
Tesla Powerwall 2 Frequently Asked Questions

What is energy storage?

Energy storage is the capture of energy produced at one time for use at a later time. Storage is a critical element in a total renewable energy solution that reliably meets the needs of customer's day or night, rain or shine, and during power outages.

What is the Tesla Powerwall 2?

Tesla's Powerwall 2 is a compact, simple-to-install home energy storage product that reduces reliance on the grid by storing your solar energy for use when the sun isn't shining. In Tesla's own words, "Powerwall is a battery that stores energy, detects outages and automatically becomes your home's energy source when the grid goes down. Unlike generators, Powerwall keeps your lights on and phones charged without upkeep, fuel or noise. Pair with solar and recharge with sunlight to keep your appliances running for days."

Why Tesla?

When we consider companies around the world who champion progress toward a cleaner energy future, Tesla sits at the top of the list. Fearless innovation is a Tesla hallmark, and ECRL is pleased to be the first to bring the Tesla Powerwall 2 to the Barbados market.

What is the difference between full load backup and partial load backup?

"Loads" are considered all equipment that consume energy. Full load backup provides backup power to all of the loads in your main electrical panel. Partial load backup only provides backup supply to loads deemed "critical" in a utility grid power outage.

How does partial home backup work?

Loads that are identified as "critical" are installed in a subpanel for backup power purposes. Under normal circumstances, the utility grid will power these loads but, in the event of an outage, the power supply switches from the utility grid to the battery (and solar PV if installed).

How does full load backup work?

The Powerwall is installed ahead of your main electrical panel and injects power into your home in the event of a grid outage. Powerwalls are stackable; therefore, multiple batteries can be installed to meet your power and energy needs. Ten batteries can be stacked together to provide up to 50 kW of continuous power and 135 kWh of energy on a single charge.

Is it a requirement to have a solar PV system to charge the battery?

No, it is not. The battery can be charged directly from the grid. It is recommended to install a solar PV system to complement the battery for a full green energy solution to service your loads.

Can you install Powerwall with generators as part of the overall home system?

Yes, but the generator can never charge the Powerwall. With a proper Automatic Transfer Switch (ATS), the generator can turn on and off per Powerwall's preset configuration as a backup to the battery.

My grid tied solar PV system does not provide energy to my home during a power outage. How does the battery help provide backup power when the grid supply is down?

Typical grid tied PV systems are not "grid forming", meaning when the power from the utility grid is not available, your PV system will not act as an independent power source. With a battery, the PV system now can operate in "grid following" mode where the battery "forms the grid" and the solar is used to charge the battery and supply energy to your home.

How long will Powerwall last in an outage?

An average home in Barbados uses approximately 11 kWh of energy per day. Each Powerwall provides 13.5 kWh of usable energy but the power rating is limited to 5 kW. A load analysis is required to ensure the energy **and** power rating of the battery is not exceeded during continuous operation. You can use the Tesla mobile app to monitor your usage and conserve power to extend your backup coverage for a day or more. Additionally, when Powerwall is paired with solar it can continue to recharge and has the potential to run your home indefinitely.

What happens if I overload the Powerwall?

If you exceed Powerwall's power (5kW each) or energy (13.5kWh each) capabilities, it will safely shut down similar to your home circuit breaker.

What battery operational configurations are available?

The battery can be configured in "backup only" mode or "self-consumption" mode. In backup only mode, the battery will only discharge in the event of a utility power outage. In self-consumption mode, the battery will cycle itself on a daily basis in the following hierarchy for energy dispatch:

1. PV provides energy to loads and charges the battery
2. When PV is not available, battery supplies energy to the connected loads

3. When the battery is depleted or reaches a pre-set charge limit, the grid takes over to serve the loads

Can the Powerwall be installed outdoors?

Yes, but it is not recommended to install the battery in direct sunlight. If the battery must be installed outdoors, a covered area with adequate ventilation is recommended.

What is the weight and dimensions of the Powerwall?

The battery weighs 125 kg with dimensions of 1150 mm x 755 mm x 155 mm

Can I monitor the Powerwall via an online app?

Yes, Tesla provides an app that allows real time monitoring of critical parameters related to the battery and solar (if applicable). An internet supply is required for connectivity between the current transformers for the solar, the battery, and the backup gateway.

What is the cost of a complete turn-key installation?

