

Embedded Networks Solar Emergency Backstop for Embedded Generation

Effective 1 January 2025

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- In these scenarios, large solar is considered as >30kVA systems
- The scenarios in this document are the default emergency backstop solution.

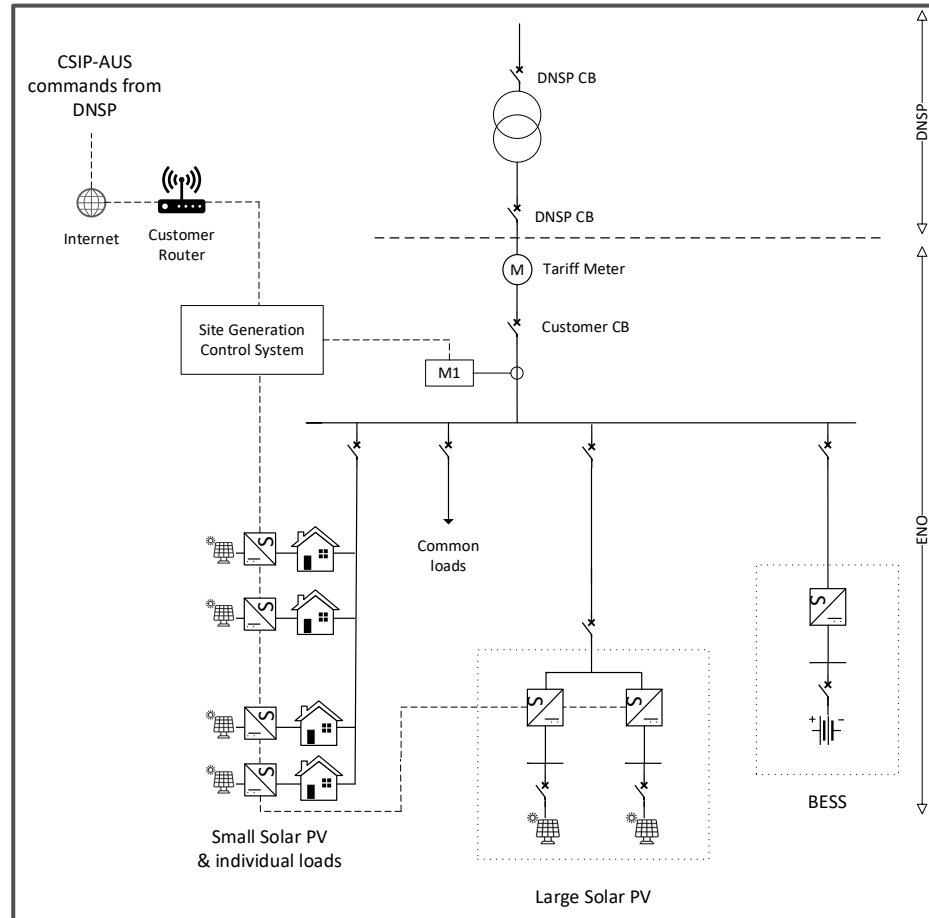
The applicant needs to demonstrate to Jemena if the default backstop solution can be implemented for their site, and if not possible, then provide an explanation. Jemena will then review on a case-by-case basis for an alternative solution.

