RENOZ ENERGY

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RENOZ BATTERY SYSTEMS

AS/NZS INSTALLATION COMPLIANCE GUIDE

RENOZ ENERGY PTY LTD
Version 1.0

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Applicable Countries

- Australia
- New Zealand

Overview

This guide is intended for use with the RENOZ Energy LV-5KWH100AH (LV Stackable) battery system, installation user manuals and safety datasheets to ensure the compliance, handling, storage, and installation of the RENOZ Energy LV Stackable battery system.

These guidelines adopt and interpret the information extracted from AS/NZS 3000:2018 and AS/NZS 5139:2019 standards, where, if required, these standards (and later issues) should take precedence over information presented within this document.

Safety Guide

Intended use (and prohibited use)

The RENOZ Energy LV Stackable (LV-5KWH100AH) is suitable for use:

- Without modifying the recommended configuration as advised by RENOZ Energy.
- For its intended use and to provide home energy storage.
- Only when installed by installers with Grid Connected Battery System (GCBS) accreditation via Solar Accreditation Australia (SAA).
- Only when installed at a location adhering to AS/NZS 3000:2018 and AS/NZS 5139:2019.

The RENOZ Energy LV Stackable (LV-5KWH100AH) is not suitable for use:

- The installed platform is moving.
- In the presence of potential water ingress, water exposure, or high humidity.
- In flame-prone locations.
- In the presence of combustible dust and debris.
- In the presence of ammonia and other corrosive gases.
- At an altitude of over 2000 meters above sea level.
- Ambient temperatures outside the -20°C to 55°C non-condensing recommended temperature range.
- When operated outside of the battery system's intended use as a battery system.

General Observations:

Before and during operation of the RENOZ Energy LV Stackable battery system, observe the following safety aspects:

- Ensure that the physical location suits the requirements of the battery system as outlined in the LV Stackable (LV-5KWH100AH) technical specifications.
- Inspect any physical damage to the LV Stackable battery system (e.g. physical, electrical burn, sparks).
- Ensure all wiring interfaces are correctly wired and terminated per the product documentation and adhere to AS/NZS 3018.
- Any repairs, modifications, and/or removal of RENOZ Energy battery systems by a licensed electrician and/or RENOZ Energy-accredited installer.

Mitigating Fire

The LV battery system is a pre-assembled integrated battery system with no access to sealed cell components; thus, it is not classified as a system requiring arc flash protection. Fire resulting from arc flash is not likely to occur. If any risk of arc flash is determined likely by a user or installer, please seek advice with RENOZ Energy. In the case of fire, if it is safe to do so, immediately de-energise the system by following the shutdown procedure in the installation manual before extinguishing the fire.

Essential steps to isolate the RENOZ Energy LV Stackable battery system include:

- Isolate the system electrically by switching off the system's main AC supply.
- Ensure the main supply at the main AC switchboard is cut off.

If the system is installed in a dedicated room, only competent personnel access to structural firefighting PPE and self-contained breathing apparatus (SCBA) may enter the room to perform the fire extinguishing room.

Storage and transportation.

Storage ambient conditions requirement

In a de-energized state, store the RENOZ Energy LV battery system under the following environmental conditions:

- Recommended ambient Temperature: 0°C to 40°C.
- Maximum humidity: 5%-100% without condensation.
- Adequate ventilation as per AS/NZS 5139 storage ventilation requirements
- Within permitted fire safety regulations
- Free from dust, debris, and corrosive and/or explosive gases.
- Free from vibration or regular moving platform.

Please note that the RENOZ Energy LV stackable battery system naturally discharges energy even when stored or kept in a de-energised state. Extended storage in a de-energized state over a prolonged period of time will damage and impact the performance of the battery modules.

Best practices for the RENOZ Energy LV Stackable battery system include:

- Ensuring the minimum state of charge (SoC) is at least 30% before de-energized and storing.
- Never store the RENOZ Energy LV Stackable battery system for more than six months.
- Seek advice before re-energizing of a RENOZ Energy LV Stackable battery system that has been stored for longer than 6 months.

Location guidelines for indoor installation

Environmental and location guide

The battery standard AS/NZS 5139:2019 (or later) is the guiding document overseeing installation of the battery system in an indoor environment. When installing the RENOZ Energy LV stackable battery system indoors, consider physical access to the system as well as any future servicing and maintenance work.

Access

When installing the RENOZ Energy LV Stackable battery system, consider the LV-5KWH100AH weight and bulkiness to determine the lifting equipment or resources required to safely handle and install the equipment without compromising the personnel or the equipment's safety.

Observe and assess suitability based on factors including, but not limited to:

- Clear access path to the installation location.
- Steps or uneven platforms.
- Slippery installation surfaces
- Tight access and requirements

Servicing and maintenance

For future servicing and maintenance of the RENOZ Energy LV Stackable battery system, maintain safe and clear access to the equipment location for certified system maintainers to carry out any required service and maintenance activities. This includes considering:

- 150mm of clearance on all vertical and horizontal sides of the LV Stackable battery system for minimal tools.
- Observe AS/NZS 5139:2019 (or later) required dimensions requirements when installing the RENOZ Energy LV Stackable Battery System indoors.

Standards, codes, and regulation

The RENOZ Energy LV Stackable battery system must be installed in compliance with all local, relevant standards, codes, and regulations. This includes battery standards AS/NZS 5139:2019 (or later). Section 4 explains requirements when determining the final location of the installation. The following notes have been extracted from AS/NZS 5139:2019.

