this. Ms Guzeleva noted that the paper acknowledges this while also noting that more transparency for the rest of the market about what is shared and about how constrained access connections are integrated into the planning processes is desirable.	

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- Mr Schubert queried whether information is shared with AEMO in real time when loads are constrained.

Ms Guzeleva agreed that it is not clear in the WEM Rules how the information flows and that clarity would help. She noted that for simplicity it may be that the constraint equations and updates to thermal limits are used to communicate the situation on the network.

- Ms Sukmadjaja advised that she would take the question about what Western Power shares with AEMO about loads being constrained in real time on notice.
- Mr Alexander asked whether information going to AEMO should be provided to the broader market. For example, would details around terms and conditions of curtailment be made public under this proposal.

Ms Guzeleva clarified that this is a high-level proposal and that more thought would need to be given to the specific information to be made available to the market. She noted there is another body of work happening to improve connection processes.

Mr Guzeleva agreed that Western Power should be required to provide information to customers that connect on a constrained basis about how and when they would be curtailed, the activation notice that would be given and how being on a constrained access contract would affect the network tariffs they would pay. She agreed that this needs to be included in the paper.

Ms Guzeleva clarified that the proposal is to apply any new transparency provisions to all constrained connections but to not change the contractual arrangements of existing constrained connection contracts.

- Mr Maticka agreed that enshrining these matters in the WEM Rules is a good idea.

Mr Schubert noted that the MAC touched on providing more information to customers as part of the connection process and requested a further discussion about this under general business.

<u>Proposal 2</u>

Ms Guzeleva provided a summary of the proposal and rationale.

- Mr Sharafi noted that AEMO considers that it is important to retain the ability to decide, based on power system security and reliability requirements, that a hybrid facility comprising of a load and an ESR must register as a scheduled facility.

Ms Guzeleva agreed that this is reasonable, but that the WEM Rules need to be amended to provide clarity so participants know in advance how they will be required to register and how they can apply for capacity credits.

- Mr Alexander noted the difficulty in managing the balance between getting the obligations for DSPs right to ensure power system security and reliability can be maintained while not

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being overly onerous such that no one wants to provide the service.

Ms Guzeleva noted that the market objectives will be amended to talk about the energy trilemma, so there is a more general discussion about how the balance in struck in many policy areas.

- Mr Huxtable sought to clarify whether the consultation paper was seeking submissions on whether or how to make the arrangements for hybrid facilities clearer.

Ms Guzeleva clarified that stakeholders should be free to comment on either matter.

- Mr Schubert noted that the paper hasn't gone to the DSR Working Group and they haven't had a chance to comment on this draft.

Ms Guzeleva clarified that, as a general rule, the working groups have discussions about the subject matter and the draft consultation papers go to the MAC.

The Chair clarified that papers for the MAC go on the website the week before, and that MAC members could consult with their Working Group members ahead of the meeting.

- Mr Schubert noted that the Working Group has not seen the proposals in the paper before.

Ms Guzeleva noted that in the Working Group meetings the Chair summarises the discussion and notes the proposals to be put in the paper, and that those minutes are published.

- Mr Sharafi noted that ideally all matters should be discussed at the Working Group before going in a paper. Mr Sharafi noted that he did not consider they had been discussed to the level of detail seen in the paper. He also noted that AEMO does not have time in the next 6 weeks before market start to review and discuss these important matters.

Ms Guzeleva encouraged members to look at the minutes of the Working Group as these proposals have all been discussed and minuted. She reiterated the Chair's point that Working Group members should feed discussion and concerns back to MAC members.

Chair asked whether the MAC papers should include working group meeting minutes, or whether there is an understanding that they are available on the website to be reviewed. She noted that this will be discussed in general business.

<u>Proposal 3</u>

Ms Guzeleva provided a summary of the proposal and.

- Mr Gaston asked whether it would have to be a Western Power meter to allow separate settlement of components.

Ms Guzeleva confirmed that national legislation requires a meter to be installed by the meter data agent if it is used for settlement

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purposes, noting that there were alternatives available if meters were being used for certification or testing in the RCM.

- Mr Maticka asked whether there are issues with Western Power installing meters on a private network, and how this would apply to aggregators/smaller customers with DER. He considered that the proposal has merit generally, but may need to be explored further.

Ms Guzeleva noted that this issue has not been raised by Western Power in Working Group meetings, and that this proposal is relevant to contestable loads not smaller DER customers. She noted that as long as the notional meter remains the issue of how this applies to non-contestable customers shouldn't emerge.

- Mr Maticka reiterated that detailed design is needed to ensure that there are no unintended consequences and to ensure the proposal is future proofed in the case the notional wholesale meter disappears.
- Mr Gaston sought to clarify if there would be a separate NMI for each submeter, or whether it was just more visibility around each submeter. If the former, Mr Gaston agreed with Mr Maticka that there would need to be a way to account for overs and unders and netting.

Ms Guzeleva clarified that this is about a separate NMI as this is the only way the calculations can work for settlement.

- Mr Gaston noted that the proposal should not be about having to create a new connection as this can take 12-18 months.

Ms Guzeleva noted that the proposal is to provide flexibility and that she appreciates that this may not be suitable for many customers. This situation is already present for the town of Kambalda and there is no reason not to change the Rules to clarify that customers can access this type of arrangement if they so wish.

- Mr Edwards noted that there are large customers that are being approached by AEMO for services like NCESS and SRC but there is not real framework to separate the components to quantify what they are offering to the market. He noted that an administrative framework is needed that deals with metering accuracy e.g. like the framework for metering for the purposes of LGCs.
- Mr Edwards noted that large loads may have batteries to service their own load, and that AEMO may want to use these components but there is no framework to recognise the behind the meter contributions so they can be used in the market.

Ms Guzeleva noted that there is a procedure on the AEMO website about submetering under section 2.27 of the WEM Rules that is used for purposes other than settlement. However, this proposal is dealing with separation of components to allow for separate settlement.

<u>Proposal 4</u>

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Ms Guzeleva provided a summary of the proposal and rationale.

- Mr Sharafi noted AEMO's support.

Proposal 5

Ms Guzeleva provided a summary of the proposal and rationale.

No comments received.

Proposal 6

Ms Guzeleva provided a summary of the proposal and rationale.

- She noted feedback from Western Power via email stating that Western Power should not be compelled to share information with AEMO but rather permitted to.
- Ms Sukmadjaja noted support for the proposal but that Western Power considered that the wording needed to be refined to clarify that Western Power are supportive of sharing the necessary information with AEMO but that they currently cannot do so because it would mean they are in breach of the metering code.

Ms Guzeleva confirmed that EPWA would consider Ms Sukmadjaja's comments and refine the wording in accordance with these.

- Mr Sharafi noted that AEMO supports the proposal, but that there needs to be clarity about the obligations for Western Power to provide specifically what AEMO needs, and that there should be alignment in the WEM Rules and the Metering Code on confidentiality provisions.

The Chair noted that AEMC released a report on metering on 30 August, which made recommendations in relation to increasing access to metering data by various parties.

Proposal 7

Ms Guzeleva provided a summary of the proposal and rationale.

No comments received.

Proposal 8 and 9

Ms Guzeleva provided a summary of the proposal and rationale.

Ms Guzeleva noted that the Appendix to the paper will include some of the AEMC's recent findings on demand side participation in the real time market.

- Mr Schubert noted that DSR is capable of participating in the real-time market.

Ms Guzeleva agreed, and noted that at some point the WEM Rules relevant for this participation should be renewed.

- Mr Sharafi noted AEMO's support for these recommendations.

Proposal 10

Item	Subject	Action

Ms Guzeleva provided a summary of the proposal and rationale.

She noted that there has been extensive discussion on the issue of a minimum demand product in the Working Group and that it's a question that has been asked in other working groups.

- Mr Sharafi noted that the paper only focuses on ESR for minimum demand, but that there is opportunity to use DER for this purpose.

Ms Guzeleva agreed but noted that the work on the DER roadmap is looking at these matters.

- Mr Schubert noted that there need to be more incentives for customers to shift load.

Ms Guzeleva noted that new products are emerging in the retail market to encourage customers to do this, but that the Working Group has concluded that there does not need to be a specific service.

- Mr Alexander noted that he was concerned about the optimism that the minimum demand issue will sort itself out and that there is a risk that it won't, and that this will result in system security and reliability issues.

Proposal 11

Ms Guzeleva provided a summary of the proposal and rationale.

- Mr Sharafi noted that AEMO agrees that updates may be required to ensure full participation of DSR and that the WEM Rules need to be reviewed to ensure there no barriers. However, requirements for participation in ESS should continue to be in procedures to ensure AEMO has control over the requirements.
- Mr Sharafi expressed the view that these are engineering matters and flexibility is needed for AEMO to accommodate emerging capabilities. The WEM Rules should not contain standards such as telemetry requirements or cyber security as these are effectively engineering matters.

Ms Guzeleva stated that there is a need to consider all WEM Procedures and the appropriateness of what is currently in the rules and what is in the procedures. Ms Guzeleva did not consider, for example, that MW thresholds for ESS accreditation should be in procedures under the control of AEMO.

Proposal 12

Ms Guzeleva provided a summary of the proposal and rationale, and noted that there have been extensive discussions on this matter in the Working Group.

- Mr Stephen agreed that the rules need to provide for rotation of DSPs that are dispatched by AEMO.
- Mr Schubert noted that AEMO would prefer that Interruptible Loads remain enabled even if not dispatched as you would

Item	Subject	Action
	want them to go off first in an under-frequency load shedding (UFLS) event. Ms Guzeleva noted that the procedure states that they would be disabled if they are not in merit. • Mr Schubert agreed but noted that it would still be desirable for them to trip off first. He clarified that he supported the proposal as drafted. <u>Summary of discussion on the DSR Consultation Paper</u> • Mr Peake noted that that was a good discussion paper. The Chair summarised the feedback on the proposals as follows: • 1: the feedback focused on providing clarity and transparency, and having a requirement in the rules rather than following a practice. • 2: feedback was received on providing clarity about whether the paper was asking if something should happen or how something should happen, and that stakeholders should feel free to make submissions on both matters. • 3: there was general support but there are details that need to be explored around metering practices and potential restrictions. • 4 and 5: there was reasonable levels of support. • 6: there were some issues raised by Western Power and AEMO and the drafting will be amended to address these. • 7, 8, 9 and 10: there was reasonable levels of support, noting some comments on proposal 10 about DER issues. • 11, 12: there was reasonable support with some issues raised about whether certain matters should be in rules or procedures. Chair called for any final comments. Chair noted that this is a consultation paper and submissions should be made when it is released. **Action: Western Power to provide advice about the information that it shares with AEMO in real time when loads are constrained.**	**Western Power** **(31 August 2023)**
10	**MAC meeting schedule for 2024** The MAC approved the schedule as proposed. Mr Peake asked whether meetings would be in person or via teams. Chair requested that this be raised in general business.	
11	**General Business** Chair noted two matters outstanding from the meeting for discussion:	

Item	Subject	Action

1. Governance: how minutes/outcomes of the working groups are communicated to MAC members.
2. The framework for submetering under section 2.27 of the WEM Rules.

- Mr Schubert noted that the ESOO projection that there will be 900MW shortfall of capacity, much of it due to electrification, hydrogen production and EV growth.
- Mr Schubert considered that it would be valuable to think about how new loads connecting to the SWIS can have flexibility embedded in their design from the beginning. This is important for both small and large customers.
- Mr Schubert questioned whether the problem should be communicated to customers to ensure that loads can be used flexibly. He considered that this much capacity will not be needed if those flexible loads shift their consumption.
- Mr Sharafi supported this, noting that load flexibility is one of the missing pieces of the puzzle in the transition. He noted that Western Power doesn't know where new EVs will locate and there will be a difficult situation if there is no flexibility in the loads**.**

Ms Guzeleva noted that the NSW government turns down government buildings when AEMO is about to issue lack of reserves advisory. EPWA is doing some internal thinking about that.

Ms Guzeleva added that Western Power should be using the NCESS process to procure flexibility services to avoid network augmentation. The new guidance on the NCESS framework should help AEMO and Western Power to identify if NCESS can be used.

- Mr Peake noted that new storage systems that are installed should be capable of orchestration.

Ms Guzeleva confirmed that the DER Roles and Responsibilities project is looking into this.

- Mr Huxtable noted that the certainty for loads who want to participate in the wholesale market is not there due to the changing requirements and that this makes a business case challenging. NCESS might help a business case in the short term but is not reliable in the long term.

Ms Guzeleva noted that the framework for DSPs has been reviewed, the number of hours has been reduced through the RCM Review and there is progress towards making it more attractive to participate. It may seem slow but there is a need to bring all stakeholders along in the reform process.

The Chair confirmed that progress is being made and that further work could to look at the gaps.

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- Mr Schubert noted that retrofitting is expensive and that it is a shame if things are being installed now without the flexibility that will be required in the future in mind.

Ms Guzeleva noted that as per proposal 1 more and more constrained access connections are expected, and that their lifecycle starts before loads connect. There needs to be absolute clarity on the conditions that will apply so they can be built into the business case. This may have to become a reference service.

The Chair expressed a preference for face-to-face meetings every second meeting, to be nominated in advance. She noted that hybrid meetings are difficult. She proposed that members might like to come half an hour earlier for a cup of tea or coffee before the meeting.

- Next meeting (12 October 2023) will be online.
- The meeting on 23 November 2023 will be in person. She encouraged members to advise well in advance if they are unable to attend in person or send a proxy.

On the matter of governance, the Chair noted that members should note that they should discuss agenda items with members of the relevant working group from their organisation ahead of MAC meetings.

The meeting closed at 11:26am.

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 4: MAC Action Items

Market Advisory Committee (**MAC**) Meeting 2023_10_12

Shaded	Shaded action items are actions that have been completed since the last MAC meeting. Updates from last MAC meeting provided for information in RED.
Unshaded	Unshaded action items are still being progressed.
Missing	Action items missing in sequence have been completed from previous meetings and subsequently removed from log.

Item	Action	Responsibility	Meeting Arising	Status
14/2023	MAC Secretariat to publish the minutes of the 20 July 2023 MAC meeting on the Coordinator's Website as final.	MAC Secretariat	2023_08_31	**Closed** The minutes were published on the Coordinator's Website on 31 August 2023.
15/2023	Western Power to provide advice about the information that it shares with AEMO in real time when loads are constrained.	Western Power	2023_08_31	**Open**

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 5: Market Development Forward Work Program

Market Advisory Committee (**MAC**) Meeting 2023_10_12

1. Purpose

- To provide an update on the Market Development Forward Work Program.
- Changes to the Market Development Forward Work Program provided at the previous MAC meeting are shown in red font in the Tables below.

2. Recommendation

- The MAC Secretariat recommends that the MAC notes the updates to the Market Development Forward Work Program provided in Tables 1-4, including that:
    - the Chair of the Reserve Capacity Mechanism Review Working Group (RCMRWG) will provide a verbal update to the MAC on the progress of the Reserve Capacity Mechanism (RCM) Review - see Agenda Item 6(b);
    - the Chair of the Cost Allocation Review Working Group (CARRWG) will provide a verbal update to the MAC on the progress of the Cost Allocation Review (CAR) - see Agenda Item 6(c);
    - the Chair of the Demand Side Response Review Working Group (DSRRWG) will provide an update to the MAC on the progress of the Demand Side Response (DSR) Review - see Agenda Item 6(d);
    - the Chair of the WEM Investment Certainty Review Working Group (WICRWG) will provide an update to the MAC on the progress of WEM Investment Certainty (WIC) Review - see Agenda Item 6(e); and
    - the Chair of the Benchmark Reserve Capacity Price (BRCP) Technology Review will provide an update to the MAC on the progress of BRCP Review - see Agenda Item 8.

3. Process

Stakeholders may raise issues for consideration by the MAC at any time by sending an email to the MAC Secretariat at energymarkets@dmirs.wa.gov.au.

Stakeholders should submit issues for consideration by the MAC two weeks before a MAC meeting so that the MAC Secretariat can include the issue in the papers for the MAC meeting, which are circulated one week before the meeting.

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**

RCM Review	A review of the RCM, including a review of the Planning Criterion.	• The MAC has established the RCM Review Working Group (**RCMRWG**). Information on the Working Group is available at https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review-working-group, including:
		  • the Terms of RCMRWG, as approved by the MAC;
		  • the list of RCMRWG members;
		  • meeting papers and minutes from the RCMRWG meeting on 20 January 2022, 17 February 2022, 17 March 2022, 5 May 2022, 2 June 2022, 16 June 2022, 14 July 2022, 2 July 2022, 13 October 2022, 24 November 2022; 15 December 2022, 1 February 2023, 16 February 2023, 2 March 2023, 22 March 2023, 6 July 2023, 13 July, 30 August 2023; and
		  • meeting papers from the RCMRWG meeting on 21 September 2023.
		• The following papers have been released and are available on the RCM Review webpage at https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review:
		  • the Scope of Works for the review, as approved by the Coordinator;
		  • the Stage 1 Consultation Paper;
		  • the Paper on the Review of International Capacity Mechanisms;
		  • submissions on the Stage 1 Consultation Paper;
		  • the RCM Review Information Paper (Stage 1) and Consultation Paper (Stage 2); and
		  • submissions on the RCM Review Consultation Paper (Stage 2).
		  • The RCM – WEM Amending Rules Exposure Draft.

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**
Benchmark Reserve Capacity Price (BRCP) Reference Technology Review	• The RCM Review will introduce a provision in the WEM Rules that will require the Coordinator to review the BRCP reference technologies.	• The RCMRWG will also support the Coordinator in the review of the BRCP reference technologies. • This review is being conducted in consultation with the MAC and the RCMRWG and information on the review is available at Benchmark Reserve Capacity Price Reference Technology Review (www.wa.gov.au) ○ A meeting of the RCMRWG was held 21 September 2023 to discuss this review and meeting papers are available at: https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review-working-group

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**

Cost Allocation Review	A review of:
	• the allocation of Market Fees, including behind the meter (**BTM**) and Distributed Energy Resources (**DER**) issues;
	• cost allocation for Essential System Services; and
	• Issues 2, 16, 23 and 35 from the MAC Issues List (see Table 3).
		• The MAC has established the Cost Allocation Review Working Group (**CARWG**). Information on the CARWG is available at https://www.wa.gov.au/government/document-collections/cost-allocation-review-working-group, including:
		  • the Scope of Work for the review, as approved by the Coordinator;
		  • the Terms of Reference for the CARWG, as approved by the MAC;
		  • the list of CARWG members;
		  • meeting papers and minutes from the CARWG meetings on 9 May 2022, 7 June 2022, 30 August 2022, 27 September 2022, 25 October 2022, 29 November 2022, and 21 March 2023 and 2 May 2023; and
		  • meeting papers from the CARWG meeting on 29 August 2023.
		The following papers have been released and are available on the CAR webpage at Cost Allocation Review (www.wa.gov.au)
		  • the Consultation Paper;
		  • the International Review;
		  • submissions on the Consultation Paper;
		  • the Cost Allocation Review Information Paper.
		• The Working Group requested that the consultation on the Exposure Draft of the proposed WEM Amending Rules to implement the Review Outcomes was published after the 9 October 2023.

