



# Digitalisation and IoT

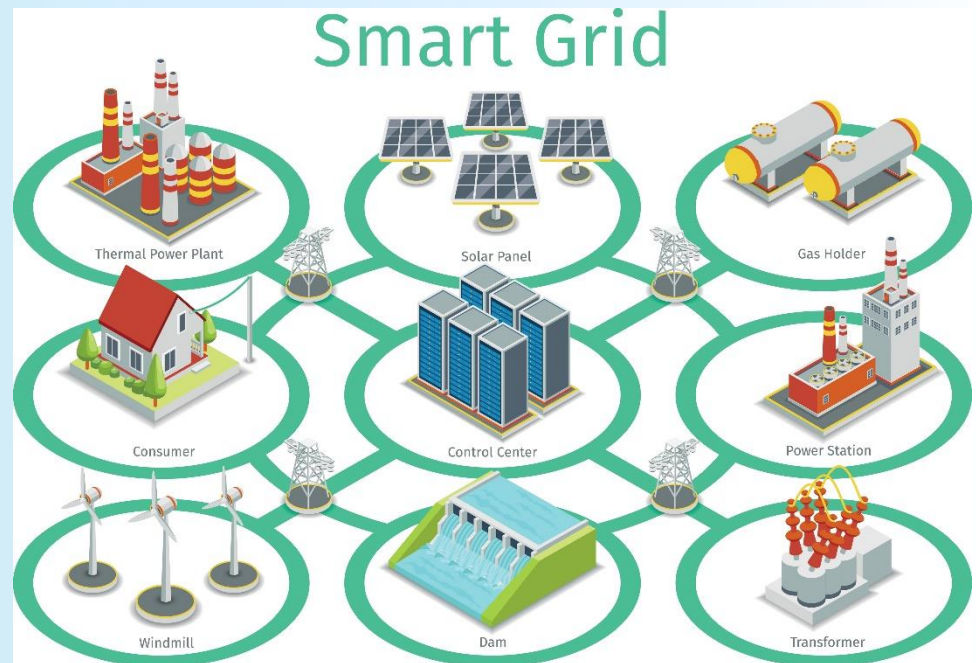
## EU perspective

Mario Dionisio  
Mario.Dionisio@ec.europa.eu  
European Commission – DG ENERGY

# New energy system

## INGREDIENTS TO IMPROVE PERFORMANCE AND ENABLE COST SAVINGS

- Electrification (EV, smart charging, etc.)
- Decentralisation (demand response, PV, storage, etc.)
- Digitalisation (network technologies, smart metering, beyond the meter measures, smart appliances, IoT, etc.)



 Connectivity

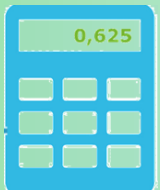


# Digitalisation

## TO SUPPORT THE ENERGY TRANSITION



Active network management: procurement of services by network operators in markets and on platforms



Optimisation of asset management through analysis, management and processing



Interoperability for smart homes, buildings and grids



Development, test and demonstration of cyber-security technologies for the electricity system



# Internet of Energy



Brussels, 5 June 2018

IoT week 2018

# Joint calls on digitalisation of the energy system

## DT-ICT-10-2018: Interoperable and smart homes and grids

- Challenge: smart homes, buildings and appliances, as well as electric vehicles can support the integration of RES in the energy system
- Scope: to combine home or building comfort services with energy management through digital technologies (IoT, AI, cloud and big data services, edge computing, blockchain technologies, etc.)
- Expected Impact: increasing use of renewable energy and increased energy efficiency, offering access to cheaper and sustainable energy for consumers and maximising social welfare.
  - **Planned opening**: 26 July 2018
  - **Deadline**: 14 November 2018
- <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/dt-ict-10-2018-19.html>

# Joint calls on digitalisation of the energy system

## DT-ICT-11-2019: Big data solutions for energy

- Challenge: an increasing number of small-scale and of dispersed energy generation and consumption devices calls for big data tools and architectures for optimized energy system management
- Scope: development of large-scale interoperable multi-party data exchange, management & governance and real-time processing
- Expected Impact: effective integration and asset management in the energy sector through digital technologies with increased consumer participation
  - **Planned opening**: 16 October 2018
  - **Deadline**: 02 April 2019
- <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/dt-ict-11-2019.html>

# Joint calls on digitalisation of the energy system

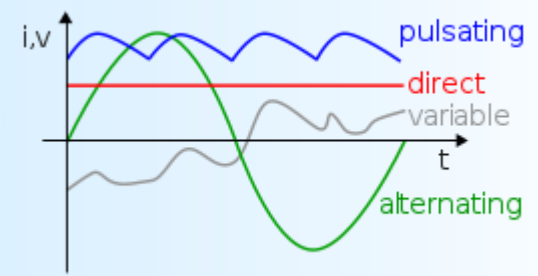
## SU-DS04-2018-2020: Cybersecurity in the Electrical Power System

- Challenge: with the growing use of digital devices and more advanced communications and interconnected systems, the electrical power system is increasingly exposed to cyberattacks threats
- Scope: to develop an armour against cyber and privacy attacks and data breaches
- Expected Impact: built/increased resilience against different levels of cyber and privacy attacks and data breaches ensuring continuity of the critical business energy operations
  - **Opening**: 15 March 2018
  - **Deadline**: 23 August 2018
- <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/su-ds04-2018-2020.html>



# R&D topics for the digitalisation of the energy system

- IoT
- HPC
- 5G
- AC - DC – hybrid grids
- Power electronics
- Cybersecurity
- Blockchain
- EV





**Thank you for your attention!**