

Use Case Requirements Document – CER Data Exchange

October 2026

To present the preliminary technical and regulatory requirements for the two priority use cases: Broader Access to CER Standing Data and the Sharing and Receiving of Dynamic Operating Envelopes



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1 Introduction

1.1 Document objective

This document consolidates industry feedback and documents the preliminary business justifications, technical and regulatory requirements for the two priority Consumer Energy Resources (CER) Data Exchange (CDX) use cases: Broader Access to CER Standing Data and the Sharing and Receiving of Dynamic Operating Envelopes (DOEs). The document has progressed the design for these use cases by defining indicative solution concepts, priority data sets, access requirements, user needs, technical requirements and regulatory considerations identified through the feedback process of the project.

It is recommended to read the *CDX Project Outcomes Report* (refer to Appendix A1) alongside this document as the requirements, data specifications, access models and design considerations in this document can be leveraged to inform subsequent detailed solution design, regulatory development, build and implementation.

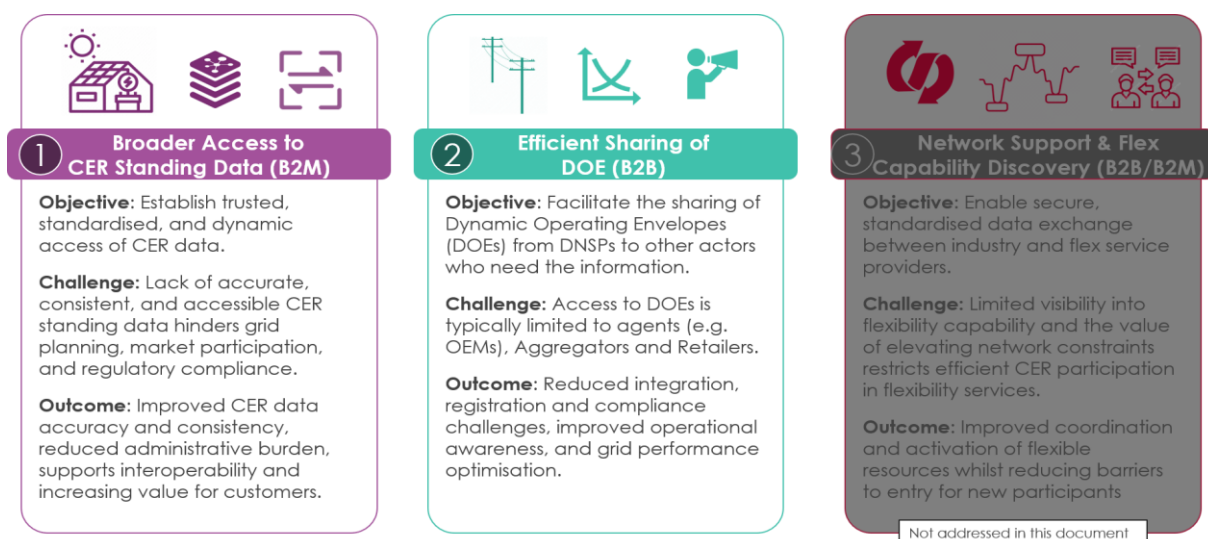
1.2 Scope

1.2.1 In scope

This document defines the preliminary requirements emanating from the CDX Detailed Design Project with respect to two of the three priority use cases identified in the CER Data Exchange Industry Co-Design Initiative¹.

The requirements address changes needed for market operations, system management and security, and participant integration.

Figure 1 Priority use cases



¹ For more information on CDX Industry Co-design project, see <https://www.aemo.com.au/initiatives/major-programs/nem-distributed-energy-resources-der-program/markets-and-framework/cer-data-exchange-industry-codesign>

1.2.2 Out of scope

Validation of suitability of indicative architecture and detailed technical design.

Implementation of market participants', Distribution Network Service Providers (DNSPs)' or other third-party systems and processes

Use Case 3 was not progressed during this project and is outside the scope of this document.

The project team chose not to pursue this use case as it is already being progressed through existing industry-led initiatives such as the Consistency Prototype Projects arising from Recommendation #3 Drive consistent delivery of Distributed System Operator (DSO) activities for DOE consistency of Redefining Roles for Market and Power System Operations (M3/P5)² which is a National CER Roadmap (CER Roadmap) workstream. More information about it is included in the *CDX Project Outcomes Report* (refer to Appendix A1).

1.3 Audience

This document may be used by:

- Participants
- Key external stakeholders, such as:
 - The Commonwealth Department of Climate Change, Energy, Environment and Water (DCCEEW)
 - Original Equipment Manufacturers (OEMs)
 - CER device management agents and portfolio operators (e.g. customer agents, Virtual Power Plant (VPP) operators)
 - CER Taskforce and the CER Taskforce Reference Group
- Business Reviewers
- Business Subject Matter Experts (SMEs)
- Analysts, designers, developers
- System and functionality testers
- Technical writers

² For more information on M3/P5: Redefining Roles for Market and Power System Operations, see <https://www.energy.gov.au/energy-and-climate-change-ministerial-council/working-groups/electricity-working-group/consumer-energy-resources-sub-working-group/redefining-roles-for-market-and-power-systems-operations>

1.4 Stakeholders

1.4.1 Requirement stakeholders

The table below identifies people who contributed to the process of defining or reviewing this document.

SN#	Organisation	Name
1.	Australian Energy Regulator	Hrishikesh Desai, Stephen Watson
2.	AGL	Rashmidha Kanagarajah, Glen Summers, Kyle Auret, Andrea Espinosa
3.	Alinta Energy	Travis Ray, Simon Kinnear
4.	Ausgrid	Alan Luc, Oli Morgan-Williams
5.	AusNet	Anoop Nambiar, Astro Sakalis
6.	Australian Energy Council	Jo De Silva
7.	Bluecurrent	Paul Greenwood
8.	CitiPower, Powercor and United Energy	Christopher Roberts, Bani Tachril, Brent Cleeve, Tennille Pownceby
9.	Clean Energy Council	Con Hristodoulidis, David Markham
10.	Consumer Advocate	David Stephen Havyatt
11.	CS Energy	Lahiru Wimalasuriya
12.	Endeavour Energy	Hadi Mostafavi, Prez Anderson
13.	Ergon Energy & Energex	Alrun Wigand, David Beasley, Andrew Bozin
14.	EnergyAustralia	Carmen Bas Domenech, Robert Lo Giudice, Courtney Markham
15.	Evergen	Michael Burlace, Tim Moore
16.	Evoenergy	Jane Godkin, Chloe Fox
17.	Gridsight	Brad Smith
18.	Intellihub	Dino Ou
19.	Itron	Richard Wallbrink
20.	Jemena	Nevena Andric, Sean Harris
21.	Kraken Technologies	Peter Docking, Sagar Shah
22.	Mondo Power Pty Ltd	Kevin Toohey
23.	Origin Energy	Amanda Pollard, Megan Findlay
24.	PlusES	Helen Vassos
25.	Red and Lumo Energy	Sean Jennings
26.	Redback Technologies	Yang Tang
27.	SA Power Networks	Blake Ashton, Liam Mallamo
28.	SEC Victoria	Sanket Wankhede
29.	SwitchDin	Ian Griffiths, Stuart Powell
30.	Tesla	Chad Wijeratne, Emily Gadaleta

1.5 Assumptions

The following assumptions have been identified (or made) with respect to this stakeholder requirement analysis:

CER standing data will contain information from the Distributed Energy Resource (DER) Register (DERR).

CER standing data that is not contained within the DERR will be secured from other sources and made available to actors with appropriate role-based access.

Market Interface Technology Enhancements (MITE) / Industry Data Exchange (IDX) architecture/capabilities are either sufficient or can be adapted effectively and efficiently to meet the technical / scale requirements of the use cases in this document.

The requirements and design considerations in this document will be matured through the consultation process before being considered for delivery.

1.6 Dependencies

The following dependencies are identified with respect to this stakeholder requirement analysis:

1. CDX is expected to leverage MITE/IDX capabilities. Changes to MITE scope, timing, technical design or onboarding approach may affect CDX solution design, implementation sequencing, testing, and participant readiness.
2. CER Roadmap policy development with respect to unrecognised roles, CER technical regulation, data management frameworks and coordination, conformance and compliance frameworks, and market and system roles and responsibilities.

