

Cybersecurity & Energy in Europe

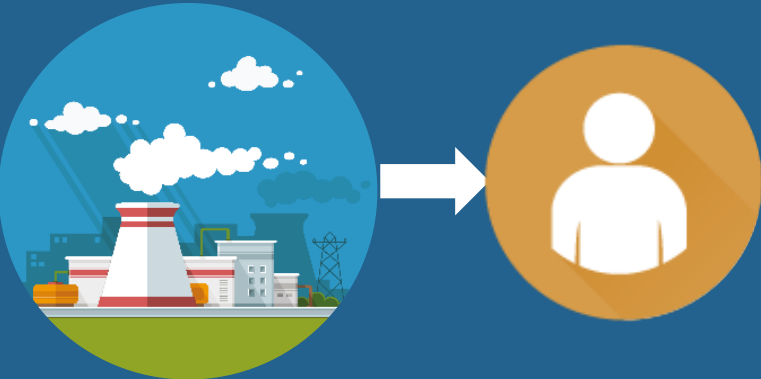
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CIO - ENTSO-E

Cybersecurity Day in the Energy Community

Energy Community Secretariat – Vienna – Austria – 11 April 2019

Grid Digitalisation : already started, always accelerating

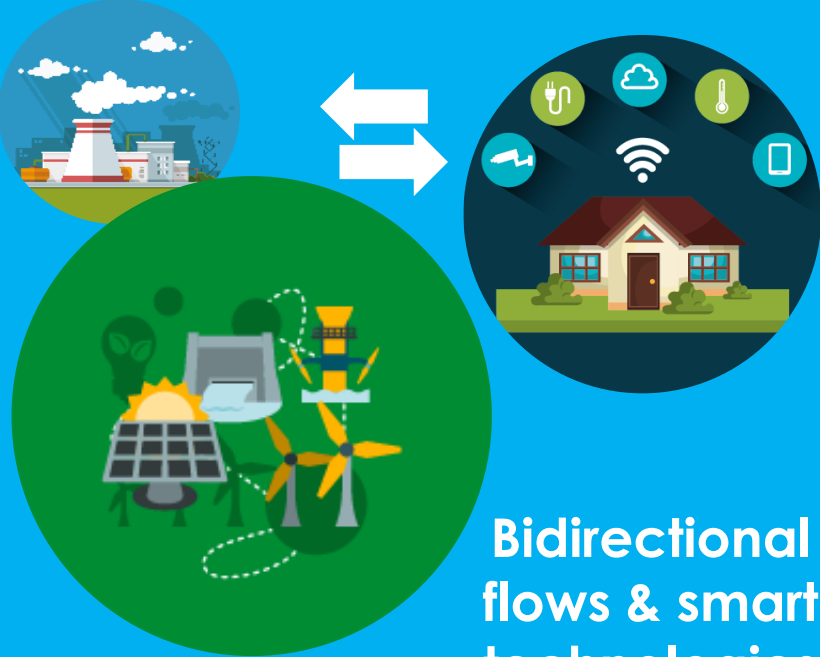
PAST



One-way power flows
Predictability

PRESENT

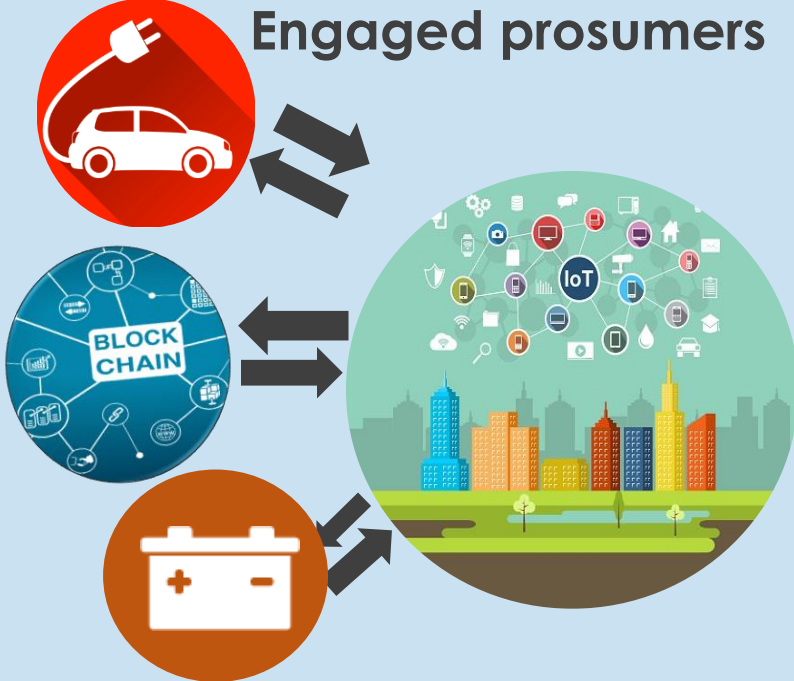
Variability & decentralisation



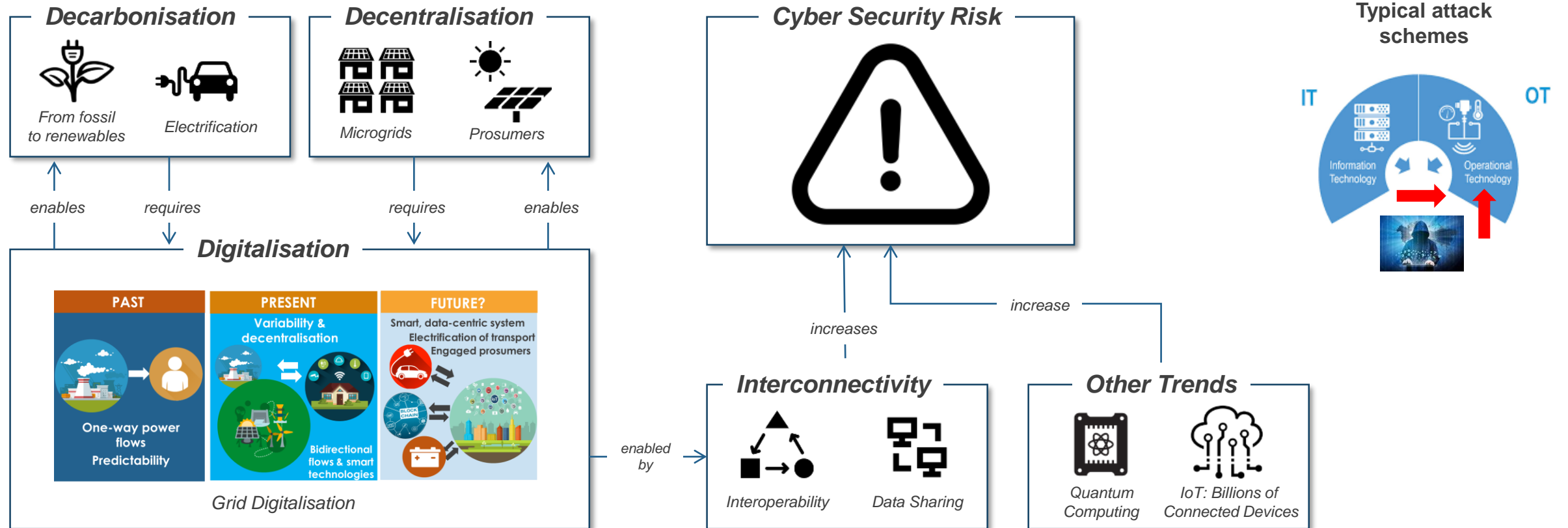
Bidirectional flows & smart technologies

FUTURE?

Smart, data-centric system
Electrification of transport
Engaged prosumers



The necessary Digitalisation acceleration increases the exposure to cyber risks



The cocktail for headaches



Source : ENCS

A target for all type of attackers



Massive and hybrid asset base



Derived from discussion with DG ENER

Real-time and cascading consequence chain



Dramatic financial and societal impacts of large disruption

“Major cyber attack on the US power system could cost up to US\$ 1.000 billion.”

Lloyd’s analysis - 2015

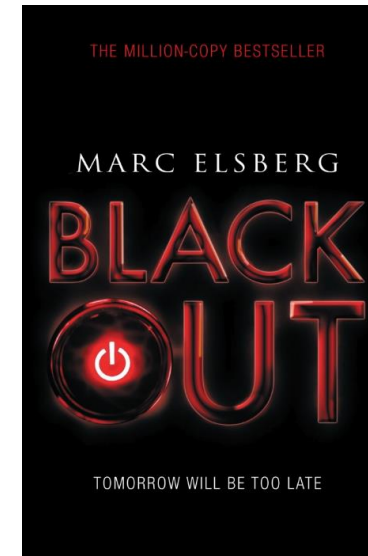
A vital infrastructure under threat

Electricity : THE essential commodity of “developed” economies ?



