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Communication green base station shutdown conditions

Overview

Are green base stations a problem?

As society grows increasingly more aware of green energy sources, governments also start modifying their power rules to support them. As a result, problems with green base stations became the focus of a significant amount of recent ICT research efforts .

How can a communication base station reduce energy consumption?

Strategies such as applying solar energy generation facilities in base stations to replace part of the grid electricity or implementing active deep sleep in communication base stations to optimize energy management 7,8,9,10 have been applied to reduce the use of grid-supplied energy and lower the operating costs of communication systems.

Can base stations reduce energy consumption while maintaining quality of service (QoS)?

Liu et al. , this research proposes a sleeping algorithm for base stations (BSs) in wireless access networks to reduce energy consumption while maintaining quality of service (QoS). The algorithm relies on location data from user equipment (UE) which is sent to the mobility management entity or serving gateway (MME/S-GW).

Can low-carbon communication base stations improve local energy use?

Therefore, low-carbon upgrades to communication base stations can effectively improve the economics of local energy use while reducing local environmental pollution and gaining public health benefits. For this research, we recommend further in-depth exploration in three areas for the future.

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China Mobile - Renewable energy and green base station ...
Aug 7, 2025 · China Mobile added 467,000 5G base stations while achieving a 2% reduction in overall base station energy consumption in 2024.

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important infrastructure for digital transformation, the mobile communication network focuses on three ...

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