1.7 Disclaimer

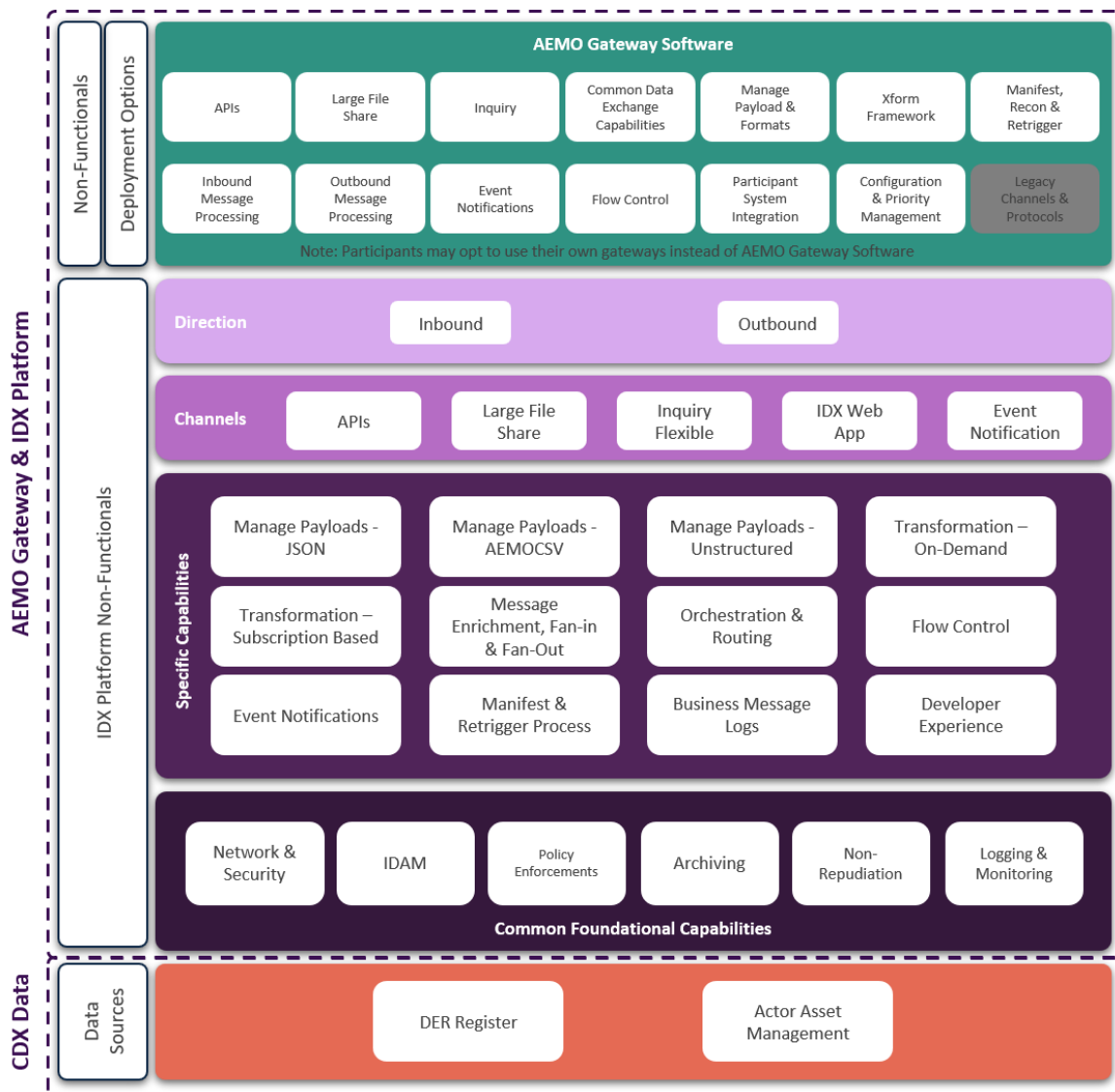
1. Indicative solution and process maps have been added to the document to facilitate understanding of the use cases and how the solution may be implemented. This additional content was developed internally in discussion with AEMO MITE SMEs and was not reviewed or validated by the working group members. As such, stakeholders feedback was not sought on these sections, and they should be considered for illustrative purposes only. The following sections were not reviewed by the working group:
 - 2. Indicative solution
 - 2.1 Use Case 1: Broader Access to CER Standing Data
 - 2.2 Use Case 2: Sharing and Receiving of DOE
 - 3.1.3.2 CER standing data Part 1: Updating Market Settlements and Transfer Solutions (MSATS)
 - 3.1.3.3 Indicative process: CER standing data Request (Part 2)
 - 3.2.3.1 Indicative process: Sharing and receiving DOEs
2. Some roles in the user stories table were not represented by working group members, but these roles were suggested for inclusion by other working group members. Where roles were not part of the consultation, it should be noted the user stories need to be reviewed.

2 Indicative solution

As described in the CER Data Exchange Industry Co-Design³, CDX will leverage the architecture developed under the MITE initiative for connectivity. In addition, the use cases discussed in this document are expected to make use of data sources such as Actor Asset Management (AAM) and the DERR.

The image below shows an indicative solution for CDX use cases 1 and 2.

Figure 2 Indicative solution for CDX



IDX provides secure Application Programming Interfaces (APIs), messaging, and file transfer capabilities to facilitate data exchange between AEMO and market participants. Within the IDX framework there are five messaging patterns available:

³ For more information on CDX Industry Co-design Project, see <https://www.aemo.com.au/initiatives/major-programs/nem-distributed-energy-resources-der-program/markets-and-framework/cer-data-exchange-industry-codesign>

Table 1 IDX framework's messaging patterns⁴

Pattern Type	Description
Synchronous	An immediate business response is required to confirm a request has been received and processed.
Asynchronous	Additional processes or validations are required to enable a response to the request. It follows a multi-legged approach to deliver the business response.
Fire & Forget	Request message is sent with no expectation of receiving a business or technical (e.g. MACK) response message from another market participant. Hub MACK responses may still be provided.
Inquiry-Flexible	The Interface data exchange consists of an on-demand service that allows for a dynamic subset of data elements to be returned.
Inquiry-Flat	The Interface data exchange consists of an on-demand service that allows for a fixed set of data elements to be returned.

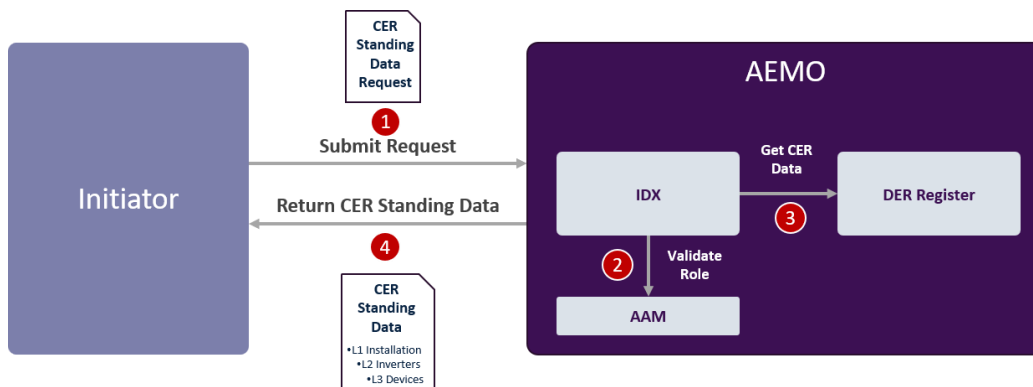
CDX Data Sources

1. DERR: The source for CER standing data
2. AAM: The source of truth for participant roles and their relationships with CER (e.g. this is where the Customer Agent for a site would be registered)

2.1 Use Case 1: Broader Access to CER Standing Data

Figure 3 shows a high-level view of how standing data requests might work. The requestor initiates the transaction by sending a CER standing data Request to AEMO's IDX platform which validates the initiator's role, compiles the requested standing data and returns it to the initiator.

Figure 3 High level view of standing data request



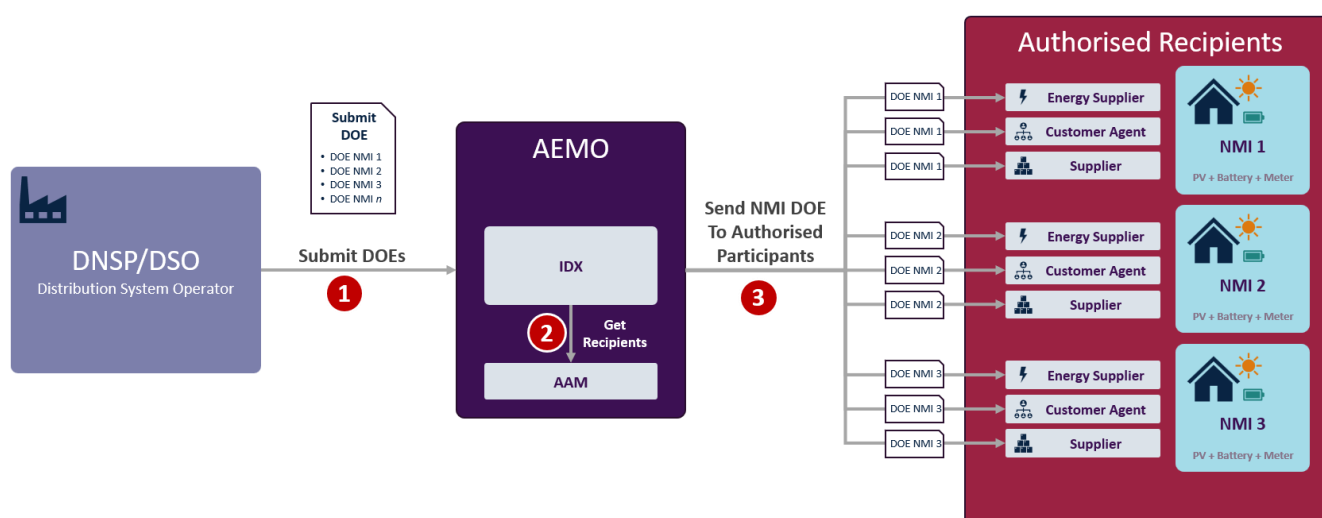
⁴ For more information on MITE, see <https://www.aemo.com.au/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/market-interface-technology-enhancements>

High-level flow	1. Initiator submits a request for CER standing data 2. AEMO validates the initiator's role by referencing AAM where the CER roles and relationships are registered. 3. AEMO queries the DERR to compile the CER standing data elements the initiator's role is authorised to view 4. AEMO returns a CER standing data message to the initiator.
IDX capabilities	• IDX's 'Inquiry Flexible' messaging pattern will allow a dynamic response to deliver only the CER standing data elements the requestor's role is authorised to view.
Data sources	• AAM will be queried to validate the requestor's role and association with the National Metering Identifier (NMI) to determine what data they are authorised to receive. • DERR is expected to serve as the primary source of CER standing data.

2.2 Use Case 2: Sharing and Receiving of DOE

Figure 4 shows a high-level view of how DOE sharing might work. The DNSP/DSO initiates the transaction by sending a set of DOEs to AEMO's IDX platform which identifies the authorised recipients and delivers the DOEs to those recipients.