The Powerwall, backup gateway, and other interconnection equipment related to the battery system is available under an introductory offer at BBD \$24,000. If a solar PV system is required, this can be quoted separately.

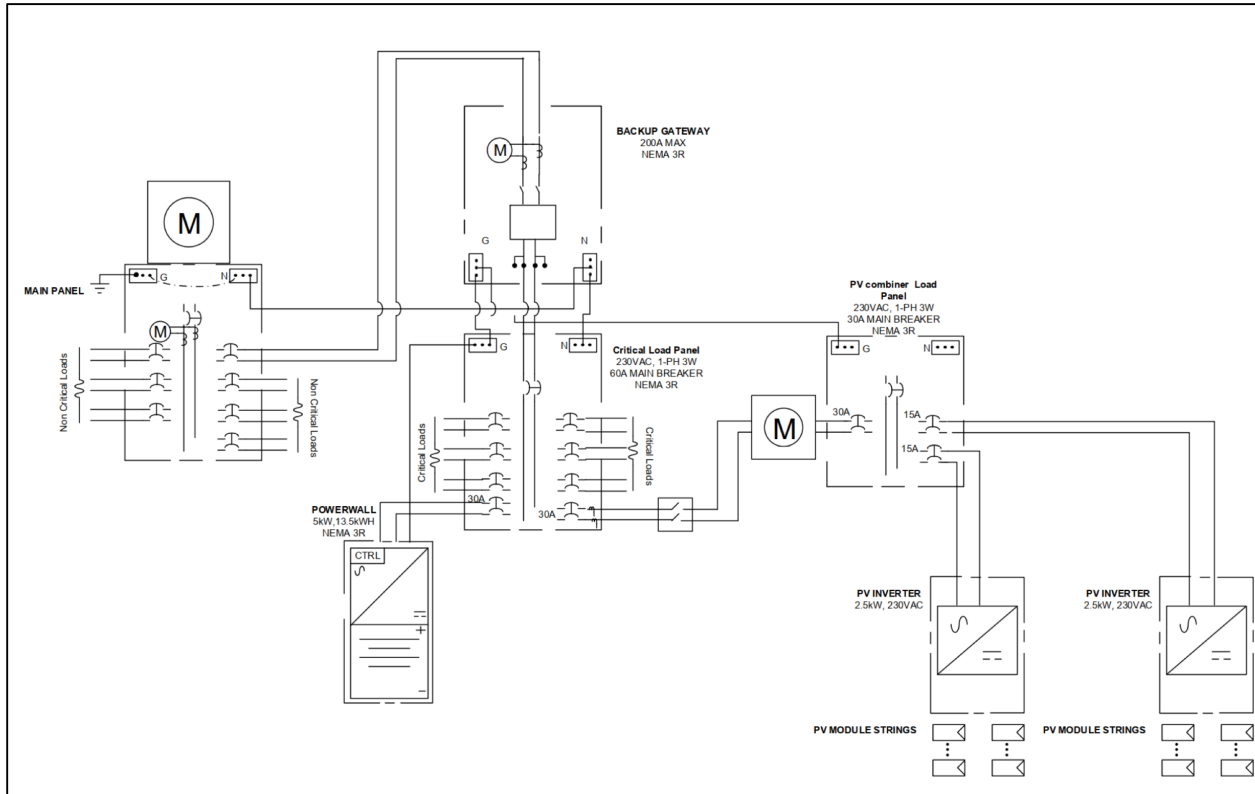
Can I purchase the battery without installation services?

No. ECRL is the only certified Tesla Powerwall installer in Barbados and is trained to install the Powerwall in accordance with training provided by the manufacturer.

What components are included as part of the battery purchase?

1. x1 Tesla Powerwall 2 battery
2. x1 backup energy gateway
3. Current transformers to measure power and energy flow from all energy sources
4. Mobile app for online monitoring and control of the battery and energy gateway

Can you provide an illustration of what a typical Powerwall, PV system, and load configuration looks like for full load and partial load backup?



What information is required to obtain a proposal for a Tesla Powerwall 2?

A site visit can be arranged to assess your equipment power and energy consumption (aka load consumption). To expedite the load analysis, please send the following information to renewables@emeracaribbean.com:

1. A list of equipment (loads) that require backup power
2. Power and voltage rating of the loads
3. Equipment utilization identifying hours of use each day
4. PV system single line drawing (if an existing array is installed)