

# Eco-friendly power networks webinar

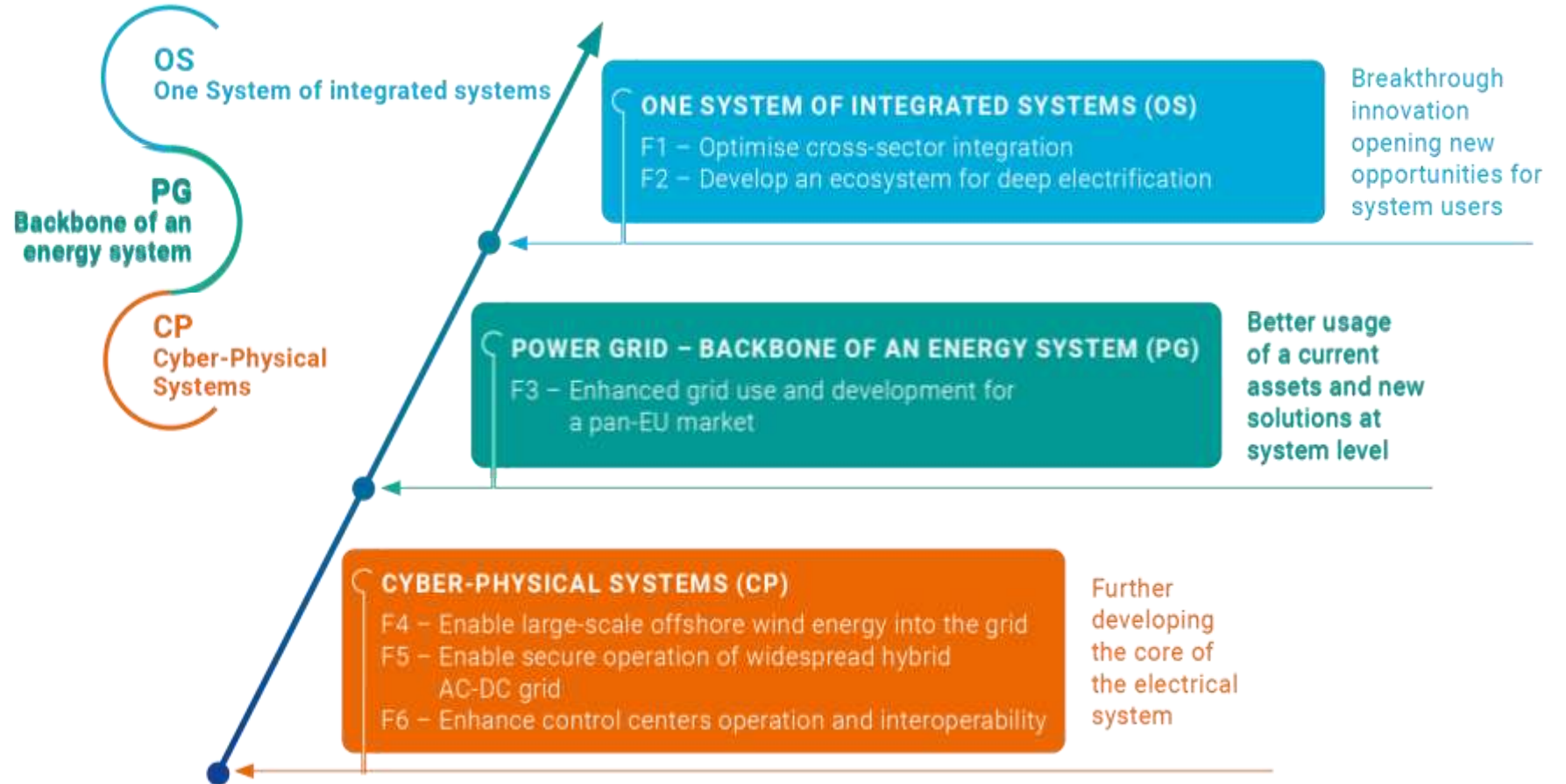
The real challenges in transition to eco-friendly power networks: European TSOs and global manufactures discuss real energy transition challenges