Procedure Change Process Review	A review of the Procedure Change Process to address issues identified through Energy	• The MAC discussed a draft Scope of Work for this review at its meeting on 11 October 2022. MAC members provided comments on the draft Scope of

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**
	Policy WA's consultation on governance changes.	Works at that meeting, and were asked to provide further comments by email. EPWA did not receive any further comments. • EPWA will update the Scope of Works to reflect the MAC discussions and, following the Coordinator approval of the Scope, will provide the final scope and a timeline for the review to the MAC in early 2023.
Forecast quality	Review of Issue 9 from the MAC Issues List (see Table 4).	• This review has been deferred.
Network Access Quantity (**NAQ**) Review	Assess the performance of the NAQ regime, including policy related to replacement capacity, and address issues identified during implementation of the Energy Transformation Strategy (ETS).	• This review will be commenced after completion of the RCM Review.
Short Term Energy Market (**STEM**) Review	Review the performance of the STEM to address issues identified during implementation of the ETS.	• This review has been deferred.

Review of the Participation of Demand Side in the Wholesale Electricity Market (**WEM**)	The scope of this review is to:
	• identify the different ways that Loads/Demand Side Response can participate across the different WEM components;
	• identify and remove any disincentives or barriers for Loads/Demand Side Response participating across the different WEM components; and
		• The MAC has established the Demand Side Response Review Working Group (DSRRWG). Information on the DSRRWG is available at Demand Side Response Review Working Group (www.wa.gov.au), including:
		  • the Terms of Reference for the DSRRWG, as approved by the MAC;
		  • meeting papers and minutes from the DSRRWG meeting on 10 May 2023, 7 June 2023, 5 July 2023 and 2 August 2023.
		• The following papers have been released and are available on the DSR Review webpage at Demand Side Response Review (www.wa.gov.au)
		  • the Scope of Work for the review, as approved by the Coordinator; and

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**
	• identify any potential for over- or under-compensation of Loads/Demand Side Response (including as part of 'hybrid' facilities") as a result of their participation in the various market mechanisms.	• the Demand Side Response Review Consultation paper.

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**
WEM Investment Certainty (**WIC**) Review	The WIC Review will consider, design and implement the following five reforms that have been announced by the Minister for Energy, which are aimed at providing further investment certainty to assist the decarbonisation of the WEM: (1) changing the Reserve Capacity Price (RCP) curve so it sends sharper signals for investment when demand for new capacity is stronger; (2) a 10-year RCP guarantee for new technologies, such as long-duration storage; (3) a wholesale energy price guarantee for renewable generators, to top up their energy revenues as WEM prices start to decline, in return for them firming up their capacity; (4) emission thresholds for existing and new high emission technologies in the WEM; and (5) a 10-year exemption from the emissions thresholds for existing flexible gas plants that qualify to provide the new flexibility service.	• The MAC has established the WIC Review Working Group (WICRWG). Information on the WICRWG is available at Wholesale Electricity Market Investment Certainty (WIC) Review Working Group (www.wa.gov.au) including: ○ the Terms of Reference for the WICRWG, as approved by the MAC; ○ the list of WICRWG members; and ○ meeting papers from the 31 August 2023 WICRWG meeting. • The following papers have been released and are available on the WIC Review webpage at https://www.wa.gov.au/government/document-collections/wholesale-electricity-market-investment-certainty-review, including: ○ the Scope of Work for the review, as approved by the Coordinator.

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**
Review of the Market Advisory Committee (**MAC**)	The scope of this review is to ensure that the purpose, representation, process and operations of the MAC are fit for purpose, and in particular, that it operates efficiently and provides balanced, timely and useful advice to the Coordinator.	• The MAC supported a Scope of Works for this review at its meeting on 8 June 2023, and advised EPWA to further consider the timing of the review. • In response to MAC's comments, EPWA now proposes to commence the MAC Review in early 2024.

Table 2 – Issues to be Addressed in the RCM Review			
Id	**Submitter/Date**	**Issue**	**Status**
1	Shane Cremin November 2017	**IRCR calculations and capacity allocation** There is a need to look at how IRCR and the annual capacity requirement are calculated (i.e. not just the peak intervals in summer) along with recognising BTM solar plus storage. The incentive should be for retailers (or third-party providers) to reduce their dependence on grid supply during peak intervals, which will also better reflect the requirement for conventional 'reserve capacity' and reduce the cost per kWh to consumers of that conventional 'reserve capacity'.	Closed. Considered in the RCM Review.
3	Shane Cremin November 2017	Penalties for outages.	Closed. Considered in the RCM Review.
4	Shane Cremin November 2017	Incentives for maintaining appropriate generation mix.	Closed. Considered in the RCM Review and the WIC Review.
14/36	Bluewaters and ERM Power November 2017	**Capacity Refund Arrangements:** The current capacity refund arrangement is overly punitive as Market Participants face excessive capacity refund exposure. This refund exposure is more than what is necessary to incentivise the Market Participants to meet their obligations for making capacity available. Practical impacts of such excessive refund exposure include: • compromising the business viability of some capacity providers – the resulting business interruption can compromise reliability and security of the power system in the SWIS; and • excessive insurance premiums and cost for meeting prudential support requirements.	Closed. Considered in the RCM Review.

Table 2 – Issues to be Addressed in the RCM Review			
Id	**Submitter/Date**	**Issue**	**Status**
		Bluewaters recommended imposing seasonal, monthly and/or daily caps on the capacity refund. Bluewaters considered that reviewing capacity refund arrangements and reducing the excessive refund exposure is likely to promote the Wholesale Market Objectives by minimising: • unnecessary business interruption to capacity providers and in turn minimising disruption to supply availability; which is expected to promote power system reliability and security; and • unnecessary excessive insurance premium and prudential support costs, the saving of which can be passed on to consumers.	
30	Synergy November 2017	**Reserve Capacity Mechanism** Synergy would like to propose a review of WEM Rules related to reserve capacity requirements and reserve capacity capability criteria to ensure alignment and consistency in determination of certain criteria. For instance: • assessment of reserve capacity requirement criteria, reserve capacity capability and reserve capacity obligations; • IRCR assessment; • Relevant Demand determination; • determination of NTDL status; • Relevant Level determination; and • assessment of thermal generation capacity. The review will support Wholesale Market Objectives (a) and (d).	Closed. Considered in the RCM Review.

Table 2 – Issues to be Addressed in the RCM Review			
Id	**Submitter/Date**	**Issue**	**Status**
56	Perth Energy July 2019	**Issues with Reserve Capacity Testing** • Market Generators that fail a Reserve Capacity Test may prefer to accept a small shortfall in a test (and a corresponding reduction in their Capacity Credits) than to run a second test. • There is a discrepancy between the number of Trading Intervals for self-testing vs. AEMO testing. • There is ambiguity in the timing requirements for a second test when the relevant generator is on an outage. • There is ambiguity on the number of Capacity Credits that AEMO is to assign when certain test results occur.	Closed. Considered in the RCM Review.
58	MAC October 2019	**Outage scheduling for dual-fuel Scheduled Generators** '0 MW' outages are currently used to notify System Management when a dual-fuel Scheduled Generator is unable to operate on one of its nominated fuels. There is no explicit obligation in the WEM Rules or the Power System Operation Procedure: Facility Outages to request/report outages that limit the ability of a Scheduled Generator to operate using one of its fuels. In terms of the provision of sent out energy (the service used to determine Capacity Cost Refunds), it is questionable whether this situation qualifies as an outage at all. More generally, the WEM Rules lack clarity on the nature and extent of a Market Generator's obligations to ensure that its Facility can operate on the fuel used for its certification, what (if anything) should occur if these obligations are not met, and the implications for outage scheduling and Reserve Capacity Testing. • (See section 7.2.2.5 of the Final Rule Change Report for RC_2013_15.)	Closed.

Table 3 – Issues to be Addressed in the Cost Allocation Review			
Id	**Submitter/Date**	**Issue**	**Status**
2	Shane Cremin November 2017	Allocation of market costs – who bears Market Fees and who pays for grid support services with less grid generation and consumption?	Closed – Considered in the Cost Allocation Review. Refer to the Cost Allocation Review Information Paper. EPWA plans to publish for consultation an Exposure Draft of the proposed WEM Amending Rules to implement the Review Outcomes.
16	Bluewaters November 2017	BTM generation is treated as reduction in electricity demand rather than actual generation. Hence, the BTM generators are not paying their fair share of the network costs, Market Fees and ancillary services charges. Therefore, the non-BTM Market Participants are subsiding the BTM generation in the WEM. Subsidy does not promote efficient economic outcome. Rapid growth of BTM generation will only exacerbate this inefficiency if not promptly addressed. Bluewaters recommends changes to the WEM Rules to require BTM generators to pay their fair share of the network costs, Market Fees and ancillary services charges. This is an example of a regulatory arrangement becoming obsolete due to the emergence of new technologies. Regulatory design needs to keep up with changes in the industry landscape (including technological change) to ensure that the WEM continues to meet its objectives. If this BTM issue is not promptly addressed, there will be distortion in investment signals, which will lead to an inappropriate generation facility mix in the WEM, hence compromising power system security and in turn not promoting the Wholesale Market Objectives.	Closed – Considered in the Cost Allocation Review. Refer to the Cost Allocation Review Information Paper.

Table 3 – Issues to be Addressed in the Cost Allocation Review			
Id	**Submitter/Date**	**Issue**	**Status**
23	Bluewaters November 2017	Allocation of Market Fees on a 50/50 basis between generators and retailers may be overly simplistic and not consider the impacts on economic efficiency. In particular, the costs associated with an electricity market reform program should be recovered from entities based on the benefit they receive from the reform. This is expected to increase the visibility of (and therefore incentivise) prudence and accountability when it comes to deciding the need and scope of the reform. Recommendations: to review the Market Fees structure including the cost recovery mechanism for a reform program. The cost saving from improved economic efficiency can be passed on to the end consumers, hence promoting the Wholesale Market Objectives.	Closed – Considered in the Cost Allocation Review. Refer to the Cost Allocation Review Information Paper.
35	ERM Power November 2017	**BTM generation and apportionment of Market Fees, ancillary services, etc.** The amount of solar PV generation on the system is increasing every year, to the point where solar PV generation is the single biggest unit of generation on the SWIS. This category of generation has a significant impact on the system and we have seen this in terms of the daytime trough that is observed on the SWIS when the sun is shining. The issue is that generators that are on are moving around to meet the needs of this generation facility but this generation facility, which could impact system stability, does not pay its fair share of the costs of maintaining the system in a stable manner. That is, they are not the generators that receive its fair apportionment of Market Fees and pay any ancillary service costs but yet they have absolute freedom to generate into the SWIS when the fuel source is.	Closed – Considered in the Cost Allocation Review. Refer to the Cost Allocation Review Information Paper.

Table 4 – Other Issues			
Id	**Submitter/Date**	**Issue**	**Status**
9	Community Electricity November 2017	Improvement of AEMO forecasts of System Load; real-time and day-ahead.	Consideration of this issue has been deferred.

MARKET ADVISORY COMMITTEE MEETING, 12 October 2023

FOR DISCUSSION

SUBJECT: UPDATE ON AEMO'S WEM PROCEDURES

AGENDA ITEM: 6(A)

1. PURPOSE

Provide a status update on the activities of the AEMO Procedure Change Working Group and AEMO Procedure Change Proposals.

2. AEMO PROCEDURE CHANGE WORKING GROUP (APCWG)

	Most recent meetings	**Next meeting**
Date	14 June 2023	As required
WEM Procedures for discussion	WEM Procedure: Supplementary Reserve Capacity WEM Procedure: Reserve Capacity Security	

3. AEMO PROCEDURE CHANGE PROPOSALS

The status of AEMO Procedure Change Proposals is described below, current as at 12 October 2023. Changes since the previous MAC meeting are in red text. A procedure change is removed from this report after its commencement has been reported or a decision has been taken not to proceed with a potential Procedure Change Proposal.

ID	Summary of changes	Status	Next steps	Indicative Date
Procedure Change Proposal AEPC_2023_02 WEM Procedure: Reserve Capacity Security	AEMO has proposed two separate revisions of the Reserve Capacity Security WEM Procedure to commence 31 July 2023 and 1 October 2023 respectively: Amendments proposed to commence 31 July 2023 include: • updates to the Security Deposit deeds, bank guarantees and bank undertakings requirements to allow Market Participants to submit electronic copies (Originals must still be provided within 20 business days); • migration to AEMO's new WEM Procedure template; and • other minor administrative changes. Amendments proposed to commence 1 October 2023 include: changes to the Required Level calculations to account for Separately Certified Components from the 2023-24 Capacity Year in accordance with the Wholesale Electricity Amendment (Tranche 5 Amendments) Rules.	Procedure Commenced		1 October 2023

ID	Summary of changes	Status	Next steps	Indicative Date
Procedure Change Proposal AEPC_2022_02 WEM Procedure: DER Register Information Procedure	AEMO proposed amendments to the Procedure to: • incorporate electric vehicles (EVs) and electric vehicle charging equipment data; • integrate changes following amendments to the Australian Standard AS/NZS 4777.2:2015 which has been superseded by AS/NZS 4777.2:2020; • implement minor changes that better reflect the changed operational expectations of DER in the WEM and SWIS (e.g. implementation of Emergency Solar Management); • improve the completeness and quality of data exchanged between Network Operators and AEMO (e.g. conveying additional context to reinforce clarity in the document; better aligning the Procedure with related technical specifications); and • reinforce alignment to the WEM Rules, and make other minor administrative changes.	Procedure Commenced		1 October 2023

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 6(b): Update on the RCM Review Working Group

Market Advisory Committee (MAC) Meeting 2023_10_12

1. Purpose

- The Chair of the Reserve Capacity Review Working Group (RCMRWG) to provide an update on the activities of the RCMRWG since the last MAC meeting.

2. Recommendation

That the MAC notes:

(1) The Reserve Capacity Mechanism (RCM) – WEM Amending Rules Exposure Draft was published 14 September 2023 for a 5-week consultation period; and

(2) the update from the RCMRWG meetings on 30 August, 4 and 21 September 2023; and

(3) notes the minutes from the RCMRWG meetings on 30 August and 4 September. (Attachment 1 and 2)

3. Background

- The MAC discussed the RCM – Stage 2 Information Paper (Paper) at its meeting 20 July 2023.
    - the Paper was published 2 August 2023.
- At this meeting the MAC agreed that the RCMRWG was the right body to review the drafting of the RCM WEM Amending Rules.
    - the RCM WEM Amending Rules Exposure Draft was published 14 September 2023 for a 5-week consultation period.
- On 30 August 2023 the RCMRWG discussed:
    - the draft rules related to the new flexible capacity product and its certification:
    - the rules around Individual Reserve Capacity Requirement for the peak and flexible capacity products: and
    - the new capability classes.
- At that meeting there was also discussion on a new policy item that had not been considered previously in the RCM Review that:
    - new Separately Certified Components of Transitional Facilities should receive the prevailing Reserve Capacity Price and not the Transitional Reserve Capacity Price to incentivise efficient investment in the market.
- There was agreement from the RCMRWG to draft rules to treat separately certified components as “new facilities” even if they are co-located with a Transitional Facility.
- On 4 September 2023 the RCMRWG discussed changes related to:

  - Demand Side Programs;
  - outages and refunds, and
  - the new relevant level method.
- Review outcome 9 of the RCM Review was the introduction of a provision in the WEM Rules that will require the Coordinator to review the Benchmark Reserve Capacity Price (BRCP) reference technologies. The RCMRWG will also support the Coordinator in this review.
- The first review of the BRCP reference technologies must be conducted to set the reference technologies before the Flexible Capacity product can be implemented. The objective of the review is to determine the reference technologies for the Peak and Flexible BRCP.
- On 21 September 2023 the RCMRWG discussed the approach to shortlisting five technologies for the Peak Capacity Product and the new Flexible Capacity Product.
- Papers and minutes for the RCMRWG meetings are available on the RCMRWG webpage at https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review-working-group.
- Further information on the RCM Review, including all Papers. submissions and the WEM Amending Rules Exposure Draft are available on the RCM Review webpage at https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review.

4. Next Steps

- Consolidate submissions received on the RCM WEM Amending Rules Exposure Draft.

Attachments

(1) Agenda Item 6(b) – Attachment 1 – RCMRWG 2023_08_30 - Minutes

(2) Agenda Item 6(b) – Attachment 2 – RCMRWG 2023_09_04 - Minutes

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Minutes

Meeting Title:	Reserve Capacity Mechanism Review Working Group (RCMRWG)
Date:	30 August 2023
Time:	9:00 AM to 11:00 AM
Location:	Microsoft TEAMS

Attendees	Company	Comment
Dora Guzeleva	Chair	
Manus Higgins	AEMO	
Toby Price	AEMO	Until 10:10 AM
Gerry Devereux	AEMO	
Daniel Kurz	Summit Southern Cross Power	
Oscar Carlberg	Alinta Energy	
Richard Cheng	Economic Regulation Authority	Proxy for Matt Shahnazari
Patrick Peake	Perth Energy	
Paul Arias	Shell Energy	
Noel Schubert	Small-Use Consumer representative	
Annabel Keogh	Synergy	Proxy for Rhiannon Bedola Until 10:45 AM
Peter Huxtable	Water Corporation	
Mark McKinnon	Western Power	
Andrew Walker	South32 (Worsley Alumina)	
Owen Cameron	EnelX	
Scott Cornish	EnelX	
Kiran Ranbir	ATCO	
Samuel Lee Mohan	Frontier Economics	
Tim Robinson	Robinson Bowmaker Paul (RBP)	
Isaac Gumbrell	RBP	
Ajith Sreenivasan	RBP	
Laura Koziol	EPWA	
Shelley Worthington	EPWA	

Item	Subject	Action
1	**Welcome** The Chair opened the meeting with an Acknowledgment of Country and welcomed members and observers. The Chair noted that the purpose of the meeting was to seek the RCMRWGs feedback on the draft Amending Rules before the public consultation. The Chair emphasised that the timely implementation of the Amending Rules is important to address several urgent issues. Therefore, any feedback is required quickly. In response to a question from Mr Price, the Chair clarified that: • The draft Amending Rules will be published as soon as possible after the 4 September 2023 RCMRWG meeting for a consultation period of four weeks. • During the consultation period, EPWA will discuss the sequence of commencing different aspects of the Amending Rules with AEMO and present the proposed sequence to the RCMRWG. • An additional meeting of the RCMRWG may be held if needed. • EPWA plans to submit the Amending Rules to the Minister in late October or early November 2023 for gazettal by the end of November 2023. • Some of the Amending Rules are planned to commence in December 2023.	
2	**Meeting Attendance** The meeting attendance is provided above.	
3	**What constitutes a Transitional Facility?** The Chair presented the proposed approach for the treatment of upgrades and additions to Transitional Facilities. The Chair noted that this was a new issue that had not been considered previously in the RCM Review. The Chair noted that: • upgrades to a Facility, once certified, are difficult to be considered separately from the original Facility; and • additional Separately Certified Components that are added to a Facility can be treated separately from the original Facility for pricing purposes. The Chair noted that EPWA proposes that new Separately Certified Components of Transitional Facilities should receive the prevailing Reserve Capacity Price and not the Transitional Reserve Capacity Price to incentivise efficient investment in the market. • Mr Carlberg, Mr Higgins and Mr Peake supported the proposal. • Mr Kurz noted that he had no concerns with the proposal.	