Figure 4 High level view of DOE sharing



High-level flow	1. DSO submits a set of DOEs for a subset of their NMIs 2. AEMO identifies the authorised recipients for each NMI's DOE by referencing AAM where the CER roles and relationships are registered. 3. AEMO uses the IDX Fan Out capability to send specific DOEs to each authorised recipient.
IDX capabilities	• IDX's 'Asynchronous' messaging pattern will allow for the processing required to identify authorised recipients and repackaging of DOEs for each recipient. • The 'Fan Out' capability is expected to be employed to allow DOEs to be delivered split up and sent out to specific authorised recipients.

Data sources

- AAM will be queried to identify participants who currently hold the roles flagged as authorised recipients for each DOE.

3 Requirements and design considerations

This section covers the high-level business requirements and use cases for each of the priorities identified as part of the CDX Industry Co-Design Initiative.

The requirements have been developed to support future consideration of delivery mechanisms, access models and implementation pathways. Further analysis of the use cases, options considered, stakeholder feedback and recommendations is provided in the *CDX Project Outcomes Report* (refer to Appendix A1).

Note on Security of Critical Infrastructure (SOCi):

AEMO is subject to obligations under the SOCi Act in its role as the owner and operator of critical energy market operator assets. As CDX design and implementation progresses, AEMO will continue to consider any relevant SOCi obligations through its established governance, cyber security, risk management and compliance processes. These assessments would be undertaken as part of the normal design, implementation and operational activities associated with the service. AEMO notes that the Australian Government is also currently consulting on amendments to the SOCi Act, including proposals relating to the coverage and regulation of DER and associated operators. AEMO will continue to monitor these reforms and consider any implications for CDX as the regulatory framework evolves. Similarly, organisations participating in CDX that are, or could become under any SOCi Act enhancements, subject to SOCi obligations would be expected to consider and manage those obligations through their own governance and risk management frameworks.

3.1 Broader access to CER Standing Data use case (Use Case 1)

This use case seeks to enable secure, standardised and scalable access to CER standing data for authorised parties.

This section defines the preliminary business, technical and regulatory requirements for the use case. Further background, stakeholder feedback and project recommendations are documented in the *CDX Project Outcomes Report* (refer to Appendix A1).

For the purposes of this document, CER standing data is defined as:

Data providing information about CER associated with a connection point that includes, but is not limited to, location and installation details, technical specifications, asset identifiers, operational characteristics and other relevant attributes necessary for supporting market and system operations.

3.1.1 Approach for access to CER standing data

Current sources of CER-related data within the NEM include the DERR and the Clean Energy Regulator's database related to the Small-scale Renewable Energy Scheme (SRES), which includes information on small-scale renewable energy installations (e.g. solar photovoltaics (PV) installation and battery data).

This document aims to define the constituent data components that comprise CER standing data and to that end has limited the definition to data elements that are currently available in the DERR. Some consideration has been given in **A3.1 CER data Part 3: Expanding CER standing data via CDX** to expanding CER standing data to include elements that are not available in the DERR in future, but how this data is sourced and maintained is yet to be determined.

This project acknowledges that the CER Roadmap workstream relating to CER Technical Regulation (T2) has proposed a National Installed Device Register (NIDR) which may also contain CER-related data once established.

Whether there may be a single source or multiple sources across the NEM containing CER standing data, how market participants and other prospective roles within the NEM might access such data is to be determined. Considerations relating to the approach to access CER standing data shall be considered subsequent to finalising the business and functional requirements outlined in this document and agreed by working group members.

Options for enabling access to CER standing data may include:

Including CER standing data in MSATS: National Metering Identifier (NMI) Standing Data comprises datasets expressly specified in the National Electricity Rules (NER) and other categories of data identified within the MSATS Procedures (as forming NMI Standing Data). MSATS governs the recording of financial responsibility for energy flows at a connection point and the processes that facilitate transfer of that responsibility between Market Participants.

If retail products increasingly interact with, are dependent upon, or are materially influenced by the presence and operation of CER/DER, there is a reasonable basis to explore whether NMI Standing Data should be expanded to include simplified CER indicators. These indicators may be:

- Derived from data currently held within the DERR, where AEMO determines that a minimal, non-confidential representation can be produced; or
- Formed from specific DERR data elements that are classified as NMI Standing Data under the MSATS Procedures.

This option was considered by the working group, and the resulting requirements are detailed below in **3.1.3.1 CER standing data Part 1: Simplified CER standing data in MSATS**

Direct DERR access: Enabling market participants to access selected fields from the DERR on a controlled basis, supported by a roles-based framework and explicit authorisation settings. This would require clear definition of eligible parties, data elements, and use constraints to appropriately manage information access and confidentiality.

This option was considered by the working group, and the resulting requirements are detailed below in **3.1.3.4 CER standing data Part 2: Existing CER standing data via CDX**

3.1.2 Roles identified for CER standing data access

The Technical Working Group adopted the roles developed through the CER Roadmap's Redefining Roles for Market and Power System Operations (M3/P5) workstream as the basis for assessing CER standing data access requirements.

These roles have been used to define data access requirements, user stories and regulatory considerations for this use case. For more information on role definitions, refer to Appendix A2.

3.1.3 Requirements and data specification

3.1.3.1 CER standing data Part 1: Simplified CER standing data in MSATS

Part 1 of Use Case 1 aims to provide a simplified subset of the CER standing data via MSATS as an adjunct to the NMI Standing Data. For example, rather than being able to secure specific details about installed DER (e.g. a PV system size), certain roles might be able to access whether a PV system is available at the NMI (i.e. yes or no). This approach will make use of existing systems for participant access to NMI Standing Data.

Note: The working group explored the idea of an incremental approach to Part 1 where:

- Part 1A would include a set of high-level non-confidential indicators, consistent with the definition of NMI Standing Data in the NER and could therefore be delivered with a rule change.
- Part 1B would extend this approach and enable access to an expanded sub-set of data from the DERR subject to amendments to the NER.

The working group assessed 1A and decided that it would not deliver enough value to pursue. The information below was originally “Part 1B” but is now presented as “Part 1”

The table below provides a listing of the CER standing data attributes that are proposed for inclusion in the MSATS NMI Standing Data as Part 1 of Use Case 1.

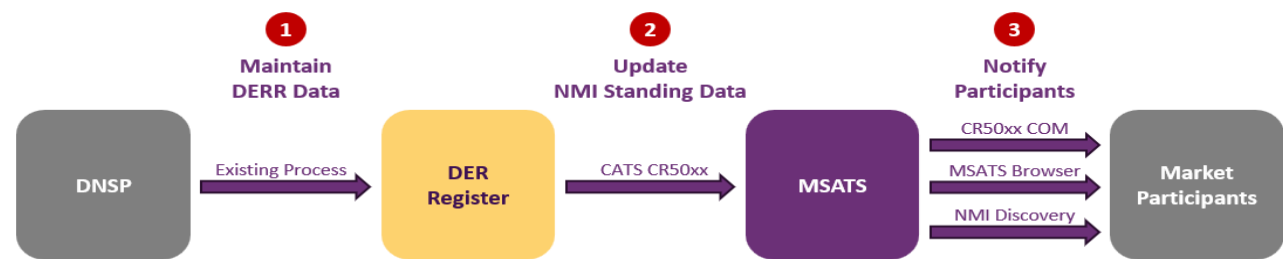
Table 1: Data for Part 1: Simplified CER standing data in MSATS

Data	Description	Value	DERR data	MSATS data access rights
Solar Flag	Indicates the status of Solar PV at the site as recorded in the DERR. <i>Note: Where a site has multiple Solar PV device records, the highest priority status will be taken based on the following priorities: 1: Active, 2: Inactive, 3: Decommissioned</i>	- A: Active - I: Inactive - D: Decommissioned - N: No DERR Record	Device (L3)	• Financially Responsible Market Participant (FRMP) • Prospective FRMP
Battery Flag	Indicates the status of a storage device at the site as recorded in the DERR. <i>Note: Where a site has multiple storage device records, the highest priority status will be taken based on the following priorities: 1: Active, 2: Inactive, 3: Decommissioned</i>	- A: Active - I: Inactive - D: Decommissioned - N: No DERR Record	Device (L3)	• FRMP • Prospective FRMP
Solar Total Capacity	Sum of rated capacity of all active solar devices at the site. <i>Note: Where a site has multiple Solar PV devices, this value will be calculated as the sum of Solar PV device capacity.</i>	Numeric	Device (L3)	• FRMP • Prospective FRMP
Inverter Nameplate Capacity	The rated output capacity of the site's inverter(s). <i>Note: Where a site has multiple inverters, this value will be calculated as the sum of inverter nameplate capacity.</i>	Numeric	Connection (L2)	• FRMP • Prospective FRMP
Storage Nameplate Capacity	Sum of rated capacity for storage devices at the site. <i>Note: Where a site has multiple storage devices, this value will be calculated as the sum of storage device capacity.</i>	Numeric	Device (L3)	• FRMP • Prospective FRMP

3.1.3.2 CER standing data part 1: Updating MSATS

AEMO would be responsible for propagating data from the DERR into MSATS. The proposed method for doing this is to use an MSATS Change Request generated by the DERR when data is added or updated. A high-level view of how this might work is shown below.

