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The Clean Energy Council (CEC) welcomes the opportunity to provide feedback to the Australian Energy Regulator (AER) on behalf of the Energy Security Board (ESB) Consultation Paper: Benefits of increased visibility of networks.

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 a range of stakeholders in the National Electricity Market (NEM), 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 welcome the opportunity to provide feedback on the value of making specific network-related data sets available to market and policy makers. The CEC is committed to adding to the value stack CER can provide and the formation of markets that support this. We support decision makers outside of the network having access to certain LV network data.

The CEC also supports the AER's three phase approach to completing this work stream, being to focus on identifying and testing/trialling the most appropriate data set prior to proposing a pathway forward. The CEC also encourages the AER to establish an industry working group to support ongoing collaboration across the three phases of work.

The industry has already invested significant time and expertise in this area. Specifically, we draw the AER's attention to the data set and use cases outlined in this [Best Practice Guide](#) developed by Solar Analytics. The Guide obtained industry wide input and support and outlines the data required to enable the transition of the distribution network to a high penetration Consumer Energy Resources (CER) grid, including rooftop solar, batteries, and other appliances such as Electric Vehicles (EV) chargers.

The Guide has two key objectives, being:

- To establish a common static and dynamic (near) real time data set collected for new CER installed behind the meter on the low voltage electricity network.
- To increase confidence in the quality and performance of CER through the provision of this real time system performance data to CER owners and authorised industry entities.

In the paper, the AER appears to be approaching the opportunities to unlock greater value from CER investments by consumers by increasing network visibility by looking for or trying to predict use cases, then asking what data could be provided that may serve those use cases.

While the CEC acknowledges this approach, it is important to also consider what are the foundations that will ensure such an approach delivers the best possible outcome for energy consumers. As such, the CEC believes the AER needs to focus on what are the barriers to providing greater visibility, removing these barriers and then allow the competitive market to use the data to develop innovate products and services to support networks.

A foundational step is considering options to accelerate the development of low voltage data sets, tools and analytical capabilities within distribution networks, so they obtain greater visibility of their network. We consider this work closely aligns with the core regulatory function of distribution networks to appropriately manage the network, including the procurement of non-network services.

By way of example, is the work NSW distribution businesses have done with Neara. Neara has digitally modelled nearly all of the state's overhead distribution network. Neara has modelled all the physical, mechanical, and engineering characteristics of the network, which therefore, enables highly sophisticated analytic capabilities across a spectrum of use cases. One of the use cases that Neara has deployed with Essential Energy relates to unlocking significant amounts of network capacity that can be made available for accelerated renewable generation integration¹.

The next challenge of providing competitive non-network solutions is accessing relevant information on available opportunities in particular LV networks. This information will be critical in assisting in the development of this emerging market by offering consumers who purchasing CER and aggregators who offer orchestration services transparency for the wider market support value they can obtain from integrating their asset into the electricity system.

In order to expand the potential for the market to provide non-network solutions at the low voltage network level, the CEC would encourage consideration of ways to mainstream and provide consistency in definition in the provision of relevant hosting capacity, export limits, constraints and other value information to support competitive market participation.

¹ [Essential Energy: How AI unlocked capacity across NSW grid \(afr.com\)](https://www.afr.com/technology/essential-energy-how-ai-unlocked-capacity-across-nsw-grid-20230815)

As an example, the recent Voltage Management review conducted by the Victorian Department of Energy, Environment and Climate Action (DEECA)² showed the opportunities that can arise through public reporting of low voltage network data. Specifically, DEECA observed that average voltages trended down across all Victorian distribution businesses when they commenced reporting. Importantly, the study did not find the growth in solar PV was the cause of high or exceeding top end voltage management limits. Rather, the report stated with the decline of average voltages more solar was enabled.

DEECA concluded that non-network market participants should be able to readily and affordably access low voltage network data to support the development of business cases for non-network solutions. The CEC believes there is a role for the AER to conduct similar reviews and publicly report on voltage network data that can unlock non-network services.

The CEC would also recommend appropriate regulatory oversight be established to validate the accuracy of networks' published estimated CER hosting capacity, export limits, constraints and other value information through data sampling and regulated reporting obligations.

Curtailement

In the curtailment data specification of the export capability use case, OEMs are cited as 'Low Cost' data capture relating to the inverters' (devices') performance during a curtailment event. We are concerned that this does not fully consider the responsibility of the OEMs in capturing data in a compliant way and cloud-based storing of that information; and the costs associated with it.

Further, the use of CSIP-Aus as the communication protocol to enable flexible exports across the jurisdiction is making post curtailment event information obsolete. Specifically, if a system has been certified as compliant to CSIP-AUS and is correctly installed and commissioned then it should be impossible for it to behave in a non-compliant way unless it is subsequently modified or goes wrong. Hence compliance efforts for emergency response events have and should continue to focus on certification and ensuring compliance at time of installation through the installation and commissioning process.

