Department of Treasury

Energy Transformation Implementation Unit

Market Design and Operations Working Group (MDOWG): Meeting 3

DATE/LOCATION: 3 July 2019, Lev 45, 152 St Georges Terrace, Perth

TIME: 9.30 am

MEETING ENDED: 11:45 am

PRESENT:

Attendees	Organisation	Attendees	Organisation
Adam McHugh	EY	Matthew Bowen	Jackson MacDonald
Aden Barker	ETIU	Melinda Anderson	AEMO
Aditi Varma	ETIU (Chair)	Natalie Robins	ERA
Andrew Stevens	Energy made clean	Noel Schubert	Individual
Ashwin Raj	ETIU	Patrick Peake	Perth Energy
Brad Huppatz	Synergy	Peter Huxtable	Water Corporation
Chris Wilson	AEMO	Rajat Sarawat	ERA
Clayton James	AEMO	Rebecca White	ETIU
Daniel Kurz	Bluewaters	Rodney Littlejohn	Tersum Energy
Dermot Costello	CES	Sabina Roshan	Western Power
Dev Tayal	Tesla	Scott Davis	Energy Council
Drew Harris	Simcoa	Shane Cremin	Summit Southern Cross
Elizabeth Aitken	Perth Energy	Simon Middleton	AEMO
Erin Stone	Point Global	Simon Orme	Sapere
Iulian Sirbu	Kleenheat	Stephen Eliot	Rule Change Panel Support
Jacinda Papps	Alinta Energy	Steven Kruit	ETIU
Jason Froud	Synergy	Suzanne Findlay	AEMO
Jenny Laidlaw	Rule Change Panel Support	Tim Robinson	RBP consulting
Jess Ting	TransAlta	Wayne Trumble	Newmont Goldcorp
Kei Sukmadjaja	Western Power	Wendy Ng	ERM Power
Mark Timson	Energy-Tec	Wesley Medrana	ETIU
Martin Maticka	AEMO		

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1.	Introduction	The Chair opened the meeting, outlined the agenda for this meeting, and highlighted that questions or comments that cannot be addressed during the meeting would be captured in the meeting minutes and taken on notice. The Chair advised that the minutes from the previous meeting are available on the MDOWG website, and that any supplementary questions can be sent to the MDOWG mailbox at marketdesign.wg@treasury.wa.gov.au. The Chair provided an update on the following Action Items from previous meetings: • AEMO had published a paper on an interim pathway for the registration of energy storage systems in the WEM on the MDOWG website, with an accompanying guideline published on the AEMO website. • Further information was sought on facility aggregation and fast start profiles – these matters would be addressed on this meeting's agenda. The Chair provided a reform update, highlighting that an Energy Transformation Taskforce (Taskforce) had been established to deliver the government's Energy Transformation Strategy (ETS), along with an Energy Transformation Implementation Unit (ETIU). The ETIU is overseeing three workstreams: a Whole of System Plan, a DER Roadmap, and the Foundation Regulatory Frameworks workstream, which comprises the existing constrained network access and WEM reform programs. The Chair informed the MDOWG that all market design recommendations will be endorsed by the Taskforce. Information papers will be published on the ETIU website, beginning after the next Taskforce meeting at the end of July. A Design Decisions Register will be published on the ETIU website in early August to track confirmed market design decisions and update on the status of work. The Chair provided a work status update. Wendy Ng (WN) asked whether the removal of constrained off payments will extend to access contracts and agreements with respect to time-in-lieu payments. The question was taken on notice.	Action: ETIU to publish information papers following Taskforce meeting at end of July. Action: ETIU to publish Decisions Register in August. Question taken on notice: Will the removal of constrained off payments extend to access contracts and agreements with respect to time-in-lieu payments? Question taken on notice: How will the STEM and bilateral contracting account for network constraints? Who will have liability where there is a physical	

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		Elizabeth Aitken (EA) asked: • whether the papers underlying design decisions will be available with the Design Decisions Register; and • how the MDOWG will keep abreast of the work being undertaken by other groups such as the PSOWG. The Chair reiterated that information papers would be available, likely from the beginning of August and clarified that the ETIU is collaborating closely with AEMO and other industry bodies to capture all the information required. EA asked how the STEM and bilateral contracting will account for network constraints, and stated that there is a fundamental unaddressed issue in determining who has liability where there is a physical constraint to the delivery of power. In the absence of a derivative market of some sort, parties will be punished through prudential burden. The Chair noted that more information on how STEM would work in the new market is to be published through the scheduling and dispatch of energy paper slated for release in August. The question was taken on notice. Shane Cremin (SC) asked why the Chair had mentioned that the ETIU would review price limits as part of the ETS, and whether the ETIU would therefore consider other jurisdictions with higher price limits. The Chair replied that the ETIU would consider the market power framework as a whole, including price limits, and that they had not necessarily been singled out as a particular area for concern. Different price limits in other jurisdictions would also be considered to derive learnings that could be adapted to the WEM. Noel Schubert (NS) acknowledged that the ERA had recently commenced a review of the method for determining energy price limits, and that would need to be considered by the ETIU.	constraint to the delivery of power?	
2.	Energy Scheduling & Dispatch – Follow up matters	Tim Robinson (TR) presented on Energy Scheduling & Dispatch, discussing facility aggregation and fast start inflexibility profiles. **<u>Facility aggregation</u>**	Action: The treatment of network contingencies to be determined by	

