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# Fingrid – Critical energy ecosystem facing cyber attacks

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An aerial night view of a city, likely Helsinki, Finland, showing a dense urban landscape with numerous multi-story apartment buildings. The city is illuminated by warm yellow lights from windows and streets, contrasting with the dark, twilight sky. Snow is visible on the rooftops and ground. In the background, a large body of water is visible, and the city lights reflect on its surface. The overall atmosphere is serene and modern.

Finland operates on  
electricity.

Fingrid's main task is  
to ensure that Finland  
receives power  
without disruption  
every moment.

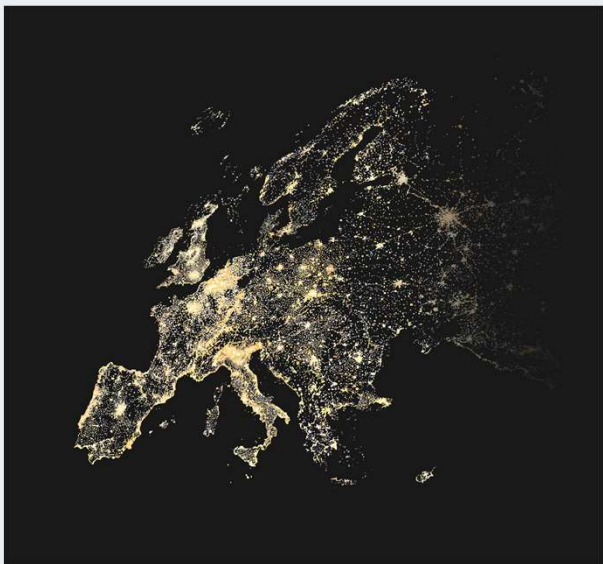
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# Distributed System

