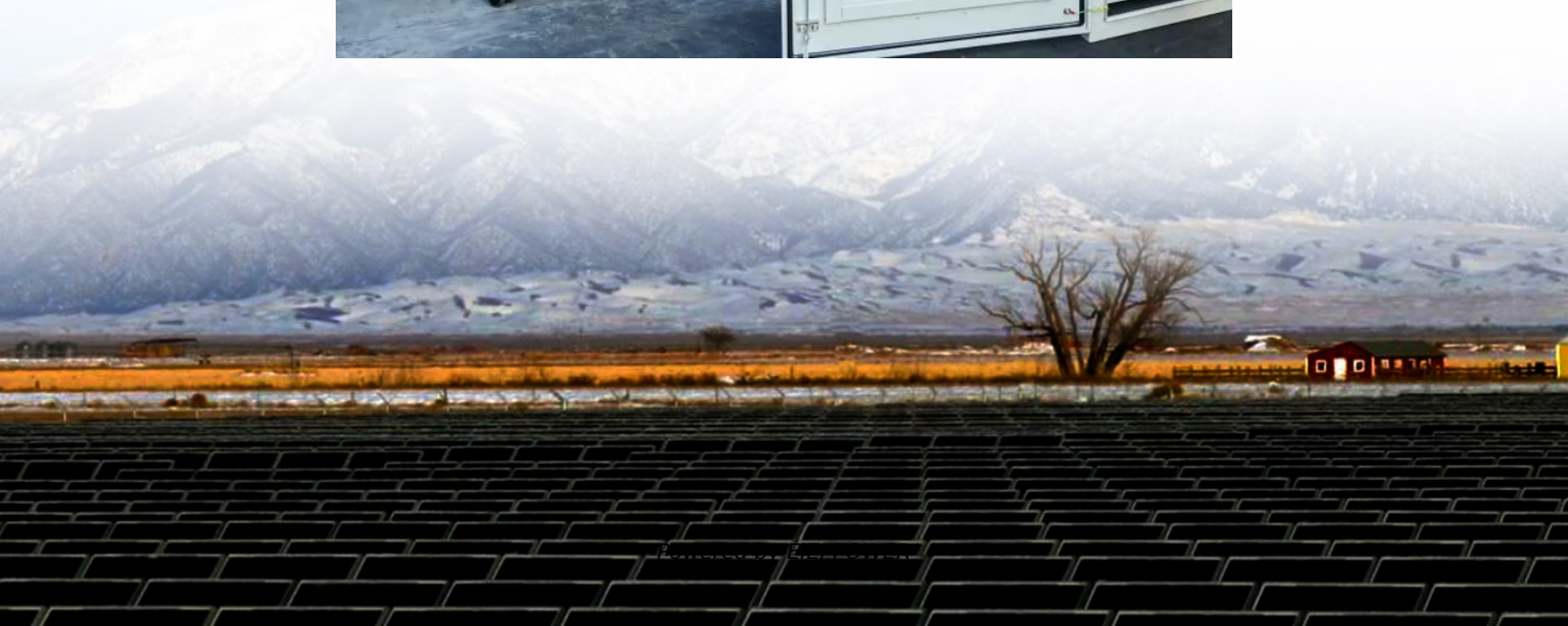


# **Power consumption of 5G base stations in Maputo**





## Overview

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Does Mappo reduce power consumption in 5G ultra-dense networks?

In this paper, we thoroughly study the base station control problem in 5G ultra-dense networks and propose an innovative MAPPO algorithm. The algorithm significantly reduces the overall power consumption of the system by optimizing inter-base station collaboration and interference management while guaranteeing user QoS.

Should power consumption models be used in 5G networks?

This restricts the potential use of the power models, as their validity and accuracy remain unclear. Future work includes the further development of the power consumption models to form a unified evaluation framework that enables the quantification and optimization of energy consumption and energy efficiency of 5G networks.

How does mobile data traffic affect the energy consumption of 5G base stations?

The explosive growth of mobile data traffic has resulted in a significant increase in the energy consumption of 5G base stations (BSs).

What is 5G base station?

1. Introduction 5G base station (BS), as an important electrical load, has been growing rapidly in the number and density to cope with the exponential growth of mobile data traffic . It is predicted that by 2025, there will be about 13.1 million BSs in the world, and the BS energy consumption will reach 200 billion kWh .