Norela Constantinescu, Head of Section Innovation, ENTSO-E  
17 March 2022

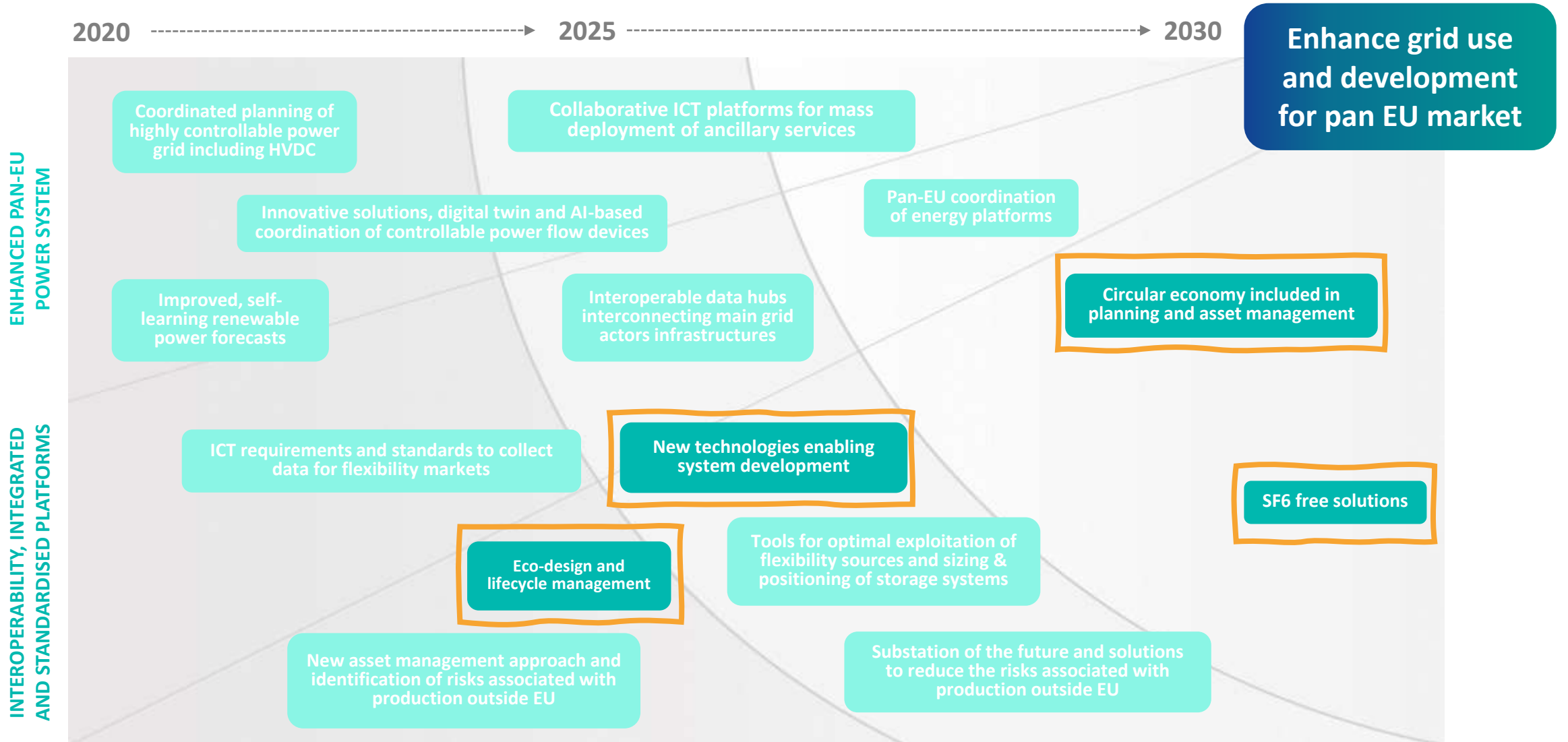
# ENTSO-E RD&I Roadmap 2020 to 2030

Coping with Green Deal objectives



# Power Grid - backbone of an energy system

## Flagship 3: Enhance grid use and development for pan EU market



# SF6 free solutions

## SF6 free solutions



### Main goals:

- Roadmap to **reduce SF<sub>6</sub> emissions in both existing and new HV equipment and**
- **Common technical specifications for performance and the testing of alternative SF6-free technologies**

