25 February 2021

Mr Nino Ficca
Interim Chief Executive Officer
Australian Energy Market Operator
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Dear Mr Ficca

Consultation – *Market Ancillary Service Specification Consultation - Issues Paper*

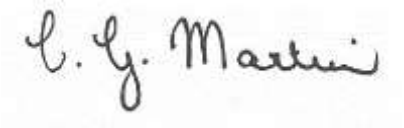
Energy Queensland Limited (Energy Queensland) welcomes the opportunity to provide comment to the Australian Energy Market Operator (AEMO) in response to its *Market Ancillary Service Specification Consultation - Issues Paper* (Issues Paper). This submission is provided by Energy Queensland, on behalf of its related entities, including:

- Distribution network service providers, Energex Limited (Energex) and Ergon Energy Corporation Limited (Ergon Energy Network);
- Retailer, Ergon Energy Queensland Pty Ltd (Ergon Energy Retail); and,
- Affiliated contestable business, Yurika Pty Ltd (Yurika) and its subsidiaries including Yurika Metering.

Feedback from Energy Queensland on the matters raised in the Issues Paper is provided in the attached response template.

Should AEMO require additional information or wish to discuss any aspect of this submission, please contact me on 0438 021 254 or Laura Males on 0429 954 346.

Yours sincerely



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Encl: *Energy Queensland comments to AEMO*

Consultation questions

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Questions for DER Participation	
1. Which option for the ongoing measurement requirements for DER described in Section 2.3 do you want AEMO to implement and why? Should any other options be considered?	Energy Queensland suggests that any option that relaxes the measurement requirements for aggregated demand response will remove barriers. However, neither option put forward in the Issues Paper enable Energex's and Ergon Energy Network's current load control capability to participate. Therefore, Energy Queensland suggests that further exploration of options would be beneficial. Energy Queensland suggests that one alternative could include the further relaxation of the measurement requirements, for example, zone substation monitoring, modelling based on local measurement and verification and/or new local and lower cost measurement where applicable. With respect to the aggregation of smaller services, we do not believe it is economically prudent to provide the level of metering required under the current Rules. It is unclear how the requirement for high speed metering can be provided for every 5 MW of aggregated capability unless that metering is aggregated metering from the distributed injection points. This would appear to negate the objective of not requiring the high speed metering. It is our view that removing barriers to entry for lower cost services can only aid in reducing the cost to serve for this capability. Energex and Ergon Energy Network maintain an audio frequency load control system that controls customers' hot water, pool pump and air conditioning loads. Elements of the customer's load could be made available (subject to meeting legal requirements) to the frequency control ancillary services (FCAS) market in the fast and slow raise services. For example, Energex and Ergon Energy Network have approximately 900MVA of connected load under control spread across customers throughout Queensland. It is therefore not practicable to provide high speed metering of this load at a customer level or at a 5MW level. Energex and Ergon Energy Network maintain SCADA metering at all Zone and Bulk Supply substations that will record megawatt metering with sequence of events (msec) time stamping based on a deadband delta from the previous reading (DNP3) that can be

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	used to demonstrate the delta in load co-incident to the digital signal of the relevant controller (local frequency trigger). While Energex and Ergon Energy Network have significant load that could be utilised in the FCAS market, current metering and the proposed virtual power plant (VPP) metering requirements make this prohibitive.
2. Which option do you think is more consistent with the NEO, and why?	It is Energy Queensland's view that lowering barriers to entry, and in turn bringing on lower cost FCAS capability, aligns to the National Electricity Objective (NEO). Consequently, supporting the proposed VPP alternative and consideration of how this could be further extended to allow distribution network service provider (DNSP) or aggregator use of audio frequency load control capability in the market, including the ability to attain revenue for this service, is recommended.
3. Should AEMO consider any principles other than those described in Section 2.4 to guide its assessment?	Energy Queensland agrees that the objective as stated appears appropriate.
4. What is the difference in implementation costs, such as updating the communication links or installing additional equipment, for capturing data at a resolution of either 50 ms or 1 second for every NMI for different VPP facility types? Do you consider the cost difference to be prohibitive for participating in the Contingency FCAS markets? Please provide examples or analysis if possible.	Energy Queensland believes provision of the 50ms metering on small distributed energy resource (DER) and loads would be prohibitive. Energy Queensland does not currently have detailed experience in DER inverter metering capabilities. However, the expectation is that it will be far more likely that inverter metering could provide 1 second metering without additional metering, while 50ms metering is expected to require additional dedicated equipment. It is currently impractical for Energex's and Ergon Energy Network's controlled load to provide either the 1 second or 50ms metering at the load. Conversion to electronic kilowatt hour meters at the premise will not provide this level of metering in the immediate term. It is our view that a metering solution at a higher network level is required. If the customer's electronic metering (owned by the retailer / metering provider) provided the capability to shed the controllable circuit based on frequency parameters and had a disturbance recorder type function for 1 second metering, there may be a market for the retailer to provide an aggregated fast raise service.

