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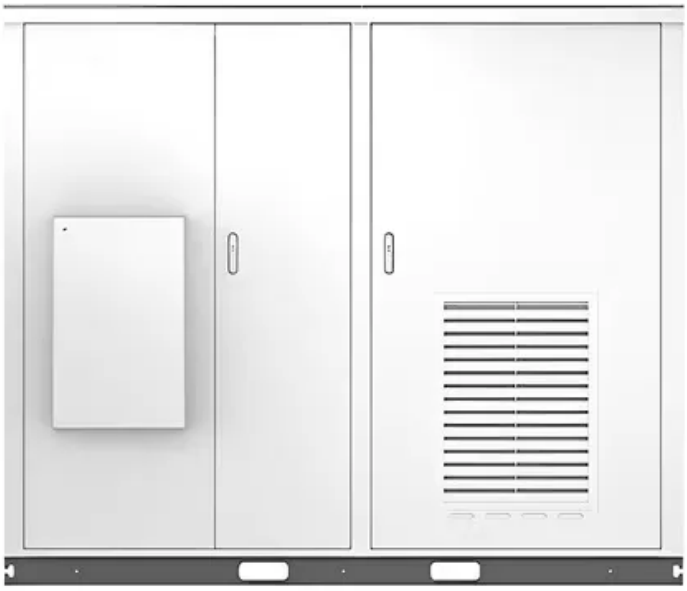
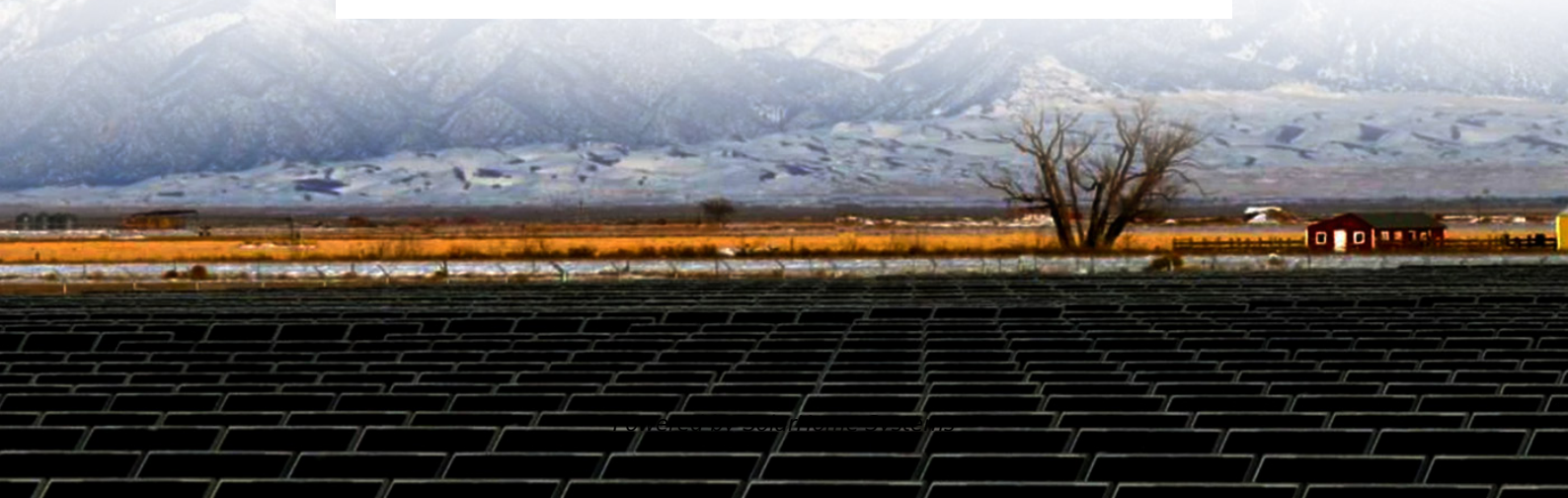
Uzbekistan Communications 5G Base Station AI Energy Saving Project





Overview

How many base stations will be modernized in Uzbekistan?

As part of the project, more than 3,000 existing base stations across Uzbekistan will be modernized using the latest technologies, and more than 2,000 new base stations will be built and put into operation. The process of upgrading base stations to the 5G standard is an important stage of the project.

When will 5G technology be introduced in Uzbek?

Since March 2023, the process of increasing the speed of mobile Internet and introducing 5G technology throughout the country has begun, the head of the Uzbektelecom press service Timur Mamajonov reported.

Does Tashkent have a 5G network?

The first stage of the project provides for full coverage of the city of Tashkent with a 5G network, as well as partial coverage of regional centers.

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.

What is 5G NR & how does it work?