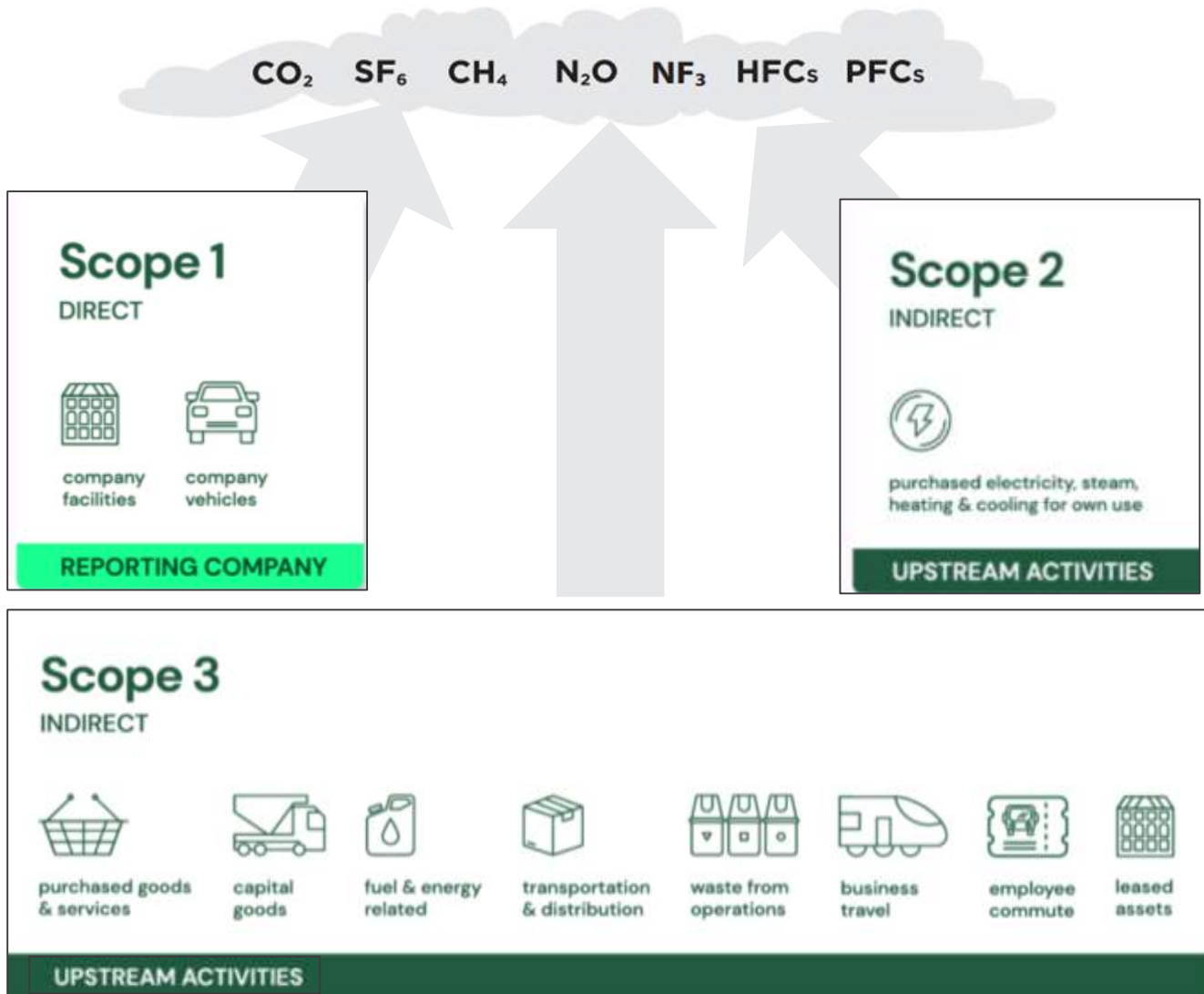
### Main targets:

1. Adequate **transition times from SF<sub>6</sub> to alternative technologies** without compromising the security of supply in transmission grids (economic and environmental assessments)
2. **Harmonised and transparent SF<sub>6</sub> emissions monitoring and reporting** (*ongoing*)
3. Regulatory recommendations at EU level to cope with financial risks to move from SF<sub>6</sub> to SF<sub>6</sub>-free technology for new equipment (*pending on the current recast of F-Gas Regulation*)

**Next step: Demonstrator** either an SF<sub>6</sub>-free gas-insulated substation or air-insulated SF<sub>6</sub>-free instrument transformers or switchgear at different voltage levels.

