Technical characteristics of hybrid energy drift in communication base stations

Overview

Does a 5G base station use hybrid energy?

In this paper, hybrid energy utilization was studied for the base station in a 5G network. To minimize AC power usage from the hybrid energy system and minimize solar energy waste, a Markov decision process (MDP) model was proposed for packet transmission in two practical scenarios.

What is a hybrid control strategy for communication base stations?

The objective of this paper is to present a hybrid control strategy for communication base stations that considers both the communication load and time-sharing tariffs.

What are the advantages of a hybrid control method?

The outcomes demonstrate that the proposed hybrid control method exhibits the following advantages: (1) The virtual battery model of the base station is capable of establishing the user’s network fee incentive data based on the historical user data, with the objective of optimizing the communication storage scheduling potential.

What is a hybrid system model?

The hybrid system model is clarified in Section 2, which describes the MDP formulation for transmission probabilities, and the transmission scheme for two practical scenarios. The simulation results are presented in Section 3, and concluding remarks are provided in Section 4.

Does a 5G communication base station control peak energy storage?

This paper considers the peak control of base station energy storage under multi-region conditions, with the 5G communication base station serving as the research object. Future work will extend the analysis to consider the uncertainty of different types of renewable energy sources’ output.

Can a power grid model reduce the power consumption of base stations?

The analysis results demonstrate that the proposed model can effectively reduce the power consumption of base stations while mitigating the fluctuation of the power grid load.

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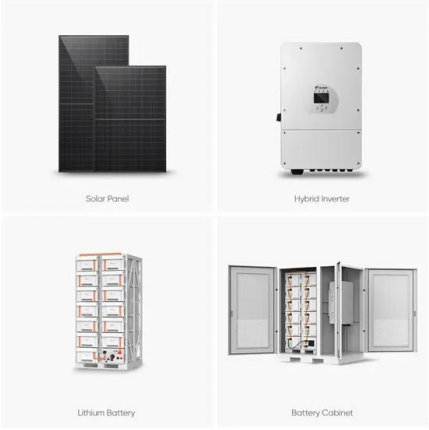

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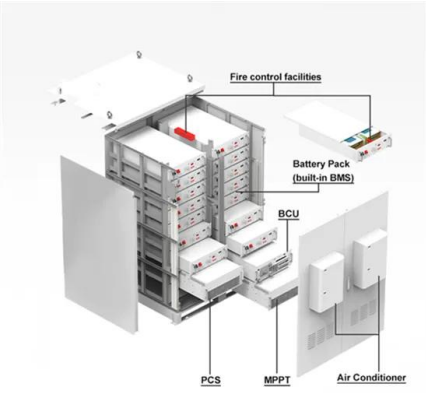

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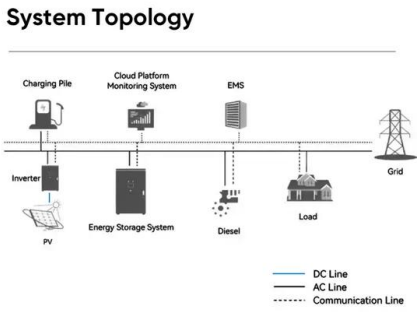

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