Clean Energy Council submission to the Australian Energy Market Commission Consultation Paper: Governance of Distributed Energy Resources Technical Standards

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Australian Energy Market Commission (AEMC) Consultation Paper 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.

The CEC strongly supports a National Framework to ensure a harmonised approach to minimum DER Technical Standards. We believe it also makes sense that such minimum DER Technical Standards be embedded in the National Electricity Rules (NER) as detailed in the Rule Change request Section 3.2 'Proposed Solution' and specifically Section 3.2.2 'Implement standards through customer connections'. This support is qualified on the basis that a number of other measures should also be considered to support the standards setting and enforcement processes. These include:

- consideration of costs and benefits, customer impacts and business impacts,
- interpretation of standards,
- governance of enforcement, inspection and compliance.

Each of these is discussed in further detail below. 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. Definition of DER Technical Standards

Our understanding is that the AEMC is distinguishing between DER technical standards (of which there are many) and capital letter 'DER Technical Standards' which would be defined by the National Electricity Rules (NER). In this submission, the term "DER technical standards" is intended to refer to the range of technical standards for DER whereas "DER Technical Standard" (with capital letters) is intended to mean a DER technical standard that has been adopted in the NER and which would be the remit of the DER Technical Standards Governance Committee. Our understanding is that the DER Technical Standards Governance Committee would make recommendations to the AEMC regarding which DER technical standard ought to be adopted as a "DER Technical Standard" for the purposes of the NER.

2. Scope of the rule change

We understand that the AEMC is considering whether to limit the scope of the DER Governance of Technical Standards Committee to the AS/NZS 4777.2 standard or to the DER standards that can be required through distribution network service providers' (DNSPs') customer connection agreements. It would be a mistake to limit the consideration to AS/NZS 4777.2. Consideration of all standards required by DNSPs' customer connection agreements would be a better way to define the scope of the work of the DER Governance of Technical Standards Committee because this approach integrates better with the proposed approach to use customer connection agreements as the means of enforcement. There are other DER technical standards that should be considered, such as 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.

It will be important for the scope of 'DER Technical Standards' to include standards for flexible load as well as for generation. Control of generation is only one part of the challenge. Interoperability must ultimately include both generation and load. This will be crucial for managing the net balance of customer generation and load. We must not lose sight of customers and the way they use electricity.

We note that in its DER Technical Standards rule change proposal the Australian Energy Market Operator (AEMO) proposed a definition of DER as follows:

> "AEMO proposes that a general definition of "Distributed Energy Resources" that covers resources and assets including small and medium scale distributed generation (such as solar PV), energy storage (such as small and medium-scale batteries and electric vehicles that can deliver energy from the vehicle to the power system) and controllable loads (such as air conditioners, electric storage hot water systems, pool pumps, and electric vehicle supply equipment) that connect to the distribution system."

We recommend the AEMC consider determining the scope of the DER Technical Standards Governance Committee with reference to a definition of what is 'DER'. If the scope of the work of the DER Technical Standards Governance Committee is limited to what is defined as a DER Technical Standard in the NER, then the usefulness of the Committee will be too limited. Ultimately, the DER Technical Standards Governance Committee should have the authority to consider standards applicable to any distributed asset capable of exporting to the grid (solar, batteries, vehicle to grid electric vehicles (EVs)) and controllable load that is required to respond to a DNSP or that is able to respond to market signals.

The work of the DER Technical Standards Governance Committee 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.

Governance of customer connection agreements is not best practice. Currently, DNSPs can unilaterally amend the terms and conditions for new customer connection agreements without any requirement for cost-benefit analysis, consultation or consideration of customer impacts and business impacts. The Governance of DER Technical Standards Committee should be tasked with reviewing and approving all amendments to DNSPs' customer connection agreements where the amendments relate to DER Technical Standards.

Recommendations

Governance of standards for DER integration should be considered in a broad ranging process and should include gaps in the regulation of DNSPs' role in DER integration and enforcement and compliance.

The scope of the work of the DER Governance of Technical Standards Committee should not be limited to AS/NZS 4777.2. Its scope should include all DER Technical Standards included in DNSPs' customer connection agreements.

The Governance of DER Technical Standards Committee should be tasked with reviewing and approving all amendments to DNSPs' customer connection agreements where the amendments relate to DER Technical Standards.

3. Models to improve Governance of DER Technical Standards

The ESB proposed four options to improve governance of technical standards:

Option 1: Maintain the status quo

Option 2: Modifications to the existing arrangements through targeted interventions such as additional resources

Option 3: Development of a new coordinating structure and process, and

Option 4: Wholesale reform including the centralisation of DER technical standards governance decision-making through a new body.

