

Kongres Container

Communication base station solar energy price trend in China



Overview

Taiwan-based research firm EnergyTrend says market optimism in China has driven up solar module prices, while production of modules, cells, and wafers has increased month on month. Can solar power improve China's base station infrastructure?

Traditionally powered by coal-dominated grid electricity, these stations contribute significantly to operational costs and air pollution. This study offers a comprehensive roadmap for low-carbon upgrades to China's base station infrastructure by integrating solar power, energy storage, and intelligent operation strategies.

Do communication base station operations increase electricity consumption in China?

Comparing data from 2021, 2025, and 2030, we found that the electricity consumption due to communication base station operations in China increased annually.

Are solar module prices on a 'consistent uptrend' in China?

Taiwanese research institute EnergyTrend has reported that solar module prices in China are on a "consistent uptrend." Its latest report said tunnel oxide passivated contact (TOPCon) module prices "rebounded sharply" and were widely quoted between CNY 0.70 (\$0.097)/W and CNY 0.75/W, reinforcing "bullish" market sentiment.

Will China Telecom upgrade base stations in 2024?

In Anhui Province, for example, the China Telecom branch plans to upgrade 700 base stations with low-carbon retrofits in 2024 and selectively implement an active deep sleep system for base stations across the province at night to reduce the cost of purchased power.

How much electricity does a communication base station use a year?

In 2021, the annual electricity consumption from communication base stations was 83,525.81 GWh, and it is estimated to rise to 458,495.18 GWh by 2030 (average across three scenarios), with an increase of 448.93% compared with 2021.

Why are China's leading communications companies incorporating energy storage batteries and photovoltaic power?

In addition, China's leading communications companies are progressively incorporating energy storage batteries and photovoltaic power generation to offset the mounting cost pressures stemming from the continued expansion of energy usage. The relative importance attached to this issue depends on the sense of urgency.

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