



Clean Energy Council submission to the Australian Energy Market Commission Review of Distributed Energy Resources Technical Standards

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Australian Energy Market Commission (AEMC) Final Determination on Governance of Distributed Energy Resources (DER) Technical Standards.

The CEC 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 accredited designers and installers of solar and battery systems, 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.

We note that the AEMC has decided it will not make a rule in response to Dr Kerry Schott's request for a rule change seeking to introduce new governance arrangements for DER technical standards in the National Electricity Market (NEM). We welcome the statement made in the Final Determination that the AEMC has "decided to initiate a review of DER technical standards".

Governance of DER technical standards is fragmented and lacks clarity of roles and coordination. There are inadequate resources dedicated to the setting of DER standards and consequently the pace of change is slower than is needed given the rapid deployment of DER.

In our submission to the Draft Determination, the CEC urged the AEMC to urgently establish a review to consider:

- Roles and responsibilities for DER technical standards,
- Responsibility for developing a DER technical standards roadmap or work program,
- Responsibility for monitoring, compliance and enforcement of DER technical standards,
- Interpretation of DER technical standards in the National Electricity Rules (NER), and
- Assessment of the economic impacts of proposed DER technical standards.

We are providing this submission to explain in further detail our views on the appropriate scope for the proposed review and to provide our rationale for the proposed scope. We are aware that the AEMC is very conscious of the limits of its powers and especially that it is unable to direct the policies of jurisdictional governments and Standards Australia. We have therefore focused in this submission on what the AEMC could usefully do in a review to improve the governance of DER technical standards, using its existing powers. We have outlined where the CEC sees failings in the framework for DER technical standards, including shortcomings of jurisdictional regulatory frameworks.

We would be happy to discuss these issues in further detail with representatives of the AEMC. We look forward to contributing further to the development and implementation of this important area for energy policy.

1. Scope of the proposed review

The CEC has undertaken further consultation with its members since the publication of the Final Determination on Governance of DER Technical Standards and based on the feedback from industry, we urge the AEMC to ensure that the scope of the proposed review is sufficiently broad to address the following issues:

- Process for identification and assessment of the need for new technical standards
- Roles and responsibilities and the process for developing the policy framework within which new DER technical standards will apply. This should include whether uptake should be driven by incentives or compulsion.
- The process for regulatory impact assessment and cost benefit analysis of proposed new DER technical standards prior to them receiving force of legislation.
- A process to avoid and eliminate conflicts between standards and regulations.
- Whether the Standard Australia model is fit for purpose and opportunities to address concerns about resourcing, speed, transparency, and breadth of representation.
- The process for developing new DER technical standards.
- The process for interpretation of DER technical standards when genuine grey areas or differences of interpretation arise.
- Governance of DER connection standards and the transition towards dynamic operating envelopes.
- The governance framework for testing and compliance of products, including accreditation of testing laboratories and the interaction of DER technical standards with safety standards.
- Roles and responsibilities for monitoring, compliance, and enforcement.
- Roles and responsibilities for regulating interoperability.

As part of the consultation for the Governance of DER Technical Standards rule change proposal by Dr Kerry Schott, the AEMC considered whether to limit the scope of DER Technical Standards to consideration of the AS/NZS 4777.2 standard or to the DER standards that can be required through distribution network service providers' (DNSPs') customer connection agreements. At that time, we argued that it would be a mistake to limit the consideration to AS/NZS 4777.2 and we recommended that the scope should include all standards required by DNSPs' customer connection agreements. We would also recommend a similarly broad scope for the forthcoming review. This approach integrates better with the proposed approach to use customer connection agreements as the means of enforcement. DER technical standards that should be considered in addition to AS/NZS 4777.2:2020 include AS/NZS 4755, IEEE 2030.5 and its Australian Common Smart Inverter Profile (CSIP-Aus) implementation guide, and other standards for interoperability and cyber security.

The review should not be limited to device standards. Device standards are just one aspect of DER integration. Equally important, is the governance of rules and regulations for DNSPs and governance of compliance and enforcement across devices, DNSPs, installers and across jurisdictions. In some important matters related to DER integration, regulation of DNSPs is just as fragmented, if not more fragmented, than governance of device standards.

