

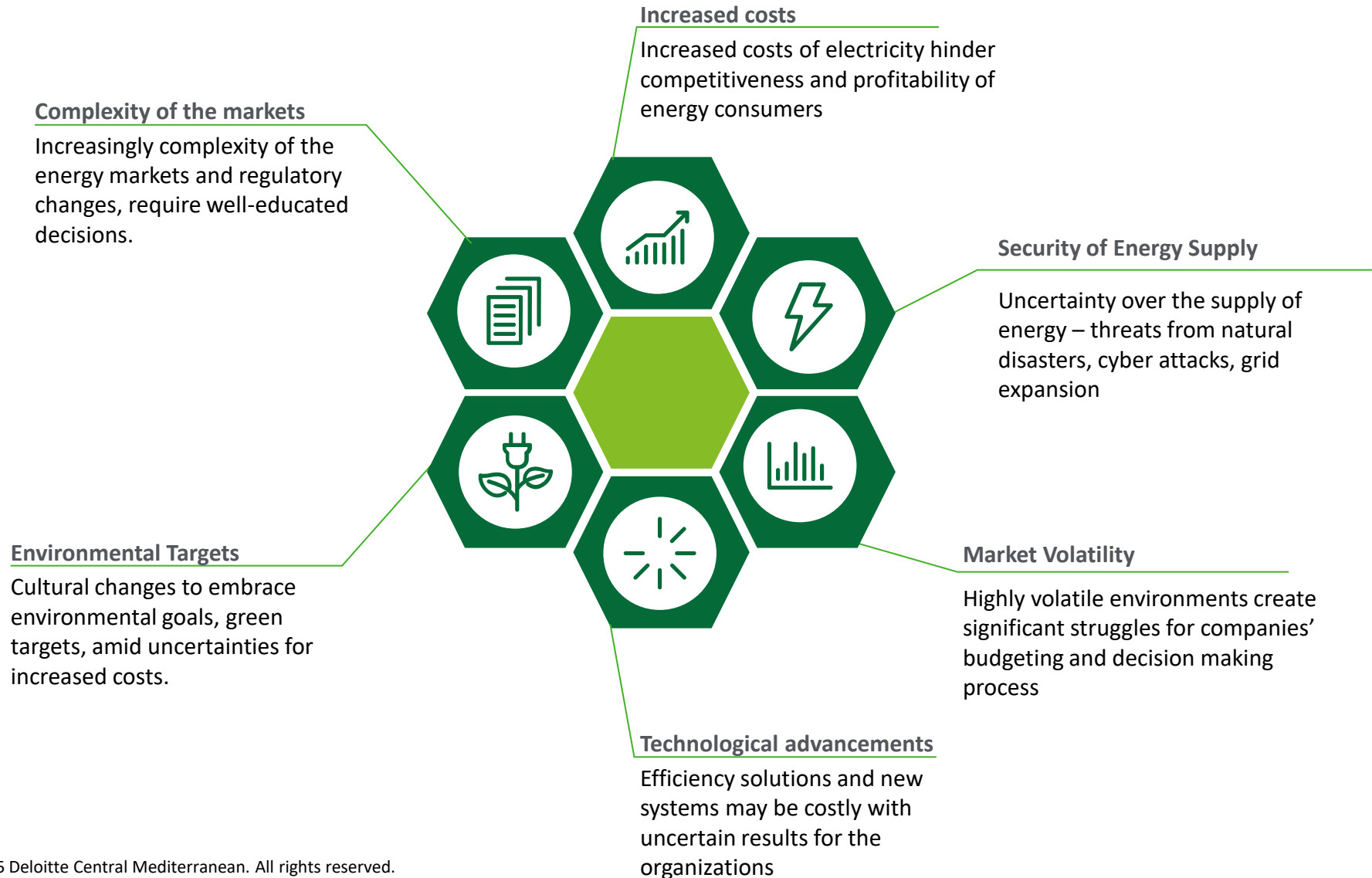
IENE

## “Innovation in Energy” Conference

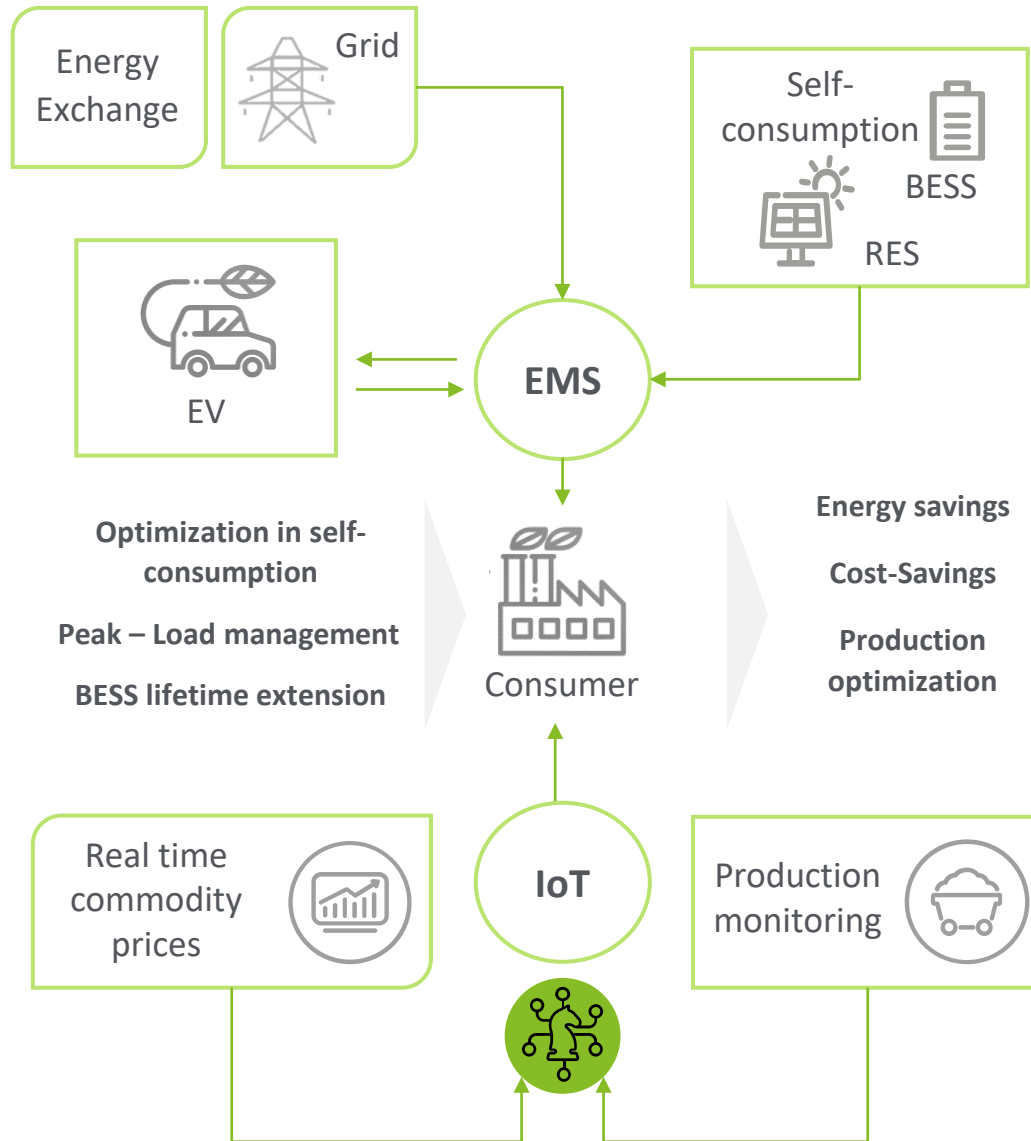
Thursday, May 8, 2025



# Challenges for Energy consumers



# Energy Management Systems, Real time monitoring with IoT & Production Optimization



## Optimization in self-consumption

Optimizing the usage of RES and BESS, based on actual production data – extension of life cycle

## Real time commodity prices

Enabling the production adjustment based on real-time commodity data, achieving cost-savings

## Production optimization

IoT enabling production maximization, using data from real-time commodity prices, EMS and production

## Peak load management

Reducing peaks from production and self-consumption – behavioral analysis, achieving optimal usage of the systems

