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

Minutes

Meeting Title:	Cost Allocation Review Working Group (**CARWG**)
Date:	29 November 2022
Time:	1:00pm – 2:15pm
Location:	Microsoft TEAMS

Attendees	Company	Comment
Dora Guzeleva	Chair	
Oscar Carlberg	Alinta Energy	
Daniel Kurz	Summit Southern Cross Power	
Rebecca White	Collgar Wind Farm	
Noel Schubert	Small-Use Consumer Representative	
Mark McKinnon	Western Power	
Justin Ashley	Synergy	Proxy for Jason Froud
Huoy Wei Tang	Synergy	Observer
Genevieve Teo	Synergy	
Paul Arias	Shell Energy	
Mena Gilchrist	Australian Energy Market Operator (**AEMO**)	
Tom Frood	Bright Energy	
Jacinta Key	Woodside	Proxy for Cameron Parrotte
Grant Draper	Marsden Jacob Associates (**MJA**)	Presenter
Peter McKenzie	MJA	Presenter
Toby Price	AEMO	Observer
Matthew Fairclough	AEMO	Observer
Stephen Eliot	Energy Policy WA (**EPWA**)	
Shelley Worthington	EPWA	

Apologies	From	Comment
Jason Froud	Synergy	

Cameron Parrotte	Woodside	
Daniel Kurz	Summit Southern Cross Power	

Item	Subject	Action
1	**Welcome and Agenda** The Chair opened the meeting at 1:00pm.	
2	**Meeting Apologies/Attendance** The Chair noted the attendance as listed above. The Chair noted the competition law obligations of CARWG members.	
3	**Minutes of CARWG Meeting 2022_09_27 and 2022_10_25** Draft minutes of the CARWG meeting held on 27 September and 25 October 2022 were accepted and approved.	
4	**Action Items** The Chair noted the following comments on the action items: Item 8: AEMO would work with EPWA to provide a breakdown of costs once the model was confirmed. Item 10: AEMO does not collect the information on a breakdown of market fees, the statement that market generators incur most of the fees was made in recognition that a lot of AEMO's systems are developed for generators.	
5	**Options for Allocating Frequency Regulation Costs** Mr Draper noted MJA was in the process of finalising the options that will be explored in the consultation paper, as follows: • current National Energy Market (**NEM**) Causer-Pays • new NEM Causer-Pays • existing Wholesale Energy Market (**WEM**) allocation • Tolerance Method (referred to as the Forecast Range method) Mr Draper also noted that he was looking to close off on the preferred method for Frequency Regulation and Contingency Reserve Lower as a result of today's meeting. Mr Draper noted that on 15 November 2022 the MAC endorsed further consideration of the Forecast Range method that could be implemented as an interim method, with a move to consideration of a more complex method, such as the new NEM Causer-Pays method, at a later stage. AEMO and EPWA met 17 November 2022 to discuss the Forecast Range method to further understand how it would work, including any benefits or potential implementation issues that may be involved. Mr Draper provided a recap of the Tolerance Method noting that it: • provides additional input to AEMO for establishing the Regulation quantity that needs to be procured in a Trading Interval; • provides a Causer-Pays methodology for recovering Regulation costs; and • helps identify the "firm" capability of Intermittent Facilities to calculate reserves available for Frequency Control Essential System Services (**FCESS**)	

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Mr Draper provided an example of a situation that was described in the consultation paper, of an Intermittent Facility i.e. a wind or solar farm deliberately under generating (below its capability) and therefore able to provide those services by being able to ramp up and provide a Raise service if required. He noted that in the future, if wind and solar were both on and solar drives the prices down, wind could come off and provide the Raise service. He also noted, however, there was a question of whether, in that instance, the incentive was provided from the Essential System Services (**ESS**) market or the negative pricing in the energy market.

Mr Draped noted AEMO's concern with volatility, and that AEMO will procure these services dynamically in the future and would require more information than what it has required in the past. If AEMO was able to calibrate that requirement based on a Facilities own uncertainty, that appeared to be a good way of establishing Regulation requirements.

Mr Draper noted that there were potential benefits with the method that AEMO is proposing, in that it helps set the Regulation quantity and is closer to a Causer-Pays methodology for the recovery of Frequency Regulation costs.

