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

Meeting Agenda

Meeting Title:	Market Advisory Committee (**MAC**)
Date:	Thursday 2 February 2023
Time:	9:30 AM – 11:00 AM
Location:	In-person, Boardroom, Energy Policy WA and 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 and welcome new members	Chair	Noting	5 min
3	Minutes of Meeting 2022_12_13	Chair	Decision	2 min
4	Action Items	Chair	Noting	2 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	2 min
	(b) Reserve Capacity Mechanism Review Working Group (**RCMWG**)	RCMRWG Chair	Discussion	60 min
	(c) Cost Allocation Review Working Group (**CARWG**) – verbal update	CARWG Chair	Noting	2 min
7	Rule Changes			
	(a) Overview of Rule Change Proposals	Chair/Secretariat	Noting	2 min
9	General Business	Chair	Discussion	5 Min
	Next meeting: 9:30am Thursday 16 March 2023			

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:	13 December 2022
Time:	2:00pm –3:34pm
Location:	Videoconference (Microsoft Teams)

Attendees	Class	Comment
Sally McMahon	Chair	
Dean Sharafi	Australian Energy Market Operator (**AEMO**)	
Martin Maticka	AEMO	
Zahra Jabiri	Network Operator	
Genevieve Teo	Synergy	
Christopher Alexander	Small-Use Consumer Representative	
Noel Schubert	Small-Use Consumer Representative	
Patrick Peake	Market Customer	
Timothy Edwards	Market Customer	
Jacinda Papps	Market Generator	
Rebecca White	Market Generator	
Paul Arias	Market Generator	
Peter Huxtable	Contestable Customer	
Noel Ryan	Observer appointed by the Minister	
Rajat Sarawat	Observer appointed by the Economic Regulation Authority (**ERA**)	

Also in Attendance	From	Comment
Dora Guzeleva	MAC Secretariat	Observer
Shelley Worthington	MAC Secretariat	Observer
Tim Robinson	Robinson Bowmaker Paul (**RBP**)	Presenter
Grant Draper	Marsden Jacob Associates (**MJA**)	Presenter
Peter McKenzie	MJA	Observer

Apologies	From	Comment
Geoff Gaston	Change Energy	

Item	Subject	Action
1	**Welcome** The Chair opened the meeting at 2:00pm with an Acknowledgement of Country. The Chair advised that she has resigned from her position as a member of the expert panel on the Electricity Review Board (**ERB**) and no longer a sitting member on the ERA versus Synergy decision process. The Chair also noted any advice to the Coordinator from the MAC presents the views of the MAC and not necessarily represent the views of the Chair.	
2	**Meeting Apologies/Attendance** The Chair noted the attendance and apologies as listed above. The Chair noted the competition law obligations of the MAC members, asked that members read the paper outlining these obligations and invited members to bring any matters they may identify to the attention of the Chair.	
3	**Minutes of Meeting 2022_11_15** The MAC accepted the minutes of the 11 November 2022 meeting as a true and accurate record of the meeting. **Action: The MAC Secretariat to publish the minutes of the 15 November 2022 MAC meeting on the Coordinator's Website as final.**	**MAC Secretariat**
4	**Action Items** The Chair noted there were no open action items.	
5	**Market Development Forward Work Program** The paper was taken as read.	
6	**Update on Working Groups**	
	(a) AEMO Procedure Change Working Group (APCWG) Mr Maticka noted there had been a number of submissions received on the AEPC_2022_01 procedure change proposal, which closed for consultation 9 December 2022. The concerns raised matched those that were discussed at the 15 November MAC meeting. Mr Maticka noted that AEMO would take into consideration the queries around the 36 month information requirement, but noted that this was likely to remain. AEMO anticipated publishing the final procedure on 15 December 2022. Mr Maticka noted that AEMO also expected to publish proposed changes to the procedure for the Distributed Energy Resource (**DER**) Register, which would have a longer consultation period given the Christmas period and that the changes related to incorporating aspects regarding electric vehicles.	

- Mr Arias asked, if the changes to the procedure for certification are finalised in the coming weeks, whether AEMO was planning any changes to the end date for certification applications or is there going to be generator interactions to manage that through.
- Mr Sharafi noted that he did not expect the date to change and would notify Mr Arias if it did.

RCM Review Working Group (RCMRWG)

The papers for agenda item 6(b) were taken as read.

The Chair noted that MAC members are being asked to:

- note the amended draft statement of policy principles, the minutes from the last RCMRWG meeting and an update from the meeting of 24 November;
- support the RCMRWG's assessment and shortlisting of Options 1 and 6 for the implementation of a penalty on high emission technologies;
- inform the Coordinator of preferences for Option 1 or 6 and why; and
- agree with the next steps for finalising the shortlisted options for presentation to the Minister.

Ms Guzeleva noted that the RCMRWG would be meeting the following Thursday to discuss a shortlist of options for the Certification of Intermittent Facilities and was hoping to reach a conclusion on that piece of work in order to move to the rest of the program under the RCM Review, noting many items are outstanding.

Regarding the implementation of the penalty for high emission technologies, Mr Robinson noted that four different options had been presented to the RCMRWG and feedback had been received on those options.

Mr Robinson noted that in each of the sessions, participants had called for clarity on exactly what the Minister would like to achieve with the policy, and that this feedback has been noted.

Mr Robinson also noted that there were also concerns raised about increasing the incentives for facilities to retire at a time when there was a possibility of a capacity shortfall for the first time in many years and stakeholders were keen to avoid unnecessary risks to system reliability.

In addition to the four options initially presented, two other options were raised in the discussions and the submissions. One was around using LGCss or ACCUs rather than a direct penalty through the market. This option (Option 5) was discussed but not favoured. The other option (Option 6) was based on the approach used in the UK, under which facilities with emissions exceeding a set threshold are not able to have their capacity certified in the RCM.

Mr Robinson noted feedback was also received regarding the use of penalties to support new technologies. He indicated that, although this could play a part, it may not be the best way to provide incentives. This was because the revenue stream that would be provided from a set of penalties would not necessarily be sustainable or bankable. There was also concern that the penalties may affect the underlying economics of the existing Facilities that face them and, if those Facilities choose to exit, then the penalties will no longer be collected, potentially making it a less certain revenue stream for new Facilities.

Mr Robinson provided a recap on the new Option 6 noting that the idea is that there would be two thresholds, one based on what you actually generated in the previous year and the other - on what your innate emissions intensity is.

Mr Robinson noted that in the UK, new Facilities have to meet the innate emission rate threshold and the Facility total emissions threshold, but that existing Facilities do not need to meet the innate emission threshold and, as long their total annual emissions were below a threshold, they would be eligible for capacity payments.

- Mr Alexander asked, in relation to Option 6, how much room there was to move with where you set the threshold.
- Mr Robinson replied that it was fair to say that under either option there were still some important choices to be made. For example, for Option 6 there is the choice of where to set the thresholds and which Facilities they are applied to, and for Option 1 what was the rate of the penalty and how would that be phased in over time.

Mr Robinson noted that both of these are important factors in the next steps because they will be quite important for those who are making those investment decisions. He noted that for both Option 1 and Option 6, the penalty rate and the threshold placement were of similar impact in terms of design choices.

Mr Robinson noted that a qualitative and qualitative assessment was undertaken of each of the options (see slide pack appendix for brief discussion of assessment). He also noted that one of the feedbacks received was that, in order to prevent facilities from avoiding the penalty impact, there would need to be prohibition on passing through these additional charges to consumers, which will involve monitoring, some additional action and oversight, potentially from the Economic Regulation Authority (**ERA**).

Mr Robinson noted that Option 6 scored a little higher on the cost impact on consumers and simplicity of implementation because it did not directly impact on operational decision making incentives for running plant in real time. He added that the other difference between Options 1 and 6 is that Option 6 would not collect any penalties for later distribution. However, under any option there needs to be a range of other revenue streams available to encourage the entry of new technology.

Mr Robinson noted that both Option 1 and 6:

- have penalties relating to actual emissions;
- can be implemented through the Wholesale Energy Market (**WEM**);
- are relatively simple; and
- allow phasing in.

Mr Robinson noted that the UK limits were looked at and that the emissions data for the WEM may not be perfect, but that it was based on the National Greenhouse Office material.

Mr Robinson noted that it appeared that the WA fleet, at least on the numbers at hand, has significantly more emissions than the UK fleet Therefore, it would not be appropriate to take the European thresholds and just apply them straight in the WEM, and further work was required to work out what the most appropriate thresholds would be.

- Mr Huxtable asked what was the relativity between the UK market and the WEM in the capacity payment versus the energy payment.
- Mr Robinson replied that he did not have an exact answer, but that in the UK the capacity payment, because it is set in an auction, is significantly lower and that in the WEM you should expect a larger contribution to fixed costs through the capacity price versus some of the other jurisdictions. He noted that in the WEM capacity payments are set by administered price, which is different to most of the other capacity regimes around the world.
- Mr Huxtable noted that under Option 6 the penalty would be harsher as you would lose your capacity payments.
- Mr Peake noted that there seemed to be no real scientific basis for setting the thresholds and that, presumably, they will be set to include some generators and exclude others and asked if there would be any legal issue with that.
- Mr Robinson replied that there were definitely scientific approaches that could be taken, noting that these have not yet been decided. For example, a threshold could be set for how many tons of carbon dioxide equivalent should be removed and then trend towards that figure, which makes it not so much about individual power stations, but more about the goal that was trying to be achieved.
- Mr Alexander queried the compatibility of Options 1 and 6 with a potential national capacity scheme, noting that there had been some pretty big announcements in the past week or two that might be relevant.
- Mr Robinson replied that he was not sure of the detail of the announcements. However, one of the things covered in some of the previous slides was that if there were a national scheme then it may be appropriate to revisit this policy. He added that he could

not see either of the two options as not been able to adjust to tailor them to a national scheme.

- Mr Alexander noted that the collection of revenues could become less important in the context of a national scheme, which may elevate Option 6 from where it might be assessed now.
- Ms Guzeleva noted that in the UK several mechanisms have existed simultaneously and could safely exist together, and noted that what the federal regime proposes is an additional incentive. She added that we would need to be very careful about how that incentive works with any other incentives introduced through the RCM Review, including any incentives for flexible capacity or capacity to cover the duration gap etc. and these would need to be examined in the light of that announcement.
- Mr Robinson noted that this sounds like it goes towards providing support for new technologies rather than the regime for discouraging high emissions Facilities, but that they absolutely can work together.
- Mr Sharafi noted that the purpose of this scheme is to be able to fund new firm capacity, but that none of these options will provide for this and so it appears to be a self-defeating objective.
- Mr Robinson noted that it was important to recognise that the policy was twofold, it is providing a disincentive for high emitting plant and it is potentially providing a revenue stream to encourage new investment in new technology. One of the feedbacks that will go back to the Minister is that this may not be the best way to provide the second incentive. Mr Robinson noted that he was fairly confident that the Minister is keen on having the former goal as part of the suite of policy tools to facilitate the transition.
- Ms Guzeleva reminded the MAC that the RCM Review was also proposing some new products, including the flexibility product, to help with the ramping issues between minimum and peak load and none of the Options was impacting on that new incentive. She added that the RCM Review was also going to have another look at the Benchmark Reserve Capacity Price (**BRCP**).
- Ms Guzeleva noted that this was why it would be good to complete some of the stage one pieces of work, such as the Certification of Intermittent Generators, to be able to move the RCM Review on. Ms Guzeleva noted that there are other investment incentives that would need to be considered, noting that the RCM Review had not actually looked at incentives to close the duration gap which may emerge at some point. She noted that the conclusion was that whatever you collect through the penalties would very quickly dissipate if plant actually exits the market.

Mr Robinson noted that for the next steps, there were a few things to look at: firstly, to make sure there is that new capacity product for flexible capacity; secondly, to think about the incentives for longer

term storage; and thirdly, while the capacity price has been out of scope for this review one of the things noted in the international scan was that the shape of the demand curve in the WEM is different from that in other places.

- Mrs Papps noted that the main difference in the papers that were sent to the RCMRWG and those that have come to the MAC is there was an extra slide in the RCMRWG slides for the shortlisted options that talked about both options would first apply in the 2030 capacity year, but this was not included in the papers to the MAC.
- Mr Robinson noted that the reason 2030 was in the previous pack that went to the RCMRWG was that a lot of those options were presented as being implemented through the RCM.
- Mrs Papps noted that this meant that the feedback she gave at that meeting was probably based on the 2030 implementation timeframe. She had not really thought about what it might mean if it was earlier or later and wanted to highlight to the group that there was a slight difference to what was been presented to the MAC today, and what was presented to the RCMRWG.
- Ms Guzeleva noted that Mrs Papps also made a good point at the last RCMRWG meeting, in that there might be a need to consider how any new capacity coming to meet the flexibility requirements would need to be treated and so there may need to be a bit of work determining whether capacity that helps with flexibility is treated a bit differently.
- Mrs Papps added that, if you can provide the flexible capacity product and if there is a shortfall in that space, you would want to make sure that any other policy does not drive you out earlier than need be.

Mr Robinson noted the next steps involved:

  - trying to firm up the emissions intensity figures to get a better idea of what might happen;
  - assess the starting level and/or transition profile for either the penalty rate or the thresholds;
  - assess revenue sufficiency for new technologies; and
  - present options for analysis to the Minister.

- Mrs Papps asked if an additional step could be included in between doing the analysis and presenting to the Minister, and if it was possible to come back to the MAC with the outcomes of the analysis noting that they had given a view that Option 1 or 6 may both be appropriate, but that was without too much detail.
- Ms Guzeleva noted that the RCM Review was behind on many items and her preference would be to test this with the Minister at the high level and only then spend a lot of time for further analysis.

The Chair sought to clarify whether it was just the analysis on the shortlisted options that will go to the Minister or would a preference also go to the Minister.