## Power consumption of 5G base stations in Maputo



### [A technical look at 5G energy consumption and performance](#)

Base Station Power Consumption  
Energy Saving Features of 5G New Radio  
How Much Energy Can We Save with Nr Sleep Modes?  
Impact on Energy Efficiency and Performance in A Super Dense Urban Scenario  
Further Reading  
Today we see that a major part of energy consumption in mobile networks comes from the radio base station sites and that the consumption is stable. We can also see that even in densely deployed networks, as in city centers, the network traffic load can fluctuate very much during the day, with significant periods of almost no traffic in the base sta  
See more on ericsson  
Missing: base stations · Maputo  
Must include: base stations · Maputo  
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### **Energy-saving control strategy for ultra-dense network base stations**

Aug 1, 2025 · Aiming at the problem of mobile data traffic surge in 5G networks, this paper proposes an effective solution combining massive multiple-input multiple-output techniques ...

### [Power consumption based on 5G communication](#)

Oct 17, 2021 · At present, 5G mobile traffic base stations in energy consumption accounted for 60% ~ 80%, compared with 4G energy consumption increased three times. In the future, high ...



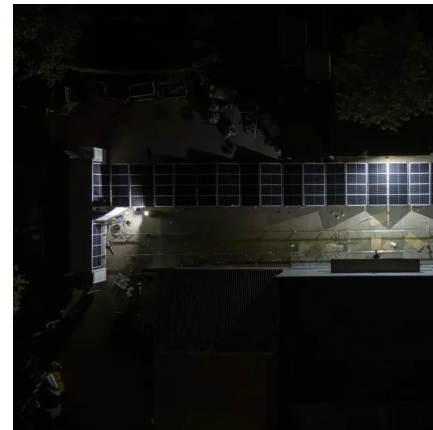


### Energy-saving control strategy for ultra-dense network base stations

Aug 1, 2025 · Aiming at the problem of mobile data traffic surge in 5G networks, this paper proposes an effective solution combining massive multiple-input multiple-output techniques ...

### Comparison of Power Consumption Models for 5G Cellular Network Base

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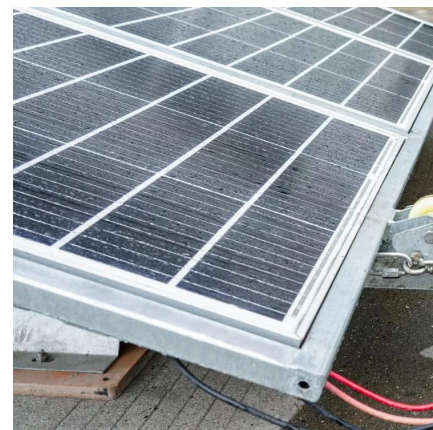


### [Energy consumption optimization of 5G base stations ...](#)

Aug 1, 2023 · An energy consumption optimization strategy of 5G base stations (BSs) considering variable threshold sleep mechanism (ECOS-BS) is proposed, which includes the initial ...

### [Energy Consumption Modelling for 5G Radio Base ...](#)

Mathematical optimization of energy consumption requires a model of the problem at hand. In this thesis linear regression is compared with the gradient boosted trees method and a neural ...





### [Modelling the 5G Energy Consumption Using Real-world ...](#)

Sep 15, 2025 · Accurate energy consumption modeling is essential for developing energy-efficient strategies, enabling operators to optimize resource utilization while maintaining network ...

### **Comparison of Power Consumption Models for 5G Cellular Network Base**

Jul 1, 2024 · This paper conducts a literature survey of relevant power consumption models for 5G cellular network base stations and provides a comparison of the models. It highlights ...



### **Sustainable Connections: Exploring Energy Efficiency in 5G ...**

Dec 9, 2024 · This paper investigates energy consumption issues from widespread 5G deployment using city-scale real-world mobile network data. Our dataset includes traffic ...

### [A technical look at 5G energy consumption and performance](#)

Sep 17, 2019 · How can 5G increase performance and ensure low energy consumption? Find out in our latest Research blog post.





### [5G Energy Consumption Prediction](#)

This repository contains my project for the 5G Energy Consumption modeling challenge organized by the International Telecommunication Union (ITU) in 2023. The challenge aims to estimate ...

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