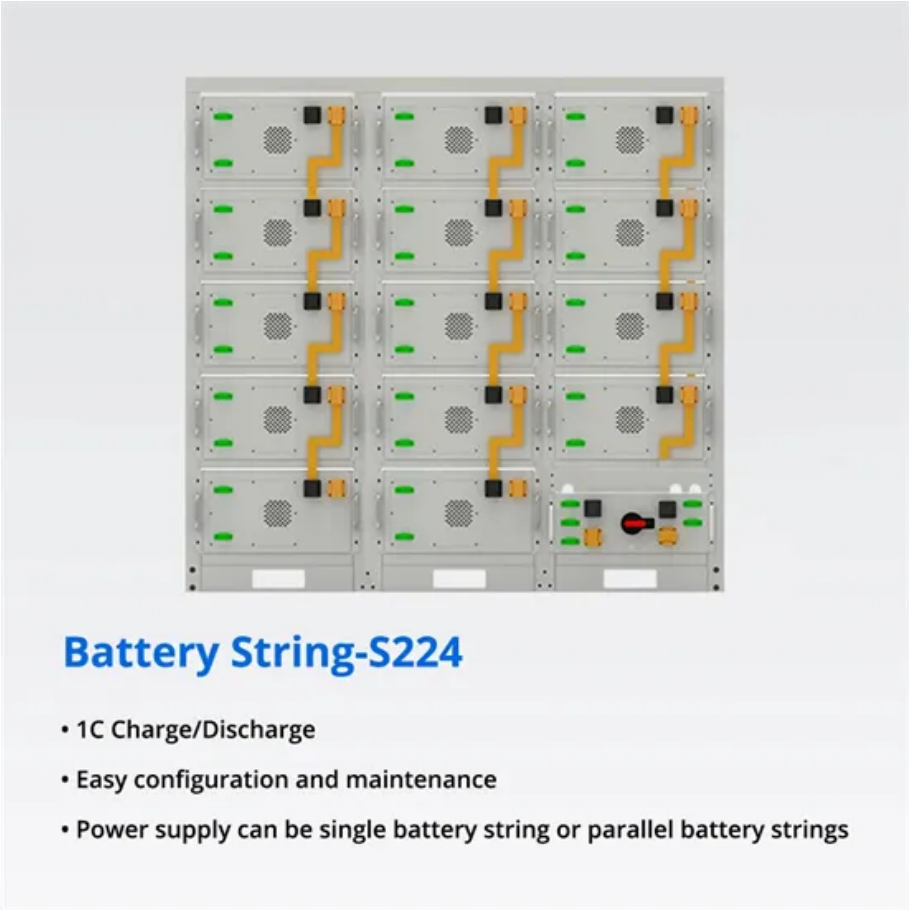
Research status of solar power generation



Overview

What is the future of solar energy?

The Future of Solar Energy considers only the two widely recognized classes of technologies for converting solar energy into electricity — photovoltaics (PV) and concentrated solar power (CSP), sometimes called solar thermal) — in their current and plausible future forms.

Is solar energy a future energy resource?

The utilization of renewable energy as a future energy resource is drawing significant attention worldwide. The contribution of solar energy (including concentrating solar power (CSP) and solar photovoltaic (PV) power) to global electricity production, as one form of renewable energy sources, is generally still low, at 3.6%.

How much research has been done in solar power generation?

The initial phase from 2001 to 2009 revealed a modest output of academic research in solar power generation, with approximately 1000 publications and a low growth rate around 15%. During the second phase, 2010–2015, the number of publications increased rapidly, with an annual growth rate of approximately 30%.

Will solar power research continue to thrive?

Solar power research will continue to thrive, given the pressing demand for new energy sources. These trends underscore the constant evolu-tion in solar power generation globally and the ongoing eforts to promote sustainable practices and address per-tinent issues related to energy access and afordability.

Does global solar power research increase citations?

This study conducted a bibliometric analysis based on publication metrics from the Web of Science database to gain insights into global solar power

research. The results indicate a stable global increase in publications on solar power generation and a rise in citations, reflecting growing academic interest.

Are solar photovoltaics ready to power a sustainable future?

Nat. Energy 3, 515–527 (2018). Victoria, M. et al. Solar photovoltaics is ready to power a sustainable future. Joule vol. 5 1041–1056 (Cell Press, 2021). Nemet, G. How solar energy became cheap: a model for low-carbon innovation. (Taylor & Francis, 2019). Rogers, E. Diffusion of Innovations. (Free Press, 2003). Farmer, J. D. & Lafond, F.

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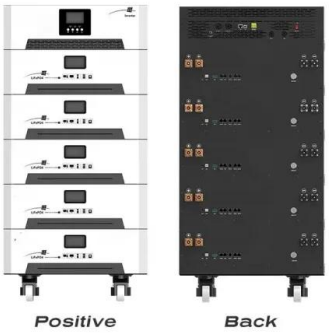


Renewable Energy

This interactive chart shows the amount of energy generated from solar power each year. Solar generation at scale - compared to hydropower, for example - is a relatively modern renewable energy source but is growing quickly in many ...

A bibliometric evaluation and visualization of global solar ...

The results indicate a stable global increase in publications on solar power generation and a rise in citations, reecting growing academic interest. Leading contributors include China, the USA, ...

A bibliometric evaluation and visualization of global solar ...

A bibliometric evaluation and visualization of global solar power generation research: productivity, contributors and hot topics Xiaozan Lyu1 · Tianqi Ruan 2 · Wujun Wang 2 · Xiaojing Cai3

Solar power generation by PV (photovoltaic) technology: A review

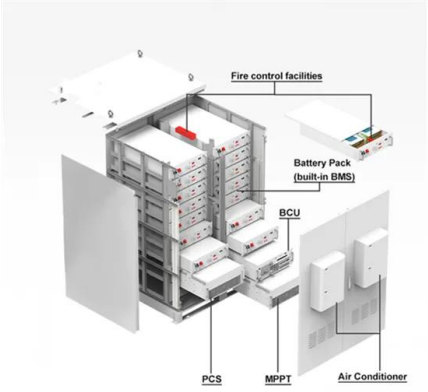
For the generation of electricity in far flung area at reasonable price, sizing of the power supply system plays an important role. Photovoltaic systems and some other renewable ...

Research Status and Development Trend of Concentrating Solar Power

The objective of this paper is to reveal the technological status and development trend of concentrating solar power (CSP), which is a kind of technology that converts solar radiation ...

Concentrating Solar Power: The State of the Art, ...

The main contribution of the paper is to provide an extensive review of the status of research activities on CSP. It does so by identifying the research gaps, the main challenges, and the future needs for fostering a ...



The Future of Solar Energy , MIT Energy Initiative

The Future of Solar Energy considers only the two widely recognized classes of technologies for converting solar energy into electricity -- photovoltaics (PV) and concentrated solar power (CSP), sometimes called solar thermal) -- in their ...

Development and Research Status of Tidal Current ...

Considering the depletion of oil, coal, gas and other fossil energy, and the increasingly serious environmental pollution, all countries in the world are developing clean and renewable energy, such as wind energy, ...

The Status and Prospects of Solar Power Generation ...

discusses the development direction of China's solar photovoltaic power generation to provide reference for the healthy development of China's solar photovoltaic power generation industry. ...

Solar PV high-penetration scenario: an overview of the global PV power ...

There is a clear growth trend that can be seen in the solar PV industry, and solar systems will become an integral part of our society and thus our environments. In this context, ...

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