ESB Workshop

Draft Policy Assessment Framework – Development of interoperability policy for inverter based solar and storage tech standards

February 17, 2022

AGENDA FOR TODAY

10:00 - 10:10 - Welcome and introduction

Lachlan Blackhall, Chair of the Interoperability Steering Committee, Professor at the Australian National University

10:10 - 10:30 - Overview of consultation - assessment framework and development of policy

ESB (Jo Witters, Phil Blythe, Mitch O'Neill)

Workshop and Discussion

10:30 - 10:45 - General questions related to policy drivers and expected outcomes

ESB team

10:45 - 11:00 - Consultation questions related to assessment framework and related governance

ESB, AEMC

11:00 - 11:15 - Consultation questions related to technical feature sets CSIP-Aus

ISC Members, AEMO

11:15 - 11:30 - Consultation questions related to policy framework parameters

ESB team

11:30 - 11:50 - Open discussion and questions

11:50 - 11:55 - Closing remarks

ESB

- Work is currently underway via the DEIP technical standards workstream to finalise technical standards for inverter-based resources (solar PV and batteries) - aligning the standards with international equivalents where possible / appropriate. This has involved adapted development of the 'CSIP-Aus' standard.

- Whilst waiting the AEMC ruling on DER Technical Standards, the Post-2025 advice identified a policy gap with this work – where although the standards have been progressed, there is currently no policy to determine how the various components of those standards should apply.

- The purpose of the ESB consultation is to seek input from stakeholders on how the 'CSIP-Aus' interoperability standard should be applied in the NEM to meet the Post-2025 policy objectives, and a feasible timeline for its introduction.

  Consequently, the ESB sought stakeholder input on the following aspects:
  - *Development of an assessment framework.*
  - *Relevant feature sets from the CSIP-Aus to be used in the assessment*
  - *Application considerations for policy introduction.*

WHY AN INTEROPERABILITY POLICY?

- **Post-2025 market reforms seeking to unlock value for customers from integration of DER and flexible demand**
  - Enable parties to enter the market and offer products / services to customers, while ensuring the system remains secure and customers receive fit for purpose protections.

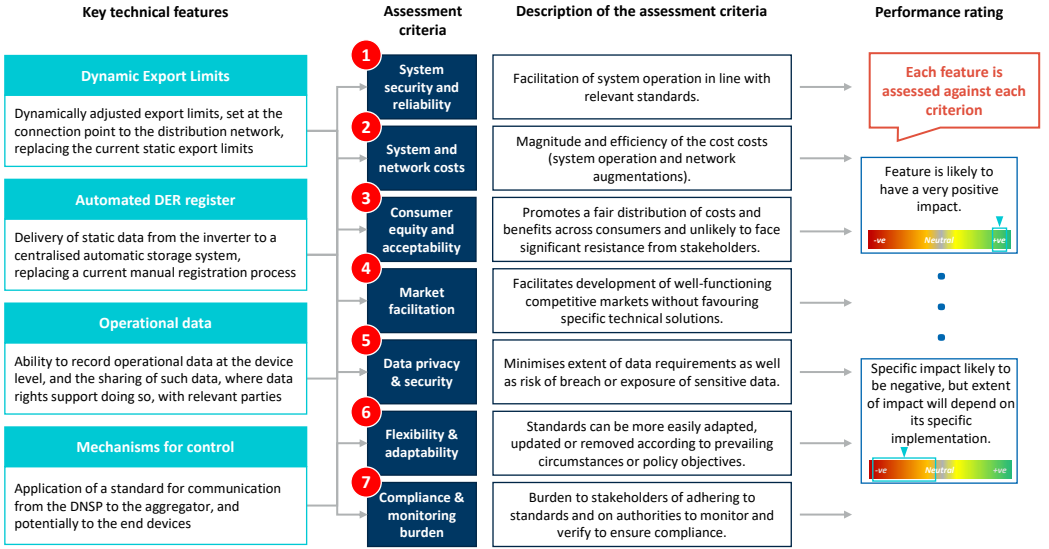
- **Effective standards will also enable customers to make choices to take up new products and services and unlock greatest value to customers from their flexibility.**
  - For customers to have access to a wide range of energy providers, service providers will require the ability to communicate with and operate these devices.
  - Without a minimum level of ‘open’ interoperability functionality, customers may have their DER assets locked-in to certain providers or offerings.
  - It will also limit the ability of new aggregators or retailers to enter the market and stimulate competition and innovation

- **Policy advice regarding application of the standard will also provide forward visibility to product vendors and service providers to support future readiness for new capabilities.**
  - Enabling providers with technical standards and processes for interoperability will see more value flowing back to customers, and a more flexible and lower cost system.