The scope of the review should include all matters relevant to DER integration. This should include governance of DER technical standards, governance of DNSP regulation and governance of compliance and enforcement more broadly.

2. Context and rationale

We outline below the context for these suggestions and why we believe the industry would benefit from guidance from the AEMC on these matters.

2.1 Process for identification and assessment of the need for new technical standards

There are several organisations that have taken on the role of assessing the need for new DER technical standards, including the Australian Renewable Energy Agency (ARENA) Distributed Energy Integration Program (DEIP), the Australian Energy Market Operator (AEMO), and the Energy Security Board (ESB). This is in addition to the ongoing work of industry associations and DNSPs. Given that resources for standards development are limited, there would be value in the AEMC considering how competing demands for new DER technical standards could best be prioritised.

The sequencing of reforms and the corresponding technical standards will be particularly important to manage. It is critical that the introduction of new DER technical standards and requirements are introduced in a way that does not create duplicative efforts, or expenditure in new requirements that become redundant within a short period.

The process for developing new DER technical standards should include avenues to establish a nationally coordinated strategic and advisory function to support the inception of new DER technical standard proposals and revisions, rather than relying only on individual proponents to bring forward proposals. A nationally coordinated process for the assessment of applicable international standards and their adoption as an Australian standard would be highly desirable.

The AEMC review should decide whether it and/or the ESB has a role in developing a DER technical standards roadmap or work program. We urge the review to either decide that the AEMC (or the ESB) have this role, or that they do not.

2.2 Roles and responsibilities and the process for developing the policy framework within which new DER technical standards apply

Even though the AEMC does not have the power to determine the role of jurisdictional governments in setting DER technical standards, a review of the roles and responsibilities of policy makers and regulators of DER would be extremely beneficial in identifying the gaps and providing clear guidance as to the roles of the AEMC, AEMO, the ESB, the Australian Energy Regulator (AER), the Clean Energy Regulator (CER), the ARENA DEIP, jurisdictional governments, the Electrical Regulatory Authorities Council (ERAC), Standards Australia and DNSPs.

Setting aside for the time being who should ideally be responsible for what, it would be helpful if the main policy makers and regulators could just agree on who is supposed to be responsible for what under the current framework. There are too many instances of duplication in the framework. Dabbling by multiple policy makers is a recipe for chaos, confusion, and unnecessary costs for consumers.

We also urge the AEMC to consider whether transitional arrangements will be needed as the value of the Small-scale Technology Certificates (STCs) available under the Small-scale Renewable Energy Scheme (SRES) decline to the point there they are no longer effective in ensuring compliance across the industry. As noted by the CER in its review of the rooftop solar PV sector¹,

“When the SRES finishes at the end of 2030, the additional integrity requirements imposed on solar PV systems claiming STCs will no longer apply, and the only requirements will be those covered by state and territory electrical safety laws. It is timely to ensure clarity of the roles and responsibilities of Commonwealth versus state and territory regulators and consider transition arrangements.” (p.4)

¹ Clean Energy Regulator (2021), *Integrity Review of the Rooftop Solar PV Sector: Small-scale Renewable Energy Scheme Regulatory Framework and Process Review*

2.3 The process for regulatory impact assessment and cost benefit analysis

Electrical regulation is one of the few areas where new regulations are introduced without assessment of costs and benefits, impacts on business, and impacts on customers. This arises from a regulatory system whereby jurisdictional legislation refers to the AS/NZS 3000 standard, which itself refers to other standards, such as AS/NZS 4777. This means that when Standards Australia modifies standards, the new standard has the force of legislation and does not need to be assessed for its costs and benefits. This is very poor regulatory practice.

Placing the DER technical standards in the NER provides an opportunity to address the poor regulatory practices of the past. We strongly recommend the AEMC provide a view on how the regulatory impacts of DER technical standards should be assessed and whether it is appropriate to continue the current practice whereby jurisdictional legislation gives new standards the force of legislation without any requirement for regulatory impact assessment or cost-benefit analysis.

We agree with the observation made by the AER that, “any significant additional costs to manufacturers or in compliance and monitoring are ultimately borne by consumers, which ought to be ascertained through a regulatory impact statement”.

Introducing new technical standards without cost benefit analysis and consideration of customer impacts undermines the achievement of the National Electricity Objective (NEO).