Mr Draper noted that MJA analysed what the level of cost recovery from different technologies would be under this method and compared it with the current NEM Causer-Pays and the new NEM Causer-Pays. He noted d that intermittent generators were bearing the higher proportion of the recovery of Regulation costs.

Mr Draper noted the potential issues with the Forecast Range Method including:

- that Market Participants could be incentivised to under-forecast to minimise allocation of Frequency Regulation costs;
- to mitigate this, the requirement to implement a penalty regime if actual output exceeds Forecast Range; and
- the potential for Market Participants to influence market outcomes in their favour.

Mr Draper noted that, as a consequence, there may be a need for a set of rules to prevent gaming behaviour.

Mr Draper noted that many of the Frequency Regulation cost recovery options the CARWG has looked at provided for more than just cost recovery. For example, the NEM Causer-Pays provided financial compensation for Market Participants that help minimize frequency deviations and the Forecast Range incentivises participants to improve their forecasting. He also noted that the WEM has a different framework from the NEM with quite an extensive regime to maintain system frequency already in place.

Mr Draper noted that the aim was to try to provide some incentives for generators to operate within the Tolerance Bands, but that the implementation costs may be quite significant, especially for intermittent generation.

- Mr Schubert noted that what was lacking in the WEM were incentives for fast acting renewables to help with Frequency Regulation. He

considered that more generators helping with Frequency Regulation and contingency response (making it more competitive) would likely result in lower costs for consumers in the long term, provided that the mechanisms do not cost more to implement than the benefits.

- Mr Price noted with regard to Mr Schubert's comment that the new Frequency Co-optimized Essential System Services (**FCESS**) are provider agnostic and there are constructs in the rules to allow both semi-scheduled and scheduled Facilities to provide FCESS. AEMO has tried to keep the enablement processes for those services as agnostic to provider as possible. Therefore, there should be no barriers to Intermittent Facilities who are capable i.e. able to provide controlled Raise and Lower services, whether that be Regulation or Contingency Reserve, to be able to provide those services in the new market. AEMO was very hopeful that some proponents would accredit their Intermittent Facilities to provide those services and Mr Price agreed that the method needs to be considered in terms of its benefits versus cost of implementation.

Mr Draper noted that Mr Price's point was interesting in that these issues can be addressed on the supply side, such as creating the Essential Systems Services market so intermittent facilities can participate in ESS, or on the demand side by getting those that are causing the problem to minimise it.

Ms Guzeleva added that at the end of the day the issues can be tackled from both sides, and noted that with the move to a new market for those services the rules should provide the right incentives for the most efficient set of services to be provided. Ms Guzeleva reminded the CARWG that the aim was for a fair, equitable, efficient distribution of the market costs of the provision of those services.

- Mr Frood asked if primary frequency response obligations were different in the NEM.
- Ms Guzeleva noted that this was discussed at the 25 October CARWG meeting and was captured in the minutes of that meeting She recapped that, while there is a slight difference in the primary frequency response or the Droop settings that are required in the NEM and the WEM, both market arrangements do require primary frequency response from generators.
- Mr Schubert noted many of generators in the NEM seem to be on AGC while there were not many in the WEM on AGC.
- Ms Guzeleva noted that she believed they all will be required to be on AGC in the future, if they are accredited to provide regulation.
- Mr Price noted that he believed AGC was still optional if a generator can respond to a dispatch instruction by some other means, but that providers of Regulation need to be on AGC.
- Ms Guzeleva summarised that the arrangement in the WEM and the NEM are similar, but that the WEM currently has a handful of providers versus the many providers of frequency response in the NEM, making the market a lot more competitive there.

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WEM Deviation Method

Mr Draper noted that the proposed alternative method, the WEM Deviation Method (slide 18) was based, to a large extent, on the method that AEMO proposed, but that it had just a single purpose. If the fundamental problem is variability of output, rather than accuracy of forecasting, this proposed method would: (i) estimate the standard deviations from the average generation across a 30 minute Trading Interval; (ii) normalize it; (iii) calculate a contribution factor for each Trading Interval; and (iv) apportion the Frequency Reregulation costs to each generation or load on that basis.

Mr Draper noted that, while this alternative method was not that different from AEMO's Forecast Range, it would set a target and estimate deviations from that target. However, this alternative method would not try to meet other objectives, i.e. to improve forecasting or to set regulation quantities.