Ms Guzeleva noted that ideally a preference would go to the Minister, but if that is not forthcoming, then it would be stated that there was no preference for one option or the other.

- Mr Schubert supported further analysis on the two options and noted, as a consumer representative, that even though there was no certainty about the revenue stream from penalties in Option 1, at least there was some revenue while there are high emission generators in place, whereas in Option 6, there was no revenue at all. Mr Schubert noted that one of the criteria for choosing the option should be what the impact on consumers was in terms of cost and while he liked the simplicity of Option 6 in terms of application, he was concerned that it does not raise any revenue at all.
- Mrs Papps noted that it was appropriate to shortlist the two options, but was unable to give a preference because that would depend on where the thresholds would sit and what the analysis says. Mrs Papps broadly agreed with the approach to the next steps, but noted that she would have preferred to have seen the analysis prior to it going to the Minister.
- Mr Peake supported looking at the two options and noted his preference was for Option 6 because it seemed simpler and that he was happy to go ahead with the proposed next steps. Mr Peake noted that it was important to make sure that this did not drive too much plant out of the market or stop plant coming in, therefore compromising reliability.
- Mr Alexander supported going ahead with Option 1 and 6 and agreed with Mr Schubert that customer cost needs to be a key consideration. Mr Alexander noted that, thinking about this in the context of a potential national scheme to generate revenue and the clarity that Option 6 might bring around the exit and the gap that is left, has him lean towards Option 6, but he was open minded about where it might land based on further analysis.
- Mr Sharafi noted the announced retirement of coal and that he would like to raise the reliability risk if this policy affects some of these generators and they exit early. Mr Sharafi noted he did not have a preferred option but that he would like to keep all the required generation running until the time that they are not required anymore.
- Mr Arias agreed with Mr Sharafi's comments that reliability was key. Mr Arias agreed to the shortlist and the proposed next steps and noted that he would also like to see the outcome of the analysis adding that it was hard to point to a preference without the analysis. However, the certainty of Option 6, in his mind,

outweighs any revenues that might be available to new Facilities, keeping in mind that the policy was aiming for a net zero cost impact for customers.

- Mr Huxtable agreed with the shortlisting options and next steps, noting that he would also like to see the analysis and that he prefers Option 1 because he finds Option 6 little arbitrary.
- Mr Maticka noted that Option 6 leads to higher capacity price, but he was not sure whether that increase would act as a suitable incentive and might not be long enough. Mr Maticka considered that moving forward with Options 1 and 6 was reasonable and reflects the working group's views but he had overarching concerns about whether this actually achieved the policy expectations. He also agreed with Mr Sharafi's comment that generation must not exit too early, because that will actually have an unintended consequence of having to procure much more expensive generation to fill the gap.
- Mr White and Ms Teo agreed with comments that were made about shortlisting the two options and that it would be useful to have more analysis before it goes to the Minister.
- Ms Jabiri supported the shortlisting of Options 1 and 6.

The Chair noted that the MAC agreed to shortlisting Options 1 and Options 6 with the majority of the MAC members indicating preference for Option 6, with some support for Option 1. She noted that there was some concern that it was difficult to actually state a preference without further analysis, particularly around the threshold and the impact of that threshold both on plant exiting early while it might be needed for the safe and secure operation of the system and also the extent to which any revenue from this scheme might be relied on.

The Chair also noted that the thresholds under Option 6 may change over time or through some sort of transition and asked if that was in the work program. The Chair noted that the next steps has been supported by the MAC.

Ms Guzeleva noted that the two things that are still to be examined are whether there is a differential threshold for existing and new plant, like there is in the UK, and whether is the thresholds are ratcheted down over time for existing plant. For new plant, the thresholds probably need to be kept at their initial level, so they may be different for an existing Facility and a new Facility. She added that consideration was been given to how this is phased in and the time frames, and that more analysis would be required.

The Chair noted there was general support for pursuing Option 1 and 6 as a shortlist. There was preference for Option 6 but further work needs to be done on the impact of the threshold, any transition arrangements, the impact on revenue and achieving policy objectives. She noted that most of those issues will be covered in the next steps that are proposed and agreed by the MAC.

(c) CAR Working Group (CARWG)

The paper 6 (c) was taken as read.

The Chair noted that the cover paper summarises whether changes are proposed, what they are as well as the reasons and that the MAC members are being asked to:

- note the minutes from the CARWG from September and October meetings;
- review the proposals and questions in the Consultation Paper and provide views on both;
- note the assessment of the proposals against the guiding principles; and
- note that, although there may be editorial changes, it is scheduled for publication on 15 December 2022, with submissions due 9 February 2023.

Ms Guzeleva noted that there have been some good discussions in the CARWG and more recently there had been additional discussion on options for allocating costs for the frequency regulation services which is (to some extent) the most important item. This is because costs in this space were likely to grow quite significantly and so sending a good signal to change behaviour was really important.

Ms Guzeleva noted that the Consultation Paper had quite a bit of analysis for people to look at in their own time and that it was planned to be published on 15 December 2022.

Ms Guzeleva noted that Market Fees have been discussed at the MAC and there was general agreement (which is reflected in the Consultation Paper) that, despite all of the methods assessed and the analysis that has been done, there was no clear benefit of changing what was already in place. Ms Guzeleva noted that there would be some cost of changing the Market Fees allocation method that would impact both AEMO and Market Participants. Therefore, unless, through the consultation process, a clear benefit was identified, it was proposed to keep the Market Fees method as it currently exists, for the time being.

Ms Guzeleva noted that there was a bit of a glitch in the current system with respect to storage, in that it might be charged twice on both sides of the market, and noted that this would need to be changed to make sure it is charged Market Fees only once.

Ms Guzeleva noted that frequency regulation was the area in which most attempts to look at various options have been made and noted that:

- there is currently a mechanism in place to allocate costs in the WEM;
- the National Energy Market (**NEM**) has a current mechanism that appears quite complex; and

- the Australian Energy Market Commission (**AEMC**) has approved a rule change to move to a new mechanism in the NEM, which has sharper signals for people to do the right thing but was not due to commence until 2025.

Ms Guzeleva noted that several presentations were made on the new NEM mechanism, including by AEMO colleagues over east and that the new method does appear to be equally complex as the current NEM one. More recently, the CARWG examined another method conceived by AEMO, the Tolerance Ranges method.

Ms Guzeleva noted that method was new (not the one that applies in the NEM) and it was effectively trying to do a couple of things at the same time. It tries to provide an incentive for facilities to reduce their volatility or variability. It also tries to increase the certainty of forecasts and give AEMO some visibility of what the forecast uncertain ranges for individual Facilities. This would probably introduce complexity that was not required in the WEM.

Ms Guzeleva noted that the new NEM method would be implemented in 2025 and there would be a need to monitor it, to see how it works in practice. It was not considered a good idea to go to one complex method and then change to another complex method after 2025.

Ms Guzeleva noted that, with the help of MJA, they had arrived with some analysis of an alternative, simpler method, which is simply looking at two points in time and at variations between those two points. The current proposal in the Consultation Paper is to introduce that simpler method after the start of the new market on 1 October 2023, for potential implementation in the 2024-25 capacity year. It is then proposed to continue to assess the new NEM method after its implementation in 2025, and complete a cost benefit analysis before considering it for potential implementation in the WEM in about 2028-29.

Ms Guzeleva noted the improvements to the Contingency Reserve Raise methodology for the allocation of Spinning Reserve costs (Contingency Reserve Raise) costs and that these improvements, the Taskforce made to the current runway method, will commence at the start of the market.

Ms Guzeleva noted that one issue was identified during the drafting of Tranche 5 Amending Rules when some refinements to the Contingency Reserve Raise method were implemented. The issue arose where a Facility had separate units but is connected to the same electrical location on the network through separate connections. Under this arrangement, one of the network connections may be out, but the Facility may be able to continue to export through the second one and therefore the view was that the largest network contingency should be driving the risk for that Facility rather than just treating it as an aggregated Facility. Ms Guzeleva noted that a fix for this issue in the WEM Rules has been proposed.

- Mr Schubert noted that there was quite a bit of discussion of this in the paper and, while he understood the message that it was trying

to get across, he believed that it comes down to what is the largest credible contingency that a Facility is likely to create and that was not based on the capacity of the generators that are behind the network connections. It is based on the network connections and their capacity, and what the maximum aggregated capacity of multiple units behind the network connections would cause if a network connection tripped.

- Mr Schubert believed the wording needed to be clearer because it refers to separate generation units, while it is not really the separate generation units that create the largest contingency. It is the loss of the largest network connection, if you have multiple network connections, that creates the largest contingency.
- Mr Schubert noted that, for example, if there is something that would cause the whole of Collgar Wind Farm to trip, like a control system or a protection scheme or something that could cause the whole wind farm to trip, then that would create the largest credible contingency. However, if there are separate network connections with separate control systems and protection systems and it is unlikely that they will all go off together, then it would be just one of them that creates the largest contingency for that Facility.

Ms Guzeleva noted that was exactly what the paper is supposed to say and would appreciate some drafting suggestions from Mr Schubert to make it clearer if that was not the case.

Ms Guzeleva noted that the Contingency Reserve Raise, or the current Spinning Reserve, cost allocation has worked on the basis of the runway method for a long time. However, for Loads this does not work in the same way and, although the cost is much lower than for Contingency Reserve Raise, there is a risk that in the future, as more storage comes into the system, contingency caused by Loads might become a driver of costs. She noted that there is some analysis in the Consultation Paper to illustrate that.

Ms Guzeleva noted that the suggestion was to introduce a similar runway method for Loads, whereby Loads above 120 MW are run through a runway methodology. Loads below 120 MW are aggregated as a single 120 MW Load and treated in that way.

Ms Guzeleva noted the reason for that is clear from the calculations in the paper, that as lots of storage comes in and that storage trips while charging, that will cause quite a big proportion of the Contingency Reserve Lower requirement and costs.

- Mr Sharafi noted that other than storage, new Loads proposed to come onto the grid, such as Hydrogen electrolisers, would also create a large amount of MW and the runway method will be an appropriate way of dealing with that.
- Ms Guzeleva replied that this was a good point and it could be added to the Consultation Paper, to note that it is not only storage that may cause this increase.

Item	Subject	Action
	Ms Guzeleva noted that for System Restart that there were no changes proposed, that the service is there to restore the system and therefore it is appropriate for customers to bear that cost. For NCESS, Ms Guzeleva noted the recommendation really was to watch this space. It is appropriate for when a network operator triggers the mechanism, with approval of the Coordinator, for those cost to be borne by network users. However for NCESS trigged by AEMO, there is a need to come back at some point (once we have some experience) to see if the current allocation of the NCESS costs to Loads should be looked at again. Ms Guzeleva welcomed any comments on the draft Consultation Paper, and asked that the MAC members provide any comments to be incorporated into the paper that they be received by the following evening at the latest. • Mr Alexander noted that this was very arcane stuff and as a consumer representative he tries to think through how it affects different customers. He wanted to say "thank you" to whoever has drafted the paper because there are numbers in here that show how things move around, which has helped him engage with some of these issues. Mr Alexander added that it was good to set up the paper in a way that shows the final impact to customers.	
	Action: MAC members to be provide any additional comment on the Consultation Paper within 24 hours.	**MAC members**
7	**Rule Changes** **(a) Overview of Rule Change Proposals** The paper was taken as read. There were no updates. Ms Guzeleva noted that there are four Rule Change Proposals, one that has had a draft report published and the other three have not. Three of the proposals related very closely to the RCM review, two of those related to the certification of intermittent generators and one to the relevant demand calculation. Ms Guzeleva noted that all of those are covered by the RCM review and, therefore, those proposals were put on hold, but that the extensions for those proposals expired at the end of the month. It was therefore proposed to extend the timeframes for the two that have not had a draft report to June 2023 and for the third one that has had a draft report - to September 2023. By that time it was hoped that the major recommendations of the RCM Review would have been delivered and there will be more clarity on what to do with the three proposals. Ms Guzeleva noted that the fourth proposal was to do with the frequency with which energy price limits are calculated and that this was subject to the Market Power Mitigation Review. This Review proposed that the frequency is reduced from one to three years and that one of the energy price limits is removed with the higher one	

Item	Subject	Action
	retained. The other component, the Benchmark Reserve Capacity Price, was subject to the RCM Review. It was therefore proposed to extend that proposal to the end of June 2023. Ms Guzeleva noted the extension notices for those proposals would be published before the end of December.	
8	**Supplementary Reserve Capacity Provisions** The Chair noted that the purpose of this item was to inform the MAC that the Coordinator of Energy will commence a review of the Supplementary Reserve Capacity (**SRC**) Provisions in early 2023 in accordance with the WEM Rules. The MAC members are being asked to note the Scope of Works that is attached. Ms Guzeleva noted that at the previous MAC meeting Kate Ryan from AEMO went through the changes to the certification procedure. There was a question of how the learnings from the current Supplementary Reserve Capacity will be factored in. As EPWA was working on the SRC Review scope of works, it was considered a good practice to bring it to the MAC for any comment before commencing the Review in earnest in January 2023. ○ Mrs Papps noted that the Scope of Works refers to using the Minister's rule change powers. While Mrs Papps knows that there is going to be a time restriction, she would prefer to try to use the normal process (the fast track rule process under the Rules). She noted that this could be fast tracked because it would be urgently required. ○ Mrs Papps believed that there was a need to transition back into using normal rule change processes over the Minister making the rules at some stage and this might be an appropriate time to do so. ○ Mrs Papps also noted that the recent governance changes changed how the fast track rule change criteria were set to allow for more scope. Ms Guzeleva noted that there was a need to decide when the time has come to move back to the normal process. Rules for 5 minutes settlement were yet to be developed. Further, while it would be optimistic to say that there will not be a Tranche 7 Amending Rules, those MAC members that were there at the commencement of the market would be aware that it did result in a flurry of changes because the systems implementation and first months of market operation led to that and that could happen again. Ms Guzeleva did not know if a transition can happen immediately, but noted that they could use the two sets of arrangements in various circumstances and that there will be consultation on both stages of the SRC Review. It was Ms Guzeleva opinion that the fast track process should be used very sparingly.	

