

## SolarTech Power Solutions

# China Mobile base station power issues



## Overview

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How much electricity does China use per base station?

For China, based on a single base station power's energy consumption of 11.5 KWh (Huawei, 2019), we estimate that the electricity consumed by its 5G network by 2030 will be  $6.04 \times 10^5$  GW for 6 million base stations, the equivalents of 8.4 % of China's national total power generation in 2019, respectively.

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.

What is China's first military-grade mobile 5G base station?

Please contact us for more information. China unveils the world's first military-grade mobile 5G base station, developed by China Mobile Communications Group and the PLA, designed for battlefield use to enable seamless communication for up to 10,000 military robots and drones within a 3-kilometer radius.

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.

Should China upgrade to low-carbon base stations?

These outcomes demonstrate that upgrading to low-carbon base stations not only ensures economic feasibility but also delivers significant environmental and public health benefits, reinforcing the strategic value of decarbonizing China's communication infrastructure.

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