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		TR stated that the rules governing facility aggregation will need to change to account for the effects of co-optimised dispatch of energy and essential system services (ESS), and outlined the following proposed design features: • SCADA visibility and standing data should be required at a generating unit level. • Facility aggregation should be mandatory where a credible contingency could cover multiple generating units for reasons other than network connectivity. • Facility aggregation could be permitted at AEMO's discretion where generating units are electrically co-located and ESS results are unlikely to be affected. TR provided several example s where aggregation may or may not be mandatory. In response to a question from Daniel Kurz (DK), TR clarified that CCGT plant capable of being operated as OCGT would be unlikely to be forced to aggregate. EA noted that for the purposes of determining aggregation requirements, large units were treated differently to other units, and asked how a "large" unit would be defined. TR responded that AEMO would determine the definition based on its view of how large a unit would need to be to affect ESS requirements, noting that right now it would likely be around 250-300 MW, the current size of the largest contingency, but this number may change in future. Patrick Peake (PP) asked whether separately-owned wind farms on a single line would be considered a contingency. TR replied that the treatment of network contingencies would be determined by the ETIU in consequential work following the current consideration of facility-level contingencies. Adam McHugh (AM) asked if very small generators or virtual power plants (VPPs) were being considered. TR replied that small resources will be allowed to aggregate where they won't affect ESS requirements. Clayton James (CJ) from AEMO stated that the level of aggregation allowed would depend on the level of constraint applied to the facilities. **<u>Treatment of fast start units</u>** TR presented on the future treatment of fast start units where dispatch intervals will be shortened and System Management will no longer manually commit Synergy	the ETIU in consequential work following the current consideration of facility-level contingencies. Question taken on notice: Will the market engine be capable of processing an inverse bid curve to reflect a facility's heat rate curve (i.e. when the cost of running at minimum generation is relatively high compared to running at higher output)?	

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		facilities, noting that the incidence of unachievable dispatch instructions could increase, particularly for fast start units. TR proposed that facilities capable of reaching minimum output within 30 minutes could opt in to submit a startup inflexibility profile, with commitment based on the next-but-one 5 minute dispatch interval and the clearing engine dispatching by startup profile until minimum running is reached. EA stated that Perth Energy already receives many dispatch instructions that require they run below minimum level, and that they are being penalised for not complying with instructions that would be unsafe to follow. TR replied that while the prevalence of such instructions would be likely to increase for the whole generation fleet as a result of the move to 5 minute dispatch, the ability of the clearing engine to consider facility capability should effectively mitigate that problem. TR also emphasised that this proposal did not include the consideration of startup costs. EA replied that startup costs would therefore need to be considered in SRMC. EA asked whether the dispatch engine would be able to consider the time taken between starts (e.g. if a facility requires 10 minutes to purge gas before restarting). TR replied that it wouldn't – this would need to be managed with offers – and 5 minute offers will therefore be critical. Jenny Laidlaw(JL) noted that AEMO had submitted a rule change proposal to improve visibility of fast start facilities in pre-dispatch in the NEM, and asked how TR's work varied from that. TR responded that the two were similar, except for the distinction that in the WEM commitment would be based on the next dispatch interval, rather than the current one, due to the lack of facilities capable of starting up within 5 minutes. In the future, such facilities (e.g. batteries) would be able to respond in the first trading interval without needing to submit a startup inflexibility profile. Brad Huppatz (BH) asked whether there would be a minimum period of time a facility would be allowed to operate once it reached its minimum generation (such as in the NEM). TR replied that there will not because there was not sufficient data available to make such a determination. EA asked whether the market engine would be capable of processing an inverse bid curve to reflect a facility's heat rate curve (i.e. when the cost of running at		

