3 kilowatt solar panel system

3 kilowatt solar panel system

If you are not quite sure exactly how big that is, let alone how much it"s going to cost you, we"ve got you covered! Below, we lay out exactly how big a 3kW solar system is, looking at how much electricity it can produce as well as how many panels you"d need. We also take a look at the costs of a 3kW solar system and - most importantly - how much you can save.

Before embarking on any solar installation, no matter the size, always consider dropping your electricity use as much as possible beforehand - in the long run, this saves you money. With heating and cooling accounting for almost 50% of utility bills, take some time and money to upgrade insulation, seal all leaks around windows and doors, and even button up your crawlspace (you"d be surprised how much energy is wasted there!)

Still have incandescent bulbs? Trade them out for LEDs - the light color and quality is virtually indistinguishable from incandescents now. Still using that old refrigerator from your parent"s basement? Replace it with an Energy Star version.

Dollar-for-dollar, efficiency measures like the ones above are the cheapest way to save money on your utility bill - even cheaper than installing solar! And the less electricity you use, the smaller your solar installation can be. This lets you avoid spending money you don"t need to, saving you even more in the long run.

3 kilowatts (or kW) is simply a measure of how much electricity your solar system can produce in a single instant. It"s just like how your LED light bulb uses 9 watts of electricity. Instead of consuming energy like your light bulb though, your installation actually produces that amount of energy.

In a perfect situation, where your installation is completely efficient and the sunlight is strong, your 3 kW installation will produce 3 kilowatt-hours (kWh) of electricity in a single hour (3kW X 1 hour = 3 kWh). In 5 hours, it will produce 15 kWh.

The average US household uses about 900 kWh each month, or about 30 kWh a day, so a 3 kW installation would produce enough electricity to cover about half of most people"s electricity needs.

Unfortunately, though, we don"t live in a perfect world. In the real world, many factors actually drop the amount of electricity your system can produce: shade, location, the direction of solar panels, and even the efficiency of your wiring and inverter. After taking your personal situation into account, the amount your panels produce will likely be less than that.

For example, in sunny Taos, New Mexico - one of the best places for solar in the country - your system will produce about 14.5 kWh a day on average, which is pretty good! In Baltimore, Maryland, that same 3kW installation will produce about 10.8 kWh daily - about 25% less than in New Mexico. A 3kW installation in

Eugene, Oregon (home to the University of Oregon) will produce just 9.8 kWh.

As you can see, the further north you go, the less electricity your installation produces. Still, a 3kW system will cover about 1/3 to 1/2 of the average US home"s electricity usage.

Most solar panels for residential installations these days produce about 265 watts of power, though they range from 245 watts to a high of around 330 watts. How many solar panels you need for a 3kW system depends on the wattage of your panels. Let"s take a look at a few examples:

You can see that, as the panel"s wattage increases (which means it can produce more electricity in a single instant), you need fewer panels. Obviously, the more efficient the panel, the higher the price. For most people, standard 265-watt panels fit the bill well, balancing performance and cost.