There is strong support among the DER industry (including DNSPs, most of which are active members of the CEC) for the establishment of the DER Technical Standards Governance Committee in line with 'Option 3'. The only significant area of disagreement is regarding the extent to which the DER Technical Standards Governance Committee should be responsible for the detailed technical work required to develop new standards.

The CEC urges consideration of two alternative approaches under Option 3:

Option 3a: Development of a new coordinating structure and process, with the DER Governance of Technical Standards Committee responsible for governance while leaving the detailed technical work of developing new DER technical standards to existing bodies such as Standards Australia, the Distributed Energy Integration Program (DEIP), the International Electrotechnical Commission (IEC), the Institute of Electrical and Electronic Engineers (IEEE) and other organisations that specialise in technical standards.

Option 3b: Development of a new coordinating structure and process, with the DER Governance of Technical Standards Committee responsible for governance and design of all DER Technical Standards

We outline below the areas of agreement regarding the roles for the DER Governance of Technical Standards Committee followed by consideration of the pros, cons, and risks of Options 3a and 3b.

4. Governance roles for the DER Governance of Technical Standards Committee

The DER Technical Standards Governance Committee should be given responsibility in the following areas:

- Review of roles and responsibilities of existing DER technical standards bodies,
- Setting a DER Technical Standards work program (or roadmap),
- Identifying policy priorities for DER and where new standards are required to enable delivery of policy priorities,
- Articulating the case of changes to standards,
- Publishing an annual work program to provide advice on direction and priorities for DER technical standards,
- Providing advice on the appropriate priority and sequencing of DER Technical Standards,
- Bringing transparency to the process of developing and setting standards,
- Undertaking cost-benefit analysis, consultation and consideration of customer impacts and business impacts prior to new standards taking effect with force of legislation,
- Providing binding interpretations of DER Technical Standards where there are legitimate disagreements in interpretation,
- Identifying governance issues regarding DER Technical Standards and providing advice to jurisdictional governments and the Energy National Cabinet Reform Committee (formerly known as COAG Energy Council) to assist with better consistency between jurisdictions,
- Directing DNSPs regarding the DER technical standards that should be included in customer connection agreements,
- Clarifying responsibility for and monitoring performance of enforcement of DER Technical Standards,
- Providing funding for research or commissioning research to support development of new standards,
- Leveraging funding (e.g. from the Australian Renewable Energy Agency (ARENA)),
- Ensuring consistency in application of standards, such as for power quality settings,
- Ensuring that the right people with the right expertise are appointed to the right committees,
- Considering the customer impacts of proposed changes to standards and customer connection agreements,
- Identifying gaps in legislation and jurisdictional requirements,
- Addressing overlap and duplication in regulation of DER (e.g. AS/NZS 4777.2:2020 is now enforced through the NER and through jurisdictional regulations that enforce AS 3000), and
- Considering the applicability of international standards to DER in Australia.

We provide additional details on some of these roles below.

4.1 Reviewing roles and responsibilities of existing DER technical standards bodies

While we recognise that the AEMC does not have the power to determine the role of state governments in setting DER technical standards, a detailed review of the roles and responsibilities of players in the DER space will be important in identifying the gaps and providing industry with clear guidance as to the roles of the AEMC, AEMO, AER, ESB and DNSPs.

It will be important for the AEMC to make it clear as to whether the DER Technical Standards Governance Committee is intended to replace bodies such as the Distributed Energy Integration Program (DEIP) and the ESB Maturity Plan, or if these processes are intended to run parallel and in a complementary manner. If the intent is for the processes to run in parallel, then it will be important to ensure that they are not duplicative.

4.2 Setting a DER Technical Standards work program (or roadmap)

The DER Technical Standards roadmap could initially be based on the Energy Security Board (ESB) DER roadmap and could evolve as new needs arise. 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 DER Technical Standards Governance Committee should be responsible for consultation with industry as it develops its roadmap. It should engage third parties to support the consultation and development of advice on appropriate sequencing for new DER policies and the DER Technical Standards required for their delivery.

4.3 Bringing transparency to the process of developing and setting standards

An important role for the DER Standards Governance Committee will be to ensure that rules and standards are transparent and accessible and that the processes to develop them are transparent and accountable. A limitation of the Standards Australia process is its reliance on Non-Disclosure Agreements as a standard practice for its committees and procedures. Representatives appointed to the DER Standards Governance Committee must be free to share information with the people they are meant to represent.

