Navigating the Cyber & Digital Journey Ahead for Nordic Data Centers

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What does Olympian athletes have in common with Norway as a datacenter Powerhouse?

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We are…

Cool, Calm, & Collected

Most of the time

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We are…

Cool, Calm, & Collected

Ideal climate conditions

Political Stability

Energy resources

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Calm,
& Collected

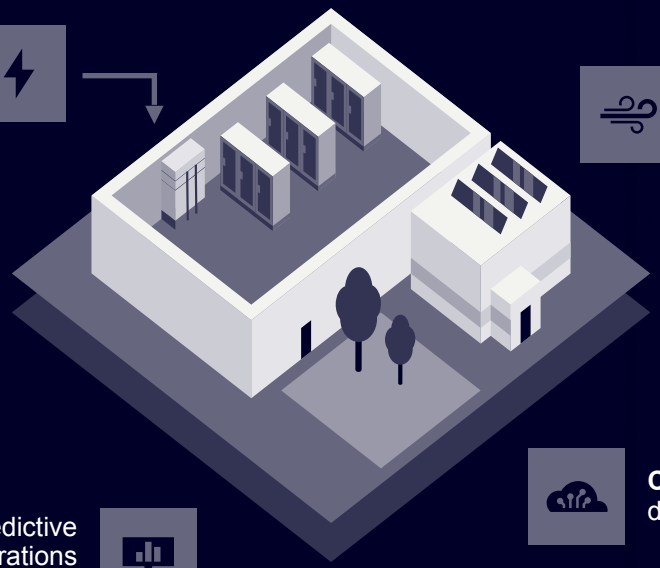
Cool,
Calm,
& Collected

Now

2035

Energy
consumer

Energy
prosumer



Air cooled facilities
Poor heat reuse

Liquid cooled
sustainable
district heating

Grid
participant for
sustainability

Sustainability requirements

Regulatory requirements

Cloud services
dominate

AI services
dominate

Defined and predictive
Operations
procedures

AI-driven operations
for efficiency

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Calm,
& Collected

Cool,
Calm,
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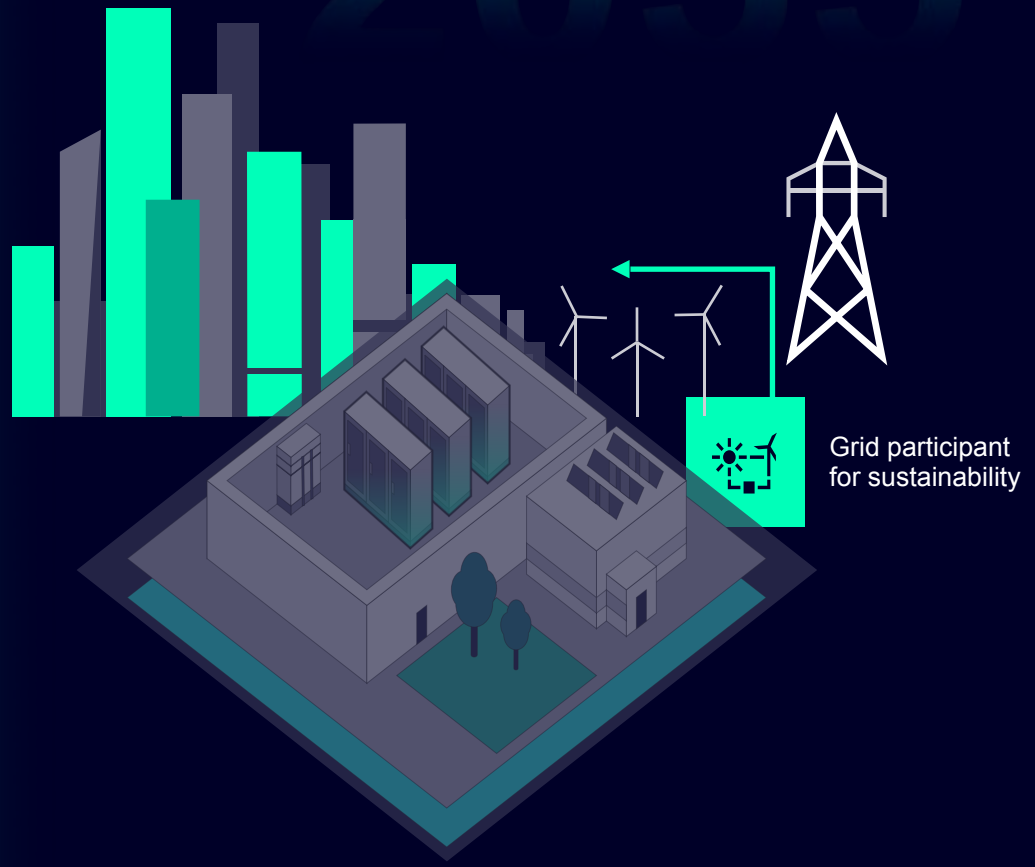
Now