Item	Subject	Action
	○ Mrs Papps noted that there was good consultation, but that in going through the normal rule change process, there will also be fulsome assessment against the wholesale market objectives. ○ Mrs Papps noted her comments were based on the experience back in 2008 to 2010 and the attempt to do a rule change on allocating SRC on a causer-pays basis. She noted that this was a very difficult and fraught time, and she wanted to make sure that some of the extra governance in the normal rule change process would be applied. Ms Guzeleva acknowledged that Mrs Papps made a good point about assessment against the market objectives and noted that they would consult in the same way regardless of the process being used. She added that there will be two sets of rules because there are two stages to this SRC review process. This means that two sets of rules would go through the formal process, which would probably lead to the need for ministerial approval at the end of the day. Ms Guzeleva was not certain (as she had not looked at the rules recently), but was concerned that the changes may need the Ministerial approval because there were protected provisions involved. The Chair noted that Mrs Papps thought the consultation processes worked well, but would like an opportunity to weave the WEM objectives into the scope the transition to moving to a full rule change process. Ms Guzeleva agreed to include this in the Scope of Works for the review.	
9	**General Business** The Chair noted the upcoming call for nominations for members of the MAC**.** Ms Guzeleva noted that half of the MAC (discretionary) memberships expire every year, on rotational basis. The rules prescribe that there shall be 6 Market Participant members and no more than eight, and require the Coordinator to keep the balance between market generators and market customers (excluding Synergy). Ms Guzeleva noted that several membership terms were expiring and that Ms White was resigning. It was not proposed to advertise the additional vacant generator and market customer positions due to the fact EPWA had not been able to fill the vacant Market Customer spot in two consecutive rounds, even with a standing call for nomination. There was a need to be consistent with the rule which requires the right balance between Market Generators and Market Customers. Ms Guzeleva noted the plan to also advertise for an additional contestable customer position (of which there could be two on the MAC). She welcomed existing members to nominate again. She noted that the intent was for the process to be completed by the next MAC meeting which was scheduled for 2 February 2023.	

Item	Subject	Action
	The Chair encouraged those members who are still interested in being active on the MAC to reapply, if their terms were expiring, and for members to encourage others to put an application for membership in. The Chair thanked Ms White for her valuable contribution to the MAC. • Mr Peake asked to consider the possibility of holding a MAC meeting in person at some stage in 2023. • The Chair noted that an expression of interest would be circulated to see how many people would be able to attend the next meeting in person. The Chair thanked the members for their attendance and positive contributions and wished everybody a very good holiday break. The next MAC meeting is scheduled for 2 February 2023.	

The meeting closed at 3:34pm.

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_02_02

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
1/2023	MAC Secretariat to publish the minutes of the 11 November 2022 MAC meeting on the Coordinator's Website as final.	MAC Secretariat	2022_12_13	**Closed** The minutes were published on the Coordinator's Website on 14 December 2022.
2/2023	MAC members to be provide any additional comment on the Consultation Paper within 24 hours.	MAC Members	2022_12_13	**Closed** No comments were received.

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_02_02

1. Purpose

- To provide an update on the Market Development Forward Work Program provided in Table 1, including:
    - the Chair of the Reserve Capacity Mechanism Review Working Group (**RCMRWG**) is to update the MAC on the progress of the Reserve Capacity Mechanism (**RCM**) Review since the last MAC meeting – see Agenda Item 6(b); and
    - the Chair of the Cost Allocation Review Working Group (**CARWG**) is to update the MAC on the progress by the CARWG since the last MAC meeting – see Agenda Item 6(c).
- To provide an update on other issues to be addressed via the Market Development Forward Work Program provided in Table 4:
- 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.

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: o the Terms of RCMRWG, as approved by the MAC; o the list of RCMRWG members; o 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 and 24 November 2022; and o meeting papers from the RCMRWG meeting on 15 December 2022. • The Chair of the RCMRWG will update the MAC on the progress on the RCM Review since the last MAC meeting, including the RCMRWG's assessment of options for the Certification of Intermittent Facilities– see Agenda Item 6(b). • 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: o the Scope of Works for the review, as approved by the Coordinator; o the Stage 1 Consultation Paper; o the Paper on the Review of International Capacity Mechanisms; and o submissions on the Stage 1 Consultation Paper.

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: o the Scope of Work for the review, as approved by the Coordinator; o the Terms of Reference for the CARWG, as approved by the MAC; o the list of CARWG members; o the Consultation Paper o the International Review o meeting papers and minutes from the CARWG meetings on 9 May 2022, 7 June 2022, 30 August 2022, 27 September 2022 and 25 October 2022; and o meeting papers from the CARWG meeting on 29 November 2022. • The Chair of the CARWG will update the MAC on the progress by the CARWG since the last MAC meeting.
Procedure Change Process Review	A review of the Procedure Change Process to address issues identified through Energy Policy WA's consultation on governance changes.	• 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 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.

Table 1 – Market Development Forward Work Program		
Review	**Issues**	**Status and Next Steps**
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 • 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 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 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 Work to reflect the MAC discussions and, following approval by the Coordinator of Energy, will provide the revised scope and a timeline for the review to the MAC in early 2023.

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'.	To be considered in the RCM Review.
3	Shane Cremin November 2017	Penalties for outages.	To be considered in the RCM Review.
4	Shane Cremin November 2017	Incentives for maintaining appropriate generation mix.	To be considered in the RCM 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.	To be 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).	To be 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.	To be considered in the RCM Review (except that the first bullet may be out scope, in which case it will be added to Table 4).
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.)	To be considered in the RCM Review (or may be out of scope, in which case it will be added to Table 4).

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?	To be considered in the Cost Allocation Review.
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.	To be considered in the Cost Allocation Review.
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	To be considered in the Cost Allocation Review.

Table 3 – Issues to be Addressed in the Cost Allocation Review			
Id	**Submitter/Date**	**Issue**	**Status**
		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.	
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 available. There needs to be equity in this equation.	To be considered in the Cost Allocation Review.

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, 02 February 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	17 January 2023	As required
WEM Procedures for discussion	WEM Procedure: DER Information Register	

3. AEMO PROCEDURE CHANGE PROPOSALS

The status of AEMO Procedure Change Proposals is described below, current as at 02 February 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
AEPC_2022_01	AEMO proposed amendments to the Procedure to: • specify additional information a Market Participant must provide as evidence of fuel availability in its CRC application under clause 4.10.1(e)(v)(2) of the WEM Rules; and • clarify the matters AEMO may consider when determining its reasonable expectation of the amount of capacity likely to be available under clause 4.11.1(a) of the WEM Rules. AEMO also made other minor and administrative changes.	Procedure Commenced		20/12/2022

ID	Summary of changes	Status	Next steps	Indicative Date
AEPC_2022_02	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.	Out for Consultation	Consultation Closure	24/01/2023

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

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

Market Advisory Committee (**MAC**) Meeting 2023_02_02

1. Purpose

- The Chair of the Reserve Capacity Review Working Group (**RCMRWG**) to update the MAC on the activities of the RCMRWG since the last MAC meeting.
- The MAC to provide comments on:
  - the proposed methodology for the Certification of Intermittent Generators; and
  - the next steps.

2. Recommendation

The MAC is to:

(1) note the minutes from the RCMRWG meeting on 24 November 2022;

(2) note the update from the RCMRWG meeting on 15 December 2022 (minutes to be provided on 1 February 2023, once approved by the RCMRWG);

(3) note the process undertaken since 2018 to redesign the methodology for the Certification of Intermittent Generators;

(4) note the proposed methodology for the Certification of Intermittent Generators; and

(5) raise any strong objections regarding the recommendations.

3. Process

- On 15 December 2022, the RCMRWG had its final meeting to discuss the options for the certification of Intermittent Generators, including:
  - a comparison of the Delta and Hybrid methods proposed by EPWA and Collgar respectively;
  - options to mitigate volatility of the methodology outputs across years; and
  - a proposed methodology for the certification of intermittent generators.
- **Attachment 2** provides a summary of the results from the analysis undertaken for discussion with the MAC. The purpose of this presentation is to:
  - inform the MAC about the outcomes of the final meeting of the RCMRWG; and
  - finalise the design of the proposed methodology for the Certification of Intermittent Generators.
- A RCMRWG meeting is scheduled for 1 February 2023 to discuss approaches to set the IRCR and the outcome will be presented at the 16 March MAC meeting.
- At the 13 December MAC meeting, the Chair of the RCMRWG provided an update on the RCMRWG's assessment of options for high emission technologies.

- the shortlisted options for penalties for high emission technologies have been discussed with and endorsed by the Minister.
- given the stronger support for option 6 (emissions thresholds for RCM eligibility), and the greater certainty it provides for reliability, EPWA is focusing on further developing this option.

- Further information on the RCM Review is available on the RCM Review webpage at https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review

4. Attachments

(1) RCMRWG 2022_11_24 – Minutes of Meeting

(2) Reserve Capacity Mechanism Review Working Group – CRC Allocation

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:	24 November 2022
Time:	12:30pm to 2:00 pm
Location:	Microsoft TEAMS

Attendees	Company	Comment
Dora Guzeleva	Chair	
Rhiannon Bedola	Synergy	
Manus Higgins	AEMO	
Toby Price	AEMO	Subject matter expert
Jacinda Papps	Alinta Energy	
~~Geoff Down~~Peter Huxtable	Water Corporation	~~Proxy for Peter Huxtable~~
Paul Arias	~~Bluewaters Power~~ Shell Energy	
Dale Waterson	Merredin Energy	
Patrick Peake	Perth Energy	
Matt Shahnazari	Economic Regulation Authority	
Noel Schubert	Small-Use Consumer representative	
Andrew Stevens	Consultant	
Rebecca White	Collgar Wind Farm	
Tessa Liddelow	Shell Energy	
Kiran Ranbir	ATCO Australia	
Daniel Kurz	SSCP Power	
Ajith Sreenivasan	Robinson Bowmaker Paul (**RBP**)	
Tim Robinson	RBP	
Stephen Eliot	Energy Policy WA (**EPWA**)	
Laura Koziol	EPWA	
Shelley Worthington	EPWA	
Isadora Salviano	EPWA	

Apologies	From	Comment
Mark McKinnon	Western Power	
Dev Tayal	Tesla Energy	
Andrew Walker	South32 (Worsley Alumina)	

Item	Subject	Action
1	**Welcome** The Chair opened the meeting at 12:30pm	
2	**Meeting Apologies/Attendance** The Chair noted the attendance as listed above	
3	**Minute of RCMRWG meeting 2022_10_13** Draft minutes of the RCMRWG meeting held on 13 October 2022 were distributed on 15 November 2022. Changes to the minutes were suggested via email prior to this meeting and are reflected in the draft included in the papers. The RCMRWG accepted the minutes as a true and accurate record of the meeting.	
	Action: RCMRWG Secretariat to publish the minutes of the 13 October 2022 RCMRWG meeting on the RCMRWG web page as final.	**RCMRWG Secretariat**
4	**Action Items** The paper was taken as read.	
	The slides for agenda items 5 to 10 are available on the webpage for the RCM Review (https://www.wa.gov.au/government/document-collections/reserve-capacity-mechanism-review-working-group).	

5	**Amended draft statement of policy principles**
	The Chair noted that on 23 November 2022 RCMRWG members exchanged emails suggesting that the objective of the draft statement of policy principles is unclear. The following key points were discussed:
	• The Chair noted that the issue had been discussed comprehensively at the 9 August 2022 MAC meeting and the 13 October RCMRWG meeting.
	• In response to a question form Mr Arias, the Chair confirmed that:
	  ○ the MAC's view that the objective of the policy is unclear has been provided to the Minister;
	  ○ EPWA will include in the feedback to the Coordinator, and any further advice to the Minister, that the RCMRWG is concerned that the objective of the policy is unclear and that this makes it difficult to assess any options.
	• The Chair noted that EPWA cannot change the Minister's draft statement and that the objective of the statement is to apply penalties to high emission technologies.
	• Mr Kurz considered that the objective of the draft statement appears to force high emission technologies out of the WEM. However, it is not clear by how much carbon emissions are to be reduced and by when.
	• Mr Shahnazari considered that the draft statement is about implementing a penalty for high emission technologies but that	

Item	Subject	Action

	having a penalty is not an objective in itself and that the statement should specify what the penalty is to achieve.
	• The Chair noted that:
	  ○ The Government's target is to reduce emissions by 43% by 2030.
	  ○ The draft statement does not provide a timeframe. Therefore, it leaves room for the Coordinator to propose a transition timeframe that helps the Government to achieve its emission reduction targets.
	  ○ The scenarios modelled for the RCM Review did not include any baseload fossil fuel plants from 2030 and no fossil fuel plants by 2050. These scenarios were agreed by the RCMRWG and the MAC.
	• Mr Kurz noted that RCMRWG's feedback is that a clear objective for the penalty policy should be specified in the Minister's statement.	

6	**Purpose of this session**
	The Chair noted that the purpose of the session is to capture the RCMRWG's feedback for the 13 December MAC meeting, including:
	• further feedback on the options for the implementation of penalties for high emission technologies in addition to the feedback provided:
	  ○ at the 13 October 2022 RCMRWG meeting ; and
	  ○ via emails after the 13 October 2022 RCMRWG meeting;
	• feedback on the two new options proposed by RCMRWG members via email.	