4.4 Consideration of costs and benefits, customer impacts and business impacts

Electrical regulation appears to be one of the few areas where new regulations are introduced without assessment of costs and benefits, impacts on business, and impacts on customers. This is due to a convoluted regulatory system where state and territory legislation refers to the AS/NZS 3000 standard (also known as 'the wiring rules'), and AS/NZS 3000 refers to other standards, such as AS/NZS 4777 and AS/NZS 5139. This means that when Standards Australia modifies standards, the new standard has the force of legislation behind it 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 National Electricity Rules (NER) provides an opportunity to address the poor regulatory practices of the past. We strongly recommend the AEMC clarify how the regulatory impacts of DER Technical Standards will be assessed prior to being adopted in the NER.

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".

The current approach, where technical standards are introduced without cost benefit analysis and consideration of customer impacts, is unlikely to contribute to the achievement of the national electricity objective (NEO) or the national energy retail objective (NERO).

Recommendation

The AEMC should explain how it proposes to assess the regulatory impacts of DER Technical Standards and future amendments to the DER Technical Standards prior to their adoption in the NER.

4.5 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. The lack of clarity in roles and responsibilities 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 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. Differences of opinion can arise when electrical inspectors differ in their interpretation. 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 the Electrical Regulatory Authorities Council (ERAC) requesting interpretation of standards, but it is not clear that this is or should be the role of ERAC.

The DER Standards Governance Committee should be given responsibility for issuing interpretations of DER Technical Standards where there is ambiguity or differences of opinion among electrical inspectors. Ideally, the interpretation would be binding on electrical inspectors and other regulators. There should also be a process that allows industry or regulators to request clarification regarding interpretation of DER Technical Standards from the DER Technical Standards Governance Committee.

Recommendations

The AEMC should clarify who is responsible for making legally binding interpretations of DER Technical Standards and the process for seeking interpretations.

The DER Technical Standards Governance Committee should be given the role and the authority to make binding interpretations where DER Technical Standards are ambiguous and there are valid differences of opinion regarding the correct interpretation.

4.6 Clarifying responsibility for and monitoring performance of enforcement of DER Technical Standards

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.

It is unclear who is responsible for compliance and enforcement of DER Technical Standards in the NEM. It would be helpful if the AEMC could publish a guideline on who is responsible for compliance and enforcement of DER Technical Standards.

For example, are DNSPs obliged only to ensure that applications for new connections and connection alterations comply with the DER Technical Standard, or if they are also obliged to ensure that new connections and connection alterations are installed correctly and in accordance with the application? Are DNSPs responsible for verifying power quality settings? Responsibility for inspection following installation currently varies by jurisdiction. The Clean Energy Regulator (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 the Australian Energy Market Operator (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 AEMC's review is an opportunity to clarify and consolidate roles and responsibilities for inspection and verification of compliance of DER systems with relevant rules and standards.

A long term objective of the policy roadmap should include a review of roles and responsibilities to determine whether DNSPs are best placed to be responsible for enforcement and compliance.

Recommendation

The AEMC should clarify who is responsible for compliance and enforcement of DER Technical Standards.

5. Detailed technical roles for the DER Governance of Technical Standards Committee

There are differences of opinion within the DER industry as to whether the DER Technical Standards Governance Committee should be tasked with the detailed technical work to develop DER Technical Standards or if that should remain with existing bodies, such as Standards Australia. As noted above, the CEC urges consideration of two alternative approaches under Option 3:

Option 3a: Development of a new coordinating structure and process, with the DER Governance of Technical Standards Committee responsible for governance while leaving the detailed technical work of developing new DER technical standards to existing bodies such as Standards Australia, the DEIP, the IEC, the IEEE and other organisations that specialise in technical standards.

Option 3b: Development of a new coordinating structure and process, with the DER Governance of Technical Standards Committee responsible for governance and design of all DER technical standards

Table 1 (below) summarises the pros, cons and risks associated with each of these approaches.

Table 1 – Advantages, disadvantages and risks of assigning responsibility for detailed technical work on standards to the DER Governance of Technical Standards Committee

	Option 3a	Option 3b
Advantages	The Standards Australia process is well established. The EL042 Committee of Standards Australia is widely respected for the quality of its work. The EL042 Committee of Standards Australia runs a rigorous process.	There would be direct accountability for poor performance in standards development. There would be broader representation of interests in the standards development process. The detailed technical work of developing DER Technical Standards could be delegated to a sub-committee of experts
Disadvantages	The Standards Australia process can take a long time. The Standards Australia process lacks transparency and is bound by confidentiality agreements. It is unclear who is accountable for poor performance in standards development. The AEMC cannot direct Standards Australia.	AEMC committees and processes can also take a long time.
Risks	The current problems with transparency, timeliness and good regulatory practices would continue.	The DER Technical Standards Governance Committee or its sub-committees might do a bad job of the detailed technical work.

