



## Battery Location

Building codes require the following elements to install an energy storage system:

- Batteries placed in uninhabited spaces that are drywalled with 5/8" sheetrock or thicker
- Batteries need at least 4' by 3' of wall space for each battery unit to dissipate heat
- Battery must be located in an area with temperatures between 32°F and 86°F—recommended areas include garages, insulated outbuildings, basements, or mechanical rooms
- If batteries are kept in a garage, they must be out of the line of impact from a vehicle on the wall parallel to the parked car

## Energy Storage Basics

Want peace of mind during a power outage or to use your solar energy at night? Add a backup battery, or energy storage system, to achieve your energy goals.

### How Solar + Storage Works

A battery stores the energy your solar PV system produces during the day. At night or during a power outage, the battery will disconnect your home from the grid and power your home from the stored energy. This "island effect" allows your solar to power your home and recharge the battery during the day too. When power is restored on the utility line, the battery system will reconnect and backfeed the grid with the excess solar-generated energy.

### Understanding Energy Consumption

The average American home uses about 35 kWh of electricity a day, and today's batteries range between 10 kWh and 15 kWh. Multiple batteries are needed to power your home for just one day, and the total amount of backup time varies based on your energy consumption. Most battery systems will not last multiple days without periods of recharge by your solar PV system.

## Sizing Your Battery System

Whole home backup or selected load backup are the two options for energy storage systems. We do not recommend backing up multiple HVAC units, hot tubs, pools, and geothermal units. During the sales process, your Project Developer will ask you to identify the breakers in your electrical panel to backup.

### PARTIAL HOME BACKUP

Partial home backup is the more economical battery backup option. This configuration backs up only essential loads in your electrical panel during a grid outage. Examples of essential loads include refrigerator/freezer, gas furnace blower, lights, small well pumps, wifi, or electronics. These loads will be moved into a new breaker panel called the critical loads panel.



### WHOLE HOME BACKUP

Whole home backup is recommended, if you want to backup an entire 200A (amp) main service panel or if your critical loads are very large. Examples of large critical loads are your air conditioner, gas furnace, or water heater. The combination of batteries will account for the start-up power needed for these large appliances.



Photo Credit: Tesla

## SPAN Smart Panels

StraightUp Solar highly recommends pairing your new battery system with a SPAN® smart panel. A smart panel works like a normal breaker panel but has an internal computer that allows you to select the loads to back up during a power outage. The smart panel will also automatically turn off selected loads when the grid goes down to prolong backup time for each connected appliance. With the SPAN phone app, the homeowner can turn breakers on and off in real time, providing the most flexibility when managing backup loads.



## FAQs



### What information do you need from me to size my battery system?



Once you've provided the information listed below, your project will be reviewed and approved by StraightUp Solar design engineers before we deliver final pricing for your energy storage system. Here's what our designers need:

1. A picture of your home's fully labeled breaker panel. If you don't feel comfortable doing this, we can do this for you for a fee.
2. A list of loads to be backed up. Your Project Developer will help answer any questions you have regarding this.
3. Photos of your service panel and the placards on equipment you'd like to back up (water heater, furnace, oven, etc.).
4. A dedicated space in your home to install your new battery system.



### What kind of maintenance should I expect on my battery system?



Much like your solar PV system, your battery system won't require regularly scheduled maintenance. Our Service Department is here to answer your questions.



### What are the warranties on an energy storage system?



Your Project Developer will share specific details on product warranties. Typically, energy storage systems have a 10-year warranty.

## About StraightUp Solar

StraightUp Solar helps homeowners uplift their energy with turnkey solar solutions from design/build, to installation, to service. We've brought 3,300+ solar solutions to light for our Illinois & Missouri neighbors since 2006. As one of the only local solar companies with a full-time service team, we'll be here to care for your system for years to come.