Clean Energy Council submission to the Australian Energy Market Operator's Consultation Paper on Initial DER Technical Standard

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Australian Energy Market Operator (AEMO) Consultation Paper on the Initial DER Technical Standard.

The Clean Energy Council is the peak body for the clean energy industry in Australia. We represent and work with Australia's leading renewable energy and energy storage businesses, as well as rooftop solar installers, to further the development of clean energy in Australia. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC supports AEMO's key recommendations, namely:

1. Incorporate the inverter undervoltage disturbance ride-through conformance test procedure developed for South Australia into the Initial DER Standards as soon as practicable,
2. Consider setting AS/NZS 4777.2:2020 in its entirety as an Initial DER Standard,
3. Develop a coordinated industry consultation / implementation plan regarding DER data, communications and interoperability requirements and standards as soon as practicable, and
4. Do not incorporate DER data, communications and interoperability provisions into the Initial DER Standard at this point in time as they are not sufficiently well prepared.

There is a significant gap in the AEMO Consultation Paper. It fails to explain why AEMO proposed mandating the use of multi-element smart meters and why South Australia has established a system of 'Relevant Agents' for managing emergency response on behalf of customers and whether AEMO intends to advocate this approach in jurisdictions other than South Australia.

We strongly urge AEMO to use international standards, Australian standards and national processes in preference to state-specific approaches. The new version of AS/NZS 4777.2 could be published within weeks. It should be used in preference to states mandating new rules in advance of the new national standard. The recent South Australian experience should not be repeated in other states and territories.

We support the proposal to implement AS/NZS 4777.2:2020 through the National Electricity Rules (NER), rather than relying on state regulations and grid connection rules.

We recommend AEMO consider IEEE 2030.5 as a starting point for its work on data, communications and interoperability.

We question the need for the various DER technical standards processes initiated by AEMO in 2020. A rule change proposal to incorporate AS/NZS 4777.2:2020 into the NER would have achieved the same result with less need for intervention by a range of policy makers and less burden for industry.

We would be very happy to discuss these issues in further detail with representatives of AEMO. We look forward to contributing further to this important area for policy development.

Rationale for multi-element smart meters and Relevant Agents

The South Australian government has recently mandated use of multi-element smart meters for remote disconnection and reconnection. The multi-element smart meters are required, even when there is an inverter or other technology that will be used for remote disconnection and reconnection. At no stage has AEMO explained why multi-element smart meters should be mandated when there is an inverter with the capability required.

Smart meters are being rolled out across Australia. It would be helpful if AEMO could clarify why it proposed mandating use of multi-element smart meters and whether it will advocate this approach in any other jurisdictions.

Use international standards, Australian standards and national processes wherever possible

We strongly urge AEMO to use international standards, Australian standards and national processes in preference to state-specific approaches. The new version of AS/NZS 4777.2:2020 could be published within weeks. It should be used in preference to states mandating new rules in advance of the new national standard. The recent South Australian experience should not be repeated in other states and territories.

We support the proposal to implement AS/NZS 4777.2:2020 through NER, rather than relying on state regulations and distribution network service provider (DNSP) grid connection rules.

We recommend AEMO consider IEEE 2030.5 as a starting point for its work on data, communications and interoperability.

How is the initial standard designed to interact with other processes?

It is unclear how the Initial DER technical standard is intended to interact with the new South Australian rules. Will the AEMO standard replace the recently introduced SA requirements? How will AEMO and the SA Government ensure that the SA standards do not contradict the AEMO standard? Will the SA requirement become obsolete as soon as AS/NZS 4777.2:2020 is introduced? Although the test required for South Australia is the same as that required for the proposed new AS/NZS 4777.2:2020, the AEMO test is only one component of a group of new voltage disturbance requirements in the public comment draft of AS/NZS 4777.2:2020. Presumably, when AS/NZS 4777.2:2020 comes into effect, all inverters will need to be re-tested for compliance with that standard. And presumably the South Australian undervoltage ride through test will then be obsolete. Can AEMO please confirm this is the case?

How will the Energy Security Board (ESB) review of the governance of DER technical standards affect the AEMO plans for DER technical standards? How is the AEMO proposal affected by the Australian Energy Market Commission (AEMC) rule change on DER technical standards?

What is the purpose of this process?

There have been so many interventions by AEMO in 2020 in relation to DER technical standards that the purpose of the various processes is becoming confused. It would have been far simpler to update AS/NZS 4777.2:2020 and then propose a rule change to incorporate it into the NER.

Responses to questions raised in the Consultation Paper

1. ***What are the costs and benefits of implementing enhanced testing for short duration undervoltage disturbance ride-through in the initial standard? (Noting that these would likely be superseded upon the publication of the AS/NZS 4777.2).***

We recommend implementing the new, short duration undervoltage ride through test procedure as part of the implementation of AS/NZS 4777.2:2020. The South Australian experience should not be repeated.