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5. Do you think that either of the options presented will result in more or less competition in the Contingency FCAS markets?	Energy Queensland suggests the proposed VPP option is more likely to generate additional participants and consequently more competition in the Contingency FCAS markets compared to not adopting the VPP proposal.
6. Are there any technical risks that you envisage if the Option 2 measurement requirements are allowed? How material do you consider those risks and how could they be efficiently mitigated?	In Energy Queensland's view, there is the risk that gaming will occur if metering is moved to the inverter (which is behind the connection point). However, given the intent is that this arrangement will be for many small inverters, the ability of the aggregator to co-ordinate, for example a load increase co-incident to a fast raise generation out or vice versa, when they do not control the load at the premise is extremely remote, if not impossible.
7. Does the sampling rate of one second rather than 50 ms for Fast Contingency FCAS under Option 2 and the determination of the FCAS delivery at the inverter/controllable device level create market distortion or negatively impact the FCAS markets?	Energy Queensland does not believe that this option will create market distortion or negatively impact the FCAS markets. Given that compliance is determined over six seconds, Energy Queensland is unsure of the validity of needing 50ms data for any participant.
8. If Option 2 was adopted, should the changes to the measurement requirements of the MASS be limited to small-scale DER (under 1 MW per NMI), or should a different threshold apply, such as 5 MW? For example, what do you see as the risks and benefits of expanding these measurement requirements to other FCAS providers and in what circumstances might that be appropriate?	We propose a 5MW limit be imposed to align with other limit breaks determining requirements, such as the scheduling requirement which is currently 5MW. Energy Queensland expects an increase in small DER under 5MW and wishes to enable participation to support the NEO. However, in order to minimise operational issues and risks to power quality, it is suggested that the DNSP is informed if DER is participating in Market Ancillary Service Specification as part of an aggregated response, similarly to a wholesale demand response participant.
Questions for general MASS issues	
9. Does the proposed reformat of the MASS (see Attachment 1) make for improved readability and understanding? What other improvements in the form and drafting of the MASS could be beneficial? If you consider the reformatted MASS may have materially changed the substantive meaning of the MASS v6.0, please also bring this to our attention.	Energy Queensland provides no comment.

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10. Clarification of FOS references – please provide any feedback on the proposal to clarify that FOS terms relate to Table A.1 of the FOS, and any other terms that have ambiguous values.	Energy Queensland agrees with the intent of this element of the proposal.
11. Frequency responsiveness of FCAS: a. What would be involved in ensuring that non-frequency responsive facilities: i. Respond only when enabled in the relevant FCAS market(s)? ii. Do not deliver significantly more than market enablement (for example, >50%)? Do any alternative options exist to manage over-delivery? b. Please provide feedback on the proposed revised trigger ranges for switching controllers set out in Table 1 and Table 2 of section 3.3. c. Please provide feedback on the proposal in section 3.3 to require proportional controllers to set deadbands no wider than ±0.1 Hz.	a) In our view, to achieve this requirement, the FCAS load needs a mechanism to be enabled or disabled by the aggregator, dependent on bid acceptance. To achieve a FCAS delivery aligned to that bid and acceptance, the aggregator needs to have a model of the available load and be able to enable or disable in suitably sized steps to meet the requirement. It is expected this would be base capability of an aggregator. Note: Regarding Ergon Energy Network's load shed capability, this is possible as remote enabling in course blocks is available, as is a load estimation model recalculated each minute. b) Energy Queensland provides no comment. c) Energy Queensland provides no comment.
12. Co-ordination of different FCAS and PFR: a. Referencing the list of co-ordination matters in section 3.4, are there other co-ordination matters AEMO should seek to address in the MASS? b. Does the list of clarifications on co-ordination of Contingency FCAS/PFR controls with AGC controls in Section 3.4 provide a reasonable balance between guidance and flexibility for plant control design?	Energy Queensland provides no comment.
13. Regulation FCAS requirements: a. Are the requirements and proposed settings listed in section 3.5 adequate and achievable? In particular, can PFR (separate to other plant targets) be determined readily and communicated to AEMO? b. Would a 1-year phase-in period for existing Regulation FCAS providers be satisfactory? c. Do Consulted Persons believe that a 2-year Regulation FCAS testing cycle	a) Energy Queensland provides no comment. b) Energy Queensland provides no comment. c) Energy Queensland provides no comment. a [sic]) Should Ergon Energy Network's load be bid in the Delayed Raise market, it would be a switched type load.

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strike the right balance of stringency and reasonableness? a [sic]. Clarification of requirements for Delayed FCAS – please consider the implications from your perspective of clarifying that Delayed FCAS controls may be of a switched type only (rather than also proportional), and, whether other factors in addition to those outlined in section 3.6 need to be considered.	
14. Regarding issues associated with the pending FFR rule change canvassed in section 3.7 and any other rule changes of concern, AEMO wishes to hear from Consulted Persons on the following issues, which would be used to help scope future changes to the MASS: a. What MASS issues they consider should be addressed in subsequent reviews, including if possible, provide reasoning as to why these issues are important. b. How any other desirable changes to the MASS could be managed in the context of ongoing rule changes.	Energy Queensland provides no comment.