2035

Energy



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Agenda

Cool, Calm, & Collected

Ideal climate conditions

Adapting to the ‘new normal’

Balancing the Grid and Power

…And the way forward

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The world is changing
… and so are we

Sweden & Finland Part of NATO

Cyber Attacks on Swedish critical infrastructure **increased 300%**

Finland reports **increase of cyberespionage from Russia**

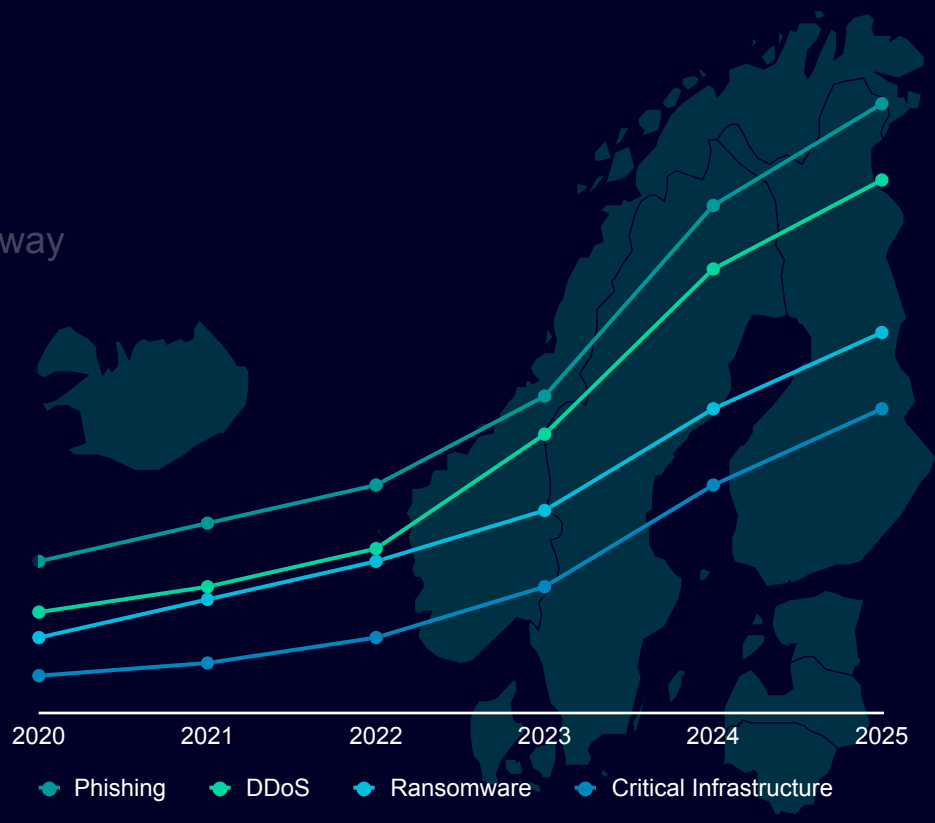
Norway scores last place in Cyber maturity in the Nordics according to TEK Norway

Ally or foe?

Can we trust the Americans the next 3 years?