New requirements for Solar PV in embedded networks

- New, upgraded or replaced solar PV generation within an embedded network must be emergency backstop enabled, allowing the Distribution Network Service Provider (DNSP) to curtail or disconnect the generation when called upon by the Australian Energy Market Operator (AEMO).
- The emergency backstop capability can be achieved using:
 - CSIP-AUS control of the inverter ($\leq 200\text{kVA}$)
 - DOE over SCADA ($> 200\text{kVA}$)
 - GMM ($> 30\text{kVA}$ to $\leq 200\text{kVA}$, by exception only)
- Note: The content of this slide pack explains the interoperability of CSIP AUS technology, the same principle applies to DOE over SCADA
- Where the Embedded Network Operator (ENO) cannot practicably apply the emergency backstop capability to solar systems within the Embedded Network (EN), the ENO must ensure that each new individual solar PV system ($\leq 30\text{kVA}$ only) which cannot practically connect are export limited to 0kW .
- Legacy (or existing) solar PV systems within an embedded network will be backstop exempt. Legacy solar PV system is a solar PV embedded generating unit of $\leq 200\text{kVA}$ in an EN that was installed and approved before 1 January 2025.
- This guide excludes EN sites with a total generation capacity of 5MVA and above. Such EGs will be assessed on a case-by-case basis.
- Standalone or AC coupled Battery Energy Storage Systems (BESS) will also be backstop exempt ($\leq 200\text{kVA}$ systems only).

Greenfield site Fully CSIP-AUS enabled

- A greenfield EN site with individual dwelling solar systems, large common area solar and battery energy storage systems (BESS)
- All solar generation in the EN is emergency backstop enabled via CSIP-AUS commands from the DNSP. The ENO implements a single site generation control system to interface with the DNSP
- BESS is emergency backstop exempt

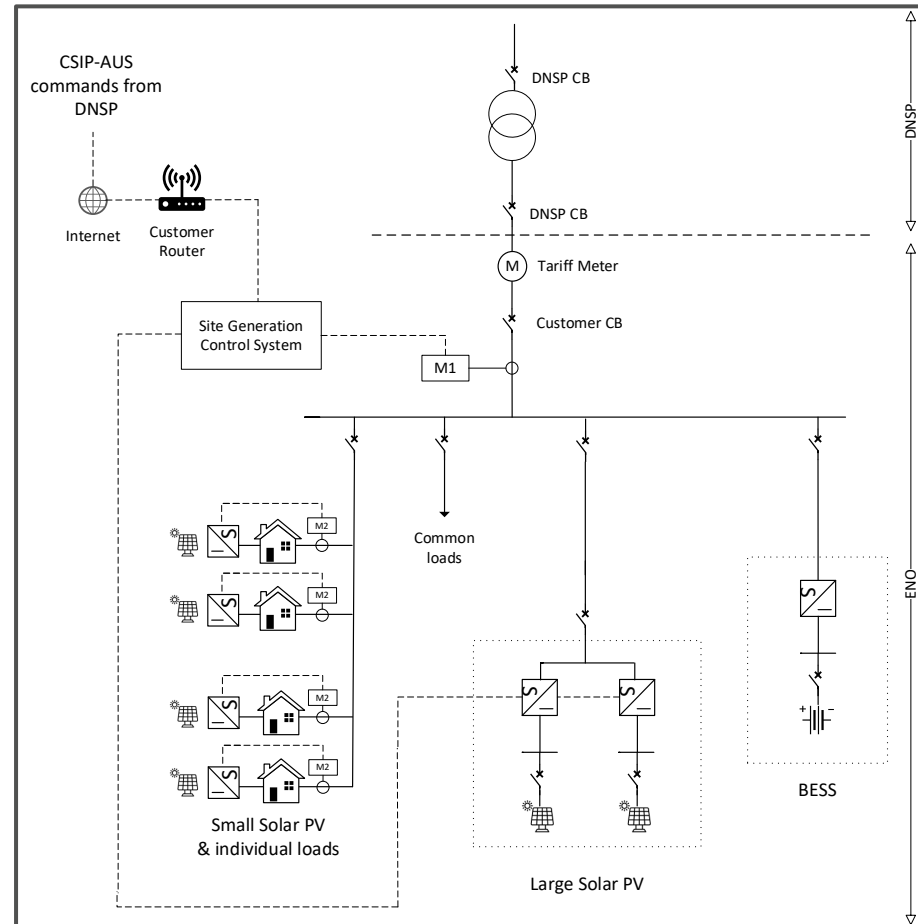


Note: depending on total site generation capacity at parent NMI, different technical requirements may apply