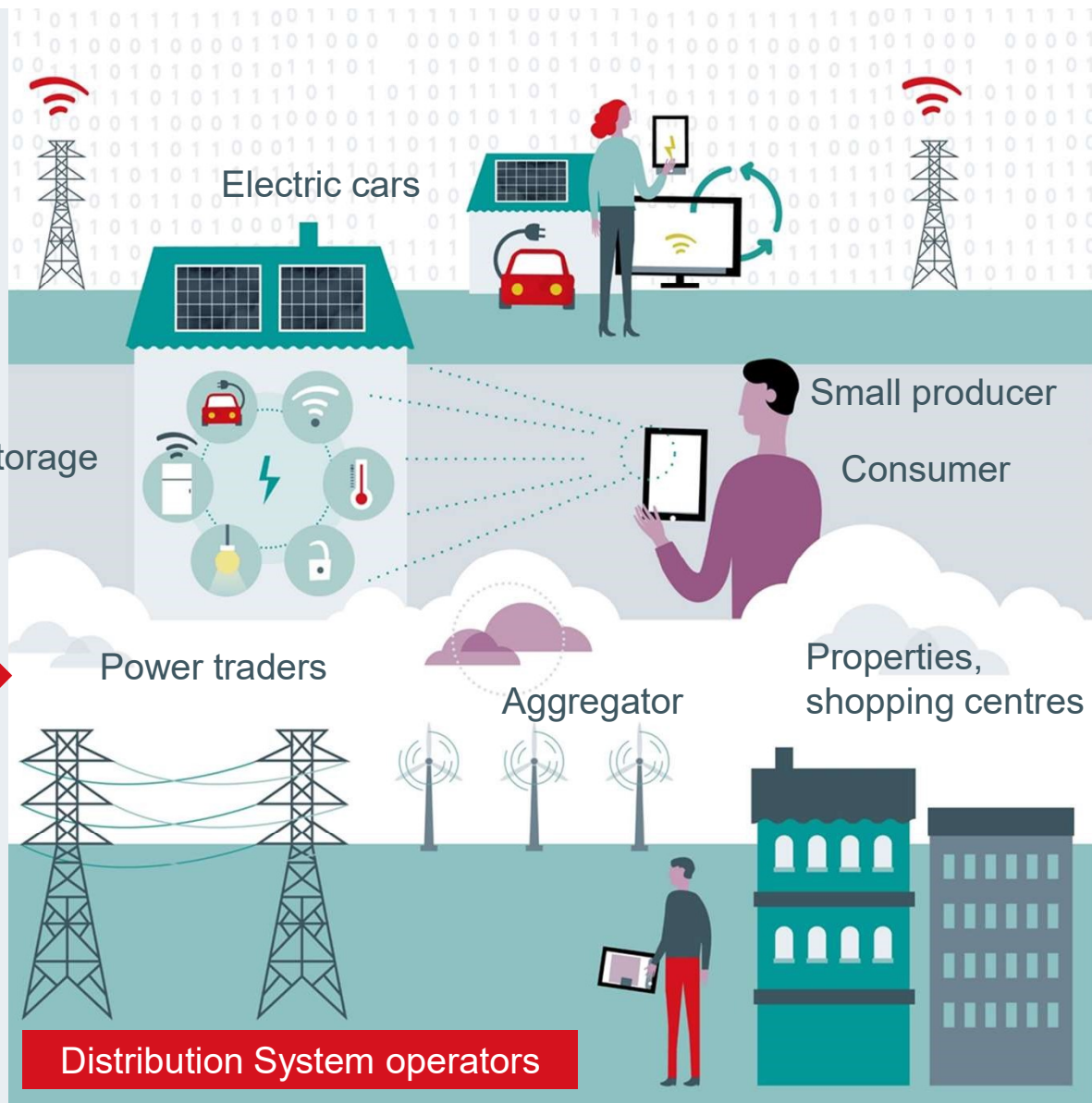
- connected to ecosystem

## Megatrends:

- change in power system
- dependency on electricity
- digitalization



Transmission System Operators



# Threats are increasing



# Suomen pahimmat riskit listattiin: Suuri sähköhäiriö on todennäköisin – sota tai ”musta joutsen” voisi olla tuhoisin



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## Cyber Resilience in the Electricity Ecosystem: Principles and Guidance for Boards

# It's not just elections: Russia hacked the US electric grid

And it may be just the first phase of a bigger attack.



### US ramps up pressure on Berlin over Huawei

12/20/18, 7:00 AM CET

German politicians weighed allegations targeting Huawei against past evidence of hacking by the United States.



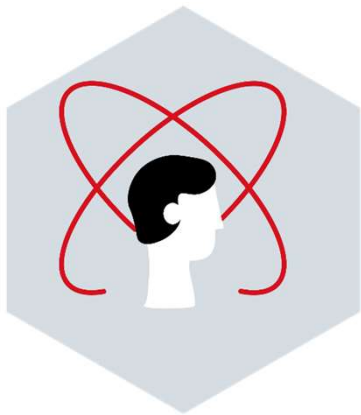
### How Ukraine became a test bed for cyberweaponry

2/14/19, 11:30 AM CET

As Russian hackers face down Western spies, the country has become a live-fire space for hackers.



# We develop and we are developing



## People

Skills and awareness  
Rights



## Practises

Risk and continuity management  
Openness and co-operation  
Audits and practising



## Technology

IS tools  
OT vs IT



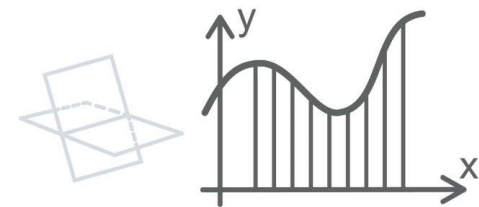
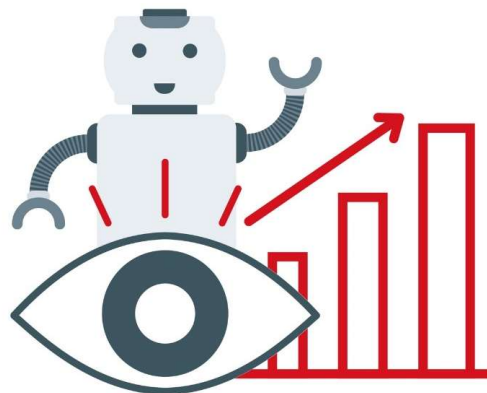
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# We are always awake

24/7 preparedness



Forcasts, robots and AI



Situational awareness and visualization of data





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