

Proposed amendments to Horizon Power's Embedded Generation Connection Technical Requirements (EG CTR)

7 & 9 April 2025

Acknowledgement of country

**Ngala kaaditj Whadjuk Noongar moort
keyen kaadak nidja boodja.**

-

We respectfully acknowledge Whadjuk Nyungar people as the original custodians of the lands where our Bentley office is located and extend that respect to all First Nations people across our service area.



Agenda

Item
Horizon Power introduction
Solar recap and learnings
Summary of proposed amendments
Key requirement overview <ul style="list-style-type: none">• Operational envelopes• Energy management requirements for ESS• Compatible inverter list• Electrical contractor requirements
Key dates and information
Q&A

Questions

- Use the Q&A panel to submit your question at anytime during the presentation
- Ask your question during the Q&A session at the end



Horizon Power at a glance

2.3M km²



Total **service area** in regional and remote WA

~38,000

Residential accounts*



~9,000

Business accounts*

53,694

Customer connection points to network*



117

Remote Communities around WA



8,410km

Overhead and underground transmission and distribution lines*



79

Standalone Power Systems (SPS) installed*



7

Energy types – gas, diesel and renewable (wind, solar, hydro, battery, hydrogen)



25

Battery Energy Storage Systems (BESS)*



24.1 GWh

Renewable energy purchased from customers*



14.23%

Energy from **centralised renewable energy sources**



Horizon Power's Purpose is to deliver clean energy solutions for regional growth and vibrant communities

Our Guiding Principles



Community involvement

Listening, creating, and delivering together.



Aboriginal and Torres Strait Islander commitment

Working in partnership for meaningful, long term positive impact and mutual benefit



Cleaner, greener

Improving our shared environment.



Regions first

Preference towards local people, goods and services.



Our commitment to the State Government's goal of being net zero by 2050

We are committed to working together towards a climate-resilient and prosperous low carbon future for our communities



**Reduce public sector
emissions by**

**80%
by 2030***

*compared to 2020 levels

WA's transition to a low-carbon economy is a collaborative journey. We recognise our unique position in this transformation as a vertically-integrated electricity utility, operating across the full energy supply chain with generation, transmission, distribution and retail services.



**Net zero
by 2050**

We are committed to increasing renewable energy generation wherever viable, balanced with the urgency of delivering our decarbonisation goal, the challenges of large-scale renewables infrastructure and the sensitivity required for cultural, environmental and economic considerations.

Solar recap and learnings

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Solar Recap

Horizon Power's Distributed Energy Resource Management System (DERMS)

DERMS delivered on Horizon Power strategic goal of zero refusals for solar connections

Horizon Power's experience with DER management:

- 2010 – Hosting capacity introduced
- 2016 - Carnarvon DER trials
- 2018 – SmartSun Broome VPP trial
- 2019 - Onslow DERMS trial
- 2024 - Smart Connect Solar



Smart Connect Solar

Energy Management of Solar

- Smart Connect Solar enables us to effectively manage high levels of solar energy on the network, whilst maintaining a safe and reliable power supply for the community.
- Internet connectivity to a Secure Gateway Device (**SGD**) enables Horizon power to smooth the fluctuations in solar output, resulting in more customer solar connections.



Compliance guidance information

- 1 No "Application to connect" lodged – system not approved
- Lodge an application with Horizon Power¹
 - Await Approval To Connect before commencing work

- 2 Non-compatible inverter installed
- Select an inverter from the compatible inverter list on Horizon Power's website
 - Note the list may expand over time

- 3 SGD not commissioned and/or configured
- Review Horizon Power's Embedded Generation Connection Technical Requirements²
 - Complete the SAA training course
 - Call SwitchDin support³ for questions or refer to their [Help Guide](#)

- 4 Electrical Notices not submitted
- Submit the Preliminary and Notice of Completion per requirements of notifiable work

21 business days provided to rectify non-compliant installs before system is Fault Noted and disconnected from the network.

¹ [Connect solar and battery - Info for installers | Horizon Power](#)

² [Renewable Energy connection - Technical Requirements | Horizon Power](#)

³ (02) 4786 0426 support@switchdin.com

Summary of proposed amendments

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Purpose of proposed amendments

Battery visibility and management

As more customers seek to decarbonise and reduce energy costs through electrification, Horizon Power anticipates increased uptake of Consumer Energy Resources (**CER**) including rooftop solar, battery storage, EV charging, smart appliances.

