

# Design of energy-saving installation scheme of flow battery for communication base station

Why do cellular base stations have backup batteries?

[...]Cellular base stations (BSs) are equipped with backup batteries to obtain the uninterruptible power supply (UPS) and maintain the power supply reliability. While maintaining the reliability, the backup batteries of 5G BSs have some spare capacity over time due to the traffic-sensitive characteristic of 5G BS electricity load.

What is base station energy consumption index (ECI)?

Brief description about components of the base station Energy Consumption Index (ECI)--It represents the efficiency of BS power utilization. The lower value of ECI means greater EE as mentioned in Eq. 6 below. Its unit is J/bit.

Do BS resource adaption techniques reduce energy consumption?

The evaluation processes as mentioned in this manuscript could be expanded to take into account the QoS that the UEs experience and to combat energy consumption by BS resource adaption techniques. Also, it has been observed that most of the past literature ignores the energy consumed while switching on-off BSs.

Does a standby battery responding grid scheduling strategy perform better than constant battery capacity?

In addition, the model of a base station standby battery responding grid scheduling is established. The simulation results show that the standby battery scheduling strategy can perform better than the constant battery capacity. Content may be subject to copyright.

What is the sleep mode of a base station?

There are different stages of the sleep mode of base stations. These are mentioned below: On: the small cell operates fully and consumes the maximal power. Standby: the small cell sleeps in "light" mode and can easily wake up on UE's request. This can be done by shutting down the TCXO heater and RF.

With the advent of the 5G era, mobile users have higher requirements for network performance, and the expansion of network coverage has become an inevitable trend. Deploying micro base ...

To further explore the energy-saving potential of 5 G base stations, this paper proposes an energy-saving operation model for 5 G base stations that incorporates communication caching ...

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 ...

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