

## **PDEOZE PowerContainer**

# **Croatia 5G base station communication energy**



## Overview

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What is 5G New Radio?

5G New Radio (NR) is designed to enable denser network deployments and simultaneously deliver increased energy efficiency, thus reducing both operational costs and environmental impacts. Before we explore the new technical features, let's look more closely at how the existing 4G LTE radio networks function.

What is 5G NR?

The 5G NR standard has been designed based on the knowledge of the typical traffic activity in radio networks as well as the need to support sleep states in radio network equipment. By putting the base station into a sleep state when there is no traffic to serve i.e. switching off hardware components, it will consume less energy.

How to evaluate a 5G energy-optimised network?

To properly examine an energy-optimised network, it is very crucial to select the most suitable EE metric for 5G networks. EE is the ratio of transmitted bits for every joule of energy expended. Therefore, while measuring it, different perspectives need to be considered such as from the network or user's point of view.

Does 5G New Radio save energy?

Emerging use cases and devices demand higher capacity from today's mobile networks, leading to increasingly dense network deployments. In this post, we explore the energy saving features of 5G New Radio and how this enables operators to build denser networks, meet performance demands and maintain low 5G energy consumption.

What are the factors affecting a 5G network?

Some of the prominent factors are such as traffic model, SE, topological

distribution, SINR, QoS and latency. To properly examine an energy-optimised network, it is very crucial to select the most suitable EE metric for 5G networks. EE is the ratio of transmitted bits for every joule of energy expended.

What is a 5G cellular network?

5G cellular network operates on a millimetre wave spectrum i.e., between 28GHz-60GHz along with LTE. Certain unlicensed frequencies such as 3.5 GHz, 3.6 GHz and 26 GHz are also being explored for fulfilling demands of high throughput and capacity [4, 5, 6].

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Our dataset includes traffic volume, energy consumption, and base station attributes spanning May 2022, July 2023, and April 2024, covering over 10,000 4G and 5,000 5G base stations. A portion of the ...

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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 ...

Photovoltaic energy storage equipment for communication base stations Solar panels

generate electricity under sunlight, and through charge controllers and inverters, they supply power to ...

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The coverage with and access to the 5G network in Croatia has grown since the summer of 2021, when licenses for the 5G frequency range were issued, to 60-70%, and a new auction is being ...

Mobile communications network operators started the first commercial 5G service in the

Republic of Croatia through DSS technology in October 2020, using radio frequency bands for which ...

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