

Paris Session 2022



Transition to a new regional coordination framework

SC C2: Power System Operation and Control

PS 2: Operational Planning Strategies, Methodologies and
Supporting Tools

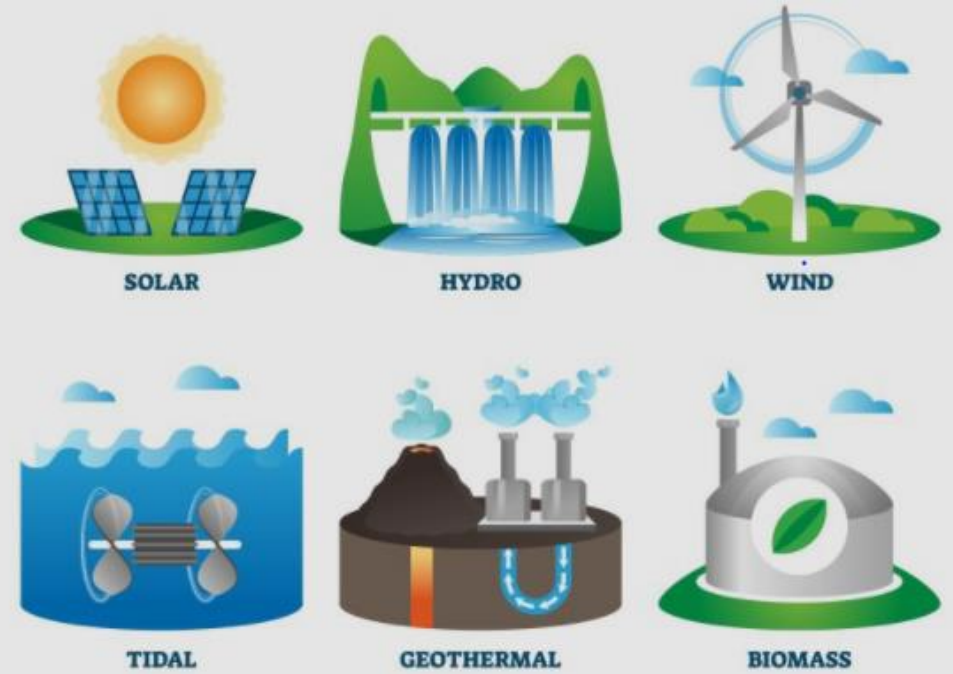
Q 2.7: How are the roles and functions of supra-national,
national and sub-national operations centres evolving to
support the energy transition?

Danny Klaar – The Netherlands

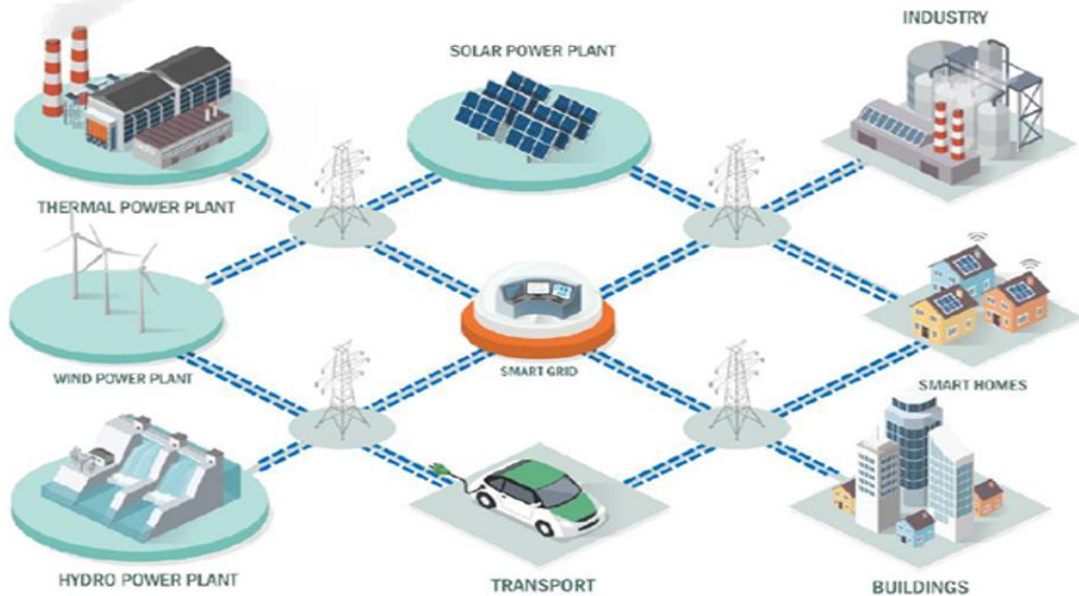
New RCC tasks

Sizing reserve capacity	Supporting inter-TSOs settlement (*)
Procurement balancing capacity	Supporting Ten Year Network Development Plan
Training and certification RCC staff	Maximum entry capacity mechanisms
Post-operation/disturbance analysis	Regional restoration (*)
(*) = at request of TSOs	

