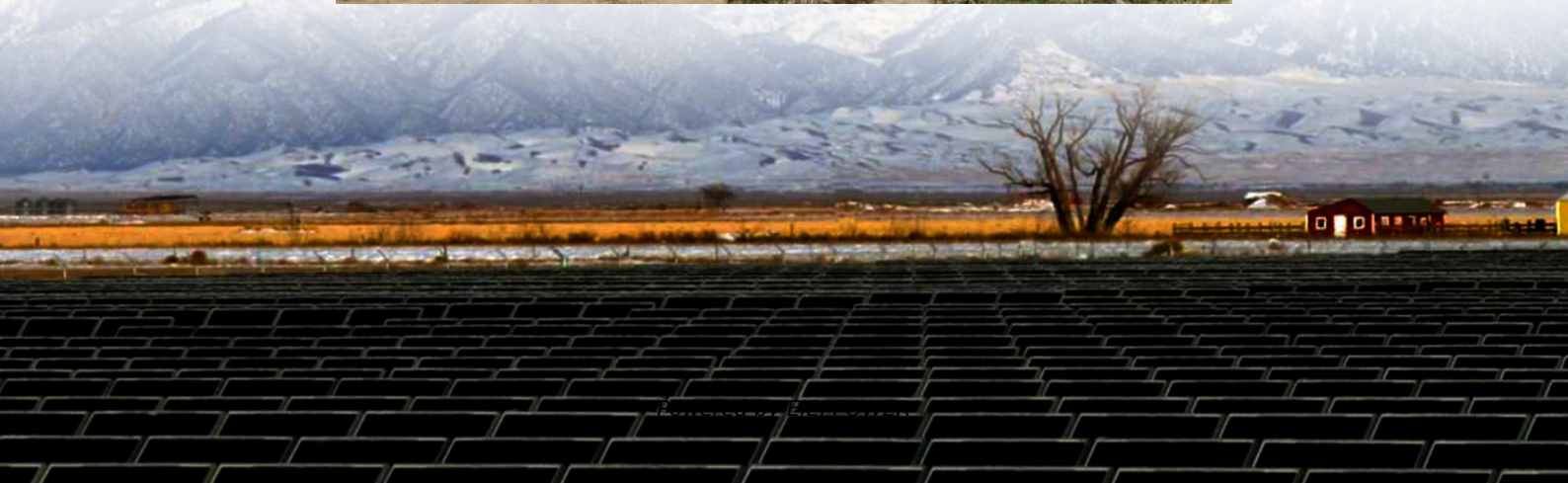


# What are the energy-saving measures for outdoor base stations





## Overview

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Can 3GPP reduce base station energy consumption in 5G NR BS?

Aiming at minimizing the base station (BS) energy consumption under low and medium load scenarios, the 3GPP recently completed a Release 18 study on energy saving techniques for 5G NR BSs . A broad range of techniques was evaluated in terms of the obtained network energy saving (NES) gain and their impact to the user-perceived throughput (UPT).

What is a suitable energy saving strategy?

The suitable energy saving strategy combined with different energy saving functions, include an initial relative threshold to the scenario and an executable energy saving time schedule. This will be enabled for the sites that are expected to have energy saving effects.

Why are energy saving measures important for mobile network operators?

Energy saving measures in mobile network operators (MNOs) are prioritized as needs rather than measures that are nice-to-have. What is more important is that sustainability has risen to the top of the agenda for many industries, including telecoms.

How does network energy saving work?

The beginning of network energy saving came with the fact that many sites had their traffic peaks and troughs, which means certain parts of the base stations could be shutdown to save energy, and these included carrier frequency block, carrier frequency shutdown, channel shutdown and symbol shutdown.



## What are the energy-saving measures for outdoor base stations



### Base Station Energy Efficiency: Key Strategies for Sustainable ...

Aug 25, 2025 · AI-driven monitoring systems can predict traffic patterns, detect inefficiencies, and automate energy-saving measures at each base station. These systems can also forecast ...

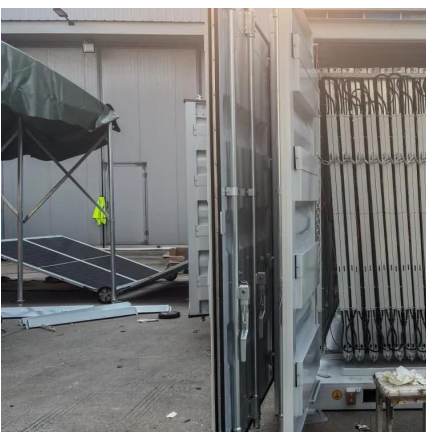
### Energy Savings in Base Stations with KDDI

Energy Savings in Base Stations with KDDI  
KDDI's combined scope 1 and 2 emissions in the 2023 financial year were approximately 950,000 tons, of which around half were related to ...



### Base Station Energy Efficiency: Key Strategies ...

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Network energy-saving techniques tune the parameters and protocols of networks for interference mitigation, resource optimization, and energy saving. It is a prerequisite to understand key ...



[Energy-efficiency schemes for base stations in 5G ...](#)

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 ...



[A Power Consumption Model and Energy Saving Techniques ...](#)

May 28, 2023 · Aiming at minimizing the base station (BS) energy consumption under low and medium load scenarios, the 3GPP recently completed a Release 18 study on energy saving ...





[Final draft of deliverable D.WG3-02-Smart Energy Saving ...](#)

Oct 4, 2021 · Smart energy saving of 5G base stations: Based on AI and other emerging technologies to forecast and optimize the management of 5G wireless network energy ...



[Energy-Efficient Base Stations Sleep Mode Techniques in ...](#)

May 4, 2020 · Abstract--Due to global climate change as well as economic concern of network operators, energy consumption of the infrastructure of cellular networks, or "Green Cellular ...

[STUDY ON AN ENERGY-SAVING THERMAL ...](#)

Oct 24, 2025 · In order to solve the poor heat dissipation in the outdoor mobile communication base station, especially in summer, high temperature alarm phenomenon occurs frequently, ...



**Optimal energy-saving operation strategy of 5G base station ...**

Dec 1, 2025 · 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 ...



### [ITU-T L Supplement 43](#)

Jun 28, 2024 · This Supplement examines energy-saving technology for fifth generation (5G) base stations (BSs). Some energy-saving technologies developed since the fourth generation (4G) ...



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