# Circular economy included in planning and asset management

## CO<sub>2</sub> emission footprint in TSO businesses



**Objective:** ENTSO-E members: reduce CO<sub>2</sub> equivalent emissions along TSO value chain: planning, asset management and decommissioning phases.

### Main targets:

1. Set up a **common, robust and transparent lifecycle assessment** to track CO<sub>2</sub> equivalent emissions based on the Greenhouse gas protocol scopes on the left (*ongoing*)
2. Develop a **common method to support the decision-making processes** favouring lower carbon footprint solutions for the grid investment, reinvestment (i.e., replacement wave of assets), upgrading and decommissioning scenarios (*planned*)

# Eco-design and lifecycle management

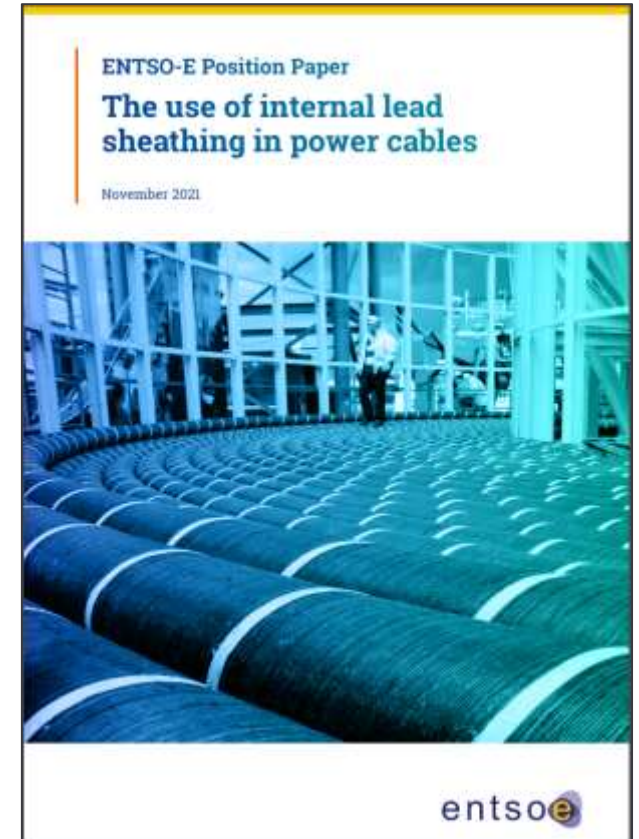
New technologies enabling system development: substitute the lead in HVAC and HVDC cables

**Objective :** Lead has a potential impact on humans and environment and its use need to be reduced

## Main targets:

1. Establish a **common roadmap between TSOs and power cable manufacturers** for a human and environmentally friendly lead-free underground and subsea cable development for high voltage applications (*ongoing*)
2. **Encourage transparency and responsibility throughout the whole life cycle** of internal lead sheathing in power cables by both manufacturers and TSOs (*ongoing*)
3. **Strengthen the use of lead-free cables** in application **where feasible** proven alternatives exist by promoting lead-free solutions by TSOs in the tendering process (*ongoing, relies on R&D funding at European level*)

**Next step:** step-wise roadmap to lead-free cables while continuing the integration of renewable energy generation and interconnectors between countries



# ENTSO-E role as an enabler in the energy transition

39 Members from 35 countries are part of ENTSO-E

LANDSNET

Statnett



FINGRID

elering

AST



PSE



Tennet

čeps



amprion connects



creos



TRÄNSNET BW

ELES

HOPS



swissgrid

Terna



ESO

REN



MEPSO



entsoe