The Energy Transition

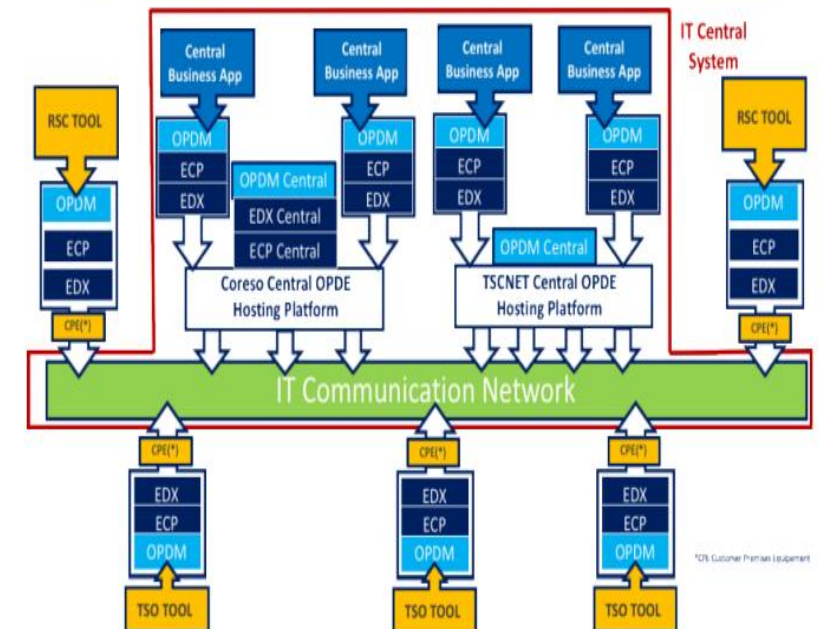


Rapidly changing Power System Landscape



New Processes & Tools

ENTSO-E's OPDE environment: High level technical concept



Access to "lots" of DATA
Data exchange Platforms



Accurate data FORECAST to reduce the operational uncertainty

EMERGING TOOLS

Big Data Analytics for AWARENESS and DECISION SUPPORT
(e.g. SE, DSA, WAMS)

New Generation of SCADA EMS systems

Automatic Power Flow Control, System Integrity Protection Schemes (SIPS) and Wide Area Control Schemes (WACS) using fast available flexibility to keep system Stability with help of Phasor Measurement Units (PMUs)

New coordination challenges

Weather dependent energy system

Inertia Stability

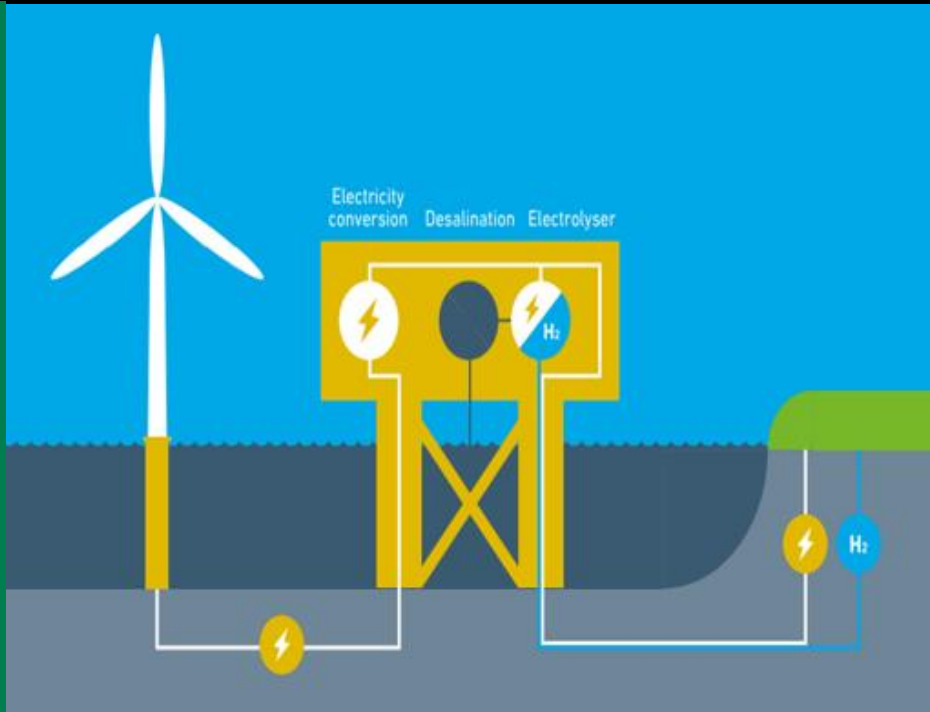
Off-shore AC-DC hybrid system

Security of supply Congestions

Resilience Risk preparedness

Data exchange Cyber security

Off-shore development with Power-to-X conversion



Close to real-time Operational Planning

Frequency Stability Voltage Stability Oscillatory Stability Transient Stability



Real-Time Situational Awareness

Grid Reliability and Security

