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Response to the ESB's Governance of DER Technical Standards Consultation Paper

Introduction

1. This is Vector Limited's (Vector) response to the Energy Security Board's (ESB) consultation paper on the *Governance of DER Technical Standards*, dated July 2020.
2. As one of the leading non-network smart metering service providers in the National Electricity Market (NEM), Vector supports the transition to new or newer technologies and more advanced standards, including for distributed energy resources (DER).
3. We support governance arrangements for DER standards that 'optimise the benefits of DER investment for all energy system users'. In our view, such arrangements are those that remain sufficiently adaptive, over time, to an environment of increasingly shorter technology lifecycles and potentially disruptive energy markets. We encourage the ESB to consider approaches to DER standards that are more flexible than mandating technical standards or technical specifications – approaches that target outcomes rather than technical solutions.
4. As such, we support the establishment of a DER Standards Governance Committee that is advisory in nature, and focuses on service standards or service levels for DER *installations/systems*, rather than on technical standards for DER devices. We do not consider the creation of a new subsidiary instrument in the National Electricity Rules (NER) to be warranted for this purpose.
5. In our view, identifying the appropriate DER standards, while seemingly mainly technical in nature, is a complex and multi-faceted process that requires holistic solutions. This process requires an understanding of exactly how a DER service is to be used, under what circumstances and timeframes the service must operate, and what supporting processes are required to enable the service. This is expected to take some time to design and implement - beyond publishing a set of technical standards - before any benefits will be realised.
6. We also have concerns around the impacts of the introduction of new DER technical standards that will potentially curtail customers' generation, and how this will be communicated to existing and potential customers. For instance, customers may seek or need to be compensated should their DER consumption or generation be curtailed. Those who fail to upgrade their system could end up getting penalised or would be unable to recover the full value of their 'stranded asset'. This could generate negative consumer sentiment – a topic of increasing interest to mainstream media. We believe the industry needs to take consumers along in the transition to new technologies.
7. As a metering service provider in the NEM, it is our observation that regions that have a high penetration of smart meters already have better tools to manage the challenges of increasing uptake of DER, particularly solar PV and batteries, without placing additional costs or

limitations upon the consumer. The accelerated deployment of smart meters that enable the delivery of DER services must therefore be encouraged.

Vector Metering

8. Vector's Australian and New Zealand advanced metering business – Vector Metering – is an accredited Metering Provider and Metering Data Provider, and a registered Metering Coordinator, in the NEM and the equivalent in New Zealand. Vector Metering provides a cost-effective end-to-end suite of energy metering and control services to energy retailers, distributors and consumers.
9. Vector is one of New Zealand's largest listed companies and provides energy and technology services across the country, with a vision of *creating a new energy future*. We are the largest provider of electricity and gas distribution network services in New Zealand, and the country's leading provider of smart metering solutions. We also provide fibre network services, solar PV, energy storage, home energy management solutions, and electric vehicle recharging services.
10. As a leading technology solutions company, we believe that any proposed requirements relating to new technologies should provide the right incentives to accelerate their introduction rather than diminish incentives for innovation and investment. The rapid evolution of energy technologies and markets makes it important for new technologies to be tested or installed to meet the changing requirements of the industry and consumers, rather than stifled through prescriptive arrangements.

Responses to consultation questions

Q1: Do you support the proposal to establish a DER Standards Governance Committee under the National Electricity Rules? If not, what alternative would you suggest?

11. Vector supports the establishment of a DER Standards Governance Committee (the Committee) that is advisory in nature, and would establish a coordinating structure and processes that provide 'line of sight' for industry participants and other interested parties on DER standards-related matters.
12. We support a Committee that focuses on service standards for DER systems or installations, rather than on technical standards for specific DER devices. Mandating DER technical standards or specifications is likely to impose the following limits and costs:
 - a. Market competition is limited by locking out existing and potential market participants who are not currently using the required technical standards or who believe that better standards or technologies are available or could become available. This effectively becomes a barrier to market entry that could stifle market competition and innovation.
 - b. Where barriers to entry are created, consumers will not benefit from lower cost service provision or the choice of better services that meet their specific needs.
 - c. Mandated technical standards makes service providers compliance/regulator focused, rather than focusing on introducing new offerings to the market in a timely manner. This does not provide strong incentives for market participants to become effective competitors and innovators that keep striving to meet rising consumer expectations.
 - d. Mandating specific technical standards before they are used (or widely used) creates the risk of 'gold plating' services. This generates unnecessary costs for consumers who do not want or need some of the mandated functionalities.