Today's amendments highlight Horizon Power's focus on integrating battery storage as Smart Connected assets

Current state



Smart Connect Solar

Delivered 'zero refusals' for customer solar



Proposed amendments



More battery connections

Supported by WA Residential Battery Scheme



EG CTR Review

Configuring batteries for time-based operation



Battery Visibility

Supporting the extension of Horizon Power's CER coordination capabilities

Horizon Power Embedded Generation Connection Technical Requirements

Key Requirements Overview

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Summary of amendments to the EG CTR

Standard



Basic

Embedded Generation
Connection Technical
Requirements
 $\leq 30\text{kVA}$



Low Voltage

Embedded Generation
Connection Technical
Requirements
 $> 30\text{kVA}$

Key amendments

1. Terminology revision
2. Clarifications to existing definitions
3. Addition of operating envelopes
4. Energy management requirements for Battery
5. Compatible inverter requirements
6. Charging from grid guidance updated

Webinar focus is on
amendments to the
basic EG CTR

1. Terminology revision
2. Charging from grid guidance updated
3. Appendix I. Modbus Parameter
 - a) Requirements for ESS are under review
 - b) Notice to industry added

Operating Envelope Requirements (new)

Operating Envelope requirements

Prescribed times when the following **must not occur**:

- Battery charging from the grid
- Battery discharging into the grid

From	To	Requirements	
		Charging from the grid	Discharging into the grid
00:00	09:59	Permitted	Permitted
10:00	15:00	Permitted	Not Permitted
15:00	18:00	Permitted	Permitted
18:00	21:00	Not Permitted	Permitted
21:00	23:59	Permitted	Permitted

Battery self-consumption mode is common and meets these requirements.

Requirements – Charging from the grid

- Section has been updated and simplified
- 1 charging cycle per month permitted for battery health and maintenance
- Charging during system frequency deviations (per AS4777.2) is permitted

Energy Management Requirements for Energy Storage Systems (ESS)

Energy management

- ESS are required to meet Energy Management Technical Requirements
- DERMS integration through an Approved API or Authorised Agent are no longer an alternative to SGD connectivity

Upgrading or modifying existing systems

- New application required
- New and existing EG systems shall meet the updated energy management requirements
- Like-for-like replacement under warranty is exempt, refer to the EG CTR documents for full details and conditions

SGD connection requirements

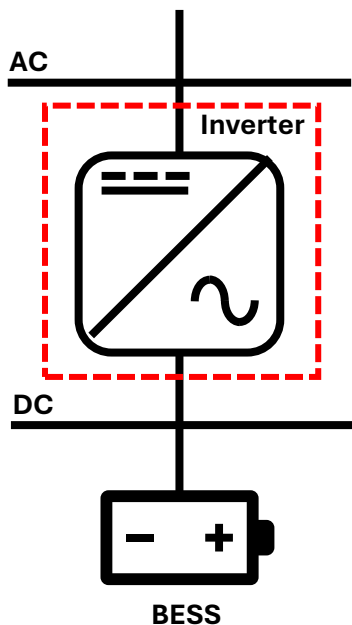
- **Up to 2** inverters can be connected to the SGD
- The second inverter must be hardwired to the SGD
- The second inverter does not have to be next to the SGD enclosure
- Installation requirements remain identical
- Installations with **more than 2** inverters are non-standard.
- Contact Horizon Power for non-standard installations¹



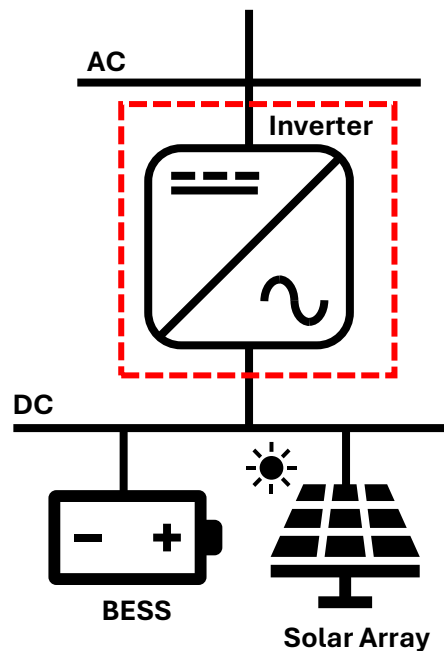
¹ renewables@horizonpower.com.au

Compatible Battery Inverter List

AC Coupled arrangement (ESS Only Inverter)



