

## PDEOZE PowerContainer

# Base station backup power supply optimization measures



## Overview

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Given the backup power sharing scenario in Sect. 4.3.3 and illustrated by Fig. 4.4, two types of power outages may happen.

What is the relationship between power supply reliability and backup time?

According to the inverse relationship between the power supply reliability of the distribution network and the backup time of the base station, the traditional base station energy storage model is modified to obtain a base station energy storage model that is affected by power supply reliability and base station communication volume.

Why do base stations have a small backup energy storage time?

Base stations' backup energy storage time is often related to the reliability of power supply between power grids. For areas with high power supply reliability, the backup energy storage time of base stations can be set smaller.

How to determine backup energy storage capacity of base stations?

For the determination of the backup energy storage capacity of base stations in different regions, this paper mainly considers three factors: power supply reliability of the grid node where the base station is located (grid node vulnerability), the load level of the grid node and communication load.

Does a base station energy storage model improve the utilization rate?

Where traffic is high, less base station energy storage capacity is available. Compared with the fixed backup time, the base station energy storage model proposed in this article not only improves the utilization rate of base station energy storage, but also reduces the power loss load and power loss cost in the distribution network fault area.

How is a backup energy storage model established?

The backup energy storage model of the base station is established by combining the node vulnerability, load level and the communication volume of

the corresponding area. The energy storage output range of the base station is finally determined.

Does a high power supply reliability increase base station energy storage capacity?

The case analysis done in this article verifies the effectiveness of the proposed method: places with high power supply reliability have more available base station energy storage capacity. Where traffic is high, less base station energy storage capacity is available.

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To maximize overall benefits for the investors and operators of base station energy storage, we proposed a bi-level optimization model for the operation of the energy storage, and the ...

This article will explore in detail how to secure backup power for telecom base stations, discussing the components involved, advanced technologies, best practices, and ...

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This paper evaluates the dispatchable capacity of the BS backup batteries in distribution networks and illustrates how it can be utilized in power systems. The BS reliability model is first ...

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In the communication power supply field, base station interruptions may occur due to sudden natural disasters or unstable power supplies. This work studies the optimization of battery resource configurations to cope with ...



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 ...

In this paper, we closely examine the base station features and backup battery features from a 1.5-year dataset of a major cellular service provider, including 4,206 base stations distributed ...

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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.

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