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(Lodged electronically)

Amendment of the Market Ancillary Service Specification (MASS) Response to the Draft Determination

Delta Electricity welcomes this further opportunity to participate in the 2017 review of the MASS.

The following pages contain comments on AEMOs draft determination and draft MASS Version 5.0 which are generally supportive whilst offering points for further consideration by AEMO prior to finalising its determination.

For further information about this submission please contact Simon Bolt (02) 4352 6315 or simon.bolt@de.com.au.

Yours sincerely



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1. Barriers for new entrants

Delta Electricity agrees that no major technical barriers to entry appear to exist in the MASS version 4 and supports AEMOs determination that no major amendments are therefore required to remove such barriers.

2. Provision of *regulation services*

Delta Electricity agrees with the intent and wording of the inclusions made to document the requirements for aggregated units providing regulation services.

Delta Electricity observes that the document could be restructured to ensure that the specifications for control and measurement facilities appear in similar locations in the document. The draft appears to have included additional control and measurement facilities for aggregated units in section 2.4 which are intended to compliment the requirements of sections 3.5, 3.6, 4.5, 4.6, 5.5, 5.6, 6.6 and 6.7. It is suggested that control facilities and measurement facilities sections for all services could all be combined inclusive of the new information for aggregated units or, alternatively, the aggregated unit information could added to the Fast, Slow, Delayed and Regulation sections where relevant.

3. Aggregation of load across *regions*

Delta Electricity agrees with AEMOs determination.

4. Variable *generation*

Delta Electricity agrees with AEMOs determination.

5. Measurement of response across aggregated sites

Delta Electricity agrees with AEMOs determination.

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6. High Speed Metering

Delta Electricity agrees with AEMOs determination.

Delta Electricity also suggests that more detail is required in the MASS about the required instrumentation and/or recording systems. There are instrument transducers and data recorders with varying methodologies of measurement, accuracy, linearity and time response. It is possible for people to interpret 3.6(a), 4.6(a), 5.6(a) and the first paragraph of 6.7 of the MASS as defining what the data



recorder specifications should be without applying the same requirements to any source instrumentation that may be providing source data to a recorder. For example, some power transducers have a 30ms response time. For fast response measurements, the measurements of power must be made at intervals of 50ms or less. If a participant installs a high speed recorder that can read and settle a record in less than 50ms but utilises a source transducer with only a 1s or slower response time, the resultant measurement could be delayed and/or incorrect relative to its timestamp.

7. Definition of services - Principles

Delta Electricity agrees with AEMOs determination.

Contingency services are continuously enabled but only occasionally utilised as compared to regulation services which, when enabled, are generally utilised. For Contingency Services, a suitable sentence describing this aspect appears in the last sentence of the first paragraph of section 2.1.1 in the draft MASS. An equivalent sentence is not found in section 2.1.2 for the regulation service. An equivalent sentence might read, "In contrast to the occasional use of Contingency Services, enabled regulation services are normally utilised by AEMO in each dispatch interval".

8. Definition of the *regulation services*

The wording "timely and accurate" is subjective but Delta Electricity supports the adoption.

The draft MASS appears to have removed the wording "generation setpoint controllers" from the statement about the traditional provisions being from generating units. At many coal-fired power stations, the Unit setpoint controller is the system that receives AEMOs dispatch for regulation coupled with the dispatched energy target. Inherent in the safety design of high pressure steam boilers and coal combustion, delays in response to changing setpoint targets are necessary, sometimes in the order of minutes, to maintain safe, undamaging and uninterrupted conditions for the plant. The unit setpoint controller is also constrained in its response by the ramp rate of the energy bid. If AEMO requires a more precise and timely regulation response, AEMO may need to separate the regulation dispatch from the energy target dispatch.

If AEMOs centrally controlled regulation is not in the same direction as that required to correct local frequency back towards 50Hz, the overall regulation of the system will potentially be less effective. Other systems of regulation exist which respond almost instantaneously to locally detected deviations in frequency and are unspecified in the regulation services described by the MASS.

9. Definition of Contingency Services

Delta Electricity agrees with AEMOs determination.

10. Interaction of *Regulation* and Contingency Services

Delta Electricity comments on AEMOs determination.

For remote control units scheduled under AEMO AGC control, such as Vales Point, unless plant conditions or safety concerns warrant a Unit dropping out of remote control, the contingency event will be responded to by the Unit simultaneously with the continuation of receipt and dispatch of the energy



target. The action required by the contingency event is blended with the Units energy target setpoint and then applied to the Unit.

11. Performance parameters and verification requirements

Delta Electricity agrees with AEMOs determination.

12. Performance parameters and verification requirements for *regulation services*

Delta Electricity agrees with AEMOs determination.

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13. Performance parameters and verification requirements for Contingency Services

Delta Electricity agrees with the removal and relocation of the mathematical details from the MASS to AEMOs FCAS Verification Tool guide but recommends consideration of the following:

- Proposed methodology other than the use of the tool should be proven to produce results consistent with the results produced by the tool before the proposed methodology is accepted by AEMO.
- The wording “operating point ... just prior to” in 3.7.1(a)(v), 4.7.1(a)(iv) and 5.7.1(a)(iv) needs to be specified in type of value and time as is done in the existing MASS. The existing MASS Version 4 defines the values FA (2.6(a)(v)), SA (3.6(a)(v)) and DA (4.6(a)(iv)) . Interpretations of the words “just prior to” that don’t align with the defined values of FA, SA and DA could produce remarkably different results.
- The measurement of power specified in 3.6(a)(i), 4.6(a)(i), 5.6(a)(i) and 6.7(a) to be “at or close to the relevant connection point” implies sent out power that for many stations will not be directly comparable to dispatch targets. It is noted that the calculated responses using the tool don’t change too much when using Generated or sent out data and that dispatch data is used to draw energy target trajectory but AEMO are advised to consider and confirm that sent out data is preferred rather than generated data which should be more directly comparable and is closer to localised machine output and Unit DCS control action.

14. Allocation of Switching Controller settings

Delta Electricity agrees with AEMOs determination.



15. Changes to existing systems

Delta Electricity agrees with AEMOs determination.

16. FCAS trials for emerging technologies

Delta Electricity agrees with AEMOs determination.