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		minimum generation is relatively high compared to running at higher output). TR replied he would take the question on notice, but it is very unlikely to do so because it would require a fundamental, high-cost design change to the market clearing engine. EA also asked whether offer bands would need to be finalised a day ahead as they are in the NEM. TR replied that they would not. SC asked whether significantly higher trading team costs will need to be incurred by market participants to participate in the new market. CJ replied that participants will be able to manage the relative complexity of bid structures themselves and are able to continue to bid as they do now if they so wish.		
3.	Essential System Services – Part 1	Aditi Varma (AV) presented on the ESS review and new technical framework for ESS. GHD's engineering and technical review had highlighted that the current ESS framework is inadequate in respect of speed of response, duration and service types for the current and future WEM. EA asked when the GHD report would be available, and whether the design proposals would be available before its publication. AV replied that the report is scheduled for publication in early August, and that the design principles, the issues list and the recommendations had been presented to previous power system operation working groups for feedback. The report was effectively a compilation of that material. EA and SC both considered that industry should be able to review design decisions and reports before publication. Aden Barker (AB) from the ETIU noted that there will be opportunity to comment once papers are published, and that with the tight timeframes for the ETS work program it wouldn't be feasible to have a more extended consultation process. If issues are raised on published papers and they require further investigation, they will be taken back to the Taskforce. SC asked whether consideration would be given to diverse ESS methods, such as long-term contracting. AV and TR replied that all procurement methods, including a long-term backup or contracting method, would be considered in addition to real-time markets in order to account for risk. Drew Harris (DH) noted that end users would require long-term clarity on pricing when making investment decisions.	Action: ETIU to publish engineering and technical review in August	

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4.	ESS Technical Framework Review	CJ presented on the ESS technical framework review, with an emphasis on the changing definitions for contingency response. The future power system will require faster response times (under 2 and 6 seconds) due to the changing capabilities of connected services and the direct relationship between total system inertia, RoCoF and required quantum of reserve.		
5.	Approach to contingency response	TR presented on the approach to contingency response. TR compared frequency control services in the WEM to those in other jurisdictions based on the technical and market differentiation of services. 6 technical segmentation options for contingency response were provided, consisting of different numbers of individual contingency response services and RoCoF. Modelling will be undertaken over a 3 month period using data provided by market participants to determine the suitability of the segmentation options identified. Acquisition options will then be evaluated for the suitable technical options. EA asked whether a facility could conceivably participate in several ESS markets during the same contingency. TR replied that it could. EA asked whether frequency fluctuations caused by solar PV systems would be considered. TR replied that it would be unlikely as the speed of a frequency drop would not be sufficient to be considered a contingency. EA and TR discussed whether a specific service may be required to account for variability of PV, or whether other methods (such as the inverter standards employed in Hawaii) might be more suitable. EA noted that a large amount of PV is expected to connect before 2022 and may necessitate new services in the interim, and AB replied that this was being explicitly considered with the imposition of new inverter standards in the DER Roadmap project. JL, CJ and TR discussed the variability in the response curves for individual facilities and how they might respond to contingencies. TR clarified that contingency response services will be designed to stabilise frequency until regular dispatch can provide a tertiary response. BH noted that setting a 2 second response time for services may lock out a number of facilities that could conceivably provide services. AM noted that a facility's speed of response and how long it can be provided are defined, but not the magnitude of the response. TR noted that you could ask for		

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		individual response curves for each facility and try to have the engine combine and optimise them all, but that would be very difficult. TR offered to discuss with AM further out of session. CJ noted that the contingency response work would try not to be technology specific, but rather focus on the services the system will require. TR thanked everybody who had provided data and Simon Middleton (SM) from AEMO reminded the MDOWG that it was the due date for all data submissions and that he would email participants later in the day in a final request for data.		
6.	RCM update	Ashwin Raj (AR) provided an update on the progress of the RCM project and presented on the project milestones. The proposed changes to the RCM will receive in-principle support from the Taskforce in July, before industry consultation and eventual Taskforce endorsement in October. AR will bring the preferred option to MDOWG in September but would also like to meet members on one-on-one to discuss. PP and EA reiterated a question they had asked at the previous PSOWG meeting: why will the new floor price not be implemented in 2021 rather than 2022? AR noted that the floor price is being considered by Matthew Martin at PUO, whereas AR's project relates to the RCM under constrained network access. JL asked about the progress of the constrained network access project. AR replied that Access Code changes are scheduled for mid-2020. EA noted that the principles concerning capacity credit allocation in a constrained market may influence the outcome of bilateral contracting and the STEM, and due to this larger impact on the market the project timeframe may not be sufficient to include the requisite consultation. AR replied that, considering the RCM changes are unlikely to require a government decision, there will be increased time at the end of the year for consultation, and the project team will also be employing a consultant to assist. EA asked whether industry will be informed who the consultant is. AR replied yes, following completion of the necessary procurement process. AV thanked the MDOWG for attending and asked that any additional questions or feedback be sent to marketdesign.wg@treasury.wa.gov.au	Action: AR to bring the preferred RCM option to MDOWG in September, after in-principle support is received from the Taskforce.	