DC Coupled arrangement (Hybrid Inverter)



Compatible BESS Inverters

- Inverters must be on Horizon Power's compatible inverter list¹ (existing requirement)
- Requests to process a non-compatible inverter onto the compatible inverter list can be made through SwitchDin²

¹ Always refer Horizon Power's website for the latest list

² <https://www.switchdin.com/contact>

Compatible Battery Inverter List

DC Coupled

Per the existing Smart Connect Solar list¹.

A subset of inverters on this list are hybrid, and therefore compatible.

Brand	Model
FRONIUS	Primo GEN24 10.0 Plus
FRONIUS	Primo GEN24 3.0 Plus
FRONIUS	Primo GEN24 3.6 Plus
FRONIUS	Primo GEN24 4.0 Plus
FRONIUS	Primo GEN24 4.6 Plus
FRONIUS	Primo GEN24 5.0 Plus
FRONIUS	Primo GEN24 6.0 Plus
FRONIUS	Primo GEN24 8.0 Plus
FRONIUS	Symo GEN24 10.0 Plus
FRONIUS	Symo GEN24 3.0 Plus
FRONIUS	Symo GEN24 4.0 Plus
FRONIUS	Symo GEN24 5.0 Plus
FRONIUS	Symo GEN24 6.0 Plus
FRONIUS	Symo GEN24 8.0 Plus
GOODWE	GW3600-EH
GOODWE	GW5000-EH
GOODWE	GW6000-EH

AC Coupled

Currently under assessment.

Will be shared with industry as it becomes available.

¹ Always refer Horizon Power’s website for the latest list



Electrical Contractor Requirements

Contractors that have [already completed](#) the Horizon Power specific installer training and have access to Stormcloud

- No further training requirements
- Awareness of these amendments required
- Adherence to the EG CTR required

Contractors that have [not completed](#) the Horizon Power specific installer training:

- Completing the Horizon Power training module is a requirement¹

Contractors have key obligations – must be met to [ensure compliance](#)

- Ensure a connection application has been submitted²
- Ensure the inverter installed is on Horizon Power's compatible inverter list
- Register the SGD during installations (SAA training course)
- Submit installation photos³
- Submit evidence of applied settings meeting **Operating Envelopes** and **Australia C** requirements
- Submit the NOC per requirements of notifiable work

¹ [Smart Connect Solar - Info for installers | Horizon Power](#)

² [Renewable Energy Connection - Technical Requirements | Horizon Power](#)

³ renewables@horizonpower.com.au

Electrical Contractor Requirements – Example Photos



Figure 5: Example SGD installation



Figure 6: Example SGD installation open



Evidence – Region C Settings

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Key dates

Date	Item
7 April	Webinar session #1 Public consultation opens
9 April	Webinar session #2
2 May	Consultation period closes
May (Date TBC)	Public information session to support WA Residential Battery Scheme
1 July	Requirement to adhere to updated EG CTR Launch of WA Residential Battery Scheme

Submit your feedback on the proposed EG connection technical requirements by Friday, 2 May [here](#).



Smart Connect Solar training

- Before installing your first Smart Connect Solar system, you will need to complete online training via:
 - [The Clean Energy Council](#), where you'll receive 30 CPD points, **OR**
 - [The SwitchDin Installer Academy](#)
- Training for Smart Connect solar consists of two modules and will take about an hour and a half to complete both:
 - Module 1- Smart Connect Solar – Overview
 - Module 2 - Smart Connect Solar – Installation deep dive.

Useful Links & Contact Details

Useful Links

- [New DER technical requirements for solar and battery connections](#)
- [Smart Connect Solar - Info for installers | Horizon Power](#)
- [Connect solar and battery - Info for installers | Horizon Power](#)
- [Renewable Energy Connection - Technical Requirements | Horizon Power](#)
- [SwitchDin Help Guide](#)

Contact Details

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SwitchDin

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Q&A