Supporting Economic Recovery through Innovation and Digitalisation

Vienna Energy Forum

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Towards Sustainable Digital Transformation

Covid-19 has put digital technologies in the centre of society:

- Accelerated the digital adoption
- Changed behaviour for goods and services
- Made us rethink business models
- Mainstreamed new tools: 5G, IoT, Machine Learning, AI, blockchain, Additive Manufacturing, Big Data, Automation, Cloud Computing, …

However, Covid-19 has slowed even further down the energy efficiency progress!

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How can innovation and digitalisation enhance Energy Efficiency?

Building Management Systems

Additive manufacturing, big data, IoT, automation…

Smart and efficient appliances

Smart cities

Electrification of energy uses

Last mile logistics

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How can innovation and digitalisation enhance Energy Efficiency?

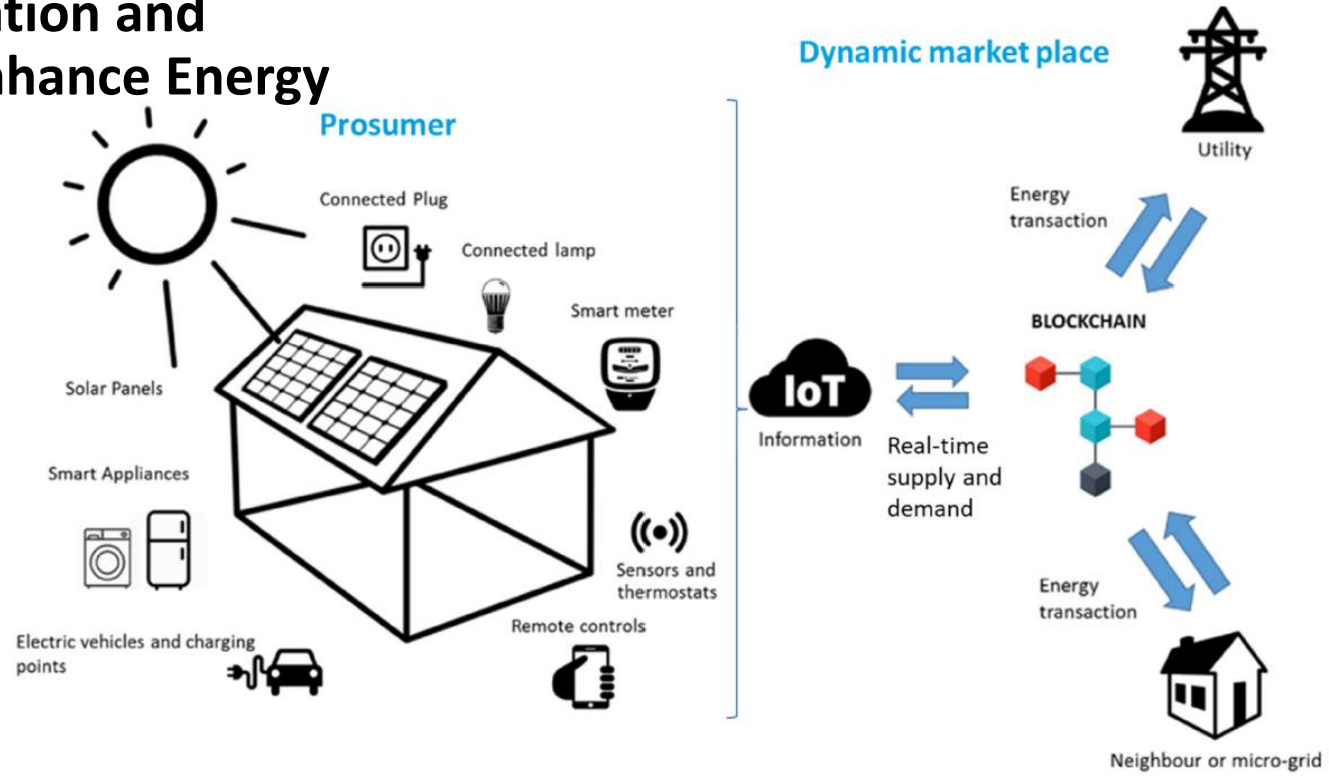

Figure 1. Blockchain-based decentralised P2P energy trading system.

From: Schletz, M.; Cardoso, A.; Prata Dias, G.; Salomo, S.; (2020) *How Can Blockchain Technology Accelerate Energy Efficiency Interventions? A Use Case Comparison*. Energies. 13(22).