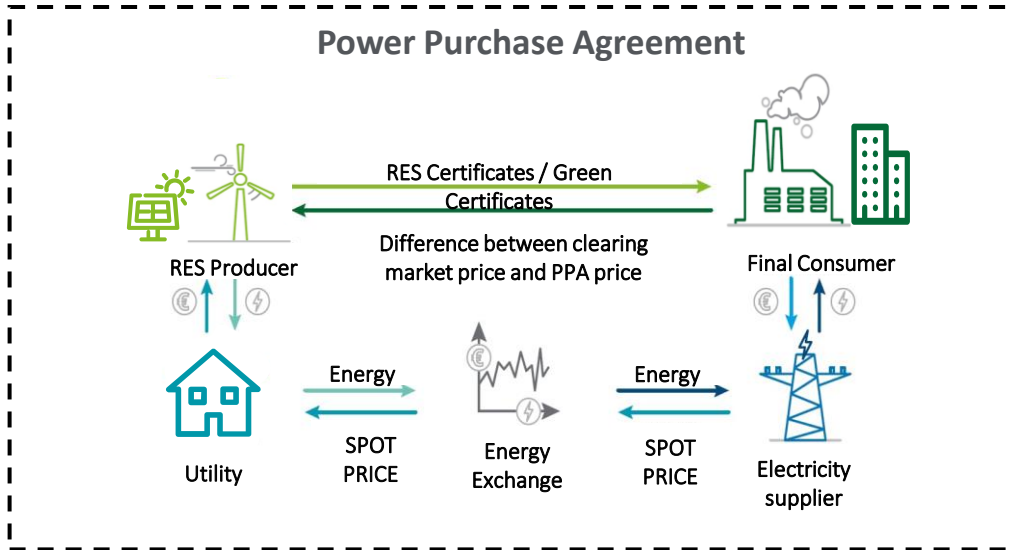
## Energy savings

Energy cost reduction through the optimal utilization of the self-production systems

## Cost savings

Production optimization in alignment with commodity prices, enabling cost-savings throughout the production process

# PPA monitoring



**Hedging against price volatility**

*Safeguarding from price hikes*

**Green sourcing of electricity**

*Achieve environmental goals*

**Benefit from the cheap green energy**

*Potential cost-savings from energy prices*

## Real – time PPA monitoring tool

- Linked with real time consumption / production
- Shaping / profiling
- Commodity / energy prices
- Energy markets monitoring



## PPA monitoring

- Electricity price forecasts
- PPA flows estimations
- Real time valuations
- Scenario testing



# Digital Transformation (Deloitte Global Industry 4.0 Survey)

## Digital priorities of power companies

Select the top three digital priorities for your business over the next three to five years

Implement a holistic digital initiative (from generation to distributed energy management) to drive overall productivity/profitability

56%

Improve the reliability KPIs in my operations via machine data and analytics (including machine learning and AI)

44%

Create a more efficiently run business with the use of data and analytics

36%

Develop an end-customer facing demand response solution to help manage grid fluctuations

35%

Gain competitive ground by being more efficient and opportunistic with the use of data, analytics, and AI

31%

Enable operations staff with data-driven insights for better informed actions across plant/fleet/grid

28%

Leverage cobots and/or robotics to automate tasks, especially ones that pose risk or are repetitive

23%

Implement a DERM capability to better manage the influx of renewable energy on the grid

22%

Create new business models and revenue opportunities leveraging data from every aspect of our business

21%

## Digital technology capabilities that power companies plan to explore

What digital technology capabilities have you or will you be exploring as part of your digital strategy in the next one to two years? (Select all that apply)