7	**Feedback on options presented** Mr Robinson provided an overview of the RCMRWG's feedback including: • feedback on the four options discussed at the 13 October 2022 meeting; • two additional options proposed by RCMRWG members via email; and • feedback on the options for using any penalties collected to incentivise the entry of new firming technologies.	
8	**Implementation options revisited** Mr Robinson provided a summary of: • the Minister's updated draft statement and the resulting assessment criteria for the options considered; • the implementation options considered; • the two new options proposed by RCMRWG members via email: ○ Option 5 – implementing the penalty by requiring participants to acquire or create ACCUs or LGCs based on their emissions and	

surrender the certificates to a State body (slide 12 of the presentation);

- Option 6 – applying emission thresholds for participation in the RCM similar to the application of thresholds in the UK capacity market (slide 13 of the presentation).

- the common parameters of all of the considered options; and
- the distribution of the collected penalty.

The following was discussed:

Penalty options

- Mr Peake considered that the draft statement does not specify that the penalty cannot be passed on to customers but that, overall, the penalty should not increase costs to customers. If the penalty is used to increase the amount of renewable energy and firming capacity in the WEM that could decrease the cost of energy in the WEM. Therefore, part of the penalty could potentially be passed through to customers without increasing the overall costs to customers.

  Mr Robinson noted that the modelling indicated that allowing the pass through of the penalty would significantly increase the cost of energy in the WEM. Mr Robinson agreed that maybe a small portion of the penalty can be passed through without increasing the overall costs to consumers. However, it would be difficult to determine how much of the penalty can be passed through without increasing overall cost to consumers.

- In response to a question from Mrs Bedola, the Chair noted that the penalty itself should not increase the cost to consumers but that other dynamics may increase costs outside of a direct impact.

  Mr Robinson considered that internalising a previously external cost increases overall financial costs.

- Mr Huxtable noted his concern about the use of ACCUs for the implementation of the penalty (Option 5) because the regime sits outside of the WEM. Therefore, it is outside of the control of Market Participants.

Distribution of collected penalty

- ~~Mr Sahnahzari~~ Dr Shahnazari considered that not all firming technologies will require the same support to achieve commercial viability and that efficient use of support funds should be considered.
- Mr Peake asked if the mechanism would distinguish between batteries that provide firming capacity and batteries that provide Essential System Services (ESS).

  The Chair noted that the draft statement referred to incentivising the early entry of firming technologies and considered that this indicates that the incentive is meant for firming technologies that would otherwise not enter the market, for example long duration storage.

Item	Subject	Action
	Mr Schubert suggested that the incentive should be based on the length of time firming capacity can be provided. Mr Price considered that the peak capacity product should be linked to the length of time capacity is needed but that firming relates to the proposed new flexibility product. The Chair considered that the draft statement provided some leeway about the interpretation but that it is clear that the incentive is meant for technologies that would otherwise not enter the WEM. • Mrs Bedola considered that Option 6 would likely lead to a higher Reserve Capacity Price that would incentivise new facilities to enter the WEM.	
9	**Analysis** Mr Robinson presented a comparative analysis of Options 1 and 6 that are proposed to be short-listed (slides 19 to 32). Mr Robinson noted: • That the emissions data used for the analysis differs from the emissions data used in the UK as follows: o the emissions data used for the WEM facilities is based on the data used for the Whole of System Plan (WOSP), which is basically the emissions during a year divided by the MWh of electricity produced and which can vary from year to year; and o the emissions data in the UK reflects the inherent emissions rate of the individual facilities; • any threshold or penalty would not be applied to biogas facilities because their emissions are not derived from fossil fuel; • if Option 6 was implemented in the WEM, appropriate thresholds would still need to be determined; • cogeneration plants are not included in the analysis because there was not sufficient information to derive the emissions related to the electricity production by taking into account the production of thermal energy; and • under Option 1, coal fired power plants would incur the highest penalty followed by some of the gas fired power plants. The following was discussed: • Mrs Bedola considered that coal fired power plants could provide RoCoF Control Service but no other ESS. Mr Robinson agreed with Mrs Bedola. • Mr Peake raised concerns about the implementation of thresholds that determine whether a facility receive Capacity Credits at all under Option 6. He considered that investors may not invest in the necessary plants if there is a likelihood that the facility won't receive Capacity Credits in the future. Mr Robinson noted that:	

  - the intent is to set a Fossil Fuel Emissions Limit and a Fossil Fuel Yearly Emissions Limit to any new facility from a certain date and to not change these limits following that; and
  - apply a separate Fossil Fuel Yearly Emissions Limit to existing plants that may increase over time.
- Mrs Papps suggested to consider an exemption from the penalty for facilities that are needed to fulfil the flexible reserve capacity requirement.

  Mrs Bedola suggested that this could be achieved by applying the penalty only to the peak capacity product but not the flexible capacity product.

The RCMRWG agreed to discard Options 2 to 5 and discussed the further analysis for the remaining Options 1 and 6:

- The Chair noted that Option 1 could be implemented at any point in time but Option 6 could only be implemented with a three-year lead time considering the Reserve Capacity Cycle timeframes.
- The Chair noted that Option 6 would provide AEMO the most certainty about meeting the Reserve Capacity Requirement (RCR) because:
  - any facility that is affected by the threshold will not be accounted for when deciding whether the RCR is met; and
  - it does not matter when an affected facility actually exits the market.
- Mr Schubert suggested that AEMO could:
  - allocate Capacity Credits without pay to any facility that is affected by the threshold but not exiting the market; and
  - use the payments that would have otherwise been made for those Capacity Credits to fund firming capacity.
- The Chair considered that relying on unpaid Capacity Credits can impact reliability because these facilities would not be subject to refunds.
- Mr Huxtable and Mr Waterson noted their preference to further assess both remaining options.
- Mr Waterson suggested to consider a hybrid of Options 1 and 5 where a generator can choose between paying a penalty and offsetting the emissions.
- Mr Shubert raised concerns that Option 6 would not raise funds for incentivising firming facilities. Therefore, the needed firming capacity will need to be funded by consumers.
- Mr Peake, Mrs Papps and Mrs Bedola noted their preference for Option 6. The following was noted:
  - Mr Peake noted that he was against applying a penalty that cannot be passed on in the market and considered Option 6 more appropriate;

Item	Subject	Action

- Mrs Papps noted that her preference was subject to setting appropriate thresholds and suggested to adjust Option 6 to only apply to the peak capacity product;
- Mrs Bedola noted that, while under Option 6 no penalties would be collected, it would also remove the complexity of distributing the penalty.

- Mr Kurz considered that both options have significant impact on reliability. Option 6 would force out a lot of the capacity in the SWIS and the replacement of this capacity is highly contingent on new transmission construction and availability of investment. Therefore he believed that the commencement of the thresholds for option six would need to be set for a time when the facilities would exit the market for commercial reasons anyway.
- Mr Peake considered that the thresholds for Option 6 need to be set so they ensure that open cycle gas turbines are not run in place of combined cycle gas turbines.

  The Chair noted that further analysis is required to develop the detail of Option 6, including:
  - the appropriate thresholds;
  - the treatment of open cycle and combined cycle gas turbines.
- Mr Shahnazari considered that Option 6 provides more certainty about the absolute emissions in the WEM but that sufficient revenue for renewable generators and flexible capacity must be available in the future.

  The Chair noted that if the selected option does not collect penalties to incentivise firming capacity the methodology for setting the Reserve Capacity Price may need to be examined in the RCM Review.

10	**Next Steps** The Chair noted that the MAC will be provided with updated slides that reflect the RCMRWG's discussion.	
11	**General Business** No general business was discussed.	

The meeting closed at 2:00pm

Government of **Western Australia**
Energy Policy WA

Market Advisory Committee

Update from RCMRWG

2 February 2023

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

CRC for intermittent generators – activity to date

Four years since start of discussions

- 2018: the ERA reviews the Relevant Level Method (RLM) for allocating Certified Reserve Capacity (CRC) to intermittent generators
- March 2019: ERA final report recommends determining intermittent generator CRC based on a reliability analysis rather than the current method
- December 2020: ERA submits rule change proposal for changes to the RLM
- April 2021: Draft rule change report proposes ELCC Delta method for facility allocation
- June 2021: extension notice provides additional analysis on ELCC method
- December 2021: RCM review, including a review of the CRC method, commences
- July 2022: RCM working group considers CRC methods for intermittent generators, and identifies alternative options
- August 2022: Consultation on CRC alternative methods
- August – November 2022: EPWA analyses alternative options
- December 2022: RCMRWG final meeting on alternative options

Overview

On 15 December, the working group discussed additional analysis conducted on three options for CRC allocation to intermittent generators: Delta method, Hybrid method (Collgar) and Hybrid method (EPWA).

The working group:

- Agreed on the approach to set the total quantity of CRC to be allocated across the fleet of intermittent generators.
- Did not reach an agreement on the approach to be used to allocate the fleet value to individual facilities.
- Gave two strong messages:
    1. EPWA's preferred approach for facility allocation would be difficult for investors to understand, and a simpler method would better align investment incentives with market objectives.
    2. EPWA should select a method as soon as practicable, as additional analysis is unlikely to make the choice clearer.

The group also reviewed analysis of the effects of new facilities on CRC of existing facilities, which showed only a small effect (see appendix).

1. Determining the Fleet ELCC

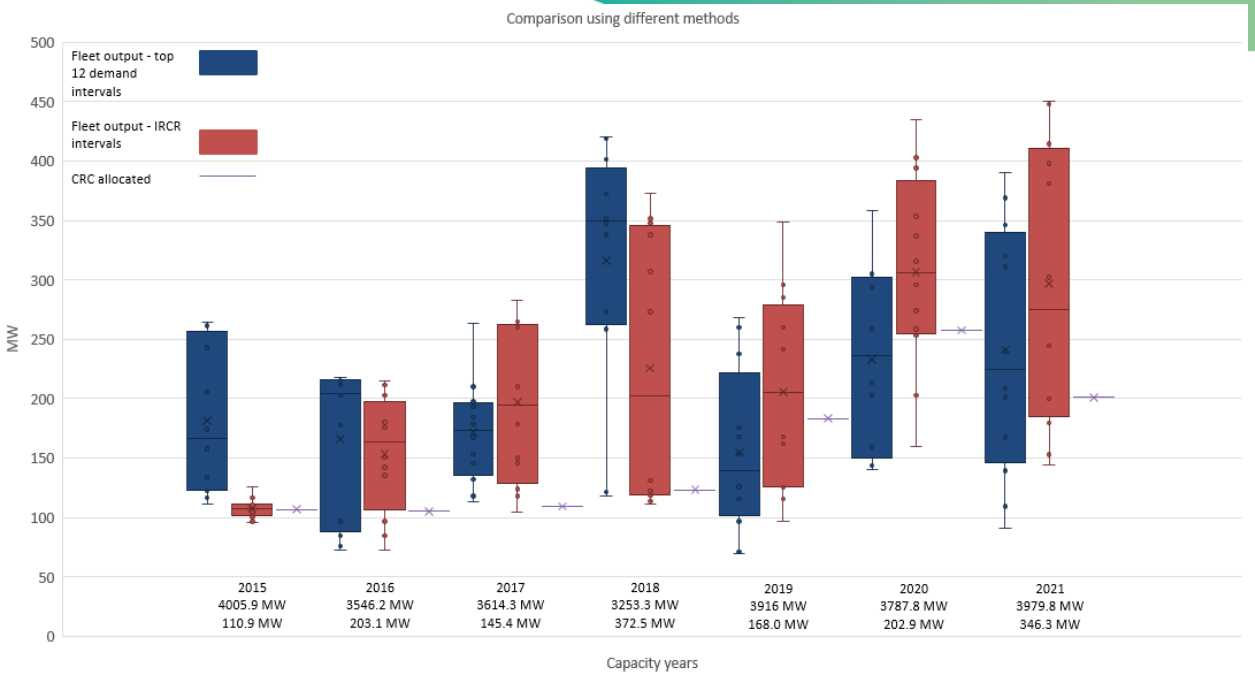
Volatility in Fleet Performance

All methods currently under consideration determine the collective ELCC for the fleet of intermittent generators (the Fleet ELCC), and then allocate CRC to individual facilities to a total of the Fleet ELCC.

The chart shows that:

- Fleet performance varies significantly between years
- Fleet performance varies significantly between high stress intervals
- The year with best performance is the year with lowest peak demand

This volatility in facility output is the underlying factor driving volatility in CRC allocation under any method.



Note:

- Whiskers show maximum and minimum fleet performance in the intervals
- Circles show other data points
- Boxes show 25th and 75th percentile range, with a line across the middle for the median.
- Crosses show the mean
- Text below the capacity year labels is:
  - MW demand during the peak interval of the year
  - MW fleet performance in that interval

Determining the Fleet ELCC (1)

There is more than one way to implement an ELCC calculation. The approach used in this analysis is focused on expected unserved energy (EUE). This approach is less reliant on firm facilities than a cumulative outage probability table, so is more suitable for systems with high intermittent penetration.

1. Use historical load (adjusted for DER penetration)
2. Remove all intermittent facilities
3. Increase or decrease demand (by adding or subtracting the same MWh quantity in each interval) until EUE is at a defined percentage of the total load*
4. Return all intermittent facilities to the fleet (historical facility output for each interval)
5. Increase load until EUE is the same as it was in step 3 (the same MWh as used in step 3)
6. Added load (MW) = Fleet ELCC

Each run consists of 50 iterations with forced outages sampled randomly based on historical outage rates.

This approach to calibrating the EUE target used to set the fleet ELCC will be further refined during detailed design.

* Previous analysis has used 0.002%. Data in this paper uses 0.015% except where noted.

Determining the Fleet ELCC (2)

Working group discussions on mitigating volatility have included proposals to calculate ELCC values for individual years and average the results, rather than calculating ELCC values for the entire period at once.

At fleet level, the % difference between the two methods is minimal in 2016-2020.