Greenfield site

Partially CSIP-AUS enabled

- A greenfield EN site with individual dwelling solar systems, large common area solar and Battery Energy Storage Systems (BESS)
- Large solar generation in the EN is emergency backstop enabled via CSIP-AUS commands from the DNSP. The ENO implements a single site generation control system to interface with the DNSP
- Individual solar ($\leq 30\text{kVA}$ only) cannot practicably connect to the controls system and is export limited to 0kW at the individual site with export metering (M2) installed for each location
- BESS is emergency backstop exempt

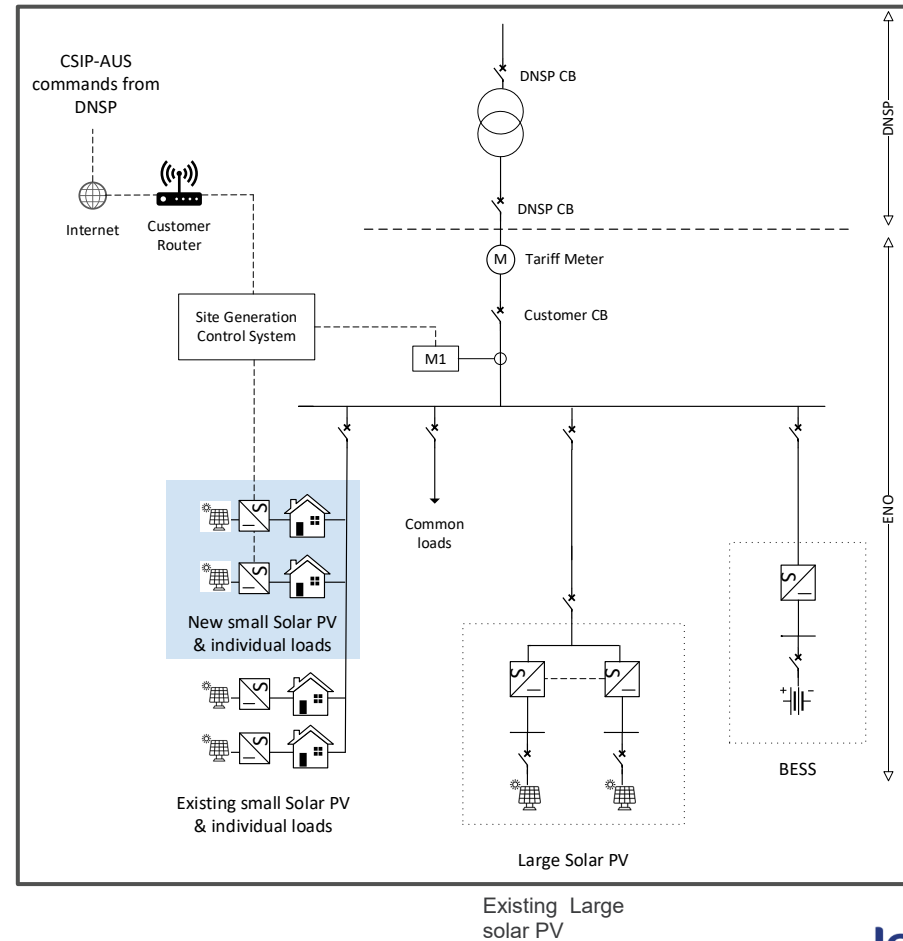


Note: depending on total site generation capacity at parent NMI, different technical requirements may apply

Brownfield site

New Solar CSIP-AUS enabled

- A brownfield EN site with individual dwelling solar systems, large common area solar and battery energy storage systems (BESS)
- All new solar generation in the EN is emergency backstop enabled via CSIP-AUS commands from the DNSP. The ENO implements a single site generation control system to interface with the DNSP
- Commissioning of the new site generation control capability will need to be performed manually and take into account existing solar generation. Site export limit zero commands will ramp down all controlled generation to zero if the legacy solar is generating and the site is exporting
- The legacy (or existing) solar (installed and approved prior to 1 January 2025) remains emergency backstop exempt
- BESS is emergency backstop exempt