Figure 5 Proposed method for MSATS change request

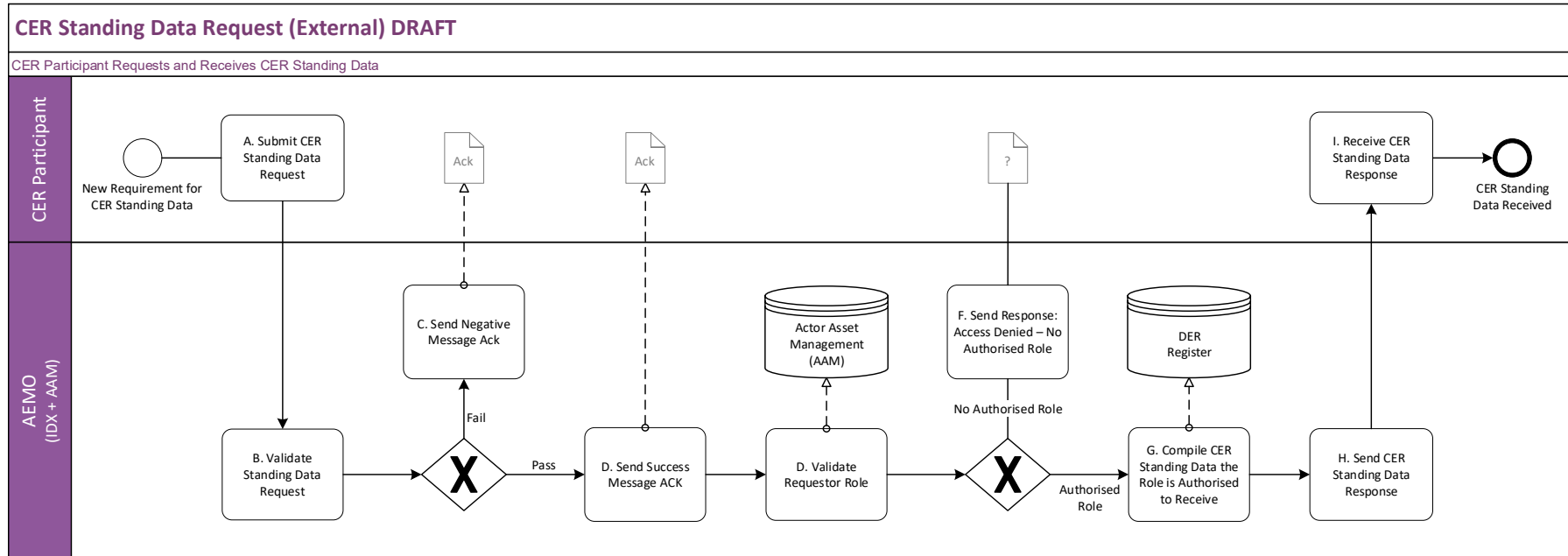


Maintain DERR Data	The existing process for adding and updating the DERR. Part 1 does not seek to make any changes to this.
Update NMI Standing Data	Changes to the DERR generate a Customer Administration and Transfer Solution (CATS) Change Request (CR) like a CR50xx CR to change NMI data. In this case, updating the NMI CER standing data.
Notify Participants	Existing MSATS methods for making standing data changes available to participants. It is to be confirmed in future design discussions if a COM notification would be used for this or if browser and NMI Discovery options will suffice.

3.1.3.3 Indicative process: CER standing data request (part 2)

The process outlined in Figure 6 below provides an indicative view of the process for a CER participant to request CER standing data.

Figure 6 Indicative process to request CER standing data



3.1.3.4 CER standing data Part 2: Existing CER standing data via CDX

Table 2 lists CER standing data that will be made available in Part 2 of Use Case 1.

The data elements included in Part 2 represent a subset of the data that is available in the DERR today. Some of the items listed below map to multiple fields in the DERR and in those cases, the individual DERR fields are included in the description.

Note: The "Data Access Rights" column indicates all parties who would have access rights to the data via CDX. As such, the organisation responsible for providing the data is also listed in the Data Access Rights in keeping with the approach taken in MSATS.

Note: The working group also identified "future requirements" for CER standing data elements that are not currently available in the DERR (refer to Appendix A3).

Table 2: Data for Part 2: Existing CER standing data via CDX

Data	Description	Value	DERR data	Org responsible	Data access rights	Priority
NMI	National Meter Identifier. This is the unique Identifier for connection point. <i>Note: this will always be the primary NMI for the premises. Regardless of whether a device is associated to a Secondary Settlement Point (SSP) NMI, the DERR and CER Standing Data will continue to use the Primary Connection Point as the NMI.</i>	String	L1	Distributed Network Operator (DNOs)	- System Operators (Transmission (Tx))*** - System Operators (Distribution (Dx)) - DNOs - CER Installers - Suppliers - Energy Supplier* - Customer Agent* - CER Regulator - Comparison Sites** - Market Operator - CER Conformance Monitor - CER Cyber Coordinator	Must
Phase Information	Phase configuration at the connection point. Includes: - Connection point number of phases - Number of phases with CER <i>Note: this was added based on participant feedback.</i>	Numeric	L1	DNOs	- DNO - System Operators (Dx) - Policy Makers*** - Market Operator	Must
Commissioning Date	The commissioning date of the Connection/Inverter. <i>Note: this was added as a proxy for Installation Date which is not available in the DERR.</i>	Date	L2	DNOs	- System Operators (Tx) *** - System Operators (Dx) - DNOs - Energy Supplier* - Market Operator	Must

Data	Description	Value	DERR data	Org responsible	Data access rights	Priority
Decommissioning Date (End Date)	The decommissioning date of the device. This is device record End Date and is set when the device status is set to 'Decommissioned'	Date	L3	DNOs	- System Operators (Tx)*** - System Operators (Dx) - DNOs - CER Regulator - Suppliers - CER Installers - Energy Supplier* - Customer Agent* - Market Operator	Must
Device Status	The status of the device.	- Active - Inactive - Decommissioned	L3	DNOs	- System Operators (Tx)*** - System Operators (Dx) - DNOs - Energy Supplier* - Suppliers - Customer Agent* - Comparison Sites** - Market Operator	Must
Device Type (“Type of Generation DER” in previous version of this document)	Indicates the primary technology used in the CER device. <i>Note: Part 2 includes the device types currently available in the DERR. Part 3 will consider expanding these options.</i>	Pick List: Fossil, Hydro, Wind, Solar PV, Biomass/Waste, Geothermal, Storage, Co-/Tri-generation, Other	L3	DNOs	- Market Operator - System Operators (Dx) - Energy Supplier* - Customer Agent* - Suppliers - CER Installers - Comparison Sites**	Must

Data	Description	Value	DERR data	Org responsible	Data access rights	Priority
Size: (capacity (kilowatt (kW)) - storage capacity (kilowatt-hour (kWh))	Capacity information for the connection and devices. Includes three attributes: • L2 Inverter Rated Capacity (Inverter based connections only) • L3 Device Rated Capacity • L3 Device Storage Capacity (Storage devices only)	Numeric	L2 L3	• DNOs	• Market Operator • System Operators (Tx)*** • System Operators (Dx) • Energy Supplier* • CER Installers • Suppliers • Customer Agent* • CER Conformance Monitor • CER Cyber Coordinator • Jurisdiction System Security Coordinator (JSSC)*** • Policy Makers***	Must
Manufacturer & Model No.	The manufacturer and model number for the inverter (if an inverter-based connection) and the CER devices. Includes: • Inverter Manufacturer • Inverter Model Number • Device Manufacturer • Device Model Number	String	L2 L3	• DNOs	• System Operators (Tx)*** • System Operators (Dx) • Energy Supplier* • Customer Agent* • CER Conformance Monitor • CER Cyber Coordinator • JSSC*** • CER Installers • Suppliers • Market Operator • Policy Makers***	Must
Inverter Serial Number	The serial number of the inverter(s) <i>Note: where the connection has multiple inverters (e.g. micro-inverters), a list of serial numbers will be provided.</i>	String	L2	• DNOs	• Market Operator • System Operators (Tx)*** • System Operators (Dx) • Energy Supplier* • CER Installers • Suppliers • Customer Agent*	Should

Data	Description	Value	DERR data	Org responsible	Data access rights	Priority
Connection Count	The number of AC Connections in the group. (all connections in the group share the same attributes) <i>Note: Connection Count allows the capacity of a connection with multiple inverters to be calculated.</i> <i>Example: 15 panel PV system with 15x 1kw micro-inverters</i> ▪ Inverter Serial = <string of 15 serial numbers> ▪ Inverter Rated Capacity = 1kW ▪ Connection Count = 15 <i>Total inverter capacity = 15 x 1kW = 15kW</i>	Numeric	L2	• DNOs	• Market Operator • System Operators (Tx)*** • System Operators (Dx) • Energy Supplier* • CER Installers • Suppliers • Customer Agent* • CER Conformance Monitor • CER Cyber Coordinator • JSSC*** • Policy Makers***	Must
Device Count	The number of devices in the group. (all devices in the group have the same attributes) <i>Note: Device Count allows the capacity of a device group with multiple devices to be calculated.</i> <i>Example: 15 panel PV system with 15x 1kw panels</i> ▪ Device Type = "Solar PV" ▪ Device Rated Capacity = 1kW ▪ Device Count = 15 <i>Total Rated Capacity = 15 x 1kW = 15kW</i>	Numeric	L3	• DNOs	• Market Operator • System Operators (Tx)*** • System Operators (Dx) • Energy Supplier* • CER Installers • Suppliers • Customer Agent* • CER Conformance Monitor • CER Cyber Coordinator • JSSC*** • Policy Makers***	Must

* Energy Suppliers and Customer Agents will only have data access rights where they have a current contractual arrangement with the customer for that role or have obtained explicit consent from the customer to access the data.

** Comparison Sites will only have data access rights where they have obtained explicit consent from the customer to access the data.

*** System Operator(Tx), JSSC and Policy Maker roles require aggregated, not site level access to this information.

3.1.3.5 User stories for broader access to CER standing data

There are two tables created for user stories for each role requiring access to CER standing data.

Table 3: User stories for Part 2: Existing CER standing data via CDX – This includes the user stories for the roles that would require access to specific CER standing data as provided in the feedback.

Table 4: User stories for roles requiring aggregated CER – This table includes the roles that would require aggregated data access as suggested in the feedback. This has been captured here for completeness but would require further investigation.

