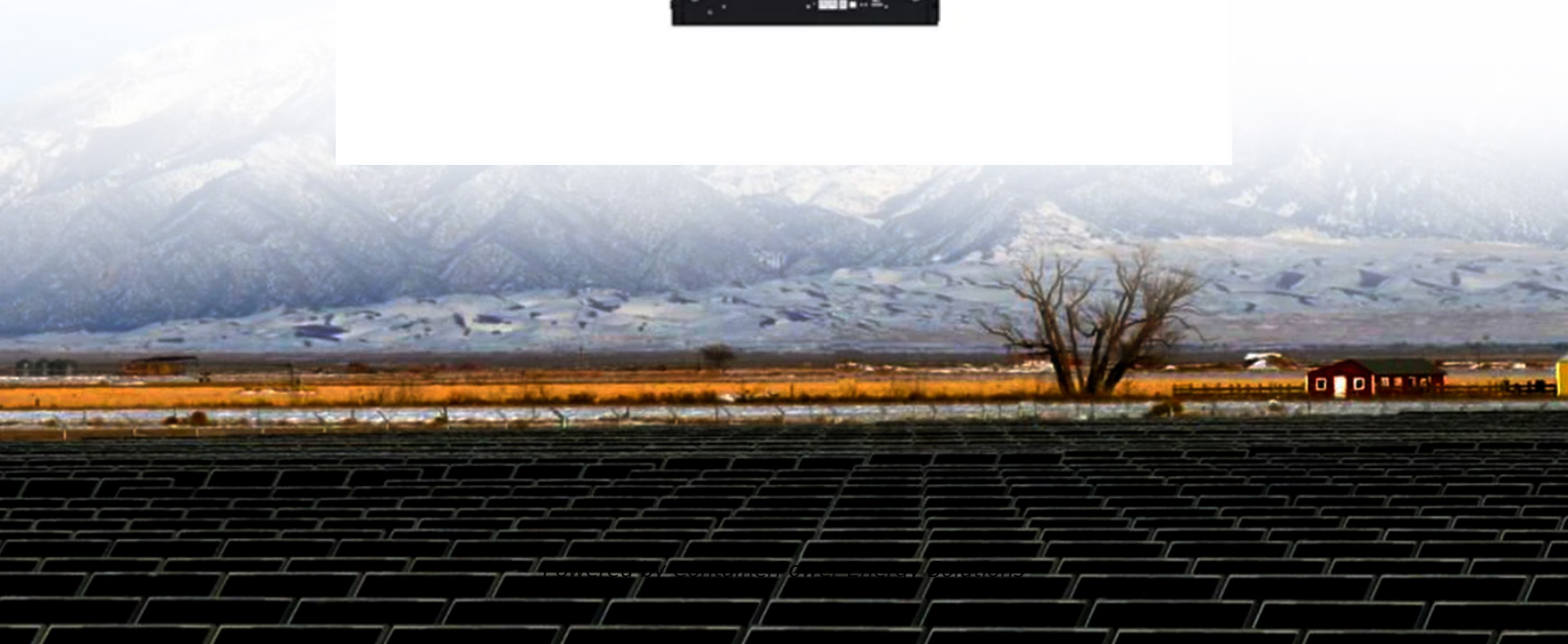


## ContainerPower Energy Solutions

# Communication base station energy storage system secondary load



## Overview

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A significant number of 5G base stations (gNBs) and their backup energy storage systems (BESSs) are redundantly configured, possessing surplus capacity during non-peak traffic hours. Moreover, traffic lo.

How much energy does a communication base station use?

In this region, the communication base stations are equipped with energy storage systems with a rated capacity of 48 kWh and a maximum charge/discharge power of 15.84 kW. The self-discharge efficiency is set at 0.99, and the state of charge (SOC) is allowed to range between a maximum of 0.9 and a minimum of 0.1. Figure 3.

What is 5G base station load forecasting technology?

The research on 5G base station load forecasting technology can provide base station operators with a reasonable arrangement of energy supply guidance, and realize the energy saving and emission reduction of 5G base stations.

What is a 5G base station energy storage device?

During main power failures, the energy storage device provides emergency power for the communication equipment. A set of 5G base station main communication equipment is generally composed of a baseband BBU unit and multiple RF AAU units. Equation 1 serves as the base station load model:.

Is Dn voltage control a co-regulation method for base station energy storage?

However, these storage resources often remain idle, leading to inefficiency. To enhance the utilization of base station energy storage (BSES), this paper proposes a co-regulation method for distribution network (DN) voltage control, enabling BSES participation in grid interactions.

How 5G technology has changed the power load characteristics of base stations?

At the same time, the new equipment has altered the power load characteristics of base stations. In the 5G technology framework, the 5G base

station comprises macro and micro variants. The micro base station serves indoor blind spots with minimal power consumption. The macro base station exhibits greater potential for demand response.

Can BSES co-regulation be used for voltage regulation in 5G base stations?

Furthermore, with the goal of fully utilizing the energy storage resources of 5G base stations, a BSES co-regulation method for voltage regulation in DNs is proposed. The feasibility of the proposed method is verified by case analysis, and the following conclusions can be drawn.

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