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Energy Security Board

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ESB Interoperability Policy for Consultation – Discussion Paper

Nexa Advisory welcomes the opportunity to provide a submission in response to the ESB Interoperability Policy for Consultation – Discussion Paper (the Paper).

Technology is a key driver for electricity industry transformation. Technology is fundamentally changing the nature of the electricity industry. Since 2008, the cost of installing household solar PV has declined by around 80%. The once homogenous product that is grid electricity supply is now competing with the “partial grid-substitute” that is embedded generation. In the future, full grid substitution may become an option for some consumers with the increase deployment of battery storage and in-home energy management systems.

At the outset, interoperability for distributed energy resources (DER) will be critical to deliver benefits to customers, but it is highly technical, and the standards to support interoperability are still developing. The ESB’s approach to introducing interoperability standards risks stifling innovation, higher costs and significantly limiting choices for consumers, while potentially locking in Australia to a local standard that is not adopted internationally.

ESB’s proposed approach to mandate CSIP-Aus is flawed

The current version of the CSIP-Aus standard has been trialed, but it has not been used as a business-as-usual approach broadly in any state or by any electricity network. Further changes and adaptations to the standard are likely to be required, as inverter manufacturers rapidly work to meet the South Australia implementation deadline and as all stakeholders understand better how it works in practice over an entire network.

In addition, the ESB are proposing distribution networks (regulated monopolies) give power to “manage” the interoperability standard (and associated communication and security standards) through their connection agreements. This concentrates the power in hands of a sector that the consumer has little trust in, and elevates network control in a way that seems unwise and potentially ineffective.

The distribution ringfencing guideline prevents DNSPs from straying behind-the-meter and connection point and yet, the ESB proposes, and as some DNSPs are pursuing (e.g., in South Australia), to ensure that interoperability requirements will mandate the right of DNSPs to go beyond the connection point to control and manage customer assets. There has been no discussion of the interaction between ringfencing and what is proposed, with the need to keep the system secure trumping ringfencing that is designed to ensure competition and protect customers.

The example of the addition of the Australian standard for inverters (AS4777) into the Rules and connection agreements shows why encoding standards in the Rules and giving the networks control does not result in better outcomes for the system or customers. The AEMC is currently exploring why compliance with the inverter standard is so poor and believes that the network is required to ensure compliance. But while the network, where it has access to data, can identify a particular inverter is a problem, the only action available via the connection agreement is to disconnect that inverter.

Interoperability standards are still nascent

Interoperability, if done well and done right, should allow customers to buy any related “energy” technology, be it air conditioner, electric vehicle, hot water system or home energy management system, and allow the new equipment to “plug in” to existing systems at home and work together seamlessly. It should also allow the customer to access energy services or provide energy services, either directly or through a retailer or aggregator, while also allowing that same customer to move retailer or aggregator simply and easily. Interoperability should protect customers and prevent them being locked in to a single provider or manufacturer of equipment or services.

Interoperability should not only be about giving AEMO and networks the ability to control or turn off inverters.

DER Behind the Meter is Customer-owned

In addition to solar PV, a proliferation of more advanced DER (digital metering, smart inverters, energy storage, energy management systems, household appliance with smart controls etc.) are now entering the customer market. These technologies offer new opportunities for customers to more actively manage their energy use and, if they chose, to share in value beyond the home- whether sharing energy with peers or participating in programs which support the operation of the network or the wholesale market.

While network support or grid stability and wholesale supply service might be required on a limited number of occasions per year, the majority of the time, customer-owned DER installed BTM is likely to be employed directly for meeting the comfort and consumption needs of the customer.

The approach to system optimisation, standards development and regulation therefore **must** recognise that it is ultimately a customer’s choice as to how their BTM resources are deployed and what compensation or reward they expect for participating in different service markets (including providing network support).

Principle based approach that is customer centric is required at this early stage of development

Appropriate **technology standards are critical**– standards that do not contradict broader policy objectives and are based, where possible, on international standards to avoid unnecessary overheads, promote customer choice, support competition and encourage economies of scale;

- Standards should remain agnostic of current and future regulation
- Product safety- fostering safety and quality and customer awareness
- Standards that promote innovation and competition
- standards that are fit for purpose and stay up to date with technology evolution

There are many examples of technology choices in history, where being on the right side of the decision has been important, so it is critical that we are flexible at this early stage to allow us to adapt

once the local standard has been practically demonstrated to deliver the technical requirements at scale. It is essential standards are considered in light of how it might be implemented across our energy market, and not simply a collection of physical networks.

Enabling competition and innovation is critical

The grid has an increasingly important role in facilitating a range of service markets beyond the consumption of electricity delivered from centralised plant. These include markets for grid stability services (frequency, voltage), markets for services which support the network in constraint conditions, markets for wholesale demand response at times of tight supply and 'peer-to-peer' energy trading. All of which require customers to be engaged and sign up.

It is important to note that as a result of the wide range of possible services and technologies, there will not be a single business or delivery model to enable these mixed interactions and respond to the broad spectrum of customer needs and preferences. Reflective of the heterogeneity of customer needs and preferences, we expect product and service offerings from a board mix of energy service providers to be similarly heterogeneous.

We therefore recommend that no further DER technical standards are placed in the NER. The distributed energy system of the future may involve multiple distributed markets and service platforms co-existing and interacting. Energy service providers will invest, test, learn and innovate their offerings, and bear the risks and rewards associated with these endeavours.

Please feel free to contact me on stephaniebashir@nexaadvisory.com.au if you wish to discuss this in more detail.

Yours Sincerely



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About Nexa Advisory

Nexa is a full-service advisory firm. We work with public and private clients including renewable energy developers, investors and climate impact philanthropists to help accelerate efforts towards a clean energy transition. We've been shaping the energy industry for over 20 years. With a proven track record across policy creation, advocacy, political risk assessment and project delivery, we're holistic in our approach and deliver solutions with commercial intent.

The Nexa Advisory team is a collaboration of passionate energy specialists, all committed to the successful transformation of Australia's energy markets. The team is focused on helping clients grasp the unpredicted opportunities the energy transformation will bring. The decentralisation of energy promises, for the first time, to enable a truly democratised ecosystem with people and communities at the centre. We believe in an energy industry where people are at the centre of every recommendation we make. This belief guides our approach to the challenges we solve, and the outcomes we create.