Project stakeholders will review and refine the content outlined in this table as part of the project

Table 3: User stories for Part 2: Existing CER standing data via CDX

Role	Data	User story
CER Installers	- NMI - Decommissioning Date - Device Type - Size - Manufacturer & Model - Inverter Serial number - Connection Count - Device Count	- As a CER Installer, I want to verify NMI and device information so that I can confirm installation and status of assets. - As a CER Installer, I want visibility of decommissioned devices so that I can avoid duplication of devices and maintain accurate records.
CER Regulator	- NMI - Decommissioning Date	As a CER Regulator, I want access to CER standing data so that I can monitor compliance and regulatory obligations.
CER Conformance Monitor	- NMI - Size - Manufacturer & Model - Connection Count - Device Count	As a CER Conformance Monitor, I want access to NMI CER standing data so that I can assess system and cyber risks at a regional level.
CER Cyber Coordinator	- NMI - Size - Manufacturer & Model - Connection Count - Device Count	As a CER Cyber Coordinator, I want access to NMI CER standing data so that I can identify and manage cyber risks across the CER fleet.
Comparison Sites**	- NMI - Device Status - Device Type	As a Comparison Site, I want CER standing data so that I can inform consumers about suitable products and services.
Customer Agent*	- NMI - Decommissioning Date - Device Status - Device Type - Size - Manufacturer & Model - Inverter Serial number - Connection Count - Device Count	- As a Customer Agent, I want to view CER standing data so that I can optimise and manage customer CER portfolios. - As a Customer Agent, I want device status and lifecycle information so that I can onboard and manage devices in VPPs.

Role	Data	User story
DNOs	- NMI - Phase Information - Commissioning Date - Decommissioning Date - Device Status	- As a DNO, I want access to CER standing data for NMIs so that I can maintain and validate network models for larger business functions - As a DNO, I want commissioning and decommissioning dates so that I can accurately reflect the state of CER assets over time.
Energy Supplier*	- NMI - Commissioning Date - Decommissioning Date - Device Status - Device Type - Size - Manufacturer & Model - Inverter Serial number - Connection Count - Device Count	- As an Energy Supplier, I want access to CER standing data for a customer's NMI so that I can tailor products and pricing, offering better services to consumers about their devices - As an Energy Supplier, I want commissioning and decommissioning dates so that I can analyse consumption impacts and manage portfolios. - As an Energy Supplier, I want device specifications and device status so that I can onboard devices and support VPP participation.
Market Operator	- NMI - Phase Information - Commissioning Date - Decommissioning Date - Device Status - Device Type - Size - Manufacturer & Model - Inverter Serial number - Connection Count - Device Count	As a Market Operator, I want CER Standing Data so that I can understand resource capability for market participation.
Suppliers	- NMI - Decommissioning Date - Device Status - Device Type - Size - Manufacturer & Model - Inverter Serial number - Connection Count - Device Count	- As a Supplier, I want access to CER asset information so that I can manage device updates and support integration. - As a Supplier, I want visibility of device status and lifecycle events so that I can maintain accurate inventory and forecasting.
System Operators (Dx)	- NMI - Phase Information - Commissioning Date - Decommissioning Date - Device Status - Device Type - Size - Manufacturer & Model - Inverter Serial number - Connection Count - Device Count	- As a System Operator (Dx), I want access to detailed CER standing data for each NMI so that I can support distribution-level planning, pricing and operational coordination. - As a System Operator (Dx), I want accurate lifecycle and status data so that I can maintain an accurate current and historical network model. - As a System Operator (Dx), I want CER standing data such as inverter serial numbers so that I can work with Suppliers for any standards compliance or faults

* Energy Suppliers and Customer Agents will only have data access rights where they have a current contractual arrangement with the customer for that role or have obtained explicit consent from the customer to access the data.

** Comparison Sites will only have data access rights where they have obtained explicit consent from the customer to access the data.

Table 4: User stories for roles requiring aggregated CER standing data

Role	Data	User story
System Operator (Tx)	- NMI - Commissioning Date - Decommissioning Date - Device Status - Size - Manufacturer & Model - Inverter Serial number - Connection Count - Device Count	- As a System Operator (Tx), I want access to aggregated CER standing data so that I can understand the CER capability at transmission-connected locations. - As a System Operator (Tx), I want to know commissioning and decommissioning dates so that I can accurately model fleet age and avoid double counting. - As a System Operator (Tx), I want device capacity and technical specifications so that I can model CER behaviour for forecasting, planning, and operational purposes.
Jurisdiction System Security Coordinator	- Size - Manufacturer & Model - Connection Count - Device Count	As JSSC, I want aggregated CER technical data so that I can assess system security risks.
Policy Makers	- Size - Manufacturer & Model - Connection Count - Device Count	As a Policy Maker, I want aggregated CER data so that I can support policy development and system planning.

3.1.3.6 Technical Requirements for Part 1 & Part 2

Table 5 lists the technical requirements that are also listed in the pre-read presentation deck.

Table 5: Technical requirements for Part 1 & Part 2

Requirement type	Part 1 (via MSATS)	Part 2 (via MITE)
Establish CER Standing Data Model, Structure, and Attributes	- Define a minimum set of data i.e. a subset of DERR data that will be shared to respective market participants only - Establish the subset of information in form of high-level indicators such as visibility of Solar/Battery or both, Nameplate capacity, status will only be shared	- Define the CER standing data set i.e. a subset of DERR data including the field description and value that will be shared to authorised parties only - A consistent data schema will be defined for CER standing data elements (e.g. NMI, CER device type, capacity, location) aligning the data fields with DERR, to ensure standardised data exchange for this part
Data Integration and Validation	Implement basic validation checks for completeness, format and field-level quality before including the DERR data into MSATS	- Interface with DERR to enable CDX to leverage existing data source - CER standing data to be shared CDX must be validated against defined schemas to ensure accuracy, completeness, and consistency - Automatically send updated data when changes occur in DERR (such as device upgrades, change in ownership) as well as post installation updates at least once a day

Requirement type	Part 1 (via MSATS)	Part 2 (via MITE)
Audit and Reporting Capability	As currently available in MSATS	Ability to track data creation, updates, and access to ensure transparency, compliance and dispute resolution
Security & Access Control (RBAC)	Access available to only market participants (FRMPs and Prospective FRMPs)	- Role-based access control and authentication mechanisms must restrict CER standing data access to authorised participants only. - If the portfolio of an authorised participant changes, access control and authentication mechanisms reflect these changes so that CER standing data can be shared based on these new portfolios
Data Encryption & Secure Transmission	As currently available in MSATS	CDX should allow real-time or near real-time access by authorised participants and systems, while maintaining encryption and security controls to protect sensitive network and customer information
Scalability & High-Volume Handling	As currently available in MSATS	Able to easily scale to support future expansion (e.g. additional CER types, new attributes, evolving market requirements) and large-scale data without performance degradation, maintaining the required frequency and latency performance standards

3.1.3.7 Regulatory requirements Part 1 & Part 2

Table 6 lists the regulatory requirements for Part 1 only.

Table 6: Regulatory requirements for Part 1

Requirement type	Requirement description
Part 1: Define access rights to data in the DERR	- Enable authorised parties to access an expanded sub-set of data from the DERR in NMI standing data in MSATS, through amendments to the NER, to establish a clear definition of eligible parties, data elements and use constraints to appropriately manage information access and confidentiality. - Examples of NMI standing data fields: - Solar/Battery: code representing the solar/battery capability at the site and total solar capacity in kW - Nameplate capacity of solar PV: an indicator of the installed rated output capacity of the solar PV system at the site - Nameplate capacity of storage: an indicator of the installed rated storage capacity of the battery system at the site - CER device status: indication of whether the device is active, inactive or decommissioned

Table 7 lists the regulatory requirements for Part 2 only. Regulatory requirements for Part 3 are not included as they will need more investigation and discussions with the working group members as well as widely across industry and other reforms.

Table 7: Regulatory requirements for Part 2

Requirement type	Requirement description
CER Data Exchange	Provision in the NER for AEMO for sharing data from the DERR data in accordance with defined access rights.
Define access rights to data in the DERR	- Clear definition of eligible parties, data elements and use constraints to appropriately manage information access and confidentiality. - Potential to recognise new entities within the NER (e.g. new participant category, accredited party). - Specify the basis for access (e.g. customer consent or role-based authorisation) to provide specifications for explicit data access rights in the NER.

3.2 Sharing & Receiving of DOEs use case (Use Case 2)

This use case seeks to enable the secure and efficient sharing of DOEs with authorised parties that require DOE information to support customer services, portfolio management, operational decision-making and regulatory functions.

This section defines the preliminary business, technical and regulatory requirements for the use case. Further background, stakeholder feedback, use case assessment and project recommendations are documented in the *CDX Project Outcomes Report* (refer to Appendix A1).

3.2.1 Use case objectives and outcomes

The Sharing and Receiving DOEs use case has the following characteristics:

- **Objective:** Facilitate the sharing of network limits, in the form of DOEs, with authorised parties that require the information.
- **Challenge:** DOE information is not consistently available to all parties that require it to support customer, operational and compliance activities.
- **Desired outcome:** Improve visibility of network limits, reduce implementation and operational complexity, and support the effective utilisation of CER within network constraints.

Further information regarding stakeholder feedback, use case assessment, options considered and project recommendations is provided in the *CDX Project Outcomes Report* (refer to Appendix A1).

Note: additional context of how DOEs might be used by participants has been included in the appendix, refer to Appendix A4. But it should be noted that this is provided for context only and this project does not seek to set rules or mandates for when DSOs are obligated to provide DOEs.