4 Rules to introduce Flexible Capacity

Mr Robinson presented the key draft Amending Rules for the implementation of the new flexible capacity product. The discussion is summarised below.

- Mr Price suggested to utilise the definition for a Fast Start Facility when setting the requirements for the flexible capacity product.

Mr Robinson agreed to assess how to include the requirements for Fast Start Facilities in the requirements for the flexible capacity product.

- Mr Schubert asked whether it is assumed that Facilities with Flexible Capacity Credits will be able to also address volatility outside of the evening ramp.

The Chair noted that the review decision was to not address volatility separately though the RCM.

Mr Robinson noted that the conclusion of stage 1 of the RCM Review had been that no extra product is required to address volatility separately because if sufficient capacity is available to cover the afternoon ramp, volatility would also be covered.

In response to a question from Mr Price, Mr Robinson clarified that meeting the requirements for Frequency Co-Optimised Essential System Services (FCESS) will not be a requirement to be certified for flexible capacity. However, a Facility holding Flexible Capacity Credits would be required to apply for accreditation for all FCESS it was capable of providing.

- Mr Carlberg raised concerns that the requirements for flexible capacity (e.g. minimum ramp rate and maximum allowed minimum stable load) could change from year to year increasing uncertainty for investors.

The Chair considered that, with the expected change to the generation mix, it was likely that the requirements for flexible capacity would become less demanding over time.

- Ms Keogh noted that it should be ensured that the proposed changes in clause 4.5.9 would not result in double counting of capacity for the purpose of the reserve margin. Ms Keogh noted that she would provide further detail on the concern via email.

In response to a question from Mr McKinnon, Mr Robinson clarified that the Flexible Reserve Capacity Target will be explicitly based on the highest upward ramp. This is because the analysis in stage 1 of the RCM Review indicated that the highest downward ramp will be smaller and can be addressed through curtailing PV generation. However, the requirements for flexible capacity will include the capability to ramp down quickly.

Mr Robinson noted that the Flexible Reserve Capacity Target will be based on the highest forecast 4-hour ramp considering the 10% Probability of Exceedance (POE) and the 50% POE forecasts.

- Mr Carlberg raised concerns that the availability requirements for Electric Storage Resources (ESR) providing flexible capacity will reduce the ability of ESR to offer Essential System Services (ESS).

Item	Subject	Action
	The Chair noted that the impact of availability requirements on the provision of ESS had been considered when setting the original requirements for the Peak Electric Storage Resource Obligation Intervals (PESROI). ESR must be available in the PESROI and Flexible Electric Storage Resource Obligation Intervals (FESROI) but the participant has the flexibility to minimise its exposure / maximise its revenues though its offers. In response to a question from Mr Price, the Chair clarified that: • For an ESR that is dispatched during the FESROI, the ESR's Reserve Capacity Obligation Quantity (RCOQ) will be reduced accordingly for that day's PESROI; and • output above the Reserve Capacity Obligation Quantity (RCOQ) will only reduce an ESR's RCOQ in later intervals if AEMO directed the ESR to exceed its RCOQ. In response to a question from Mr Price, Mr Robinson clarified that an ESR will not be able to be assigned more Flexible Capacity Credits than Peak Capacity Credits even if it could ramp to a higher quantity over the afternoon ramp. The Chair clarified that ESR can offer into the Wholesale Energy Market to increase their chance to be dispatched during the peak instead the ramp, in which case AEMO would only dispatch them during the ramp if they were needed to maintain security of supply. • Mr Kurz suggested that a worked example would be helpful. The Chair noted that EPWA would consider including an example in the explanatory notes for the exposure draft. • Mr Schubert asked which short run marginal costs would be applied to ESR. • Mr Cheng noted that the Economic Regulation Authority would consider Mr Schubert's question.	
5	**Capability Classes Rules** Mr Robinson presented the key draft Amending Rules for the implementation of the new Capability Classes. The discussion is summarised below. • Mr Carlberg asked if it had been considered to provide AEMO with discretion to reduce the 14-hour availability requirement for Capability Class 1 Facilities. Mr Robinson noted that the review decision was that the availability requirement for Capability Class 1 Facilities would be at least 14 hours but could increase if the Availability Duration Gap extended beyond 14 hours.	
6	**Peak IRCR Rules** Mr Robinson presented the key draft Amending rules for the implementation of the new Peak Individual Reserve Capacity Requirement (IRCR). The following was discussed.	

Item	Subject	Action
	In response to a question from Mr Schubert, Mr Robinson clarified that the IRCR intervals will be published before the Hot Season. However, because loads enter and leave the South West Interconnected System throughout the year, the IRCR will change throughout the year as well. Mr Robinson noted that for a portfolio with no new or retiring loads the IRCR will only change slightly throughout the year as a result of other load portfolios changing. • Mr Kurz raised concerns that the timing of the implementation of the new Peak IRCR regime will pose a risk for retailers who usually contract customers for two years, in particular for retailers that contracted Non-Temperature Dependent Loads (NTDLs). The Chair noted that, while the impact on retailers could be taken into consideration for the commencement of the new Peak IRCR regime, these changes will need to be implemented in a timely manner to enable implementation of the new Relevant Level Method. • Ms Keogh noted that Segment 1 and Segment 2 in clause 4.29.1(b) may need to be renamed to avoid confusion with Segment 1 and Segment 2 in clause 4.29.1(a). • Ms Keogh suggested that some of the clauses 4.29.1A to 4.29.1G could be combined to increase clarity and reduce repetition.	
7	**Flexible IRCR Rules** Mr Robinson presented the key draft Amending Rules for the implementation of the new Flexible IRCR. No issues were raised.	
3	**General Business** No general business was discussed	
3	**Next Steps** Mr Robinson outlined the agenda for the 4 September 2023 RCMRWG meeting.	

The meeting closed at 11:00 am

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Minutes

Meeting Title:	Reserve Capacity Mechanism Review Working Group (RCMRWG)
Date:	4 September 2023
Time:	9:00 AM to 11:00 AM
Location:	Microsoft TEAMS

Attendees	Company	Comment
Dora Guzeleva	Chair	
Manus Higgins	AEMO	
Neetika Kapani	AEMO	
Toby Price	AEMO	From 9:55 AM
Gerry Devereux	AEMO	
Daniel Kurz	Summit Southern Cross Power	
Oscar Carlberg	Alinta Energy	
Richard Cheng	Economic Regulation Authority	Proxy for Matt Shahnazari From 9:30 AM
Paul Arias	Shell Energy	
Tessa Liddelow	Shell Energy	
Noel Schubert	Small-Use Consumer representative	
Rhiannon Bedola	Synergy	
Peter Huxtable	Water Corporation	
Mark McKinnon	Western Power	
Scott Cornish	EnelX	
Peter Huxtable	Water Corporation	
Geoff Gaston	Change Energy	
Dale Waterson	Merredin Energy	
Samuel Lee Mahon	Frontier Energy	
Tim Robinson	Robinson Bowmaker Paul (RBP)	
Isaac Gumbrell	RBP	
Ajith Sreenivasan	RBP	
Laura Koziol	EPWA	

Shelley Worthington	EPWA	

Item	Subject	Action
1	**Welcome** The Chair opened the meeting with an Acknowledgment of Country and welcomed members and observers. Mr Robinson noted that the purpose of the meeting was to seek the RCMRWG's feedback on the draft Amending Rules before the public consultation.	
2	**Meeting Attendance** The meeting attendance is provided above.	
3	**Optional Expressions of Interest Optional** Mr Robinson presented the key draft Amending Rules for making the Expression of Interest (EOI) process optional. The discussion is summarised below. • Mr Devereux noted that AEMO will still need the information currently required for the EOI submissions to determine the constraint equations which are needed for the ESOO and the Network Access Quantities (NAQ). • Mr Devereux suggested to remove the EOI process altogether and instead bring the time forward by which a facility must be registered to allow them to apply for Certified Reserve Capacity (CRC). The Chair noted that some simple drafting that requires participants to provide AEMO with the data that is required would be good to include at some point but considered that removing the EOI process was not appropriate. The Chair considered that bringing the requirement for registration forward would just replace the current requirement to participate in the EOI with the requirement to register. She noted that discussions in the MAC and public forums have indicated that is too early for participants to know exactly what proposals they might ultimately make. The Chair considered that this change would not resolve the issue with stakeholders registering many facilities that may not eventuate for the Capacity Year and that this will not improve the input data for the constraint equations. She added that some valuable facilities that could be available in the relevant Capacity Year may not be able to apply for CRC later in the process. • Mr Carlberg agreed with the Chair. • Mr Higgins noted that AEMO will provide a suggestion for a changed date by when facilities must be registered to receive CRC.	

Item	Subject	Action

4 Demand Side Programmes

Mr Robinson presented the key draft Amending Rules for the implementation of the changes to the treatment of Demand Side Programmes (DSPs). The discussion is summarised below.

In response to questions from Mrs Bedola, the Chair:

- clarified that analysis on the number of hours DSPs are expected to be needed is presented in the Stage 2 Information Paper;
- agreed that it must be ensured that the Amending Rules do not allow DSPs to use the same capacity for both reducing their loads' Flexible Individual Reserve Capacity Requirement (IRCR) and for providing Flexible Capacity; and
- agreed that available DSP capacity must be taken into account in AEMO's outage planning process.

- Mrs Bedola and Mr Kurz noted that outage scheduling was currently already difficult.
- Mr Schubert considered that with the expected electrification, it could be expected that winter peaks will increase. Therefore, outage scheduling will become even more difficult.

The Chair noted that AEMO would need to consider whether DSPs are taken into account as a firm and available capacity for the outage planning process.

- Mr Cornish considered that the prohibition on Associated Loads of DSPs to reduce IRCR should be removed because the issue of double dipping will be addressed through the implementation of dynamic baselines.

The Chair noted that it will need to be assessed first that the dynamic baseline addresses all potential double dipping issues adequately.

Mr Robinson suggested that the prohibition should remain until the method for determining the dynamic baseline is determined as part of the Demand Response Review.

- Mr Schubert asked whether it is assumed that Facilities with Flexible Capacity Credits will be able to also address volatility outside of the evening ramp.

The Chair noted that the review decision was to not address volatility separately though the RCM.

Mr Robinson noted that the conclusion of stage 1 of the RCM Review had been that no extra product is required to address volatility separately because if sufficient capacity is available to cover the evening ramp, volatility would also be covered.

The Chair considered that, with the expected change to the generation mix, it was likely that the requirements for flexible capacity would become less demanding over time.

Item	Subject	Action

5 Testing, Outages, and Refunds

Mr Robinson presented the key draft Amending Rules for the implementation of the changes to the testing, outages and refunds regimes. The discussion is summarised below.

- Mrs Bedola suggested to amend all formulas, so all variables are denoted by P for Peak or F for Flexible where possible to avoid confusion.

In response to questions from Mrs Bedola, Mr Robinson clarified, that it is intended that a Facility can have a partial outage related to Peak Capacity without an Outage for Flexible Capacity that it can still deliver. Mr Robinson noted that it would be ensured that this is reflected in the draft Amending Rules.

In response to a question from Mr Carlberg, Mr Robinson clarified that there are new calculations for the Flexible Trading Interval refund rate - clauses 4.26.1(h) – 4.26.1(k). He noted that the refund rate for flexible capacity is different from the refund rate for peak capacity and, similarly, the refund factor and the per Trading Interval refund price will be different.

In response to a question from Mrs Bedola, Mr Robinson noted that the rate equals 1.5 times the Facility monthly Flexible Reserve Capacity Price.

- Mr Kurz noted that 12/8 was more representative.

The Chair noted, in regard to clause 9.8.3, that it will be distributed to participants that have withdrawal quantities and that some generators have withdrawal quantities.

- Mrs Bedola sought to clarify, with regard to refunds being redistributed on the IRCR, if the individual interval the outage occurred in was what the refund was paid for.

Mr Robinson responded that the capacity costs for that interval are divided up based on the IRCR in that interval and that the refund is paid on the basis of that interval, not over a longer period.

6 Relevant Level Method

Mr Robinson presented the key draft Amending rules for the implementation of the new Relevant Level Method (RLM). The following was discussed.

The Chair noted that “load curtailment” covered everything including SRC activations and clarified that every direction or instruction to demand or interruptible loads will be added back, including SRC activations.

In response to a question from Mrs Bedola, Mr Robinson noted that if intermittent facilities were to provide Essential Systems Services (ESS) then that would be accounted for as well.

Mr Robinson noted that the idea is that the historical output for each facility is what it would have done, the maximum it could have done in the absence of anything that could have curtailed output. Similarly, the

Item	Subject	Action

demand needs to be what it would actually have been free of any intervention that may have reduced it.

Mr Robinson noted that there was a transitional rule included due to the IRCR intervals being measured in a particular way before the new RLM rules come into effect, so that on commencement the IRCR intervals selected under the new rules will be used as part of the new RLM.

In response to questions from Mrs Bedola, Mr Robinson noted that:

- AEMO calculates what the IRCR intervals would have been in each of those historical years and the facility average performance level is their deemed historical output;
- if a facility was actually in operation AEMO has their actual output, adding any curtailment back;
- for new facilities, expert report numbers are available for the historical period and combined with the historical IRCR intervals to estimate average performance level.

Mr Robinson noted that the intervals are the same, but the data is different depending on whether a facility was actually commissioned for that period or not.

Mr Robinson noted that the complexity of the four different groups of facilities had not been discussed in the working group but was required at the detailed design level for implementation. Mr Robinson added that the fleet ELCC is calculated for each of the four different categories of facilities, and that detail of how this is calculated is in previous papers available on the Coordinator's website.

In response to a question from Mrs Bedola, the Chair noted that this process was already very complex and that anything to judge whether a year is typical, or an outlier will be extremely arbitrary. The Chair noted that the lowest year was a decision, as per the Information Paper.

Mr Robinson added that EPWA had considered whether there was any threshold that could be used to differentiate. However, any reasonable threshold number would have thrown out more years rather than fewer years.

In response to a question from Mr Bedola, Mr Robinson noted that it was only the additional portion of the ELCC that relates to the Proposed Facilities that gets allocated to the Proposed Facilities. If none of the Proposed Facilities are allocated any NAQs that will not change the CRC of the other facilities because the Proposed Facilities do not impact on the Committed Facilities.

The Chair noted that there had been previous discussion as to how the NAQs may influence this and if there would be a need to consider if the process would need to be rerun. The Chair noted that there may be circumstances in which things change in the NAQ process, but that Committed Facilities would always have the first allocation and the Proposed Facilities would receive the residual.

Mr Robinson added that the RLM was independent of the NAQ. The NAQ process comes after the relevant level was determined for each of the

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facilities and because Committed Facilities have preference in the NAQ there was a need to separate the Fleet ELCCs so that the Committed fleet ELCC was not affected by facilities that may not eventuate.

- Mr Price asked if the contribution for each of the groups was then underestimated, noting that it was his understanding that the larger the group the lower the ELCC for that group.

Mr Robinson responded that this depended on the characteristics of the facilities. For example, if there was a wind farm that produces only during the day and another that produces only during the night, the ELCC across both of those facilities would be larger than the ELCC if they were in an individual fleet by themselves.

Mr Robinson noted that, assuming that wind and solar farms are corelated in some way, the more facilities are added that are correlated the more the fleet ELCC will increase but the individual share of the ELCC will drop.

The Chair added that there would be a drop but the drop will not be as large because the fleet value will continue to increase. She noted that EPWA would include an explanatory note in the draft to explain the relationship as just discussed.

In response to a question from Mr Carlberg, Mr Robinson clarified that a Committed Facilities was the group that referred to an existing facility or one under construction.

- Mr Carlberg noted that under the current RLM when there are network constraints facilities receive estimates and asked if that would also occur under the new RLM.

Mr Robinson noted that curtailment for network outages would be included if a facility was able to do more but was curtailed, Step B1 will include an allowance for it, and the pre-curtailment projected output would be used to work out what a facility's historical output was.

Mr Robinson noted that, before the new market starts, there are still periods in the five year window where there are consequential outages, whereas in the new market the facility would not be on outage rather it would be constrained by the dispatch algorithm and, therefore, there was a transitional rule to account for consequential outages before they cease.

- Mr Carlberg noted that the transitional rule needs to pick up GIA generators because they do not get consequential outages but get operational instructions instead that trigger those estimates.

The Chair noted that consideration to what had happened in the past would be given and an attempt would be made to try and replicate it.

- Mr Schubert noted that, over the last few years. intermittent generators were self-limiting their output during the day when market prices are low which would reduce their allocation of Capacity Credits in the future if that data is used for determining their RLM.

Mr Robinson noted that in the new market intermittent generators should be able to offer a particular price and let the clearing engine do the curtailment. However, if they were making a decision to submit a lower

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quantity into the dispatch process due to a low market price then that would potentially reduce their Capacity Credits.

Mr Robinson added, however, that the price was unlikely to be low in the periods that are driving the ELCC so it was unlikely it would be in periods which would affect their relevant level.

The Chair noted that in the new market there would be rules that should prevent this behaviour anyway.

