



17 November 2022

Energy Security Board

By email: info@esb.org.au

Dear Sir/Madam,

RE: Interoperability policy –Directions paper

CitiPower, Powercor and United Energy welcome the opportunity to respond to the Energy Security Board's (ESB) Interoperability Policy – Directions paper.

As our customers increasingly invest in consumer energy resources (CER), including rooftop solar, batteries, smart chargers for electric vehicles and home energy management systems (HEMS), it is important this equipment can work together with the distribution network for the purpose of maintaining a safe, reliable and secure energy system.

We support implementation of a national framework for a common communications protocol and technical standard in the form of CSIP-Aus. This will assist in ensuring all new relevant installations are 'flexible export ready'.

CSIP-Aus compliant CER devices at a customer premise level is an important step to integrating broader interoperability across all customer devices. This is because distributors will be able to communicate flexible export limits to customers which will unlock future value for customers from their investment in CER.

In this submission, we contend:

1. Flexible export limits should be applied to an entire premises. Where there is more than one CER device, the distributor must be able to communicate with the HEMS or the customer's nominated trader
2. CER devices behind the meter must be able to communicate with other CER and HEMS
3. Where distributors are unable to communicate a flexible export limit to a customer premise, a fail-safe export limit must be able to be enforced
4. CSIP-Aus should not be directly referenced in the National Electricity Rules.

These matters are further discussed in the Appendix.

Should you have any queries please do not hesitate to contact Trent Gibson on 0418 166 169 or tgibson@powercor.com.au.

Yours sincerely,

Brent Cleeve
Head of Regulatory Policy and Compliance
CitiPower, Powercor and United Energy

APPENDIX

1. Flexible export limits must apply to the entire customer-premise. Where there is more than one CER device, the distributor must be able to communicate with the HEMS or retailer/aggregator

It is important that networks set flexible export limits at a premise level rather than an individual device level.

Customer CER installations may be simple or complex.¹ For simple installations, where a customer has a single inverter, it will be sufficient that distributors communicate a flexible export limit to that device through CSIP-Aus. This is because the inverter is the single device responsible for importing and exporting energy to the electricity grid. Therefore, setting the flexible export limit at this device will ensure that those limits are complied with.

Where a customer has a more complex installation with a solar inverter, battery or EV charger, the distributor must be able to communicate a flexible export limit to a HEMS through CSIP-Aus. The HEMS should then be responsible for ensuring that each device within a customer premise is operating within the flexible export limit.

A distributor should not have the onus of communicating a flexible export limit to multiple devices. If this were to happen, it would effectively have to provide a customer with multiple flexible export limits at the one premise. A distributor would then be required to take on the role of a trader, co-ordinating these devices to ensure that the customer remained within a premise-level flexible export limit.

Instead, where the customer has a trader managing their import/export of electricity, then the distributor must be able to communicate with the trader to pass-on any flexible export limit instructions. To this end, a formal relationship between a distributor and trader must be established through the regulatory framework.

Regardless of the customer's CER installation it is critical that whether it be an inverter, a gateway device at the customer premises or via a consumer energy resource aggregator cloud, these devices be CSIP-Aus compliant so that we may set the relevant flexible export limit.

2. CER devices behind the meter must be able to communicate with other CER and a HEMS

To fully unlock the value of flexible export limits, behind the meter interoperability is essential to enable orchestration of multiple CER devices.

As noted in the Directions paper, a key enabler of demand-side flexibility is the ability of CER to be co-ordinated inside a customers' home or business to make use of local generation, respond to cost reflective tariffs, respond to real-time electricity wholesale market conditions, or provide other power system services.

We agree that where a flexible export limit is set at the customer premise level, and where multiple CER are present, these devices will need to be co-ordinated by a single device (such as a HEMS).

However, we consider the communication protocols for behind-the-meter interoperability of devices is best left to market forces to develop. Technology companies have made significant investments into the smart home development space. Examples include collaboration between companies such as Apple, Amazon, Google, and Samsung.

¹ Figure 1, Energy Security Board Interoperability Policy for Consultation, Directions Paper, October 2022 (Page 13)

3. Distributors must be able to impose a fail-safe export limit where the communication fails

Distributors must be able to communicate with a CSIP-Aus compliant CER device to set flexible export limits at a customer premise level. While we would welcome dedicated cellular connections inside CSIP-Aus compliant CER devices to ensure the most reliable internet connectivity, we appreciate that this would come at a cost to consumers.

We support the current model in South Australia which requires a temporary internet connection to be established for the purposes of device commissioning. However, where a distributor is unable to set a flexible export limit at a customer premise because a customer's inverter or HEMS loses internet connectivity and is unable to conform to flexible export limits, distributors must have the ability to impose a fail-safe export limit until such time as connectivity is restored.

Fail-safe modes may also need to be applied by distributors where a premises is not responding as intended to a flexible export limit. For example, the distributor may identify that a premises is exporting more than allowed under a flexible export limit due to the presence of additional CER devices behind the meter that are not connected to a HEMS. To maintain the safety, reliability and security of the grid, a fail-safe model should be able to be applied by the distributor.

The imposition of a fail-safe limit provides an incentive to customers to restore internet connectivity to their CSIP-Aus compliant device(s). It will also allow for distributors to effectively manage the capacity and congestion in their networks due to the export from CER and ensure the network remains within defined technical limits until such time the ability to communicate a flexible export limit to the customer premise is restored.

4. CSIP-Aus should not be directly referenced in the National Electricity Rules

We do not believe the National Electricity Rules (NER) is the appropriate place to directly reference CSIP-Aus. If interoperability standards are to be referenced in the NER, we would prefer it cross-refer to a separate 'interoperability requirement for consumer energy resources' made by another authority. Consideration would need to be given to which authority is best placed to manage interoperability requirements going forwards.

Should a mandate to require CSIP-Aus compliant installations be introduced, we support suggestion 1 outlined in the directions paper.² This would provide assurance that installations are CSIP-Aus compliant and that distributors are able to effectively communicate a flexible export limit to the customer premise.

² Energy Security Board Interoperability Policy for Consultation, Directions Paper, October 2022, page 28.