- e. In the near future, new technical functionalities may not be able to be delivered using today's technology. It would not benefit consumers if market participants do not have ample flexibility to upgrade or alter technical specifications in a timely manner. This could lead to outcomes where the delivery of services is not keeping pace with technological changes or what consumers value.
13. In addition, mandating technical standards is likely to increase the regulatory burden, which we describe in the next section.

- Q2:** Do you have any feedback on the proposed functions of the DER Standards Governance Committee?
- Q3:** Do you support the DER Standards Governance Committee being advisory or be determining? Please provide reasons.
- Q4:** Do you have any feedback about the Committee determining standards in a subsidiary instrument under the rules?
- Q5:** Do you have any feedback on the development of new compliance and enforcement arrangements for DER technical standards?

Support for adopting DER service standards rather than technical standards

14. As indicated in our response to Q1, Vector supports an advisory Committee that improves coordination with existing standards bodies and provides advice on DER standards (rather than mandates them) based on the nature of the service rather than on the device.
15. We encourage the ESB to consider more flexible governance approaches that overcome the above limitations without compromising network security and reliability. Flexibility can be promoted, for example, by adopting common design principles, rather than mandating technical specifications, so existing service providers and new entrants can benefit from interoperability and efficiency gains without stifling innovation.
16. We suggest that the proposed Committee focus on applying minimum service standards or service levels to the DER *installation or system* instead of applying minimum technical standards to DER devices. Rather than specifying technical standards, we suggest that the Committee focus on defining the outcomes required and specifying a set of minimum services or service levels that must be supported. We agree with Farrier Swier's proposal that a high-level definition of DER focus more on the nature of the service rather than on the DER devices.¹
17. For example, minimum service standards could require that DER *installations/systems* need to support:
- a. metering of the customer's consumption and generation;
 - b. the ability for DER devices within the installation to be controlled on or off where appropriate, or limited to a percentage of their capacity;
 - c. randomisation of response to control events;
 - d. integration with the required B2B application programming interfaces for access to authorised parties such as the Australian Energy Market Operator (AEMO), distribution network service providers (DNSPs), or retailers, as required;
 - e. etc.

¹ https://www.aemc.gov.au/sites/default/files/documents/erc0301_-_technical_standards_for_distributed_energy_resources_-_consultation_paper_-_24june2020.pdf, page 20

18. Metering service providers, retailers and customers could then determine the most effective way of achieving the desired outcomes. For example, for a simple installation, this may be to install a two element meter. For a site that is more complex and has load controlled hot water system, a single three element meter might suffice; alternatively, a two meter solution could meet the requirements. Specifying the required outcomes rather than the technical solution incentivises service providers to innovate and drive down costs.
19. We note that the *Power of Choice* reforms in the NEM avoided prescribing minimum technical standards/specifications for metering so as not to stifle innovation. Instead, the Australian Energy Market Commission (AEMC) adopted a “minimum services specification” to ensure that consumers across NEM jurisdictions experience similar levels of service when they switch to a smart meter. Metering service providers have now well exceeded the minimum services specification in jurisdictions where it has been applied. We want to avoid the problems besetting the smart meter rollout in the U.K. (e.g. delays, moving targets), which in 2011 defined an extensive prescriptive technical specification (SMETS1 – over 100 pages) which was subsequently superseded by SMETS2 in 2018.² The U.K. rollout is currently less than 50% complete.

