SolarTech Power Solutions

Capital Communications 5G Base Station Environmentally Friendly Power

Overview

The emergence of fifth-generation (5G) telecommunication would change modern lives, however, 5G network requires a large number of base stations, which may lead to greater carbon emissions. Sin.

Can a 5G base station promote green development of mobile communication facilities?

However, a significant reduction of ca. 42.8% can be achieved by optimizing the power structure and base station layout strategy and reducing equipment power consumption. Overall, this study provides a clear approach to assess the environmental impact of the 5G base station and will promote the green development of mobile communication facilities.

How much energy does a 5G base station use?

China Mobile’s measurement report 9 indicates that the energy consumption of a 5G base station is 4.3 kWh, which is four times that of a 4G base station at 1.1 kWh. One 5G base station is estimated to produce 30 t of carbon emissions in one year of operation 10.

Are 5G mobile networks a carbon eficiency trap?

We reveal a carbon eficiency trap of 5G mobile networks leading to additional carbon emissions of 23.82 ± 1.07 Mt in China, caused by the spatiotemporal misalignment between cellular trafic and energy consumption in mobile networks.

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 MtCO 2 eq.

How many 5G base stations were built in 2020?

Construction of 5G base stations accelerated in 2020 and a total of 718,800 base stations were built, resulting in a sharp increase in carbon emissions.

Carbon emissions during the operational phase account for the largest proportion among the other phases of the entire lifecycle.

What is the system boundary of 5G base station?

The system boundary of the CO 2 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.

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