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SUBMISSION ON THE ENERGY SECURITY BOARD'S INTEROPERABILITY POLICY

Dear Anna

We appreciate the opportunity to provide a submission on the Energy Security Board's (ESB) consultation paper *Interoperability Policy* (the Consultation Paper) released on the 17th of December 2021, after the formal closing date. It has been a particularly busy period for Energy Consumers Australia, since the Consultation Paper's release with a number of coincident consultations by market bodies and governments as well as reporting on collaboration projects such as the Working Group Outcomes Report on Dynamic Operating Envelopes that was released yesterday.

As the national voice for residential and small business energy consumers, we have a unique point of view on the significance of interoperability in the future energy system.

Interoperability matters for consumers and community outcomes and is not something that can be determined solely by "technologists".

There is no question that interoperability is an essential part of the transition towards a decentralised, low emissions, renewable energy system. Developing capabilities that allow consumer energy resources, such as rooftop solar or electric vehicles, to be orchestrated will be essential in integrating these technologies into the current energy system. This submission seeks to highlight that this integration must be done with a focus on consumer outcomes and ensuring social licence, which includes addressing the coordination and communication of behind the meter (BTM) resources as well as the implementation of inverter interoperability standards. These resources are first and foremost consumer owned investments, not system resources. Therefore, understanding and acting upon consumer motivations and expectations towards their energy resources will be essential to the successful integration and development of current and future interoperability policy.

Choice and flexibility, enabled by interoperability, are critical in ensuring consumers' expectations of an affordable, accessible, and sustainable system are reflected in the energy transition.[1]

This will require the coordination of both system and BTM resources through interoperability standards. While we acknowledge that inverter interoperability, enabled by CSIP-AUS, is critical in providing functions that support the energy system, outcomes addressing behind-the-meter interoperability will be just as critical in enabling direct benefits for consumers. Locking consumers into a prescribed way of using technology that they invested in for their homes or small businesses due to poor interoperability behind the meter could lead to poor social licence outcomes. Consumers should be able to easily share data across multiple devices, switch between service providers, and use energy flexibly in a way that works for them despite previous purchasing decisions.

[1] https://ecss.energyconsumersaustralia.com.au/sentiment-survey-december-2021/

This gap in BTM coordination is also especially concerning considering the implementation of certain technical features of CSIP-AUS such as Dynamic Operation Envelopes (DOE). If DOEs are to be allocated at the connection point, there needs to be clear orchestration and coordination of consumer resources behind the meter which can be dynamically controlled to respond to the DOE.

We see addressing BTM interoperability as an essential part of implementing the CSIP-AUS and other interoperability standards as these are consumer owned devices which consumers invested with the expectation on how they would be controlled and perform.

Before addressing the specific issues in the Consultation Paper, we want to flag that we see value in a wider discussion amongst stakeholders about interoperability in the energy sector, in the same way that Energy Systems Catapult in the United Kingdom explored the multiple dimensions of interoperability. In their discussion paper Energy Systems Catapult developed an interoperability framework which included six categories of definitions.

1. Consumer interoperability– provisions exist for consumers to switch between different commercial offers and technology choices.
2. Commercial interoperability– incentives are aligned across the energy system so that value can flow where it needs to, driven by market forces.
3. Data interoperability– easing the sharing and portability of data between different systems.
4. Device interoperability– devices are swappable, replaceable and exchangeable as needs change and technologies develop, so consumers can make informed choices between open and closed ecosystems.
5. Physical interoperability– end-to-end systems function as changes happen to parts of the system.
6. Vector interoperability– energy provision across gas, electricity, heat and transport fuels are compatible with one another, and coordination occurs in a timely fashion.

We will seek stakeholder views on whether there is value in Energy Consumers Australia exploring the application of a similar framework and use case studies for the Australian context.

SPECIFIC COMMENTS ON THE CONSULTATION PAPER

Establishing principles

The need to understand consumer motivations and expectations of their energy resources was highlighted in our recent submission to the Australian Energy Market Commission's (AEMC) *Governance of Distributed Energy Resources (DER) Technical Standards* Draft Determination.[2]

In that submission we outlined our recommendation for a standing governance body, overseen by the AEMC, which would consider the purpose, intent, policy, implementation and regulation related to DER technical standards from diverse representative perspectives. This recommendation was put forward in response to a disconnect we have identified between the overarching framework and market design set by the AEMC, and the standards created and implemented by technical experts, which shape consumer capabilities, and ultimately the energy market.