- Mr Cheng noted, with regard to dynamic refund rates, that there was a potential to get to a point where refunds become greater than Capacity Credits at which point RCOQ becomes zero and asked if this would continue with the new rules. Noting that there was now a split between peak and flexible capacity, Mr Cheng asked if that would affect RCOQ for peak capacity and vice versa.

Mr Robinson responded that there had been previous discussions on whether to have a single refund pool or separate refund pools. The decision was to have separate refund pools for peak and flex.

Mr Robinson noted that one of the reasons for pushing the flexible capacity refunds to outside the Hot Season was to reduce the likelihood that a participant runs through all of its flex capacity refunds before the time that it is actually required and there is no financial incentive to provide it at the required time.

The Chair noted that there should still be a requirement to make sure that participants are still available, though they are not paying refunds, and that failure to submit an offer or respond to an instruction is taken into account in at least the Forced Outage count.

The Chair noted there was a need to pay more attention to the Forced Outage count, more generally.

Mr Robinson added that effectively the RCOQ should never get to zero. If a participant paid refunds to the full amount of their capacity payments, all of the capacity obligations still remain. If they get to above the 10% Forced Outage count figure there were now rules to make it more likely that AEMO will allocate them a smaller amount of CRC.

The Chair noted that. based on the discussions during this meeting. EPWA would ensure that there were good explanatory notes in the Exposure Draft.

7	**General Business**	
	No general business was discussed	

Item	Subject	Action
8	**Next Steps** The Chair noted that following publication of the Exposure Draft of the Amending Rules there would be public consultation. If there were too many issues raised following the consultation that another meeting of the RCMRWG would be held. Pending that, the Chair advised that the next RCMRWG meeting was scheduled for 21 September 2023 to discuss the reference technology type.	

The meeting closed at 11:00 am

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 6(c): Update on the Cost Allocation Review Working Group

Market Advisory Committee (MAC) Meeting 2023_10_12

1. Purpose

The Chair of the Cost Allocation Review Working Group (CARWG) is to provide an update on the activities of the CARWG since the last update to the MAC (31 August 2023).

2. Recommendation

That the MAC notes:

- the update from the CARRWG meeting on 29 August 2023; and
- note the draft minutes from the CARWG meeting on 29 August 2023 (Attachment 1)

3. Background

- The CARWG discussed the Cost Allocation Review (CAR) WEM Amending Rules Exposure Draft at its meeting 29 August 2023.
- The Exposure Draft is in 3 parts as per the outcomes of the CAR and included changes to:
    - regulation raise and lower services cost allocation:
    - changes to the contingency raise runway model: and
    - a new appendix to introduce a similar runway methodology for contingency lower.
- The CARWG requested not to publish the WEM Amending Rules Exposure Draft until 9 October 2023, due to industry been busy with the commencement of the new market and the Reserve Capacity Mechanism Review WEM Amending Rules Exposure Draft that is currently out for consultation.
- Meeting papers and minutes for the CARWG meetings are available on the CARWG webpage (https://www.wa.gov.au/government/document-collections/cost-allocation-review-working-group).
- The Consultation Paper and all submissions are available on the CAR webpage (https://www.wa.gov.au/government/document-collections/cost-allocation-review).

4. Next Steps

Step	Timing
EPWA to publish CAR WEM Amending Rules Exposure Draft	Mid October 2023

Submissions close on the CAR WEM Amending Rules Exposure Draft	Mid November 2023
EPWA to seek Ministerial approval for Amending Rules	End November 2023
Commencement of the Amending Rules	TBD (consistent with timing for commencement of five minute settlement)

5. Attachments

(1) Agenda Item 6(c) – Attachment 1 – CARWG 2023_08_31 – Draft Minutes

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Minutes

Meeting Title:	Cost Allocation Review Working Group (CARWG)
Date:	29 August 2023
Time:	1:00pm – 2:40pm
Location:	Microsoft TEAMS

Attendees	Company	Comment
Dora Guzeleva	Chair	
Donna Todesco	AEMO	
Mena Gilchrist	AEMO	Observer
Toby Price	AEMO	Observer
Nicholas Nielsen	AEMO	Observer
Oscar Carlberg	Alinta Energy	
Tom Frood	Bright Energy	
Jake Flynn	Collgar Wind Farm	
Paul Arias	Shell Energy	
Tessa Liddelow	Shell Energy	
Noel Schubert	Small-Use Consumer Representative	
Genevieve Teo	Synergy	
Daniel Kurz	Summit Southern Cross Power	
Jacinta Key	Woodside	
Mark McKinnon	Western Power	
Grant Draper	Marsden Jacob Associates (MJA)	Presenter
Peter McKenzie	MJA	
Stephen Eliot	Energy Policy WA (EPWA)	
Shelley Worthington	EPWA	

Apologies	From	Comment

Item	Subject	Action
1	**Welcome and Agenda** The Chair opened the meeting at 1:00pm.	
2	**Meeting Apologies/Attendance.** The Chair noted the competition law obligations of CARWG members. The minutes from the 25 May 2023 working group meeting were approved out of session and were published on the website on 31 May 2023.	
3	**Cost Allocation Review: Exposure Draft:** The Chair noted that the MAC had advised that it was appropriate that the draft rules should only be discussed with the CARWG and not taken to the MAC prior to publication for public consultation. Ms Todesco noted that AEMO had prepared responses to discuss with the working group today but had not yet completed a thorough review and would do so when the draft rules were out for consultation. The Chair noted that the intent for the meeting was for the CARWG to provide comments that could be addressed in the draft Amending Rules released for public comment. The draft Amending Rules would then be amended following a four-week consultation period the rules and amalgamated with the five-minute settlement rules.	
	Regulation Services Mr Draper noted that Appendix 2D is a new appendix for the calculation of regulation shares to allocate Regulation service costs and provided a summary of how the appendix reflects the 'WEM Deviation Method' specified in the Cost Allocation Review Information Paper. The CARWG discussed Appendix 2D as follows: • Mr Price noted that he had some concerns with the final reference value for Scheduled Facilities and Semi-Scheduled facilities providing Essential System Services (ESS) and the possibility of a Facility that responds to an event at the end of an interval then being considered to have been deviated throughout the dispatch interval. o Mr Draper noted that it was covered by section 2.1(f) of Schedule 2D. o Mr Price agreed that section 2.1(f) would make sure that the end point of the line is correct at the end of the Dispatch Interval, but if a Facility was constantly injecting 100 MW and then an event occurred 8 seconds before the end of the Dispatch Interval causing them to increase by 20 MW then the line that AEMO would draw was a trajectory from 100 to 120MW throughout the Dispatch Interval. o Mr Draper agreed in that is a valid point, that the trajectory needs to be adjusted, not just the end point.	

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- Mr Price noted that, in the National Electricity Market (NEM), an adjustment is made to account for whether the trajectory was acceptable – if a Facility is not on its trajectory because it is responding to a frequency event, then AMEO would reduce its contribution from that point. Mr Price added that this was part of the complexity in the NEM framework that derives from managing regulation, primary frequency response and other reasons for a Facility not been on their trajectory, which he understood was what EPWA was trying to avoid with the simple Deviation Method.

- Mr Kurz noted that he could not envision a scenario where an automatic governor control (AGC) would not be responding equivalently to what was required and would therefore always be contributing in the right direction.
- The Chair noted that in the new market a Facility would have to be in merit and dispatched for that service to be off the hook.
- Mr Price added that AEMO should seek to revise a Facility's accreditation if it is not performing, noting that if a Facility was accredited to provide Regulation and was not meeting the service specification or accredited parameters, then that would be cause to reaccredit a Facility.
  - The Chair responded that accreditation was one thing and being in merit and dispatched was another, and noted that, if a Facility was not dispatched for Regulation, then they should not be off the hook.
- Mr Price considered there would be a need to look at each of the services – if a Facility provides Regulation Raise or Lower, then they are contributing to the service and it could be argued that they should not have an allocation during those intervals. For frequency response, Mr Price noted that AEMO had previously recommended to look at whether the frequency was within the normal operating band during the interval, or if a Facility was responding to directions from AEMO, and if so, then that Facility should not contribute in that interval.

The Chair summarized there were two options to address this:

- to let facilities off the hook for that interval if they receive an instruction; or
- if frequency is outside the prescribed limits, everyone that has responded should be off the hook.

The Chair noted the intent was not to consider how every Facility reacts and to look into positive versus negative deviations, as that would add to the complexity that the NEM has experienced and is exactly what EPWA is trying to avoid.

- Mr Neilsen noted for section 2.2 that missing SCADA data for a period could potentially benefit a Facility because it was not being added and suggested that, rather than having the raw deviation, to

Item	Subject	Action

instead sum of the deviation divided by the count of the SCADA points.

- The Chair asked if missing SCADA data was estimated.
- Mr Price noted that in the case of missing SCADA data that:
  - there were other SCADA points that can be used as a backup;
  - there was not just one SCADA point associated with the single registered Facility; and
  - it was Western Power's SCADA data, not AEMO's.

- Mr Neilsen added that it might be worthwhile to have a process to populate missing SCADA points and cleaning up inaccurate data, and that this should perhaps sit with Western Power.
- The Chair noted that the WEM Rules refer to a SCADA data system operated by AEMO in several places and asked if that should be changed.
- Mr Draper considered that, as SCADA data is used for several processes in the WEM Rules and that AEMO must have a cleaning process for the SCADA data, so there is no need for a specific cleaning process for Appendix 2D.
- Mr Neilsen responded that AEMO has a cleaning process and, if it is clear that could be used in this instance and make sure that every SCADA point was populated, then section 2.2 could remain as it is.

The Chair noted that EPWA would need to confirm that references to SCADA systems relate to the cleaned or replacement quantities.

Mr Carlberg sought to clarify the use of term Regulation Facility to include things that are not Facilities and suggested to use a different term.

- Mr Draper responded that EPWA had been very careful to differentiate Regulation Facilities from Facilities but that further changes could be made to avoid confusion.

ACTION: EPWA to confirm whether reference to SCADA systems relate to cleaned or replacement quantities. — **EPWA Dec 2023**

Appendix 2A: Runway share calculation method

Mr Draper recapped the rationale for the changes to Appendix 2A and that the changes would only affect allocation of Contingency Reserve Raise costs, not affect how plants are dispatched in the market.

The Chair acknowledged that participants may have been confused by the references to separately dispatchable units, but the point was more for AEMO to determine the largest contingency if there is more than one connection to the network for that facility.

- Mr Draper noted that if a facility wanted to be treated as two separate units for the purpose of Contingency Reserve Raise cost

Item	Subject	Action

allocation, there would still be work for AEMO to develop a WEM Procedure for this to occur.

- Mr Price agreed that further consideration would need to be given to the precise wording in the WEM Procedure, which would need to cover many scenarios, so the preference is for generic rule wording.
    - The Chair asked Mr Price to review the current text and confirm if it was generic enough.
    - Mr Price responded that AEMO would do so and added that it was important for Market Participants to build Facilities with clarity on how they will be treated and equally that appropriate risks were captured.

The Chair noted that EPWA would need to be sure that the language talks about the largest contingency for that Facility, whatever the cause and that the heads of power need to be generic enough to say that AEMO will publish a procedure to help it identify the largest contingency.

- Mr Carlberg noted that he believed there was a similar requirement for AEMO to check whether two Facilities are subject to a single contingency in the aggregation rules and suggested to keep the two consistent.

Appendix 2E: Calculation of Contingency Reserve Lower Share

Mr Draper recapped the process to apply the runway method to large loads exceeding the threshold of 120MW.

Mr Draper noted that the intent was to capture the risk that will arise with large batteries or other loads coming onto the system and that non-dispatchable loads, typically without SCADA metering would be below the 120MW threshold and as such, the runway method would not apply to them.

- Mr Price noted there were intertrip provisions for Intermittent Loads.

The Chair responded that EPWA will look into this.

Mr Price asked if “FacilityRisk” risk should be multiplied by 12 to get to MW if it was a 5-minute measure of MWh. Mr Draper agreed and noted they would make that change.

Regarding section 2.4 in Appendix 2D, Mr Nielsen noted that it appears that only consumption will contribute to the cost of Contingency Reserve Lower and sought to clarify if that was correct, asking why in that instance why injection was not considered to contribute towards regulation and therefore be considering when determining that value.

- The Chair noted they the defined terms would need to be changed to refer to metered quantity up or down rather than metered consumption.

Item	Subject	Action
7	**Next Steps** Ms Todesco requested deferral of publication of the draft Amending Rules for consultation until after 9 October 2023 to give AEMO time to address and complications from the 1 October 2023 commencement of the new market. The Chair agreed to postpone the publication on the Cost Allocation Review Amending Rules but that consultation on the Reserve Capacity Mechanism Review Amending Rules would not be delayed.	
8	**General Business** No general business was discussed.	

The meeting closed at 1:56pm.

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 6(d): Update on the Demand Side Response Review Working Group

Market Advisory Committee (MAC) Meeting 2023_10_12

1. Purpose

The Chair of the Demand Side Response Review Working Group (DSRRWG) is to provide an update on the activities of the DSRRWG since the last MAC meeting.

2. Recommendation

That the MAC notes:

- the minutes from the DSRRWG meeting on 2 August 2023 (Attachment 1);
- the update from the DSRRWG meeting on 2 August 2023; and
- the Consultation Paper published on 21 September 2023.

Background

- The fourth DSRRWG meeting was held on 2 August 2023 and the following key items were discussed:
    - Demand Side Programme (DSP) participation in the Real-Time Market (RTM), including Essential System Service (ESS), and whether there are any obligations or requirements that prevent DSP participation in the RTM.
    - Non-DSP Load participation in the RTM and ESS, including what barriers or incentives there are for a large load registered as a semi-scheduled facility or a scheduled facility that is not a DSP.
- Additional information on the DSRRWG, including meeting papers, is available on DSRRWG webpage at: Demand Side Response Review Working Group (www.wa.gov.au).
- The Consultation Paper for the Demand Side Response (DSR) Review was published on 21 September 2023, after having previously been discussed at the MAC meeting of 31 August 2023.
- The Consultation Paper summarises the findings of Stage 1 and 2 of the Demand Side Response Review and presents proposals for changes to:
    - the commercial and regulatory framework that applies to loads that are seeking to connect on a constrained access basis;
    - the integration of constrained access loads into AEMO's processes;
    - the *Electricity Industry (Metering Code) 2012* to allow better information sharing between Western Power and AEMO about the operations of DSR; and
    - other changes to various Wholesale Energy Market components to maximise the participation of DSR.

- Stakeholders have until 5:00pm (AWST) on 2 November 2023 to provide feedback on the Consultation Paper.
- The DSR Consultation Paper is available on the DSR Review webpage at: Demand Side Response Review (www.wa.gov.au)

3. Next Steps

- The fifth DSRRWG meeting is yet to be scheduled. An agenda for that meeting is yet to be finalised but is expected to include discussion on the DSR Consultation Paper.

4. Attachments

(1) Agenda Item 6(d) - Attachment 1 - DSRRWG 2023_08_02 - Minutes

Minutes

Meeting Title:	Demand Side Response Review Working Group (DSRRWG)
Date:	2 August 2023
Time:	9:32 AM to 11:36 AM
Location:	Microsoft TEAMS

Attendees	Company	Comment
Dora Guzeleva	(Chair) EPWA	
Toby Price	AEMO	
Tom Butler	AEMO	Joined until 11:00AM
Dimitri Lorenzo	Bluewaters Power	
Jake Flynn	Collgar Wind Farm	
Devika Bhatia	Economic Regulation Authority	
Claire Richards	Enel X	
Thomas Marcinkowski	EPWA	
Mitch O'Neill	Grids	Joined until 10:34AM
Bobby Ditric	Lantau Group, Consultant	
Dave Carlson	Lantau Group, Consultant	
Mike Thomas	Lantau Group, Consultant	Joined until 10:37AM
Wayne Trumble	Newmont Mining	
Tom Higgins	Perth Energy	
Tessa Liddelow	Shell Energy	
Graeme Ross	Simcoa Operations	Joined at 9:46AM
George Martin	Starling Energy	
Chris Alexander	Small-Use Consumer Representative	Joined at 10:05AM
Noel Schubert	Small-Use Consumer Representative	
Peter Huxtable	Water Corporation	
Mark McKinnon	Western Power	Proxy for Valentina Kogon
Apologies	**From**	**Comment**
Oscar Carlberg	Alinta Energy	
Justin Ashley	Synergy	
Valentina Kogon	Western Power	Mark McKinnon proxy

Michael Zammit	Integrated Management Services	

Item	Subject
1	**Welcome** The Chair opened the meeting at **9:32 AM** with an Acknowledgement of Country.
2	**Meeting Apologies/Attendance** Noted as per the attendance record above.
3	**Competition Law Statement** The Chair drew members' attention to the *Competition and Consumer Law Obligations* document circulated prior to the meeting. The Chair encouraged members to read the document carefully, and to raise any issues with the Chair immediately should they arise during the course of the working group deliberations.
4	**Minutes** The Chair acknowledged the out of session approval and publication of the minutes from the previous meeting.
5	**Action Items** <u>Action Item 1:</u> • Mr McKinnon stated that none of Western Power's action items were able to be closed and requested further clarification from the group. • Mr Schubert clarified that his request was for information on the average demand on typical circuits divided by the rating of the circuits to illustrate available capacity outside of peak times. Mr Schubert stated that average, rather than peak utilisation of typical transmission and distribution circuits would be useful. The Chair asked Mr Schubert if his initial intention giving rise to Action Item 1 was whether loads could be shifted to times when the network is not at full capacity to save network reinforcement costs for consumers. • Mr Schubert confirmed that this was his question, and added that batteries would help with load levelling and addressing minimum demand upstream, but cannot provide load levelling benefits downstream. He noted that batteries can be utilised to level demand and highlighted that, if batteries were located at a local substation level or behind the meter, they could provide a greater benefit to the system by levelling demand all the way back through the network to transmission and generation. • Mr Schubert also said that this supports the merits of load shifting at the customer end rather than halfway through the network, adding that: o A number of transmission circuits have average utilisation of around 20% (because of the n-1 requirement), which is staggering given the capital involved. o Increasing average utilisation should be a key objective, but is not at the moment. The Chair stated that Mr Schubert's view concerning the under-utilisation of the network away from peaks was true, with no more evidence needed to support it. The Chair suggested that instead of providing the data described in Action Item 1, Western Power should help provide further information on how Western Power is

Item	Subject

improving average utilisation. The Chair that stated this issue could also be dealt with in the upcoming Consultation Paper.

