

Will 5G be a catalyst for the smart grid in Portugal?

With the aim of leading the energy transition, E-REDES has adopted 5G as an important catalyst for the smart grid in Portugal, ensuring that E-REDES' critical installations have resilient, efficient and secure communications.

What is 5G & why is it important?

automation, health, etc. The main idea behind 5G is to minimize total network energy consumption, despite increased traffic and service expansion due to its use for these verticals and the general increase in data consumption by worldwide users. To fully deploy 5G, a dense infrastructure for base stations and small cells has to be implemented as

What is the energy-saving technology of base stations?

This technical report focuses on energy-saving technology of base stations. Some energy saving technologies since 4G era will be explained in details, while artificial intelligence and big data technology will be introduced in response to the requirement of an intelligent and self-adaptive energy saving solution.

What is the ITU-T Technical Report on 5G base station?

This document contains Version 1.0 of the ITU-T Technical Report on "Smart Energy Saving of 5G Base Station: Based on AI and other emerging technologies to forecast and optimize the management of 5G wireless network energy consumption" approved at the ITU-T Study Group 5 meeting held online, 20th May, 2021. 3.1.

Is a 5G energy saving solution enough?

It also analyses how enhanced technologies like deep sleep, symbol aggregation shutdown etc., have been developing in the 5G era. This report aims to detail these fundamentals. However, it is far away from being enough, a revolutionized energy saving solution should be taken into consideration.

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.

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 ...

A base station control algorithm based on Multi-Agent Proximity Policy Optimization (MAPPO) is designed. In the constructed 5G UDN model, each base station is considered as ...

However, pumped storage power stations and grid-side energy storage facilities, which are flexible peak-shaving resources, have relatively high investment and operation costs. 5G base ...

A survey on these technologies for the 5G Radio Access Network (RAN) can be found in [5]. This survey has been aimed to contribute towards a greener and a sustainable ...

To further explore the energy-saving potential of 5 G base stations, this paper proposes an energy-saving operation model for 5 G base stations that incorporates communication caching ...

A dynamic capacity leasing model of shared energy storage system is proposed with consideration of the power supply and load demand characteristics of large-scale 5G ...

This solution not only focuses on energy saving and consumption reduction but also aims to achieve intelligent and digital management of 5G base stations. This article will delve into the ...

Execution Strategy: The integrated energy-saving strategy is sent to the network management system to perform the energy-saving operations on 5G base station, such as deep sleep, ...

This paper presents the design and implementation of a cloud-based energy monitoring system specifically developed for 5G base stations, with a focus on optimizing ...