The 5G new radio (NR) standard allows more components to switch off or go to sleep when the base station is in idle mode and requires far fewer transmissions of always-on signalling transmissions. Equipment deep sleep, a basic function that is introduced in the initial stage of the 5G deployment, can be applied to maximize energy saving efficiency.

Can network energy saving technologies mitigate 5G energy consumption?

This Technical Report explores how network energy saving technologies, such as carrier shutdown, channel shutdown, symbol shutdown etc., that have emerged since the 4G era, can be leveraged to mitigate 5G energy consumption.

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Energy Saving Technologies and Best Practices for 5G Radio ...

This article identifies energy-saving potential of the fifth generation (5G) Radio Access Network, and describes main energy-saving principles and technologies. It explores how to use network ...

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Energy Saving Technologies and Best Practices for ...

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Analysis of Intelligent Energy Saving Strategy of 4G/5G Network ...

With the large-scale deployment of 5G network of communication operators, there are more and more 5G devices, and the power consumption of mobile network surges. This ...

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Modelling the 5G Energy Consumption using Real-world ...

This paper proposes a novel 5G base stations energy con-sumption modelling method by learning from a real-world dataset used in the ITU 5G Base Station Energy Consumption

Modelling ...

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Intelligent Energy Saving Solution of 5G Base Station Based on

This paper introduces the basic energy-saving technology of 5G base station, and puts forward the intelligent energy-saving solutions based on artificial intell

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This project addresses the critical challenge of energy consumption in 5G networks, specifically in Base Stations (BSs), which account for over 70% of the total energy usage.

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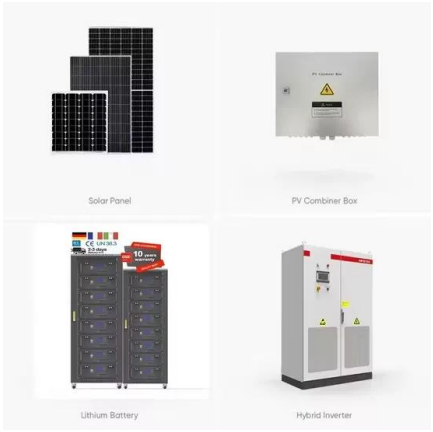

AI-based energy consumption modeling of 5G base stations: an energy

This paper demonstrates the energy consumption modeling of a BS considering its energy-saving sleep modes. We design a Deep Neural Network (DNN) based energy ...

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These tools and metrics are designed to help AI actors develop and use trustworthy AI systems and applications that respect human rights and are fair, transparent, ...

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Evaluation of the power-saving effect of 5G base station based on AI

Abstract The research and application of energy-saving technology for 5G wireless networks are significant for the emission-reduction work of Communication Operators. ...

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Final draft of deliverable D.WG3-02-Smart Energy Saving of ...

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 consumption

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Evaluation of the power-saving effect of 5G base station based ...

In this paper, a framework is developed to study the impact of different power model assumptions on energy saving in a 5G separation architecture comprising high power ...

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Energy efficiency in 5G systems: A systematic literature review

Therefore, a great way to improve Energy Efficiency is by establishing Energy Efficient base stations then switching off as many base stations as you can. It is essential to ...

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O-RAN Network Energy Saving: Cell Switching On/Off ...

Introduction to O-RAN Network Energy Saving The contemporary 5G wireless networks offer high throughputs by increasing the bandwidth, ...

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Green Future Networks

Introduction of 5G brings more energy consumption due to the deployment of additional radios in new frequency layers but on the other hand the 5G technology is more energy efficient than its ...

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5G Network Launched in Uzbekistan - Global Validity

In April 2023, a 5G trial was successfully launched in the capital city of Tashkent, using more than 60 newly installed 5G base stations. At the upcoming ICTWeek exhibition in ...

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Smart Energy-Saving Solutions Based on Artificial ...

Execution Strategy: The network management system receives the integrated energy-saving strategy and executes energy-saving functions on 5G base stations, such as deep sleep, ...

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AI-based energy consumption modeling of 5G base stations: an ...

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The role of AI in energy consumption

How can intelligence make networks more sustainable? Learn how AI can help reduce energy consumption and more.

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Green networks in action: China Mobile

In Shanghai, 5G-A networks powered by AI-driven energy management and new MetaAAU antennas are cutting energy consumption by 30-35% while enhancing mobile network ...

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In this paper, a framework is developed to study the impact of different power model assumptions on energy saving in a 5G separation architecture comprising high power ...

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Telecom Station Power System Upgrade Project in Uzbekistan

In recent years, 5G coverage has been expanding in major cities and tourist centers across Uzbekistan. In response, the client (a telecom operator in Uzbekistan) has been ...

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Machine Learning and Analytical Power Consumption ...

Abstract--The energy consumption of the fifth generation (5G) of mobile networks is one of the major concerns of the telecom industry. However, there is not currently an accurate and ...

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Uzbekistan introducing 5G technology

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