

Submission on the Issues Paper: Making it easier to connect solar, batteries and EV chargers

Submitted to: Department of Energy and Economic Diversification, Energy Policy WA

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1. Executive Summary

Arnowa welcomes the opportunity to respond to the Issues Paper **Making it easier to connect solar, batteries and EV chargers**.

Arnowa works in industrial and grid technology, connecting sensors, meters and other operational equipment to monitoring and data systems across energy, utilities and buildings.

Arnowa's interest in the Issues Paper is less about how DER data should be defined and governed, which the Issues Paper already addresses well, and more about how that data is actually captured, integrated and kept current once systems are connected. Reliable standing data and network visibility ultimately depend on the technology layer that connects meters, inverters, chargers and network systems in the first place.

Arnowa supports the overall direction of the reforms and offers the following perspective on how the technical architecture underlying these proposals can help Western Australia achieve its data quality, interoperability and VPP visibility objectives without adding unnecessary cost or complexity.

Arnowa's principal observations are:

1. Data quality is significantly affected by fragmented systems, manual re-entry and inconsistent validation across the connection lifecycle.
2. CSIP-AUS works best implemented as one of several protocols a connection point can speak, rather than a stand-alone system, so that DER data flows automatically into existing DSO, retailer and market systems.
3. Real time telemetry can reduce the burden of proposed reporting obligations, including for EV chargers and VPPs, by generating standing data as a by-product of normal operation rather than a separate compliance task.
4. Digital twin and spatial visualisation tools can make network capacity information, of the kind proposed for Western Power, genuinely usable for project screening, rather than simply published.
5. Controllable VPP capacity is best measured dynamically from observed device behaviour, rather than estimated from static portfolio assumptions.
6. Whatever data architecture DEED adopts should be designed to accommodate continued growth in connected DER, given the trajectory of uptake in the SWIS.

2. Arnowa's Perspective

Arnowa works in industrial and grid technology, connecting sensors, meters, inverters and other operational equipment to monitoring, analytics and automation systems. This work spans energy and utility networks, smart buildings, water and waste systems, and industrial and mining operations, including virtual power plant applications.

This gives Arnowa a practical, device level view of a problem the Issues Paper addresses at a policy level: connecting many different types of equipment, from many different manufacturers, into a single, reliable and current picture of what is actually happening on the network.

The most persistent source of poor asset data is generally not a lack of rules requiring it, but a lack of automated integration between the point where data is generated, such as an inverter or charger, and the systems meant to hold accurate records of it. Where integration is automated, data quality tends to improve considerably because manual transcription and duplicate entry are removed from the process.

Arnowa considers this relevant to several of the proposals discussed below, particularly those concerned with standing data quality, network capacity visibility and VPP capacity reporting.

3. Overall Response

Arnowa supports the Government's overall approach and the Issues Paper's preference for staged, proportionate reform over a single prescribed data platform.

Experience with interoperability standards across other industries points to one lesson in particular: they work best when treated as a common language that existing systems can speak, rather than a new destination those systems must be rebuilt to reach. CSIP-AUS, properly implemented, can play that role for DER communications.

Arnowa also notes that reforms of this kind tend to succeed or fail on integration design rather than on the underlying policy intent. A well designed minimum dataset can still produce unreliable information if it depends on manual entry at multiple points in the connection and operational lifecycle.

Arnowa therefore encourages DEED to consider, alongside the regulatory design of the reforms, the practical data architecture that will support them, including the extent to which standing data, network capacity information and VPP capacity can be generated automatically from existing telemetry rather than collected as a separate administrative step.

4. Response to the Seven Reform Proposals

4.1 Reform Proposal 1: Require inverters up to 30 kVA to be CSIP-AUS v1.2 enabled

Arnowa supports extending CSIP-AUS v1.2 to inverters up to 30 kVA, and considers this a sound foundation for consistent DER communications across the SWIS.

In practice, a communications standard delivers most of its value when it can coexist with other established protocols already in use, rather than requiring parallel, standard specific infrastructure. Arnowa encourages DEED to design implementation guidance so that CSIP-AUS can be adopted alongside existing manufacturer or aggregator protocols rather than replacing them outright.

Arnowa also notes that consistent testing and certification, already flagged in the national CSIP-AUS program, will be more effective if it tests real world interoperability between different platforms and device types, rather than compliance with the standard in isolation.

4.2 Reform Proposal 2: DSO functions to collect, validate and share data

Arnowa strongly supports clearer DSO responsibilities for DER data collection, validation and sharing, and considers this one of the most consequential proposals in the Issues Paper.

