

TESLA

# SOLAR PANEL

## OWNER'S MANUAL

WITH POWERWALL



# IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

Your safety is Tesla's top priority. Follow these precautions around your solar system and related electrical equipment. If you believe your solar panels system requires repair, or your inverter displays an error message, please contact Energy Customer Support for guidance.

## SYMBOLS IN DOCUMENT

Throughout this manual, there are steps and procedures that present hazardous situations. The following signal words are used to identify the degree or level of hazard seriousness. Failure to read and comply with any of the limitations noted herein can result in serious bodily injury or death and/or property damage.



### **DANGER:**

Indicates the presence of a hazard that **WILL** cause severe personal injury, death, or substantial property damage if ignored.



### **WARNING:**

Indicates the presence of a hazard that **COULD** cause severe personal injury, death or substantial property damage if ignored.



### **CAUTION:**

Indicates a hazardous situation which, if not avoided could result in minor injury or damage to the equipment.



### **NOTE:**

Indicates an important step or tip that leads to best results, but is not a safety or damage related.

## SPECIFIC SAFETY INFORMATION - READ AND FOLLOW



**DANGER:** **Your solar system generates electrical current.**

Do not try to service the system, disconnect wires, open electrical panels, or modify any portion of your equipment in any way. Contact with electrically active parts of a photovoltaic (PV) system and related equipment can result in burns, sparks, and lethal shock.



**DANGER:** Do not walk on the roof without being trained and using required safety equipment. Walking on a roof is a fall hazard and can result in serious injury or death.



**CAUTION:** Opening or altering electrical equipment by anyone other than a Tesla approved technician may void your warranty.



# YOUR SOLAR PANELS SYSTEM

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Congratulations on your new solar panels system. Welcome to the Tesla family and the energy revolution. Your beautiful and durable solar system will produce clean, renewable energy for years to come.

This manual walks you through each step of activating, monitoring, and maintaining your solar system. If you have any questions about this manual or other functions of your solar system, please contact **Energy Customer Support**.

# SOLAR SYSTEM ACTIVATION

Energy Customer Support notifies you when your utility company approves the operation of your solar system. If your system is approved and not yet turned on, you can activate your solar system with guidance from Energy Customer Support. Turn on your system components in the following order:

## Glossary

**Breakers** Switches inside electrical panels that protect your home from harmful power surges.

**Disconnect** A switch, operated by a large handle, that disconnects or interrupts the electrical circuit.

**Inverter** A central component that converts solar-generated power from Direct Current (DC) voltage to Alternating Current (AC) voltage for your home's use.

## System Activation

1. Turn on the breakers in your main electrical panel.

Go to your main electrical panel. Most electric panels are mounted on an outside wall, or mounted in a garage, basement, or closet.

Find the breakers labeled Solar System, PV, Photovoltaic Backfeed, Powerwall, or Tesla.

Switch them **On**.

You may have an additional sub-panel. If you do, check to see if there are additional solar breakers in the sub-panel and switch them On.

2. Switch on the external AC and DC disconnects.

If your Solar Roof system has one or both of these, switch them On.

3. Switch on the Powerwall and Powerwall+ units.

The toggle switch can be found on the right side of the unit.

BREAKER



DISCONNECT



# HOME ENERGY MONITORING

## Connecting to Your System

Now that your system is live, the last step is to connect to its wifi network to view product details, monitor power flow and charge level. Visit the Tesla Energy Support Page for guidance on setup:

<https://www.tesla.com/support/energy/powerwall/own/monitoring-from-home-network>.

You can also find more information in the Powerwall Owner's Manual at:

[www.tesla.com/support/energy/own/powerwall/owner-documents](http://www.tesla.com/support/energy/own/powerwall/owner-documents).

## Tesla Mobile App

The Tesla Mobile App gives you visibility into your Solar Roof power generation and home energy use. The app also sends alerts from Energy Customer Support if Tesla detects issues with your Solar Roof system.

Most issues can be resolved remotely by Energy Customer Support. If not, Tesla sends a technician directly to your home.



## Self-Consumption Only Mode

The Powerwall+ system understands real time energy production and consumption. Sites with at least one Powerwall+ are configured to operate with Self-Consumption Only Mode after inspection is passed. During Self-Consumption Only Mode, no energy is sold back to the grid, and solar generation is automatically reduced to the quantity necessary to charge Powerwall or power your home usage.

If you have any questions about your Powerwall, please contact Energy Customer Support.