3.2.2 Roles identified and utilised in sharing of DOE use case

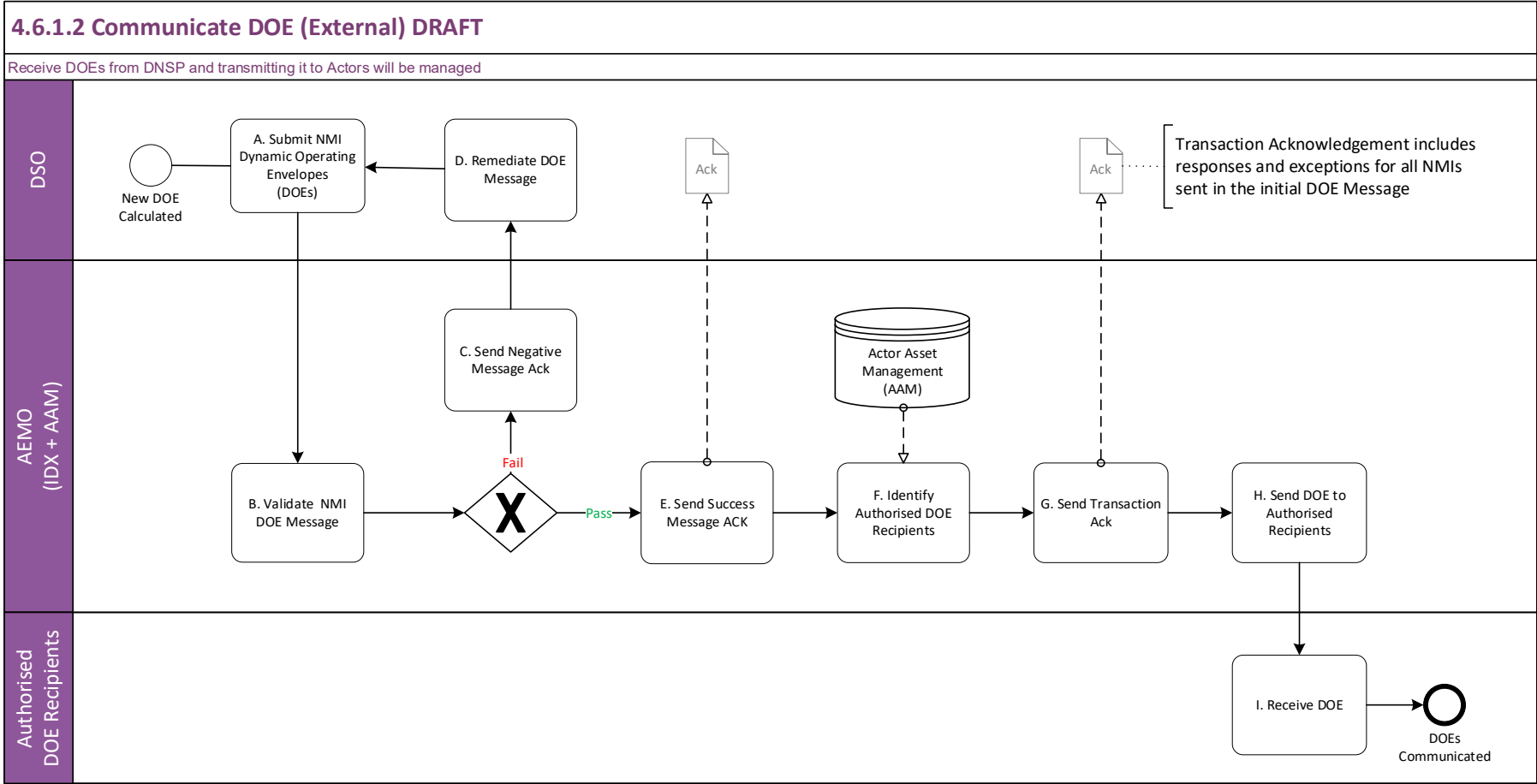
As per the advice provided during consideration of Use Case 1, the Technical Working Group for the CDX Detailed Design and Implementation project has adopted the Roles Glossary and their associated definitions that were utilised as part of the M3/P5 workstream of the CER Roadmap (refer to Appendix A2). As the policy landscape develops, this approach to Roles may change.

3.2.3 Requirements and data specification

3.2.3.1 Indicative process: Sharing and receiving DOEs

The process outlined in Figure 7 below provides an indicative view of the process for sharing and receiving of DOEs.

Figure 7 Indicative process for sharing and receiving DOEs



3.2.3.2 Sharing of DOE use case data attributes

Table 8 below lists the attributes for a DOE message. This format aims to follow the CSIP-AUS DERControl format as closely as possible with the exception of the NMI and Event attributes which have been added to support this use case.

Table 8: Data attributes for sharing of network limits use case (Use Case 2)

Data element	Format	Description	CSIP-AUS element	Mandatory / Optional
NMI	CHAR(11)	The NMI to which the DOE relates Note: this is NMI + Checksum	N/A	Mandatory
Start	timetype	Date and time when the control becomes effective (UTC). i.e. The time from which the DOE applies.	interval.start	Mandatory
Duration	Integer	Length of time, in seconds, that the control remains active.	interval.duration	Mandatory
Export Limit Value	Integer	The maximum power that can be exported. Base value of the site export power limit. Watts (scaled)	csipaus:opModExpLimW.value	Optional. Note: the control must contain at least one limit (Export or Import) and can include both.
Export Limit Multiplier	Integer	Power-of-ten scale factor applied to the export limit value.	csipaus:opModExpLimW.multiplier	Optional. Required if Export Limit Value is populated.
Import Limit Value	Integer	The maximum power that can be imported. Base value of the site import power limit. Watts (scaled)	csipaus:opModImpLimW.value	Optional. Note: the control must contain at least one limit (Export or Import) and can include both.
Import Limit Multiplier	integer	Power-of-ten scale factor applied to the import limit value.	csipaus:opModImpLimW.multiplier	Optional. Required if Import Limit Value is populated.
Event	Pick List: • Normal Operations • Minimum System Load (MSL) Event • Frequency Disturbance • More can be added to the list	A description of the purpose or event underlying the DOE's upper and lower bounds. E.g. Normal operations, MSL event, Frequency disturbance	N/A	Optional

3.2.3.3 User stories for sharing of DOEs use case

DOE information is not currently available to all parties who require it. While DNSPs communicate DOE controls to sites, visibility is not available to other parties such as Energy Suppliers, Suppliers, Customer Agents and regulators who require it to support customer service delivery, device operation, portfolio coordination and regulatory oversight. This misalignment gives rise to operational inefficiency, reduces transparency, and increases the likelihood that decisions affecting customer devices or portfolios are made without clear visibility of the applicable network constraints.

Table 9 below sets out the user stories for the roles identified as requiring access to network limit advice as part of this use case.

Table 9: User stories for sharing of network limits use case (Use Case 2)

Role	Data	User story
Energy Supplier	DOE	- As an Energy Supplier, I want access to daily forecast DOE for a customer's NMI so that I can take these into account to manage my bids, product operation and customer engagement while ensuring any retail or orchestration actions remain within network limits. - As an Energy Supplier, I want access to historical and updated DOE for a customer's NMI so that I can support onboarding, investigate customer issues and disputes, and improve product design based on how network limits affect site operations over time.
Supplier	DOE	As a Supplier, I want access to current and historical DOE for the NMIs of devices I support so that I can troubleshoot device behaviour, validate responses to network limits and improve device settings and firmware to maintain compliance and performance.
Customer Agent	DOE	- As a Customer Agent, I want access to daily forecast DOE for a customer's NMI so that I can optimise site and portfolio operations, coordinate CER dispatch within network limits and fulfil my obligations to the customer and the network. - As a Customer Agent, I want access to updated and historical DOE for customer NMIs so that I can onboard services, investigate non-conformance or customer complaints, and demonstrate that portfolio actions were coordinated in accordance with network limits.
CER Regulator	DOE	As the CER Regulator, I want access to DOE so that I can compare with actuals and monitor whether network limits are being communicated and applied consistently, support regulatory oversight of DSO activities, and assess whether arrangements are operating in the long-term interests of consumers.

3.2.3.4 Technical requirements

Table 10 below lists the technical requirements that are also listed in the pre-read presentation deck.

Table 10: Use Case 2: Technical requirements

Requirement type	Requirement description
Established DOE Data Model, Structure and Attributes	• A consistent data structure aligned to CSIP-AUS format is required so all parties interpret DOE fields even if DNSP values vary (e.g. 5, 15, 30 mins granularity) • Data structure must accommodate both flexible export and import limits, even if not all DNSPs currently implement both • DOE data should be available at the NMI/site level to enable accurate operational decisions and compliance with connection agreements • DOE needs to match the advice sent to site through alternative channels e.g. utility server, OEM cloud, site controller
Ability to publish DOE and support data updates	• System must support publication of DOE forecasts (e.g. 30min – 48 hrs ahead) so authorised parties can receive it to plan their energy usage and dispatch decisions for their portfolios • Ability to publish revised DOEs at least once a day i.e. 24 hours or to reflect changing network conditions. Duration needs to match-up with CSIP-AUS field • Design must support whether DOE updates are full time-series replacements or partial (sparse) updates to minimise data volume and complexity • Technical design must define the acceptable latency.
Include Event/Context Metadata Field	• Ability to include a field that describes the purpose of the DOE (e.g. normal operation, MSL event, Frequency disturbance) to explain why limits are applied
Data Standards	• DOE data should be exchanged with consistent protocols and connection patterns for system interoperability.
Schema Validation & Data Quality Controls	• Incoming/outgoing DOE data must be validated against defined schemas to ensure consistency, accuracy, and completeness.
Security & Access Control	• Role-based access control and authentication mechanisms must restrict DOE data access to authorised participants only • If the portfolio of an authorised participant changes, access control and authentication mechanisms reflect these changes so that DOEs can be shared based on new portfolios
Data Encryption & Secure Transmission	• DOE data exchange must implement encryption and security controls to protect sensitive network and customer information.
Scalability & High-Volume Handling	• System must support large-scale data exchange (potentially millions of NMIs and high-frequency updates)
Audit & Reporting Capability	• Ability to track DOE publications, metadata, changes, and access for compliance, transparency, and dispute resolution

3.2.3.5 Regulatory requirements

Table 11 below lists the regulatory requirements for Use Case 2.