For 2015-2019, the difference is greater, as averaging reduces the impact of the relatively high fleet performance in 2015.

While averaging the annual Fleet ELCC could reduce volatility in the Fleet ELCC from year to year, EPWA is concerned that doing so increases the weight of years without significant stress events.

At the same time, scaling the whole five-year period to an EUE target may result in individual years within the period having an EUE above the target and therefore not meeting the Planning Criterion.

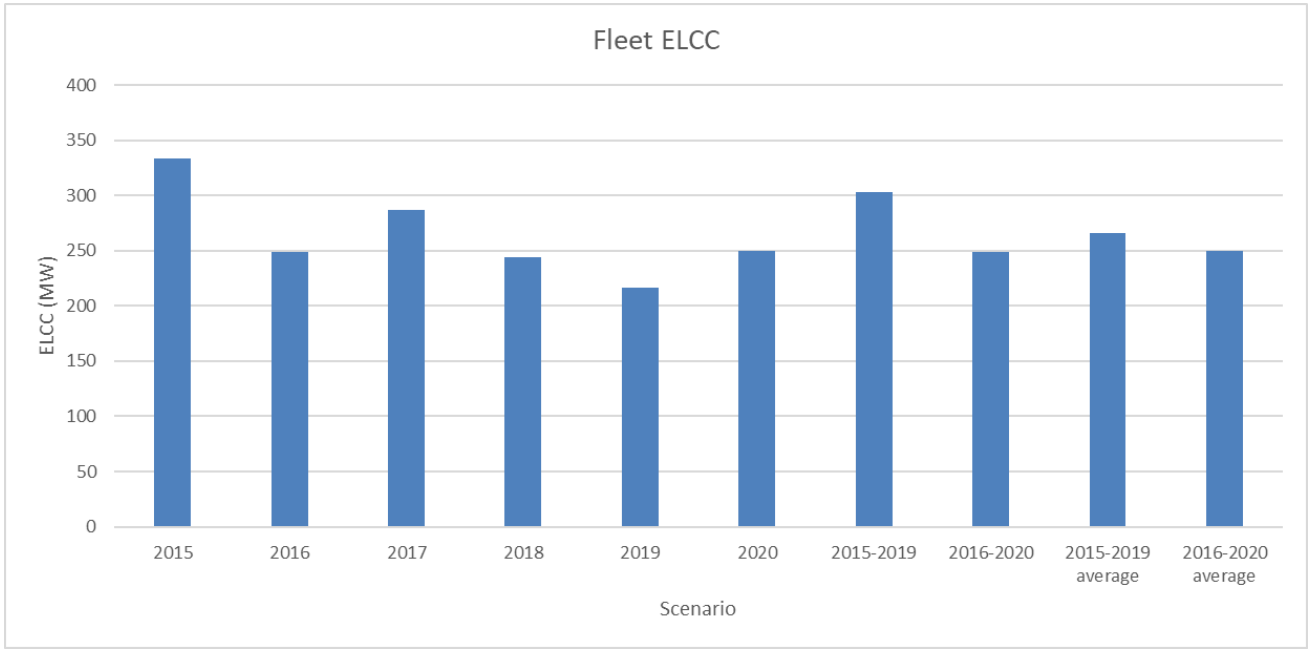


Chart shows Fleet ELCC calculated for each individual year in the dataset, and each five-year period considered as a whole and averaged.

Removing Non-stress Periods from Historical Data

In our dataset, 2018 has the lowest peak demand of any year – approx. 300MW lower than any other year, and 750MW lower than the highest peak interval.

Removing this period from the data means that there are fewer modelled periods, and lower total load over the four years of data, but facility performance in the peak periods of the low demand year no longer affects the result. When calculating for the combined years, the overall Fleet ELCC is slightly reduced.

	2015-2019 combined	2015-2019 average	2016-2020 combined	2016-2020 average
Include all years	303.1	266	249	249.2
Drop lowest peak year	296.6	271.5	241.3	250.6

Conclusions of RCMRWG discussions

Adjusting historical year load to account for changes in DER penetration is a key part of the process (see appendix).

Smoothing out year-to-year volatility in Fleet ELCC could improve certainty for investors, but EPWA is concerned that any method for reducing volatility should not cause CRC allocations to overstate performance due to lower stress periods:

- Volatility due to unusually high performance in a single year can be mitigated by setting the Fleet ELCC to the lower of:
  - The Fleet ELCC calculated for the whole period
  - The average of the Fleet ELCCs calculated for each individual year of the period
- The effect of low stress periods can be mitigated by removing the year with the lowest peak from the data used to calculate CRC.

The Working Group generally supported this approach to determining Fleet ELCC, which sets the total quantity of CRC to be allocated to intermittent generators.

2. Determining the Facility ELCC

Recap - Methods assessed

EPWA considered three methods (with various permutations):

- The Delta ELCC method, where first-in and last-in Facility ELCCs are calculated, and used to distribute the Fleet ELCC.
- The EPWA Hybrid method, where the Fleet ELCC is distributed based on facility performance in stressed intervals, using Load for Scheduled Generation (LSG) as the metric for which intervals to consider.
- The Collgar Hybrid method, where the Fleet ELCC is distributed based on facility performance in stressed intervals, using total demand as the metric for which intervals to consider.

All values in this section are from previous analysis which used an EUE target of 0.002% and slightly different Fleet ELCCs, so are included here for illustration only.

Output for all methods – 2015-19 and 2016-20

	2015-2019				2016-2020			
	Hybrid (EPWA) LSG 1% 90th Percentile	Hybrid (EPWA) Peak 1% 90th Percentile	Hybrid (Collgar)	Delta (no averaging)	Hybrid (EPWA) LSG 1% 90th Percentile	Hybrid (EPWA) Peak 1% 90th Percentile	Hybrid (Collgar)	Delta (no averaging)
ALBANY_WF1	15.63	5.83	5.3	14.96	14.66	4.69	5.02	10.77
ALINTA_WWF	27.79	22.47	20.56	18.01	18.9	17.1	19.92	18.15
AMBRISOLAR_PV1	0.05	0.17	0.06	0.02	0.03	0.13	0.06	0.02
BADGINGARRA_WF1	29.22	36.97	33.67	27.04	20.84	32.13	34.9	26.06
BIOGAS01	1.7	0.21	0.25	1.54	1.5	0.19	0.29	1.29
BLAIRFOX_BEROSRD_WF1	0.19	0.68	0.16	0.14	0.61	1.22	0.39	0.36
BLAIRFOX_KARAKIN_WF1	0.34	0.7	0.47	0.82	0.22	0.58	0.47	0.62
BLAIRFOX_WESTHILLS_WF3	0.34	0.7	0.47	0.82	0.22	0.58	0.47	0.62
BREMER_BAY_WF1	0.72	0.16	0.17	0.1	0.63	0.13	0.16	0.07
Badgingarra Solar Farm	0.74	3.09	1.11	2.1	0.55	2.3	1.1	1.8
DCWL_DENMARK_WF1	2.23	0.44	0.47	0.24	2.1	0.35	0.43	0.18
EDWFMAN_WF1	6.65	17.96	12.92	10.94	3.97	16.1	14.68	11.65
Emu Downs Solar Farm	0.85	3.53	1.27	2.36	0.63	2.63	1.26	2.04
GRASMERE_WF1	12.55	3.91	3.62	10.05	11.73	3.31	3.55	7.5
GREENOUGH_RIVER_PV1	3.81	2.4	1.04	2.55	2.89	3.37	1.87	2.83
HENDERSON_RENEWABLE_IG1	4.68	0.64	1.05	2.31	4.12	0.49	0.99	1.94
INVESTEC_COLLGAR_WF1	51.32	51.87	39.57	70.88	42.7	43.98	36.26	41.97
KALBARRI_WF1	1.02	0.25	0.22	0.26	0.7	0.17	0.19	0.2
MERSOLAR_PV1	7.01	22.89	8.26	15.12	5.28	18.27	8.66	13.64
MWF_MUMBIDA_WF1	14.63	12.99	10.58	13.02	12.6	10.86	10.87	13.25
NORTHAM_SF_PV1	0.43	1.98	0.64	1	0.3	1.65	0.73	0.94
RED_HILL	8.2	1.09	1.84	2.8	7	0.82	1.71	2.36
ROCKINGHAM	7.31	0.94	1.34	3.08	6.32	0.65	1.18	2.59
SKYFRM_MTBARKER_WF1	2.74	0.57	0.63	0.28	2.49	0.46	0.59	0.21
SOUTH_CARDUP	9.11	1.05	1.92	3.2	7.95	0.82	1.72	2.69
TAMALA_PARK	11.27	1.52	2.74	3.69	9.94	1.18	2.57	3.11
WARRADARGE_WF1	36.69	52	52.99	42.66	33.81	40.99	47.36	39.96
YANDIN_WF1	48.54	58.74	54.78	55.75	39.46	47.03	51.79	45.36
Total	**305.7**	**305.7**	**258.1**	**305.7**	**252.2**	**252.2**	**249.19**	**252.2**

Recap - Mitigating volatility

Five-year period vs individual year average

Working group discussions on mitigating volatility have included proposals to calculate ELCC values for individual years and average the results, rather than calculating ELCC values for the entire period at once. This approach is inherent in the Hybrid (Collgar) method, but can also be applied to the Delta method.

- Our dataset allows us to assess the effects of averaging across two sets of five years: 2015-2019 and 2016-2020, and to explore the effects of averaging the Facility ELCCs.
- The table in the next slide has three columns for each five-year set, where “Average” refers to the average of the individual year Delta results, and “Combined” refers to the result for the five-year period considered as a block.
- While this is only a small number of data points, this reduces the year-to-year change for most facilities, the exceptions being the small facilities which had been aggregated together.

Effects of Averaging Facility Results across years

		2015-2019 (Delta)			2016-2020 (Delta)		
Facility	Nameplate (MW)	Averaged	Combined	ELCC difference %	Averaged	Combined	ELCC difference %
ALBANY_WF1	21.6	14.96	16.19	8.20%	10.77	11.25	4.48%
ALINTA_WWF	89.1	18.01	14.03	22.10%	18.15	17.19	5.29%
AMBRISOLAR_PV1	0.96	0.02	0.03	23.58%	0.02	0.03	20.71%
Badgingarra Solar Farm	17.5	2.10	2.69	28.27%	1.80	1.96	8.72%
BADGINGARRA_WF1	130	27.04	23.85	11.82%	26.06	27.83	6.79%
BIOGAS01	2	1.54	1.21	21.10%	1.29	1.20	7.49%
BLAIRFOX_BEROSRD_WF1	9.252	0.14	0.11	21.57%	0.36	0.86	140.62%
BLAIRFOX_KARAKIN_WF1	5	0.82	0.82	0.03%	0.62	0.61	1.49%
BLAIRFOX_WESTHILLS_WF3	5	0.82	0.82	0.03%	0.62	0.61	1.49%
BREMER_BAY_WF1	0.6	0.10	0.10	0.03%	0.07	0.07	1.49%
DCWL_DENMARK_WF1	1.44	0.24	0.24	0.03%	0.18	0.17	1.49%
EDWFMAN_WF1	80	10.94	7.97	27.19%	11.65	14.02	20.26%
Emu Downs Solar Farm	20	2.36	3.07	30.36%	2.04	2.39	17.48%
GRASMERE_WF1	13.8	10.05	10.24	1.89%	7.50	7.73	3.01%
GREENOUGH_RIVER_PV1	40	2.55	3.03	19.04%	2.83	3.67	29.79%
HENDERSON_RENEWABLE_IG1	3	2.31	1.82	21.10%	1.94	1.80	7.49%
INVESTEC_COLLGAR_WF1	206	70.88	89.60	26.42%	41.97	37.46	10.76%
KALBARRI_WF1	1.6	0.26	0.26	0.03%	0.20	0.19	1.49%
MERSOLAR_PV1	100	15.12	18.45	21.99%	13.64	16.38	20.04%
MWF_MUMBIDA_WF1	55	13.02	7.62	41.48%	13.25	13.54	2.17%
NORTHAM_SF_PV1	9.8	1.00	1.34	33.35%	0.94	1.26	32.99%
RED_HILL	3.64	2.80	2.21	21.10%	2.36	2.18	7.49%
ROCKINGHAM	4	3.08	2.43	21.10%	2.59	2.39	7.49%
SKYFRM_MTBARKER_WF1	2	0.28	0.28	0.03%	0.21	0.21	1.49%
SOUTH_CARDUP	4.158	3.20	2.52	21.10%	2.69	2.49	7.49%
TAMALA_PARK	4.8	3.69	2.91	21.10%	3.11	2.87	7.49%
WARRADARGE_WF1	180	42.66	39.19	8.13%	39.96	39.88	0.20%
YANDIN_WF1	214.2	55.75	52.71	5.46%	45.36	41.96	7.49%

Conclusions of RCMRWG Discussions

EPWA presented the ELCC Delta method as its preferred option, with year-to-year volatility smoothed by averaging ELCC at a facility level.

Several members of the working group expressed a strong desire for a simpler method based on performance intervals so that participants and investors could apply the method themselves. The group proposed other interval selection methods in the meeting and in correspondence after the meeting.

As a result of this feedback EPWA is proposing an alternative, simpler method based on utilizing the concept of the Individual Reserve Capacity Requirement (IRCR) (see slide 18)

3. Proposed Method - Final

Fleet CRC determination

EPWA proposes to determine the total Fleet CRC for intermittent facilities as follows:

1. Use historical load for the most recent 5 capacity years, adjusted for DER penetration
2. Remove data from the capacity year with the lowest peak demand
3. Calculate Fleet ELCC over the remaining historical data
4. Calculate Fleet ELCC for each remaining year of historical data
5. Take the average of the Fleet ELCC for each individual year
6. Set the Fleet CRC for the next capacity year as the lower of 3 and 5.