Mr Draper provided examples of the pros and cons of the WEM Deviation Method (slide 19) and noted that, in terms of cost recovery, this method was closer to the new NEM method and the existing WEM cost allocation to wind and solar facilities.

Mr Draper noted that the current proposal for the WEM was to either use the WEM Deviation Method as an interim method or to retain the current method.

- Mr Price asked Mr Draper if he could confirm that this alternative method was measuring deviations from a dispatch target.

Mr McKenzie provided an overview of the method and Ms Guzeleva clarified that deviations are not measured against a dispatch target, but from a straight line between point A and point B over period.

- Mr Price noted that this made sense for how the Causer-Pays could be applied to historical data in the WEM. However, if you were to use point A and point B rather than point A being the start of an interval and point B being a dispatch target then if point B happens to be nowhere near what a participant said that they were going to do, queried what this would do in terms of the regulation requirements.

Ms Guzeleva noted that currently there was no concept of dispatch targets for the intermittent facilities and there would need to be a change in the rules to introduce the concept of dispatch targets for semi-scheduled and non-scheduled Facilities. What we were looking to incentivize is to reduce their volatility.

Mr Draper noted that the proposed alternative method did have limitations. Rather than establishing ranges or targets, the method was just looking at deviations as a proxy for measuring variability.

Ms Guzeleva acknowledged that the method was not perfect and that it was only focused on cost allocation on the basis of volatility of output or consumption. However, this was designed as a starting point with the expectation that a more sophisticated/appropriate method would be implemented at some point in the future.

- Mr Schubert, asked if there was serious concern with the current WEM method or was it possible to wait until the new market starts in October 2023 to see how that goes and then decide whether something else was required.
- Mr Draper responded that this was a possibility.
- Ms Guzeleva noted that there was a strong view expressed by AEMO in the, Renewable Energy Integration – SWIS Update paper, published September 2021, that something needs to be done and there was a strong desire to start sending price signals to incentivize generators to reduce their volatility.
- Mr Schubert noted that Mr Price was saying that from October 2023, that there could be better response from the intermittent generators and we may be in a better position to decide whether to change the current method after seeing how the market operates for the first year.

Ms Guzeleva noted that there were two different things, what the market provides and how we distribute the cost of it, and that this exercise is only about the cost distribution and not about trying to incentivize a provision of a service, which the new ESS market should do.

- Mr Schubert noted that if there are serious concerns about distributing the costs (in 2023/2024) there would be a need for another method for allocating the costs but that after the new market start, if the concerns are not as strong then perhaps there was no need to do anything now.

Ms Guzeleva noted that this was true but that if we decided to wait then this probably should wait for the new NEM method to be bedded down.

Mr Carlberg noted that, in deciding whether to provide his support, he would like consideration of:

- how much ESS cost would be saved;
- the difference compared to the status quo in terms of payments by intermittent generators; and
- the impact on the business case for renewables.

Ms Guzeleva noted her concern that the CARWG was confusing who provides the service in the market with who causes the problem. Ms Guzeleva added that before a final decision was made a cost benefit analysis was needed.

Mr Draper asked if the WEM Deviation method was worth considering as a realistic option to be implemented after new market start in 2023, to use as an interim method before the new NEM Causer-Pays method has been implemented.

Ms Guzeleva noted that a decision on implementing the new NEM method may be premature, because in 2025 it may still be considered that this is a very complex and expensive method for the WEM to implement. She added that there are risks associated with doing nothing in the interim, or implementing something that is expensive that needs to be changed. Ms Guzeleva noted that this was the reason for trying to simplify an interim method, and that currently there is no signal that says - if you reduce your volatility you will save money.

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Mr Draper noted that the WEM Deviation method was simplified for cost allocation purposes, but it is easier to calculate while providing signals to reduce volatility, as it results in a higher cost allocation to intermittent plant. In terms of the split between customers and generators, it is still around 50%/50% using this method, almost half of the generation costs assigned to intermittent generation.