2025: New laws and regulations NIS2

Building cyber resilience in critical infrastructure and the power grid,
Affecting both Information- and Operation Technoligy



Ov*erview over attacks on Swedish public and private sector pre and post nato

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Cyber Threats in The Power Grid
… and why Norway is at risk

Hackers & hacker groups

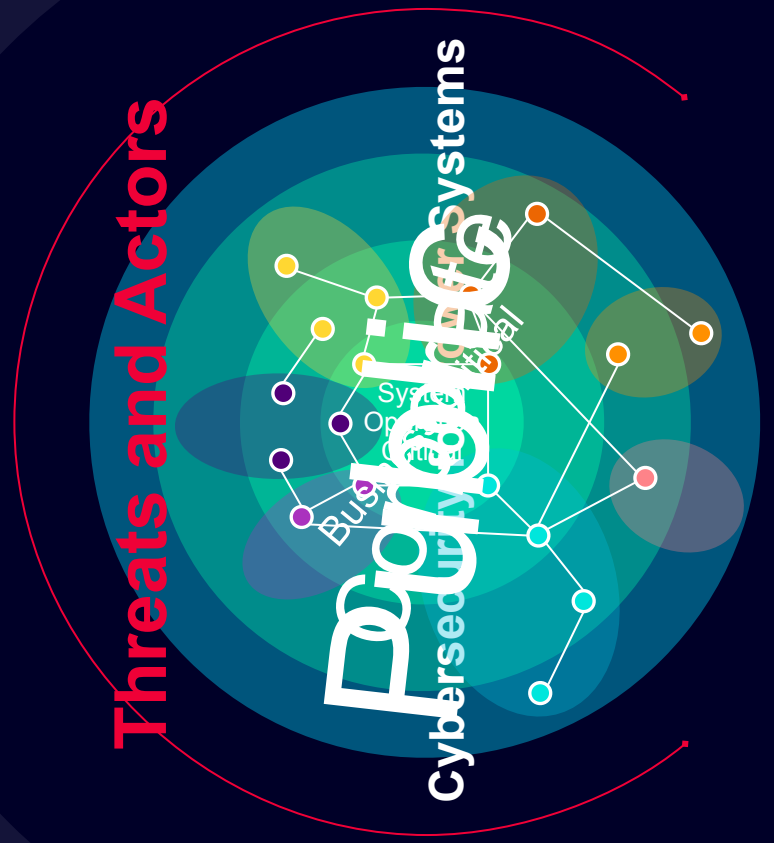
Organized Crime

Activists

Terrorists

(Insider) Employees

Nation state actors



Norway's role as an energy exporter within Europe

Highly digitalized energy system

Remote operations common due to geography

Critical infrastructure is interconnected via OT systems

Increasing geopolitical tensions

Distribution Customer Transmission Operation Generation Market Services

1 IEC 62531-10: Mapping of information security domains to power system domains

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Threat Scenarios Relevant to Norwegian Data centers … to Norway´s Electrical Infrastructure

Manipulation of protection relays, UPS controllers, and switchgear

Risk amplified by remote access

Combined physical + cyber incidents impacting power stability

Attacks via OEM equipment and supply chain

Disruption targeting hydropower-dependent regions

- Loss of redundancy causing data center downtime
- Cascading effects on Statnett's balancing responsibilities
- Impact on energy-intensive industries in connected regions
- Trust and regulatory implications for operators

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Kraftberedskaps-forskriften

NSM

…ov om digital sikkerhet (NIS1)

IEC 62443
ISO 27019

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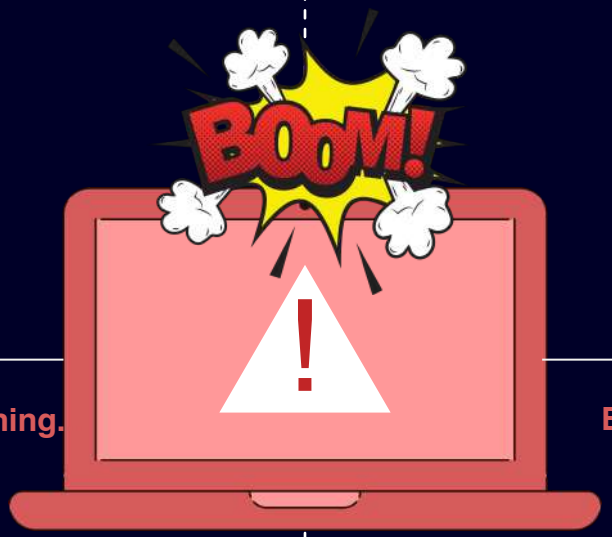
Securing operational technology
Hardening electrical infrastructure



Reduce Risk

Preventing a bad cyber day from happening.