The working group supported this approach.

Do MAC members have any strong objections to this approach and if yes, on what basis?

Facility CRC determination

Based on the working group feedback, EPWA proposes a simpler method to allocate CRC, which is based on facility performance in a set of performance intervals that:

- represent system stress events,
- **are consistent with IRCR** (i.e. are used to determine IRCR for loads).

This approach, in conjunction with the Fleet ELCC determination, will address all the policy design goals:

- ensure that the system reliability objective is met;
- adequately assess facilities' contribution to system reliability;
- minimise year-to-year volatility for investors;
- simple and easy to understand;
- can be replicated by potential investors and other stakeholders;
- can be used for Demand Side Programmes (DSPs); and
- are predictable for both loads and generators.

noting that the IRCR methodology is the next step in the RCM review.

RCMRWG will discuss approaches to IRCR in its meeting on 1 Feb, and this will be presented to MAC on 16 March.

Do MAC members have any strong objections to this approach and if yes, on what basis?

4. Penalties for high emission facilities

Status update

The shortlisted options for penalties on high emission technologies have been discussed with and endorsed by the Minister.

Given the stronger support for option 6 (emissions thresholds for RCM eligibility), and the greater certainty it provides for reliability, EPWA is focusing on further developing this option.

Key policy dimensions to confirm include:

- Thresholds to be used
- Timing of introduction and transition profile
- Potential application to peak capacity product only (i.e. not to the flexibility product).

5. Next steps

Next Steps

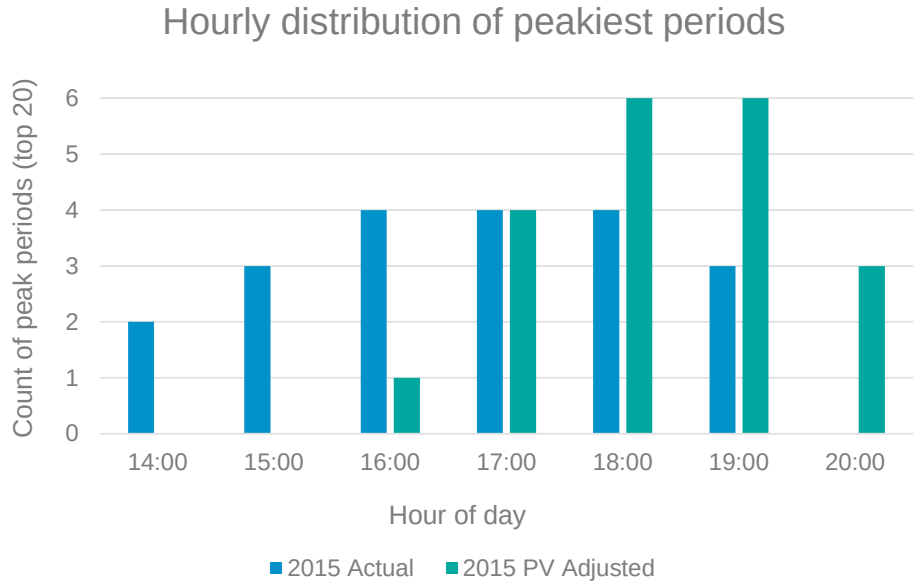
- CRC for Demand Side Programmes and alternative IRCR methods (Stage 2 of the RCM Review)
- Incentives to address the Duration Gap (as discussed in the Stage 1 Consultation Paper)
- Penalty design parameters (thresholds and timeframes)
- Financial analysis (as part of overall assessment of package)
- Questions or feedback can be emailed to energymarkets@energy.wa.gov.au

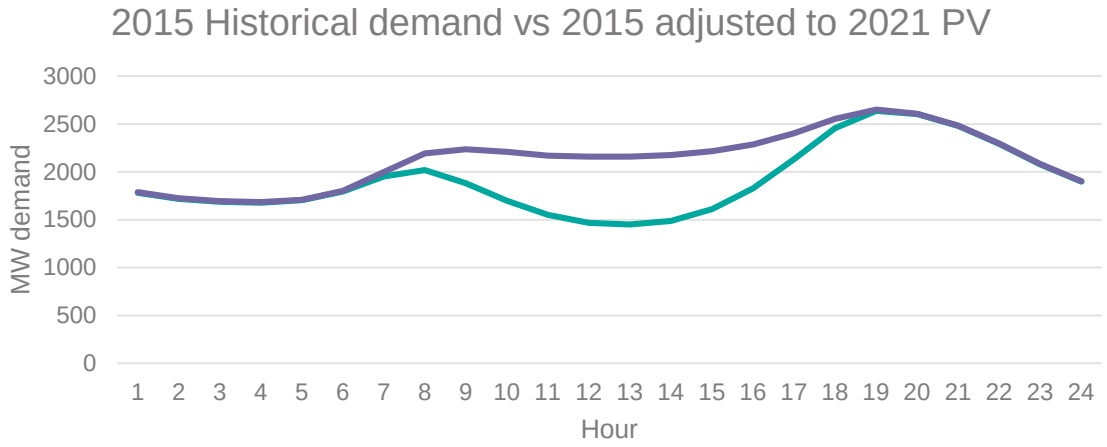
We're working for Western Australia.

Appendix – additional material on Fleet ELCC

Effect of DPV Adjustment to Load

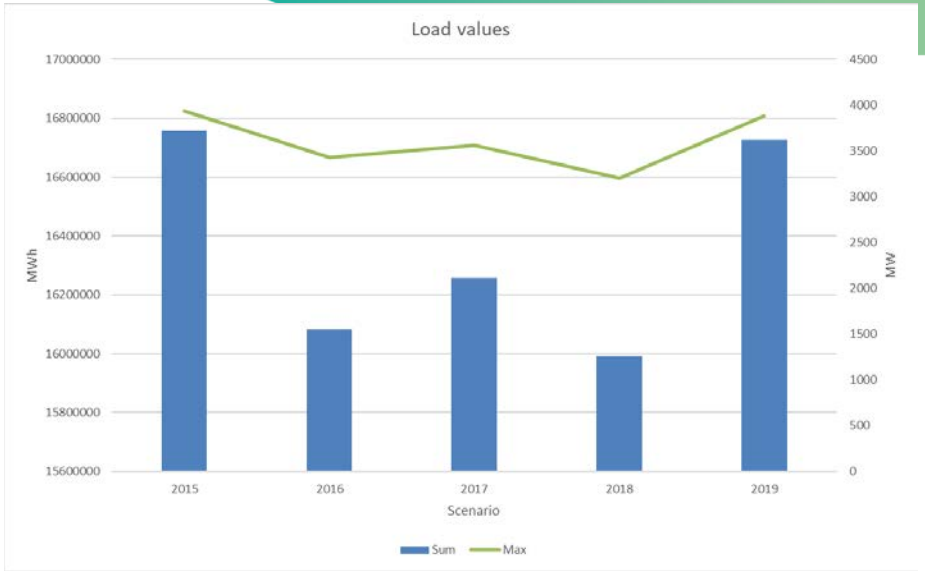
- The first step in all methodologies is to adjust historical load to account for DER growth.
- 2015 is the earliest year in our dataset, and is affected the most by this adjustment.
- Without the DPV adjustment the Fleet ELCC would be significantly higher due to more peaks occurring during the middle of the day.
- The DER adjustment is important to ensuring the Fleet ELCC accurately reflects expected conditions in the relevant capacity year.

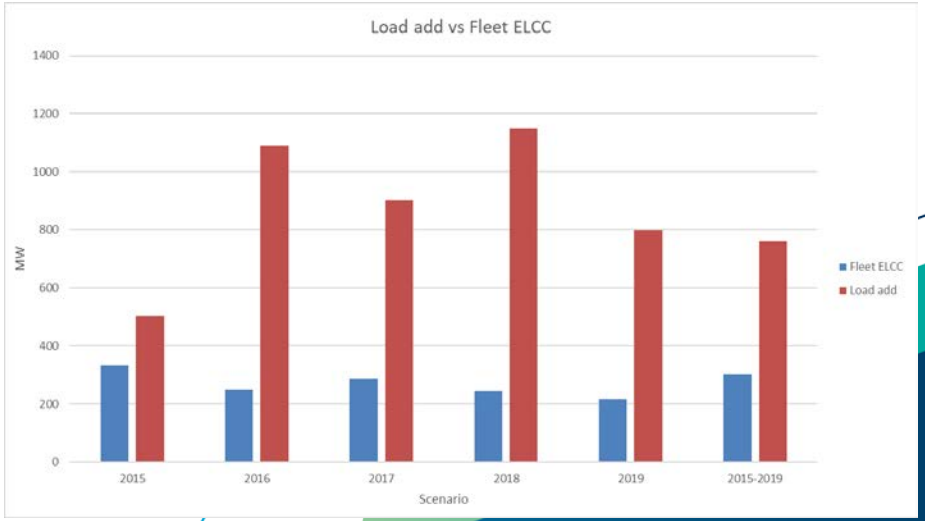




Comparing Delta outputs for 2015 and 2015-19

- The upper chart shows that DPV adjusted load (both peak and total) is highest in 2015, with 2019 close behind.
- Per slide 5, ELCC is calculated by adding load to get to 0.0015% EUE. Then the intermittent fleet is removed and load is reduced until the EUE is the same amount as it was before the removal. The MW of load reduced is the Fleet ELCC.
- The lower chart shows the MW quantity originally added to the load to get EUE to 0.0015%, as well as the amount reduced when removing the intermittent fleet.
- More load is added to each interval in the 2015-2019 case than the 2015 case, resulting in a higher overall demand curve.
- While the majority of EUE in the 2015-2019 case is still driven by 2015, there are more intervals affecting the result.





Appendix – additional material on Facility CRC

Delta ELCC methodology for Facilities

The process to determine the ELCC for each individual facility is the same as that used to determine the Fleet ELCC (see slide 31), except that:

- For the last-in calculation, step 2 only removes the candidate facility, and step 4 only returns the candidate facility
- For the first-in calculation, step 2 removes all intermittent facilities, but step 4 only returns the candidate facility.
- Wind facilities less than or equal to 5 MW are aggregated and assessed as a single facility
- The only small solar facility is AMBRISOLAR_PV1. The ELCC value for this facility is calculated as the average ELCC value of other solar facilities scaled to the nameplate capacity of AMBRISOLAR_PV

All values in this section are from previous analysis which used an EUE target of 0.002%.

Delta Method – Facility ELCCs

Row Labels	Nameplate (MW)	2015	2016	2017	2018	2019	2020	2015 - 2019	2016 - 2020
ALBANY_WF1	21.60	19.53	9.45	16.94	6.82	10.41	9.57	16.19	11.25
ALINTA_WWF	89.10	8.26	20.24	16.28	22.38	8.86	21.91	14.03	17.19
AMBRISOLAR_PV1	0.96	0.03	0.02	0.02	0.01	0.02	0.03	0.03	0.03
Badgingarra Solar Farm	17.50	2.39	1.56	2.06	1.04	1.81	2.43	2.69	1.96
BADGINGARRA_WF1	130.00	18.65	33.38	24.35	21.72	16.01	33.29	23.85	27.83
BIOGAS01	2.00	1.14	1.41	1.50	1.29	1.16	1.04	1.21	1.20
BLAIRFOX_BEROSRD_WF1	9.25	0.02	0.00	0.08	0.03	0.48	1.17	0.11	0.86
BLAIRFOX_KARAKIN_WF1	5.00	0.83	0.85	0.57	0.60	0.59	0.43	0.82	0.61
BLAIRFOX_WESTHILLS_WF3	5.00	0.83	0.85	0.57	0.60	0.59	0.43	0.82	0.61
BREMER_BAY_WF1	0.60	0.10	0.10	0.07	0.07	0.07	0.05	0.10	0.07
DCWL_DENMARK_WF1	1.44	0.24	0.24	0.17	0.17	0.17	0.12	0.24	0.17
EDWFMAN_WF1	80.00	3.53	10.03	10.71	9.46	12.45	14.93	7.97	14.02
Emu Downs Solar Farm	20.00	2.67	1.71	2.37	1.12	2.09	2.77	3.07	2.39
GRASMERE_WF1	13.80	12.23	6.97	11.00	5.47	6.76	6.88	10.24	7.73
GREENOUGH_RIVER_PV1	40.00	3.12	1.71	4.92	0.51	0.50	6.33	3.03	3.67
HENDERSON_RENEWABLE_IG1	3.00	1.70	2.12	2.24	1.94	1.74	1.55	1.82	1.80
INVESTEC_COLLGAR_WF1	206.00	128.25	46.24	34.48	50.88	39.30	36.48	89.60	37.46
KALBARRI_WF1	1.60	0.27	0.27	0.18	0.19	0.19	0.14	0.26	0.19
MERSOLAR_PV1	100.00	15.29	10.27	13.25	8.15	16.86	18.87	18.45	16.38
MWF_MUMBIDA_WF1	55.00	0.62	11.29	28.27	10.77	4.02	11.13	7.62	13.54
NORTHAM_SF_PV1	9.80	1.22	0.36	1.05	0.64	0.96	1.65	1.34	1.26
RED_HILL	3.64	2.07	2.57	2.72	2.35	2.11	1.88	2.21	2.18
ROCKINGHAM	4.00	2.27	2.82	2.99	2.59	2.32	2.07	2.43	2.39
SKYFRM_MTBARKER_WF1	2.00	0.29	0.30	0.20	0.21	0.21	0.15	0.28	0.21
SOUTH_CARDUP	4.16	2.36	2.94	3.11	2.69	2.41	2.15	2.52	2.49
TAMALA_PARK	4.80	2.72	3.39	3.59	3.10	2.78	2.49	2.91	2.87
WARRADARGE_WF1	180.00	20.27	33.86	35.90	44.51	45.49	37.67	39.19	39.88
YANDIN_WF1	214.20	40.88	42.81	65.86	49.03	36.74	29.66	52.71	41.96

