Government of **Western Australia**
Energy Policy WA

Minutes
WEM Reform Implementation Group – Meeting 6

Time: 9:30am – 12:00pm
Date: 29 October 2020
Venue: Teleconference

Attendees:

Name	Organisation	Name	Organisation
Aden Barker	ETIU	Leon Kwek	AEMO
Aditi Varma	ETIU	Liz Aitken	Aitken Energy
Adrian Theseira	ERA	Lize Combrinck	Bluewaters
Alan		Lynda Venables	Synergy
Andrew Walker	South 32	Mark McKinnon	Western Power
Antonia Cornwell	Synergy	Mark Riley	AGL
Ashwin Raj	ETIU	Michael Zammit	AGL
Ben Brealey	AEMO	Mike Hales	AEMO
Ben Conner	Synergy	Oscar Carlberg	Alinta Energy
Brad Huppatz	Synergy	Patrick Peake	Perth Energy
Christopher Wilson	AEMO	Peter Huxtable	Water Corporation
Clayton James	AEMO	Rebecca White	ETIU
Dimitri Lorenzo	NewGen	Rhiannon Bedola	Synergy
Dora Guzeleva	ETIU	Richard Peppler	Synergy
Erin Stone	Point Global	Rob Perkovic	Alinta Energy
Gavin White		Robert Pullella	ERA
Jas Bhandal	AEMO	Ross Davies	Western Power
Javier Acitores	AEMO	Sam Lei	Alinta Energy
Jenny Laidlaw	RCP Support	Simon Middleton	AEMO
Jo Pownall	AEMO	Steve Kane	ETIU
Jo-Anne Chan	Synergy	Stuart Featham	AEMO
John McLean	PSC	Tim Robinson	RBP
Judy Hunter	Western Power	Tinna Needham	Western Power
Katie Franklyn	Tersum Energy	Victor Francisco	PSC
Laura Koziol	RCP Support	Wendy Ng	ERM Power

Item No.	Issue
2	• Aden Barker (AB) apologised for clash with the WOSP stakeholder forum. It is expected a recording of the session will be made available to stakeholders. Stakeholders can also contact the WOSP team to discuss the content.
5	• Stuart Featham (SF) said AEMO presented to the Strategic Consultative Group (SGC) – an executive level group of stakeholders engaged by the Taskforce to discuss strategic matters. In response to stakeholder questions on timelines for reform, AEMO presented on it and industry's ability to implement reforms by Market Start, and on the 2021 Reserve Capacity cycle. o SF said that overall it was a very positive conversation. It was noted that the delivery of Security Constrained Economic Dispatch (SCED) by 1 October 2022 was challenging but the reforms are progressing well and reaching this timeline is achievable. AEMO is committed to delivery as soon as possible and focus of efforts should remain on conclusion of Rules, development of Procedures and delivery and learning from initial implementation projects . o SF said there is significant effort required to implement the changes for the Reserve Capacity Mechanism (RCM). This includes finalising the Amending Rules and developing new/modifying existing WEM Procedures. AEMO must also make system changes, including building the Network Access Quantities (NAQ) Model. Given this work still to be completed the 2021 cycle planned for January – September 2021 cannot be completed in those timeframes. Alternative options will be presented at the TDOWG on 5 November with a Taskforce decision on preferred approach reflected in the Amending Rules made in December 2020.
6	• Ben Brearley (BB) gave overview of implementation activities. o Planning and design for the Digital Platform and WEM Dispatch Engine (WEMDE) is progressing well. o Initial development activities have commenced, including for the constraint management and the Generator Performance Standard (GPS) projects. The next step is holding a WRIG IT forum to present on the GPS solution design. o Procedure development is underway, which several already having been presented to the WRIG. o A program Health Check has commenced – undertaken by an external organisation – to determine how AEMO can best achieve the October 2022 deadline. Information from this process will inform WRIG discussions. • Mark Riley (MR) asked whether AEMO has identified people to do the external review. o SF said that the organisation is called Market Reform – it has previously undertaken work on similar large projects. o MR said AEMO may also want to talk to RSM as it does the NEM Market Audits, including for Market Start. o SF said an Expression of Interest for technical/IT support is going to market soon, so this will enable AEMO to get a sense of the capabilities of organisations to assist with implementation activities. • Wendy Ng (WN) asked when the next WRIG IT forum will be held and asked to receive an email as she did not receive one for the last WRIG IT forum. o BB said around mid-November.