6. Interaction with the Government's Integrity Review of the Rooftop Solar PV Sector

The Federal Government has published a review of the regulatory framework and process for the Small-scale Renewable Energy Scheme (SRES). The review recommends changes to the regulation of DER, including changes to the role of the CER and CEC. While the changes to regulations are not expected to overlap significantly with the content of the review of governance of DER Technical Standards, it is important to acknowledge the issues that may be affected by both reviews. These issues include:

- Who will step into the role being played by the CER following the demise of the SRES, which is scheduled to terminate by 2030 and is expected lose its impact and influence from around 2025?
- Who can make binding interpretations when there are differences in interpretation of DER Technical Standards?
- Will the Governance of DER Technical Standards Committee set minimum requirements enforced through customer connection agreements while the CER sets best practice requirements encouraged through eligibility for the SRES?

Even though the overlap between the two review processes is not likely to be significant, there might be a need to consider the most appropriate sequencing. The CEC recommends that the publication of the Final Determination for the AEMC's review of Governance of DER Technical Standards should occur after the amendment of the regulations for the Renewable Energy (Electricity) Act.

Responses to Questions Raised in the Consultation Paper

QUESTION 1: ASSESSMENT FRAMEWORK

1. Do you agree with the proposed assessment framework?

We are generally supportive of the assessment framework, however it appears to be incomplete and should also include quality, as defined by the AEMC and outlined in further detail below.

2. Should the assessment framework include any additional considerations? If so, what are they and why?

The NEO refers to the "price, quality, safety, reliability and security of supply of electricity".

For the purposes of a rule change or review against the relevant energy objectives, the AEMC has defined "quality" as follows[1]:

> There is a spectrum for what 'quality' can mean. In an electricity or gas context it simply relates to the technical quality of the energy (e.g. in electricity it refers to the variations to frequency and voltage magnitude, and imperfections in the voltage waveform), while in a retail context it can encompass broader 'quality of service' aspects, depending on the circumstances.

Clearly, a review encompassing DER Technical Standards should include consideration of quality.

Recommendation

The assessment framework for the review should include consideration of quality, as well as the proposed assessment against security and reliability, price, and safety objectives.

QUESTION 2: IDENTIFYING GOVERNANCE PROBLEMS

1. Do you agree with the problems identified by the rule change request? Why?

We agree that "the inability to implement consistent technical standards across the NEM" is problematic and justifies the rule change request.

We agree that a critical weakness in the current governance system is the "lack of harmonisation in network connection standards across DNSPs" and that "network technical standards provide for minimum DER technical standards, but there is a lack of coordination across the NEM". Requirements for grid connection approval have a significant impact on customers and businesses and this will become more pronounced in future with the introduction of new requirements such as remote disconnect and reconnect capability, and dynamic operating envelopes. There is no formal process requiring DNSPs to publicise, consult on or justify changes to grid connection rules. Even the requirement to publish grid connection requirements has been circumvented in the past with claims that the contract between the DNSP and the customer satisfies the requirement for publication.

We agree there is a problem with "under-resourcing of compliance and enforcement activities, and gaps especially for non-safety related standards".

We also agree that there is a need for "a fast, flexible and transparent standards setting process". However, if the proposed process is intended to replace the Standards Australia process it is unclear whether it would be any faster. Adequately resourcing the DER Technical Standards Governance Committee with a secretariat of full-time, professional staff to develop DER Technical Standards would assist with improving the speed with which standards can be developed. Alternatively, the DER Technical Standards Governance Committee could commission research and outsource the detailed technical work of developing new DER Technical Standards to experts.

[1] AEMC, Applying the energy market objectives, 8 July 2019

Publication of DER Technical Standards in the NER would assist with making standards more accessible and affordable.

In addition to the problems identified by the ESB, the current standard setting process lacks:

- A process to allow for consideration of costs and benefits, customer impacts and business impacts of DER technical standards prior to them receiving the force of law, and
- A process for binding interpretation of standards where legitimate differences of interpretation arise.