Support for an advisory Committee rather than a determining Committee

20. We support the proposed Committee having an advisory role, which is less prescriptive than a determining role, in relation to DER standards for the reasons stated in our response to Q1. Prescriptive approaches are ‘fragile by design’ and would be incongruent with a dynamic energy sector.
21. Consistent with our preference for more flexible approaches, we encourage the proposed Committee to use targeted approaches where these are more efficient or suitable to avoid ‘locking in’ existing technologies and ‘locking out’ those with better alternative offerings. Targeted approaches could include:
 - a. *Locational targeting* - it is reasonable to expect that the functioning of DER systems would be geographically based. For example, solar systems would be switched off in areas that are experiencing grid constraints while other customers remain unaffected, in which case locations of solar systems will need to be mapped against network infrastructure. The Committee could target these ‘hot spots’ rather than adopt a blanket solution that may impact customers who are not affected in the first place.
 - b. *Sequential targeting* - the Committee could consider more mature or more developed technologies earlier than emerging ones, e.g. develop guidelines for inverters and coordinate with importers, manufacturers, and installers. We note that some of the communications capabilities that make DER systems/devices ‘pluggable’ are some way off and may not need to be considered in the same timeframe as inverters.
22. Greater flexibility can also be promoted by ensuring that ongoing market reforms intended to promote greater transparency around demand and pricing are facilitated, rather than delayed. These include, among other reforms, Five-Minute Settlement, demand response initiatives, and the promotion of innovative tariffs. Some service providers are already responding to changing demand patterns, for example, by offering huge discounts on electricity prices during the middle of the day,³ targeting the ‘duck curve’ problem described in the AEMC’s recently published consultation paper on AEMO’s rule change request on technical standards for DER.

² <https://ec.europa.eu/growth/tools-databases/tris/et/index.cfm/search/?trisaction=search.detail&year=2018&num=150&fLang=EN&dNum=1>

³ <https://www.afr.com/companies/energy/sa-solar-overload-sparks-huge-power-discounts-20200714-p55bsy>

23. Smart meters underpin the above market reforms and play a key role in the efficient integration of DER to the network. By providing greater network visibility, smart meters help ensure energy system security and reliability. As a smart metering service provider, we are of the view that any definition of DER should recognise that smart meters are first and foremost a measurement and control device. While a smart meter plays an important role in delivering DER services, it should not be seen solely as a DER device. It has other uses aside from delivering DER services, such as remote reads, more accurate billing, load control, real-time detection of faults on the network, etc.
24. The value of DER can be optimised where there is widespread uptake of smart meters. In our view, this can best be achieved by large-scale retailer-led deployments of smart meters in a timely manner and in a competitive market.
25. Our advanced metering business, Vector Metering, is concerned with the emergence of barriers to the accelerated deployment of smart meters. These include, among others:
 - a. lower forecast meter installations driven by lower releases of failed meter families by DNSPs;
 - b. the setting of retailer Default Market Offers not reflecting more realistic costs of smart metering;
 - c. the sharp economic downturn due to COVID-19, resulting in significant reductions in the volume of metering installations, increasing per unit cost; and
 - d. jurisdictions not adopting the NEM competitive metering framework, e.g. Victoria and Western Australia.
26. We describe the above emerging barriers in a recent submission – on the Federal Government’s *Technology Investment Roadmap – Discussion Paper*, where we also proffer some solutions.⁴

New subsidiary instrument not warranted

27. We do not support the proposed Committee determining standards through a subsidiary instrument under the NER. Its introduction would add complexity to an already complex regulatory environment. It is for the same reason that we do not support mandating technical standards as this would likely increase the regulatory burden and costs for consumers, require substantial resources, and takes time (usually years).
28. However, should the ESB recommend the creation of a subsidiary instrument, we suggest that the existing principles guiding Standards Australia’s development of standards be adhered to:

Our standards development process is based on the key principles of transparency, consensus and balanced expert committee representation. This process is regarded as one of the most rigorous in the world.