PROPOSED ASSESSMENT FRAMEWORK

The framework has two main components.

1. The **first** is a method to break down the technical standards that are within the scope for the policy (in this case, the inverter-based grid connected solar and storage resources) into a number of 'feature sets' that are largely mutually exclusive and can be regulated separately from other features.
2. The **second** is a proposed set of criteria for assessing whether each of these feature sets should be subject to the application of mandatory standards.



Source: FTI analysis

Assessment Framework

THE ASSESSMENT CRITERIA

Criterion 1: System stability (which encompasses reliability and security): 'System stability' evaluates the extent to which a standard facilitates efficient and effective system operation in line with both current standards and standards that may become increasingly relevant in future (for example, DNSP-provided dynamic operating envelopes).

Criterion 2: System and network costs: 'System and network costs' considers the magnitude and efficiency of the cost burden imposed in relation to system operation and network augmentations.

Criterion 3: Consumer impact – functionality, equity and acceptability: 'Consumer impact – equity and acceptability' evaluates two main factors. Firstly, it considers how fairly the costs and benefits of a standard are distributed across individual consumers. Secondly, it considers the extent to which it gives customers the functionality they need and expect, and the acceptability of the associated operation, data flows and other aspects of the standard.

Criterion 4: Market facilitation: 'Market facilitation' refers to the extent to which a standard facilitates the development of well-functioning competitive markets without favouring specific technical solutions. This includes the extent to which barriers to entry are created, the availability of information in the market, and the possibility of causing a 'lock in' for a specific technology.

Criterion 5: Data privacy and cyber security: 'Data privacy and security' measures the extent to which data requirements are imposed and the risk that a breach or exposure of sensitive or personal data could occur.

Criterion 6: Flexibility, adaptability, and innovation: 'Flexibility and adaptability' covers the ability of a standard to adapt in line with the evolving power market, prevailing policy objectives and the future needs of consumers.

Criterion 7: Compliance and monitoring burden: 'Compliance and monitoring burden' covers the burden created by adherence to a new standard placed on stakeholders, as well as the burden placed on authorities to monitor compliance and to take action against non-compliance.

KEY THEMES EMERGING FROM STAKEHOLDER FEEDBACK

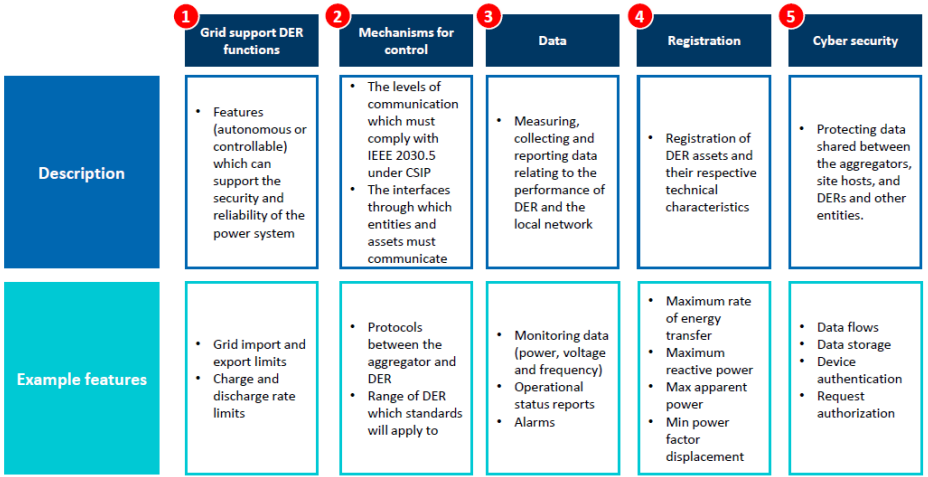
- Stakeholder submissions in - mix of feedback received on assessment framework
- General sentiment that proposed assessment criteria cover appropriate considerations
- Questions raised re the applicability of using the framework to support all layers of interoperability – e.g., between devices / between customers and traders / between networks and aggregators/device controllers or providers
- Support for development of a national policy and approach where possible and use of framework to get there
- Lack of clarity of how the assessment framework will be applied and by whom – noting parallel work on governance arrangements being considered by AEMC (GDERTS rule change proposal)
- Queries re next steps for governance and roadmap for implementation