In the near future, CEC believes that a combination of storage, pricing and dynamic operating envelopes for solar PV will be the leading solutions to addressing minimum demand conditions and therefore ensuring curtailment is a genuine last resort measure. As a result, CEC believes clearly defining an emergency backstop response with appropriate guard rails as to when it will be triggered will better complement these market-based solutions. Further, such an approach is consistent with the arrangements for large scale generation load shedding. The use of arrangement

² [Voltage Management in Distribution Networks Consultation | Engage Victoria](#)

like Lack of Reserve (in this case, Demand) warnings can provide signals to the market to respond to a minimum demand event and potentially avoid triggering an emergency backstop response.

Hence, the most valuable and important data for distribution businesses to publish will be the level of service provided in an area, which is an indication of how constrained the network is and how much curtailment could be expected for exporting systems in that area. For example, as part of their flexible export arrangements, SAPN is proposing to introduce a service level that will on average allow solar PV to operate uncurtailed for 95% of daylight hours but may have reduced export limits for up to 5% of daylight hours. In the future, where export service performance in a local area is poor, SAPN could tender for aggregators or others to provide some local response when called upon, to voluntarily shed generation or increase load, where this is more efficient than upgrading the network in that area.

Defining, setting guardrails and improving market information on minimum demand events will assist to better integrate emergency backstop mechanism with the other market-based options.

Compliance

When considering what data sets are particularly useful to optimise the benefits for consumers and market participants from their CER investments, it is also important to consider the compliance programs that underpin accessing the data sets by market participants. The AER needs to avoid the situation of unlocking data sets that provide new revenue streams, but the access and compliance regimes are disjointed or highly administrative so that the cost of compliance to access the regime outweighs any market and consumer benefits.

For example, a concern with the current CSIP-Aus communication protocol to access hosting capacity is that distribution networks and/or jurisdictions are developing different approaches to compliance, including certification programs. Such an approach adds unnecessary costs and dissipates market and consumer benefits from using CSIP-Aus to install a solar PV system that can take advantage of dynamic connection agreements.

The remainder of the submission provides comments on the specific questions in the Consultation Paper. If you have any queries or would like to discuss any aspects of our response you can contact Michael Shaughnessy, [REDACTED]

Kind regards

[REDACTED]

Con Hristodoulidis
Policy Director, Distributed Energy

1. *Is the set of use cases in Appendix 6.4 representative of the use cases that you are aware of?*

CEC refers the AER to the [Best Practice Guide](#) established by Solar Analytics and recommends that the AER establish an industry working group to support the development of use cases.

2. *What additional use cases should be added?*

CEC recommends the AER consider a data set and use case relevant to providing a market-based solution to minimum demand and emergency response, this will ensure solar curtailment is a last resort measure.

3. *Are there other sources of data that should be considered?*

Meters embedded in CER. Eventually there will likely be higher grade meters embedded in CER and this data could be accessed. A fee may be required in this case as the data is not already being collected and communicated for market participation.

4. *Do you agree with the framing parameters that were used? If not, why, and what should have been included or left out?*

Yes.

5. *Are the data sets that have been identified and prioritised the correct ones? Are there others that are needed? Are any of the ones listed NOT needed?*

The CEC does not believe accessing OEM inverter data post an curtailment event is appropriate as it is too costly and there are more cost effective ways to ensure compliance of systems to a curtailment event. The CEC believes the focus should be on developing pre-curtailment data set and use case. Compliance of systems to curtailment should be addressed during the commissioning of solar PV.

Frameworks designed now should not impede new data streams being added in future, as they become required by certain markets.

6. *Do you agree with the conclusions reached regarding the need for real-time data?*

Currently third-party customer service providers are required to install metering equipment that duplicates the existing smart meter to provide a range of customer and grid services. This is inefficient and a barrier to new entrants and new service offerings. The CEC supports the development of a consumer consented and verification framework to allow access to real time data for third party providers. Further, the CEC believes that it is mandatory that the data format, access arrangements, security keys and request / response format is standards based and consistent across all providers. Unless these requirements are specified, there is a risk that different providers could interpret the requirements differently and create unnecessary barriers to access the data.

7. *Are there more issues that should be considered regarding the balance between customer protection and reasonable data collection?*

There is no problem with consumers providing more granular data, and vice versa, with bodies that they already have a data exchange with, so long as that more granular data is required. To protect consumers and their privacy and to also mitigate against possible cyber-attacks, the CEC believes the AER can consider a model whereby access to data can only be made available to “approved” 3rd party provider, where the approving authority can certify the party wanting to access the data meets all relevant standards of protection. This is not dissimilar to the current Accredited Data Recipient arrangements under the Consumer Data Rights regime.

8. *Is there any other feedback on the data set definitions?*

Export capability (kW and kWh) of a site may also be of interest to the market operator.

9. *Do you agree with the criteria?*

Yes

10. *Do you see value in these data sets being made readily available to the public?*

Yes

11. *Is any important data missing?*

Frequency measurements taken by high quality Frequency meters will be required in future.