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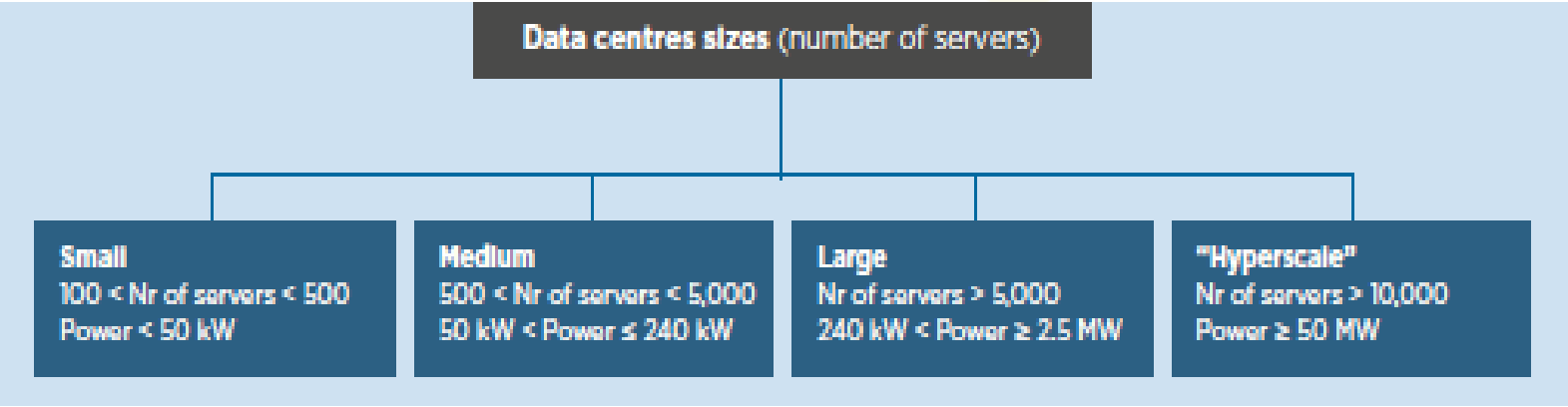
How can innovation and digitalisation enhance Energy Efficiency?

- Predict supply and demand
- Measure in real time
- Remote monitoring
- Improve analysis and decision making
- Increase transparency