We disagree with the ESB's conclusion that a problem exists because "the publication of Australian or international standards does not mean automatic adoption by manufacturers or jurisdictions". It is factually incorrect to state that Australian DER technical standards are not automatically adopted. Australian states and territories give legal force to the electrical wiring standard, AS 3000, through state legislation and AS 3000 in turn calls up a range of DER technical standards, including AS/NZS 4777.2, AS 5139 and others. However, this is poor regulatory practice and in most other industries the introduction of new rules with legislative backing would be preceded by a Regulatory Impact Statement or another process to consider costs and benefits and the impacts on customers and businesses.

It would be ill-advised to propose that international standards should be automatically adopted by jurisdictions. Many international standards are simply not appropriate in an Australian context.

2. Do you agree with the rule change request on the causes of the identified problems? Why?

Dr Schott's rule change request notes 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
- lacks clarity and transparency in its objectives when developing Australian Standards

We agree that the Standards Australia process relies on a technical committee dominated by network service providers, and market and regulatory bodies. This is a function 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. Even then, we are aware of some staff in DNSPs who work long hours and on their own time to help deliver standards in a timely manner. There is also a problem with succession and an ageing workforce in standards development. We are drawing on the intellectual capital that was developed when the electricity industry was owned and operated by state governments. It is not practical to expect a system to be fast and flexible if it relies on retired engineers and people working after hours. The question of resourcing and training of staff proficient in standards development needs to be addressed by the rule change.

3. To what extent has the Commission's recent rule change on DER technical standards resolved or likely resolve the identified governance issues?

The CEC welcomed the decision to creates a definition of DER Technical Standards that incorporates AS/NZS 4777.2:2020 in the NER. We also support the requirement that DER Technical Standards must be embedded in DNSPs' customer connection agreements. However, the DER Technical Standards rule change did not resolve the key governance issues regarding DER Technical Standards. There is still no process to consider costs and benefits, customer impacts and business impacts of new DER

Technical Standards. There is still no process to resolve differences in interpretation of standards. Responsibility for compliance and enforcement of DER Technical Standards is unclear.

4. When do longer term issues such as interoperability and cyber security need to be addressed? Can existing governance arrangements and the recent rule change address these issues in a timely manner or is further governance reform required?

We are concerned that the AEMC considers issues of interoperability and cyber security to be "longer term issues". Interoperability and cyber security should be priority issues for the work program that would be undertaken by the DER Technical Standards Governance Committee.

The ARENA DEIP is actively developing the implementation guides and other technical inputs needed for a new framework for interoperability and cyber security. It would be a mistake for the proposed new committee to attempt to take over that work. However, it might be appropriate for sub-committees of the DEIP to transition towards being a sub-committee of the DER Technical Standards Governance Committee.

5. Are there any other governance problems not identified by the rule change request? If so, why does the AEMC need to consider these issues?

The AEMC's Final Determination on DER Technical Standards[2] noted that, "… the Commission considered the existing compliance and monitoring systems under the Clean Energy Council and the Clean Energy Regulator relating to the certification of products and installers of electricity generating systems should continue to be used by industry as they are complementary to the overall compliance arrangements. The Commission considers that this approach is consistent with achieving the NEO as this avoids imposing inefficient costs of a new potentially duplicative compliance system on electricity consumers" (p.v)

Since the publication of the Final Determination on DER Technical Standards the CER has published its review of the rooftop solar PV sector[3], which proposes changes to the role of the CEC and the CER. The role of the CEC will be removed from regulations and replaced with a new process. The CER's report notes,

> "When the SRES finishes at the end of 2030, the additional integrity requirements imposed on solar PV systems claiming [small-scale technology certificates] 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)

QUESTION 3: ASSESSING THE MARKET IMPACT OF IDENTIFIED PROBLEMS

1. Do you face any costs from governance arrangements in place prior to the commencement of the new DER technical standards rule change on 18 December 2021? Can you quantify those costs?

Yes.

A recent example of loose governance leading to unnecessary costs was the introduction of the short duration under voltage disturbance ride through (VDRT) test procedure by the South Australian Government and AEMO in 2020.

In 2020 the CEC and its members worked closely with AEMO to support the introduction of its VDRT test procedure, which has been mandatory in South Australia, on the Western Power network and in

[2] AEMC, Technical standards for distributed energy resources, Rule determination, 25 February 2021
[3] Clean Energy Regulator (2021), *Integrity Review of the Rooftop Solar PV Sector: Small-scale Renewable Energy Scheme Regulatory Framework and Process Review*

Victoria since 28 September 2020, 1 July 2021, and 1 September 2021 respectively. This test procedure will be superseded when AS/NZS 4777.2:2020 commences from 18 December 2021.

