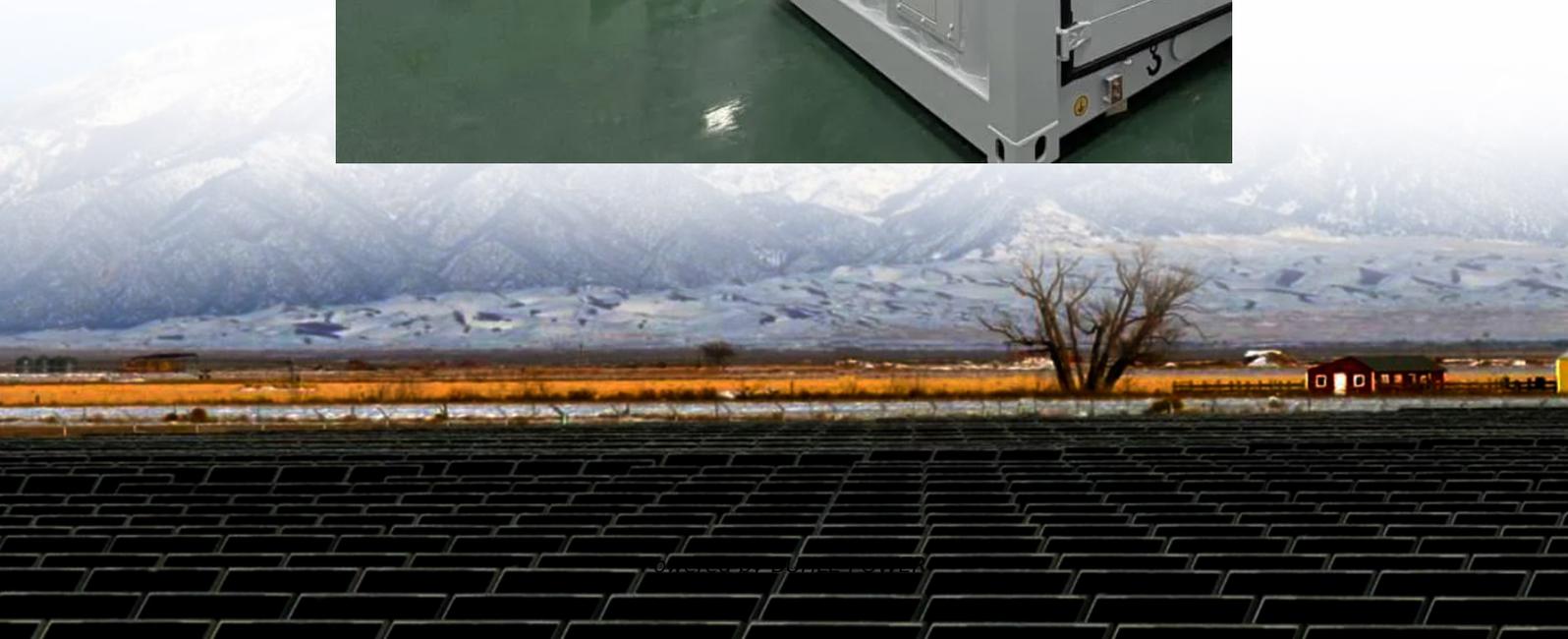


# 5g base station construction and investment in power equipment





## Overview

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How does a 5G base station consume energy?

In terms of energy consumption, 5G base stations require continuous operation and stability, which leads to significant electricity consumption (Guo et al., 2022a). This power is mainly supplied by transmission equipment and auxiliary equipment, such as transformers, UPS power supplies, and cooling equipment.

What is the system boundary of 5G base station?

The system boundary of the CO<sub>2</sub> of 5G base station The civil construction of 5G base stations is typically carried out using the existing infrastructure of 4G base stations, resulting in less material input during the construction phase. The primary focus on carbon emission generation is during the use phase due to power consumption.

What are 5G base stations?

5G base stations are categorized into micro base stations, macro base stations, and indoor sub-systems based on their transmit power and coverage. As 5G operates at a higher frequency than 4G, its coverage capability is lower and the signal penetration is poor, causing significant signal attenuation.

What equipment does a 5G base station need?

The equipment of both 5G macro and micro base stations typically consist of baseband units, radio frequency units, antenna feeder systems, basic components, iron towers and poles, power supply, air conditioning, and computer rooms (Chen et al., 2010; Igor, 2007).



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### 5G-oriented Site Evolution

The total site power consumption will triple. This creates new challenges in terms of AC input power distribution, DC output power distribution, battery backup, and the stability of load ...

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The battery is the core equipment to ensure the continuous power supply of the communication base station. When the mains power supply is normal, the battery can help smooth filtering ...



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### **How much does it cost to build a 5G base station? The total investment**

The battery is used to provide emergency power after the base station power supply is unexpectedly interrupted. The price of ordinary lead-acid batteries is 1~2 yuan/Ah. The price of ...



### 5G-oriented Site Evolution

Main Equipment Evolution  
 Antenna Reconstruction  
 Energy Installation  
 In the 5G era, the power consumption of main equipment will double, and the power consumption of auxiliary equipment, such as temperature control equipment, will also increase. The total site power consumption will triple. This creates new challenges in terms of AC input power distribution, DC output power distribution, battery backup, and the stab See more on carrier.huawei GlobeNewswire



## **Opportunities in the Chinese 5G Base Station Construction**

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