

Economic analysis of solar power generation in residential areas

Are residential solar photovoltaic systems a good investment in China?

Residential solar photovoltaic (PV) installations have boomed in China over recent years. However, knowledge about the economic performance of residential PV investments is still limited. Therefore, this study attempts to make a complete economic assessment of residential PV systems at the county-level.

Is residential solar photovoltaic (PV) investment economically viable?

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Are solar energy resources a risk factor for rooftop PV system construction?

The study revealed that areas with abundant solar energy resources and higher electricity prices have a lower economic risk for rooftop PV system construction under the current subsidy price and cost. This finding provides valuable insights and serves as a reference for constructing rooftop PV systems in different regions of China.

Do shadowing conditions affect the economics of photovoltaic systems?

Installing photovoltaic (PV) systems is an essential step for low-carbon development. The economics of PV systems are strongly impacted by the electricity price and the shadowing effect from neighboring buildings. This study evaluates the PV generation potential and economics of 20 cities in China under three shadowing conditions.

The results show that currently the photovoltaic power generation technology is relatively mature and widely applied, and passive photovoltaic technology can play a greater role in reducing ...

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Attention will be paid to the economic aspects of a residential PV system including the overall cost of the system, the payback time of the system, and how functional the system will be in ...

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Solar photovoltaic (PV) power generation is undeniably clean, and with the decline in the cost of PV technology in recent years, the installed capacity of solar PV power generation worldwide ...

The annual PV power generation value in regions with high latitudes and altitudes in the northwest and north, which belong to areas rich in solar energy resources, can reach more than 200 ...

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Moreover, it was found that bigger solar systems are less cost-effective in the presence of demand charges.

Keywords: photovoltaic (PV) systems; EnergyPlus; economic analysis; energy in ...

In recent years, with the rapid development of China's economy, China's energy demand has also been growing rapidly. Promoting the use of renewable energy in China has become an ...

This paper evaluated the economic performance of residential PV systems at the county-level under the background where the subsidies for solar PV generation are phasing out quickly in ...

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