

SolarInnovate Energy Solutions

Is China Energy Construction building 5g base stations



Overview

How many 5G base stations are built in China?

As 5G serves as the foundation for the construction of new infrastructure, China, as the world leader in 5G base station construction, has already built over 1.4 million 5G base stations in 2021 alone. In the same year, 5G base stations in China produced approximately 49.2 million tons of CO₂ eq.

How much carbon does a 5G base station produce?

Previous research has estimated that a single 5G base station will produce approximately 30.2 ~ 33.5 tCO₂ eq throughout its life cycle (Ding et al., 2022; Guo et al., 2022a). Consequently, the carbon emissions from 5G base stations in China in 2021 amounted to approximately 49.2 MtCO₂ eq.

Are 5G base stations sustainable?

However, due to their high radio frequency and limited coverage, the construction and operation of 5G base stations can lead to significant energy consumption and greenhouse gas emissions. To address this challenge, scholars have focused on developing sustainable 5G base stations.

What is 5G base station equipment architecture?

The 5G base station equipment architecture mainly adopts the BBU + AAU method. The BBU is the baseband part and can be further divided into two logical network elements, CU and DU. The CU handles the protocol stack functions above the PDCP layer of the wireless network, while the DU handles radio protocol functions below the PDCP layer.

What is the system boundary of 5G base station?

The system boundary of the CO₂ 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.

How much carbon does 5G emit in China in 2021?

The results indicate that, due to the high carbon emissions resulting from the new infrastructure, the carbon emissions of 5G base stations in China in 2021 amounted to 49.2 MtCO₂ eq.

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