Table 11: Use Case 2: Regulatory requirements

Requirement type	Requirement description
DNSP obligation to publish DOE/network limit information	Establish an obligation on DNSPs under the NER to publish DOE / network limit information to specified authorised parties to support operational use cases (e.g. managing distribution limits and Voluntarily Scheduled Resource (VSR) dispatch) in accordance with defined access rights.
Data exchange mechanism, access rights, and governance	- Provide for a governed data exchange mechanism for DOE / network limit information including consideration of the Business-to-Business (B2B) framework as the regulatory and delivery pathway. - Current assessment (subject to change) is the exchange of DOE / network limit information appears consistent with the definition of a B2B Communication which has an established governance structure, framework specifying parties that may use the B2B mechanism and their access rights, that could be extended (if necessary) through an amendment to the NER. - DOE /network limit data communications might be defined within a new or extended B2B Procedure which could require definition of new transactions, schemas, specification of data fields. - Incorporation of network limit information into the B2B framework would require the use of the B2B e-hub for sharing network limits with authorised parties unless otherwise agreed between the sender and receiver.
Access for new customer facing parties	- Potential to recognise new entities within the NER (e.g. new participant category, accredited party, extension of “third party B2B participant”. - Specify the basis for access (e.g. customer consent or role-based authorisation) to provide specifications for explicit data access rights in the NER.

A1. Appendix – Other project deliverables

A1.1 CDX Project Outcomes Report

The *CDX Project Outcomes Report*⁵ summarises the outcomes of the CDX Detailed Design Project, including the key themes emerging from Working Group feedback, the technical, governance, and regulatory considerations identified during the project, and the regulatory enablers required to support future implementation of the priority use cases.

The report focuses on:

- Feedback received through the Technical Working Group , Regulatory Working Group and collaboration sessions
- The technical, governance, and regulatory enablers identified through the project
- CER Roadmap initiatives that may support future implementation pathways of the priority use cases

The Outcomes Report should be read alongside this document. While the Use Case Requirements Document provides the detailed requirements, data specifications, user stories, access arrangements and design considerations for the priority use cases, the *CDX Project Outcomes Report* provides the supporting context, rationale, stakeholder feedback and implementation considerations that informed their development.

Detailed feedback received through the project is documented separately in the CDX Feedback Tracker (see below), while the *CDX Project Outcomes Report* provides a synthesis of the key themes and findings from that feedback process.

A1.2 Additional Appendix – CDX Use Case Feedback Tracker

This is an additional appendix produced alongside the *CDX Project Outcomes Report* and the Use Case Requirements Document.

The *CDX Use Case Feedback Tracker*⁶ provides a detailed record of stakeholder feedback received through the Technical and Regulatory Working Groups and collaboration sessions undertaken as part of this project. It documents the feedback received, project responses and resulting updates made throughout the development of the use case requirements.

The tracker should be read alongside the *CDX Project Outcomes Report* and the Use Case Requirements Document. While the Outcomes Report summarises the key themes, implementation considerations and regulatory enablers identified through stakeholder engagement, the Feedback Tracker provides the detailed feedback and supporting rationale that informed the development of the requirements documented in this publication.

⁵For more information on the CDX Project Outcomes Report, see <https://www.aemo.com.au/initiatives/major-programs/nem-reform-program/nem-reform-program-initiatives/consumer-energy-resources-data-exchange>

⁶For more information on the Additional Appendix – CDX Use Case Feedback Tracker, see <https://www.aemo.com.au/initiatives/major-programs/nem-reform-program/nem-reform-program-initiatives/consumer-energy-resources-data-exchange>

A2. Appendix – Roles glossary

Roles references in this document fall into the following groups:

1. Roles considered as part of the CER Taskforce’s M3/P5 workstream. These can be found at the DCCEE website for National CER Roadmap - Redefine roles for market and power system operations – M3/P5 in the **Role and Actor Glossary (PDF)**⁷ document
2. Current roles in AEMO’s MSATS system (see Table 12 below)
3. Additional roles identified by working group members and recommended for inclusion in requirements and user stories (see Table 13 below)

Table 12: Roles in Market Settlement and Transfer Solutions (MSATS)

Code	Description
FRMP	Financially Responsible Market Participant Note: this document also uses the term “ Prospective FRMP ” which is a participant seeking to become the FRMP for a NMI via a customer transfer. Prospective FRMPs are required to obtain customer consent before they can access data for a NMI.
LNSP	Local Network Service Provider or Embedded Network Manager for child connection points
LR	Local Retailer
MDP	Metering Data Provider – Category D
MPB	Metering Provider – Category B
MPC	Metering Data Provider – Category C
NEMM	National Electricity Market Operator
NSP2	Second Network Service Provider (For Wholesale NMIs only)
ROLR	Retailer of Last Resort
RP	Metering Coordinator

Table 13: Additional roles identified by the working group

ROLE	Definition	Description	Responsibilities specific to CER/DER
Comparison Sites	Online services that compare available energy plans and products to help consumers identify options suited to their circumstances, energy use and CER configuration.	Comparison Sites use customer-provided information and, where expressly authorised, relevant CER standing data to assess how installed or proposed CER may affect the suitability, features and value of available energy products and services.	Obtain the customer’s explicit consent before accessing site-level CER standing data. Present product comparisons clearly, accurately and transparently, including relevant assumptions and limitations.
Supplier	CER Supplier	The Supplier provides equipment and software solutions that enable CER functionality, such as inverters, batteries, or energy management systems. Suppliers play a critical role in the innovation and evolution of CER technologies, ensuring their products meet regulatory requirements and are capable of integrating into grid and market frameworks. They also support the lifecycle management of CER assets. OEMs could be a subset of this.	Includes OEMs. Supply hardware, software, and solutions for CER deployment. Ensure products meet technical and regulatory standards.

⁷ For complete Roles and Actor Glossary, see <https://storage.googleapis.com/files-au-climate/climate-au/p/prj36791bd88b93f8b020990/page/4. Role and Actor glossary Working draft final .pdf>

A3. Appendix – CER data Part 3 of Use Case 1

This appendix includes data elements and associated user stories identified by the Technical Working Group as “future requirements” for CER standing data that is not currently available in the DERR.

A3.1 CER data Part 3: Expanding CER standing data via CDX

Table 14 below provides a listing of the CER standing data that will be considered for Part 3 of Use Case 1. This includes data that is not available in the DERR today but is deemed to be useful in the context of Use Case 1. Data for Part 3 may be added to the DERR or sourced from other data sources (e.g. National Installed Device Register)

Table 14: Data for Part 3: Expanding CER standing data via CDX

Data	Description	Value	DERR data	Org responsible	Data access rights	Priority
NMI Location in Network	Represents the NMI location within the physical network topology. Assumption: this would be represented by a TNI (Transmission Node Identifier)	To be confirmed	N/A	• DNOs	• System Operators (Tx)*** • System Operators (Dx) • CER Conformance Monitor • CER Cyber Coordinator • JSSC*** • Market Operator • Policy Makers*** • DNO	Must
Installation Date	The date the device was installed.	Date	N/A	• DNOs • Suppliers	• System Operators (Tx)*** • System Operators (Dx) • DNOs • Energy Supplier* • Market Operator	Must

Data	Description	Value	DERR data	Org responsible	Data access rights	Priority
Network Type	Indicates whether the connection agreement requires static import and export limits or if it allows for dynamic limits.	• Static • Dynamic	N/A	• DNOs	• System Operators (Tx)*** • System Operators (Dx) • DNOs • CER Installers • Energy Supplier* • Customer Agent* • Policy Makers*** • Comparison Sites** • Market Operator	Must
Device Type <i>("Type of Generation DER" in previous version of this document)</i>	Indicates the primary technology used in the CER device. <i>Note: Part 3 will expand the options already included in part 2.</i>	Example Pick List • Distributed PV (DPV) • Battery Energy Storage System (BESS) • Electric Vehicle (EV) Supply Equipment (EVSE) • Demand Response • etc...	N/A	• DNOs • CER Installers • Suppliers • Customer Agents	• Market Operator • System Operators (Dx) • Energy Supplier* • Customer Agent* • Suppliers • Comparison Sites	Must
Type of Controllable Load	Identifies the specific types of CER devices that have controllable load and may be eligible to provide energy services.	Example Pick List • Hot Water • EV • Pool Pump • etc...	N/A	• DNOs • CER Installers • Suppliers • Customer Agents	• Market Operator • System Operator (Dx) • Energy Supplier* • Customer Agent* • Suppliers • Comparison Sites**	Should
Who Can Control	Indicates who is able to control the device in the case of a controllable load.	To be confirmed		• To be confirmed	• To be confirmed	Could

Data	Description	Value	DERR data	Org responsible	Data access rights	Priority
Technology	Type of electrical device technology installed at the property, specifically whether AC electrical machines, rotating equipment or power system resources.	Example Pick List • Synchronous Generator • Inverter-Based • Induction Motor • etc...	N/A	• DNOs • CER Installers • Suppliers • Customer Agents	• Market Operator • System Operators (Dx) • Energy Supplier* • Customer Agent* • CER Conformance Monitor • CER Cyber Coordinator • JSSC*** • Market Operators • Policy Makers***	Must
Installation Type	Indicates whether the installation is a new installation, a replacement of an existing installation, or an additional installation at the site.	• New Installation • Replacement • Addition	N/A	• DNOs • CER Installers • Suppliers	• Market Operator • System Operators (Tx)*** • System Operators (Dx) • Energy Supplier* • Customer Agent*	Should
LFDI	Long Form Device Identifier. CSIP:AUS Asset Identification number.	LFDI	N/A	• CER Installers • Suppliers • Customer Agents	• Market Operator • System Operators (Dx) • Energy Supplier* • Customer Agent*	Must
Last Updated (date & by who)	The date the device information was last updated and by who. Assumptions: • This will only be required if/when 3rd parties (e.g. CER Installers, Suppliers, etc) are given access to enter data directly into the DERR or other CER standing data source. Re "Org Responsible" this would be system generated on data update, not explicitly provided by a participant.	Date & User/Org	N/A	• DNOs • CER Installers • Suppliers • Energy Supplier • Customer Agent	• System Operators (Tx)*** • System Operators (Dx) • DNOs • CER Installers • Suppliers • Energy Supplier* • Customer Agent* • Market Operator	Should

* Energy Suppliers and Customer Agents will only have data access rights where they have a current contractual arrangement with the customer for that role or have obtained explicit consent from the customer to access the data.