In practice, data validation can be made more efficient where telemetry is available, supplementing periodic manual checks rather than replacing them. Where DER systems are connected to monitoring, it becomes possible to compare declared standing data with observed telemetry and other system information to identify potential discrepancies for review, such as a capacity rating that does not align with observed behaviour or a record that has not been updated following a change to the system.

This is directly relevant to the data quality problems the Issues Paper identifies in the existing DER Register, and can help flag records worth a closer look well before a manual audit would.

Arnowa recommends that the detailed framework for Proposal 2 allow this kind of automated, telemetry-based validation to be used where suitable telemetry is available, alongside the manual and installer provided data collection already proposed, rather than treating real time monitoring as a universal requirement. This keeps the approach proportionate, consistent with DEED's stated intent, while allowing data quality to improve progressively as more DER systems become connected to monitoring over time.

4.3 Reform Proposal 3: Indirect data collection for EV chargers

Arnowa supports the proposed low friction approach to EV charger data collection.

Where operational EVSE data is available, including charging sessions, power draw and, where applicable, Open Charge Point Protocol status information, it could supplement the standing data collected at installation over time. Where charger owners or operators choose to connect their equipment to monitoring or energy management platforms, this operational data can provide an ongoing picture of EV charging load that a one off installation record cannot.

Arnowa agrees that this should remain optional rather than mandated at this stage, consistent with the Issues Paper's intention to avoid new barriers to EV adoption.

5. Principle 2: Making it easier for businesses to connect DER

5.1 Reform Proposal 4: Standardised data to create an easier connection pathway

Arnowa strongly supports a standardised connection pathway for commercial DER.

Commercial and industrial sites typically combine solar, storage, EV charging, building management systems and multiple meters operating as a single, coordinated energy environment rather than as separate installations. In practice, these sites are best represented not as a list of individual devices, but as a connected system whose combined operating characteristics, including export limits, storage behaviour and controllable load, can be modelled and monitored as a whole.

A structured, current model of a site's energy assets and their relationships, sometimes described as a digital twin, is one optional tool that could support the standardised commissioning DEED is proposing, by giving both the connecting party and Western Power a shared reference point rather than a static set of application documents. Arnowa raises this as a possible implementation aid rather than a requirement, and considers it a practical complement to the standardised data fields proposed under this reform for larger or more complex commercial sites.

5.2 Reform Proposal 5: Requirements to share network capacity

Arnowa strongly supports improved access to network capacity information and considers spatially enabled, and where appropriate dynamically updated, presentation of this information important to its practical usefulness.

Published capacity figures, whether forecast or historical, are considerably more useful to a project developer when they can be viewed spatially, alongside other network and asset information, rather than as a table or static report. In practice, spatial visualisation can substantially reduce the time and expertise needed to interpret network constraint information, including for developers who are not network engineers.

Arnowa encourages DEED to consider Western Power's iNOM platform as a starting point for this kind of presentation, and recommends that any expansion of network capacity information be designed for integration into digital twin, geographic information system or similar spatial tools that developers and aggregators already use, rather than as a stand alone dataset or report.

6. Principle 3: VPPs, network impacts and consumer opportunities

6.1 Reform Proposal 6: Explore mechanisms for VPP operators to provide simple capacity data

Arnowa supports the proposed controllable VPP capacity concept, and agrees that nameplate capacity is a poor proxy for what a VPP can actually deliver.

Controllable capacity is best understood as a dynamic, observed figure rather than a fixed estimate. Available capacity varies with weather, time of day, state of charge, device availability and customer behaviour, and can be measured directly from telemetry where a VPP's assets are connected to real time monitoring.

Arnowa recommends that the detailed reporting framework allow calculation of controllable capacity where suitable telemetry is available, rather than relying solely on a single static number, so that reporting can better reflect the genuine, time varying flexibility a VPP can provide.

6.2 Reform Proposal 7: Tie network-capacity information to VPP opportunities

Arnowa strongly supports linking network capacity information to VPP siting opportunities.

In practice, the most useful form of this information is spatially enabled network and VPP opportunity information that combines network constraint data with an indication of DER flexibility already present or expected in an area, similar in principle to Western Power's iNOM but extended to reflect VPP relevant information such as aggregated controllable capacity by area rather than individual customer detail.

This kind of tool would allow VPP operators, EV charging developers and other market participants to identify promising locations on a self service basis, consistent with the outcomes based approach the Issues Paper proposes, while keeping the underlying customer level data appropriately protected.

7. Other Matters Arnowa Recommends DEED Consider

The Issues Paper asks whether there are other matters DEED should consider. Arnowa raises two, from a technology and integration perspective.

