

# Yearly electricity generation of rooftop solar panels





## Overview

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According to our calculations, the average-sized roof can produce about 21,840 kilowatt-hours (kWh) of solar electricity annually—about double the average U.S. home's usage of 10,791 kWh. How much electricity can a rooftop solar system generate a year?

It then calculates that if every suitable roof was used, rooftop solar could generate 19,500 TWh of electricity per year, allowing for fossil fuel-based electricity to be replaced almost entirely, when coupled with load shifting and battery-electric storage.

How much solar power will a new roof generate?

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 per year. If even a small fraction of these new roofs had solar installations, it could have a significant impact on U.S. solar power generation.

Could solar panels provide 65% of global electricity?

Covering the world's rooftops with solar panels could provide 65% of global electricity, according to the findings of new research from the University of Sussex.

Can solar power be installed on a new roof?

If even a small fraction of these new roofs had solar installations, it could have a significant impact on U.S. solar power generation. For individual rooftops, national laboratories and private companies have developed a number of tools to estimate the amount of solar that could be installed on a given rooftop.



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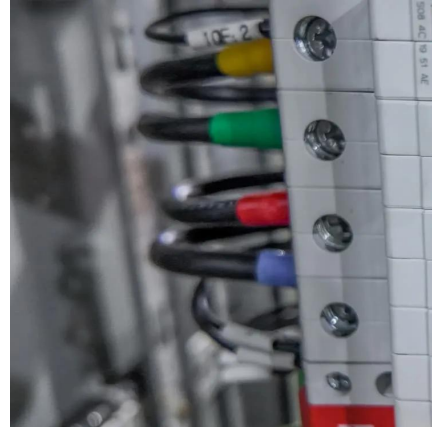


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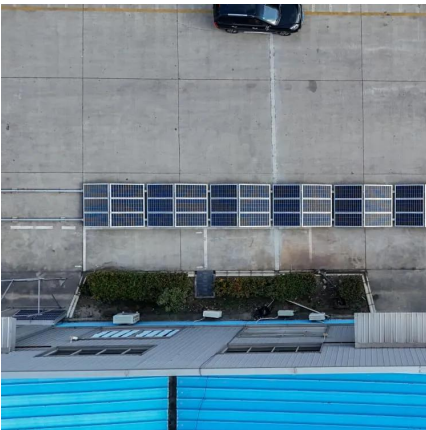
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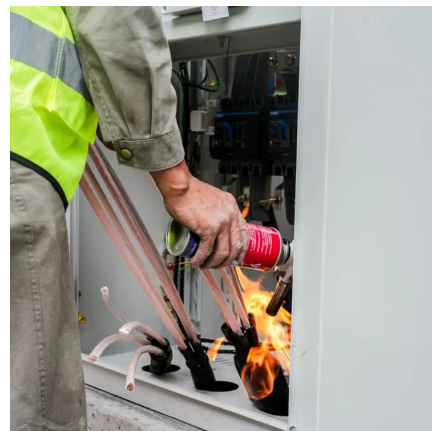
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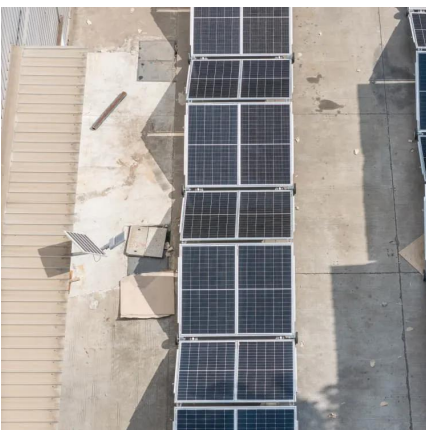


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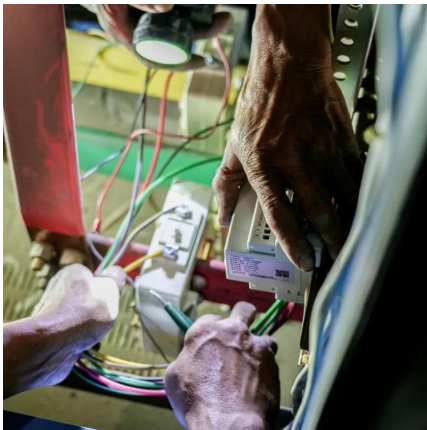
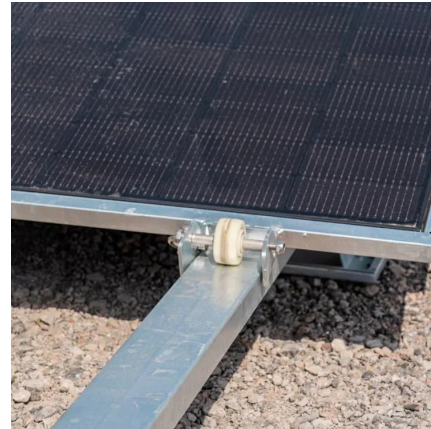
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### [Solar Rooftop Potential](#)

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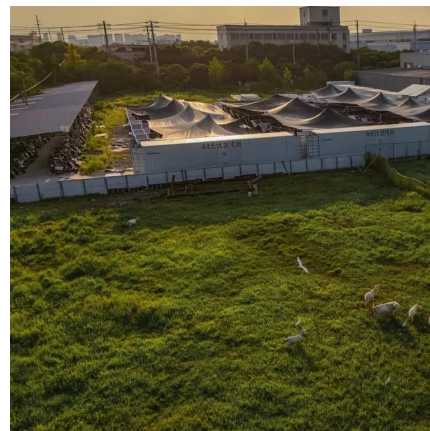


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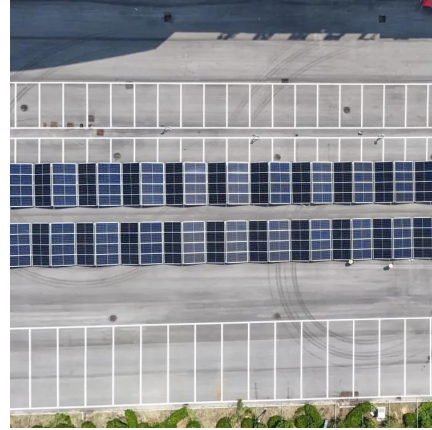
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