Based on analysis by the AEMO and confirmed by industry participants, the VDRT test procedure did not achieve what was intended with regard to unexpected inverter behaviour. Testing undertaken by the University of New South Wales (UNSW) and AEMO indicates that AS/NZS 4777.2:2020 has resolved the issue of unexpected inverter behaviour in response to grid disturbances.

We estimate that bringing forward the date for compliance with the VDRT test procedure in advance of AS/NZS 4777.2:2020 cost inverter manufacturers in the order of tens of millions of dollars in total for product changes and retesting of products. The costs of this exercise far exceeded any benefits. A process to consider the costs and benefits, customer impacts and business impacts of changes to regulatory requirements could have delivered a better result for customers.

2. Alternatively, how would you be impacted if the Commission does not establish new governance arrangements for DER technical standards?

If new governance arrangements for DER Technical Standards are not established there will continue to be no consideration of costs and benefits, customer impacts and business impacts prior to new DER Technical Standards acquiring the force of legislation. This would continue the poor regulatory practices operating today.

If there is no process for obtaining binding interpretations of DER Technical Standards then the industry will continue to face the risk of unnecessary costs, which are ultimately passed on to consumers.

3. How certain are you about any forecast future costs?

Forecasting future costs is uncertain. What is more certain is the costs incurred due to poor governance and regulatory practices. The introduction by the South Australian government of the VDRT test procedure in advance of AS/NZS 4777.2:2020 is an example of a process where new technical standards were introduced without appropriate consideration of the costs, benefits, and impacts. That exercise resulted in an estimated cost to industry of tens of millions of dollars for no discernible improvement to system security.

QUESTION 4: DER TECHNICAL STANDARDS IN THE RULES

1. Should DER technical standards relevant to the NEM be included in the NER, or a subordinate instrument?

Transparency and accessibility of rules and standards is of utmost importance and if the use of a subsidiary instrument makes rules and standards opaque then this approach should be rejected.

For example, the DER Technical Standard rule change proposed by AEMO had proposed a subsidiary instrument that would insert minimum DER Technical Standards into DNSP connection contracts. This would be a major backward step for transparency and accessibility. The CEC knows from experience the difficulty of understanding grid connection rules based on information available from connection contracts or direct contact with DNSPs. We spent more than a year collecting information from DNSPs to piece together a comprehensive set of advice on power quality requirements for grid connection of inverters. And that is just one of many requirements included in grid connection agreements.

It would be preferable for DER Technical Standards to be published in the NER because that is the ‘gold standard’ for transparency and accountability. We understand that changes to the NER can take months, however that should not be an insurmountable barrier given that device manufacturers generally require 12 months for implementation of new technical standards and DNSPs generally require at least a year for new standards.

2. How could any new governance arrangements interact with Standards Australia existing processes in a way which avoids duplication, while ensuring standards are developed in a timely manner?

Standards Australia's existing processes are not intended to be the place where new standards are subjected to cost-benefit analysis or consideration of customer impacts and business impacts prior to entry into force. There would be no duplication at all if Standards Australia processes continue to develop standards and if the proposed new AEMC committee is given responsibility for assessing cists, benefits and impacts prior to the adoption of standards into jurisdictional regulatory frameworks.

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.

3. What would be the main benefits from including DER technical standards in the NER, NERR or a subordinate instrument? Are there any risks?

Electrical regulation appears to be one of the few areas where new regulations are introduced without assessment of costs and benefits, impacts on business, and impacts on customers. This is due to a convoluted regulatory system where state and territory legislation refers to the AS/NZS 3000 standard (also known as 'the wiring rules'), and AS/NZS 3000 refers to other standards, such as AS/NZS 4777 and AS/NZS 5139. This means that when Standards Australia modifies standards, the new standard has the force of legislation behind it 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 clarify how the regulatory impacts of DER Technical Standards will be assessed prior to being adopted in the NER.

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".

4. Did the recent rule change on DER technical standards partly address problems identified by Dr Schott's rule change request?

The DER Technical Standards rule change has improved the transparency of the regulatory framework. It did not address the governance issues that ought to be the remit of the DER Technical Standards Governance Committee.

5. If so, does the recent rule change on DER technical standards reduce the need to adopt the new governance arrangements proposed by the rule change request?

No. The recent rule change on DER Technical Standards did not address the problems of governance.

QUESTION 5: WHO DEVELOPS AND MAINTAINS DER TECHNICAL STANDARDS

1. Should a new committee be responsible for determining or advising on DER technical standards in the NEM?

The CEC supports the proposal to establish a DER Standards Governance Committee under the NER. We agree with the findings of the Sapere/CutlerMerz review, that the governance of DER Technical Standards is fragmented and lacks clarity of roles and coordination. We agree that 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. The proposed DER Standards Governance Committee would greatly assist with the resourcing and coordination of DER Technical Standards.