[2] https://energyconsumersaustralia.com.au/publications/submission-to-the-aemc-on-the-governance-of-distributed-energy-resources-technical-standards

We are persuaded that this disconnect can be addressed with governance and coordination through contextualising the standard within consumer and community objectives that ensures standards are set within a clear policy framework which recognises and delivers value for consumers.

We support the principles set out in the Consultation Paper, that were provided in the ESB's Final Advice on Post 2025 Market Design, to apply to interoperability of consumer energy resources – or distributed energy resources (DER) - from a system perspective.

1. Consumers should be able to share data with service providers. Interoperability should be standardised to allow data portability and sharing between consumer, aggregator, network, and market

2. Consumers' DER assets should have a level of portability between providers. These standardized communications should enable consumers to move between providers (and technology) and promote competition between providers. These standards should be minimum levels of capability while allowing providers to layer additional functionality over the top so they can offer their own innovative products and services.

3. Control of and access to consumer devices should be limited to clear use cases. Control of (operation of and/or access to) any consumer device by a network or system operator should be limited to a set of well documented use cases that can be updated from time to time as agreed by industry.

4. Consumers need to receive clear information about the compatibility of their DER assets. Device manufacturers, installers, and service providers must be transparent about any proprietary technology resulting in closed eco-systems and the consequences or limits of those closed ecosystems.

The test is how these principles are incorporated into standards, and how they are applied.

The assessment framework

The Consultation Paper seeks feedback on the following.

1. Development of an assessment framework, where the framework is intended to support assessing the merits of introducing technical 'feature sets' within standards, and whether / when it may be in customers interests for these features to be introduced as a mandatory requirement.

2. Relevant considerations for assessing trade-offs. In applying the framework to assess 'feature sets' within the CSIP-Aus, what factors should be considered.

3. Applicability of CSIP-Aus for the NEM, and how features within the CSIP-Aus standard should be applied to support outcomes for consumers.

A consistent assessment framework or consumer benefits test that utilises consumers outcomes to measure the impact of standards both in the NEM and behind the meter, similar to the framework suggested by the ESB's consultation paper, would be a useful tool for the governance body that Energy Consumers Australia proposes. While we believe there is still further work to be done to explore how this tool might apply to different segments of consumers such as small business owners, the assessment framework provides a useful starting point for recognising and integrating consumer outcomes in the standards process. An assessment framework is something we broadly support and are pleased to see its consideration and development as part of the current consultation.

Our primary concerns towards the assessment framework relate to the application rather than the framework itself. As mentioned in our submission to the AEMC, while Energy Consumers Australia does not have the capability or resources to be involved in the technical standards setting process itself, we do have a mandate to ensure that the overall design and regulation of the system is working towards the long-term interests of consumers. This is why the following questions are focused on the coordination, timing, and responsibility of such as assessment framework.

When in the standards process will a framework be applied?

From the consultation paper, it appears that this framework would be applied following the writing of the standard itself.

As mentioned in our submission to the AEMC, we are concerned with the current lack of transparency and consumer input into how these standards are written as well as applied. We would suggest that the ESB considers the timing of applying such a framework in the broader context of standards development. If applied earlier in the standards writing process it may allow a more thorough consideration of diverse consumer impacts, and the identification of pending conflicts which can then be immediately addressed. If the assessment framework is employed any later, it may be difficult and less efficient to address, adapt or modify the standard pending any conflict or issue an assessment tool uncovers.

Who will apply the framework to future standards?

Our submission to the AEMC also outlines our concern with the coordination of the current standards implementation processes. We would support a framework such as the one proposed by the ESB if it was made clear who is responsible for its implementation, such as a standing governance body. Without clear guidance on who is going to assess the standard using the proposed framework, its use could diminish to haphazard application at best, or absence of application at worst amidst confusion around which group is optimal for overseeing its application. In light of this, we suggest further coordination with the AEMC on the Governance of DER Technical Standards rule change.

Applicability of framework to all standards

We believe that the same rigor of the assessment process should not be limited to only inverter standards such as CSIP-AUS. As highlighted above, we see the need for further investigation into interoperability behind the meter and recommend the EBS explore the application of a framework to further use cases. A consistent process for the implementation of technical standards in the future through a coordinated governance and principles-based approach will help ensure positive outcomes for consumers.

