Information bulletin

Solar PV Batteries – Information for home and business owners

This bulletin provides important safety information for home and business owners who are considering installing Solar PV Batteries at their premises.

The benefits of batteries

Australia has the highest uptake of rooftop Solar PV systems globally and as battery technology improves and the costs reduce, a number of businesses and homeowners are considering the benefits of installing Solar PV batteries.

The benefits of installing a Solar PV battery include:

- **Lower electricity bills:** Power stored in the battery during the day is used at night, which reduces the amount of power you have to pay for.
- **Power security:** If you have installed this feature, important appliances, such as the fridge and freezers, will still work using the battery in the event of a blackout.
- **Help the environment:** Fossil fuels are still used to produce electricity for the grid in the Territory. Maximising the use of the power your Solar PV systems generate will reduce the amount of power the utilities will need to generate.

Types of batteries

There is a range of battery types, which use different chemical processes available on the market. Each battery type has different performance capabilities.

The two most common battery types are:

- **Lithium-Ion batteries:** Used in laptops and mobile phones for a number of years, this battery type is becoming popular for Solar PV systems.
- **Lead-acid batteries:** Similar to the batteries used in cars.

The other less common battery types are nickel-based, flow and sodium-ion batteries.

The risk of batteries

All batteries can potentially be dangerous if they are not correctly installed and/or maintained according to manufacturer's guidelines. Failing to correctly install and/or maintain a battery will have a significant impact its performance and life. The risks associated with batteries include:

- Overheating causing fire or an explosion, and
- Toxic chemical exposure and pollution due to the battery rupturing.

The main risk for **Lithium-Ion batteries** is overheating leading to possible fires. Components in this battery type can break down at elevated temperatures causing the battery to overheat and catch fire.

Lead-acid batteries, as the name suggests contain corrosive material, which can cause serious burns if there is a split in the battery casing. During charging, Lead-acid batteries also emit hydrogen and oxygen gasses, so the battery needs to be installed in an adequately ventilated area.

Managing the risks

If you do install a Solar PV system with a battery in your home or business, you have a responsibility under the *Electricity Reform Act 2000* to ensure that:

1. your system is installed and operated in accordance with the technical and safety requirements required by law; and
2. The system is safe and safely operated.

To manage the risks, you should:

- Make sure your installer is a licensed electrician (it is recommended that the installer also has the Clean Energy Council 'Battery Storage' Accreditation).
- Consult with your installer during the quote stage and discuss what battery type is suitable for your house/workplace based on the possible battery installation locations. A number of safety restrictions exist that will limit where you can install a battery and the installer should discuss these with you.
- Make sure the battery location:
    - Is well ventilated;
    - Is fire-proof;
    - Protects the battery from accidental damage;
    - Does not block your emergency escape route; and
    - Is within the battery's operating temperature range.
- Discuss the battery capacity with your installer to ensure it is sufficient for your requirements.
- When the battery or system is installed, make sure the installer:
    - Gives you a completed Certificate of Compliance (COC) for the installation. The CoC must detail what has been installed and is a form of warranty that the work is done to a recognised standard. The CoC can be proof that you have met your first responsibility under the Electricity Reform Act 2000 (see above).
    - Gives you a full induction on the system including (but not limited to) the start-up and shutdown procedures, alarm features and emergency procedures, any exclusion zone requirements, any periodic maintenance requirements, how to access specific data and a description of the risks associated with the system and battery.
    - Gives you the 'System Manual', a comprehensive document that includes details of the installation, the operating manual, all warranties and engineering certificates if any structures have been provided.
    - Confirms and proves that the system is operational.
- Make sure you follow the maintenance schedule for your system.

Useful information

The following guides provides additional information on purchasing a Solar PV battery.

- Guide to installing a household battery storage system (Clean Energy Council)
- Best Practice Guide: Battery Storage Equipment (industry publication)

Getting help

If you have a concern regarding the safety or compliance of an electrical installation, contact NT WorkSafe and ask to speak to an Electrical Safety Inspector by calling 1800 019 115 or emailing ntworksafe@nt.gov.au