

Digital Power Grid and Energy Internet



Overview

IRENA identifies five key areas in which digital technologies can transform power systems: monitoring through smart sensors and metres; AI-enhanced forecasting for demand and renewable generation; operational optimization to reduce losses and congestion; end-use automation for. IRENA identifies five key areas in which digital technologies can transform power systems: monitoring through smart sensors and metres; AI-enhanced forecasting for demand and renewable generation; operational optimization to reduce losses and congestion; end-use automation for. IRENA (2026), Digitalisation and AI for transforming power systems: Case studies from IRENA Innovation Week 2025, International Renewable Energy Agency, Abu Dhabi. This report presents successful examples of solutions supporting renewable energy integration, grid reliability and system flexibility. With many countries recognizing digitalization as a strategic. FIDE, or Foundation for Interoperability in Digital Economy (fide. FIDE achieves this by promoting innovation and co-creation among. Imagine a city where every rooftop generates electricity, every battery communicates seamlessly with the grid, and algorithms make split-second decisions on how energy is distributed most efficiently. A system-wide approach, supported by EU.



Article Content

Digitalisation of the energy systems

It aims to accelerate the rollout of digital solutions, including European sovereign AI solutions, in areas that are important for the decarbonisation

Top Tech News Today, July 1, 2026

It's Wednesday, July 1, 2026, and here are the top tech stories making waves today, from AI and startups to regulation and Big Tech. The fight for tech dominance is no longer confined to apps,

Full article: [Beyond the grid: a decade of intelligence ...](#)

The rapid digitalization of power systems has transformed smart grids into complex cyber-physical energy networks driven by intelligence, interoperability, and innovation.

Digital Energy Grid

Together, we can build a Digital Energy Grid that not only addresses the challenges of today but also lays the foundation for a sustainable, resilient, and inclusive energy future.

Digital energy grids of the future

We show how digital technologies are being systematically integrated into the energy industry, smart cities, and industry to create a system

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Siemens: A global technology leader driving innovation in industry, infrastructure and mobility through digital transformation.

Energy and AI – Analysis

The development and uptake of artificial intelligence (AI) has accelerated in recent years – elevating the question of what widespread

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Fluence is a global market leader in energy storage products and services, and cloud-based software for renewables and storage assets.

Digitalisation

Advances in digital technologies and services, declining costs and ubiquitous connectivity have accelerated the digital transformation of energy in recent

Digitalisation and AI for transforming power systems: Case studies

Drawing on insights from IRENA Innovation Week 2025, the report examines digital solutions for grid operation and distributed energy resource management. The case studies cover dynamic congestion

Transforming the electrical grid: the role of AI in ...

The review also explores the emerging technologies poised to redefine the future grid, including Digital Twin (DT) models, the Internet of Energy (IoE), and decentralized energy management systems.

Insights | Siemens

Explore how we're bringing AI to the real world through digital twins, autonomous infrastructure and software-defined automation.

Data centre electricity use surged in 2025, even with

Constrained by slow grid connections, data centre developers are also advancing a large number of projects with onsite natural gas-based power

ITPro Today, Network Computing, IoT World Today combine

ITPro Today, Network Computing and IoT World Today have combined with TechTarget . The page you are looking for may no longer exist.

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Impacts of digitalization on smart grids, renewable energy, and

Digitalization is a significant trend that transforms societal, economic, and environmental processes globally. This shift moves us from traditional power grids to decentralized, intelligent

AI to drive 165% increase in data center power demand

Goldman Sachs Research forecasts global power demand from data centers will increase 50% by 2027 and by as much as 165% by the end of the

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Latest Press Releases

TAMPA, Fla., July 8, 2026 /PRNewswire/ -- Verdantas, a leader in digitally enabled technical consulting for the environment, water, and energy transition markets, today announced its acquisition of

Key technologies and applications of collaboration between digital ...

Thus, the nature of the collaborative development of the digital power grid and the IoT is demonstrated from the perspective of data processing in power IoT and application requirements in

Digital power systems "essential" - and more energy stories

Top energy news: Digital power system transformation "essential"; IEA's World Energy Outlook 2025; batteries "crucial" to lives and economies.

Contact Us

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