

SolarInnovate Energy Solutions

Operators are overwhelmed by the electricity costs of 5G base stations



Overview

Why are 5G base stations being powered off every day?

Selected 5G base stations in China are being powered off every day from 21:00 to next day 9:00 to reduce energy consumption and lower electricity bills. 5G base stations are truly large consumers of energy such that electricity bills have become one of the biggest costs for 5G network operators.

How much power does a 5G station use?

The power consumption of a single 5G station is 2.5 to 3.5 times higher than that of a single 4G station. The main factor behind this increase in 5G power consumption is the high power usage of the active antenna unit (AAU). Under a full workload, a single station uses nearly 3700W.

How will 5G affect the energy consumption of mobile operators?

Edge compute facilities needed to support local processing and new internet of things (IoT) services will also add to overall network power usage. Exact estimates differ by source, but MTN says the industry consensus is that 5G will double to triple energy consumption for mobile operators, once networks scale.

Is 5G more energy efficient than 4G?

Although the absolute value of the power consumption of 5G base stations is increasing, their energy efficiency ratio is much lower than that of 4G stations. In other words, with the same power consumption, the network capacity of 5G will be as dozens of times larger than 4G, so the power consumption per bit is sharply reduced.

How much electricity will a 5G base station save a year?

The current 200,000 base stations can save 1.2 billion annually. By the end of this year, 1 million 5G base stations will be built, saving 6 billion in a year. If there are more than 2 million base stations, 12 billion electricity can be saved

a year, which is equivalent to China Unicom's total profit in one year.

Can 5G power slash site retrofitting costs?

In 2019, the 5G Power solution won ITU's Global Industry Award for Sustainable Impact. For operators, it provides a replicable power solution that can slash site retrofitting costs. 5G Power is based on intelligent technologies like peak shaving, voltage boosting, and energy storage.

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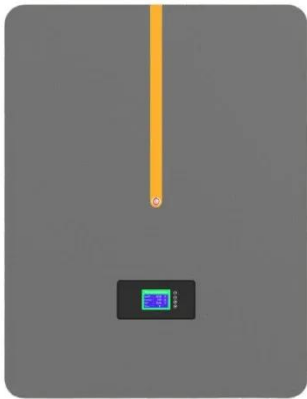


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