Secure-by-design in hardware and components

Authentication and segmentation for distributed sites

Build response capability

Being ready when a bad cyber day appens...

Firmware and lifecycle management aligned with European practices

Continuous monitoring for abnormal behavior in electrical systems

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Defence-in-Depth for Norwegian Data Centers
To Norways Electrical Infrastructure

Cybersecurity is not only IT but also **OT** in your total infrastructure

Zero Trust approaches for remote connection

Secure vendor access (critical in remote Norwegian locations)

Adoption of IEC 62443 principles for industrial cybersecurity

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Staying Collected.

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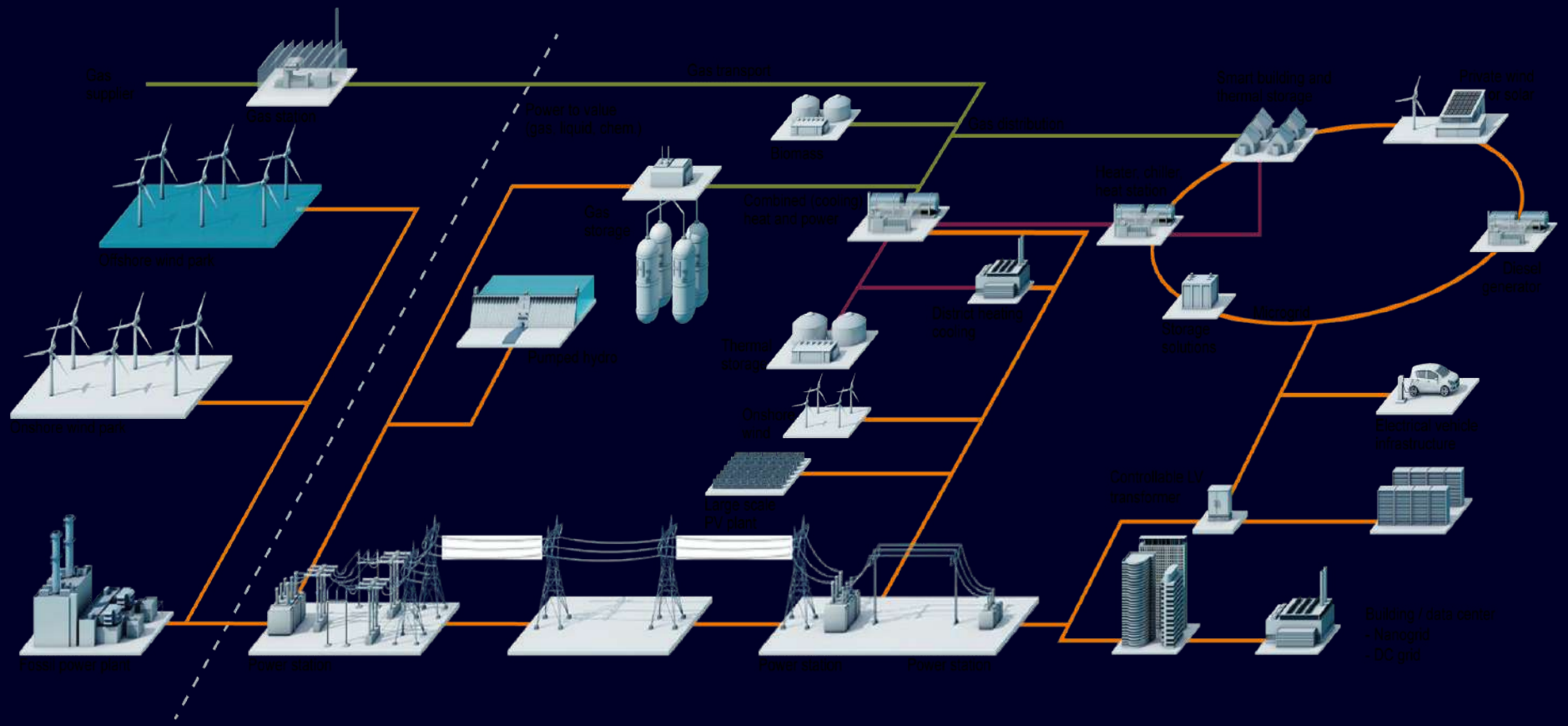
The Power System:
The worlds largest and most complex machine



