11 February 2025

Ms Anna Collyer

Chair

Australian Energy Market Commission

GPO Box 2603

Sydney NSW 2001

Electronic Lodgement: ERC0393

Dear Anna,

AEMC Draft Determination Improving NEM Access Standards – Package 1

Energy Networks Australia (ENA) welcomes the opportunity to make this submission in response to the Australian Energy Market Commission's (AEMC's) Draft Determination on *Improving NEM Access Standards- Package 1*

ENA represents Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

While ENA supports this work proceeding expeditiously, we are concerned that the draft rule includes extensive changes and several matters require further careful consideration, including:

- Inconsistencies between the draft determination and draft rule.
- Inconsistencies within the draft rule.
- A draft rule including amendments that are not discussed in the draft determination nor consulted on by AEMO.

ENA welcomes the opportunity to meet with the AEMC to discuss the issues in submissions. ENA notes that connections volumes, technology and requirements are continuing to evolve even since AEMO consulted in mid-2023. Further, this package 1 and the package 2 under development are interrelated and need careful consideration.

Appreciate the clarity in the standards, unlikely that it results in cheaper or faster connections

ENA supports fit for purpose access standards that strengthen and maintain a secure power system. Despite the earlier consultation in mid-2023, a number of NSPs continue to have concerns and have provided submissions on the technical aspects of this rule change.

The AEMC objective is to lower the costs of connection and reduce the burden on NSPs and AEMO by streamlining connections, and providing clarity and reducing the need for negotiations. The AEMC recognises that NSPs are processing a far more significant volume of connections than in the past and a broader range of plant types and configurations on a transitioning power system. As the NEM is becoming more fragmented and the volume of connections increases, the shortage of power

system engineers is being felt across industry. ENA is concerned that aspects of the proposed rule change may not result in streamlining connections.

It would also be useful to consider the consistency with the optimal development path under the Integrated System Plan (ISP). The ISP highlights the future need to add Phasor Measurement Units (PMUs) to the networks, yet S5.2.5.10 does not require PMUs for connections under 100MW.

Allow time between the rule being made and taking affect

We understand that the AEMC proposes to make the rule and have it take effect on 10 April and allow a transitional period for certain inflight connections to 30 October 2025. Whilst this allows some transition for inflight connections, it allows no time to review the final rule and implications and update key resources and processes. ENA notes that TNSPs and DNSPs in the NEM can have very different workloads for connections and this rule and the further package 2 are being implemented in a very resource constrained environment. This is a lengthy, complex rule, ENA suggests that the AEMC work closely with the ENA and its members to determine which of elements of the rule could be implemented more quickly, and which elements may require a longer implementation period (e.g. up to 6 months).

Application of arrangements to network equipment

Rule 11.xx.2 requires NSPs to document and advise AEMO of the relevant performance standards for plant that exists within 12 months of the rule commencement. ENA recognises that the AEMC has enabled a year for TNSP synchronous condensers performance agreements to be updated, however as the AEMC notes there are limited power system engineers to the extent any additional documentation is needed and this could divert resources from other connections. The AEMC should also make it clear whether the performance standards are being documented to the standards that existed at the time the equipment was commissioned or to the current standards.

Rather than provide statements in footnotes that suggests the network equipment of SVC (Static VAR Compensator) and Statcomms (Static Synchronous Compensator) are not part of this transitional requirement, ENA would welcome clarity within the rule and a clear statement in the final determination that they are excluded from both the transitional arrangement and from the connections arrangements going forward. These types of equipment are frequently re-tuned and would involve considerable time negotiating with AEMO.

It would also be useful for the AEMC to clarify the rationale for both S5.1 and S5.2 applying for NSP provided synchronous condensers. ENA is aware that S5.1 alone can take 8 months of work for each synchronous condenser and there may be a substantial number connecting over the next few years to meet the system strength requirements without requiring both S5.1 and S5.2. Any delay to the connection of network synchronous condensers is likely to increase costs to consumers through the extended reliance on non-network procurement of system strength services.

