

Statement on Interoperability of Distributed Energy Resources

May 2025

Distributed Energy Resources (DER) are smaller-scale devices connected to the distribution network that can use, generate, or store electricity. They include household devices such as rooftop solar, batteries, electric vehicle chargers, and appliances that can be incorporated into a Home Energy Management System, like pool pumps or hot water systems.

DER offers new and significant benefits to Western Australian electricity consumers, the power system, and the clean energy transition. To enable this, customer devices need to communicate and interact with the evolving power system. This Statement explains how such interaction, or 'DER interoperability', will be achieved in the state's main power grid, the South West Interconnected System (SWIS), by harmonising DER remote communication capability and installation.

DER interoperability

In this Statement, 'DER interoperability' refers to the ability of DER devices to exchange information with the electricity system. Its implementation across the SWIS will provide the following benefits:

1



Confirmation that DER devices are configured for secure and efficient network operation.

Example: Helping to identify whether an inverter meets the requirements of the [AS4777](#) standard, and that export settings are correct.

2



Efficient implementation of emergency backstop measures to support system security.

Example: Enhancing [Emergency Solar Management \(ESM\)](#) through increased automation and more sophisticated use to minimise impacts on system owners.

3



Introduction of flexible connections to maximise the use of assets and the network.

Example: Adjusting the limits on how much can be exported to the grid depending on what the grid can handle at the time. This will supersede current fixed exports and allow more energy to flow between DER and the network to the benefit of the system and electricity consumers.

4



Opportunities for consumers to benefit from new electricity products.

Example: Enabling customers to participate in Virtual Power Plants (VPPs). VPP participation refers to the remote orchestration of aggregated DER assets into a single entity, a VPP, to provide network and market services. New retail products will see consumers benefit financially in exchange for the use of their asset.

DER interoperability and associated benefits are becoming increasingly important as the energy transition progresses and DER uptake continues to grow in Western Australia (WA). Establishing and validating DER interoperability at the time of asset installation is the way forward.

DER interoperability is a major focus of the WA Government's [DER Roadmap](#).

Standards and harmonisation

DER interoperability is a national priority. Although WA's electricity networks and market are separate from the rest of the country, DER devices are imported and used nationwide.

The ability of different DER devices, systems, and applications to work together and exchange data effectively is critical. A harmonised approach will provide certainty for manufacturers, suppliers, and consumers.

The “[Common Smart Inverter Profile – Australia](#)” (CSIP-AUS) is a technical solution that encapsulates a suite of standards (established norms and requirements) identified to enable DER interoperability within an Australian electricity sector context. It also includes instructions on how to implement those standards.

CSIP-AUS enables the same technical language to be spoken across different devices and systems. This in turn supports DER interoperability by enabling DER device-level visibility and communication with network operators, VPP orchestrators, and energy management systems. It also supports robust cyber security practices and greater visibility of engineering standards related to network and system stability.

[South Australian](#), [Queensland](#) and [Victorian](#) governments have adopted CSIP-AUS for greater DER interoperability, with other state and territory jurisdictions likely to follow. It is the primary standard being considered for formal harmonisation by the national Consumer Energy Resources (CER) Working Group, as it delivers against interoperability projects identified in the recently released [CER Roadmap](#).

WA is aligning with the national approach and will use CSIP-AUS in the SWIS for new solar and battery installations and upgrades. Synergy is leading national development to update CSIP-AUS so it can be used to provide greater visibility and management of batteries. Synergy is also supporting national work to develop a robust cybersecurity framework to ensure CSIP-AUS communications are secure. In future, similar interoperability requirements will be needed for electric vehicle charging equipment with work on national alignment underway.

Implementation

CSIP-AUS is the first step toward DER interoperability in the SWIS. CSIP-AUS capability will be required for all new or upgraded rooftop solar and battery systems that are installed at ‘non-contestable’ consumer premises.

Non-contestable consumers are those that use less than 50 Megawatt hours (MWh) of electricity per year and are connected to the Western Power network. Typically, this encompasses residential consumers and small businesses, who are Synergy customers. Synergy is the sole entity permitted to aggregate these customers’ DER for market services, either directly or indirectly through a third-party.

Synergy will use the CSIP-AUS protocol to communicate with assets for the purposes of VPP orchestration, emergency backstop measures and to manage and limit exports to the grid. Remote management capability is often delivered through intermediaries, like the equipment manufacturer.

Device and system CSIP-AUS capability will be tested during installation and commissioning. This confirms systems are working as they should from the outset. For those who have opted into a VPP product and/or the Distributed Energy Buyback Scheme (DEBS), it means their new tariff arrangement can commence. For those who haven't, it means their connection is ‘future-proofed’ and capable of participating in products or schemes in future should the customer, or potentially a new homeowner, desire it.