The group agreed to close Action Item 1.

- Mr Trumble highlighted that Western Power introduced a permissive scheme in the Goldfields area, and suggested that Western Power could provide information on the scheme and its success so far.
- Mr McKinnon agreed to provide this information.

Action: Western Power to provide an overview of the extent to which the Eastern Goldfields Load Permissive Scheme (ELPS) has been successful.

Action Item 2:

The Chair opened discussion on this action item by stating that:

  - It can be assumed that storage facilities can be connected under a runback scheme and the market can take care of their network access quantities and injection.
  - There is a question whether there is any reason to have an arrangement in which withdrawal can be constrained during peak times.

- Mr Price addressed the issue of storage participation in the market:
  - If a facility is registered and participating in the market, both its injection and withdrawal will be considered from a dispatch perspective, notwithstanding that Western Power may have ensured access should be available to it at all times.
  - From a market perspective, AEMO cannot differentiate between any participating MWs be it for injection or withdrawal.
- Mr McKinnon highlighted that Western Power provides connections on an unconstrained basis unless there is a network constraint, therefore alternative arrangements such as run-back schemes are atypical albeit becoming more prevalent.
- Mr McKinnon queried whether, if constrained access were to apply to ESR withdrawal, there is the ability through WEMDE or something else to manage that load so it is still within the limits of the network.
- The group agreed that it was preferable to integrate constraints on market participating facilities into the bidding and dispatch systems and processes.
- Mr McKinnon said that he would speak to Action Item 4 to clarify some of the issues arising under Item 2.

Action Item 4:

- Mr McKinnon said that almost all schemes, apart from the ELPS, were post-contingent protection based, stating that:
  - For runback schemes, loads connected by Western Power should be able to get their full contracted maximum demand (CMD) (unless there is planned maintenance or a trip to protect the network).
  - In contrast, under the ELPS Western Power is not able to connect customers under a reference service to meet the required CMDs on a 24/7 basis. Instead, customers are allocated capacity on a rotational basis. It has been successful in that capacity not sold is now able to be used.
  - The challenge is whether there a better way of allocating who gets spare capacity and should the approach be market based instead of bespoke.

The Chair stated that:

Item	Subject

- If Western Power connects a customer on an unconstrained basis there is no market issue. It is only if a customer is connected on a constrained basis that the problem arises.
- The group needs to explore the best mechanism to facilitate the optimum dispatch outcome in the presence of network constraints.

Mr Price stated that:

- If a constraint results in market impacts (foregoing cheap constrained energy for expensive unconstrained energy), market visibility of this may affect decisions on whether to augment the network.
- In contrast, in a runback scheme the financial impost is crystallised when a decision to connect a load is made.

The Chair noted that load and generation were unconstrained at the start of the WEM, with generators not being connected unless they could export their full capacity at any point in time. This has changed to apply constraints to generators. A similar situation is now arising for loads.

- Mr Trumble stated that this arrangement has existed for the Parkston Power Station for 15 years, and both as a load and generation for at least the last 5 years until capacity became available under the ELPS.

The Chair queried whether, if there is insufficient capacity for a load to connect unconstrained, there is a service that could both cut time to connection and provide a non-reference service at a lower cost for loads.

- Mr Schubert highlighted that there is significant benefit for those customers who can consume above their CMD to do-so without penalties to help address minimum demand issues.

The Chair agreed, noting that they need to be integrated in the market with AEMO having full visibility. She added that this is particularly important as the network becomes more constrained (both in terms of generation and load). Such schemes could save money overall, both to the individual consumer and the market.

- Mr McKinnon drew a parallel with the Generator Interim Access (GIA) scheme highlighting that determining how to allocate capacity was a problem, and similar issues could arise in respect of loads. Mr McKinnon stated that hydrogen production could be an example in which a load may not want power all the time, only when the price is right.

The Chair stated, with regard to this Action Item, that the working group needed information on the current situation in the Goldfields and Western Power's view on how such schemes may grow given the network is increasingly constrained.

<u>Action Item 3:</u>

- Mr Price stated that:
  - Storage has been considered in the reliability modelling based on capacity credits or forecast capacity credits for the facility.
  - The optimisation assumes that storage will mitigate unserved energy even if that unserved energy falls outside the RCOQ for that facility.
  - AEMO may modify the obligation intervals that were set two years ahead to ensure reliability is ensured, and this may cause the storage facilities to not be fully charged at the start of the intervals.

<u>Action Item 7:</u>

The Chair asked whether there was a reason to not allow a participant with a hybrid facility to register either as a DSP or a scheduled facility.

Item	Subject
	• Mr Price stated this is a question of the relative merits of a DSP compared with storage as a scheduled facility. Mr Price said AEMO's preference would be for the facility to be a scheduled or a semi-scheduled facility, stating that: o A scheduled facility is able to participate in ESS and has more market obligations (from a visibility and controllability perspective) even though there are less obligation hours of storage vs DSP. o A battery is the same battery with the same capacity whether it is registered as a DSP or not. The Chair asked the group whether the consultation paper should seek views on this. • Mr Butler stated that the expectation is that there will be opportunities on top of the capacity component for that registered facility to access other value streams. The Chair stated that a facility may or may not be able to access them depending on how it's registered. • Mr Trumble stated that: o There are three DSPs shown as registered in the Electricity Statement of Opportunities (ESOO), however two of those (Wesfarmers' and Synergy's) are also registered as intermittent loads. o As a result, those loads are not subject to the rules that apply to other DSPs. o In the last quarter, Boddington DSP was dispatched repeatedly, and the WEM Rules suggest that other DSPs should have been dispatched in preference and fall back in order once called. • Mr Trumble requested clarification as to how DSPs can be registered as other facility types, whether they receive parallel income streams, and how they can circumvent the DSP rules by being registered as something else. The Chair clarified that there is no way to circumvent DSP obligations, but that the AEMO preference is to treat them as an intermittent load to provide spinning reserve. The Chair stated that there is a MAC action item for AEMO to address in regard to the Boddington DSP situation. The Chair will provide the information to the group when it is available. <u>Action Item 8:</u> The Chair stated that Enel X provided a paper which was circulated and the action is now closed. <u>Action Item 5:</u> The Chair stated that EPWA will make changes to the Metering Code to address this. <u>Action Item 6:</u> The Chair stated that this issue will be included in the Consultation Paper.
6	DSP Participation in RTM, including ESS Mr Ditric stated that: • DSPs do not bid in the RTM but instead are required to make capacity available. • DSPs can be dispatched based on availability, but there is no bidding or consideration of prices in dispatch, they are dispatched as AEMO deems reasonable. Mr Ditric asked whether there are there any obligations/requirements that prevent DSP participation in the RTM that the group should consider changing. There were no responses.

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The Chair suggested posing that question in the consultation paper.

Mr Ditric asked whether the WEM Rules should be changed to allow and/or require DSPs to bid into the RTM or whether they provide optimum value by participating in the RCM only.

- Mr Trumble expressed concern that the DSP is being called when AEMO thinks it might need it, but in many cases AEMO then decides it is not required. Mr Trumble asked how a DSP could be paid for supplying energy and also be available to AEMO as an insurance policy.

The Chair responded that DSPs currently do not offer in the market to reduce consumption. They just get an activation notice that they will be dispatched in 2 hours and need to respond.

The Chair said that there is a question whether there should be changes requiring DSPs to submit offers, noting that the risk is that they may all bid at the cap, requiring a tie-breaker.

The Chair asked Mr Price if, when the new market commences, the optimisation of those things would be better and the activation may be more precise than it is today.

- Mr Price said that he hopes so, noting there is always uncertainty around dispatch because of the notice period required.

The Chair noted that:

- the notification period is 2 hours, in contrast with the SRC last summer where a longer, 9 hour notification period created much uncertainty.
- the 2-hour period in the rules may need to be reconsidered if DSPs need to make offers.

The Chair asked whether more equalised participation is required.

- Mr Schubert stated that the market is still not mature, and if there are more ways for demand side to participate in the market then there will be demand that can participate.

The Chair said that DSPs receive capacity credits to be available at peak but have a 12-hour obligation. The Chair asked whether there is a benefit of allowing DSPs to offer to buy from the market in middle of day. The Chair noted that the price floor is at -$1,000 price, and the Chair suspected the peak price would reach that level when the second cap is removed.

The Chair invited other views on the slide but there were none.

Mr Ditric stated that:

- AGC is needed to offer ESS.
- It makes it more difficult for DSPs to participate if there is an aggregator as a middle person.

Mr Ditric asked whether there are any ESS that DSPs would be suitable to provide.

- Mr Price sought clarification that the discussion was about a DSP associated with an interruptible load, stating that ESS is available in that scenario in the form of contingency reserve raise in the new market.

The Chair confirmed this was the case.

The Chair queried whether, if a load is significantly larger than the ESR, that hybrid facility would need to register as a scheduled facility.

- Mr Butler stated that it would only need to register if it’s going to provide contingency services.

The Chair stated that:

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- Currently, if a DSP with an ESR component registers as a scheduled load it cannot also register as a DSP. The only exception is interruptible load as it is not a scheduled facility.
- There is a need to determine whether, if load is significantly bigger in size than the ESR, this is a barrier to entry to the detriment of the market.

- Mr Schubert stated that interruptible loads offering ESS are very valuable because they are fast and do not needAGC.

The Chair stated that the key questions to be addressed by the group are:

- If a facility is providing spinning reserve, or in the future contingency raise, is it providing both services at the same time and should it get the benefit of both; and
- If it is activated to provide spinning reserve, is it also covering its DSP obligations.

- Mr Ross stated that there are two different market services: one is contingency and the other is capacity. More often than not they do not coincide. While they may influence the decision of which to dispatch first, they are often very different services to the market.

The Chair stated that the fundamental question is whether such a facility would ever be activated as a DSP if AEMO needs it as spinning reserve.

- Mr Price identified the same challenge on generation side. Mr Price asked, in relation to fast responding storage that receives capacity credits and also provides contingency reserve, whether during peak demands WEMDE would optimise to keep it as contingency reserve or dispatch it for energy.
- Mr Schubert stated that there have been occasions in the past when the operator has lowered the spinning reserve requirement because of lack of available capacity.
- Mr Price responded that this is an operational decision to maintain security and reliability, but there would be a level of foregone ESS that would be too great a risk. Mr Price clarified that the discussion is about capacity credits, which are clearly an insurance policy procured some time ahead, and not about making the operational considerations that you might do in an emergency.

The Chair highlighted that a DSP is the reverse of a scheduled generator in that it ensures load is met at peak. Though the DSPs do not offer in the market like a scheduled generator they still play a role by reducing their demand. The Chair tasked the group whether they should therefore be treated as a generator that is also accredited to provide spinning reserve and be given both capacity credits and a spinning reserve payment.

The Chair stated that these issues could be considered in the consultation paper.

- Mr Trumble asked, once facilities are registered to provide both services, who makes the decision as to how they will be used.

The Chair stated that this exact question was asked in the MAC, and an answer from AEMO was needed before the consultation paper is finished.

- This was noted by Mr Price.

Mr Ditric said that bidding in the RTM becomes more of a requirement if DSPs provide ESS. Mr Ditric asked whether it would be problematic if a DSP providing ESS is not co-optimised with other providers of the ESS.

The Chair queried whether there is the DSP or the intermittent load that should be allowed/required to be in both, since it is providing ESS as an interruptible load rather than a DSP.

- Mr Schubert stated that, if an interruptible load is interrupted at peak times, it is no longer providing spinning reserve but demand reduction and, therefore, the remaining

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generator output is reduced by the same amount thus maintaining the level of spinning reserve. He stated that the load, therefore, ought to be able to value stack by getting capacity credits as well as being paid for spinning reserve / contingency raise.

- Mr Trumble stated that the way it is practically working now is by not dispatching other DSPs and holding them as spinning reserve.

The Chair concluded that:

  - In the new market, interruptible loads would be bidding in the contingency raise market.
  - If they are not dispatched because of a low price, they are treated as every other DSP and activated when necessary (noting that a DSP providing capacity would not be providing contingency raise at the same time).
  - AEMO would need to know how to rotate loads in such circumstances.

- Mr Price mentioned the new clause 7.4.10 of the WEM Rules which will require a participant to reduce its interruptible load offers to zero if dispatched as a DSP and if it is registered as both interruptible load and DSP at same connection point.

The Chair noted these issues would be covered in the consultation paper.

- Mr Ross stated that this works both ways, if DSPs are dispatched then they cannot be in the contingency raise market.

The Chair noted Mr Ross's point.

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8 Non-DSP Load Participation in RTM and ESS

Mr Ditric stated that:

- The discussion concerns large loads registering as a scheduled or semi-scheduled facility, with a scheduled facility not able to be a DSP.
- There are two possible incentives for a dispatchable load, one - dispatch at low load periods, another - dispatching off during high demand periods to reduce demand.

These two options will be explored by the working group, especially any potential barriers to participation.

Mr Ditric introduced the questions for this discussion, asking in particular what working group members thought about the role of retailers in this area.

- Mr Schubert questioned whether retailers that are enjoying low or negative prices actually want load to increase because price will then increase. Mr Schubert stated that negative prices are not currently reaching customers and, therefore, customers cannot respond to them.
- Ms Richards asked if there are any loads currently registered as scheduled facilities.
- Mr Huxtable said that loads can participate via retailers to get the benefit of the price shifts in the market, but noted that with the obligations around dispatch and bidding a load might not be interested in participating.
- Ms Richards stated that other jurisdictions that have adopted demand side bidding, scheduled loads etc, have had minimal uptake because the costs and effort outweigh the benefits.

The Chair said that this would be highlighted in the consultation paper.

- Mr Price agreed with this from an energy perspective alone, but stated that future loads and storage are examples of the benefits of accessing more ESS. Mr Price recommended this as a topic for the consultation paper.

The Chair said that this depends on the type of load, adding two comments:

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- A large load without onsite generation might actually take advantage of this.
- The group needs to explore whether there is anything in that rules that prevents a load that is not part of a DSP from participating.

- Mr Price queried whether in a scheduled facility, its parasitic load is treated in the same way as the parasitic load of a generator.
- In the chat, Mr Alexander asked for “views on NEM scheduled lite proposition as a way to reduce the burden”
- Ms Richards answered in the chat that she is “waiting to see the latest proposal but in all previous iterations of the idea, industry feedback has been that there is insufficient incentive to take up either “of the "lite" options they are considering.”
- Mr Butler answered that: “it’s a consideration in the DER work in the WEM, with similar aspects considered through AEMO’s DER Visibility Framework, ahead of DER Participation models (Oct 2025).”

Mr Ditric stated that:

- There are types of loads that could increase demand during SWIS low demand periods.
- These are loads that do not operate 24/7 and can engage a “batch” process to store their “product”.

Mr Ditric asked whether:

- these loads would be able to participate in the RTM during low demand periods.
- there are enough of these types of loads in the WEM to make this viable.

- Mr Schubert added that because large customers have been on time of use tariffs for a long time, there are probably loads operating overnight now taking advantage of lower prices who could shift to midday if they had the incentive to do so.

The Chair asked whether there is a need for a more structured service given AEMO has triggered procurement of NCESS to address minimum demand twice already.

- Mr Schubert stated that this depends on whether customers are paying too high a price through NCESS, and whether a lower price overall (including for implementation) was available through a structured service.

The Chair clarified that the discussion concerned large customers, not DER.

- Mr Price expressed the personal view (not an official AEMO view) that the ultimate objective will be levels of excess renewables which are used to charge storage to meet demand at other times. Mr Price asked whether:
  - capacity payment for those storage resources to supply at other times is sufficient to ensure they are charged and therefore withdraw at the times when excess renewables are available.
  - storage projects would be built without additional support and should support be provided in the form of incentivising consumption in addition to generation.
- Mr Price said that the WEM Investment Certainty Review will have a role to play, and sufficiency in revenue streams to allow those projects to be built and participate in the right way, is something AEMO needs to forecast better.

The Chair stated that the WEM Investment Certainty Review will be commenced in parallel with what reference technology type is selected for the flexible capacity service, as it may lead to a higher price for flexible capacity in the RCM than the price for peaking capacity.

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The Chair noted that if all of the new storage charges in the middle of the day the price in the middle of day will probably rise, but it should still be lower than prices during the evening peak.

- Mr Schubert said that this depends on whether enough storage capacity is built to keep up with or outstrip the growth in rooftop PV installation.

The Chair said that the DER program will solve some of those issues.

The Chair stated that it might be necessary to wait and see if the flexible capacity services together with ESS price and reserve capacity price address this problem before the group considers a standard service to address minimum demand.

- Mr Schubert agreed as long as participants are not paying high amounts for minimum demand services.

Mr Schubert said that loads would participate to reduce their IRCR without actively participating in the RTM itself.

The Chair noted that even with much higher price caps in the NEM the cost and effort, especially in the 5-minute market, may outweigh the potential benefits.

The Chair noted that there were no other contributions.

The Chair asked whether larger loads can provide effective regulation service by installing AGC or similar.

- Mr Schubert said that they could, if they have the technology, but that such technology is not available. Mr Schubert said that it would be interesting to see if there are any international markets in which large loads install technology to respond to real time pricing.
- Ms Richards stated that she is not aware of any loads providing a regulation service, even for relatively large flexible loads. Ms Richards also noted that most markets require AGC for regulation, which is a barrier in itself.

The Chair asked if there is an expectation, or ability, for more loads to provide a contingency raise service.

- Ms Richards said that:
    - There are many examples of loads capable of providing it.
    - Loads providing it have AGC, however AGC may not be necessary.
    - It is unclear what telemetry obligations are for interruptible loads participating in the WEM, and that there are possibly SCADA requirements that present a barrier.
    - In other interruptible load markets, there are no telemetry obligations, only compliance with dispatch instructions. Offers reflect what loads can actually provide in a frequency event, with local response to locally measured frequency deviation.
- Mr Price stated that there is a carve-out in the accreditation procedure for not having AGC for providing contingency reserve raise.
- Mr Price agreed with Ms Richards regarding telemetry, saying that there are currently barriers with respect to communications and control systems. However, AEMO plans to consult on this as part of updating the FCESS Accreditation WEM Procedure. Mr Price said that the real time SCADA is not necessary to provide those services but some level of visibility of the service availability should be required.

The Chair noted that this would be included in the consultation paper, with reflections on telemetry obligations in other markets.