8	• AB said the slide is the same as that presented at the last WRIG meeting, except for Tranche 4.
	• AB provided the following status updates:
	  ○ The Tranche 0 Amending Rules have been made.
	  ○ The Tranche 1 Amending Rules will be considered by the Taskforce shortly and be provided to the Minister for making by the end of November. Minor amendments were made following stakeholder consultation.
	  ○ The Tranche 2 Amending Rules are out for consultation, including several presentations to TDOWG. This tranche is on track for finalisation by the end of November to be made in December.
	  ○ The Tranche 3 Amending Rules are also out for consultation and will be finalised and made in the same timeline as the Tranche 2 Amending Rules.
	  ○ The Tranche 4 Amending Rules will be made following the election (rather than prior as previously indicated). Consultation on Tranche 4 and 5 Amending Rules will occur in Quarter 1 2021 and it is planned that both tranches will be provided to the Minister for Energy for making in April 2021, prior to the end of the Taskforce in May 2021.

9	• SF said that work on the Joint Industry Plan (JIP) is progressing well, and now includes additional milestones provided by Western Power.
	  ○ AEMO has updated categories of milestones and created a milestone log. An updated JIP, including the categories of milestones and the milestone log, will be provided with the minutes.
	  ○ The milestone log includes key details of each milestone, including the ID, title, type, topic/project, target dates, level of certainty of date setting, owner of milestone, milestone level and milestone description.
	• MR said that the reform was moving at such as pace and that it would be useful for the log to capture items that stakeholders raise that are to be captured in a future workstream.
	  ○ SF said AEMO could build that into the log and asked if other stakeholders would also find that useful.
	• Patrick Peake (PP) asked then the JIP would be sufficiently developed to provide dates for when Market Participants can commence developing their market systems.
	• SF said there are several things that will assist Market Participants make that decision, including the Amending Rules, WEM Procedures and the IT interface information. Market Participants will have good visibility on each of these in December 2020.

11	• SF outlined the procedure development process, as previously presented to the WRIG. See slide for details.
12	• SF outlined the target dates for the AEMO WEM Procedures. (See slide for details.)
Communications and Control Requirements – Chris Wilson and Leon Kwek	

3	• Chris Wilson (CW) outlined the following principles:
	  ○ Use existing SCADA points for new market features where possible so minimal changes are required to SCADA infrastructure.
	  ○ AEMO will ramp outage constraints at a slower than the maximum rate to minimise the effect on the market.

4	• CW said that AEMO's preliminary analysis indicates facilities that meet existing communication and control requirements will not require any new SCADA points, potentially with the exception of Fast Start Facilities.
	  ○ Liz Aitken (LA) asked what a Fast Start Facility will be under the new registration framework and why the exception is needed.
	  ○ CW said a Market Participant can opt to register their facility as a Fast Start Facility if it meets certain requirements. The reason for the exception is discussed in upcoming slides.
	  ○ Clayton James (CJ) said the Fast Start definitions are in the Tranche 2 Amending Rules.
	  ○ Aditi Varma (AV) said there is a mini registration package that will be released shortly and Gazetted in December 2020.

5	• CW said AEMO aims to have smooth linear ramps with minimum overshoots of Dispatch Targets where possible. • The AGC system will use linear set points combined with any signals for regulation. As long as ramp rate submissions are accurate there will not be a risk that the Facility cannot meet dispatch requirements. • Question for Market Participants: Are there any of your Facilities that require an exemption from linear ramping? If so, please explain why.