To support this process, Synergy will release guidance for industry on how to connect to its platform and validate that CSIP-AUS is up and running. Synergy will also update its Supported Devices List to address interoperability requirements.

Western Power documentation such as its Basic Embedded Generation Connection Technical Requirements (BEGCTR) will also be updated as required. Opportunities for industry consultation will occur as part of updating these resources.

Regulations to support the DER connection process and device compliance are in development, per the DER Roadmap. In future, DER interoperability will be required for asset classes outside of rooftop solar and battery systems (such as EV chargers) and in the contestable market (>50 MWh) more broadly.

Customer benefits

When investing in household batteries or rooftop solar, there will be more opportunities for Synergy customers with CSIP-AUS capable devices to benefit. These include:

- Ability to opt into new VPP products that provide a financial return.
- Optionality to change between participating in the Distributed Energy Buyback Scheme (DEBS) and/or other VPP products, or avoid remote management by not spilling power into the grid.
- Ability to ‘future-proof’ properties so new homeowners can access products with increased ease.

Industry implications

National support and adoption of CSIP-AUS impacts the DER supply chain. Original equipment manufacturers (OEMs) will need to ensure their devices are compatible and appropriately supported, and DER retailers will need to ensure devices can meet capability requirements.

On a more local level, onsite commissioning will be impacted as it will require installers to revise processes to align with the needs of a CSIP-AUS connection in the SWIS. Due to the already-established national direction toward CSIP-AUS, there is familiarity and support from industry for this technical solution.

New installation and commissioning requirements will include:

- Connection to Synergy’s aggregation platform and validation that connection has been successful.
- Installation of an export monitoring device, so exports can be monitored and managed as required.
- Setting up VPP products, ESM or export limiting arrangements as appropriate.

Relevant documentation

To support industry with these changes, new and updated guidelines will be released. Synergy in its capacity as DER aggregator for all non-contestable customers, supported by Western Power in its role as Distribution System Operator, will be able to provide further detail on processes and timelines, including when industry will be engaged and consulted on implementation arrangements.

Synergy

NEW Interconnection Handbook (guidelines for OEMs and technology providers on how to use CSIP-AUS to integrate with Synergy’s Aggregation platform)

NEW Supported DER List and device registration process (for OEMs to register their products on the list of DER permitted for installation at a non-contestable customer premises)

NEW Installer Register and registration process (for DER Installers to get onto the list of trusted partners permitted to submit DER Registration information for DER installations and upgrades at a non-contestable customer premises)

NEW DER functional requirements (industry guidance on Synergy’s remote management approach highlighting relevant standards, technical features, and minimum functional outcomes)

Western Power

Basic Embedded Generation Connection Technical Requirements (BEGCTR)

Western Australian Services and installation Requirements (WASIR) – as required

Implementation timeframes

CSIP-AUS requirements will be incrementally rolled out in the SWIS.

In 2025, Synergy is updating its Supported Devices List to identify those that are CSIP-AUS compliant. Shortly after, it will also release its new VPP product with the launch of the WA Residential Battery Scheme. The rebate and VPP product will only be available to customers with systems that meet interoperability requirements. The transition of applying ESM to one that uses CSIP-AUS will commence in the second half of 2025, and will be a condition of DEBS when installing new systems.

Synergy, with support from Western Power, will engage and consult with industry in the development and introduction of new arrangements.

Energy Policy WA is reviewing and developing regulations to support better DER system compliance with technical and installation requirements, including interoperability needs, under the auspices of the DER Roadmap.

H1 2025

- Interconnection Handbook released.
- Updated Supported Devices List and device registration process released.
- DER functional requirements released.
- BEGCTR updated to allow larger DER inverters to connect to the grid.
- Development of DER compliance framework advanced.

H2 2025

- **WA Residential Battery Scheme commenced.**
- Synergy's VPP product operational in market.
- Further updates to BEGCTR.
- Broader DER standards assessed, including those required for EV Supply Equipment (EVSE).
- Commence DER compliance framework implementation.
- Transition of ESM to CSIP-AUS.

H1 2026

- Continue DER compliance framework implementation.
- Update to the WASIR.
- Contestable market device interoperability considered.

Find out more

Synergy

Email: CER@synergy.net.au

Web: [DER Industry Resources](#)

Western Power

Phone: 13 13 51

Web: [Technical guidance for solar installers](#)

Department of Energy, Mines, Industry

Regulation and Safety – Energy Policy WA

Email: epwa-info@demirs.wa.gov.au

Phone: (08) 6551 4600

www.energy.wa.gov.au