Concerns regarding voltage standards (S5.2.5.1)

S5.2.5.1 - ENA recommends that the AEMC retain the current automatic access standard requirements and reinforce the negotiating framework with the proposed amendments, considering the voltage-dependent requirement for reactive power based on connecting location. The introduction of new automatic access standards adds unnecessary complexity to the assessment process without providing substantial benefits, as this is already permitted within the existing negotiation framework. Retaining the current approach will help minimise risks such as projects unnecessarily limiting their reactive power capabilities. The Commission should also consider how to manage variations in mid-point voltage over the generator's lifespan considering the new Rule requirements.

If the new automatic access standard is retained, there is a need to clarify the negotiation principles that will apply to manage network specific impacts (i.e. additional reactive power may still be required if connecting to a weak grid).

Concerns regarding S5.2.5.4 (e2)

S5.2.5.4(e2) – the amended clause allows transformer tap-changing to be considered as a method for maintaining power levels for voltage variations up to 10% within the range 90% to 110% of nominal voltage. Transformer tap-changing could take tens of seconds to minutes to respond, during which there could be substantial variations in plant output, exacerbating or prolonging network disturbances. ENA recommends reviewing this requirement to ensure that connecting plant can meet Continuous Uninterrupted Operation (CUO) requirement for voltage variations up to 10% within the range 90% to 110% of nominal voltage, without relying on tap-changing transformers.

From a distribution perspective, we recommend removing the reliance on On Load Tap Changing (OLTC) under S5.2.5.4(e2)(1) and replacing it with specific criteria to meet CUO, such as defining acceptable response time limits. The response time of OLTC can vary significantly between transmission and distribution networks. In distribution systems, it is often relatively slow, typically taking minutes. As a result, relying on tap changer response may not effectively improve CUO in distribution networks.

Make S5.2.5.7 more flexible

ENA suggests that the drafting should not be limited to synchronous generators only, and it be broadened to include asynchronous plant. It is important that all generating systems providing primary frequency response and voltage control remain in continuous uninterrupted operation during a load rejection event. The separate assessment of voltage and frequency disturbances covered under other schedule 5.2 access standards does not adequately address the potential impacts of simultaneous voltage and frequency disturbances due to a major load rejection event. More importantly, limiting application of clause S5.2.5.7 to synchronous units does not adequately consider emerging plant technologies such as grid-forming asynchronous plant and the criticality of load rejection performance during islanded operation.

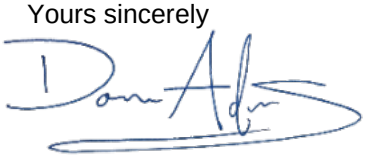
Grid forming and grid following technologies could assist a remote community to island and still meet load requirements. As drafted, the ability to support rural communities in an islanding event has been removed despite the fact that technology has the capability and NSPs are being requested to allow this capability. This can provide useful resilience for rural communities cut off in bushfires or when lines are down in storm events and should not be eliminated as an option.

Supportive of the new standards applying for new network assets, suggests that process could be streamlined by avoiding AEMO advisory matters step (5.2.3 (c1))

ENA supports in principle the application of the new standards for any new synchronous condensers owned by the TNSPs. Given the new system strength arrangements, this will add materially to connection volumes to be processed and potentially have the effect of slowing all connections. Recent synchronous condenser installations have required considerable location specific tuning over a number of years. This retuning activity will also add to the 5.3.9 connection variation workload, potentially slowing processes down. Before making a final determination, the AEMC should consider the volume of new network assets adding to the connection processing and connection modification volumes both from new and existing assets and ascertain where the resources and funding is coming from to avoid slowing down connection processes within the NSPs and at AEMO.

ENA looks forward to working with the AEMC as it finalises the Rules. In the meantime, if you would like to discuss this submission, please contact Verity Watson (vwatson@energynetworks.com.au) in the first instance.

Yours sincerely



Dominic Adams
GM Networks