6	• CW provided a linear ramping example (see graph on slide).
	  o Depending on the Facility, the new setpoint will need to be updated at a different frequency (grey line)
	• CJ said the AGC system ramp the machine – it does not need to be manually controlled by the Market Participant.
	  o AGC will issue new setpoints periodically depending on the dead-band and tuning of the facility.
	  o Some further investigation is needed, including whether AGC is collecting enough small changes to send a revised set point to the Facility. This will be done as part of commissioning and testing, and configuration of the Facility.
	  o Even if a Facility has a fixed ramp rate it can approximate linear ramping.
	• LA asked what happens if a Facility comprises multiple units – there could be a linear ramp rate for each unit, but the ramp rate for the Facility as a whole is compromised if another unit starts up.
	  o CJ said it is the same concept as in practice today – if there is a second unit then it has to be factor into the logic of the Facility itself.
	  o LA said there is a plant that has a decreased ramp rate. There is potential to have a proper ramp rate if the Facility is considered separately from individual units for the purpose of ramp rates.
	  o CJ said the intent is still to dispatch at the Facility level, however to the extent a different ramp rate can feed into AGC this is something that can be considered as a dynamic point.
	• WN asked if it means that a Facility will receive signals almost every minute in a five-minute interval.
	  o CJ said in this example, yes, but in the case there are smaller movements in AGC it could be less, and if there are greater movements in AGC it could be more – depending on the machine.
	  o WN said she thought the intent was to put in a target and then the system will issue a ramp rate to make it linear. Why can the Facility not just ramp to where it needs to be at the end of the interval?
	  o CJ said the Dispatch Instruction will take care of the ram rate based on the capability of the machine and the target – so it will calculate intermediate targets.
	  o WN asked whether it would take into account the potential for minimum ramp rates.
	  o CW said this is influenced by the AGC deadband – the movements may be so small it is not possible to get a new set point.
	  o CJ said yes – AEMO will need to determine what the deadband is for each Facility. If the deadbands are really large, then the Facility may need to be exempted from linear ramping.
	• Ben Connor (BC) said that if a machine has a minimum ramp rate then this is only a constraint if the dispatch target is such that it cannot be accommodated with a linear ramp rate, which is a Market Participant problem. BC asked whether this alters the nature of the compliance requirements.
	  o CJ said AEMO still needs to determine the envelopes but yes compliance will be checked against the end of interval amounts within the tolerance band.
	  o CJ said there is an option to do self-ramping, and the same compliance regime will apply.
	• LJ said it is not clear from the Tranche 2 and 3 Amending Rules what the compliance requirements are.
	  o CJ said yes dispatch compliance will be presented at a future WRIG.
	• Brad Huppatz (BH) asked whether there will be options to just get a single set point and the Market Participant determines what ramp rate is required.

	○ CJ said yes Market Participants will be able to do their own ramping – but this will have to be across a linear profile.
7	• CW said a Fast Start Facility will have an approved Fast Start Inflexibility Profile (FSIP).
8	• CW said that the time from receiving the Dispatch Instruction to then synchronise and reach the minimum loading must be 30 minutes or less. The total time to undertake that process, be at the minimum loading and then shut down must be 60 minutes or less. (See graph on slide).
9	• CW said that the NEM runs a two-step process where it first runs the dispatch engine without the FSIP and then runs it again with the FSIP constraints – the engine may then keep some Fast Start Facilities at their minimum loading or ramp them down. ○ Dispatch does not actually occur until the interval itself. ○ Any Fast Start Facility can opt to commit earlier to ensure they can meet their ramp rate and minimum loading.
10	• CW provided an example of an FSIP (see graph on slide).
11	• CW explained the NEM process of using the MW setpoint for indicating fast-start facility start and stop signals. • An alternative option for the WEM is to use look ahead set points or start signals. • Different approaches may work for different Facilities. AEMO is seeking feedback from Market Participants on if they are considering registering any Facilities for Fast Start, and if so whether there is a preference on how AEMO indicates a start and stop for the Facility. ○ BC said that even if a Facility does not have a FSIP look ahead points are still needed. This means there is potentially two different start behaviours or the same machine – one as above and the other being an FSIP signal with a lag until the facility starts generating. ○ CJ said that the same look ahead data is available from market systems, for example in pre-dispatch. However, it does depend on individual Facilities and their technology. ○ BC said using market systems is technically possible, however it creates security issues if there is information flowing to the generator dispatch control system. Information coming from SCADA is better from a security perspective. ○ CW asked for feedback in writing.
12 and 13	• AEMO must document the process for it to convert sent out quantities to as generated quantities. ○ Market Participants are able to do the conversion or opt in for AEMO to do it. ○ BC asked whether anyone will be in this position other than Synergy. ○ CW said probably not. ○ BC said Synergy's current preferred solution would be for Synergy to undertake the conversion rather than AEMO doing it. ○ CW asked Market Participants to let AEMO know if the may also need to have AEMO undertake the conversion and if so what telemetry is required. ○ CJ said it may also be a transition arrangement rather than an ongoing requirement.

15 -18	• Leon Kwek (LK) provided outlined an example of real-time constraints (see slides). ○ AEMO proposes that the control room will assess the state of the dispatch fleet and put the constraint in early without the Rule Participant having to request the outage early.

