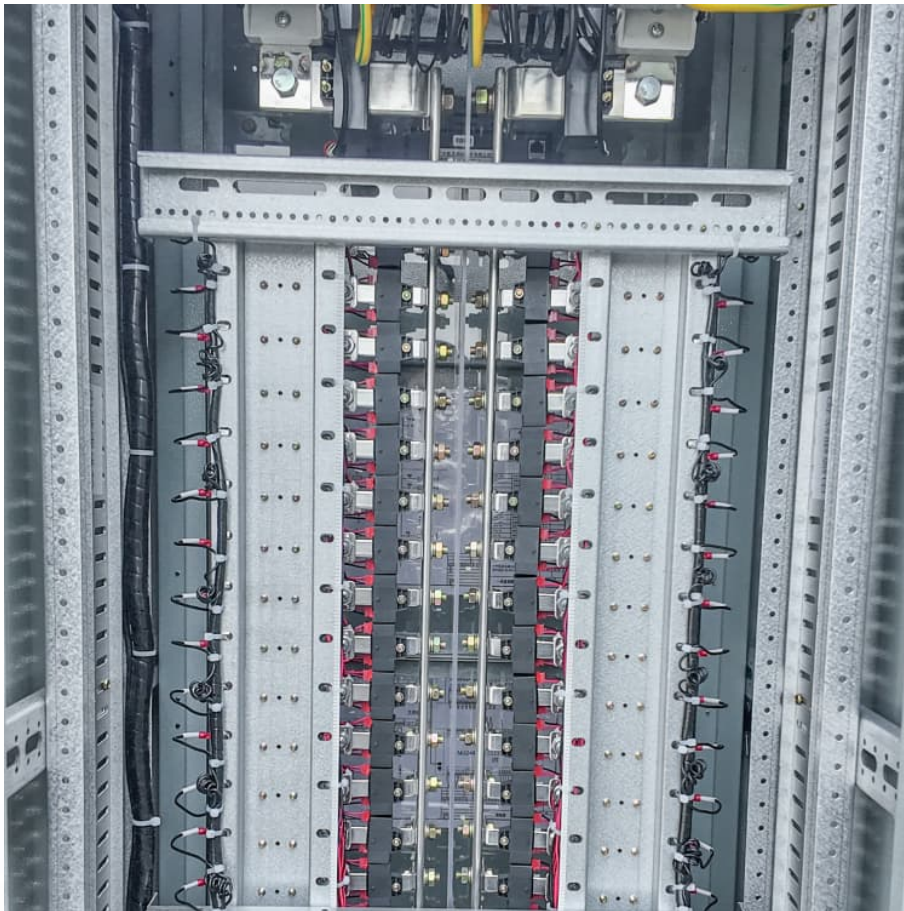


# Solar pv price per kwh





## Overview

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Generally speaking, a typical solar system in the U.S. can produce electricity at the cost of \$0.06 to \$0.08 per kilowatt-hour. This price is comparable to the prices of solar electricity in Louisiana (\$0.0771), where it still makes sense to go solar.

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IRENA presents solar photovoltaic module prices for a number of different technologies. Here we use the average yearly price for technologies 'Thin film a-Si/u-Si or Global Price Index (from Q4 2013)'. This data is expressed in US dollars per watt, adjusted for inflation. IRENA (2025); Nemet.

As of 2025, the average cost of residential solar panels in the U.S. is between \$15,000 and \$25,000 before incentives. This typically translates to about \$2.50 to \$3.50 per watt of installed capacity (more on price per watt below). The total price depends on your system size, location, roof type.

Each year, the U.S. Department of Energy (DOE) Solar Energy Technologies Office (SETO) and its national laboratory partners analyze cost data for U.S. solar photovoltaic (PV) systems to develop cost benchmarks. These benchmarks help measure progress toward goals for reducing solar electricity costs.

Take control of your energy costs with solar power. Solar panels generate “free” electricity, but installing a system still costs money. A typical American household needs a 10-kilowatt (kW) system to adequately power their home, which costs \$28,241 in 2025. That price effectively drops to \$19,873.

NREL analyzes the total costs associated with installing photovoltaic (PV) systems for residential rooftop, commercial rooftop, and utility-scale ground-mount systems. This work has grown to include cost models for solar-plus-storage systems. NREL's PV cost benchmarking work uses a bottom-up.



This dashboard provides an overview on the latest Solar PV costs. How much does a solar system cost per kWh?

This number, the cost per kWh is then used to compare that price to the price you pay to your electricity company. Generally speaking, a typical solar system in the U.S. can produce electricity at the cost of \$0.06 to \$0.08 per kilowatt-hour.

How much does a 5kw Solar System cost?

According to the National Renewable Energy Laboratory (NREL), a typical U.S. household installs a 5kW solar system. The solar panel cost is a portion of the total price you have to pay for installing solar panels. At the current average cost of \$2.71 per Watt, a typical 5kW system will cost you \$13,550.

How much does a commercial solar system cost?

Commercial solar installations are a great way for companies to lower energy costs. Generally, installing solar panels on businesses costs a bit less per watt because the systems are larger, but the total costs will be higher. In 2025, the average cost for commercial solar panels is just about \$2.00 per watt.

How much do solar panels cost?

The price of solar panels changes depending on where you live, but the average for installation is just under \$29,000 or \$2.75 per watt. On the high end, we talked to a solar customer in Hawaii who spent \$100,000 going solar. Dion in Nevada said their 10-kW system cost about \$20,000, which is about the national average price for a 7-kW system.

How much does solar power cost in 2025?

