AEMC

INFORMATION

Technical standards for DER

The Australian Energy Market Commission (AEMC) has made a more preferable draft rule to introduce technical standards that will enable distribution network service providers (DNSPs) and the Australian Energy Market Operator (AEMO) to better manage the growing number of micro-embedded generators connecting across the national electricity market (NEM).

In making this draft rule, the AEMC recognises the importance of promptly addressing the concerns of AEMO and the Energy Security Board (ESB) about the impact that the significant growth in connections of distributed solar PV generation units is having on networks and the electricity grid, particularly in the ability of DNSPs and AEMO to manage voltage disturbances.

The draft rule has been made in response to a rule change request from AEMO.

The draft rule

To address these urgent issues, the draft rule requires all new or replacement micro-embedded generators connecting to distribution networks to be compliant with the DER Technical Standards specified in the National Electricity Rules (NER). The newly defined DER Technical Standards comprise the Australian Standard AS 4777.2:2015 and a new Schedule 5A.2 of the NER (which incorporates the Australian Energy Market Operator's (AEMO) short duration under voltage response test requirements).

In addition, the draft rule includes:

- A requirement that model standing offers for basic micro EG connection services for embedded generating units, information required to negotiate the connection of embedded generating units and the minimum content requirements of connection offers under Schedule 5A.2 include the requirement that the embedded generating units that subject of the basic micro EG connection service must be compliant with the DER Technical Standards
- Supporting the application of existing compliance and monitoring systems under the Clean Energy Council (CEC) and the Clean Energy Regulator (CER), relating to the certification of products and installers of electricity generating systems.
- A requirement for the rule to commence six months after it is made, to allow for the implementation of the new requirements.

The Commission invites submissions on this draft rule determination, including the more preferable draft rule, by 14 January 2021.

Reasons for the draft rule

The draft rule has been made to address the immediate concerns arising from the increasing use of small rooftop solar generators in the NEM. By requiring micro-embedded generators connecting to distribution networks to be compliant with the DER Technical Standards, the urgent power system security issues identified by the ESB, AEMO and other stakeholders should be addressed.

Establishing the DER Technical Standards has been achieved through the use of the existing processes that DNSPs have in place for the connection of embedded generation, and the existing compliance and monitoring systems under the CEC and the CER. This approach has been adopted in preference to the proposal to create a new process to

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establish technical standards which could have resulted in duplication and potentially inefficient costs borne by consumers.

The draft rule will also utilise existing rules and industry frameworks to provide governance processes to update the DER Technical Standards. It is therefore likely to be more cost effective and timely than establishing a set of new requirements with bespoke governance arrangements.

Importantly, the draft rule to establish the initial DER Technical Standards to meet immediate issues does not limit, in any way, any changes to the governance structure that may be needed in the future.

If Standards Australia publishes the updated version of AS 4777.2 (that is, AS 4777.2:2020) before the publication of the final rule determination, then the AEMC expects that the final rule will refer to AS 4777.2:2020 alone rather than AS 4777.2:2015 and the short duration under voltage response testing requirements which are specified in the draft rule.

The publication of the final rule determination and the final rule, if made, is currently expected to be in February 2021.

Background and rule change request

On 5 May 2020, AEMO submitted a rule change request to the AEMC to make a rule to implement initial minimum technical standards for DER. The rule change request was prepared in co-operation with the ESB as requested by the COAG Energy Council. In the rule change request, AEMO stated that:

- There are gaps in current technical standards for DER, which are increasingly driving system risks to unmanageable sizes across the NEM.
- Without establishing minimum technical standards, especially given the exponential growth in DER, power system operation may be sub-optimal; increasing the reliance on inefficient interventions to manage waning system security parameters such as voltage, thermal capacity, or inertia.
- Particular capabilities in DER minimum standards are critical and need to be brought in line with network connection frameworks, to more efficiently integrate DER into the grid.

AEMO's proposed solution involved establishing an obligation on AEMO to make, publish and, if necessary amend initial minimum technical standards for DER that will be contained in a new subordinate instrument (such as an AEMO procedure). AEMO proposed the development of a high-level definition of DER to determine the coverage of the initial minimum technical standards.

The rule change request also proposed that the NER and NERR obligate DNSPs to include the minimum technical standard for DER into the model terms and conditions of their relevant connection agreements with retail customers. On the basis that the minimum technical standards for DER be housed in a subordinate instrument, AEMO proposed that the new framework should require the Australian Energy Regulator (AER) to develop a light-touch monitoring and compliance framework.

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3 December 2020