Distributed energy resource management (DERM) solution

44%

Analytics, artificial intelligence, and machine learning

42%

Cybersecurity solutions

38%

Mobile-enabled workforce

38%

Cloud computing for cross plant/fleet/grid analytics

35%

A unifying big data platform

33%

Asset performance management (APM) solution

32%

Visualization technologies

32%

Blockchain

27%

Robotics

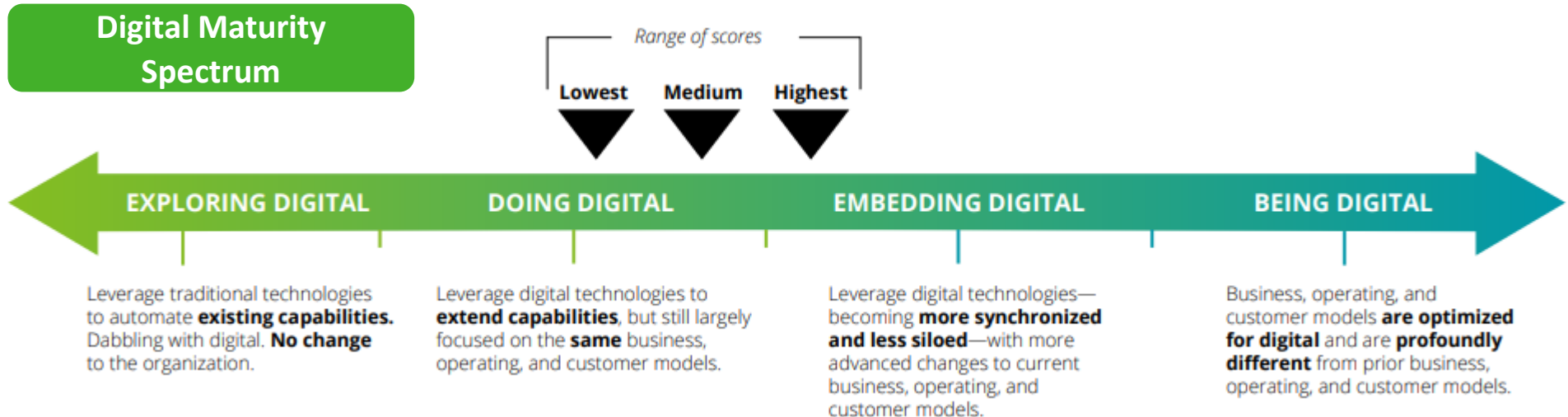
27%

Edge capabilities for on-premise rapid response

22%

# Digital Transformation

Digital transformation is the essential bridge between the business of today and the business of tomorrow. Organizations can uncover and capture the full value of technology and innovation to radically transform their business.



