



A Closer Look: PV Panel Warranties

The Basics

All solar panel warranties have 3 parts. Here's what they cover:

- 1 Service Warranty for services provided if a panel fails
- 2 Product Warranty for manufacturing defects
- 3 Power Warranty for minimum guaranteed power over time

Most solar manufacturers emphasize the power warranty, but without proper service and product coverage, relying on the power warranty alone can result in substantial unexpected costs. Only SunPower delivers great value for all three parts.

1 Service Warranty

This is the most important feature of any panel warranty: the services offered if a panel fails. Manufacturers typically reserve the option to only pay for the panel's then-current price, prorated for the power shortfall, or provide a replacement. In addition, you may incur substantial costs to remove a defective panel, ship it to the manufacturer, and install a replacement panel. This means you lose money by executing the warranty, since the payment is likely less than the incurred costs.

SunPower knows you want a functioning system that realizes your desired return on investment. Our comprehensive warranty states: "SunPower will make all reasonable efforts to repair or replace the PV Module with an electrically and mechanically compatible PV Module with an equal or greater power rating. If this is not commercially feasible, then SunPower will refund the purchase price of the defective PV Module as paid by the customer."

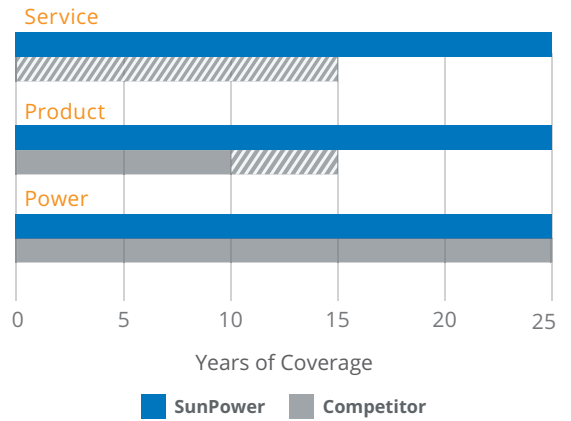
SunPower is serious about comprehensive coverage for defective panels. If your system was installed by SunPower or an authorized SunPower installer, then the warranty also covers:

- Transportation costs for returning defective panels
- Shipment of any repaired or replaced panels
- Panel installation, removal or re-installation

2 Product Warranty

SunPower has a 25-year product warranty. Other warranties generally cover defects in materials or workmanship for 10-15 years. Going further, only SunPower combines both power and product coverage into a single 25-year warranty, eliminating confusion over coverage. SunPower "warrants that, for 25-years, its photovoltaic modules ... shall be free from defects in materials and workmanship under normal application, installation, use and service conditions."

Panel Warranty Length



Competitor compensation can be less than the cost to replace a defective panel

Panel warranted at 300W is only delivering 200W

Panel prices at the time of the panel failure: \$0.80/W

Compensation for the owner:

$$100W \times 0.80/W = \$80.$$

SunPower Service Warranty

Typical Service Warranty

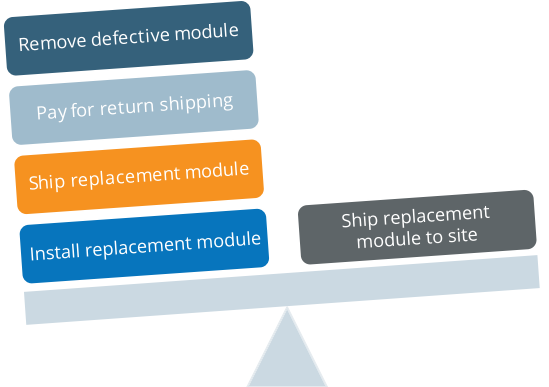




Photo Credit: Powerpac

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3 Power Warranty

With SunPower's combined power and product warranty, your system is fully covered for 25-years. Most panel manufacturers focus solely on their 25-year power warranty, because it appears to guarantee a working solar panel for that length of time. But many power warranties are not supported by the service and product warranties. Since panels typically lose power because of defects in materials or workmanship, **there is no clear value to the standard power warranty alone, beyond the 10-15 year coverage of the product warranty.** In other words, the power warranty is effective only as long as the product warranty. And, because the value of the product or power warranty is only as good as the underlying service warranty, replacement of a failed panel can cost far more than the compensation allowed.

Frequently Asked Questions

Q. Are there any other parts of the warranty that vary between manufacturers?

A. Yes, warranty exclusions vary. For instance, some warranties exclude:

- constant shading, exposure to salt, or seaside environments
- microcracks in cells (a symptom of power loss¹) or damage induced during transport
- lack of original paper receipt or annual cleaning records

Some manufacturers even impose fees if no defect is found.

Q. My panel manufacturer bought warranty insurance – does that help me?

A. Not necessarily. Some manufacturers imply warranty insurance will provide unchanged protection if the manufacturer becomes insolvent. These policies generally have larger "deductibles" that limit total pay-out to a fraction of the fleet, offer only restrictive terms and conditions, and require owners to buy separate coverage to have any warranty rights.

Q. Some companies have gone out of business, leaving us with no warranty coverage. How can I avoid that?

A. Solar is a long-term investment. Choose a long-term partner. Be wary of large conglomerates, which can appear to provide strong backing; but, if their solar divisions lose profitability, they could exit the solar business and leave customers with uncertain coverage. Examples include Siemens Solar, Bosch, Sanyo Solar, Sharp Solar, BP Solar, and General Electric.

SunPower has been in solar for over 30 years, and is one of the most trusted and stable companies in the industry. SunPower is independently operated and majority owned by TOTAL, the world's 10th largest public energy company.² TOTAL demonstrates its solar commitment with a cumulative \$2.9Bn in financial guarantees and convertible debt investments to SunPower over a five-year period. Your investment is safe with SunPower.

Protecting your investment

Solar is a significant investment with a long-term payoff. The best protection is not the warranty; it's high quality panels. SunPower panels are ranked most reliable³ with only 50 returned per million sold.⁴ In the rare case of a problem, SunPower panels are backed by the industry's best combined power, product and service warranty to ensure your investment is protected. SunPower stands behind your investment, for the long term.

¹ Kasewieter, J., et. al. Cracks in solar cell metallization leading to module power loss under mechanical loads, Energy Procedia, 2014. doi:10.1016/j.egypro.2014.08.011

² Forbes, the World's Biggest Oil and Gas Companies, March 30, 2016.

³ #1 rank in "Fraunhofer PV Durability Initiative for Solar Modules: Part 3". PVTech Power Magazine, 2015.

⁴ Hasselbrink, E., et al. "Validation of the PVLife Model Against 3 Million Module-Years of Live Site Data." 39th IEEE PVSC, Tampa Florida, 2013.