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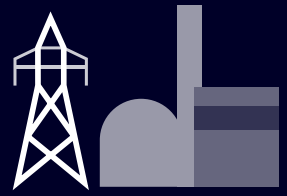
Norway's Energy System
Needs Flexible Consumption

Electricity consumption expected to increase by **40-60%** by 2050*

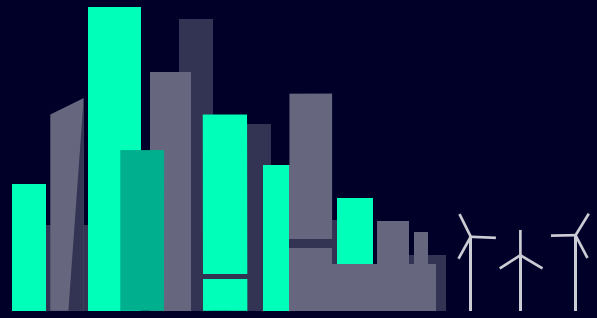
*Source: Statnett

15-25% of new capacity needs by 2040-2050



Energy **consumer**

Energy **prosumer**



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A Snapshot

From energy **consumer** to **prosumer** & smart operations

Power & production in synergy

Learning what and when the flexibility is available

Automation requires measurements

Build for more than one way flow
BESS
Flexibilitymarkets

Virtualization as cost efficient enabler

Reduce CO2 footprint and enable dynamic load mgm

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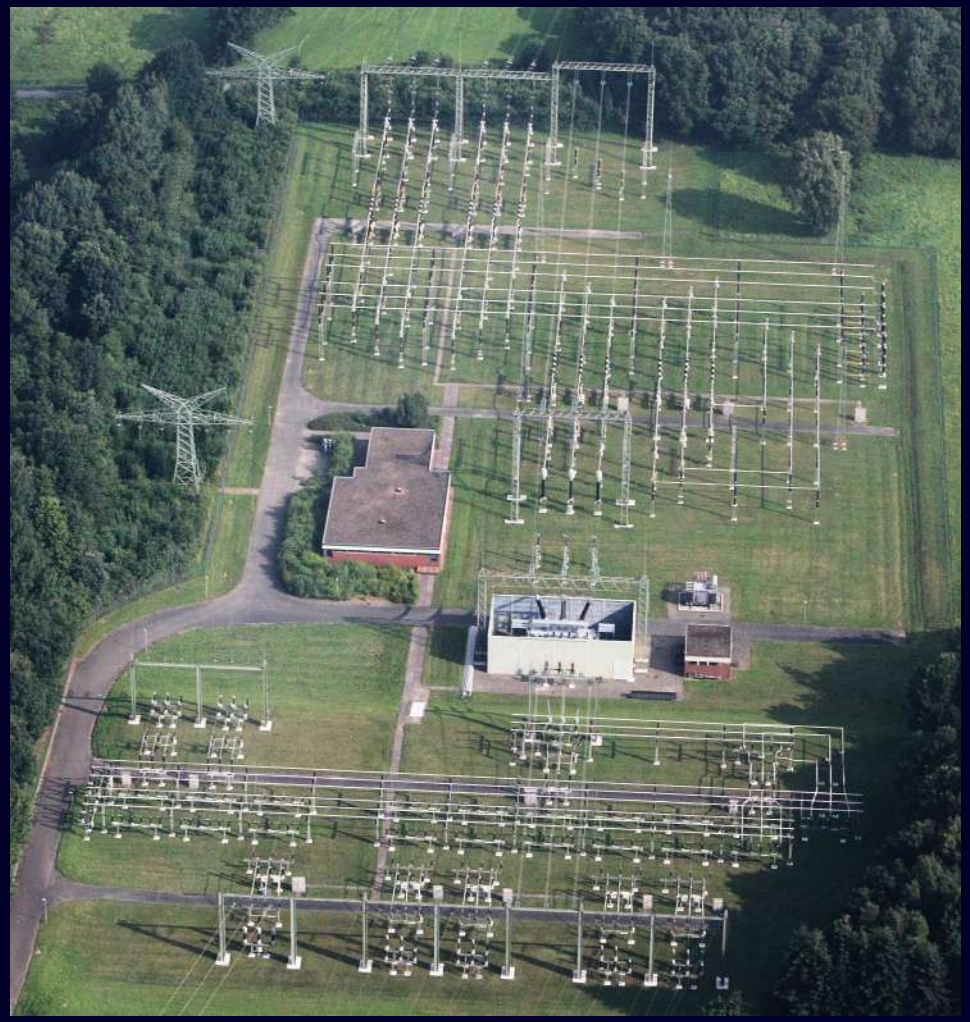
Smart Monitoring
… as the key enabler



