SEIA - Connection Standards Series Update

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Updating DNSP Connection Standards



Fixed export



23 August 2024 AS/NZS 4777.1:2024 & AS/NZS 4777.2:2020 Amd 2:2024 released

> 23 February 2025 AS/NZS 4777.1:2024 in effect (6 months)

23 August 2025 AS/NZS 4777.2:2020 Amd 2:2024 in effect (12 months) 1

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Focus areas

New Technology

Allowing connection of new technologies such as EVSE and IPSD.

Aligning Terminology

Ensure terms and references are consistent within the different Connection Standards.

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AS/NZS 4777. **** () Harmonization 0 where possible.

AS/NZS4777

changes

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Aligning Connection Standards with new introductions and changes in

Aligning policies with other DNSPs

Minor Corrections

Minor editing, references and spelling corrections.

	STNW1170	STNW1174	STNW1175	STNW3510	STNW3511
AS/NZS 4777 Changes					
Interface Protection	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Generation Limit	\checkmark	\checkmark		\checkmark	\checkmark
EV and EVSE	\checkmark	\checkmark		\checkmark	\checkmark
Phase Balance	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Inverter Power Sharing Device	\checkmark	\checkmark		\checkmark	\checkmark
Other Changes					
RS232 Serial Connection			\checkmark		
Cybersecurity			\checkmark		
Connection Category			\checkmark		
Fixed and Dynamic Settings				\checkmark	\checkmark
CSIP-AUS				\checkmark	\checkmark
Minor Corrections	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
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NETWORK

STNW1170 & STNW1174 Small IES & LV EG Connection Standards



Low Voltage Embedded Generating Connections

STNW1170

Standard for Small IES Connections °1 Lo

Generation Limit

Generation limits may be applied to control the active power output levels of V2G and V2B Embedded Generations (EG)s. This ensures the phase balance requirements can be fulfilled with market products.



Inverter Power Sharing Device

Inverter Power Sharing Devices (IPSD) may be used on premises with multple electricial IES installations. Due to the potential complexities with these systems, the design and implementation shall be completed under Engineering Supervision. Systems with an aggregated rated apparent power greater than 30kVA will need Interface Protection installed.



EV and EVSE

EV and EVSEs capable of reverse power flow are classified as a type of energy storage system (ESS) that does not need to conform with AS/NZS 5139. This removed previous conformance barriers for EV and EVSE vendors.



Interface Protection

Interface Protection (Central Protection) no longer required for installation (or multiple) < 200 kVA. Phase balance protection no longer a function within the Interface Protection Relay (Grid Protection Relay). Setting have been updated to align with AS/NZS 4777.1.2024

Interface Protection Requirements

Change of name

Changed from Central Protection to Interface Protection and Grid Protection Relay (GPR) to Interface Protection Relay (IPR).

Application Requirements

DCR and CR reports have not changed and is required for IES installations between 30 – 200 kVA.

IPR

The listing approach shall continue to be updated to reflect requirements. Energex and Ergon Energy approved Interface protection listing to IEC standards available <u>here</u> as reference.



Requirements

IPR required for IES systems with aggregate capacity greater than 200 kVA.

IPR required for IPSDs with aggregate IES capacity greater than 30 kVA.

Exemption under STNW1174

Exceptions introduced for embedded networks such as retirement villages or properties within an LV bulk metered connections that classify as a detached house class 1a building in the National Construction Code.

STNW1175 High Voltage EG Connection Standard



STNW1175 Standard for High Voltage Embedded Generation Connections

Draft for Consultation



Interface Protection

Interface Protection shall be installed for IES (or multiple) greater than 200 kVA at an electrical installation. Fail safe with continuous self-supervision introduced which will require a process change in the assessment of the Interface Protection Relay.



Connection Categories

Short Circuit Ratio (SCR) removed as an assessment criteria for the Connection Categories. SCR is used as an input for determining the modelling requirements.

RS232 Based Serial Connection

RS232 serial connection now supported and accepted as a form of communication link for SCADA traffic interchanges between the DNSP and the Proponent. This provides greater flexbility for the Proponent when connecting to the DNSP network.

Cybersecurity

Cybersecurity requirements updated to align with the Security of Critical Infrastructure (SoCI) Act. Proponents connecting to the DNSP network shall comply with the DNSP's Cirtical Infrastructure Risk Management Program (CIRMP). This requirement will be reflected in the connection contracts.

STNW3510 and STNW3511 Dynamic Connection Standards

STNW3511

Dynamic Standard for Low Voltage Embedded Generation Connections

STNW3510

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Dynamic Standard for Small IES Connections



Fixed and dynamic settings

The standard changed fixed default import/export limits to 1.5kW. Maximum dynamic import/export limit will be determined via a Technical Study. This approach is hamonised with other DNSPs.



Interface Protection

Interface Protection shall be installed for IES (or multiple) greater than 200 kVA at an electrical installation. Additional exceptions introduced for embedded networks such as retirement villages or properties within an LV bulk metered connections that classify as a detached house class 1a building in the National Construction Code. Network overload protection is required when aggregate inverter capacity exceeds distribution rating.

CSIP-AUS

The Energex and Ergon Energy Network dynamic solution is already CSIP-AUS with all approved devices compliant to the <u>SEP2 Client Handbook</u>. Listed products are all CSIP-AUS compliant see <u>here</u>.

Inverter Power Sharing Device

Inverter Power Sharing Devices (IPSD) may be used on premises with multple electricial IES installations. Due to the potential complexities with these systems, the design and implementation shall be completed under Engineering Supervision. Systems with an aggregated rated apparent power greater than 30kVA will need Interface Protection installed.

Fixed EG





Dynamic Version 3

STNW3510 **Dynamic Standard for Small IES Connections**



Proposed Publishing

To access the draft Connection Standards:

https://www.talkingenergy.com.au/changes-toconnection-standard-for-embedded-generation

Proposed Effective Date: 23 February 2025

Email contact: standardsfeedback@energyq.com.au

Proposed FAQ to be published

Emergency Backstop Mechanism Reminder

- Inverter system ≥ 10 kVA with a connection agreement from the 6th February 2023 is required to install. The site capacity is an aggregate of all inverters including BESS.
- QECM V4 Clause 8.10.2 has been updated to include industry feedback and the supplement to version 3 has been withdrawn. The installation design options simplified by removing the options for designers to assess the risk of short-circuit protection and requiring it for all installations.
- Exclusions for installation include battery only inverters, areas without an AFLC and isolated networks.
- The generation signaling device (GSD) is a Demand Response Enabling Device (DRED) which operates via AS4755.1 functionality and utilizes the DRM 0 functionality in inverters.



Factsheet on emergency backstop mechanism is available <u>here</u>



Dynamic Connections

Capacity Maps

In Queensland have developed interactive map to provide information on the DNSP assets.



What others think

<u>Click</u> to view video to see what Shane Williams says on the benefits Dynamic





Connection Ready

At Energex you can sign up to dynamic connection today.

To connect you need to use a compliant solution. We currently have 12 OEM's registered for listing click <u>here</u>.

More Information

Please visit our dynamic website here.

Email any questions to: Dynamic.connections@energyq.com.au











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