Take control of your energy costs with solar power. Solar panels generate “free” electricity, but installing a system still costs money. A typical American household needs a 10-kilowatt (kW) system to adequately power their home, which costs \$28,241 in 2025.

How much does a solar inverter cost?

**Inverter:** A solar inverter converts the generated DC electricity into AC electricity that can be used to power your home. The cost of an inverter depends on its size and efficiency, but these devices typically cost between \$1,000 and \$3,000. **Mounting system:** This is what holds rooftop solar panels



in place.



## Solar pv price per kwh

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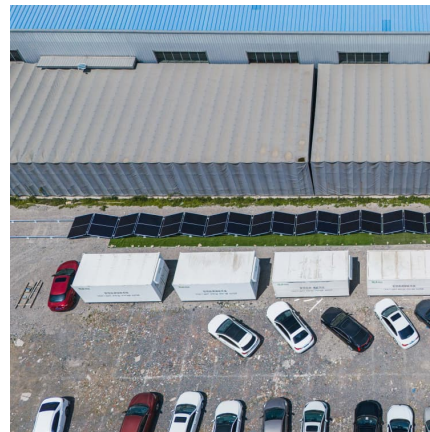


### **Solar PV Cost Per kWh: Real Numbers That Drive ROI in 2024**

This analysis explores current market trends, technological advancements, and financial considerations that influence solar PV costs per kWh, offering valuable insights for ...

### [Solar Panel Costs in 2025 : It's Usually Worth It](#)

This guide explains the costs involved in going solar, factors that affect pricing, and how to decide if solar panels are the right choice for you.



### **Solar Energy Cost per kWh in 2025 [With Installation Cost]**

Read this article to find out the current solar energy cost per kWh and how much you can save by installing a solar panel system on your home.

### **2025 Solar Panel Costs: Ultimate Guide to Pricing and Savings**

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cost benchmarks to measure progress towards goals and guide research and development ...

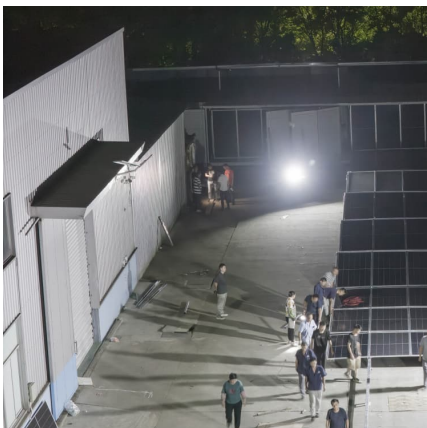


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[Solar Panel Prices in 2025: Average Cost by kWh. ...](#)



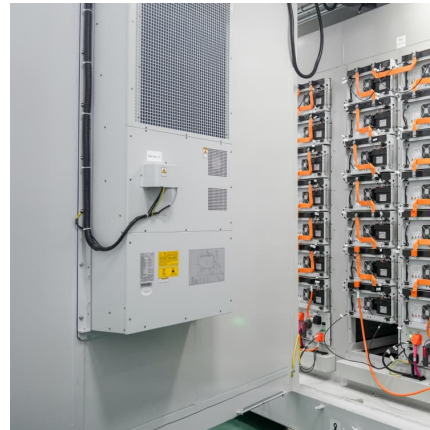
### [Solar Panel Prices in 2025: Average Cost by kWh. ...](#)

How much does solar panel installation cost? See pricing by home size, nationwide averages, and factors that will affect your costs in 2025.



### Solar Panel Prices in 2025: Average Cost by kWh, Incentives & ROI

How much does solar panel installation cost? See pricing by home size, nationwide averages, and factors that will affect your costs in 2025.

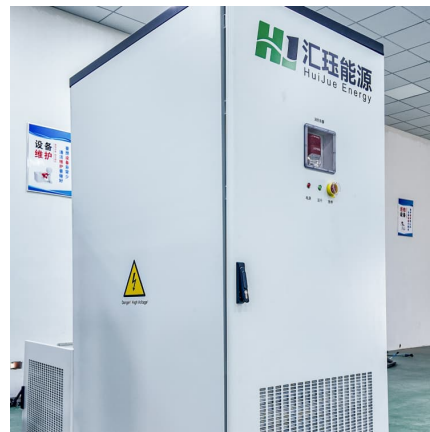


### [Solar Photovoltaic System Cost Benchmarks](#)

The U.S. Department of Energy's solar office and its national laboratory partners analyze cost data for U.S. solar photovoltaic systems to develop cost benchmarks to measure progress ...

### [Solar Installed System Cost Analysis , Solar Market ...](#)

NREL analyzes the total costs associated with installing photovoltaic (PV) systems for residential rooftop, commercial rooftop, and utility-scale ground-mount systems.



### 2025 Solar Panel Costs: Ultimate Guide to Pricing and Savings

Instead of paying the current utility rate for electricity, the cost per kilowatt-hour of home solar is typically around 6-8 cents - roughly what utilities were charging 40 years ago.



## Solar Installed System Cost Analysis , Solar Market Research

NREL analyzes the total costs associated with installing photovoltaic (PV) systems for residential rooftop, commercial rooftop, and utility-scale ground-mount systems.



## [How Much Do Solar Panels Cost? \(Aug 2025\)](#)

The average 6-kW residential solar panel installation is \$17,852 before incentives. Learn about cost factors, financing options, tax breaks and more.

## [Solar Panel Costs in 2025 : It's Usually Worth It](#)

This guide explains the costs involved in going solar, factors that affect pricing, and how to decide if solar panels are the right choice for you.





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