

Wellington 5G base station daily power consumption





Overview

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 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).

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

To improve the energy efficiency 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.

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 .



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[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.

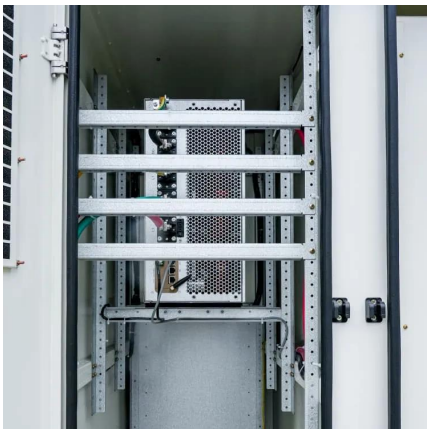
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Measurements and Modelling of Base Station Power Consumption under Real

Abstract Base stations represent the main contributor to the energy consumption of a mobile cellular network. Since traffic load in mobile networks significantly varies during a working or ...

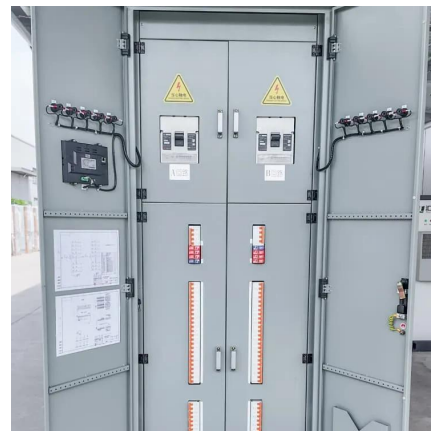


What is 5G Energy Consumption?

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Energy-efficiency schemes for base stations in 5G ...

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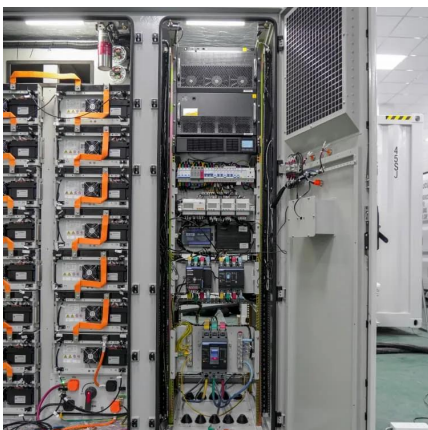


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Mathematical optimization of energy consumption requires a model of the problem at hand. In this thesis linear regression is compared with the gradient boosted trees method and a neural ...

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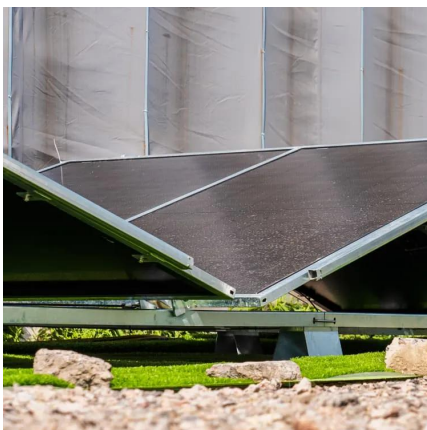


[Energy consumption optimization of 5G base stations ...](#)

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[WHAT IS THE ENERGY CONSUMPTION OF 5G COMMUNICATION BASE STATIONS](#)

As the number of 5G base stations, and their power consumption increase significantly compared with that of 4G base stations, the demand for backup batteries increases simultaneously.



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