In determining the role for the DER Technical Standards Governance Committee, it will be important to strike a balance between competing objectives, including:

- the need for technical expertise versus the need to take account of broader considerations, such as the long-term interests of consumers, impacts on industry and overall costs, benefits, and risks of proposals, and
- the need for speed versus the need for accountability, good process and appropriate consideration of important issues that might be overlooked by a committee comprised of members selected for their technical expertise.

As a means of balancing the competing objectives, the CEC recommends consideration of a hybrid model that takes advantages of the strengths of the key institutions involved in the proposed structure.

This could involve:

- Low level technical committees (possibly convened by Standards Australia, or by the DER Technical Standards Governance Committee or possibly working independently) to continue the usual work of detailed standards development,
- The DER Technical Standards Governance Committee making recommendations for adoption of a standard, which is referred to the AEMC for a final determination, and
- The AEMC approving (or rejecting) recommendations made by the DER Technical Standards Governance Committee.

Under this model it is proposed that the AEMC would not reject recommendations on technical grounds. The role for the AEMC would be to analyse costs, benefits and risks of proposals, the likely impact on industry and whether the proposal is in the long-term interests of energy consumers.

The scope of the DER Technical Standards Governance Committee 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. An important role for the DER Technical Standards Governance Committee will be to ensure that rules and standards are transparent and accessible and that the processes to develop them are transparent and accountable.

2. If so, how should members be appointed to the new committee?

It will be important to ensure that members of the DER Technical Standards Governance Committee who are drawn from industry are widely considered to have legitimacy and that there are clear requirements for accountability to the stakeholder group they are drawn from. Conflicts of interest (and perception of conflicts of interest) is a risk that needs to be managed. We would also recommend a Code of Conduct (or similar arrangement) for representatives to ensure that expectations are understood and to establish a benchmark for accountability.

The CEC has a deep understanding and extensive experience in matters of representation, consultation and managing real or perceived conflicts of interest. We would be pleased to advise on or more actively assist with the selection of representatives to the DER Technical Standards Governance Committee.

3. What knowledge and experience would be needed to develop and maintain DER technical standards in the NEM?

The committee should be chaired by an independent DER expert.

The consumer expert should be an expert in DER-specific consumer issues. The broader customer experience in respect of the electricity sector is already well represented in existing forums.

It is crucial that all members of the committee responsible for setting standards understand the industry and the practicality of their proposals. Members of the committee should also have demonstrated understanding of the interests of consumers and the impact of proposals on businesses, as well as an understanding of technical issues.

4. Should membership of a new committee be paid or voluntary?

We would welcome clarification of the process of budget allocation to and by the DER Technical Standards Governance Committee. One of the main issues with the current process of standards development is that it relies on volunteers and is inevitably dominated by well-resourced companies and regulated entities. Relying on volunteer labour might be suitable for an industry that changes slowly but it is inadequate for a rapidly changing industry. Standards development simply cannot keep up with the rapid pace of technological change. Requiring membership of the new committee to be voluntary would entrench the problems associated with reliance on volunteer labour. If there is a desire for broad representation and rapid change, then membership should be paid. The DER Technical Standards Governance Committee should also be allocated a budget so that it can commission expert analysis to expedite develop of new DER Technical Standards.

5. Should the committee report to the Commission as proposed by the rule change request? Or should the new committee report to another entity? If so, whom?

Yes. The DER Technical Standards Governance Committee should be responsible for considering DER technical standards, developed elsewhere, for their economic impacts and their impacts on customers and businesses. Where it finds in favour of a proposed standard, it should propose adoption of the DER Technical Standard to the AEMC for a final determination. The AEMC would not reconsider technical aspects of the proposed standard, only issues of economics, customer impacts and impacts on businesses.

6. How would the governance arrangements proposed by the rule change request interact with existing governance arrangements and the recent DER technical standards rule change? Are there risks of duplication or divergence?

There is no national regulator with oversight of DER technical standards and some states and territories also 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.

7. Are the proposed governance arrangements likely to reduce how long it takes to develop and implement new DER technical standards for the NEM? If not, would any alternative approaches increase the pace of setting standards for the NEM?

On their own, the proposed new governance arrangements are unlikely to speed up the pace of development of DER Technical Standards. They should, however, substantially improve the regulatory practice. The current system whereby technical standards gain legislative force without any assessment of their economic, consumer or business impacts is very poor regulatory practice.

