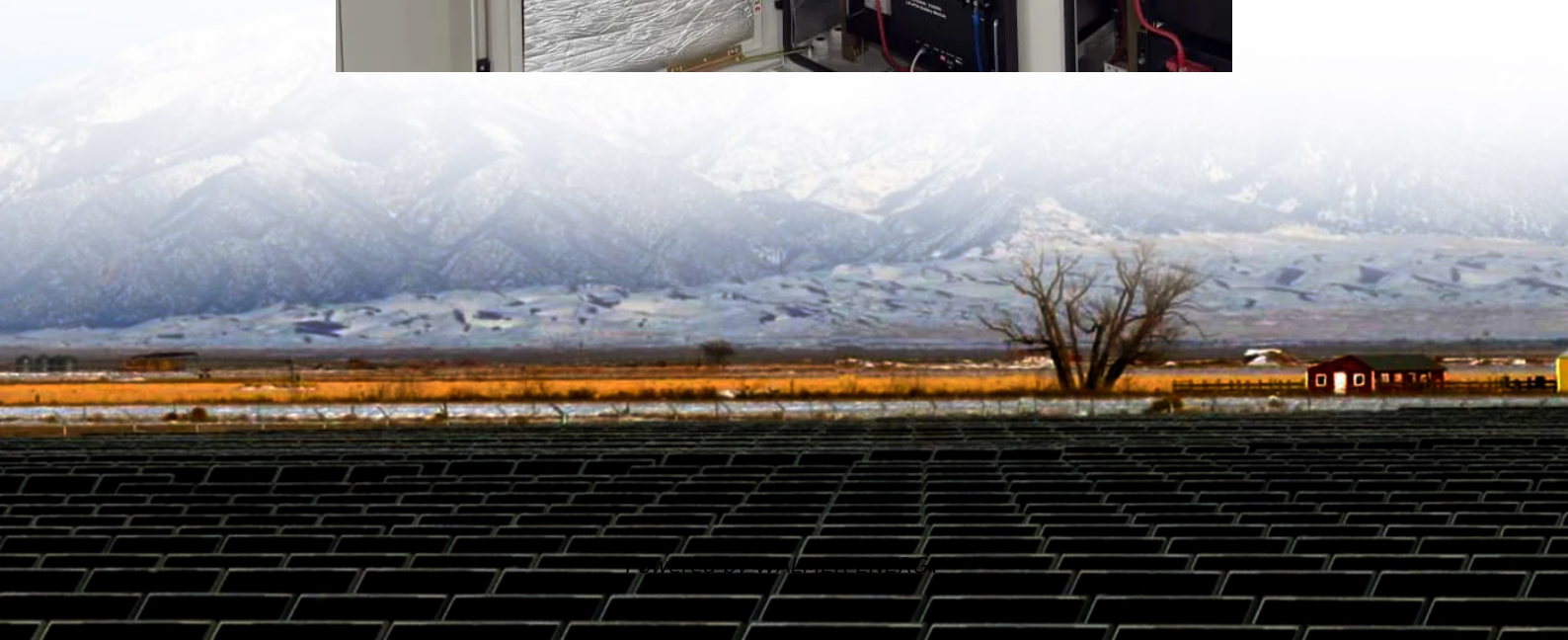# Where to find 5g base station power consumption data

# Overview

What is the energy consumption of a 5G network?

The energy consumption of 5G networks is one of the pressing concerns in green communications. Recent research is focused towards energy saving techniques of base stations (BSs). BSs are one of the most power consuming elements of a 5G network. It is important to model their energy consumption for analyzing overall energy efficiency of a network.

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.

Does a balanced dataset improve energy prediction of 5G base stations?

For energy prediction of 5G base stations, this thesis finds that using a more balanced dataset, in terms of the number of samples for each product, has a positive impact for the ANN and the Gradient Boosted Trees model while the linear regression performs worse.

How can we improve the energy eficiency of 5G networks?

To improve the energy eficiency of 5G networks, it is imperative to develop sophisticated models that accurately reflect the influence of base station (BS) attributes and operational conditions on energy usage.

# Where to find 5g base station power consumption data

Power consumption based on 5G communication
     Oct 17, 2021 · This paper proposes a power control algorithm based on energy efficiency, which combines cell breathing technology and base station sleep technology to reduce base station ...

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 ...

AI-based energy consumption modeling of 5G base stations: an energy
     Jun 25, 2024 · The energy consumption of 5G networks is one of the pressing concerns in green communications. Recent research is focused towards energy saving techniques of base ...

5G Energy Consumption Modeling
     This project involves working with the '5G-Energy Consumption' dataset provided by the International Telecommunication Union (ITU) in 2023 as part of a global challenge for data ...

Power Consumption Modeling of 5G Multi-Carrier Base ...
     Jan 23, 2023 · However, there is still a need to understand the power consumption behavior of state-of-the-art base station architectures, such as multi-carrier active antenna units (AAUs), ...

5G Base Station Power Consumption Using Machine Learning
     Apr 25, 2025 · Accurate power consumption forecasting plays a pivotal role in energy management, influencing both utility operations and customer experience. With increasing ...

Optimal energy-saving operation strategy of 5G base station ...
     Dec 1, 2025 · In recent years, with the widespread deployment of 5 G technology, global communication data traffic has experienced rapid growth, leading to an increase in the ...

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 uti-lization while maintaining network ...

Energy Consumption Modelling for 5G Radio Base ...
     Mathematical optimization of energy consumption requires a model of the prob-lem at hand. In this thesis linear regression is compared with the gradient boosted trees method and a neural ...

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 ...

## Contact Us

For technical specifications, project proposals, or partnership inquiries, please visit:
https://walmerceltic.co.za

## Scan QR Code for More Information



https://walmerceltic.co.za