



LLSE CONTAINERS

Communication green base station line change





Overview

How does a communication base station upgrade affect emissions?

(D) Total emissions of major pollutants (CO₂, NO_x, SO₂, and PM 2.5) generated by the electricity consumption of communication base stations before and after the upgrade. Paired bars with the same color represent pre- and post-upgrade comparisons for the same pollutant. Emissions of all pollutants are significantly reduced after the upgrade.

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.

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.

What is the energy consumption of 5G communication base stations?

Overall, 5G communication base stations' energy consumption comprises static and dynamic power consumption. Among them, static power consumption pertains to the reduction in energy required in 5G communication base stations that remains constant regardless of service load or output transmission power.



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[Low-Carbon Sustainable Development of 5G Base Stations in ...](#)

May 4, 2024 · Goncalves et al. (2020) explored carbon neutrality evaluation of 5G base stations from the perspective of network structure and carbon sequestration. Despite the growing ...

[Toward Green Network: An Expanding of Base Station ...](#)

Aug 4, 2025 · Green network aims to promote the sustainable development of communication systems, and base station (BS) and cells sleeping has been proven effective in reducing the ...



[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.

Green 5G White Paper

GREEN 5G WHITE PAPER Figure 12 Radio Air conditioner Power supply Others Figure 13 Baseband Figure 14 Power consumption A I-CIB increase in base station transmit power leads ...



[Communication Base Station Green Energy . Huijue Group E ...](#)

As global telecom networks expand exponentially, how can communication base station green energy solutions address the sector's mounting carbon footprint? With over 7 million cellular ...



Multi-objective cooperative optimization of communication base station

Sep 30, 2024 · This paper develops a method to consider the multi-objective cooperative optimization operation of 5G communication base stations and Active Distribution Network ...



[Carbon-Neutralized Joint User Association and Base ...](#)

Mar 15, 2023 · Lin and S. Wang, "Joint user association and base station switching on/off for green heterogeneous cellular networks," in IEEE International Conference on Communications ...



Remake Green 5G

Nov 10, 2022 · The task of achieving carbon neutrality is short and challenging. As an important infrastructure for digital transformation, the mobile communication network focuses on three ...

[Low-carbon upgrading to China's communications base stations ...](#)

Nov 21, 2025 · It is important for China's communications industry to reduce its reliance on grid-powered systems to lower base station energy costs and meet nationa...



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