

TESLA

# Off-Grid Application Overview



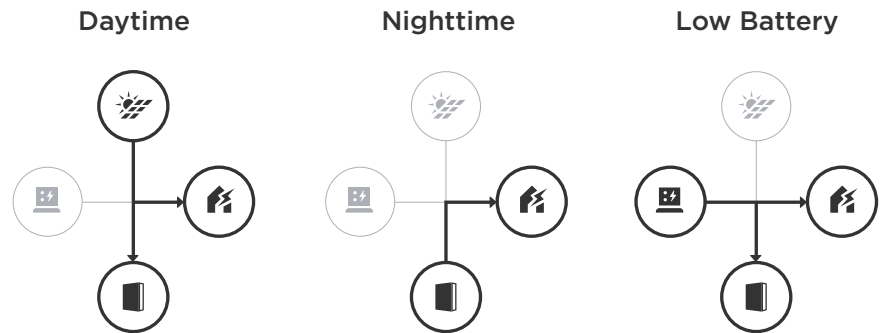
# Introduction

A Tesla Off-Grid system generates and stores solar power, allowing homeowners to live on clean energy, independent of the grid. It is for homes that are not connected to utility power.

- Best Value
- Unparalleled Performance
- Longest Lasting
- Smartest Software
- Beautiful, Compact, & Clean

# How It Works

Powerwall will charge from excess solar and discharge when needed. If you ever run low on energy, Powerwall can automatically turn on the secondary energy source to power the home and charge the Powerwall.



# Why Tesla Off-Grid

The Off-Grid system allows you to have a self-contained system of sustainable energy products, completely independent of the grid. Tesla's Off-Grid offering includes consultation about the right-sizing of your system as well as a seamless Off-Grid experience: Powerwall is able to charge from a secondary energy source and control the state of charge at which the secondary energy source kicks in. The Tesla App allows you to see your home's energy usage in real time and make informed decisions. Over the life of your system, updates will be pushed to your system over-the-air.

## Best Value

Tesla's vertical integration and product design offers the lowest cost per kWh of an integrated Off-Grid battery system. Advanced cell technology and battery management allows superior depth of discharge.

## Longest Lasting

When following Off-Grid installation guidelines, Powerwall offers a 10-year warranty. This long life, with all the capacity available on a daily basis means Powerwall will both outlast and outperform traditional Off-Grid energy storage systems.

10  
Year Warranty

∞  
Unlimited Cycles

🌡️  
Thermal Controls

## Unparalleled Performance

Powerwall integrates a high performance inverter, thermal controller, and battery management system. Powerwall produces high quality true sine power output to help you live Off-Grid without compromise.

True Sine 

## Beautiful, Compact, & Clean

Powerwall is an integrated solution with the highest energy density of any residential battery. This results in compact and beautiful installations, with no maintenance or toxic by-products.

## Smartest Software

Tesla products get better over time. Powerwall's active internet connection provides free over-the-air updates to ensure customers have new features and improved functionality.

Powerwall includes comprehensive monitoring through the mobile app to show your energy usage in real time. For Off-Grid customers this allows a unique insight into your homes energy usage and how you can manage your energy consumption



# System Requirements

As with all energy systems, your site must meet some basic design requirements to ensure efficient and reliable operation. A reliable and appropriately sized system is especially critical for Off-Grid.

## Tesla Off-Grid System Checklist:

- The site has sufficient solar energy available year-round to meet your energy needs
- Off-Grid Powerwalls must be installed in an area that is between 50°F – 86°F (10°C - 30°C)
- The site does not have a utility connection
- The site has Internet connectivity
- Secondary energy source for backup

## Powerwall-compatible secondary energy sources

Kubota (GL Series)

Himoinsa (HYW Single Phase Series)

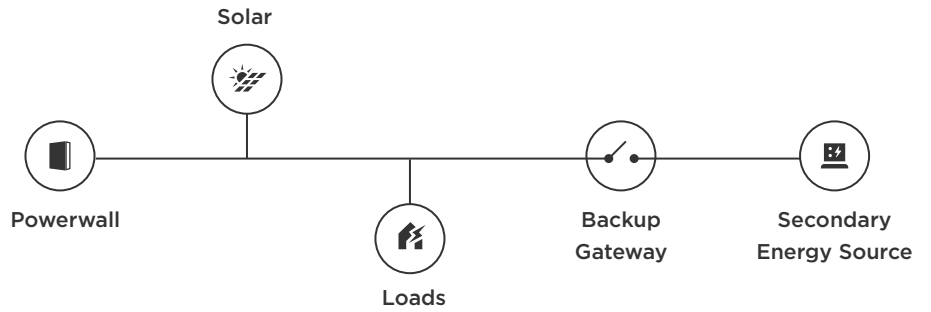
## Off-Grid approved solar inverters

Fronius (Primo Series)

SMA (Sunny Boy SB Series)

SolarEdge (HD Wave Series)

# System Components



## Solar Generation System

If you have an existing Off-Grid solar system, speak with your Tesla Certified Installer about compatibility with Powerwall, as some systems may require modification. To ensure reliable performance, all Off-Grid solar systems must use approved inverters.

## Tesla Powerwall

An Off-Grid system will have between 2 and 10 Powerwalls, determined by your Certified Installer. Powerwalls must be installed in a conditioned part of the home, an area that is consistently between 50°F - 86°F (10°C - 30°C).

## Backup Gateway

The Backup Gateway provides energy management, metering, and remote monitoring through the mobile app as well over-the-air updates with future software improvements. The gateway also integrates with an alternative power source to automate the start and stop of additional generation.

## Secondary Energy Source

A secondary energy source provides additional resilience and the ability to generate energy when solar is unavailable for a prolonged period. To ensure reliable performance, use Powerwall-compatible secondary energy sources.

# Best Practices For Living Off-Grid

## Sizing Consultation

Appropriate sizing of solar and energy storage is crucial to Off-Grid living. Work with your Tesla Certified Installer to ensure your solar system meets your energy needs. Due to the seasonal nature of solar, this is typically sized such that the daily solar production even on short winter days will meet your energy needs. For energy storage, this is typically matched to your average energy production or enough energy to run your home for at least 1 full day alone, whichever is larger.

## Secondary Energy Source Integration

While your system will be sized to work in the vast majority of circumstances, extreme events can and do occur. Integrating a secondary energy source protects you against these events and provides additional resiliency for your home. Secondary energy source integration also allows the system to be sized based on typical days rather than 'worst-case', which lowers costs and allows more people to live Off-Grid.

## Energy Use

It is a good idea to familiarize yourself with all the appliances in your home and reflect on your typical use. To extend the hours of available power, it is best to not use more than 3 kilowatts (kW) of power at one time per Powerwall. This means don't run too many appliances at once, and be mindful of energy intensive appliances.

## Grid Forming

When Off-Grid, Powerwall will reserve some energy within the top 5% - 10% for grid-forming. This gives the system the ability to keep solar running throughout the day, even when there is an excess production. This means your Tesla App may not show the system reaching a full 100%, but rest assured it is working.

## Standard Appliances

Use Normally



Coffee



Refrigerator



Phone



Lights



Television



Microwave

## Energy Intensive Appliances

Use Sparingly



Dishwasher



Dryer



Washer



A/C



Heater



Car Charging

# An Entire Island Powered Off-Grid by Powerwall and Solar

Even if you are as remote as an island in the Caribbean, Powerwall can provide reliable power independent from an electric utility.