7.1 Design data requirements to support automated data exchange

Much of the detailed regulatory work following this Issues Paper will need to specify data fields, formats and sharing obligations. Arnowa recommends that these requirements be specified in a way that can support automated data exchange between systems, using standard, well documented interfaces, rather than being designed solely around manual form based reporting and automated later as an afterthought. This is a question of how the data requirements are specified, not a call to mandate any particular technical architecture, consistent with DEED's technology neutral approach.

This distinction matters because the volume of DER connections in the SWIS is expected to grow substantially over the coming decade. A framework designed around manual reporting tends to become a bottleneck as volumes increase, while one that can support automated exchange is better placed to scale without proportional increases in administrative effort for Western Power, retailers or connecting parties.

7.2 Recognise that DER interoperability extends beyond CSIP-AUS

CSIP-AUS is a valuable and appropriate common standard for DER communications, and Arnowa supports its extension under Proposal 1. In practice, any given site is also likely to include equipment, such as building management systems, EV charging networks or third party energy management platforms, that communicates using other established protocols.

Arnowa recommends that the detailed framework treat CSIP-AUS as the common inverter level communications standard, while allowing other established protocols to provide data into the same standing data framework where it can be reliably mapped to the same minimum data fields. This would avoid creating an incentive to duplicate equipment or communications pathways solely to achieve formal CSIP-AUS compliance.

8. Response to DEED's Broader Consultation Questions

Do you have feedback on the seven proposals?

Arnowa's feedback on each proposal is set out in sections 4 to 6 above, focused on the technology and data architecture considerations relevant to DER connections and monitoring.

Are there any other things that we should consider to improve DER data quality, collection and/or data flows?

Arnowa's suggestions are set out in section 7 above: specifying data requirements so they can support automated data exchange between systems, and recognising that DER interoperability extends beyond CSIP-AUS to the wider range of equipment increasingly found at connection sites.

How well do data sharing and connection processes work for different stakeholders, like consumers, DER installers, electricity retailers, and potential VPP aggregators?

From a technology and integration standpoint, the common thread across these stakeholders is duplicate data entry and unclear ownership of individual data fields. Arnowa recommends the detailed framework minimise duplicate entry wherever information can reasonably be reused, and clearly identify who is responsible for providing, validating and updating each data element, so that consumers, installers, retailers and aggregators are each only asked for information once and know where it is held.

Will the proposals help increase DER uptake and participation?

Yes, particularly if implemented with automation in mind.

Arnowa considers that the proposals, if implemented using automated data integration rather than manual reporting processes, can reduce the administrative burden of DER connection and VPP participation while improving the quality and timeliness of the underlying data. This is particularly relevant as DER volumes continue to grow across the SWIS.

Are there parts of the DER connection process that should receive particular attention?

Arnowa recommends particular attention to:

Integration design: data fields and sharing obligations should be specified in a way that can support automated data exchange between systems, not only manual reporting.

Protocol scope: the detailed framework should recognise data collected through other established protocols alongside CSIP-AUS, where it can be reliably mapped to the same standing dataset.

Spatial presentation: network capacity and VPP opportunity information should be designed for integration into the spatial and digital twin tools that developers, aggregators and network planners increasingly use.

Dynamic VPP reporting: controllable VPP capacity should allow telemetry based calculation where suitable telemetry is available, rather than relying only on a static estimate.

9. Conclusion

Arnowa supports the seven reform proposals and welcomes DEED's staged, proportionate approach to improving DER data quality, connections and VPP visibility in Western Australia.

Arnowa's central observation is that the success of these reforms will depend heavily on the technology architecture that sits beneath them. Well designed data requirements can still produce unreliable outcomes if they rely on manual collection and reporting at multiple points in the DER lifecycle, while the same requirements can be met more reliably, and with potentially lower ongoing administrative effort, where they are supported by automated integration, telemetry where available, and spatial visualisation tools.

Arnowa particularly supports:

- CSIP-AUS as a common, but not exclusive, interoperability standard for inverter level DER communications;
- automated validation of standing data against observed telemetry and other system information, alongside manual and installer provided data collection, to flag discrepancies for review;
- use of available operational EVSE data where it can be obtained without creating additional installation or compliance barriers;
- digital twin and spatial visualisation tools to make network capacity and VPP opportunity information genuinely usable; and
- telemetry based calculation of controllable VPP capacity where suitable telemetry is available.

Arnowa welcomes the opportunity to contribute further, including from a technology and integration perspective, as DEED progresses to detailed ESM Rule amendments later in 2026.