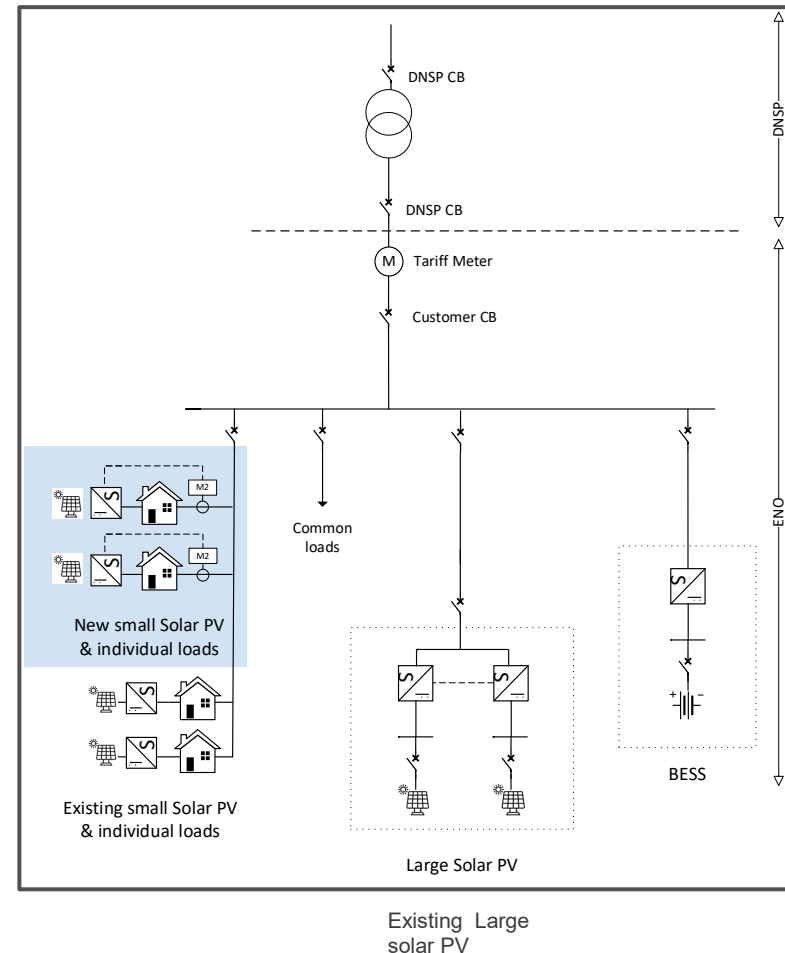


Note: depending on total site generation capacity at parent NMI, different technical requirements may apply

Brownfield site

New Solar export limited

- A brownfield EN site with individual dwelling solar systems, large common area solar and battery energy storage systems (BESS)
- New solar generation cannot practicably be connected to a common control system. Each new system ($\leq 30\text{kVA}$ only) is export limited to 0kW .
- ENO to provide confirmation that the newly installed solar is export limited to 0kW at the individual site, with export metering (M2) installed for each location
- The legacy (or existing) solar (installed and approved prior to 1 January 2025) remains emergency backstop exempt
- BESS is emergency backstop exempt



Note: depending on total site generation capacity at parent NMI, different technical requirements may apply

Brownfield site

New large solar CSIP-AUS enabled

- A brownfield EN site with existing individual dwelling solar systems
- The new or upgraded large solar generation (>30kVA) in the EN is Emergency Backstop enabled via CSIP-AUS commands from the DNSP. The ENO implements a single site generation control system to interface with the DNSP
- Commissioning of the new site generation control capability will need to be performed manually and consider existing solar generation. Site export limit zero commands will ramp down all controlled generation to zero if the legacy solar is generating and the site is exporting
- The legacy (or existing) solar (installed and approved prior to 1 January 2025) remains emergency backstop exempt
- New BESS is emergency backstop exempt