19-20	• LK outlined the process for using constraints in real-time and offline (see diagram on slide).
	  ○ Jenny Laidlaw (JL) asked whether this would be in pre-dispatch.
	  ○ LK said yes.
	• LK said there is additional responsibility for AEMO to select the correct constraint as part of the outage approvals process. – to assist mitigate this the outage is tagged with the relevant constraint set.
	• The start and the end time for the outage will flow through to the SCADA mapping. It will be calculated through pre-dispatch and published to the market.
	• JL said this process is very important for bigger planned outages so it should be an obligation on AEMO rather than just something it chooses to do.
	  ○ CJ said the process will be in the outage and dispatch WEM Procedures.
	  ○ Interfaces in WEMDE, SCADA mapping, pre-dispatch and PASA runs will be updated with information in real-time so Market Participants can see the effect of the outage.
	• BC asked whether the constraint database will be published.
	  ○ LK said yes, it will be in the Congestion Information Resource (CIR). The CIR will include all past, current and known future constraints.

21	• LK requested stakeholder feedback on the following questions:
	  1. Are there any of your facilities that you believe require an exemption from linear ramping? If so, please provide details.
	  2. Are you considering registering any of your facilities as Fast Start Facilities? If so, which ones? For these facilities, do you have a preference as to which point is used by AEMO to signal a fast-start dispatch?
	  3. Are you considering applying for AEMO to perform a sent-out to as-generated conversion of Dispatch Instructions for any of your facilities? If so, which ones? For these facilities, do you believe existing telemetry is sufficient to perform this calculation?

Congestion Information Resource – Leon Kwek	
3	• Leon Kwek (LK) said the Congestion Information Resource (CIR) will include the Constraints Library (including historic, current and future (e.g. outage) constraints), the annual Congestion Report and other information as specified in the relevant WEM Procedure. It will be a public resource that is a 'one-stop-shop' for information on constraints and congestion.

4	• LK said the objectives of the CIR are outlined in the WEM Rules (2.27B.1).
	  ○ AEMO will need to balance providing sufficient information to be useful for Market Participants/other stakeholders with not providing too much 'noise'.
	  ○ The Constraints Library will include information in 'raw format' and the annual Congestion Report will include a high-level picture of congestion.

5	• LK said implementation of the RCM will require constraint equations. The constraints procedures will be amended to include RCM constraints (and RCM constraints will be included in the Constraints Library).
6	• LK outlined the information that will be published in the Congestion Information Resource (see table on slide).
7-9	• LK outlined what the Constraints Library will contain (see list on slides). o AEMO will share mock ups of the CIR as it is developed to seek feedback from stakeholders.
10	• LK outlined the annual Congestion Report will be published each year on 31 March. o The report is not a forecast or speculative tool – the WOSP and/or own analysis can provide information on future scenarios/forecasts. o There will also be linked to information on the Western Power website so it can be easily located. • JL asked whether it could be moved to a later publication due to missing the last part of summer. o Rebecca White (RW) responded that the WEM Rules require the report to include information from the previous capacity year. • Patrick Peake (PP) asked how many constraints there will be. o LK said that AEMO will work to keep the number of constraints as low as possible – it will be in the range of 100s to 1,000. If a constraint equation has very low coefficients it is not likely to bind and therefore does not need to be deployed (if it was it would just create noise in the Constraints Library). • BC said there some Limit Advice requirements (specified in the WEM Procedure present at the previous WRIG session) are related to relatively complex aspects of the dispatch engine and perhaps better suited for AEMO to manage. o CJ said AEMO will consider how to input the constraints into the dispatch engine, including cross checking arrangements and the processes for checking Limit Advice and asking for additional information from Western Power. o LK said the WEM Procedure has been developed in consultation with Western Power, and the two organisations agree as to what degree of preparation is required prior to submission of Limit Advice. The underlying requirement is that a network limit is ultimately representable in the dispatch engine; were WP to identify difficulty through experience if following the Procedure as written, AEMO's requirements could be relaxed as necessary.
11	• LK said stakeholders will be further consulted on the CIR through the WRIG.
12	• LK said IT implementation works are underway and an update will be provided in March 2021. • LK sought feedback from stakeholders on the CIR.

Next Steps	

	• SF said the procedures will be circulated for consultation shortly.
	• AB said ETIU will continue to engage with the ERA and Western Power to determine the consultation dates for their procedures.
	  ○ AEMO will continue to work on the JIP and schedule the new WRIG IT meeting.
	  ○ AEMO will engage with Synergy over the coming weeks to include its milestones in the JIP and will present on those at a future WRIG.
	• AB reminded stakeholders to please provide feedback.
	• WN asked for a copy of the slides.
	  ○ AB said they will be provided as soon as possible.