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- Mr Schubert stated that visibility is key for AEMO, and noted that:
  - For contingency raise, the local UFLS relays used by interruptible loads can operate and trip the load.
  - For contingency lower, an over frequency relay could instantly turn on a big load.
- Ms Richards added that curtailing solar is also effective as it can be turned off quickly.
- Mr Trumble stated that Boddington is the largest single connection load on the system and does have an UFLS scheme which works automatically.
- Mr Trumble asked Mr Price how AEMO dispatches spinning reserve for those programs currently identified as DSP and also providing spinning reserve and how AEMO monitors the performance of the service.
- Mr Price said that ultimately the spinning reserve will be enabled through dispatch instructions to each facility for the relevant dispatch interval.
- Mr Price said that he is not aware of the exact SCADA requirements for the current interruptible loads, but expects the status of the underfrequency relays would be visible to AEMO.
- Mr Trumble noted that DSPs, when dispatched, are subsequently required to show that they did reduce load to the required level.
- Mr Trumble asked if the other two DSPs being held as spinning reserve are being dispatched by AEMO as spinning reserve, and whether that is fast enough given the discussion on participants providing ESS needing to be SCADA connected.

Mr Price answered that:

- They will be enabled for ESS, which is checking whether their underfrequency relay is active, with no other signal required to enable them for an interval.
- Following a contingency (as with all providers) AEMO uses a high-speed data recorder to review whether performance was in line with accredited quantity.
- The new FCESS framework includes information on failure to perform in line with accreditation parameters.

The Chair asked if AEMO requires them to be enabled when they are getting instruction but be disabled at other times, and stated there may be a contentious issue as to how quicky they can be restored.

- Mr Price did not believe there is a requirement for them to disable a response, but that there was a droop response that they must provide, and that there are differences in reserving headroom and providing a contingency reserve response.

The Chair said that the procedure needs to be checked, as well as how that will work in a competitive market if DSPs may or may not be dispatched for contingency raise.

- Mr Price stated if a load is not in merit it will not be dispatched in the contingency reserve raise market, but if there is an event it will still be required to respond to frequency in both directions.

The Chair said that it must therefore be up to the load to disable itself, so it does not respond to frequency deviations and is not being paid if it is not in merit.

The Chair said that RoCoF can be provided by loads and questioned whether the working group needed to discuss this issue. The Chair invited views on this but received none.

Mr Ditric asked whether:

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	• there was a need to explore ways for loads / DSPs to participate in the STEM, and whether there was an appetite for participation. • there are any restrictions due to the wording 'sale and supply of energy' and whether this should also include withdrawal. • Mr Schubert said that there was a retailer in the past who purchased energy from the STEM and sold it to customers at STEM prices plus a margin. The Chair stated that if they have a bilateral contract they can do that, but the question is can a participant do so without having any bilateral position. Mr Ditric said that there is also a question as to whether a load can register and bid to buy energy from the STEM, not just sell to the STEM. • Mr Huxtable stated that loads should definitely be able to both buy and sell outside bilateral contracts if that is not already possible. The Chair stated that this issue will be addressed in the consultation paper. The Chair identified two scenarios for discussion: **1.** Western Power has signed a runback scheme contract, and how that is visible to the market and how is it included in dispatch. **2.** Western Power goes through an NCESS mechanism and signs contracts with curtailable loads which are already connected. The Chair asked whether these should be visible to the market, stating that AEMO would also need to be involved in their dispatch in the RTM. • Mr Trumble asked if the existing DSP requirements of 200 hours a year and 12-hours a day availability has been considered. The Chair said that this was considered in the RCM Review. The paper will be published today and suggests a change from 200 hours to the difference between 1 in 10 and 1 in 50 forecast, which drops the hours significantly. • Mr McKinnon wanted to clarify that this is talking about pre-contingent runback schemes to resolve network constraint or allocating spare capacity as opposed to post-contingent protection based schemes that are set and forget. The Chair clarified that for existing loads, there is a question as to how they are considered in the market: • Those that are set and forget can be included in the constraint equations. • If they are more actively managed (pre-contingent) the question is whether they should be not only visible but actively dispatched through the market rather than operate outside of it.
9	**International Case Studies** Not covered.
10	**General Business** None.
11	**Next Steps** The Secretariat will prepare a Consultation Paper for discussion at the MAC (the date of which is to be advised).

The meeting closed at 11:34 AM

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 6(e): Update on the WIC Review Working Group

Market Advisory Committee (MAC) Meeting 2023_10_12

1. Purpose

- The Chair of the Wholesale Energy Market Investment Certainty (WIC) Review Working Group (WICRWG) to provide an update on the activities of the WICRWG.

2. Recommendation

That the MAC notes:

(1) the minutes from the WICRWG meeting on 31 August 2023 (Attachment 1);

(2) the update from the WICRWG meeting on 31 August 2023; and

(3) the WICRWG Chair will provide a verbal update on the outcomes of the WICRWG meeting on 11 October 2023.

3. Process

- The MAC established the WICRWG to support the Coordinator's WIC Review under clause 2.2D.1 of the WEM Rules.
- The WIC Review will address issues that were recognised in the Reserve Capacity Mechanism Review and will consider the five specific reforms that were announced by the Minister for Energy on 9 May 2023.
- On 31 August 2023, WICRWG discussed the scope of the WIC Review including:
    - the five reforms announced by the Minister and the order in which the reforms would be considered;
    - the modelling required to determine whether the package of reforms under the WIC Review will provide sufficient revenue certainty to potential investors to ensure that the Planning Criterion will be met;
    - the six policy options considered by the RCMRWG and the MAC and the preferred option – Option 6 – emissions threshold for participation in the RCM;
    - the correlation between the WIC Review and the Benchmark Reserve Capacity Price (BRCP) Reference Technology Review which would be considered in parallel; and
    - the proposed schedule of future WICRWG meetings.
- A WICRWG meeting is scheduled on 11 October 2023 with the following items on the agenda for discussion:
    - the approach to emissions threshold regime for participation in the RCM:
    - treatment of new and existing facilities:
    - exemption parameters for flexible capacity providers; and

  - the treatment of cogeneration.

- The Terms of Refence, papers for the 31 August and the 11 October 2023 meeting are available on the WICRWG webpage at Wholesale Electricity Market Investment Certainty (WIC) Review Working Group (www.wa.gov.au)
- Further information on the WIC Review, including the Scope of Works are available on the WIC Review webpage at Wholesale Electricity Market Investment Certainty Review (www.wa.gov.au)

4. Attachments

(1) Agenda Item 6(e) – Attachment 1 – WICRWG 2023_08_31 - Draft Minutes

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Minutes

Meeting Title:	WEM Investment Certainty Review (WIC Review)
Date:	31 August 2023
Time:	12:30pm –2:00pm
Location:	Microsoft Teams

Attendees	Company	Comment
Dora Guzeleva	Chair	
Mena Gilchrist	AEMO	
Oscar Carlberg	Alinta Energy	
Graham Pearson	Australian Energy Council	
Trent Leach	Australian Gas Infrastructure Group	
Daniel Kurz	Bluewaters Power 1 Pty Ltd	
Francis Ip	BLT Energy Pty Ltd	
Tom Frood	Bright Energy Investments	
Jake Flynn	Collgar Renewables	
Liz Aitken	Empire Carbon and Energy	
Julius Susanto	EnerCloud Consulting Pty Ltd	
William Street	Entego Group Pty Ltd	
Dr Matt Shahnazari	ERA	
Luke Skinner	Expert Consumer Panel	
Noel Schubert	Expert Consumer Panel	
Timothy Edwards	Metro Power	
Patrick Peake	Perth Energy	
Paul Arias	Shell Energy	
Shane Cremin	Summit Southern Cross Power Pty Ltd	
Rhiannon Bedola	Synergy	
Peter Huxtable	Water Corporation	
Valentina Kogon	Western Power	
Shelley Worthington	Energy Policy WA	
Tonia Curby	Energy Policy WA	

Tim Robinson	RBP (consultants to Energy Policy WA)	
Isaac Gumbrell	RBP (consultants to Energy Policy WA)	

Item	Subject	Action

1 Welcome

- The Chair opened the meeting at 12:30pm with an Acknowledgement of Country.
- The Chair advised members that WIC Review Working Group (WICRWG) meetings are recorded for minute-keeping purposes.
- The WICRWG members noted the Meeting Protocols.
- The Chair noted the attendance as listed above and invited members to introduce themselves.

2 Scope of the WIC Review

The Chair presented the five initiatives that were announced by the Minister for Energy on 9 May 2023 and brought to the Market Advisory Committee (MAC) on 9 June 2023, noting that:

- The aim of the WIC Review was to address issues raised during the review of the Reserve Capacity Mechanism (RCM).
- The RCM Review discussed options for emissions thresholds, formerly known as penalties for high emissions technologies in the Wholesale Electricity Market (WEM).
    - Within those discussions concerns were raised by stakeholders about reliability of supply and the need to be very careful with how the emissions threshold requirements would be staged.
- Another component to the WIC Review is exemptions for plants which fulfil the requirements of the flexible capacity product for a period of time to ensure reliability issues are addressed during the introduction of the emissions thresholds.
- Financial analysis was conducted and published suggesting that:
    - storage can be profitable between now and 2050;
    - intermittent renewable generators (wind and solar) may not be profitable following the expiration of Large Generation Certificates under the Renewable Energy Target (Cth) in 2030.
- EPWA is therefore proposing a financial top-up in return for proponents demonstrating they have contracts with storage providers, when prices begin to decline following the exit of high emissions technologies.
- A review of the Reserve Capacity Price curve has been included following concerns flagged during the RCM Review.

The Chair noted that:

- The WICRWG discussion and focus should be kept to the five initiatives - if other issues are raised, they will be noted and tracked by EPWA but they will not be addressed within this review.

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- The first stage of work will address initiatives two, four and five in the Scope of Work for the review.
- the second stage will address initiatives one and three.
- modelling will be undertaken to examine outcomes.

The Chair noted that the WICRWG is a working group formed under the MAC. The working group does not make decisions, it will undertake analysis and develop options to address the issues. The Chair advised that the MAC will be briefed on everything that is discussed within the working group.

The Chair asked the WICRWG if there are any questions.

- Mr Cremin noted that he had previously been a member of the MAC for over ten years. He noted the recent publication of the current Electricity Statement of Opportunities (ESOO) by AEMO and the expected forecast demand of 26 terawatt hours in 2030, which is significantly different to the ESOO in the year prior.
- Noting the announced retirement of coal, Mr Cremin considered that the increase amounted to a requirement to build capacity to meet the whole annual system load within the next six years.
- Mr Cremin noted that the changes that are proposed are not insignificant and sought to clarify whether any consideration has been given to the very significant changes to the market, the proposed coal retirement dates and actually determined whether this is the right time to implement the proposed changes.

The Chair responded that the WICRWG will not change the Government policy on the retirement of coal, nor was that within the scope of the WIC Review.

The Chair noted that members can independently choose to pursue the policy of coal retirement with the Minister for Energy as these policies are made by the Minister for Energy and Government.

The Chair also noted that:

- the forecast demand in 2030 has been public since the announcement of the South West Interconnected System Demand Assessment (SWISDA) on 9 May 2023;
- the ESOO is aligned with the SWISDA; and
- this information was available in the development of the scope for this review and the five initiatives.

The Chair noted the reasons for having these discussions with the WICRWG were to endeavour to get the investment environment right.

- Mr Frood noted the importance of getting the investment drivers right.
- Mr Cremin noted his disagreement with the policy on retirement of coal and noted that the ESOO estimates the requirement of $20 billion worth of assets to be built in the next six years.

The Chair responded that the WICR is a tool to shift the investment environment to enable this increase in investment.

Item	Subject	Action

- Mr Skinner noted the context driving the government decisions to retire coal is climate change and requested that members stick to the meeting agenda.

The Chair noted that meetings will occur approximately once a month, and that members are welcome to reach out to EPWA with comments outside these meetings.

3 Initiatives 4 and 5: Emission Thresholds for RCM Participation – Revisiting Work to Date

Mr Robinson noted that some of the participants in this working group were involved in the relevant RCMRWG discussions and provided an overview of:

- the background of the Penalties on High Emission Technologies and the five key policy constraints.
- the work to date:
  - the six options identified by the RCMRWG;
  - the two options shortlisted for further consideration - penalties on trading interval emissions and emissions threshold for RCM participation.
- what remains to deliver on the emissions threshold work.

Mr Robinson noted there were five WIC initiatives and that today's discussion would look at initiatives four and five, and two.

- Ms Aitken asked how these initiatives interact with the proposed exemptions for flexible gas.

The Chair responded that the proposal for exemptions for flexible gas for a period of time was not conceived separately. It evolved as a direct result of discussions on this policy, and the main concerns raised in submissions on EPWA's consultation paper, on the need to ensure reliability and security of supply are maintained during the transition net zero energy industry.

- Ms Aitken considered that this may become a challenge, and was concerned that the market, as a whole, may not be able to meet thresholds due to exempted facilities.

The Chair responded that EPWA and the WICRWG will be working on ways to address this challenge, noting that there will be discussions on making sure that participants who want to meet thresholds are able to meet their thresholds without losing their Capacity Credits due to an externality. The aim is to provide strong incentives for people to operate below the emissions thresholds. The Chair noted further design and modelling work will be required.

- Ms Aitken responded that option five should not be disregarded at this stage and should be used to give participants the flexibility to offset their emissions in the future and flagged. She noted the shortlist may have to be reopened to be able to assess some further solutions.

The Chair noted that the offsets option was ruled out by the RCMRWG very early in the process.

Item	Subject	Action

- Mr Skinner considered that offsets are not guaranteed emissions reductions.
- Ms Aitken disagreed with this view.

Mr Robinson noted that Ms Aitken had raised the fundamental tension between the options that:

- the thresholds could be set loosely such that they never bind, and retirement and operations continue as planned without adding any additional concerns about reliability; or
- the emissions thresholds could be set to actually change behaviour and possibly bring forward retirement of fossil fuel plants and incentivise proponents to install a different type of technology. This option potentially increases the risk to system reliability.

Mr Robinson noted that the ideal solution would make a difference to the emissions profile of the SWIS, while maintaining reliability.

Mr Robinson noted that option six was the preferred option. It is expected to provide more certainty of the timing of exit from the market for certain technologies than option one, it received the most support from the MAC and RCMRWG members and:

- assists in maintaining reliability of supply, as it provides certainty around plant exit;
- is simpler to implement; and
- allows use of existing National Greenhouse and Energy Reporting (NGER) data.

Mr Robinson noted that the RCMRWG considered that if this policy brings forward the retirement of existing plants, it may increase security and reliability issues, noting the large investment required for the energy transition.

Mr Robinson noted that as a response to the concern about reliability initiative five was developed, to allow for a ten-year exemption for facilities providing flexible capacity. Mr Robinson noted that this did not remove the tension but does go some way to mitigating the reliability issue.

In response to a comment from Mr Edwards, Mr Robinson noted that there was a mandate in Europe for emissions thresholds in the capacity mechanisms and provided an overview of emission participation thresholds in the UK Capacity Market.

Mr Robinson noted that there was information provided in the appendix that showed that the current performance of the SWIS fleet, if measured against the same limits that Europe was using, would show that the SWIS would be in big trouble in reliability terms. He added that the fleet in the SWIS had a long way to go in improving emissions to the point where the European regulations would not bite incredibly hard.

In response to comments from working group members, the Chair noted that, while she understood participants concerns with regard to coal capacity and baseload gas plant, the retirement of coal was not going to be dealt within the WICRWG. The Chair noted that the thresholds in the

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UK Capacity Market were only one part of a plethora of measures to reduce emissions in Europe and the UK.

- Mr Kurz considered this to be a 434MW rule implementation and questioned whether we want 434MW for peak demand, which is what this initiative considers.
- Ms Aitken noted her understanding of the concept of the emissions thresholds. However, she could see issues which will require detailed modelling. If a facility is emissions-limited in dispatch via an emissions budget, the facility will need to be able to price that into its offer. As facilities are not able to include opportunity cost in market bids, the facility may be forced to put itself on a forced outage. Ms Aitken has concerns as to what would happen once a facility's carbon 'budget' is reached in the hot season. Ms Aitken requested this to be considered.
- Ms Gilchrist noted that the AEMO will continue to require the ability to direct facilities to operate to maintain System Security and Reliability. This will be irrespective of where they are at in terms of their annual emissions. She noted that AEMO considers an exemption may be appropriate in these circumstances.

Mr Robinson noted that there were effectively two threshold limits and provided an overview of what was proposed for the WEM:

  - Emission rate threshold - a limit based on the scope one emissions from the previous year, divided by the amount of electricity generated in the last year, which calculates an average carbon dioxide limit per MWh of electricity generation.
  - Facility emissions quantity – a limit based on the scope one emissions from the previous year, divided by the facility's nameplate capacity.
- Mr Schubert suggested rather than using 'MWh generated'/'MW installed', to use 'MWh sent out'/'MW sent out capability' as this would align better with what capacity allocations are based on. Mr Schubert considered that this would place a more stringent obligation on the generator and will encourage efficiency of the plant.

Mr Robinson noted that further work will be required to be undertaken to unpack some of these issues and there was a need to be careful whether to use MW generated vs MW sent out data for generation and emissions.

- Ms Aitken considered, from a commercial perspective, that facilities, particularly gas plant, may limit their total generation this year in order to maintain their ability to preserve Capacity Credits in the following year due to the emissions thresholds being based on the previous year's emissions/generation.
- Ms Aitken noted that facilities cannot price themselves out of the market or to reflect the opportunity cost of their reserve capacity and could be left with no option but to put themselves on an outage.

The Chair responded that linking the thresholds to the capacity cycle also allows AEMO to foresee the gaps in capacity, for the ESOO.

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- Ms Aitken considered that the WEM does not necessarily have all the right tools in the short-term dispatch market and there may be a need to rethink some things in order to accommodate the emissions limits.
- Dr Shahnazari noted, in response to Ms Aitken, that this has been discussed previously by the RCMRWG and this was considered by the RCMRWG to be the better mechanism. Emissions thresholds rather than emissions penalties were chosen, as a result of the Ministerial directive that there will be no net cost to the consumers. The emission threshold accounts for that opportunity costs whereas the emissions penalties would result in a cost pass through to consumers.
- Mr Edwards provided support for the existing emissions threshold quantity as explained by Mr Robinson.
- Mr Edwards noted that ideally, following the introduction of emissions thresholds, the only fossil fuels left on the network should be fast response gas generators which can deal with situations that long duration storage cannot fill. Calculating the threshold from nameplate capacity gives generators sufficient flexibility to move around.
- Mr Carlberg wanted to clarify that the Environmental Protection Agency's (EPA) guidelines are also taken into consideration along with the federal emissions policy and the State Electricity Objective, noting that these guidelines require new facilities to reduce their emissions in line with net zero.