Before a project to develop a new Australian Standard or revise an existing Australian Standard commences, there needs to be demonstrable evidence that the standard will deliver a net benefit to the Australian community. Stakeholders also need to demonstrate there is sufficient industry and stakeholder support for the development of the standard.

Our policy is to base the development of Australian Standards on current international standards, avoiding unnecessary duplication, and allowing us to meet the requirements of the World Trade Organisation’s Agreement on Technical Barriers to Trade.⁵

⁴ <http://vectorams.com.au/documents/597574/1813953/Vector+Submission+Technology+Investment+%0bRoadmap+Discussion+Paper/9248abca-8f0d-401f-aa93-d61915059c56>

⁵ <https://www.standards.org.au/StandardAU/Media/SA-Archive/OurOrganisation/Documents/Developing-Australian-Standards.pdf>, page 4

29. We support the above principles and would expect any alternative process of establishing standards to subscribe to the same principles. We therefore question the need to create a new instrument for establishing standards where one already exists. We are concerned that a new instrument would be an unnecessarily duplication that would increase costs for industry participants and consumers. It could compromise the above principles of good standards development and result in poor outcomes for energy consumers.
30. We support the “interim Guidelines phase” suggested by the ESB “to trial new standards and prevent lock-in of existing approaches as technologies develop”.⁶ We agree that this approach is “particularly important in an emerging area like DER, where many products are competing to establish their protocols are [sic] the industry standard”.⁷ We suggest that such Guidelines be based on the principles and minimum services set out above and could include examples of best practice in the industry. Interim Guidelines could also be used for matters of urgency, which can be subject to consultation via the AEMC’s expedited consultation processes.

Support for compliance arrangements that do not increase the regulatory burden

31. We support a ‘light touch’ monitoring and compliance framework for DER services, primarily for transparency purposes, similar to the suggestion in the AEMC’s consultation paper on AEMO’s rule change request on technical standards for DER.⁸ This would incentivise DER service providers to focus on delivering new and innovative services, rather than on regulatory or technical compliance. New monitoring requirements would also increase the regulatory burden and expand regulators’ role, including in addressing industry disputes, some of which could have previously been resolved through commercial means.

Q6: Do you support the proposed composition of the membership and nature of chair of the Committee? Please provide reasons or nominate alternative arrangements.

Q7: Do you support the proposed terms and selection arrangements? Please provide reasons.

Q8: Do you have any feedback on the other elements of the proposed operation of the Committee?

32. Vector generally supports the proposed composition of the Committee and nature of the Committee chair. In addition, given the importance of measurements and smart meter data to the delivery of DER services and functioning of DER systems/installations, we suggest that the Committee include a representative from the energy data sector. We suggest including a data analytics expert that has in-depth appreciation of the use of real-time smart metering and other data in the delivery of DER services, and the challenges (including regulatory challenges) of the application of this data to rapidly evolving energy markets.
33. We suggest that the proposed Committee consider the principles guiding Standards Australia’s standards development processes, set out above, in establishing its own coordinating structure and processes.

Concluding comments

34. As indicated in this submission, Vector believes that the setting of governance arrangements for DER services can be done more efficiently and effectively where the process of adopting new technologies and standards is not stifled by highly prescriptive arrangements. In

⁶ Page 10 of the consultation paper

⁷ *Ibid.*

⁸ https://www.aemc.gov.au/sites/default/files/documents/erc0301_-_technical_standards_for_distributed_energy_resources_-_consultation_paper_-_24june2020.pdf, page 23

dynamic environments such as the electricity sector, the uptake of and transition to new technologies are driven by market outcomes and positive consumer outcomes, rather than by regulatory or technical prescription.

35. We are happy to provide further information to support this submission or discuss any aspects of it with the ESB. Please contact Paul Greenwood (Industry Development Australia - Vector Metering) in the first instance at Paul.Greenwood@vectorams.com.au or 0404 046 613.
36. No part of this submission is confidential, and we are happy for the ESB to publish it in its entirety.

Yours sincerely



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