

Monitoring and controlling energy use is critical for efficient power system management, particularly in smart grids. The internet of things (IoT) has compelled the development of intelligent ...

Latvia's AST secures EUR73m for grid synchronisation and modernisation. Yusuf Latief Oct 18, 2024. ... EirGrid has awarded four contracts for synchronous condensers to provide low carbon inertia to the power grid. Google Cloud partners up on a 1GW AI-powered virtual power plant in Texas. Nov 11, 2024 ... smart grid and smart energy markets ...

Paper gives an overview of the smart grids definitions and smart meter cost benefit analysis in Latvia. Electrical power consumption metering is topical since development of distribution grid.

1.1 Emerging smart grids. A smart grid represents an improved electrical grid system employing digital communication technology to oversee, assess, manage, and convey information throughout the supply chain from utility providers to consumers in a manner that is more efficient, dependable, and environmentally sustainable [] integrates modern information ...

What is a Smart Grid? A smart grid is a digitally enabled electrical grid that collects, distributes and works on the information about the behaviour of all suppliers and consumers in order to improve the efficiency, reliability and sustainability of electricity service.. Smart Grid = Information Technology + Electrical Grid. The smart grid uses a two-way digital ...

In this article the authors explore the relationship development between them and the feasibility of smart grids" and other new tools and technologies" popularization in the context of the Latvian ...

Smart grids 07 Sep 2022 by SmartCitiesWorld news team. Latvia joins Estonia and Lithuania as the latest user of the Plexos simulation modelling software, which will help the country manage changing energy priorities and build more energy security. ... Arnis Daugulis, a board member responsible for the power system development in Latvia, added ...

Leal-Arcas, Rafael; Santos, Filipa; and Papadea, Danai (2020) "Energy, Electricity and Smart Grids in Latvia and Portugal - Developments and Concerns," Kentucky Journal of Equine, ...

Why smart power grids are creating a bigger cyber security risk . Cyber security challenges in smart grids. Because the smart electrical grid is predicated on online communications, it opens up new vulnerabilities to cyber-attacks - in addition to any physical threats the grid already faces. This problem is exacerbated by the sheer size of a ...

Smart power grids often coordinate a distributed network of renewable energy sources (such as solar panels or wind turbines) and integrate them with conventional power plants (like coal, gas or nuclear). This integration improves the infrastructure's resilience and ensures that local energy production is employed efficiently with minimal ...

Smart grids represent a significant leap from traditional power grids, thanks to their ability to integrate cutting-edge technology and sophisticated systems. Smart grids use IoT sensors and smart meters to constantly monitor energy flows, enabling faster response to outages and inefficiencies by making energy management more precise.

The rise in power demand and the growth of renewable energy sources call for rapid grid transformation, enhanced energy storage capacity, and the integration of advanced technologies for effective smart grid management. As physical grids become less centralized and comprise multiple power sources, flexibility and visibility are critical.

The smart grid is estimated to have reduced power outages by an average of 60%, saving the city about 60 million dollars annually. It has also reduced the need for "truck rolls" to scout and troubleshoot faults, resulting in an estimated reduction of 630,000 truck driving miles, and 4.7 million pounds of carbon emissions. ...

The Smart Grid Index (SGI) is a simple and quantifiable framework that measures smartness of power grids globally, in seven key dimensions. The framework assesses proxies of each dimension using publicly available information. The ...

Discover the critical role power grids play in energy security and learn how the planned synchronisation of the Baltics with the European grid in 2025 will revolutionize the energy landscape. Engage with experts, government officials, and innovators as they discuss the future of smart energy in the Baltics.

Smart grids provide more reliable power, improving the overall energy service. Prosumers, using smart meters and communication systems, now engage in power trading, capitalizing on green energy production. This accelerates return on investment and offers profit potential within regulatory guidelines. Demand response programs further showcase ...

This article by Rafael Leal-Arcas, Filipa Santos and Danai Papadea explores the electricity market of Latvia and Portugal, taking into account the promising policies introduced by the EU with the ...

The smart grid also enables two-way power flow, and enhanced metering infrastructure capable of self-healing, resilient to attacks, and can forecast future uncertainties. This paper surveys various smart grid frameworks, social, economic, and environmental impacts, energy trading, and integration of renewable energy sources over the years 2015 ...

Estonian grid system operator Elering and Latvia's utility AST have launched a new electricity connection between their countries. The EUR172 million (\$202.1 million) project is the third electricity connector between the two countries and comprises more than 360km of powerlines, 972 pylons, and has a total capacity of 600MW.

I'm one of the founders (in 2015) of National Technology Platform - Smart Grids Latvia; member of the Baltic Association of Electric Power System Researchers; since 2007 I'm an expert of the Latvian Council of Science in Energy field; active ETIP-SNET WG5 and European Energy Research Alliance Joint Programme on Smart Grids member.

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Towards a self-healing, fully automated grid. Smart and embedded systems that combine distribution management systems, advanced metering infrastructure and data from substation gateways to shape the grid similar to the internet, with the ability to self-diagnosis and self-healing - that's the vision of many in the smart grid industry.

The book brings together common themes beginning with Smart Grids and the characteristics of power plants based on renewable energy with highly efficient generation principles and storage capabilities. It covers the advanced technologies applied today in the transmission and distribution networks and innovative solutions for maintaining today ...

America's economy, national security and even the health and safety of our citizens depend on the reliable delivery of electricity. The U.S. electric grid is an engineering marvel with more than 9,200 electric generating units having ...

Smart Grid Research Centre . The Latvian National Smart Grid Platform was founded at the beginning of 2015 on the basis of the Smart Grid Research Center (SGRC), taking into account the achievements and competence of the IPE scientists in the energy sector as well as the support of the Ministry of Economics of the Republic of Latvia and the Latvian Power ...

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