CYBERSECURITY IN POWER UTILITY SECTOR

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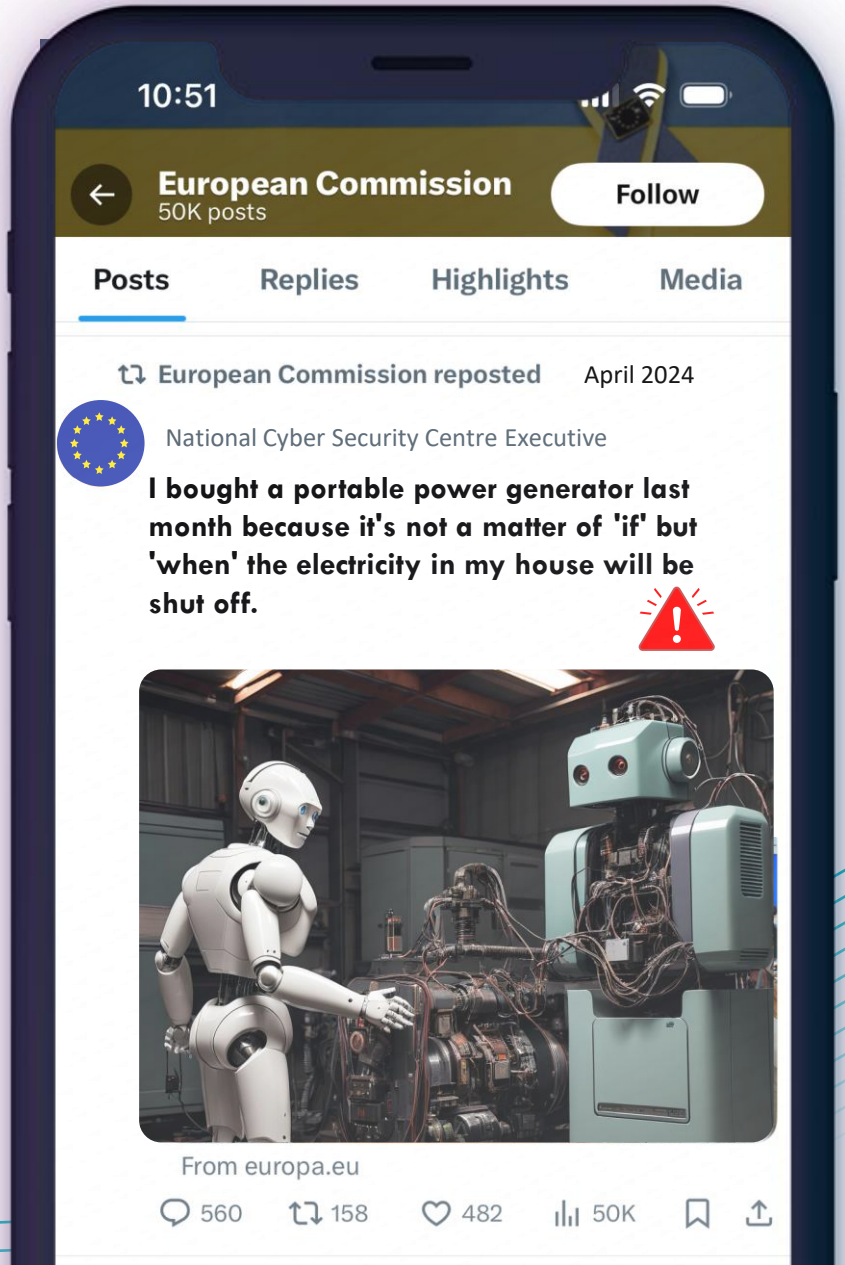

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GROWING ENERGY UTILITY **ECOSYSTEM BRINGS NEW** CYBER CHALLENGES

Key trends

Renewable Energy Integration / optimization of production mix to reduce dependence on fossil fuels, lower carbon emissions, and achieve sustainability goals.

