Energy saving and consumption reduction in communication base station hybrid energy station

Aiming at this issue, an interactive hybrid control mode between energy storage and the power system under the base station sleep control strategy is delved into in this paper.

This article identifies energy-saving potential of the fifth generation (5G) Radio Access Network, and describes main energy-saving principles and technologies.

Abstract: Dense deployment of small base stations (SBSs) within the coverage of macro base station (MBS) has been spotlighted as a promising solution to conserve grid energy in hybrid-energy ...

Case studies demonstrate that the proposed model effectively integrates the characteristics of electrical components and data flow, enhancing energy efficiency while satisfying ...

To reduce the extra power consumption due to frequent sleep mode switching of base stations, a sleep mode switching decision algorithm is proposed. The algorithm reduces unnecessary ...

In today"s 5G era, the energy efficiency (EE) of cellular base stations is crucial for sustainable communication. Recognizing this, Mobile Network Operators are actively prioritizing EE for both ...

In this work, we analyze the energy and cost savings for a defined energy management strategy of a RE hybrid system. Our study of the relationship between cost savings and percentage of sites equipped ...

This paper proposes a power control algorithm based on energy efficiency, which combines cell breathing technology and base station sleep technology to reduce base station energy consumption ...

This technical report explores how network energy saving technologies that have emerged since the 4G era, such as carrier shutdown, channel shutdown, symbol shutdown etc., can be leveraged to ...

We demonstrate that this model achieves good estimation performance, and it is able to capture the benefits of energy saving when dealing with the complexity of multi-carrier base stations architectures.

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