The Chair added that emission thresholds currently exist as part of EPA WA's Ministerial Statements for new facilities.

- Ms Aitken, in response to Dr Shahnazari, noted that having a signal that indicates that emissions have a cost may attract new investment in the market and opportunity costs could represent a reasonable price signal for the changeover of different types of plant.
    - Dr Shahnazari noted agreement with this comment by Ms Aitken.

The Chair noted that the WIC initiatives four and five would no longer be required if the State or Commonwealth Government introduced another carbon reducing measure that achieves the same objective.

Mr Robinson continued the overview of the thresholds, noting that under the proposal new facilities who were not meeting either thresholds would not receive any Certified Reserve Capacity. Existing facilities would be exempt from the rate thresholds and the quantity threshold would decrease over time.

- Mr Skinner asked whether the CO2e figure was e20 years or e100 years.

Mr Robinson responded that he did not know the detail of how the NGER translates the other gases into CO2 equivalent and that the intent was to use an existing regime rather than implement a new one.

- Mr Skinner responded that it is likely 100 years in that case.

Mr Robinson noted that the proposal in March 2023 was to set the emissions intensity threshold at 0.55tCO2/MWh, which could be met by a new gas peaker. The quantity threshold would then allow it to be used as

Item	Subject	Action

a peaker for up to 20% of the time. This threshold would allow a new peaker, but not allow new coal or liquid fuels.

The Chair added that this threshold will need to be decreased for existing facilities and that what still required discussion was whether the threshold decreases over time for new incoming facilities while preserving the existing facilities for a period of time.

- Mr Skinner opposed the concept of setting an emissions threshold which enables new gas fired investment and that resources should instead be going into the production of new renewable facilities. Mr Skinner considered that the purpose of this policy should be to prevent the entry of new fossil fuels and reduce existing fossil fuel consumption.
- Mr Frood agreed with Mr Skinner and considered that new fossil fuels should not be facilitated in the network and considered that if signals are there, alternatives will get built.

Mr Robinson noted that, just because something is allowed, does not mean it will be built and noted that in the discussions in the Benchmark Reserve Capacity Price (BRCP) Reference Technology Review there have been discussions whether new gas will actually be built.

- Mr Frood questioned if there are doubts of feasibility why is this being considered.
- Mr Arias noted that this work will incentivise renewable capacity, however, there is also a need to balance system security and reliability. If the modelling suggests gas is required, then the policy should provide the opportunity for new gas to enter the market.
- Ms Gilchrist agreed with Mr Arias.
- Mr Edwards noted that this is a transition period in which reliable power was still required. Mr Edwards considered that there is a need to incentivise new gas generators and noted that new gas generators can use green hydrogen and, as supply lines mature, gas turbines can transition to green hydrogen.
- Mr Street noted his agreement with Mr Edwards.
- Mr Skinner responded that hydrogen storage and transport has a high leak rate and hydrogen gas has a global warming potential higher than carbon dioxide. He further noted that green hydrogen has a very inefficient round-trip use for electricity production.
- Mr Schubert also considered that hydrogen for power generation is very inefficient and high cost compared to the same renewable electricity being used directly (instead of for producing hydrogen) or stored in long duration storage.
- Ms Aitken noted that a green hydrogen fuelled peaker needs to be considered in order to meet system security, at least until a twelve-hour battery can be produced.
- Mr Carlberg agreed with Mr Arias' and Mr Edwards' comments, and considered that it is too early to definitively say whether gas does or does not have a role in the future electricity system. Mr Carlberg noted that the ERA and the Grattan Institute have said that the last ten to twenty percent of energy will be hard to abate and gas generators may have a role in providing this backstop.

Item	Subject	Action

- Mr Carlberg noted that the topic of decreasing thresholds may be second order due to the EPA guideline and the existing pressures against new thermal generation to come online.

The Chair noted the importance of the WIC Review being undertaken alongside the BRCP Reference Technology Review.

- Mr Cremin noted his concern with security of supply. Mr Cremin had concerns that if the review gets this wrong a decision or outcomes may not be able to be reversed, and that careful consideration needs to be given to the timeframes and sequencing of this work.

The Chair agreed that detailed design and sequencing consideration was important, and work was still to be done.

- Mr Frood noted the importance of the timeframes to ensure confidence for investment and give investors the ability to plan.
- Mrs Bedola noted that, in terms of the exemptions, Essential System Services facilities need to be considered. These may or may not decide to be certified for flexible capacity.

The Chair noted that she is not certain that she agreed with Mrs Bedola but is happy to discuss this further.

Mr Robinson outlined next steps for the WICRWG including:

- finalising threshold levels for new facilities;
- transitional thresholds and exemption parameters;
- the timing of the commencement and transition; and
- the interaction between dispatch availability obligations and emissions limits.

Mr Robinson highlighted the link between the BRCP Reference Technology Review and the WIC Review, and that the proposed emissions thresholds will be used to shortlist technology types which can be used.

The Chair noted that EPWA will present to the WICRWG on the outcomes of future discussions on the BRCP Reference Technology Review by the RCMRWG.

4 Schedule of working group content

Mr Robinson highlighted proposed dates for future meetings and provided a draft agenda and dates for future meetings.

Mr Robinson noted EPWA will present a revised proposal for the emissions thresholds for discussion at the next WICRWG meeting on 11 October 2023.

The Chair noted that EPWA intends to complete the BRCP Reference Technology review by the end of the year, noting that this work is being completed in parallel with the new rules. This will be taken to the RCMRWG on the 21 September 2023 meeting as an initial proposal.

ACTION: EPWA to re-publish the slides with amendments.

5 General Business

Item	Subject	Action
	No general business was discussed.	

The meeting closed at 2pm.

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 7(a): Overview of Rule Change Proposals (as of 5 October 2023)

Market Advisory Committee (**MAC**) Meeting 2023_10_12

- Changes to the report since the previous MAC meeting are shown in red font.
- The next steps and the timing for the next steps are provided for Rule Change Proposals that are currently being actively progressed by the Coordinator of Energy (**Coordinator**) or the Minister.

Indicative Rule Change Activity Until the Next MAC Meeting

Reference	Title	Events	Indicative Timing
RC_2019_01	The Relevant Demand Calculation	Close of second period submissions	20/10/2023

Rule Change Proposals Commenced since the Report presented at the last MAC Meeting

Reference	Submitted	Proponent	Title	Commenced
None				

Rule Change Proposals Awaiting Commencement

Reference	Submitted	Proponent	Title	Commencement
None				

Rule Change Proposals Rejected since Report presented at the last MAC Meeting

Reference	Submitted	Proponent	Title	Rejected
RC_2019_03	17/12/2020	Economic	Method used for the assignment of Certified Reserve Capacity to	21/09/2023

		Regulation Authority	Intermittent Generators	

Rule Change Proposals Awaiting Approval by the Minister

Reference	Submitted	Proponent	Title	Approval Due Date
None				

Formally Submitted Rule Change Proposal

Reference	Submitted	Proponent	Title	Urgency	Next Step	Date
Fast Track Rule Change Proposals with Consultation Period Closed						
None						
Fast Track Rule Change Proposals with Consultation Period Open						
None						
Standard Rule Change Proposals with Second Submission Period Closed						
None						
Standard Rule Change Proposals with Second Submission Period Open						
RC_2019_01	21/06/2019	Enel X	The Relevant Demand calculation	Medium	Close of second period submissions	20/10/2023
Standard Rule Change Proposals with First Submission Period Closed						
None						
Standard Rule Change Proposals with the First Submission Period Open						
None						

Pre-Rule Change Proposals

Reference	Proponent	Description	Next Step	Date
None				

Rule Changes Made by the Minister and Awaiting Commencement

Gazette	Date	Title	Commencement
2023/96	18/07/2023	Wholesale Electricity Market Amendment (Supplementary Capacity No. 2) Rules 2023	• Schedule B will commence on 1 April 2024

Government of Western Australia
Department of Mines, Industry Regulation and Safety
Energy Policy WA

Agenda Item 8: BRCP Reference Technology Review

Market Advisory Committee (MAC) Meeting 2023_10_12

1. Purpose

- To provide an update on the Benchmark Reserve Capacity Price (BRCP) Technology Review.

2. Recommendation

That the MAC notes:

(1) a presentation including the relevant analysis and the discussion at the Reserve Capacity Mechanism (RCM) Review Working Group (RCMRWG) meeting on 21 September 2023 (Attachment 1); and

(2) provides any additional views on the analysis.

3. Background

- Review outcome 9 of the RCM Review provided for the introduction of a provision in the WEM Rules that will require the Coordinator to review the BRCP reference technologies.
- The BRCP Reference Technology Review aims to ensure that the WEM Rules provide sufficient incentives for investment in new capacity to maintain system security and reliability at efficient cost to consumers.
- The first review of the BRCP reference technologies must be conducted to set the reference technologies before the ERA reviews the BRCP Methodology and to enable the implementation of the Flexible Capacity product. The objective of the review is to determine the reference technologies for the Peak and Flexible BRCP.
- The RCMRWG, which supports the analysis conducted in this review, discussed at its meeting on 21 September 2023:
    - the approach to shortlisting technologies for each capacity product and shortlist determined through this approach;
    - product requirement assumptions, including the need to review the BRCP technologies at regular intervals
    - the economic life and treatment of major overhauls, including the treatment of battery cell replacement as a variable cost;
    - upfront capital costs and other fixed costs; and
    - the results of the analysis indicating that the BRCP technology for both the Peak and Flexibility products should be a 200MW/800MWh lithium battery energy storage system.

4. Next Steps

- EPWA will hold another RCMRWG meeting on 19 October 2023 to further discuss the analysis undertaken in the BRCP Reference Technology Review.
- EPWA will circulate a BRCP Reference Technology Review consultation paper to the MAC in late October 2023 for review.
    - MAC members will have one week to provide comments prior to publication of the consultation paper for a four week period.
- It is anticipated that the Coordinator will determine the BRCP reference technologies for the Peak and Flexible products before the end of this year.

5. Attachments

(1) Agenda Item 8 - Attachment 1 – MAC 2023_10_12 – Presentation

Government of **Western Australia**
Energy Policy WA

BRCP Reference Technology Review

Update for MAC

12 October 2023

Working together for a **brighter** energy future.

Agenda

	Item	Duration
1	Scope of this review	5 min
2	Overview	5 min
3	Requirements	15 min
4	Initial Costs	15 min
5	RCMRWG Meeting feedback	5 min
6	MAC Discussion	10
7	Next Steps	5 min

Scope of the Review

- **Review outcome 9 of stage 2 of the RCM Review requires the Coordinator review the appropriateness of the reference technologies for:**
  1. the Peak Capacity product; and
  2. the new Flexible Capacity product.
- **The first review must be conducted to set the reference technologies before the Flexible Capacity product can be implemented.**
- **The objective of the review is to determine the reference technologies for the Peak and Flexible BRCP which:**
  - provide efficient investment signals to ensure system security and reliability; and
  - ensure that customers don't overpay for the desired system security and reliability by selecting the most efficient new entry technology.
- **While this is not a WEM Development review, EPWA would like to consult on it with the MAC and the RCMRWG**
- **Using the benchmark technologies to determine the actual BRCPs remains an ERA process.**

2. BRCP Reference Technology Review - Overview

Approach

1. Establish a long list of technologies
2. Define the requirements that must be met to provide Peak Capacity and Flexible Capacity
3. Create a short list of 5 technologies for each capacity service
4. Identify cost data (based on the existing BRCP determination approach) for each of the 5 technologies when delivering each capacity service
5. Identify additional data for determination of net Cost of New Entrant (CONE) assessment
6. Conduct market modelling to inform proposals on reference technologies and Gross/Net CONE
7. Develop Reference Technology and Gross/Net CONE proposals.

EPWA has completed Steps 1- 4.

Reference Technology Long List

Generation Technologies	
OCGT (Heavy Duty)	Lithium Based BESS
OCGT (Aeroderivative)	Vanadium Based BESS
High Efficiency Gas Turbine (HEGT)	Pump storage
Reciprocating Engine	Solar thermal
CCGT Once Through Steam Generator (OTSG)	Solar PV
CCGT Drum SG	Wind
Fuel Cell	

Fuels
Liquid
Natural Gas
Solar
Wind
Hydrogen

Note: Nuclear excluded

3. BRCP Reference Technology Review - Requirements

Capacity Service Requirements

To establish a short list and to establish the BRCP Cost parameters for this list a definition of the required services was required. EPWA developed these requirements based on current and projected system characteristics.

Peak Service – Non Storage

Parameter	Setting	Comments	Impact on Short List
Operational Duration	14 hours with 3-day recharge		Liquid storage size Requirement for gas transport contract / line pack
Operating Temperature	41° Celsius	Existing	Site capacity
NOx emissions	150 mg/ m3	DWER approval at Kwinana	Requirement for Dry Low NOx or water NOx control
Carbon emissions intensity	0.55 tCO2e/MWh	Based on latest proposal for emissions thresholds	Excludes diesel fuels and heavy duty gas turbines.
Capacity factor	10%	Based on DSM meeting last tranche of peak demand, and this facility meeting the next portion of the LDC.	Operational life considerations

Capacity Service Requirements

Peak Service – Storage

Parameter	Setting	Comments	Impact on Short List
Operational Duration	4 Hours	Match existing requirements on ESR technology	Battery storage
Operating Temperature	41° Celsius	Existing	Site capacity
NOx emissions	None	Not required	Emissions accounted for at generation, not at charge
Carbon emissions intensity	None	Not required	Emissions accounted for at generation, not at charge
Capacity factor	10%	Based on DSM meeting last tranche of peak demand, and this facility meeting the next portion of the LDC.	Operational life considerations

Capacity Service Requirements

Flex Service - All

Parameter	Setting	Comments	Impact on Short List
		Must meet all Peak Service Requirements	
Ramp rate	100% capacity in 30 min	Estimated requirement after ESS support short term ramps	Excludes some CCGT
Start time	30 minutes	Start time within ESS response. Time of zero makes similar to the ESS service	Excludes CCGT
Minimum online generation	25%	Not technically required but minimizes market impact. No worse than ESS requirements.	Excludes CCGT
Capacity factor	Daily operation	Flex service required daily	Increases variable costs

Technology Short List

Peak Service	Flex Service
Super Aero GT (HEGT) on gas	Super Aero GT (HEGT) on gas
Reciprocating engines (15MW) on gas	Reciprocating engines (15MW) on gas
Lithium BESS	Lithium BESS
Vanadium BESS	Vanadium BESS
CCGT with OTSG	Aero GT (e.g. LM6000) on gas

The existing Siemens OCGT 160MW generator has been excluded as it does not meet the 0.55 tCO2e/MWh requirement. It is included in the following analysis as a point of comparison.

Scale of reference technology

Scale is defined by economic use of fuel and electrical connections. A facility bigger than about 200MW could result in an increase in the Contingency Reserve Raise requirement.

Natural Gas Supply is most economically delivered by proximity to existing pipelines, and each technology has a slightly different efficient size.

Network connections support different maximum scales as per the table below.

Voltage	Maximum Scale
22kV	15MW
132kV	100-150MW
220kV	150-200MW
330kV	200-500MW

We have assumed that there is limited or no 132kV new connection capacity close to existing gas pipelines. This leaves 220kV and 330kV as the feasible new connection options for a facility of any significant size.

The costs of a new 220kV connection and a new 330kV connection do not have major effect on the cost of a new facility, but a 330kV connection could support a larger facility.

Discussion – connection location

- Connection costs are ultimately a matter for the ERA BRCP methodology, but this review needs assumptions to determine the appropriate technology.
- Some proposed projects do not involve a new connection, but rather installing new equipment at an existing HV connected site to make better use of existing DSOC.
- Capacity connected in this way would have lower connection costs than a new standalone facility but relies upon development by an existing participant at an existing site.
- Alternatively, smaller (15 MW) lithium BESS connected to existing medium voltage substations could provide a range of Network Control Services. This revenue is currently very difficult to estimate and is not considered in the analysis below.

Assumption: Standalone facility with a 330kV connection, with new gas Facilities at ~200MW total, though made up of smaller units.