Retrofitting and timeframe considerations

Given the rapid pace of change and large investments consumers make in energy resources we would encourage the ESB to consider how timeframes for standards implementation and retrofitting processes can be designed to support consumers with older technology to ensure they are not disadvantaged. If they choose, consumers should be able to access a retrofitting option which allow the technology which they purchased to be compatible in some way with new standards.

SPECIFIC COMMENT ON OPEN VERSUS CLOSED SYSTEMS

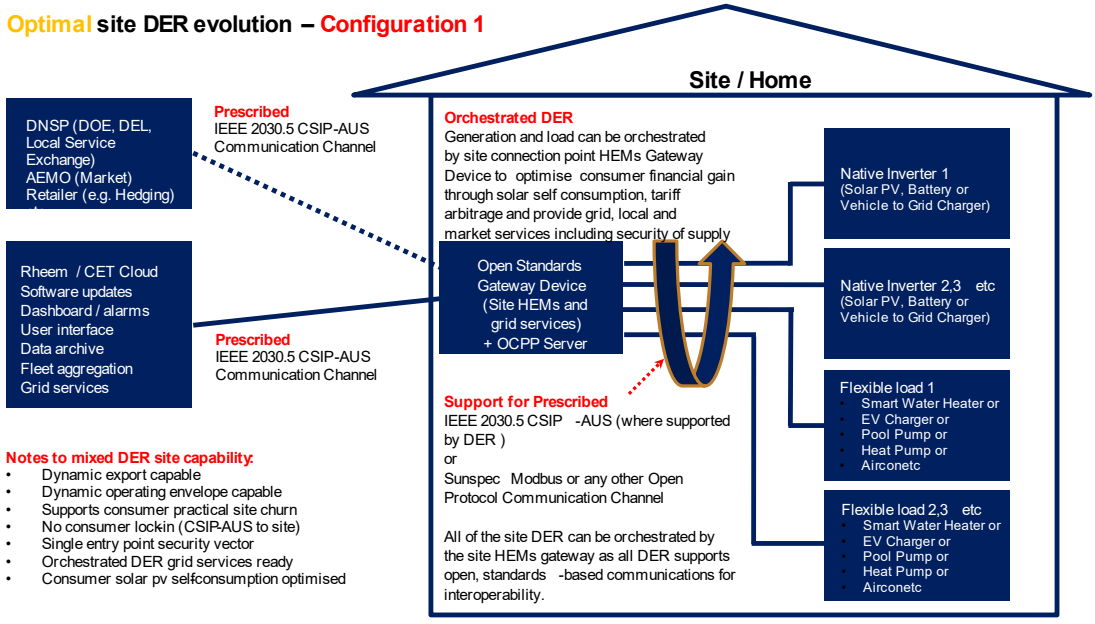
The feature sets are shown in Figure 1 in the Consultation Paper which includes the mechanisms for control, which might otherwise be described as orchestration.

Stakeholders who have expertise in technical standards and interoperability have raised the issue with us of the importance of standards based, local control interfaces on DER and open fully featured communications protocols for interoperability.

Energy Consumers Australia supports open interfaces and protocols, as necessary to consumers being able to avoid being locked-in to particular proprietary providers or systems. While “walled gardens” are common such as Facebook, Apple and Google, it is difficult to see why they should exist within the energy system. Whereas social media platforms and Apple may provide unique user experiences, it is difficult to argue that solar panels, batteries, smart appliances and electric vehicles should be orchestrated locally other than through open standards and protocols. To do otherwise will produce suboptimal financial outcomes for consumers and mitigate the ability of BTM mixed DER (generation and flexible load) in delivering grid services such Dynamic Operating Envelopes (DOE) and Contingency FCAS, thus impacting on grid security of supply.

There is an optimal future state, illustrated here in Figure 1 and a suboptimal state illustrated in Figure 2 (below)

