



Consumer Guide to Residential Solar Rooftop Potential

To determine the amount of solar rooftop potential for the United States is to determine the number of rooftops across the nation that are suitable for solar panels. Rooftop potential depends on the size of the roof, the amount of shade it gets, the direction it faces, and the general location.



According to the National Renewable Energy Laboratory (NREL), there are more than 8 billion square meters of rooftops on which solar panels could be installed in the United States, representing over 1 terawatt of potential solar capacity. Residential and other small rooftops represent about 65% of national rooftop potential, and 42% of residential rooftops are households with low-to-moderate income. NREL estimates that an average of 3.3 million homes per year will be built or will require roof replacement—representing a potential of roughly 30 gigawatts (GW) of solar capacity annually. If even a small fraction of these new roofs had solar installations, it could have a significant impact on U.S. solar power generation.

INDIVIDUAL ROOFTOP POTENTIAL

Solar rooftop potential for an individual rooftop is the amount of solar that could be installed on that rooftop, based

on its size, shading, tilt, location, and construction.

The U.S. Department of Energy has funded the development of tools that estimate the amount of solar that could be installed on a given rooftop. The following tools can help consumers start the process of choosing solar by determining the solar potential of their homes or businesses:

ENERGYSAGE

EnergySage allows homeowners, businesses, and nonprofit organizations to estimate their energy savings from solar and connects them with prescreened installers who can provide estimates specific to the user's address. Consumers can comparison-shop and select the system that fits their needs best. Electricity bills are used to estimate the potential savings from solar energy, and has been found to offer customers substantial savings. energysage.com

DID YOU KNOW?



When installers provide customers with an estimate for a residential solar energy system, they use satellite maps, irradiance data, equipment specifications, and other factors to inform their bids and help customers understand the costs and benefits of solar panels on their roof.



PVWATTS

PVWatts is an online calculator from NREL that estimates the energy production and cost of electricity for grid-connected photovoltaic (PV) solar power systems. It allows homeowners, business owners, and nonprofit organizations to easily estimate the performance of potential PV installations, based on an online map or user-supplied data. pvwatts.nrel.gov

SUN NUMBER

Sun Number scores a building's rooftop potential on a scale of 1 to 100, with 100 being ideally suitable for solar. Consumers can view scores by entering a valid address in a region where the analysis has been performed. Sun Number generates scores by processing aerial imagery with proprietary algorithms to analyze individual rooftops. The score is based on a combination of factors, including roof shape, pitch, orientation, the size of each roof plane, and shade from surrounding buildings and trees, each uniquely weighted to provide an accurate rooftop analysis.

The company partnered with online real estate company Zillow, which added Sun Number scores to the descriptions of more than 84 million homes on its website.

solarreviews.com/blog/what-is-a-sun-number-score

