

ContainerPower Energy Solutions

How to solve the power supply problem of 5G base station



Overview

Why are 5G base stations important?

The denseness and dispersion of 5G base stations make the distance between base station energy storage and power users closer. When the user's load loses power, the relevant energy storage can be quickly controlled to participate in the power supply of the lost load.

What factors affect the energy storage reserve capacity of 5G base stations?

This work explores the factors that affect the energy storage reserve capacity of 5G base stations: communication volume of the base station, power consumption of the base station, backup time of the base station, and the power supply reliability of the distribution network nodes.

Can 5G base station energy storage be used in emergency restoration?

The massive growth of 5G base stations in the current power grid will not only increase power consumption, but also bring considerable energy storage resources. However, there are few studies on the feasibility of 5G base station energy storage participating in the emergency restoration of the power grid.

What is the energy storage demand for China's 5G base stations?

According to data from the Ministry of Industry and Information Technology of China, the energy storage demand for China's 5G base stations is expected to reach 31.8 GWh by 2023 (as shown in Fig. 1).

How does a 5G base station reduce OPEX?

This technique reduces opex by putting a base station into a "sleep mode," with only the essentials remaining powered on. Pulse power leverages 5G base stations' ability to analyze traffic loads. In 4G, radios are always on, even when traffic levels don't warrant it, such as transmitting reference signals to detect users in the middle of the night.

Why does 5G cost more than 4G?

This percentage will increase significantly with 5G because a gNodeB uses at least twice as much electricity as a 4G base station. The more operators spend on electricity, the more difficult it is to price their 5G services competitively and profitably.

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