2.4 A process to avoid and eliminate conflicts between standards and regulations

There is a need to establish a process to ensure there are no conflicts between standards. This issue should be addressed as part of the definition of roles and responsibilities. It also relates to the process for regulatory impact assessment. There is so much layering of regulation due to the existence of “too many cooks” and no one is considering the cumulative impact of the multiple layers of regulation (i.e. whether you are just imposing additional costs for no real benefit), as well as any potential conflicts. Currently, there is no real opportunity in the governance structure to discuss conflicts and cumulative impacts unless the people on the Standards Committee are sufficiently attuned to those issues. It also relates to the problem of who does the regulatory impact assessment and the length of it.

2.5 Whether the Standards Australia model is fit for purpose

We agree with the observations made by Dr Schott in her rule change request that the Standards Australia process:

- relies on a technical committee dominated by network service providers, and market and regulatory bodies,
- relies on a consultation process that is too short and opaque compared with the AEMC consultation process, and
- lacks clarity and transparency in its objectives when developing Australian Standards.

Standards Australia’s reliance on a technical committee dominated by network service providers, and market and regulatory bodies is a result of the way that the standards development process is resourced. In Australia, we operate on a model of standards being developed on a voluntary basis by people who already have demanding jobs. Internationally, many governments recognise the importance of the standards setting process and resource it accordingly. The DER sector is highly competitive and is largely comprised of small to medium enterprises or Australian offices of international companies. Most companies do not have sufficient staff to allocate them to standards development. Only the DNSPs, very large companies, and government bodies are sufficiently resourced for this work. The question of resourcing and training of staff proficient in standards development needs to be addressed. There is a problem with succession and an ageing workforce in standards development. It is not practical to expect a system to be fast and flexible if it relies on retired engineers.

Participation in Standards Australia processes are exclusive. For example, academics are unable to contribute.

Standards Australia processes are not transparent. Participants are bound by non-disclosure agreements.

We understand that the AEMC does not have the power to direct Standards Australia in the way that it operates. Nevertheless, we would welcome the views of the AEMC as to how the Standards Australia model could be improved and whether there can be any role for governments and market bodies in assisting with the improvements.

2.6 The process for developing new DER technical standards

There is no national regulator with oversight of DER technical standards and most jurisdictions do not have a technical regulator. It would be highly desirable to give a single body the authority to assess and recommend DER technical standards in the NER. This would avoid the need to repeat situations like the one that recently arose in South Australia, where a state regulator imposes technical standards unique to one state without due consideration of the economic impacts.

There is a need to develop DER technical standards more rapidly than is the norm in the Standards Australia process. Recently, the ARENA DEIP has supported development of CSIP-Aus to assist the adoption of the IEEE 2030.5 communication protocol for interoperability of DER. This has been a welcome contribution by the ARENA DEIP, and we urge the AEMC to consider how similar initiatives can be supported in future and whether the ARENA DEIP (or another organisation) ought to be recognised and, if necessary, resourced to undertake this role.

2.7 The process for interpretation of DER technical standards

Interpretation of standards is an important area requiring governance. Under the current arrangements, it is unclear which body has the authority to making binding interpretations of how DER technical standards should be applied. Problems arise when DER technical standards are interpreted differently. The lack of clarity leads to decisions and disputes being pushed down to a low level, down to the level of electrical inspectors.

There needs to be a way to resolve genuine disagreements in interpretation. Sometimes standards are ambiguous and there can be several valid interpretations. This is especially problematic when electrical inspectors make differing interpretations.

Standards Australia does not issue interpretations of standards when disagreements arise. Giving an organisation the authority to issue binding interpretations of standards would not risk duplication with Standards Australia processes.

There needs to be a way for genuine disagreements in interpretation to be resolved in a way that has legal force and sets an ongoing precedent. Sometimes standards are ambiguous and there can be several valid interpretations. Disputes are often referred to the CEC, but we do not have the authority to make interpretations that would bind an inspector. CEC has occasionally written to ERAC requesting interpretation of standards, but it is not clear that this is or should be the role of ERAC – particularly for interpretation of DER technical standards.

The AEMC should establish a process for publication of its interpretation of the DER technical standards. Even if the AEMC interpretation would not be binding upon jurisdictions, it would be immensely helpful to have a process for publication of an authoritative interpretation.