Feature Sets

Key categories of technical features identified:

- Grid support DER functions (DOEs)
- Mechanisms of control
- Data
- Registration
- Cybersecurity

Figure 7: Key categories of technical features within CSIP AUS



Source: FTI analysis

KEY THEMES EMERGING FROM STAKEHOLDER FEEDBACK

- A number of submissions provided feedback on the proposed feature sets – some agreeing it was a useful way of breaking down the issues for consideration
- Some views that there may need to be adaptations made to the framework to apply it to other standards (i.e. feature sets considered to be 'CSIP-Aus' specific)
- Some parties identified issues with how certain assessment criteria have been framed – important to consider all costs to consumers (not just system and network costs)
- Some parties identified issues with how certain feature sets have been framed and proposed alternatives – e.g. 'Mechanisms for Control'
- Views that issues relating to cyber security (as a Feature Set) needs to be elevated / prioritised as a consideration
- Views that issues relating to consumer impact were important – consideration of social licence

Policy framework parameters

Compliance Dates

The target date for compliance with the feature sets defined, via one or more technical standards. The readiness of the industry to adopt and leverage new interoperability standards will be a key factor on the timing of standards introduction.

Applicability

The applicability would define rules and limits on who is subject to meet the compliance obligation of each Stage. For example, this could include market segments (residential, commercial), size of inverters, types of connected assets (e.g., solar PV, battery storage).

Applicability could also be defined inclusive of existing installations, e.g., defining the sunsetting of any existing grandfathering arrangements.

Related Decisions

This relates to a number of policy determinations that make clear statements on how the technical standard is to be implemented, which might include the required mechanisms for certification and compliance, policies on where features should be monitored (e.g., at connection point). These decisions may not all be defined up front and may be determined at later points in the staged rollout.

Related decisions may also refer to certain ‘trigger’ conditions under which the policy dates might move. For example, a sudden sharp uptake in the rate of electric vehicles which puts increased strain on systems and consumers and requires a policy response.

Table 1 - Indicative framework for developing an implementation roadmap

Stage	Feature sets	Applicability	Related Decisions	Compliance date
Stage 1	Feature set 1:	All newly installed inverters > YY kW	Related decision 1 Related decision 2	1st XX 202X
	Feature set 2:	All newly installed inverters > XX kW		
Stage 2	Feature set 3:	All newly installed inverters > AA kW	Related decision 3	1st XX 202X
	Feature set 3:	All newly installed inverters > BB kW		
Stage 3	Feature set 1	All inverters		1st XX 202X
	Feature set 2	All inverters		

KEY THEMES EMERGING FROM STAKEHOLDER FEEDBACK

- Industry readiness can be gauged from DNSPs, OEMs, and other parties and should inform compliance dates
- Grandfathering is recommended where it is not cost effective to upgrade systems to compliance
- Inverters reaching end of life and being replaced with standards compliant inverters means the existing fleet will naturally switch over time
- Important for CBAs and regulatory/business impact assessment to holistically understand costs and benefits of implementation times and applicability

Roles and Responsibilities

ROLES AND RESPONSIBILITIES TO SUPPORT INTEROPERABILITY

The Post 2025 advice outlined the need to evolve the roles and responsibilities for different actors as the reforms are delivered – setting directions for each of the actors in the supply chain. As part of the current workstreams, incl development of interoperability policy, consideration will need to be given to roles and responsibilities allocated to different actors.

Dynamic Operating Envelopes

- Which parties can take on the role of agent connecting to the device (e.g. OEM, Aggregator, DNSP, tech provider) how are consumer protections governed?
- Currently connection agreements are solely between the DNSP and the customer. How might the responsibilities of the agent be codified in these connection agreements?
- How can we ensure customers with different needs (the intention to be passive, semi-active or active in the wider energy system), are all suitably serviced

Interoperability

- How can switching between agents be achieved that promotes good outcomes for customers: transparency, allows for new entrants with innovative offerings?
- Currently switching arrangements in energy are between retailers, and therefore have energy market specific governance and tools (NER, NERR, MSATS, etc). How might switching in models which allow non-market participants to be agents operate?

DISCUSSION and NEXT STEPS

NEXT STEPS

- Market bodies will examine and summarise feedback, submissions will be published online next week
- ESB to provide input to AEMC on governance related issues and routes for implementation ahead of final determination in March
- ESB appointing consultant in late Feb to revise assessment framework, and to work with industry stakeholders on key inputs (e.g. costs, timelines)
- Exercise and active engagement on roles and responsibilities work to commence in March
- Directions paper expected to be released in June 2022

MIRO

Consultation questions

WHY AN INTEROPERABILITY POLICY?