Digital strategy and operating model

Digital culture, talent, and organization

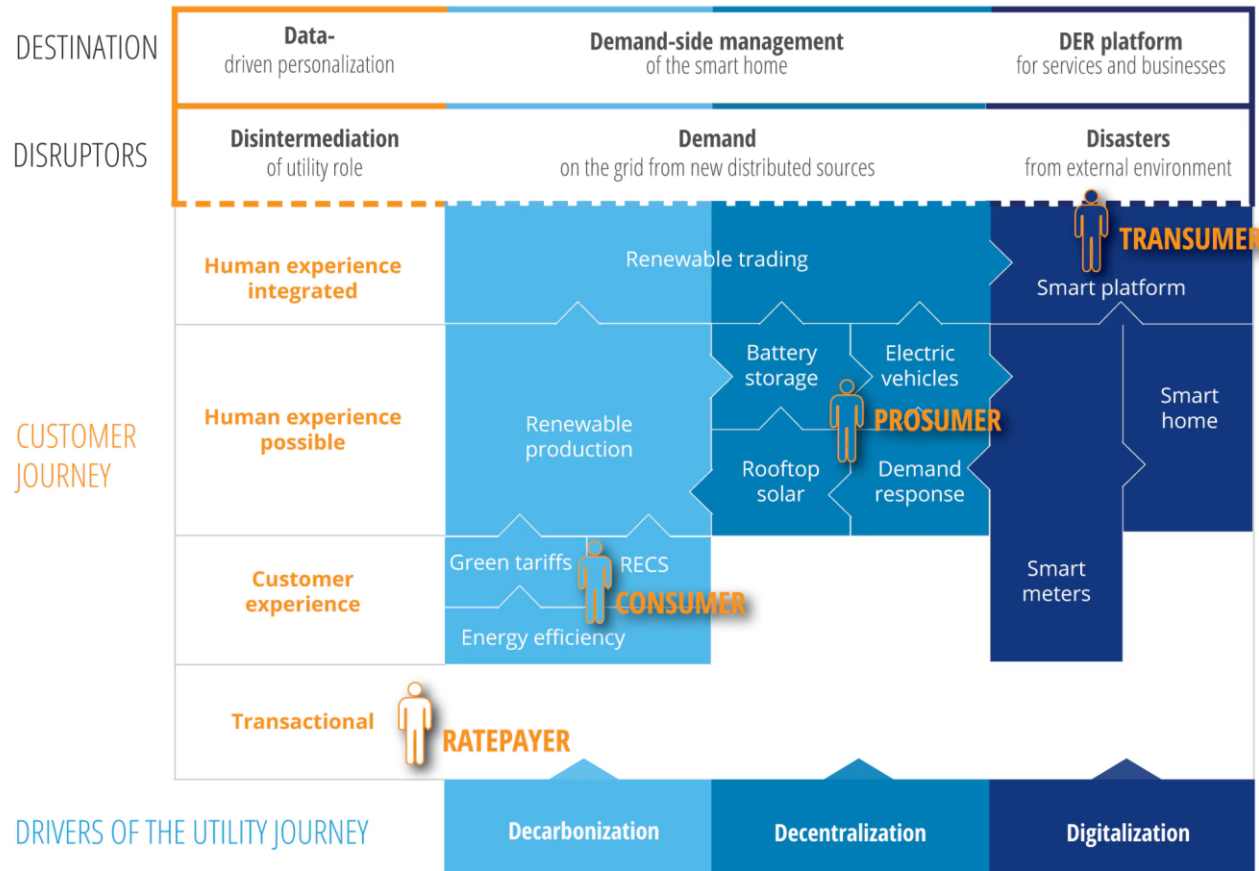
Operations and value chain

Technology, data, and infrastructure

- ✓ New ERP and CRMs Systems with embedded Analytics
- ✓ New Management Reporting with KPIs and dashboards
- ✓ New HR Management Systems and Training platforms
- ✓ New Asset Management & Predictive maintenance systems with SCADA, GIS and Analytics
- ✓ New Real time monitoring platforms with IoT
- ✓ Increase efficiency and reallocation of resources with RPAs Machine Learning
- ✓ Cloud infrastructure and Cyber Security
- ✓ Embrace Gen AI

# Digital Transformation

## The 3D framework



## Customer centric strategies

- Increased **Customer Engagement** through smart meters, sensors and open platforms.
- **Higher retention** of customers
- Increased **customer satisfaction** and **customer empowerment** through new digital solutions, smart appliances and Virtual Assistants.
- **Real time management**, Peer-to-peer transactions, **new revenue streams** (EV charging, solar panels, storage units, etc.).
- Enhance **digital marketing** to attract clients and focus on **E-Commerce & E-bills**



# Cyber security and infrastructure protection

## Cyber breach of infrastructure threats

### Operational Technology

- Loss of control of production line
- Loss of safety systems
- Loss of control sensors etc.

### Third Parties

- Unintentional or accidental breaches
- Abuse or disruption of systems
- Breach of Intellectual Property (IP) etc.

### Industrial IT Risks

- Stop to production line
- Asset damaging
- Delay in deliveries and selling etc.

### Enterprise IT

- Unavailability of data and applications
- Loss of communications
- Data breach etc.

**Business impact** - a compromise of IT and OT assets and systems may result in impacts in the following areas:



**Financial**



**Operational**



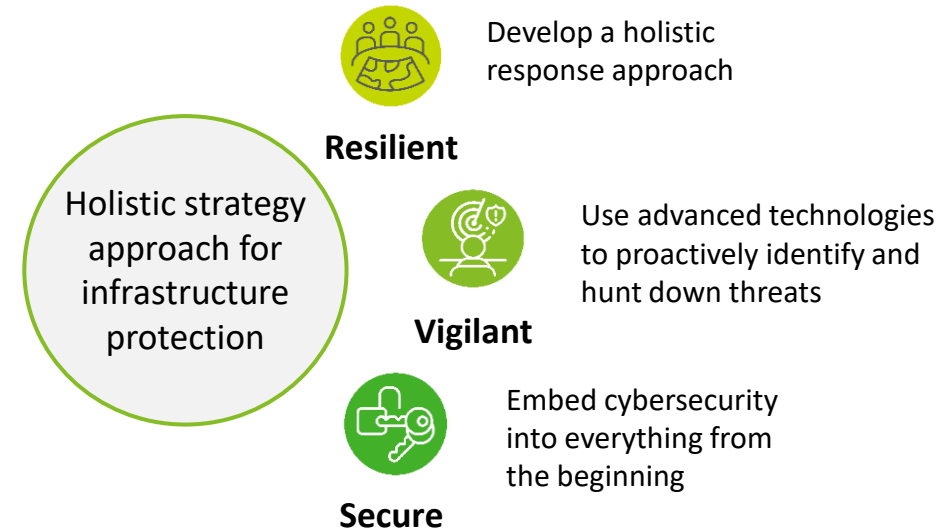
**Reputational**



**Legal & Regulatory**



**Health & Safety**



## Critical Energy infrastructure protection

Critical **energy infrastructure** are **vulnerable at cyber attacks**, threatening security of supply of energy. Unstable geopolitical conditions make highlight the importance of energy infrastructure security.

EU  
Preparedness  
Union Strategy



- Stockpiling of energy equipment
- EU-wide preparedness exercises
- Cooperation with NATO
- Integrated risk and threat assessments





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