Figure 1

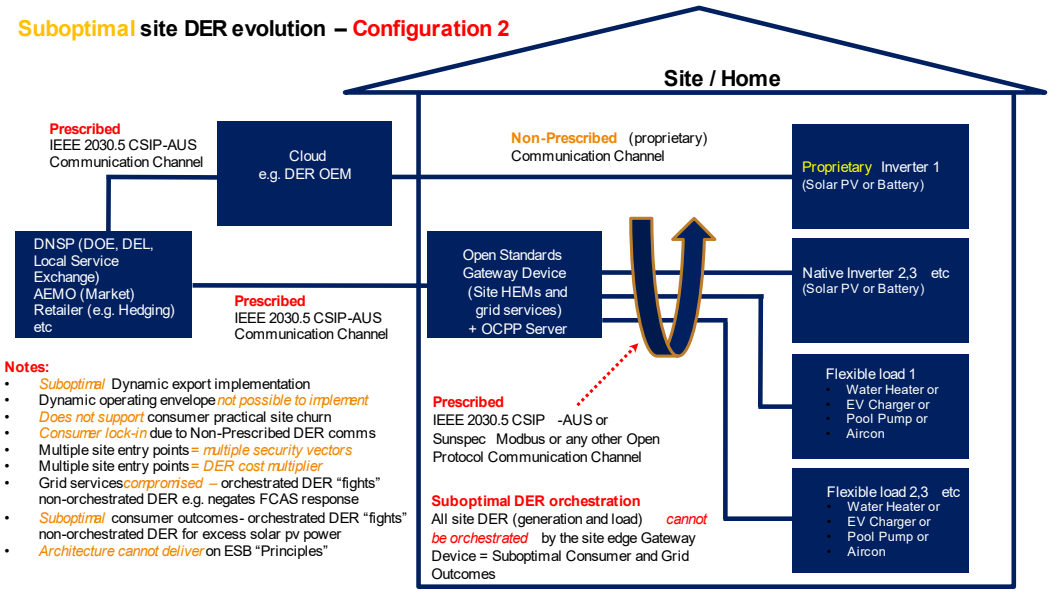


For this outcome to be achieved universally, for all consumers and all digitally controlled devices, two things are required to happen.

- Any inverters, batteries (BESS) and OEMs that do not support local interfaces and open published communications protocols need to come with a warning label for consumers (Principle 4 of the ESB’s principles) that in purchasing these devices they may be locked-in to that provider. Elsewhere in the economy, market regulation has evolved to disallow “lock ins” such as motor vehicle warranties that require only the manufacturer to service for warranties to be valid. We do not need to repeat that experience in the energy sector. In reality, there are very few suppliers that would be impacted and who could not adapt their devices, and so there are no industry costs to be offset against the consumer benefit. Governments could also lead the way in requiring labelling and/or excluding suppliers that are not open from their rebate schemes.

- The ESB should make support for CSIP-AUS at the actual device level (i.e. the solar inverter / battery inverter) mandatory. That way the consumer can churn their DER (inverter/battery inverter) device to another cloud (aggregator / retailer etc) with a better offer or their inverter / battery inverter can be orchestrated locally by an open HEMS gateway as they add further DER to their site. This does not stop the OEM having a connection for maintenance / software upgrade purposes as well.

Figure 2



In general, we propose that the ESB adopt, and support the implementation of, open standards, in the same way that the Energy Data Taskforce in the United Kingdom established an open principle, to access to data.

> *At the core of the Taskforce recommendations are the principles that the sector should be Digitalising the Energy System and that in order to maximise value, Energy System Data should be Presumed Open…..In the future, we anticipate an energy sector rich with algorithmic balancing, automated asset optimisation, software platforms managing the interactions between multiple actors and truly cross-vector provision of energy. Just as importantly, digitalisation will enable consumers to participate in, benefit from and take more control of energy markets, opening up value they can gain from behind the-meter assets and services.*[3]

CONCLUDING COMMENTS

As the energy environment rapidly evolves, the process for the setting and implementation of standards such as CSIP-AUS should provide transparency, confidence, and assurance to consumers and other market participants.

[3] Energy Data Taskforce, A Strategy for a Modern Digitalised Energy System, https://es.catapult.org.uk/report/energy-data-taskforce-report/

This is why we broadly support the ESB's principles and the proposal to use an assessment framework in the implementation of new interoperability standards in the NEM. However, interoperability cannot end at the inverter. We believe that alongside the implementation and assessment of inverter standards such as CSIP-AUS the ESB must also turn its attention to BTM interoperability and coordination. Energy resources such as rooftop solar or batteries are not system resources, they are consumer resources bought with the intention to benefit the people who own and use them in a certain way.

Once again, thank you for the opportunity to provide our feedback on the ESB's *Interoperability Policy* consultation paper. If you have any questions about our comments in this submission or require further detail, please contact Jacqueline Crawshaw, Director Policy, Energy Services, and Markets, by email at jacqueline.crawshaw@energyconsumersaustralia.com.au.

Yours sincerely,

Lynne Gallagher
Chief Executive Officer