The backbone and drawbacks of digital infrastructure - Datacentres

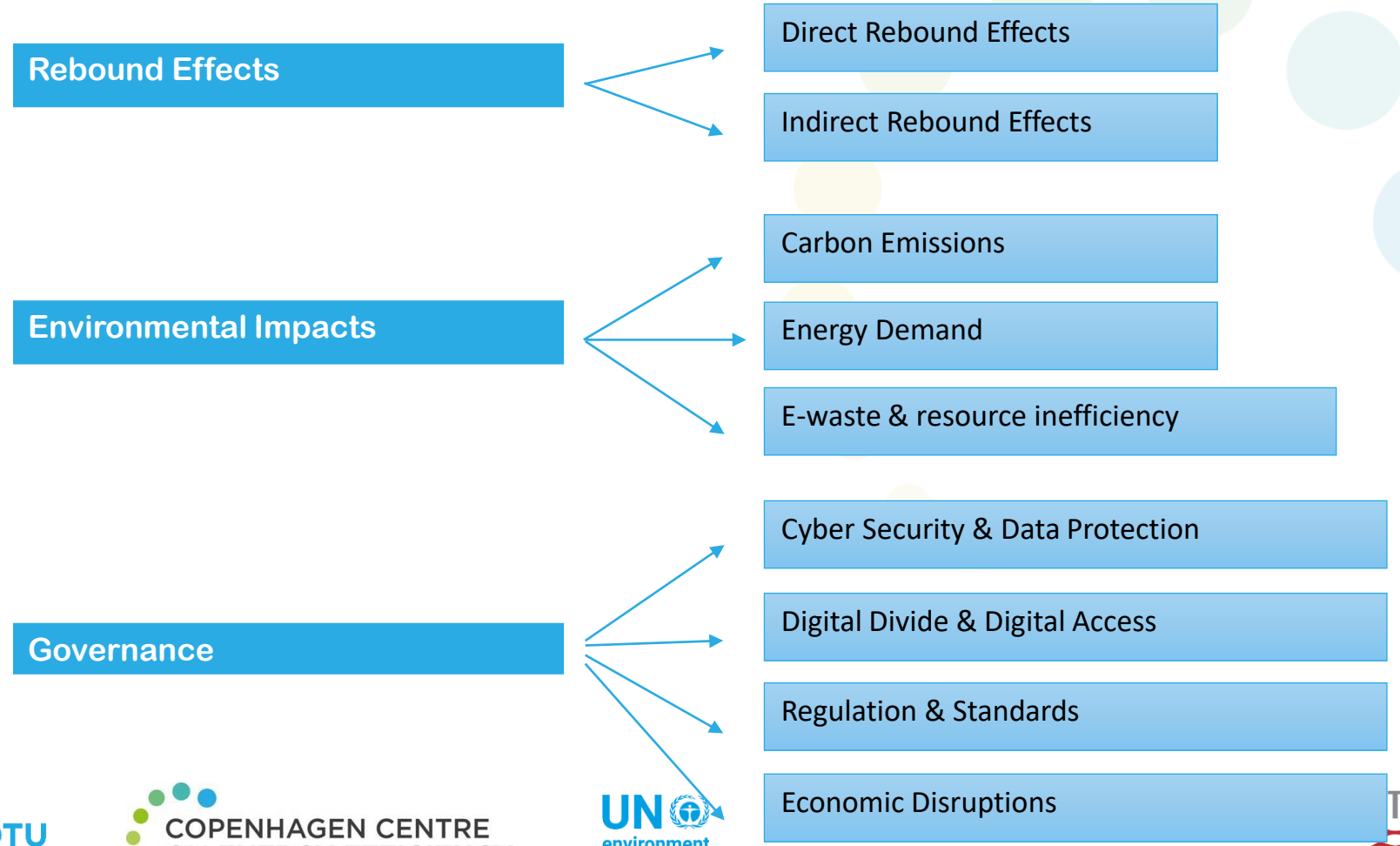


- 1% to 1,5% of worldwide energy use (2019)
- Energy use increase of 6% between 2010-2018
- Computing instances with 550% growth 2010-2018
- Datacentres require 10 to 100 times more energy than other commercial building types

How does a datacentre use energy?

- From chips to servers
- Routers, switches and cables
- Direct power, backup and storage
- Cooling and ventilation
- Control and security systems

What are the challenges to innovation and digital economy?



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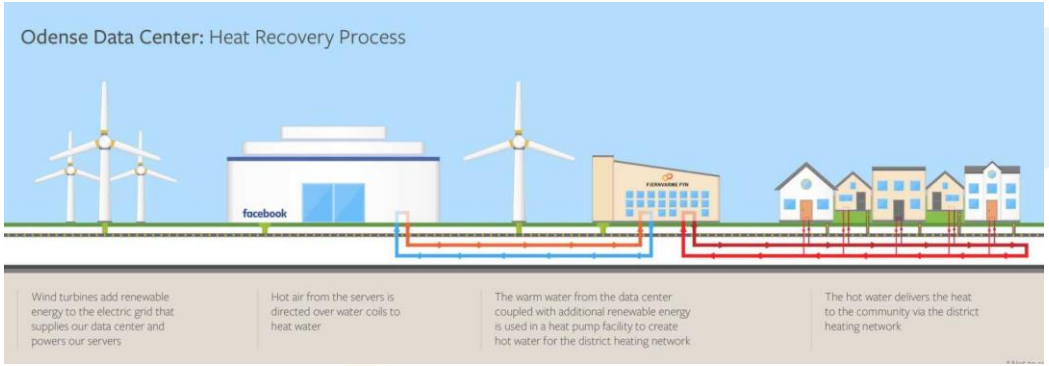
Examples of technical solutions

Renewable energy and heat recovery to district heating



Fuel cells & green hydrogen

Underwater datacentres

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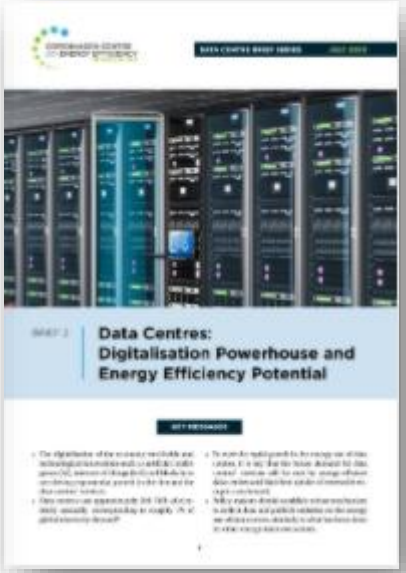
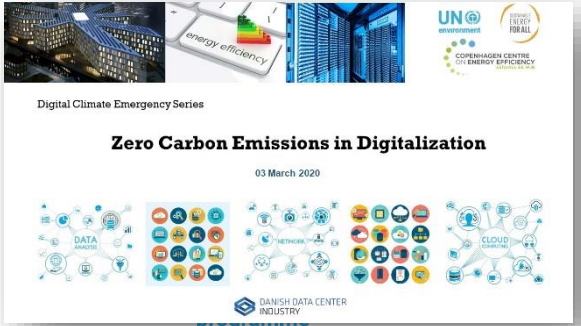
Placing digital and energy efficiency at the heart of NDCs, SDGs and recovery packages

- Boost public digital infrastructure investment
- Develop regulatory frameworks, standards and policy & planning. Beware: technology (hardware and software) develops faster than regulation!
- Bet on re-skilling and upskilling of professionals
- Support SME's on digital transformation: commercial, industry, agriculture, forestry
- Test innovation and fund R&D
- Promote global collaboration and digital toolkits for developing and emerging economies
- Promote information, communication and behaviour change (use gaming and streaming entertainment for the effect)





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Thank you.

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