Economic Life

Peak Service (10% capacity factor during small number of peak intervals)	Economic Life
Super Aero GT (HEGT) on gas	25 years
Reciprocating engines (15MW) on gas	25 years
Lithium BESS	25 years
Vanadium BESS	25 years
CCGT with OTSG	25 years

Flex Service (daily cycling)	Economic Life*
Super Aero GT (HEGT) on gas	25 years
Reciprocating engines (15MW) on gas	25 years
Lithium BESS*	25 years
Vanadium BESS	25 years
Aero GT (e.g. LM6000) on gas	25 years

* Refer discussion on maintenance and degradation impacts on following slides

Economic Life and Treatment of Major Overhauls

Economic life assumptions

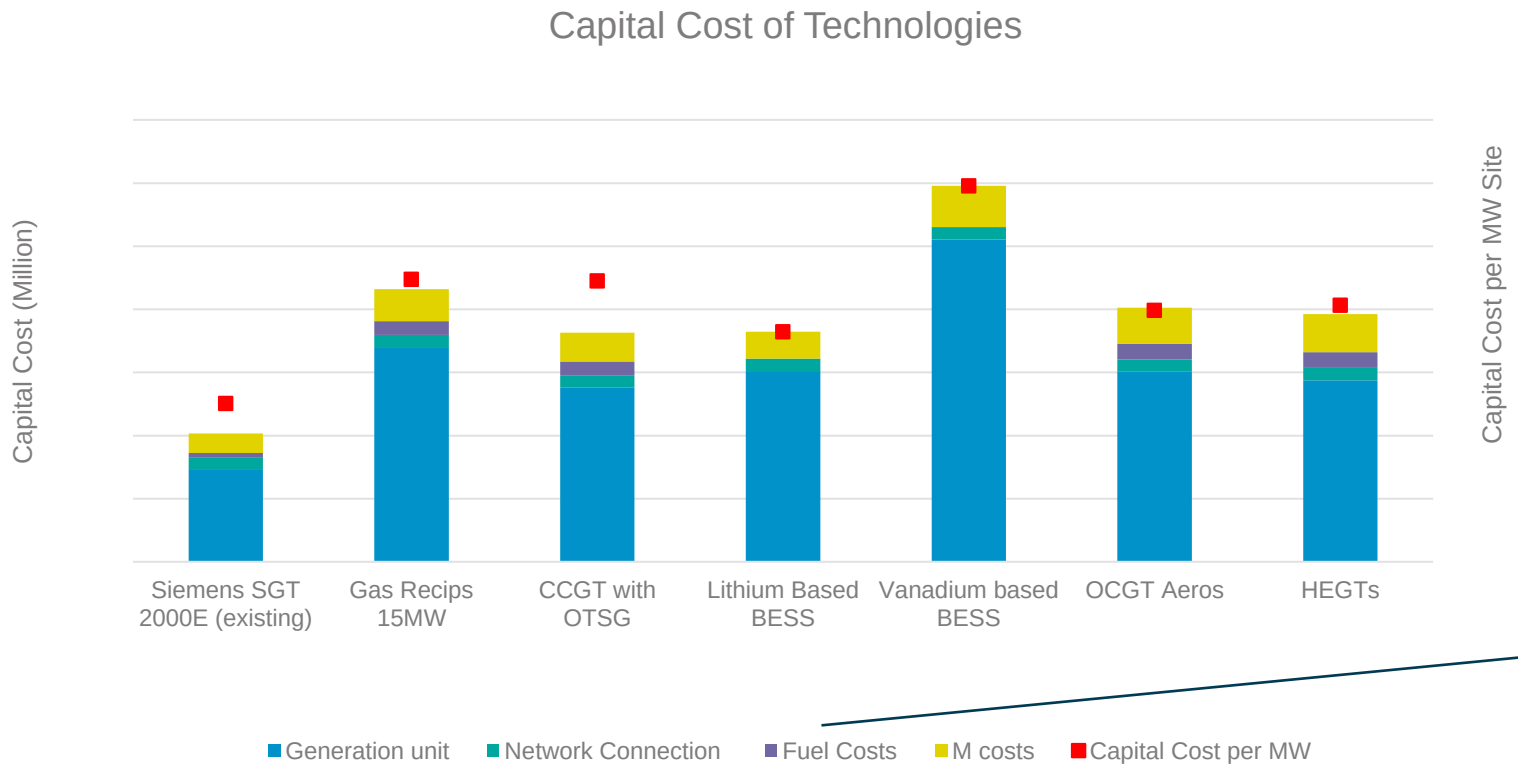
- While assumed economic life is a matter for the ERA BRCP methodology, this review needs assumptions to support the economic modelling.
- The current BRCP procedure uses a 50-year life, but this project will assume gas generation has an economic life of 25 years, driven by WA's 2050 net zero target.
- It may be possible to extend life beyond 25 years by using green fuels (hydrogen/biogas), but the availability and cost of doing so is far from certain.

Major overhauls as a variable cost component

- Flexible Capacity providers will incur greater maintenance costs than peak providers. These costs include reducing the time between major overhauls and cell replacement. Under the current BRCP calculations, these maintenance costs are recovered from the energy market as variable costs.
- The following analysis assumes that the costs of all major overhauls and end of cell life replacements are recovered by energy market charges (including the BESS buy/sell spread). These costs are excluded from capital costs and will be considered in the economic analysis.

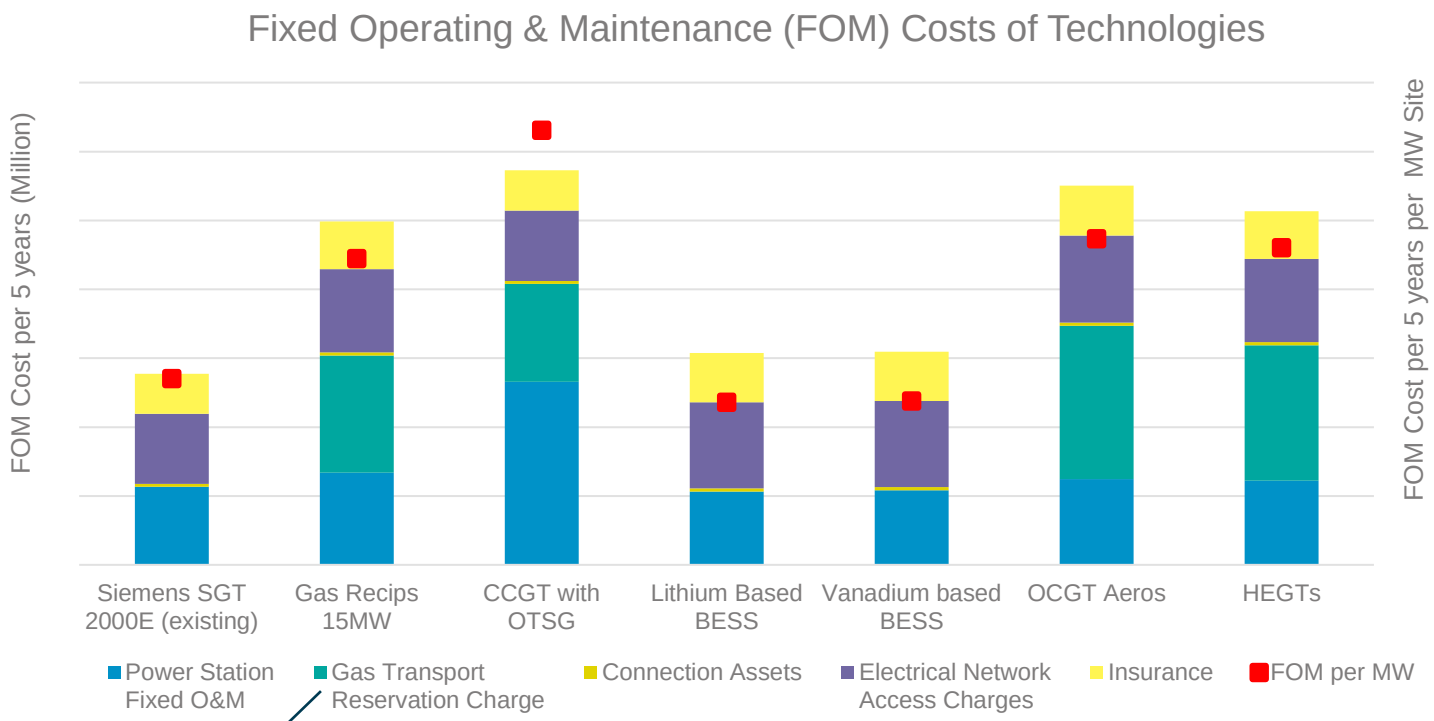
4 BRCP Reference Technology Review – Initial Costs

Capital and Upfront Costs



Includes capital cost for a gas lateral with capable storage for 14 hours supply. Aero technologies include a gas compressor

Fixed Operating Costs



Gas transport reservation charge included to allow sufficient gas for ~4h/day, or 14h on one day then two days with no operation

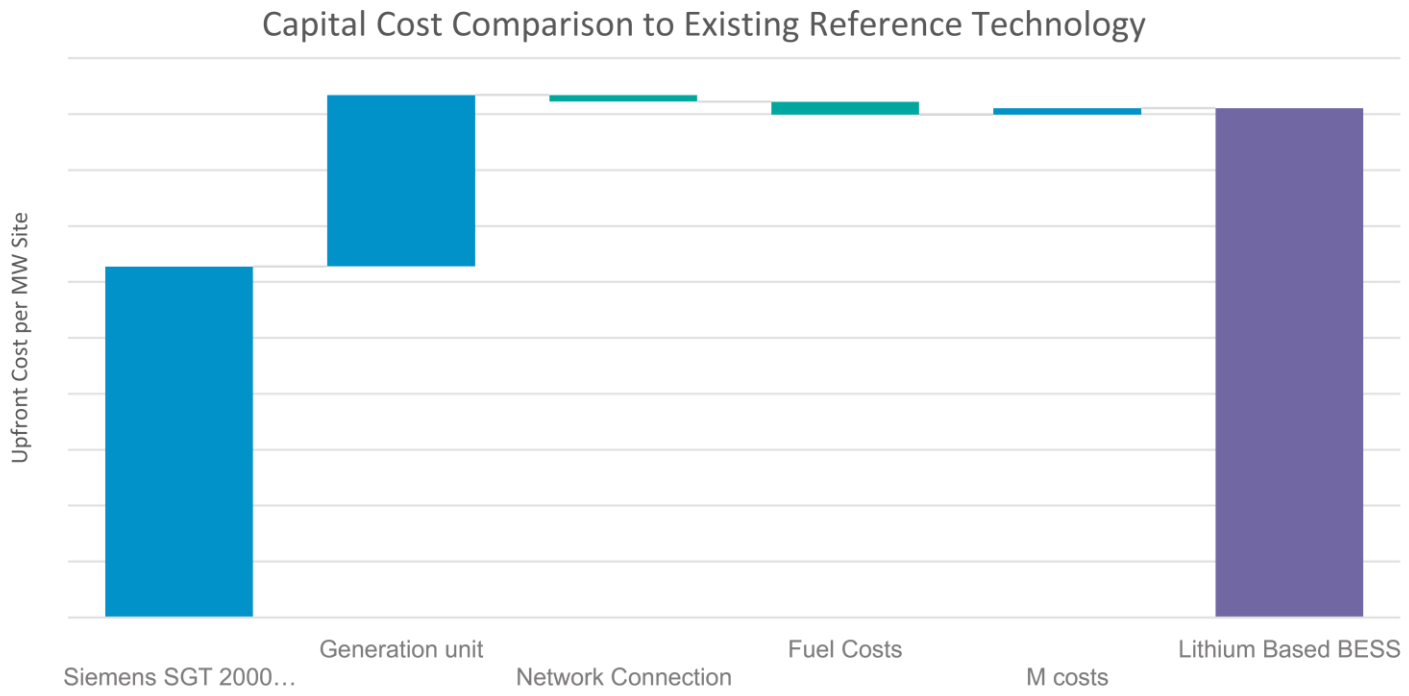
For storage Western Power TRT3 (Bidirectional for Storage) adopted with price as TRT2 (Entry Service).

Likely BRCP Technology Outcomes

The following are the cheapest new entrant technologies on a gross basis

Peak Service	Flex Service
• Lithium BESS • 200MW / 800MWh • Connected at 330kV	• Lithium BESS • 200MW / 800MWh • Connected at 330kV

Changes in Capital Costs – Lithium BESS



Cost changes

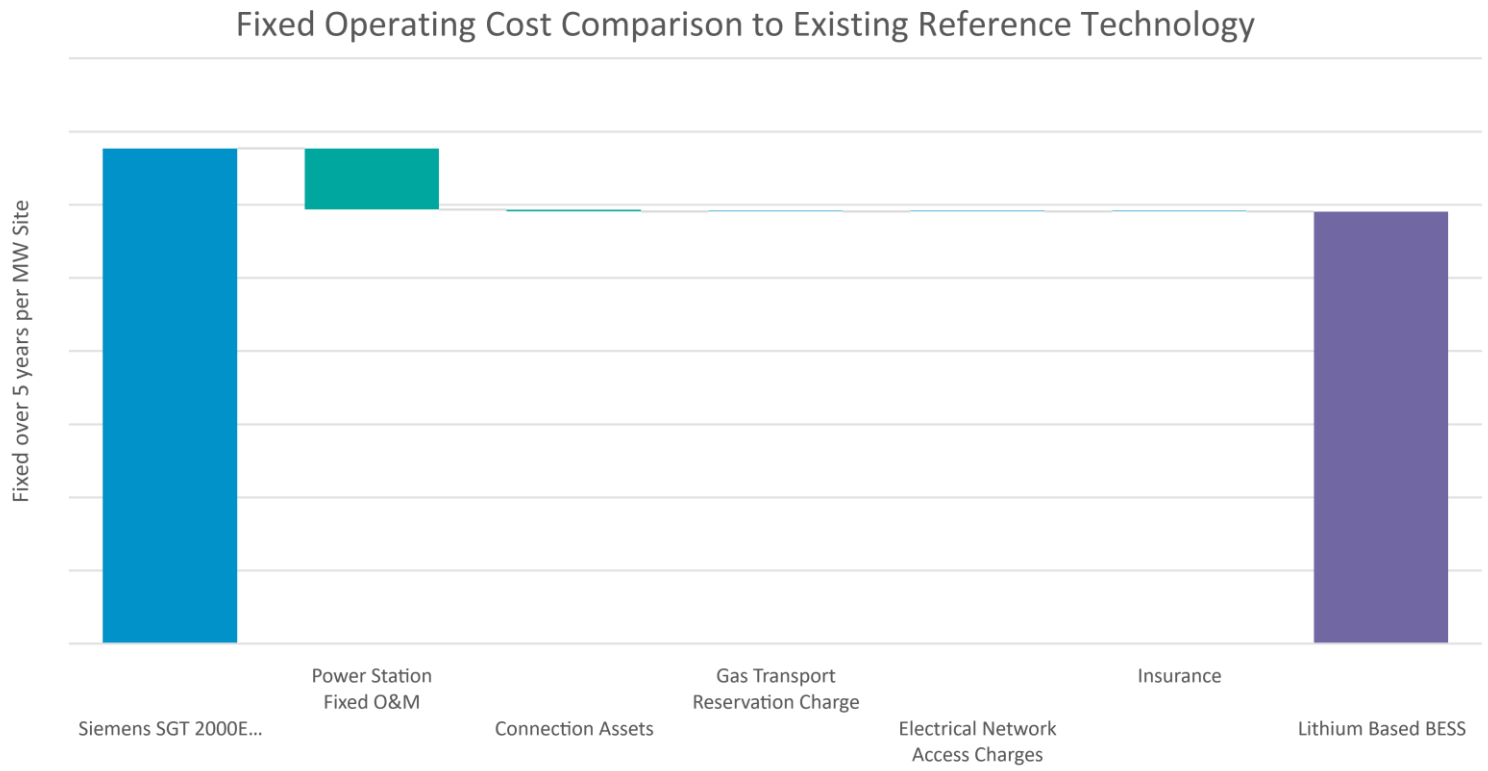
Generation Unit
- Cost of 200MW/800MWh BESS

Network Connection
- Same cost for more delivered MW

Fuel Costs:
- Avoid costs of 14 hours liquid storage

M Costs:
- Avoid some approvals costs but higher insurance (based on Generating Unit Capital)

Changes in Fixed operating Costs – Lithium BESS



Cost changes

Power Station FOM
- Lower fixed operating costs of BESS

Connection Assets
- Same fixed costs for larger output reduces per MW cost

Gas Transport
- No charge (same as liquid Siemens)

Key assumptions supported by the RCMRWG

Assumptions for this review:

1. In the medium term, it seems reasonable to assume that the top of the Load Duration Curve will be served by DSPs and existing liquid fueled generators installed before the commencement of the emission thresholds
2. A 200 MW is a reasonable size assumption, considering other power system operation concerns

Assumptions made by this review to assist with modelling but for consideration by ERA when setting BRCP:

1. Economic life for BRCP technology
2. Connection location (existing site or new connection)
3. Other fixed costs

Discussion with RCMRWG

Implications of analysis

- The existing 160MW OCGT with 14 hours of liquid fuel remains the least cost new entrant until the 0.55tCO2e / MWh emission threshold becomes binding on new entrant generators.
- The new benchmark technology will be higher cost than the existing due to:
  a. Carbon intensity target excluding liquid fuels, resulting in higher capital costs and/or gas transport charges
  b. Materially lower economic lives (25 years vs 50 years).
- There appears to be little difference in capital and fixed costs for Peak Capacity and Flexible Capacity:
  - All shortlisted technologies (HEGTs, Gas-fired Reciprocating Engines, Aero-derivative Gas Turbines and Battery Electric Storage Systems) can meet the requirements of both services.
  - The different operating profile required for the Flexible Capacity will result in increased costs from more frequent maintenance requirements, where every cycle and hour of operation brings the facility closer to a major overhaul. However, this increased maintenance requirement is usually apportioned as a variable cost component, and therefore can be incorporated into energy offers.

5 RCMRWG Meeting Feedback

RCMRWG Meeting Feedback

The material in these slides was presented to the RCMRWG on 21 September 2023. Members were generally comfortable with the recommendations. Key discussion points were as follows:

- Regarding the assumed 4-hour duration for storage technologies, there was a question if longer storage duration (e.g. 6 hours) should be considered to address future requirements
  - Modelling to date indicates that longer duration storage will be required only after baseload plant retires (e.g. after 2030)
  - Setting the BRCP on longer duration storage now will inflate prices for consumers before the need actually arises
  - Given the rapid industry transition, the BRCP technologies must be reviewed at regular intervals (e.g. every 3 years)
- A member was concerned that 4-hour storage will not cover long-term system security requirements e.g. “renewables droughts”
  - Covering these is not the purpose of the Peak product (to meet peak demand) and Flex product (to meet the afternoon ramp)
- There was a question regarding the treatment of battery cell replacement as a variable cost, and not including it in the capital and fixed operating costs
  - It was confirmed that this is consistent with the ERA offer construction guideline
- There was a concern that, as diesel GTs are the lowest cost new entrant until emissions limits are binding, introducing the new BRCPs early may enhance incentives for new diesel plant to enter the system
  - There was general agreement that it is unlikely that anyone will consider building new diesel GTs now, given that the emissions limits are imminent

6 MAC Discussion

MAC's views are sought on the following:

- The new benchmark technology type for the Peak Capacity Product will have significantly higher cost than the current one, because the current design of the Emissions thresholds would rule out liquid fuels, resulting in higher capital costs and/or gas transport charges
  - **Should allowing liquid storage on site with some limitations on the annual output of the facility be considered in the Emission Thresholds design to mitigate this steep increase**
  - **If this is considered as a mitigation when should this be reviewed/removed**
- The existing 160MW OCGT with 14 hours of liquid fuel remains the least cost new entrant until the 0.55tCO2e / MWh emission threshold becomes binding on new entrant generators
  - **Should the new Reference Technology Types be introduced before or following the commencement of the Emission Thresholds**
  - **If they are introduced following the introduction of the Emissions Thresholds what technology should apply to the Flexible Capacity Product in the interim**
- There appears to be little difference in capital and fixed costs for Peak Capacity and Flexible Capacity - all shortlisted technologies can meet the requirements of both services
  - **Are there any implications of having the same shortlisted technologies for peak and flexible capacity**

7 BRCP Reference Technology Review – Next Steps

Next Steps

1. Finalise additional data for determination of net Cost of New Entrant assessment.
2. Conduct market modelling to inform recommendations on reference technologies and Gross/Net CONE
3. Develop Reference Technology and Gross/Net CONE proposals
4. Discuss with RCMWG (19 October)
5. Draft Consultation Paper to MAC out of session
6. Issue a Consultation Paper (early November)
7. Issue an Information Paper (mid December)

We're working for Western Australia.