From
supporting
decarbonization ...

... to bringing water
to citizens



The Challenges

Regulation

Key enablers of Cyber Risk mitigation

- Communicating / sharing
- but :
- What can be communicated ? To whom ? How ?

Challenge

The regulatory situation does not yet facilitate the establishment of a seamless sound trans-national operational cooperation :

- Country-level regulations may forbid sharing
- The Members of our Association are EU AND non-EU based

Organization

“Russian dolls”

- The European Power System : World’s most complex piece of engineering
- Connects the largest generation asset to the tiniest load (“from nuke to toaster”) electrically ... and now digitally
- Massive stakeholders setup including **a very intimate entanglement between TSOs/RSCs and DSOs**

ENTSO-E Cyber Security Vision

Vision

Secure and Resilient inter-TSO and RSC Information, Services and Infrastructure

Vision Elements

Secure and Resilient...

- Secure : prevention controls and compliance to standards
- Resilient : incident monitoring, detection, response, and recovery capabilities

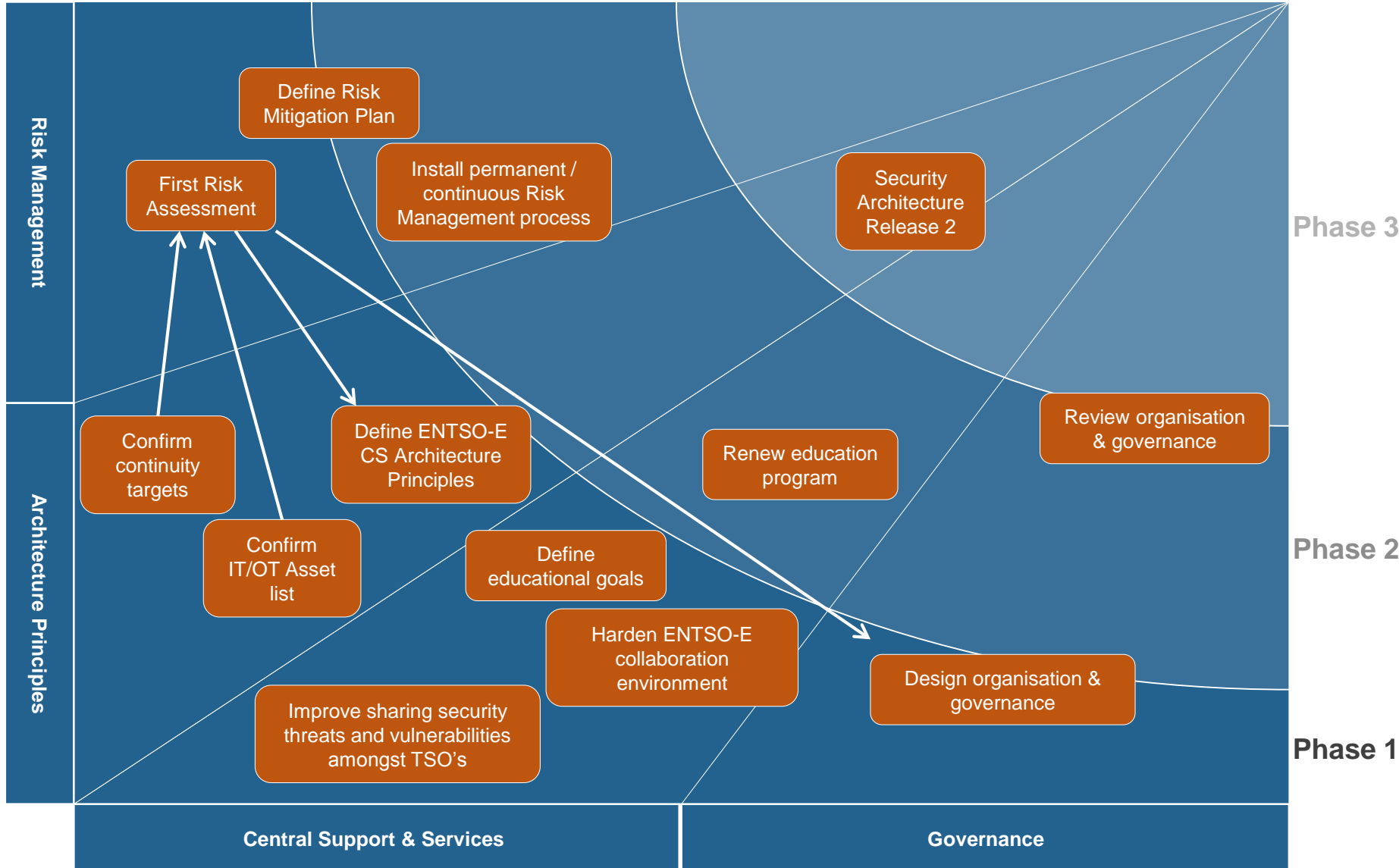
...Inter-TSO and RSC...

