Energy Internet Security Issues

Overview

Recent cyberattacks in the electricity sector have disabled remote controls for wind farms, disrupted prepaid meters due to unavailable IT systems, and led to recurrent data breaches involving client names, addresses, bank account information and phone numbers. Germany and Greece lead individual countries in terms of exposure, with Italy following closely behind, representing approximately 6% of the total vulnerable devices worldwide. Forescout analysts identified these internet-exposed solar power devices using the Shodan search engine on May 9, 2025. In this blog, experts from IBM and Palo Alto Networks come together to explore five of the sector's most pressing security challenges, and how to address them. Let's look at each of these in turn. How Can You Stay Compliant Without Slowing Down Business?

Michael Woodbridge, Associate Partner, IBM. Cyberattacks are on the increase in the electricity sector, yet IEA analysis indicates that utilities face serious difficulties in finding and retaining the skilled professionals needed to defend themselves. As with most industries, utilities increasingly use digital technologies to better manage. The Internet of Things (IoT) has profoundly transformed industries, with one of its most impactful applications being in the Internet of Energy (IoE). The IoE represents a next-generation, intelligent energy network that integrates renewable and nonrenewable energy sources with cutting-edge IoT. The UK and EU are particularly vulnerable due to geopolitical tensions, regulatory changes, and rapid technological advancements. With energy companies central to national security and economic stability, strengthening cybersecurity has evolved from being optional to absolutely essential. This. The International Energy Agency projects that renewable electricity capacity will grow by more than 60% in 2026 (IEA, 2024).

Article Content

Emerging Energy Security Risks in Today''s Context

Emerging energy security risks that accompany the green energy revolution include rare earth mineral shortages and geopolitical instability.

Cybersecurity Challenges in the Energy and Utilities Sector

The energy and utilities sectors must quickly find answers and respond to a vital question – how can we address the emerging cybersecurity challenges

35,000 Solar Power Systems Exposed To Internet Are

A comprehensive cybersecurity investigation has revealed alarming vulnerabilities in the rapidly expanding solar energy infrastructure, with nearly

A survey on internet of energy security: related fields, challenges ...

This survey focuses more on energy-efficient mechanisms to tackle IoT security from the best of knowledge as addressing the security issues and energy impact on energy consumption with

Energy Internet Security Risk Evaluation Index System

As the construction of the Energy Internet has launched into a novel method, the dependence on energy and information networks has been greatly increased. The interaction of

New innovations in cybersecurity are disrupting the

Groundbreaking technologies are driving a seismic shift in cybersecurity, particularly for critical infrastructure and the energy sector. The

Internet of Things and the Increasing Threats to the

While pre-Internet smart devices, such as the first remote meter load management system, date as far back as 1974, the first true definition of the

Growing cyber security threats in the energy sector and

By leveraging AI, staying compliant with regulations, and fostering industry collaboration, businesses can safeguard their operations and ensure

Building Cyber Resilience in the Energy Sector

Explore the importance of cyber resilience in the energy sector, examining threats, & strategies to safeguard critical infrastructure:

Growing cyber security threats in the energy sector and

Energy firms in the UK and EU are increasingly targeted by sophisticated phishing campaigns, malware, and AI-driven attacks. These attacks

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Internet communications tools Document preparation Computing industry Computing standards, RFCs and guidelines Computer crime Language types Security and privacy Computational complexity and

Cyber threats and energy security: Development and analysis of an ...

Driven by technological progress, cyber threats present one of the most prominent security challenges in the modern world. The ongoing transformation of energy sector is creating increasingly

Growing cybersecurity threats in the energy sector and

In 2023 alone, 90% of the world''s largest energy companies suffered cybersecurity breaches either directly or through third parties, with critical

Cybersecurity Challenges in the Renewable Energy Sector

Explore cybersecurity challenges and solutions in the renewable energy sector, including cyber threats, ransomware attacks, ICS security, and IoT

Cyber Security Threats in Energy Sector 2026 Guide

Discover critical cyber security threats in energy sector facing utilities today. Essential 2026 protection strategies and expert insights to safeguard

The energy sector has no time to wait for the next

Explore the growing cyber risks facing the energy sector, from aging infrastructure to ransomware and state-linked attacks.

Cybersecurity – is the power system lagging behind?

Recent cyberattacks in the electricity sector have disabled remote controls for wind farms, disrupted prepaid meters due to unavailable IT systems, and led to recurrent data breaches involving

Resecurity | Cyber Threats Against Energy Sector Surge

Back Cyber Threats Against Energy Sector Surge as Global Tensions Mount Cyber Threat Intelligence 15 Apr 2025 energy, nuclear, cybercrime,

Cyber security and resilience guidelines for the smart energy ...

In the energy operational environment, there are five critical concepts for cyber security that should be understood as these energy businesses struggle to implement the necessary cyber security policies,

Building Cyber Resilience in the Energy Sector

In today''s interconnected world, the energy sector stands as a vital backbone of national and global infrastructures, facilitating everything from lighting our homes to powering industries. However, this

Cybersecurity in Energy Systems

Let''s explore what makes energy systems a target, how cyber threats can cause major problems, and what we can do to keep things secure.

Cybersecurity challenges in IoT-based smart renewable energy

The Internet of Things (IoT) makes it possible to collect data from, and issue commands to, devices via the Internet, eliminating the need for humans in the process while increasing

Why we need to power cyber resilience in the energy

Collaboration across energy ecosystems and supply chains is key to improving the sector''s cyber resilience as power demand grows and threats

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Therefore, this model revolves around a highly complex access environment that is flexible and integrates distributed energy sources that communicate with other power grids while monitoring

Cybersecurity Issues and Challenges in Internet of Energy (IoE)

This Special Issue (SI) addresses the pressing need to develop scalable, adaptive, and innovative cybersecurity solutions for IoE. Given the critical role of energy systems in modern infrastructure,

Best Practices & Case Studies in Energy Sector

Explore energy sector cybersecurity with essential guidelines, real case studies, top practices, key risks, and expert ideas for stronger protection.

Cyber Security Threats in Energy Sector

Explore the major Cyber Security Threats in Energy Sector. Learn about the risks, recent incidents, and effective solutions to protect critical

Securing the Power Grid: Cybersecurity Strategies for

Explore the importance of cybersecurity in smart grids and substations to safeguard our energy systems from rising threats.

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Index Terms A survey on internet of energy security: related fields, challenges, threats and emerging technologies Security and privacy Intrusion/anomaly detection and malware mitigation

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