2.8 Governance of DER connection standards and the transition towards dynamic operating envelopes

The review should not be limited to device standards. Equally important, is the governance of DER connection standards and the transition towards dynamic operating envelopes.

The review should clarify responsibility for national standardisation of network connection standards, including the extent to which the AER will be responsible for overseeing the development and implementation of dynamic operating envelopes and underpinning standards to support consistent consumer outcomes.

We urge the AEMC to consider avenues to establish a nationally harmonised approach to distribution networks' DER connection standards and ongoing obligations to manage voltage levels on the network and appropriate regulatory oversight through the AER to ensure transparency and alignment to support consistent consumer outcomes

2.9 The governance framework for testing products, including accreditation of testing laboratories and the interaction of DER technical standards with safety standards

The governance framework for product testing and the interaction of DER technical standards with safety standards needs reform.

Problems with the process for accreditation of testing laboratories were highlighted in late 2021 when a committee of electrical safety regulators known as the Electrical Equipment Safety System Standing Committee of Officials Equipment Working Group (EESS SCO EWG) published [two bulletins](#) which outlined requirements for certification of DC isolators for use in solar PV installations and a new process for testing facilities to be considered an "approved testing entity". The [Electrical Equipment Safety System](#), which applies to the safety of household electrical equipment in Queensland, Victoria, Western Australia and Tasmania, required integrated DC isolators to comply with AS 60947-3. However, there was no testing facility in the world that was approved to test to AS 60947-3! This threw into disarray the plans of manufacturers whose inverters have integrated DC isolators and who were required to demonstrate compliance to AS/NZS 4777.2:2020 only weeks after the changes announced by the EESS SCO EWG.

Decisions about the accreditation of international testing laboratories can have major ramifications for the industry nationally. It seems logical that a national body should be responsible for deciding how accreditation of international laboratories apply to products installed across Australia. It seems highly unusual that this decision can be taken by a committee comprising four state government electrical safety officials.

2.10 Roles and responsibilities for monitoring, compliance, and enforcement

Governance of electrical inspection and compliance is highly fragmented. DER integration requires joining up the regulation of DER with the regulation of DNSP performance and with compliance and inspection regimes. The forthcoming AEMC review presents an opportunity to clarify roles and responsibilities for inspection and verification of compliance of DER systems with relevant rules and standards, even if it is beyond the powers of the AEMC to change the enforcement regime.

The framework for enforcement of installation requirements in relation to DER technical standards is inadequate. It seems that no one is responsible for inspecting installed DER systems to verify that the regional settings are correct. Electrical inspectors are responsible for safety and are not responsible for inspecting power quality and other settings related to DER technical standards.

The CEC can issue demerit points, but we rely on other organisations to provide evidence of non-compliance.

It is our understanding that DNSPs are obliged only to ensure that applications for new connections and connection alterations comply with the DER technical standard. They are not expected to verify that

new connections and connection alterations are installed correctly and in accordance with the application.

Responsibility for inspection following installation currently varies by jurisdiction. The CER inspects a representative sample of installations. Licenced electrical inspectors check installations in some jurisdictions and to varying degrees. Solar Victoria has its own inspection regime. DNSPs are responsible for grid connection approval and AEMO requires verification of device compliance post-installation, which is undertaken by DNSPs in most states except for New South Wales (NSW) where installers are responsible. Rules also differ in Western Australia and the Northern Territory.

The more complex the rules become, and the more frequently they change, the more likely it is that we will encounter problems with installers not meeting the requirements.

The CEC is in conversation with AEMO and inverter original equipment manufacturers (OEMs) regarding the feasibility of remote verification of inverter settings. However, even if the feasibility is demonstrated it is unclear who would be responsible for the administration of the system. It seems logical that the role would fall to DNSPs, given that the enforcement powers would very likely be underpinned by the connection agreement between the DNSP and the customer. However, DNSPs might require a means of cost recovery before agreeing to undertake this role.

The review should consider whether DNSPs are best placed to be responsible for enforcement and compliance.

2.11 Roles and responsibilities for regulating interoperability

At present, most discussions regarding DER technical standards for interoperability have focused on inverters. In future, we anticipate these requirements could be extended to other devices behind the connection point, such as pool pumps, air conditioners etc. The review should clarify who has the authority to set technical standards for these devices.