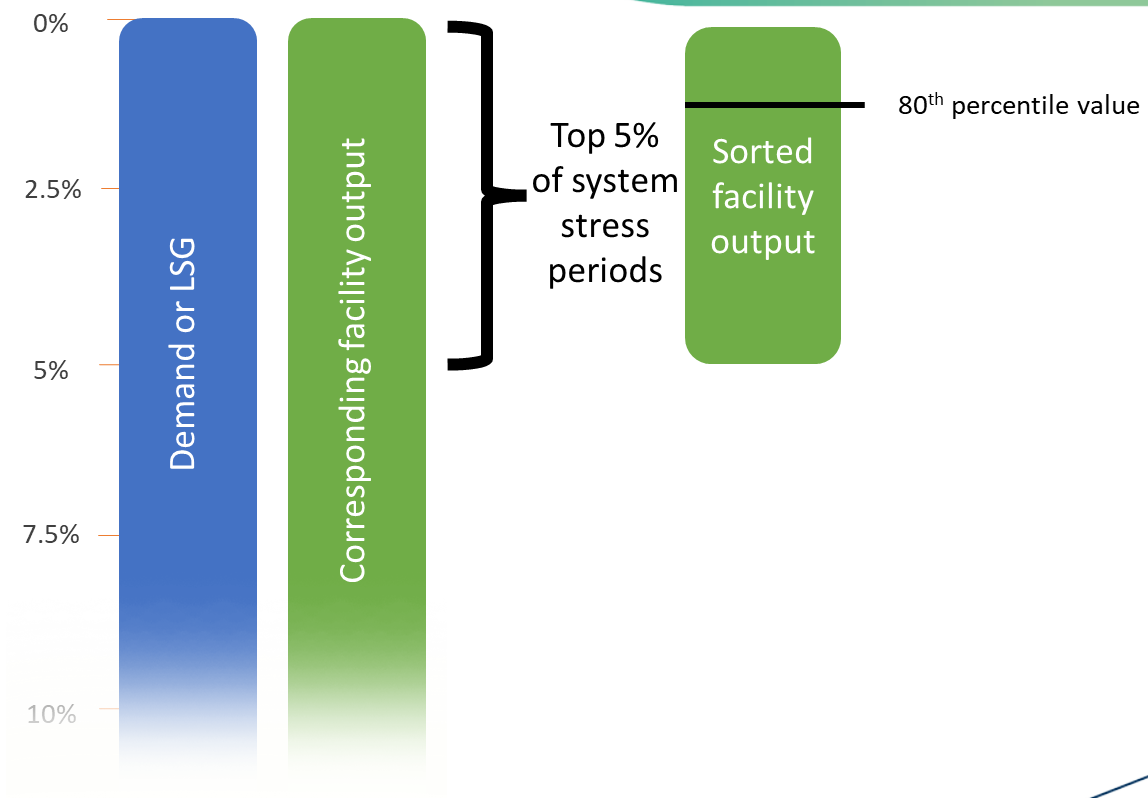
- Volatility in facility output drives volatility between years.
- Collgar 2015 value is a particular outlier:
  - 2015 has only a few peak intervals
  - Collgar output during those few intervals was high compared to other years
- 2015 and 2019 had the highest peaks, so they have the most influence on the 5-year period ELCCs

Small solar
Small bio
Small wind

Hybrid Method (EPWA)

The Hybrid Method allocates that Fleet ELCC based on comparative facility performance in selected intervals, using a combination of percentage and percentile as follows:

1. Calculate system stress for each historical period using either:
   a) **Load for scheduled generation** (LSG): demand – total intermittent generation + candidate facility generation **(LSG =** SySt**)**
   b) **Peak demand, (Demand =** SySt**)**
2. Sort trading periods by system stress (highest to lowest)
3. Take a **percentage** of trading intervals from the start of the list (for example the top 5%)
4. Take the facility's un-curtailed output in the selected trading intervals, and sort the facility's output from highest to lowest
5. The facility's output at the chosen **percentile** of ordered periods is the facility's CRC



Hybrid Method results are very sensitive to the choice of parameters

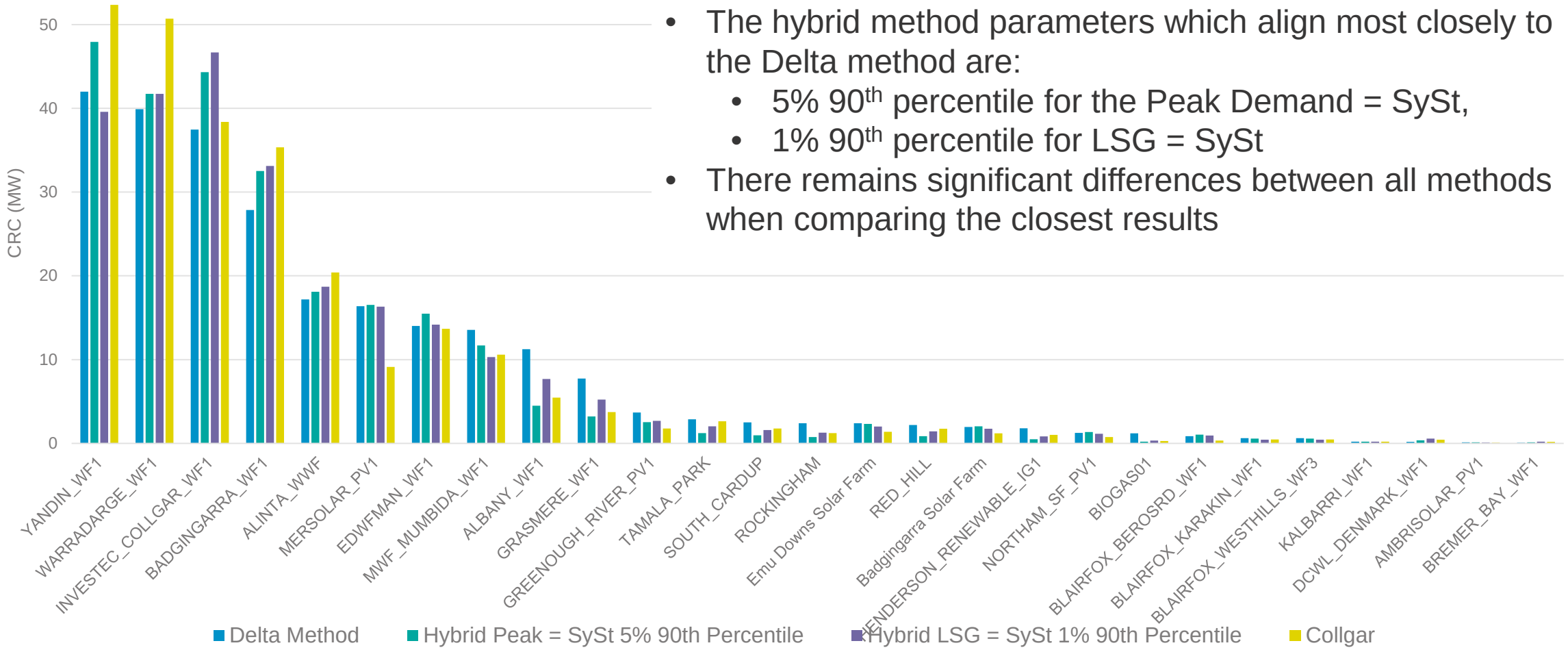
The Hybrid Method can yield significantly different results depending on the choice of LSG or demand, and the selected percentage/percentile combinations

Hybrid Method (Collgar)

The Collgar hybrid method allocates the Fleet ELCC based on facility performance during 48 trading intervals of each year, selected as the four highest demand trading intervals from each of the twelve days with the highest peak demand intervals.

As proposed, the method uses seven years of historical data. Analysis presented here uses five years of data at a time.

Methods



- The hybrid method parameters which align most closely to the Delta method are:
  - 5% 90th percentile for the Peak Demand = SySt,
  - 1% 90th percentile for LSG = SySt
- There remains significant differences between all methods when comparing the closest results

Base fleet ELCC: 2016-2020 (252.2)

Hybrid Methods are Sensitive to Parameter Choice

- The hybrid method tables show that different parameters result in different winners and losers:
  - using LSG favours biogas facilities
  - using demand allocates less to biogas facilities, and less to solar (except in a handful of specific cases)
- Results for wind are relatively insensitive to using LSG or Demand, and wind allocation is higher than the Delta method in all cases.
- High percentages favour wind, while low percentages favour solar.

Load for scheduled generation

Total allocated CRC (MW)

Wind		Percentile						
		60	65	70	75	80	85	90
Percentage	0.05	233.1	231.2	225.1	218.2	219.7	221.0	221.5
	0.1	232.6	227.3	222.6	218.5	219.3	218.8	219.1
	1	233.0	235.2	237.6	236.5	231.6	227.1	220.7
	5	232.3	236.5	238.3	239.0	236.5	232.1	226.5

Solar		Percentile						
		60	65	70	75	80	85	90
Percentage	0.05	1.7	5.4	12.6	21.4	21.1	20.4	20.6
	0.1	1.5	8.0	14.9	20.8	21.1	22.4	23.5
	1	0.0	0.1	0.4	3.1	9.4	15.9	24.0
	5	0.0	0.1	0.4	1.7	6.0	11.9	18.9

Other		Percentile						
		60	65	70	75	80	85	90
Percentage	0.05	17.4	15.6	14.5	12.6	11.4	10.7	10.0
	0.1	18.0	16.8	14.7	12.9	11.8	11.0	9.5
	1	19.2	16.9	14.2	12.7	11.1	9.2	7.5
	5	19.8	15.6	13.4	11.5	9.7	8.2	6.7

Demand

Total allocated CRC (MW)

Wind		Percentile						
		60	65	70	75	80	85	90
Percentage	0.05	222.9	226.0	226.5	231.8	232.6	233.7	224.8
	0.1	224.9	225.3	227.1	217.3	210.6	211.6	211.6
	1	242.9	240.3	237.7	236.1	233.4	223.3	219.7
	5	244.9	245.4	244.7	241.6	237.6	233.6	222.8

Solar		Percentile						
		60	65	70	75	80	85	90
Percentage	0.05	18.5	16.8	17.1	14.1	13.7	13.3	22.8
	0.1	18.7	19.2	18.3	29.1	36.6	36.0	36.4
	1	2.7	6.0	9.2	11.2	14.2	24.5	28.4
	5	0.0	0.2	1.4	4.9	9.3	13.8	24.9

Other		Percentile						
		60	65	70	75	80	85	90
Percentage	0.05	10.8	9.5	8.6	6.2	5.9	5.2	4.6
	0.1	8.6	7.8	6.8	5.8	5.0	4.6	4.2
	1	6.6	5.9	5.4	4.9	4.7	4.4	4.2
	5	7.2	6.5	6.1	5.7	5.3	4.8	4.5

Base fleet ELCC: 2016-2020 (252.2)

Comparing Methodology Output to Actual Output (1)

In order to assess the extent to which methodology output accurately considers performance during system stress intervals, we seek to understand whether the CRC calculated by the method matches facility output during periods of known system stress. There is no perfect comparison, but we seek an indication by:

- Calculating Facility ELCC using data for each single year, considering only facilities which were actually present in that year (so excluding expert report data).
- Distributing the annual Fleet ELCC according to the Delta and Collgar methods in the specific year.
- Comparing the Facility CRC allocations to their average facility output during the 12 intervals with highest demand in each capacity year from 2015 to 2020. These are not the only intervals with system stress, but will definitely be among the intervals where stress occurs.
- Applying a least squares analysis to weight the magnitudes of the differences.
- The differences are not large, but Delta outperforms the Collgar method in four of six years.

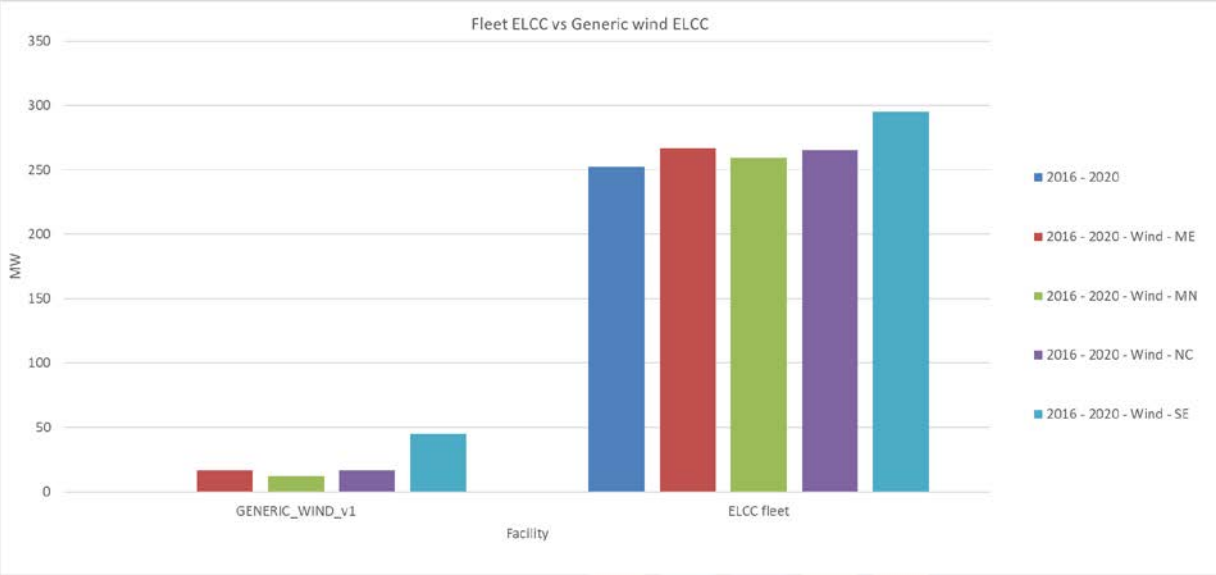
Comparing Methodology Output to Actual Output (2)

