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Tuesday, 23 May 2023

Australian Energy Market Operator

By email: contact.connections@aemo.com.au

Dear Ms York,

AEMO review of technical requirements for connections

Transgrid welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO) proposed review of technical requirements for connections consultation on the addendum to the draft report.

As the jurisdictional planner, operator and manager of the transmission network in NSW and the ACT, Transgrid supports reforms that will enable both energy and system security services to be provided to consumers at the lowest possible cost. To achieve this and remain consistent with the National Electricity Objective (NEO), any proposed technical amendments would need to withstand a variety of foreseeable, present and future operating scenarios while promoting efficient and effective investment within the NEM.

Transgrid welcomes the development of technical requirements that are appropriate to address emerging and future issues associated with large loads of a diverse and changing nature. Transgrid broadly supports the proposed amendments which incorporate the impact and capability of large loads by aligning technical requirements with generating systems where appropriate. In our view, it is important that the proposed amendments are appropriate and fit for purpose.

The table in Attachment 1 to this letter provides comments on the individual items outlined in AEMO's addendum to draft report on the review of technical requirements for connection (NER 5.2.6A) template provided by AEMO, whether Transgrid supports the proposed amendments, and the underlying reasoning for our response.

We appreciate the opportunity to comment on AEMO's addendum to draft report on the review of technical requirements for connections. If you would like to discuss this submission, please feel free to contact Kevin Hinkley, Manager System Planning, at kevin.hinkley@transgrid.com.au.

Yours faithfully



Doug Thomson
General Manager of Network Planning (Acting)

Attachment 1

Addendum to draft report Stakeholder feedback template: AEMO Review of technical requirements for connection (NER 5.2.6A)

Stakeholders making a submission on the recommendations set out in the addendum to the draft report may use the below template to provide feedback. Feedback on the addendum is due to AEMO by 5:00 pm, 23 May 2023 (please note the earlier submission date for feedback on the primary draft report). Please consider the confidentiality disclaimer at the end of this document.

Stakeholder: Transgrid

Schedule 5.3 Conditions for Connection of Customers

Issue	Schedule 5.3 Recommendations
Policy positions	
Recognition of different load technologies	Transgrid agree with the recommendation to pursue Option 2, to consider IBL ride through requirement and general requirements for load separately.
Size and technology-based thresholds for ride through capability requirements	Transgrid agree with the recommendation to pursue Option 2 to apply different thresholds for traditional loads and IBL in combination with Option 3 MAS for all single facilities loads of 5 MW or more. It is worth noting that, any threshold proposed should be consistent with any other ongoing consultations, such as the PSMG.
Treatment of different load technologies within a load facility	Transgrid agrees with the recommended approach of Option 2 in principle, to apply different thresholds based on the size of the IBL load component and the size of the traditional load component. However, consideration may need to be given to the fact that it may be challenging to distinguish between the load components in some hybrid facilities and effectively design the protection systems as per the requirements in each load category.
Continuous uninterrupted operation (CUO) requirements	Transgrid agrees with the recommended approach of Option 2, however would suggest an alteration to the change in active power limit allowable to be the lesser of a fixed MW value or 20% following a disturbance.
Treatment of loads with uninterruptible power supplies	Transgrid agrees that loads with UPS should not be able to disconnect at will from the grid, particularly when they can be relatively large, and should follow similar thresholds as other large loads (traditional or IBL), noting that there is provision in the wording suggested for the CUO Option 2 that there can be agreement between the NSP and AEMO to alter the requirement on a case-by-case basis.

Issue	Schedule 5.3 Recommendations
AEMO advisory matters	Transgrid agrees with the recommendation of Option 2 to consult with AEMO when negotiating an access standard that relates to AEMO's system security function under the NEL.
New definitions – for use with ride-through requirements	
Single facility load	Transgrid recommends that “electrical proximity” be clearly defined and remain as consistent as possible with the existing definition of “connection point” under the rules (Chapter 10).
Large single facility load	Transgrid would like to understand the basis for the 200 MW threshold proposed to define a large single facility load for the purpose of imposing ride through requirements. Without understanding the basis for this threshold, Transgrid is unable to make a determination on the suitability of the definition of large single facility load.
Large single facility inverter-based load	Transgrid prefers Option 2, for the definition to apply for a 5 MW or more IBL, with discretion for the NSP to exempt up to a threshold of 30 MW. This is more consistent with the current threshold/s for generator technical requirements.
New/amended clauses for ride-through requirements	
Operation of large loads during frequency disturbances	Transgrid agrees with the recommended approach of Option 2 in principle, however we do not want to create a barrier for loads to connect. AEMO should conduct further engagement with load proponents of different types of technologies and have a survey of various capabilities to determine if the MAS as proposed is a suitable threshold.
Operation of large loads during contingency events	<p>Transgrid agrees with the recommended approach of Option 2 in principle, however we do not want to create a barrier for loads to connect. AEMO should conduct further engagement with load proponents of different types of technologies and have a survey of various capabilities to determine if the MAS as proposed is a suitable threshold.</p> <p>It is uncertain whether AEMO's intention is for IBLs to provide reactive power supply or absorption capability as per AAS and MAS of S5.2.5.5 given the wording on being 'consistent' with that clause. Transgrid sees that may be an issue and further discussion will be required.</p>
Operation of large loads during voltage disturbances	Transgrid agrees with the recommended approach of Option 2 in principle, however we do not want to create a barrier for loads to connect. AEMO should conduct further engagement with load proponents of different types of technologies and have a survey of various capabilities to determine if the MAS as proposed is a suitable threshold.
NER S5.3.3 – protection systems and settings	
Link to 'ride through' requirements and maximising protection	Transgrid agrees in principle, however the question remains about how the protection systems will distinguish between the different types of load components in a hybrid facility and be effectively designed.
NER S5.3.10 – Load shedding facilities	
Emergency Under-frequency ramp down of large loads	Transgrid agrees with the recommended approach of Option 2, providing alternatives for the proponents to incorporate proportional ramping down functionalities if it is suitable for the specific system conditions of the time.
New clause for instability monitoring and prevention	

Issue	Schedule 5.3 Recommendations
Stability of IBL – monitoring, protection and performance	Transgrid suggests the ongoing consultation for clause S5.2.5.10 be finalised prior to an equivalent clause for IBL loads, and this be fully investigated following the conclusions from that consultation. Further consideration should be given to the appropriate thresholds for such a clause, as the specific levels proposed may not be appropriate.

Confidentiality disclaimer

Under clause 5.2.6A(d)(2), AEMO is required to publish all submissions received about this Review on its website. Please identify any part of your submission that is confidential, which you do not wish to be published. Please note that if material identified as confidential cannot be shared and validated with other interested persons, then it may be accorded less weight in AEMO's decision-making process than published material. AEMO prefers that submissions be forwarded in electronic format.