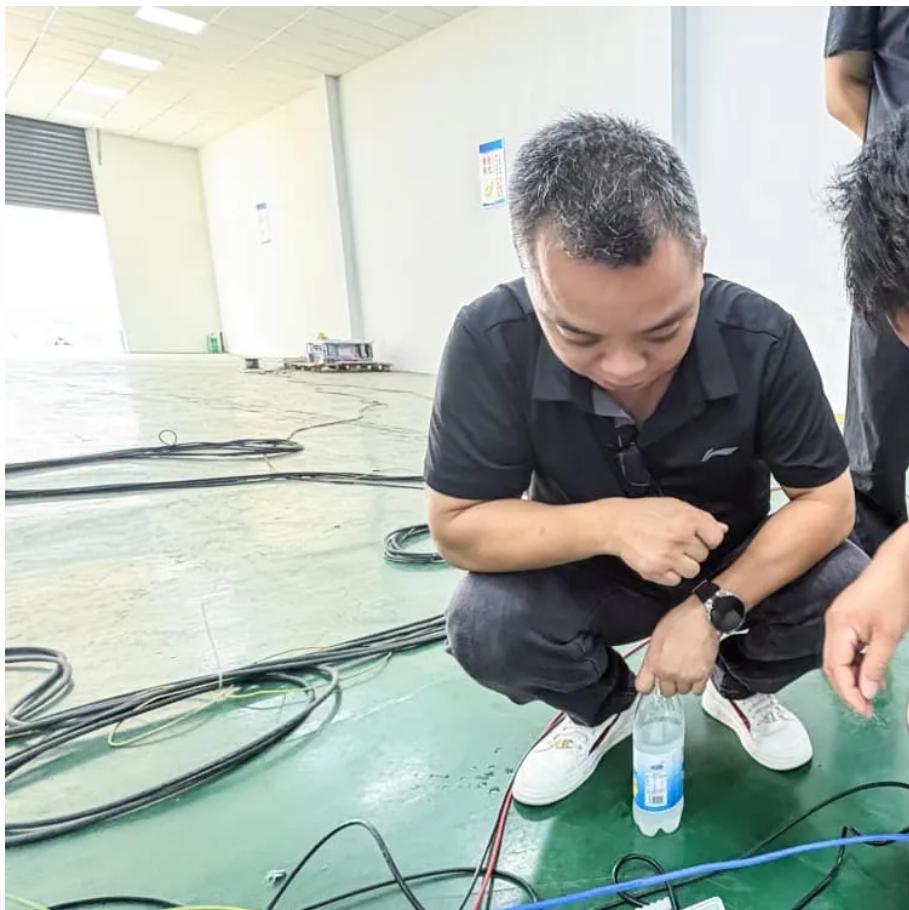




MODERNIZATION SOLAR

Base station communication equipment power saving





Overview

How does a base station work?

In this scheme, the base station is powered by solar panels, the electrical grid, and energy storage units to ensure the stability of energy supply. When there is a surplus of energy supply, the excess electricity generated by the solar panels is stored in the energy storage units.

How much energy does a communication base station use a day?

A small-scale communication base station communication antenna with an average power of 2 kW can consume up to 48 kWh per day.^{4,5,6} Therefore, the low-carbon upgrade of communication base stations and systems is at the core of the telecommunications industry's energy use issues.

What is a base station energy optimization?

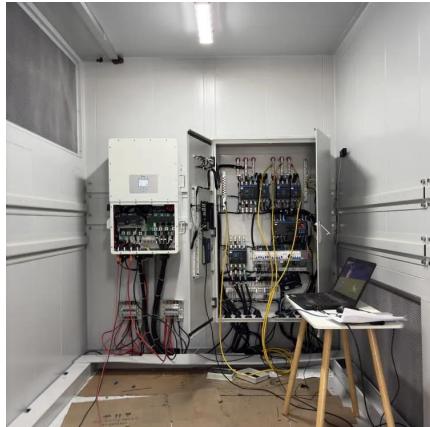
The optimization covers configurations of base station energy supply equipment (e.g., investment in photovoltaics [PV] and energy storage capacity) and operational locations (e.g., urban vs. rural deployments).

Will communication base stations reduce electricity consumption?

Our findings revealed that the nationwide electricity consumption would reduce to 54,101.60 GWh due to the operation of communication base stations (95% CI: 53,492.10–54,725.35 GWh) (Figure 2 C), marking a reduction of 35.23% compared with the original consumption. We also predicted the reduction of pollutant emissions after the upgrade.



Base station communication equipment power saving



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9

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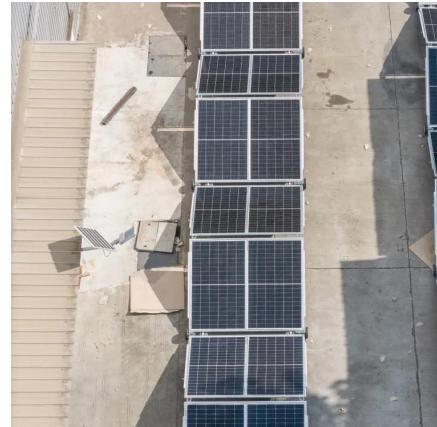
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The Energy Saving Measurement System and Method of Main Base Station

The Definition of Energy Saving
Measurement
Introduction to The Model Usage
Algorithm
The Overview of GBRT Algorithm
New Energy Saving Formula
There are two parts in the energy saving calculation system and method of the main base station communication equipment. The first step is to select the appropriate modeling indexes to reduce index dimension based on the above algorithm from more than 100 indicators of network management through the chi-square test, Pearson correlation analysis and See more on link.springer ACM Digital Library



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