

Is intelligent energy system a Russian vision of a smart grid?

The chapter presents the following contributions: intelligent energy system as a Russian vision of a smart grid; informational support of an active and adaptive network (IESAAN) control problems; intelligent operation and smart emergency protection; smart grid clusters in Russia. 1.1. Intelligent energy system as Russian vision of smart grid

Can a smart grid be implemented in Russia?

However, in practice, the implementation of a smart grid may not include the use of all technological capabilities and be limited only to a small set of technical solutions that solve the most pressing problems for a grid company. This is the situation that is now more typical for the development of smart grids in Russia.

What is energy management in a smart grid?

Energy management in the Smart Grid (SG) ensures that the stability between supply and demand is maintained, while respecting all system constraints for economical, reliable and safe operation of the electrical system. It also includes optimization, which ensures a reduction in the cost of power generation.

How a grid organization can improve charging infrastructure in Russia?

Considering that grid organizations in the Russian Federation are the main initiators of the development of charging infrastructure, they can get an additional economic effect by increasing the volume of transmitted power.

What is the Unified Energy System of Russia?

The unified energy system (UES) of Russia is a power interconnection where seven interconnected power systems (IPSs) are combined by weak ties. Under emergency conditions, the Russian UES is able to disintegrate into autonomously operating self-balanced IPSs without grave consequences.

How many people are familiar with smart grid technology?

But the results of survey in (Salnikova & Ratner, 2019) demonstrate that only 10.6% of respondents are familiar with smart grid technology and only 22% are familiar with smart meters (Fig. 10.12).

An innovative distribution pilot in the Russian city of Ufa is proving that modern smart grid technologies are suitable for Russian city networks. The pilot is jointly headed by the Russian Joint Stock Company (JSC) and Bashkirian Power Grid company (BPGC) according to ...

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This chapter analyzes what the prospects for these technologies in the Russian market are. Can we expect that electric grids in Russia in the next decade are to become grids of a new technological paradigm with qualitatively new characteristics of reliability, efficiency, availability, manageability, and customer focus?

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However, large-scale innovative projects started in Russia by grid companies for the implementation of individual elements of the smart grid technology, are still managed without taking into account international experience of interaction with end users, which creates a risk of creating a gap between consumer expectations and real results from ...

Smart Grid applications, such as energy feedback systems, load shifting for smart homes, and smart charging of electric vehicles provide new possibilities to support the incorporation of...

Super-Efficient Equipment and Appliance Deployment (SEAD) Push the use of energy efficient equipment everywhere; Hydrogen Advance the deployment of clean hydrogen across the economy; ISGAN - International Smart Grid Action Network Accelerate the global deployment of smart grids; Clean Solutions. Clean Energy Solutions Center (CESC) Clean ...

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Smart Grids optimize the production and distribution of energy in utility systems through advanced metering (smart meters) and automated Big Data Research Topic through ubiquitous computing (UC) and the Internet of Things (IoT) and their analytics by artificial intelligence (AI) (Qin et al., 2022).

In recent years, Russian power grid companies have significantly intensified their planning and implementing innovative projects to introduce various elements of smart grid technology. The global experience shows that the best potential outcome from smart grid technologies largely relies on the customers' readiness and adoption.

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