	2015					2016					2017					2018					2019					2020				
				Squared difference					Squared difference					Squared difference					Squared difference					Squared difference					Squared difference	
Facility	Delta	Collgar method	Actual performance	Actual vs Delta	Actual vs Collgar	Delta	Collgar method	Actual performance	Actual vs Delta	Actual vs Collgar	Delta	Collgar method	Actual performance	Actual vs Delta	Actual vs Collgar	Delta	Collgar method	Actual performance	Actual vs Delta	Actual vs Collgar	Delta	Collgar method	Actual performance	Actual vs Delta	Actual vs Collgar	Delta	Collgar method	Actual performance	Actual vs Delta	Actual vs Collgar
ALBANY_WF1	11.1	12.7	15.9	23.3	10.4	8.6	5.9	12.6	16.1	45.1	15.4	9.3	19.9	20.4	112.2	4.4	5.0	6.9	6.3	3.5	13.4	6.6	15.6	4.9	80.9	11.3	7.5	15.0	13.7	56.2
ALINTA_WWF	34.2	33.9	24.7	90.5	84.9	29.5	29.7	33.0	12.7	11.0	22.7	32.4	18.0	21.9	208.4	43.5	42.7	60.8	296.4	325.1	13.9	21.8	10.5	11.5	128.1	26.2	24.7	24.1	4.6	0.4
AMBRISOLAR_PV1																					0.2	0.2	0.2	0.0	0.0	0.2	0.1	0.2	0.0	0.0
BADGINGARRA_WF1																					24.3	37.5	12.2	145.8	638.6	49.7	54.4	54.4	22.3	0.0
BIOGAS01																1.2	0.3	0.4	0.7	0.0	1.1	0.2	0.3	0.6	0.0	1.0	0.4	0.1	0.7	0.1
BLAIRFOX_BEROSRD_WF1																										2.1	1.5	2.5	0.2	1.0
BLAIRFOX_KARAKIN_WF1	1.3	1.0	0.7	0.3	0.1	1.2	0.8	0.4	0.6	0.2	1.0	0.9	0.0	1.0	0.9	1.5	1.3	3.0	2.4	3.1	1.1	0.7	-0.3	1.9	0.9	1.1	0.5	0.4	0.5	0.0
BLAIRFOX_WESTHILLS_WF3	1.3	1.0	0.7	0.3	0.1	1.2	0.8	0.4	0.6	0.2	1.0	0.9	0.0	1.0	0.9	1.5	1.3	3.0	2.4	3.1	1.1	0.7	-0.3	1.9	0.9	1.1	0.5	0.4	0.5	0.0
BREMER_BAY_WF1	0.2	0.3	0.4	0.1	0.0	0.1	0.1	0.3	0.0	0.0	0.1	0.2	0.4	0.1	0.0	0.2	0.2	0.3	0.0	0.0	0.1	0.2	0.4	0.1	0.0	0.1	0.2	0.3	0.0	0.0
DCWL_DENMARK_WF1	0.4	0.8	0.8	0.2	0.0	0.3	0.5	0.9	0.3	0.1	0.3	0.7	0.8	0.3	0.0	0.4	0.6	1.1	0.5	0.3	0.3	0.6	1.1	0.6	0.3	0.3	0.4	0.7	0.2	0.1
EDWFMAN_WF1																32.3	28.3	58.6	690.7	917.5	20.3	25.2	15.8	20.4	89.7	21.1	22.3	22.7	2.4	0.1
GRASMERE_WF1	7.3	7.6	11.2	15.2	12.9	6.6	4.5	10.4	14.5	35.5	9.9	6.1	12.5	6.9	41.0	3.9	4.2	7.0	9.4	7.5	8.5	4.3	9.9	1.9	31.3	7.9	5.3	11.2	10.3	34.5
GREENOUGH_RIVER_PV1																										5.4	6.8	4.4	1.0	5.7
HENDERSON_RENEWABLE_IG1	1.8	1.7	1.2	0.4	0.3	2.3	1.6	1.9	0.1	0.1	2.2	1.5	1.8	0.1	0.1	1.8	1.3	1.7	0.0	0.2	1.7	1.0	1.3	0.1	0.1	1.5	1.0	1.4	0.0	0.1
INVESTEC_COLLGAR_WF1	55.7	49.7	89.9	1163.7	1612.9	40.4	48.8	59.7	375.4	120.3	40.3	53.3	36.8	12.0	269.6	52.3	60.1	121.9	4849.5	3820.5	51.1	34.5	43.8	54.4	85.3	31.0	39.3	9.8	452.6	873.3
KALBARRI_WF1	0.4	0.4	0.2	0.1	0.0	0.4	0.4	0.4	0.0	0.0	0.3	0.4	0.1	0.0	0.1	0.5	0.5	0.7	0.0	0.0	0.4	0.2	0.1	0.0	0.0	0.3	0.1	0.1	0.0	0.0
MERSOLAR_PV1																										21.8	18.3	26.2	19.3	63.3
MWF_MUMBIDA_WF1	7.2	10.6	4.8	6.0	34.6	15.5	13.2	19.4	15.2	38.8	32.2	19.9	37.6	29.4	315.1	22.3	20.1	35.7	179.8	244.6	6.4	10.8	4.2	4.9	44.4	14.5	13.4	11.9	6.7	2.1
NORTHAM_SF_PV1																					1.8	2.1	1.4	0.2	0.4	2.1	1.7	2.7	0.3	0.8
RED_HILL	2.2	2.8	2.2	0.0	0.3	2.7	2.5	2.9	0.0	0.1	2.6	2.6	3.2	0.3	0.3	2.2	2.2	2.4	0.0	0.0	2.1	1.9	2.4	0.1	0.3	1.8	1.6	2.5	0.5	0.8
ROCKINGHAM						0.0	0.0	2.5	6.2	6.2	2.9	2.1	2.8	0.0	0.5	2.5	1.8	2.0	0.2	0.1	2.3	1.4	1.7	0.4	0.1	2.0	0.9	1.4	0.3	0.3
SKYFRM_MTBARKER_WF1	0.6	1.2	1.4	0.5	0.0	0.6	0.6	0.9	0.1	0.1	0.5	0.9	1.2	0.5	0.1	0.7	0.8	1.2	0.2	0.1	0.6	0.9	1.5	0.9	0.4	0.5	0.8	1.4	0.7	0.3
SOUTH_CARDUP																2.6	2.6	3.2	0.4	0.3	2.4	2.0	2.6	0.1	0.3	2.1	1.4	1.9	0.1	0.2
TAMALA_PARK																3.0	3.4	3.9	0.9	0.2	2.7	3.0	3.9	1.3	0.8	2.4	2.6	3.5	1.2	0.7
WARRADARGE_WF1																										49.0	50.7	50.5	2.4	0.0
Sum of difference				1300.5	1756.5				442.0	257.7				93.9	949.2				6040.0	5326.2				252.1	1103.1				540.6	1040.3

Appendix – Impact of New Entry

Effect of New Wind Facility on Fleet ELCC

- When a new intermittent facility is commissioned, it could potentially affect the CRC allocation of existing facilities with a similar output profile.
- To explore the effect, we ran four scenarios in which a new 100 MW generic wind facility is added in each of four different zones (ME, MN, NC, SE). The output profile of the new facility is generated by taking the average profile of the existing wind facilities in that region.
- All values in this section are from previous analysis which used an EUE target of 0.002%.
- In all cases, adding a new wind facility proportionately increases the overall Fleet ELCC as there is one more facility in the intermittent fleet
- The increase in Fleet ELCC is the highest for a facility added in the Southeast, and lowest in the Mid-North (MN).



Facility Name	Zone
INVESTEC_COLLGAR_WF1	ME
BADGINGARRA_WF1	MN
BLAIRFOX_KARAKIN_WF1	MN
EDWFMAN_WF1	MN
WARRADARGE_WF1	MN
YANDIN_WF1	MN
BLAIRFOX_BEROSRD_WF1	MN
BLAIRFOX_WESTHILLS_WF3	MN
ALINTA_WWF	NC
KALBARRI_WF1	NC
MWF_MUMBIDA_WF1	NC
BREMER_BAY_WF1	SE
DCWL_DENMARK_WF1	SE
GRASMERE_WF1	SE
SKYFRM_MTBARKER_WF1	SE
ALBANY_WF1	SE

Effect of New Wind Facility on Existing Facilities - Delta

- The effect on nearby facilities can be seen by looking at a representative facility in each zone.
- The table below shows the change in ELCC with the addition of a new 100 MW facility in that zone as a % of nameplate capacity.

Zone	ME	MN	NC	SE
Representative facility	INVESTEC_COLLGAR_WF1	YANDIN_WF1	ALINTA_WWF	ALBANY_WF1
2015	-0.16%	-0.28%	-0.09%	0.22%
2016	-1.83%	-0.60%	-1.31%	-3.02%
2017	-0.67%	-0.36%	-0.41%	-1.78%
2018	-2.87%	-0.67%	-0.85%	-1.50%
2019	-1.93%	-0.72%	-0.58%	-3.89%
2020	-1.26%	-0.30%	-0.51%	-1.88%
2016-2020	-1.55%	-0.65%	-0.61%	-2.70%

- The effect on facilities in other regions is smaller, but in some cases is positive.

Effect of New Wind Facility on Existing Facilities - Collgar

- As the Collgar method distributes the Fleet ELCC based on average performance in selected periods:
  - the effect of additional facilities is shared across the entire fleet rather than concentrated in facilities with a similar output profile
  - The new facility gets a smaller proportion of the increase in the Fleet ELCC, so the overall effect is to increase the CRC of existing facilities rather than decrease it.

Collgar Method Results				
Zone	**ME**	**MN**	**NC**	**SE**
Representative Facility	**INVESTEC_COLLGAR_WF1**	**YANDIN_WF1**	**ALINTA_WWF**	**ALBANY_WF1**
Difference in CRC (MW)	0.0	1.0	1.0	0.9

Conclusion

New facilities affect the CRC allocation of existing facilities.

- A new facility with an output profile similar to an existing facility will reduce the Delta method ELCC of the existing facility. Under the hybrid methods, the decrease will be spread across the whole fleet.
- A new facility with a output profile complementary to an existing facility will increase the Delta method ELCC of the existing facility. Under the hybrid methods, the new facility could receive a smaller proportion of the increase in Fleet ELCC, with the increase being spread across existing facilities.

Similarly, exiting facilities will also affect CRC of remaining facilities.

In the current fleet, the effects appear relatively small – less than 2% of nameplate capacity for affected facilities.

EPWA considers that the change is not large enough to warrant the additional complexity of caps and floors for existing facilities.

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 20 January 2023)

Market Advisory Committee (**MAC**) Meeting 2023_02_02

- 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
None			

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
None				

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						
RC_2019_03	17/12/2020	ERA	Method used for the assignment of Certified Reserve Capacity to Intermittent Generators	High	Publication of Final Rule Change Report	30/09/2023
Standard Rule Change Proposals with Second Submission Period Open						
None						
Standard Rule Change Proposals with First Submission Period Closed						
RC_2014_05	02/12/2014	IMO	Reduced Frequency of the Review of the Energy Price Limits and the Maximum Reserve Capacity Price	Medium	Publication of Draft Rule Change Report	25/08/2023
RC_2018_03	01/03/2018	Collgar Wind Farm	Capacity Credit Allocation Methodology for Intermittent Generators	Medium	Publication of Draft Rule Change Report	25/08/2023

Reference	Submitted	Proponent	Title	Urgency	Next Step	Date
RC_2019_01	21/06/2019	Enel X	The Relevant Demand calculation	Medium	Publication of Draft Rule Change Report	25/08/2023
Standard Rule Change Proposals with the First Submission Period Open						

Pre-Rule Change Proposals

Reference	Proponent	Description	Next Step	Date
RC_2020_04	Rule Change Panel	Balancing Facility Loss Factor Adjustment	Consult with the MAC on the priority for development of a Rule Change Proposal	Closed

Rule Changes Made by the Minister and Awaiting Commencement

Gazette	Date	Title	Commencement
2022/184	20/12/2023	Wholesale Electricity Market Amendment (Tranche 6 Amendments) Rules 2021	• Schedule B will commence on 01/02/2023 • Schedule C will commence on 01/03/2023 • Schedule D will commence on 17/04/2023 • Schedule E will commence at times specified by the Minister in notices published in the Gazette
2022/67	17/05/2022	Wholesale Electricity Market Amendment (Network Access Quantities Procedure) Rules 2022	• Schedule B will commence on 01/03/2023
2021/212	17/12/2021	Wholesale Electricity Market Amendment (Tranche 5 Amendments) Rules 2021	• Schedule H will commence on 01/10/2023. • Schedule I will commence at times specified by the Minister in notices published in the Gazette.
2021/166	28/09/2021	Wholesale Electricity Market Amendment (Miscellaneous Amendments No. 2) Rules 2021	• Schedule G will commence at times specified by the Minister in notices published in the Gazette.
2021/96	28/05/2021	Wholesale Electricity Market Amendment (Miscellaneous Amendments No. 1) Rules 2021	• Schedule E will commence at times specified by the Minister in notices published in the Gazette.
20201/17	18/01/2021	Wholesale Electricity Market Amendment (Governance) Rules 2021	• Schedule C will commence immediately after the commencement of the Amending Rules in clauses 50 and 62 of Schedule C of the *Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020.*
2020/214	24/12/2020	Wholesale Electricity Market Amendment (Tranches 2 and 3 Amendments) Rules 2020	• Amending Rules in Schedule C will commence at the times specified by the Minister in notices published in the Gazette.