## PERFORMANCE & MAINTENANCE

### System Performance

Your solar system performance is measured by how much energy is generated over time. Energy production can vary from month to month based on seasonal weather conditions. Other factors that can hinder production include:

- Unexpected shading due to new tree growth
- Debris or dirt on the panels
- Long periods of rainy or snowy weather

You can find expected performance information on your solar panels layout document. You can also use the Tesla mobile app to follow your energy production in real time.

**System Maintenance**

Solar panels require routine maintenance. Minor care on your part can ensure better system performance.

- Shade on your solar panels can hinder electricity production. Keep trees or other tall plants trimmed to prevent shade on your solar panels.
- Clean your panels to remove accumulated dust, pollen, and leaves maintains system performance. The required frequency of cleaning depends on where you live. Ordinarily, you can rinse off panels with a water hose from ground level to remove accumulations.

**DANGER:**

Rinse only the glass cover of the panels; do not rinse wiring or areas underneath panels.

**CAUTION:**

For safety and performance reasons, rinse panels only when the sky is overcast, or when the sun is low in the sky, as panels can become hot under intense sunshine.

If you have excessive soiling, such as bird droppings, you may wish to hire a local solar panel cleaning service.

**CAUTION:**

- Do not shovel snow off your solar panels. While accumulated snowfall can cover panels and temporarily reduce production, this is not a cause for concern. Your system is designed with annual energy production in mind, and occasional inclement weather is expected.

# WARRANTY AND SERVICE

## **Solar Panel Warranty**

Review your Warranty Agreement for detailed information about the coverage of your system over time.

## **Equipment Warranty**

Your equipment comes with a warranty from its manufacturer. If you experience any issues with your equipment during its warranty period, for example an inverter, please contact **Energy Customer Support** so we can help you file a warranty claim with the manufacturer. When you need to replace your equipment after its warranted life, please contact Tesla Customer Service and we will help you obtain and install a replacement, at your cost.

## **Mid-Circuit Interrupter Warranty**

Your Mid-Circuit Interrupter (MCI) comes with a 10-year warranty from its manufacturer. If you experience any issues with your Mid-Circuit Interrupter (MCI) during its 10-year warranty period, please contact **Energy Customer Support** so we can help you file a warranty claim with the manufacturer. When you need to replace your Mid-Circuit Interrupter (MCI) after its warranted life, please contact Tesla Customer Service and we will help you obtain and install a replacement Mid-Circuit Interrupter, at your cost.

## **Powerwall Warranty**

Powerwall is a maintenance-free product with a 10-year warranty. Please visit Tesla's support page for the Powerwall Owner's Manual at [www.tesla.com/support/energy/own/powerwall/owner-documents](http://www.tesla.com/support/energy/own/powerwall/owner-documents).

## **How to Get Warranty Service**

In the rare case that your Solar Roof is not running properly, please contact **Energy Customer Support**. If Tesla determines that a problem cannot be diagnosed or resolved remotely, **Energy Customer Support** will troubleshoot the issue and arrange for service. If the issue is covered by warranty, your Solar Roof will be repaired at no cost to you. If the issue is not covered by your warranty, **Energy Customer Support** will assist you in resolving the issue and service charges may apply.





## RELATED PRODUCTS: POWERWALL AND POWERWALL+

If you have a Powerwall system, you are successfully storing your excess solar energy from Solar Roof tiles and powering your home even when the sun isn't out. You also have the advantage of automatically backing up your home during a utility power outage.

Powerwall is a maintenance-free product with a 10-year warranty. Please visit Tesla's support page for the Powerwall Owner's Manual at [www.tesla.com/support/energy/own/powerwall/owner-documents](http://www.tesla.com/support/energy/own/powerwall/owner-documents).

### **Powerwall Operations**

After your Solar Roof is commissioned and the inverter is active, Powerwall automatically begins operation. You do not need to do anything to begin operation. If you do not see Powerwall in the Tesla Mobile App, check that the home Internet connection is working and that the Powerwall switch is turned on.

If a brownout or blackout is experienced when Powerwall is in backup mode, reduce the loads. As you turn off appliances or switch off circuit breakers in your electrical panel, Powerwall automatically attempts to restart.

If you have any questions about your Powerwall, please contact Energy Customer Support.

## FREQUENTLY ASKED QUESTIONS

You can find detailed expansions of these FAQs and more at:

[www.tesla.com/support/energy/own/solar-panels/getting-started](http://www.tesla.com/support/energy/own/solar-panels/getting-started).