The pace of setting standards for the NEM would be increased by paying people to do the work, rather than continuing to rely on volunteer labour. The DER Technical Standards Governance Committee should also be allocated a budget so that it can commission expert analysis to expedite develop of new DER Technical Standards.

8. Is there a trade-off between how quickly new technical standards are developed and other NEM objectives such as the safety, security and reliability of power supply?

Yes, all other things being equal. However, all other things do not need to be equal. We could move from a volunteer-based system, to a system where full-time professionals are given responsibility for development of standards, consultation, and impact assessment. Providing resources for DER Technical Standards would avoid the need for trade-offs.

QUESTION 6: HOW PRESCRIPTIVE SHOULD NEW GOVERNANCE ARRANGEMENTS BE

1. How much prescription should be included in the NER to implement the proposed new governance arrangements?

The current arrangements for DER technical standards suffer from a lack of prescription regarding governance and (in some cases) too much prescription regarding details. This results in a situation where no one knows exactly who is in charge and when decisions are made, they can be very prescriptive and can seem ad hoc.

The arrangements in the NER should make it very clear which organisations is expected to:

- Develop DER Technical Standards,
- Assess proposed adoption of DER Technical Standards for their economic impacts,
- Clarify ambiguities in standards and issue binding interpretations, and
- Monitor compliance and enforcement of DER Technical Standards.

The governance arrangements should be very clear, precise, and prescriptive about who is supposed to do what. They should not attempt to be prescriptive about how things should be done. They should only be prescriptive about what needs to be done and who needs to do it.

2. Should the AEMC periodically review DER technical standards to determine if further regulatory intervention is needed? What level of prescription should be included in the NER to implement this option?

Yes, a periodic review would be beneficial.

3. Are there any solutions that can complement voluntary initiatives to address DER technical standards? For example, how could new governance arrangements in the NER support DEIP?

Organisations such as the DEIP, Standards Australia and various other industry working groups could continue their role in the development of DER Technical Standards. There could be merit in shifting reporting arrangements, so that some existing sub committees under the DEIP (for example) become sub committees of the DER Technical Standards Governance Committee.

The DER Technical Standards Governance Committee should be allocated a budget so that it can commission expert analysis and leverage funding from ARENA and other sources. Where standards continue to be developed by DEIP and others the DER Technical Standards Governance Committee should be responsible for consultation and consideration of economic impacts prior to recommending their adoption in the NER.

4. Is it feasible to amend the role of the reliability Panel to cover DERR technical standards? Would this be preferable to creating a new advisory committee on DER technical standards?

The Reliability Panel currently has no one selected for the DER expertise. We understand that it is in the process of recruiting one DER expert to provide a DER perspective. Amending the role of the Reliability Panel would not be preferable to creating a new advisory committee.

5. Are there other alternative solutions to address the issues identified in the rule change request? What level of prescription in the NER is required to successfully implement these solutions?

Yes. The concerns about the speed with which standards are developed could be addressed by providing resources for standards development rather than relying on volunteer labour. That would not address all governance issues, but it could help.

Another issue not considered is the lack of professional people early in their career being trained in development of standards. The system has been running off the intellectual capital that was built up

decades ago. The average age of people involved in standards development is approaching retirement age. This situation will continue to worsen if we continue to rely on volunteer labour.

Summary of Recommendations

1. The AEMC should explain how it proposes to assess the regulatory impacts of DER Technical Standards and future amendments to the DER Technical Standards prior to their adoption in the NER.
2. The assessment framework for the review should include consideration of quality, as well as the proposed assessment against security and reliability, price, and safety objectives.
3. The AEMC should clarify who is responsible for making legally binding interpretations of DER Technical Standards and the process for seeking interpretations.
4. The DER Technical Standards Governance Committee should be given the role and the authority to make binding interpretations where standards are ambiguous and there are valid differences of opinion regarding the correct interpretation.
5. The AEMC should clarify who is responsible for compliance and enforcement of DER Technical Standards.
6. Governance of standards for DER integration should be considered in a broad ranging process and should include gaps in the regulation of DNSPs' role in DER integration and enforcement and compliance.
7. The scope of the work of the DER Governance of Technical Standards Committee should not be limited to AS/NZS 4777.2. Its scope should include all technical standards included in DNSPs' customer connection agreements.
8. The Governance of DER Technical Standards Committee should be tasked with reviewing and approving all amendments to DNSPs' customer connection agreements where the amendments relate to DER Technical Standards.