

Slovakia Communications 5g Base Station Energy Storage ESS Installation





Overview

What is a 5G base station power system?

Model of Base Station Power System The key equipment in 5G base stations are the baseband unit (BBU) and active antenna unit (AAU), both of which are direct current loads. The power of AAU contributes to roughly 80% of the overall communication system power and is highly dependent on the communication volume .

Do 5G base stations consume more energy?

However, the widespread deployment of 5G base stations has led to increased energy consumption. Individual 5G base stations require 3–4 times more power than fourth-generation mobile communication technology (4G) base stations, and their deployment density is 4–5 times that of 4G base stations [3, 4].

How to optimize PV and ESS?

Optimization of PV and ESS was carried out for three schemes: Table 1. Case parameters. Scheme 1: The classic scheme in which the base stations are only powered by grid electricity. Scheme 2: The PV modules are connected in series to obtain higher voltage and are connected to the AC bus of the base station through an inverter with MPPT function.

How long does ESS take to optimize a power supply?

Considering the service life of PV modules, the optimization period is set to 15 years. To ensure power supply after a power outage, the ESS needs to have a minimum capacity of 6 kWh, and this part of ESS does not participate in output scheduling to ensure sufficient power. The optimization results and specific analysis are shown in Table 1. 4.1.



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