### **When can I turn on my solar system?**

Once the utility has granted permission for your system to operate, **Energy Customer Support** will contact you to help turn your system on. If you receive an email, door hanger, or tag on your electric meter regarding your solar system, please contact **Energy Customer Support**.

### **How much energy do my solar panels produce?**

The amount of energy that your solar panels produce depends on your system size, as well as environmental factors such as shade, dust, debris, snow, and weather. Refer to your customer agreement for more information on solar panel layout.

### **Can I see how much solar energy my home is generating and using?**

The Tesla mobile app gives you real-time and historical visibility into your solar production and home energy usage. Use the Tesla mobile app to follow your energy production in real time.

### **How long can I expect my solar panels to last?**

Tesla installs solar power systems to be durable and effective over the long term. Many components of your system are designed to last for decades. As an example, testing by outside researchers has shown that solar panels installed by Tesla have a useful life of 35 years. You should review your Warranty Agreement for detailed information about the coverage of your system over time.

If you have a Tesla PPA or lease, then Tesla will remove the system at the end of the contract term, typically 20 years. At the end of the contract term, you may have the option to renew so that you can continue to generate solar power.

### **Will I still be subject to electric rate increases if I buy solar panels?**

Even with solar, you will most likely have a residual utility bill and those rates may fluctuate. The bill depends on the size of your solar panels system relative to your energy demand, as well as your peak hour energy use. You can minimize utility rate changes by using less energy during peak hours. Peak rates may apply only in some markets and with some rate plans.

### **What happens when the sun goes down?**

Your solar panels do not produce electricity in the absence of sunlight. The system inverter goes into "Night Mode" when there is not enough daylight to produce energy. If you have a battery like Powerwall, then you can use stored electricity to help meet your nighttime energy needs. If you don't have a battery, then at night your home draws power only from the utility grid.

**What happens to my solar production on a cloudy day?**

Your solar panels still generate electricity on cloudy days, since even diffuse sunlight activates solar power production. Solar panel output on a cloudy day will be less than on a cloudless day, but may still produce a meaningful amount of electricity.

**What happens if it snows on my solar panels?**

Do not shovel snow off your solar panels. While accumulated snowfall can cover panels and temporarily reduce production, this is not a cause for concern. Your system is designed with annual energy production in mind, and occasional inclement weather is expected.

**What should I do if my solar panels have become shaded?**

Shade on your solar panels will reduce electricity production. Keep trees or other tall plants trimmed to prevent shade on your solar panel system.

**Will I still have solar power if there is a utility power outage?**

If you don't have a battery like Powerwall, your solar panels will not work during a utility outage due to grid safety requirements. However, if you have both solar panels and Powerwall during an outage, your home's power supply operates as an independent system from the utility grid, running on solar energy during the day and storing excess energy for later use.

**Can I add a Powerwall to my existing solar panel system?**

Yes, Powerwall can be integrated with your existing solar panels. Powerwall is currently compatible with solar inverters from SMA, SolarEdge, Enphase micro inverter, Delta, and ABB.

Visit [www.tesla.com/powerwall](http://www.tesla.com/powerwall) to get started adding a Powerwall to your existing solar panel system.

**If I have Powerwall, how quickly does Powerwall restore power to my home?**

Powerwall can detect an outage, disconnect from the grid, and bring power back to your home in a fraction of a second. Powerwall can keep your appliances running without interruption.

**What if my solar panels need repairs?****DANGER:**

Never attempt to fix or repair your solar power system. Your solar panel system operates at high voltage and contact with any live parts can result in burns, sparks, and lethal shock. Only Tesla-approved installers can repair Tesla solar panel systems. Do not disconnect wires, open electrical panels, modify, or damage the equipment in any way. Contact Tesla Customer Care to perform repairs.

**What if my roof needs repairs after I've installed solar panels?****DANGER:**

If you need to make repairs on the roof for any reason, your solar panels may need to be removed and reinstalled. Please contact Tesla Customer Care if you want to start this process.

## ADDITIONAL RESOURCES

For resources visit the Tesla Solar Panel Support Page:

<https://www.tesla.com/support/energy/solar-panels/after-installation/what-to-expect-after-installation>.

You can use the Tesla mobile app or visit [www.tesla.com/teslaaccount](https://www.tesla.com/teslaaccount) to follow your energy production in real time.

