10 kw solar panels cost

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As subject matter experts, we provide only objective information. We design every article to provide you with deeply-researched, factual, useful information so that you can make informed home electrification and financial decisions. We have:

Incorporated third-party data and information from primary sources, government agencies, educational institutions, peer-reviewed research, or well-researched nonprofit organizations.

We won"t charge you anything to get quotes through our marketplace. Instead, installers and other service providers pay us a small fee to participate after we vet them for reliability and suitability. To learn more, read about how we make money, our Dispute Resolution Service, and our Editorial Guidelines.

The average U.S. solar shopper needs about 11 kilowatts (kW) of home solar to cover their electricity usage. Based on thousands of quotes in the EnergySage Marketplace, you"ll pay about $20,948 to install a system around that size in 2024 after federal tax credits.

We often reference the cost-per-watt ($/W) of solar to compare the value of a quote against the national average. According to the most recent data from the EnergySage Marketplace, the average cost-per-watt across the U.S. is around $2.75/W before incentives. Your state-level average cost-per-watt will be a more relevant benchmark, but those numbers vary widely. Even with that number, you"ll still need to consider the shape of your roof, the incentives in your state or region, and the quality of your solar equipment before you can get a true cost estimate.

Solar is worth it for most homeowners because it eliminates or significantly reduces your electric bill. It"s most helpful to think about solar panels as an investment. It takes an average of 7.5 years to earn back the money you spend on installing solar panels. After that point, the electricity from your solar panels is free.

Most homeowners will save $28,000 to $120,000 over 25 years with solar. Your savings depend on a few factors, including your electricity rates and the cost of your system. You can calculate your break-even point, or solar payback period, by dividing the final cost (the total cost of your solar panel system minus any upfront incentives) by your annual financial benefit (the amount you save on electricity combined with annual incentives). The faster the cost of electricity increases, the shorter your payback period and the greater your savings will be.

Lower solar prices also drive shorter payback periods. Ten years ago, a home solar installation cost $3.60/W according to the National Renewable Energy Laboratory. That"s 31% more than what we see on EnergySage right now. Solar prices did increase slightly in the last three years, primarily due to the pandemic-related equipment shortages felt in many industries. But, as of 2024, solar is back down to pre-pandemic prices, so

it"s a great time to get quotes!

If you live in a hot state and require a lot of air conditioning, you"ll probably need a lot of solar panels. As we explain more below, most solar installers charge less per watt for larger systems, so your "unit" price could be quite low.

We generally see this trend on EnergySage (though there are some outliers), with lower $/W pricing in warmer states and higher $/W pricing in colder states. Arizona has the lowest average cost of solar, while Maine and New Hampshire have some of the highest prices. Because you probably need a larger system in sweltering Arizona than cooler Maine and New Hampshire, you may end up paying a similar price overall.