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How far does the scope of CSIP-Aus take us towards achieving the policy objectives?

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Are there questions on the criteria as stated? Are these sufficient?

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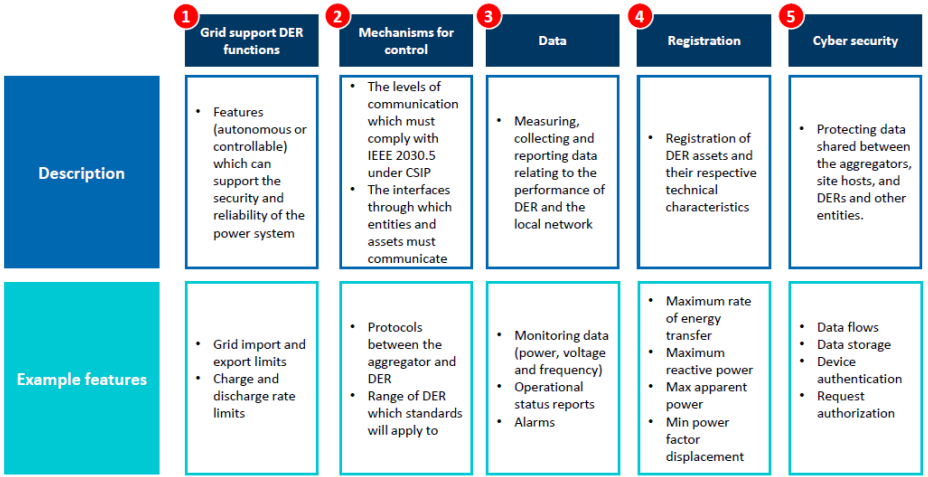

Source: FTI analysis

Is there any feedback on specific features to include in the assessment?

Does it make sense to group feature sets in a different way?
E.g. via a series of use-cases?

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What are stakeholder views on the staged introduction, and parameters of policy framework?

Appendix

Consultation questions

Questions related to the assessment framework

1. What are stakeholder views on the framing of the feature sets as described in Chapter 3 (and in the accompanying FTI paper)?
2. What are stakeholder views on the selected the groupings of functionality for the feature sets?
3. What are stakeholder views on each of the proposed criterion as described in Chapter 3 (and in the accompanying FTI paper)?
4. Are there considerations that have not been captured in the assessment framework?
5. This assessment framework has been established to assist consideration of the CSIP-Aus standard for inverter based DER (solar PV and battery storage); however, it could also support consideration of other technology groups, such as EV smart charging and smart appliances. What are stakeholder views in respect of the applicability of this framework to other technologies, e.g., could the framework be applied to electric vehicle charging standards as a subsequent exercise?

Applicability

6. Understanding consumer needs will be important to support effective interoperability settings and secure acceptance for application of standards. What might be implications for the way households and businesses use their DER devices and how they may choose to interact with systems and markets?
7. Is there an assumption that existing fleets of devices would need to be grandfathered? If so, how long might be appropriate? Would sunset arrangements need to be considered to address potential issues of inequity issues?
8. Is it appropriate for new standards to apply to all retailers? How would aggregators and embedded network providers be treated?

Compliance timeframes

9. How might we assess timing of industry readiness? Is it appropriate for timing to be considered as part of the feature sets, rather than conformance to the entire standard, to allow gradual phasing in of functionality over time?
10. Is there a case for phasing in introduction of the standard (or relevant aspects of the standard) across different jurisdictions based on need? What might these considerations include?
11. Are there other parameters that may also be valuable for consideration of inclusion in this process?

Related decisions

12. How and when is the certification and compliance mechanisms determined? What are the likely lead times to establish such a capability?

13. What might be likely systems and processes required to ensure that customers can easily switch providers that conform to these new standards? How does this relate to other IT and systems upgrades identified as part AEMO regulatory and IT systems roadmap?

14. Are there other cross-cutting issues that stakeholders consider need to be raised and explored as part of this policy assessment?

Costs

15. The burden of compliance with implementing the technical standards will fall in the immediate term on the vendors across the solar and storage industry. In the medium term, the upfront and operational costs for compliance will likely be passed back to customers via Traders (retailers and aggregators). What are the key issues for retailers in ensuring this can be delivered at low cost? Are there aspects of the feature sets that have significant cost implications? Is there merit in staging the introduction of functionality over time?