Restricted Locations (AS/NZS 5139: Clause 4.2.2.2)

A pre-assembled integrated BESS shall not be installed:

1. In restricted locations, as defined for switchboards in AS/NZS 3000.
2. Within 600mm of any exit.
3. Within 600mm of any vertical side of a window or ventilation that ventilates a habitable room.
4. Within 600 mm of any hot water unit, air conditioning unit or any other appliance not associated with the pre-assembled integrated BESS.
5. within 900 mm below any of the items included in Items (2), (3) and (4).
6. In ceiling spaces.
7. In wall cavities.
8. On roofs, except where specifically deemed suitable.
9. Under stairways.
10. Under access walkways; or
11. In an evacuation route or escape route.

Fireproof barriers

Considerations when selecting the location of the RENOZ Energy LV Stackable battery system is whether the rear side of the wall of the installation location is a habitable or non-habitable room. The RENOZ Energy LV stackable battery system is a floor-mounted battery system, however any walls with a habitable room directly behind the battery system require a fireproofing barrier installed where the equipment is to be installed. Any conduit penetrations larger than 5mm through a non-combustible material within restricted zones must be filled with fire-retardant material.

Habitable rooms

In areas of domestic or residential electrical installations, pre-assembled integrated BESS shall not be in habitable rooms. A habitable room is defined as a room associated with a domestic or residential installation used for normal living activities and includes rooms such as, but not limited to:

- Bedroom.
- Living room.
- Lounge room.
- Music room.
- Television room.
- Kitchen.
- Dining room.
- Sewing room.
- Study.
- Playroom.
- Family room.
- Home theatre.
- Sunroom.

Note that a garage that is used as a lounge room or workspace may also be considered a habitable room.

The following does not constitute a habitable room: Bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other areas of a specialized nature occupied neither frequently nor for extended periods.

Additionally, any manufacturer clearance zones need to be maintained for batteries, inverters, and switchboards.

Acceptable locations

Suitable locations for installation may include garages, storage rooms, a dedicated battery storage room, or a suitably enclosed veranda. Ensure that a smoke detector is installed in any enclosed rooms.

When selecting locations, consider any future complications from the selected installation location of the BESS and assess suitability. Any possible damage that can be caused by a vehicle if installed in a carport or garage may be mitigated by installation of a bollard or equivalent protection.

Minimum clearance requirements

The minimum clearance requirements as per Section 4 AS/NZS 5139:2019 in an indoor setting are as follows:

- Minimum 600 mm horizontally from windows to habitable rooms and/or entrance doorways and minimum 900 mm vertically from windows or egress to habitable rooms.
- Minimum 600 mm horizontal clearance from any appliances not associated with RENOZ Energy LV Stackable battery system. This includes but is not limited to any customer's electrical appliances, that is, refrigerators, TVs, and/or other electrical appliances outside the installation scope of the RENOZ Energy LV Stackable battery system.
- Exceptions to other electrical appliances include electrical switchboards, AC and DC isolators, and power outlets. Associated appliances with the RENOZ Energy LV Stackable battery system are permitted to be located within the clearance zones, including the PV distribution board and solar PV inverters.
- Consider the following dimension recommendation when RENOZ Energy LV Battery System indoors, where the back wall is a habitable room within the allowed dimensions in AS/NZS 5139.

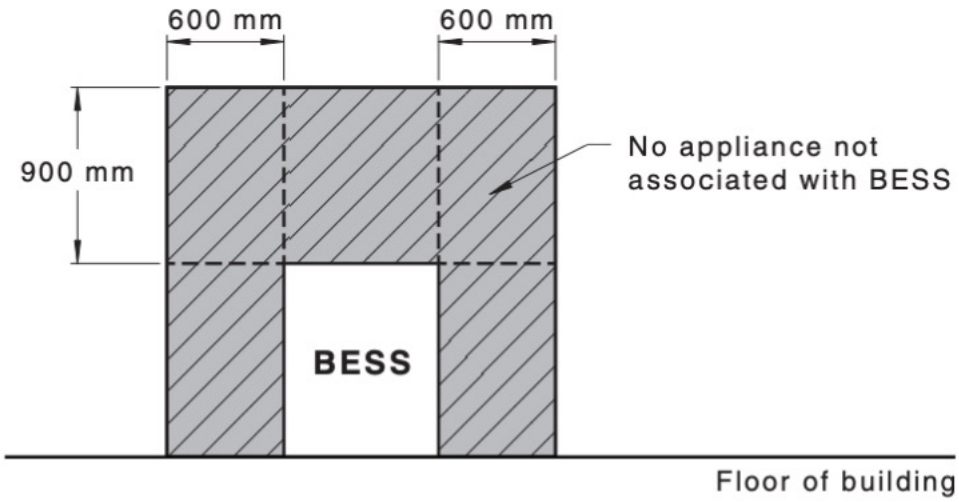

Figure 1: Suggested dimensions and barrier zones for pre-assembled integrated BESS installed on or near a habitable room facing wall.

Bollard requirements

AZ/NZS 5139:2019 states that pre-assembled integrated BESSs shall be protected from mechanical damage, environmental and other external influences. Where the location chosen may expose the pre-assembled integrated BESS to influences that might be reasonably expected then they should be considered as part of the installation conditions, e.g. damage caused by a vehicle if a system is being installed in a carport or garage.

Additional protections such as bollards or barriers should be provided in garages or carports for RENOZ Energy LV Stackable floor-mounted battery systems where there is potential for damage during normal vehicle movement.

AZ/NZS 5139:2019 (or later) should be referred to for conforming bollard requirements and suitable installation locations.

Revision History

Revision	*Date*	*Description of Changes*
1.0	June 2025	Initial Release