** Comparison Sites will only have data access rights where they have obtained explicit consent from the customer to access the data.

*** System Operator(Tx), JSSC and Policy Maker roles require aggregated, not site level access to this information

A3.1.1 User stories for broader access to CER standing data

Table 15 includes the user stories for the roles that would require CER standing data access as suggested in the feedback for Part 3. This has been captured here for completeness but would require further investigation.

Table 15: User Stories for Part 3: Expanding CER standing data via CDX

Role	Data	User story
CER Conformance Monitor	- NMI location in Network - Network Type - Technology	As a CER Conformance Monitor, I want access to CER location, Network Type and technology data so that I can assess system and cyber risks at a regional level.
CER Cyber Coordinator	- NMI Location in Network - Network Type - Technology	As a CER Cyber Coordinator, I want access to CER technology, Network Type and location data so that I can identify and manage cyber risks across the CER fleet.
CER Installers	- Network Type - Device Type - Type of Controllable Load - Technology - Installation Type - LFDI - Last Updated	- As a CER Installer, I want access to device and installation data so that I can validate installations and ensure compliance with technical requirements. - As a CER Installer, I want identifiers such as LFDI and serial numbers so that I can correctly register and manage CER assets.
Comparison Sites**	- Network Type - Device Type - Type of Controllable Load	As a Comparison Site, I want access to CER capability data so that I can inform consumers about suitable products and services.
Customer Agent*	- Network Type - Device Type - Type of Controllable Load - Technology - Installation Type - LFDI - Last Updated	- As a Customer Agent, I want access to CER device and control-related data so that I can optimise customer portfolios and deliver energy services. - As a Customer Agent, I want asset identifiers and capabilities so that I can manage and coordinate DER participation effectively.
DNOs	- NMI Location in Network - Installation Date - Network Type - Device Type - Type of Controllable Load - Technology - Installation Type - Last Updated	- As a DNO, I want access to comprehensive CER standing data so that I can build and maintain accurate network models and support planning decisions. - As a DNO, I want visibility of installation and technology details so that I can manage network constraints and optimise hosting capacity.
Energy Supplier*	- Installation Date - Network Type - Device Type - Type of Controllable Load - Technology - Installation Type - LFDI - Last Updated	- As an Energy Supplier, I want access to CER technical and installation data so that I can tailor products, pricing, and services and have conversations to consumers about them - As an Energy Supplier, I want visibility of device capabilities and identifiers so that I can onboard assets into VPPs and manage portfolios. - As an Energy Supplier, I want LFDI details so that I can coordinate detailed market processes (e.g. disconnection due to non-payment)

Role	Data	User story
Market Operator	- NMI Location in Network - Installation Date - Network Type - Device Type - Type of Controllable Load - Technology - Installation Type - LFDI - Last Updated	As a Market Operator, I want access to CER technical and capability data so that I can understand resource availability for market participation.
Suppliers	- Installation Date - Device Type - Type of Controllable Load - Technology - Installation Type - LFDI - Last Updated	- As a Supplier, I want access to CER asset and lifecycle data so that I can manage device portfolios and support integration into services. - As a Supplier, I want technical and identification data so that I can onboard and maintain CER assets effectively.
System Operators (Dx)	- NMI Location in Network - Installation Date - Network Type - Device Type - Type of Controllable Load - Technology - Installation Type - LFDI - Last Updated	- As a System Operator (Dx), I want access to detailed CER technical and operational data so that I can manage distribution system operations and optimise network utilisation. - As a System Operator (Dx), I want visibility of controllable load and technology types so that I can identify resources capable of providing energy services. - As a System Operator (Dx), I want access to CER location and technical data to model CER and their behaviour for forecasting, identifying constraints, planning, pricing and tariff analytics.

* Energy Suppliers and Customer Agents will only have data access rights where they have a current contractual arrangement with the customer for that role or have obtained explicit consent from the customer to access the data.

** Comparison Sites will only have data access rights where they have obtained explicit consent from the customer to access the data.

A4. Appendix – CSIP-AUS, DOEs, and forecasts

Note:

This Appendix is provided to outline the content presented to Working Group members as part of the workstream considerations. It seeks to provide stakeholders with a detailed insight into considerations undertaken by the working groups, as well as highlight to policy makers and others responsible for pursuing technical or regulatory arrangements that will facilitate the Use Cases some of the issues they may need to contend with.

It is not intended to act as the definitive position of the working groups or the project team.

Use Case 2 seeks to enable the sharing of network limits - in the form of DOEs - from DNSPs (or future DSOs) to roles / actors who need the information. As operating envelopes and their management continue to evolve, inconsistent terminology and concepts may create confusion.

Recently released, ARENA has published its *Navigating Dynamic Operating Envelopes* report⁸, which seeks to provide “a shared language of the core concepts, design and implementation of DOEs”, and is recommended reading for Working Group members.

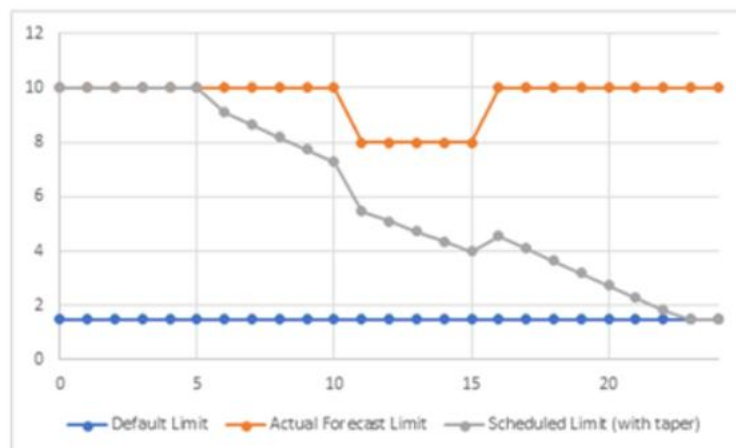
At present, it is understood that DNSPs, as part of their roll-out of Flexible Export Limits (FELs) programs, will communicate DOEs directly to solar PV inverters via CSIP-AUS (utilising their respective CSIP-AUS servers). Inverter manufacturers (or OEMs) that maintain communications with their devices (often via the internet) can thus receive the DOEs applied to their inverters in the field. However, unless these DOEs are subsequently published by the OEM to a consumer’s PV monitoring application and/or other digital source, the DOEs will not be readily accessible to other roles, such as customer agents (including VPP operators, Retailers and other aggregators).

As outlined in the Australian Renewable Energy Agency (ARENA) report, DNSPs’ choice and accuracy of operational forecasting method (and thus, the efficient use of network capacity) depends on the quality, availability, and granularity of data available to them, e.g. network model, smart meter, and consumer profile data. As a growing capability, operational forecasts are significantly in advance (i.e. 24, 48, or 72 hours in advance) and therefore likely “conservative” estimates of network level demand or capacity, limiting the spare capacity available to be shared across network NMIs (via DOEs).

Further, it is understood that DNSPs are looking to incorporate “fall back behaviours” into DOE— if communications interruptions occur during the period of the DOE (and especially during periods when possible emergency backstops may need to be invoked), or if forecast accuracy at the “edge” of the DOE window is in question, then pre-programmed behaviour is communicated via DOEs in the form of a gradual ramp-down (say, over a 30-60 min period) to a “fallback” limit – see the example in the figure below.

⁸ For more information on ARENA’s Navigating Dynamic Operating Envelopes report, see <https://arena.gov.au/assets/2026/01/Final-DEIP-DOEs-Report-Feb-2026.pdf>

Figure 8: Static (default), Dynamic (actual) and Scheduled (taper) network limits advice



Source: CSIP-AUS Explainer (p28) available at [CSIP-AUS-v1.2-explainer-May-2025-release.pdf](#)

The above information is provided to enable clarity for discussion around the purpose of this use case - the sharing of network limits. Specifically:

- the need to share a *definitive* network limit advice with consumers and their representatives. Advice being shared via CSIP-AUS directly to inverters should *not* differ from advice that may be shared with other actors via alternative channels (including any updates to forecasts);
- How potential “taper” advice should be received and treated by consumers and their representatives, particularly where a consumer device may be providing energy services. This raises the issue of conformance, and how it may be monitored and measured.

A5. Appendix – Glossary

This document uses many terms that have meanings defined in the National Electricity Rules (NER). The NER meanings are adopted unless otherwise specified.

Term	Definition
AAM	Actor Asset Management
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
API	Application Programming Interface
ARENA	Australian Renewable Energy Agency
B2B	Business-to-Business
CDX	Consumer Energy Resource Data Exchange
CER	Consumer Energy Resource
CSIP	Common Smart Inverter Profile
CSIP-AUS	Common Smart Inverter Profile – Australia
DCCEW	Department of Climate Change, Energy, the Environment and Water
DER	Distributed Energy Resource
DERR	DER Register
DNSP	Distributed Network Service Provider
DOE	Dynamic Operating Envelope
DSO	Distributed Service Operator
DNO	Distributed Network Operator
Dx	Distribution
FRMP	Financially Responsible Market Participant
IDX	Industry Data Exchange
IEC	Information Exchange Committee
JSSC	Jurisdiction System Security Coordinator
MITE	Market Interface Technology Enhancements
MSATS	Market Settlement and Transfer Solutions
NEM	National Electricity Market
NER	National Electricity Rules
NMI	National Metering Identifier
OEM	Original Equipment Manufacturer
PV	Photovoltaics
RBAC	Role-Based Access Control
SRES	Small-scale Renewable Energy Scheme
SSP	Secondary Settlement Point
Tx	Transmission
VPP	Virtual Power Plant
VSR	Voluntary Scheduled Resource