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Flexibility Enablers
t**hrough OT and IT integration**

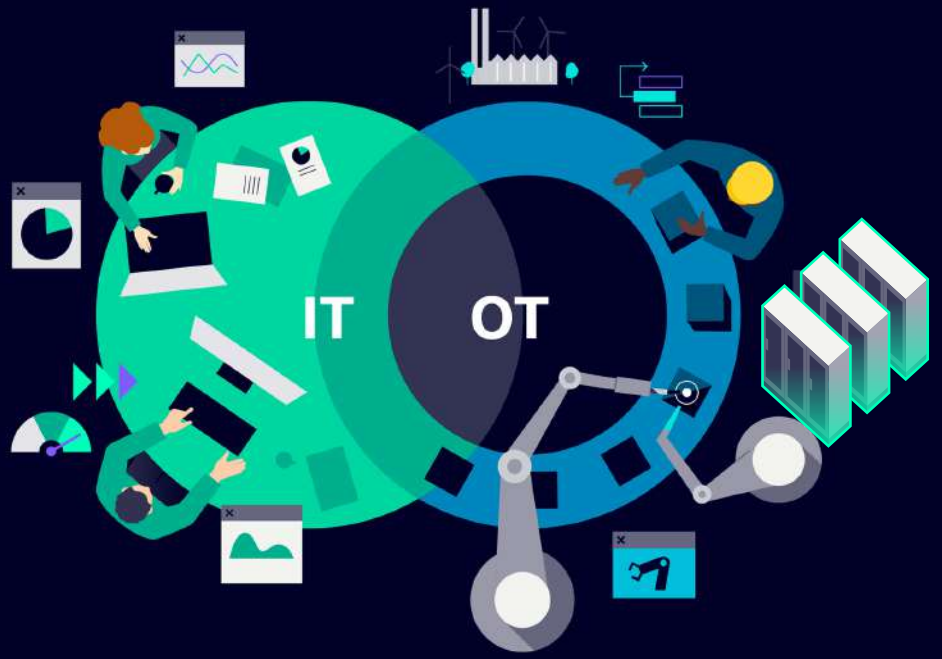
5% of operational grid data is being utilized

< 80% manual grid operations in most datacenters

Real-time visibility of UPS systems, cooling, building, grid and OT status

AI analytics to match cooling to IT loads – align with price fluctuations

Integrate **BMS and EPMS** into a single platform



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Cool, Calm & Collected
Today and in the future

Cybersecurity + Flexibility = National Value

Better protection strengthens national resilience in the grid and beyond
Smarter operations reduce operational risk
Flexibility participation creates financial benefits and improves grid stability

Supply-Chain goes both ways

Set demands on your vendors and ask for guidance
Local engineering presence and field service
Deep expertise in both grid stability and OT cybersecurity

Strategic considerations

Invest in OT security modernization (ahead of full NIS2 enforcement)
Enable real-time monitoring of operational environment
Plan digitalization in parallel with physical infrastructure upgrades

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Webinar April 9, 2026

Becoming the Data-driven Data Center by using **Digital Twins, Connected Insights, and Predictive Operations**

Frida Ahlberg
Digital Enterprise Sales Lead,
Siemens

Jacob Bentzel
Managing Director Edge & IoT,
Techseed

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