- Focus on Inter-TSO and RSC Cyber Security measures
- Cyber Security at TSO level : TSO itself in line with national regulation

...Information, Services and Infrastructure

- All technology and information exchange aspects that can jeopardize the security of supply and availability of the European electricity grid

Cyber Security Roadmap First Phases

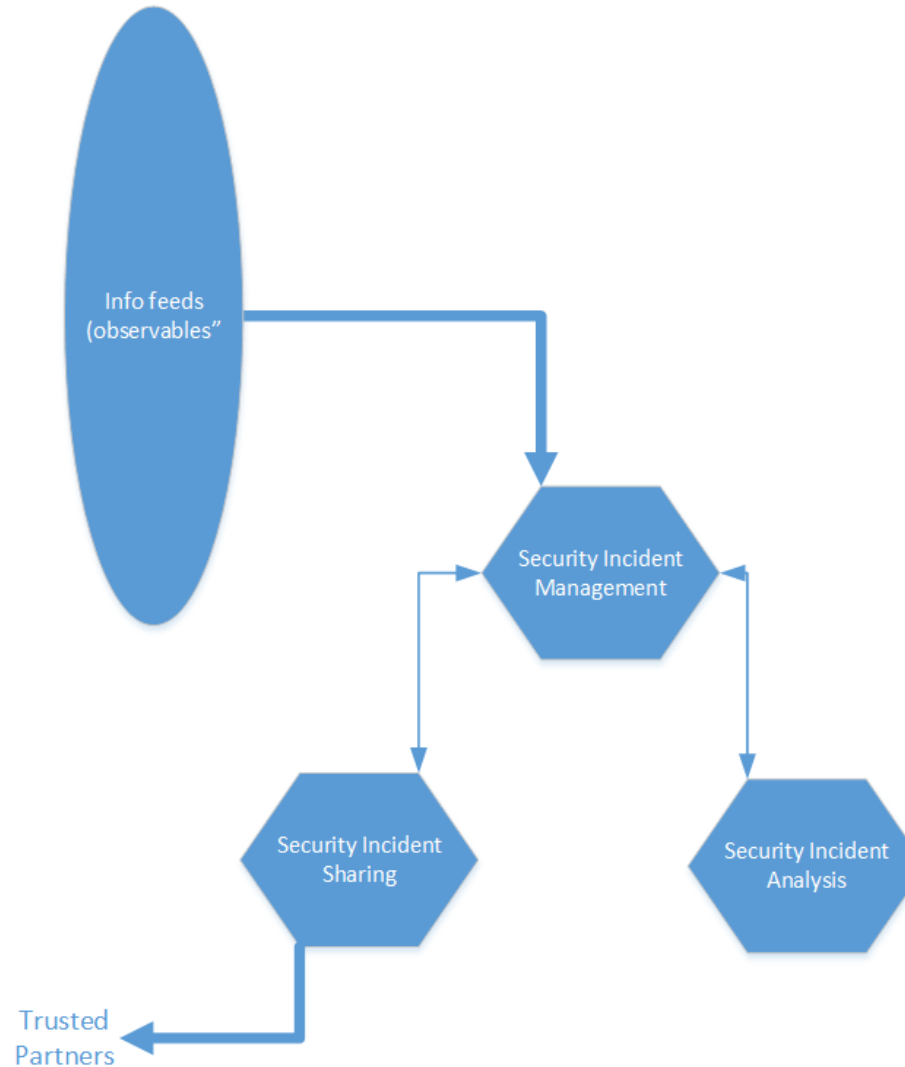


- Key features
- Cyber security by design for solutions and infrastructures
 - Secure physical network and “middleware” layer
 - Shared awareness for all TSOs and RSCs
 - Pan-European attack pattern anticipation

Example of practical ongoing efforts

Key features

- Cyber security by design for solutions and infrastructures
- Secure physical network and “middleware” layer
- Shared awareness for all TSOs and RSCs
- Pan-European attack pattern anticipation



Thank You