Grid Modernization aim to upgrade aging infrastructure and incorporate Smart grid digital technologies, including advanced metering infrastructure (AMI), grid automation, and predictive analytics, enable better monitoring, control, and optimization of energy flow.

Decentralization and Distributed Generation There is a shift towards decentralized power generation models, characterized by smaller-scale distributed energy resources, microgrids, and energy storage systems.

Electrification of Transportation including electric vehicles (EVs) and **charging infrastructure**, is driving **increased electricity demand**. Utilities are adapting to accommodate this trend by investing in EV charging infrastructure, managing charging demand, and exploring vehicle-to-grid (V2G) technology to leverage EV batteries for grid services.

Energy Storage Solutions Energy storage technologies, such as batteries, pumped hydro storage, and thermal storage, play a crucial role in balancing supply and demand

Digitalization and Data Analytics The integration of digital technologies, data analytics, and artificial intelligence (AI) is transforming power generation and transmission operations. Utilities leverage real-time data, predictive analytics, and machine learning algorithms to optimize asset performance, enhance grid reliability, and improve outage management.

Energy Efficiency and Demand-Side Management, programs are essential for optimizing energy usage, reducing waste, and minimizing environmental impact. Utilities are promoting energy-efficient technologies, offering incentives for energy conservation, and implementing demand response programs to balance energy demand and supply.

Threats

Ransomware and Extortion Attacks
Ransomware attacks targeting decentralized energy systems can encrypt critical data or control systems, rendering them inaccessible until a ransom is paid. Such attacks can paralyze energy operations, disrupt services to consumers, and incur significant financial losses.

Cyberattacks on DER Infrastructure, targeting the control systems, inverters, sensors, and communication networks.

Grid Disruption and Manipulation can lead to grid instability, voltage fluctuations, frequency deviations, and even cascading outages. Attackers may exploit vulnerabilities to inject false data or commands, disrupting normal grid operations.

Supply Chain Vulnerabilities:
Decentralized energy networks rely on a complex supply chain for equipment, software, and communication devices. Supply chain attacks, such as compromised firmware or counterfeit components, pose risks of backdoors, malware injection, or hardware tampering, compromising the integrity of DER installations.

Data Breaches and Privacy Concerns Decentralized energy networks generate vast amounts of data related to energy consumption, production, and grid performance.

Unauthorized Access and Control Weak authentication mechanisms, default passwords, and insecure communication protocols

SELECTED **UPCOMING CHALLENGES IN ENERGY INDUSTRY**

multivendor asset strategies / not same vulnerabilities

supply chain risks / NIS2 compliance

integrated IT / OT SOC

customer resilience / security beyond connection point

fast evolution of assets in OT space (smart meters, connected cars)

segmentation of distribution network

next generation smarter meter design (country wide)

centralized nation-wide SOC

ABOUT **ESET CORPORATE SOLUTIONS**

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MEET **ESET CORPORATE SOLUTIONS**

Safeguarding Progress: 35+ Years Of Expertise, Insights from Billions of Devices and Touch points, Today and Tomorrow

ESET Corporate Solutions specialises in empowering large corporations and governments to bolster their cyber-resilience. **We design, deploy, and even operate** bespoke security solutions based on over 35 years of experience and leverage the best global Threat Intelligence, while safeguarding more than a billion devices worldwide.

The largest global **EU-owned & based** company with over **30 years of experience** in the cybersecurity industry

1 billion protected devices / security **solutions are based** on **real threats** that pose risk to organization

Long-term and **consistent recognition by leading analysts** for innovative and effective cybersecurity solutions

We work with 4 out of **magnificent** seven multinational enterprises

High detection rates, low false positive and **low performance impact**

One of the **strongest** cyber threat **research teams in the world**

Social responsibility built on **strong values** and principled position against all forms of war, cyber or traditional

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Thank you!

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