- Mr Schubert noted that he would like to see incentives for more participants providing the regulation service so that there is more competition and lower costs so that costs are lowered for consumers.
- Mr Draper noted that was consideration for the supply side and asked if Mr Schubert wanted greater participation of intermittents in the formal ESS mechanisms.
- Mr Schubert responded that he would like to see the demand side participating too, competing with the supply side to provide the services.
- Mr Price reiterated AEMO's view that a Regulation Causer-Pays framework beyond what is currently in place is pretty essential moving forward, given the massive increases that AEMO is seeing in volatility on the system and the challenges in meeting that. It was really important to have incentives on both sides to both mitigate the problem by providing the service and providing incentives to reduce volatility and reduce the need for the service. Mr Price acknowledged Carlberg's point but noted that it is not necessarily the role of Causer-Pays to avoid charging for behaviour that adds to the cost of managing the system and that if that challenges the financial case of renewables, then there are other places where that should be dealt with.
- Ms Gilchrist sought clarification on intended implementation dates.
- Mr Draper noted that it is not proposed to implement the WEM Deviation method until after the new market start in October 2023.

Mr Draper noted that the aim is to get to the point where MJA could evaluate a method and develop a business case rather than trying to do the business case on all four options that have been presented to the group.

Ms Guzeleva noted the issue the Mr Price refers to was in the AEMO paper (as mentioned previously) and was one of the essential urgent actions AEMO was calling for, i.e. a price signal to be sent, to reduce volatility on the system and therefore reduce the need for and the cost of the service.

Contingency Reserve Lower – Runway Method

Mr Draper provided further clarification of how the method would work.

Mr Draper covered the requirement for Contingency Reserve Lower, noting that the introduction of large scale battery energy storage systems (**BESS**) had the potential to increase the largest single Load risk on the system and as a result the requirement for this service. Mr Draper provided an overview of the proposed Runway Method for Contingency Reserve Lower, noting that the analysis was done for different scenarios

looking at multiple batteries and how the cost increase would be attributed.

Mr Draper noted that this cost attribution to large scale batteries was to provide some incentives for them to split across a number of circuits.

- Mr Schubert noted that rooftop photovoltaic (**PV**) is likely to have high output when all the large battery is charging in the middle of the day. He asked AEMO to comment on whether, the fact that to comply with AS4777 rooftop PV is likely to reduce its output automatically when the frequency gets to a certain point, might mean that this need for Contingency Reserve Lower is not as critical. Mr Schubert did not consider the loss of large Loads to be as serious when there is lots of rooftop PV output.
- Mr Price noted that this was a good point and that one of the benefits of the new framework for FCESS is that AEMO can set more dynamically the quantities required. Mr Price noted that they can be reflective of the system conditions at the time and that there will be opportunities that will be made clear in the FCESS quantity procedure (when that goes out for consultation). He added that this will reflect what AEMO will take into account when setting those quantities, one of those being the Causer-Pays angle.
- Mr Carlberg asked whether it is likely that a transmission line with a load higher than the size of the battery may be setting the Contingency Lower requirement instead of the battery.
- Mr Price noted that anything over 120MW would set the requirement given that there were no block Loads larger than that, and that he was fairly sure that there were currently no transmission lines with a Load risk of that order of magnitude.

Mr Draper noted that Mr Schubert had made the point previously that, in terms of transmission design, Western Power would not be increasing the risk through augmentation of the system.

- Mr Schubert noted that he did not know what the largest Load was on a transmission line, but that they had talked about the Goldfields line at 120 MW causing the requirement.
- Mr McKinnon noted his understanding that in the Eastern Goldfields even the largest mine site was in that 120 MW order of magnitude.
- Ms Guzeleva noted that the concern was not the current largest Load, but the size of the storage (which is necessary) coming on the system in the future.
- Mr Fairclough agreed with Ms Guzeleva, noting that the largest battery will set a requirement higher than the current largest Load.

Mr Draper noted the Consultation would be recommending that the runway method be applied to large Loads that exceed that 120 MW threshold so that they are attributed more of the costs and incentivised to configure differently.

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	Ms Guzeleva noted the implementation timeframes needs to be properly aligned with other activities because AEMO must prioritise implementing its market systems for 1 October 2023.	
7	**Next Steps** Next steps: EPWA finalising the CAR Consultation Paper for the next MAC meeting scheduled for 13 December 2022.	
8	**General Business** No general business was discussed. The date for the next CARWG meeting is to be determined	

The meeting closed at 2:15pm.