2. ***What are the implications of mandating in the initial standard for additional testing to confirm that inverters can meet the short duration voltage ride-through test procedure, including in relation to DNSP obligations to manage their network safety, power quality and reliability?***

The new AS/NZS 4777.2:2020 includes the new, short duration undervoltage test procedure. The new test procedure should be mandated through the implementation of AS/NZS 4777.2:2020

3. ***To operate the power system securely, a level of certainty is required to ensure new installs can satisfactorily withstand a transmission level fault of this nature. Are there other cost-efficient solutions available that provide a high level of certainty in achieving this objective? What considerations need to be made for small DER businesses, manufacturers and consumers?***

The most cost-effective solution is likely to be mandating the new, short duration undervoltage test procedure through the implementation of AS/NZS 4777.2:2020. Manufacturers will be required to change their products to comply with the new standard. In the case of AS/NZS 4777.2:2015, manufacturers were given 12 months to comply following publication of the final standard. Small DER businesses will also require sufficient notice to manage their inventory to ensure they are not left holding non-compliant inverter stock.

4. ***Should this or a future version of the DER minimum technical standard incorporate AS/NZS4777.2 and/or the revised version, following its publication (expected to be in early 2021)? What are the benefits and risks in doing this?***

We understand that AS/NZS 4777.2 could be published as soon as late 2020.

It would be beneficial to include AS/NZS 4777.2:2020 in the NER. This would clarify obligations and would provide for a consistent approach to compliance across the National Electricity Market (NEM). It would be preferable to relying on a patchwork quilt of state energy regulations and DNSP grid connection rules for enforcement and compliance.

5. ***What are the technical challenges faced by each industry sector in integrating DER?***

The recent South Australian experience has highlighted the challenges of bringing forward new regulatory requirements in advance of national processes. It remains unclear whether AEMO is of the view that the new South Australian approach of multi-element smart meters and 'Relevant Agents' should be replicated nationally or if this is intended as a one-off exception.

6. ***What interoperability functions are needed to help address the challenges and realise the value of DER?***

There are many interoperability functions that would help to address the challenges and realise the value of DER. The South Australian requirement for inverters to be capable of connecting to the internet seems to be a logical place to commence. A useful practical application for internet connectivity would

be to automate part of the inspection process using the ability to remotely verify power quality settings of inverters.

7. ***What interoperability capabilities are available now for consideration in DER minimum technical standards? What capabilities will be required in the future?***

The CEC recently hosted a webinar on the international standard, IEEE 2030.5. A recording of the webinar can be viewed here (Access Passcode: OYDB^.45)

AEMO should consider the interoperability capabilities defined in IEEE 2030.5 as a starting point.

8. ***What are the priority interoperability capabilities to be taken forward in minimum standards over the next 2 years?***

The priority should be to develop an implementation roadmap for use of either IEEE 2030.5 or an alternative international standard for interoperability capabilities.

9. ***Should the DER Visibility and Monitoring Best Practice Guide developed by a sector of industry participants be utilised as a basis for review and inclusion in future minimum DER technical standards, and if not what other options should be considered?***

The DER Visibility and Monitoring Best Practice Guide should also be considered as future DER technical standards are developed.

10. ***What developments exist in communications, data and interoperability systems, for consideration in future DER minimum technical standards?***

It would be helpful for AEMO and other policy makers to implement a process to decide whether Australian intends to use IEEE 2030.5 as the basis for future standards development and, if not, what other standards should be considered.

11. ***Should the Australian Implementation Guide for IEEE 2030.5 currently under development by a sector of industry participants be utilised as a basis for review and inclusion in future minimum DER technical standards, and if not what other options should be considered?***

It is difficult to comment because we have not yet had the opportunity to review the Australian Implementation Guide for IEEE 2030.5. We look forward to receiving a draft of the guide.

12. ***If an implementation date were to be set in the initial standard, what is an appropriate implementation date for the short duration voltage disturbance ride through requirements?***

We recommend use of AS/NZS 4777.2:2020 as the preferred vehicle for implementing the short duration voltage disturbance ride through requirement. The new version of AS/NZS 4777.2:2020 could be published as soon as late 2020, which would mean late 2021 could be considered as the appropriate starting date for the new standard.

13. ***What are the benefits and risks/costs of staging implementation of the initial standard across jurisdictions?***

Stage implementation across jurisdictions will add costs. A national approach is strongly preferred to a stage state-by-state approach.

14. Do you suggest any changes to the proposed test procedure? What and why

The CEC provided detailed feedback on the test procedure during the consultation phase. We have nothing further to add at this stage.