Next strategic Grid integration challenges
Towards next Digital Grids 4.0

Laurent SCHMITT, ENTSO-E Secretary General
Beyond just the EU

- 42 TSOs in 35 countries
- 312,693 km of transmission lines (7 times the Earth’s circumference)
- 3,278 TWh electricity consumption
- 15% of the global electricity consumption
- Over 500 million customers served
The Energy Transition: What does it mean for Europe?

27% renewables by 2030 = +/- 45% for the power system

Sector Coupling:
- Power
- Gas
- Transport

Illustration of main RES potential across Europe towards 2030
Enabling the 4th Industrial Revolution with the Clean Energy Package 2025-2030

- Active customer
- Scarcity pricing
- Removal of price caps
- Easier supplier switching
- Risk preparedness framework
- European resource adequacy
- Ambitious Regional Cooperation

Future

Digital, data-centric system
Electrification of transport
Engaged prosumers

Entsoe
New Prosumer integration strategy

- Sensitivity to **price signals**
- Participation to the market in all time frames, including **balancing & ancillary services**
- New role for **aggregators**
New Strategic investments towards Digital

- Energy Data Hubs & App Stores
- Reference Grid Architecture Model to support next Network Code deployments

New Generation Flow Based real-time markets
New Market Integration Strategy

1. Phase out of the priority dispatch for renewables
2. Expose ‘mature’ renewable energy sources to market
3. Renewable energy sources need to have balancing responsibilities
4. Renewables support needs to be market-based
5. Support needs to be coordinated at regional and EU level
New sector coupling

- Power with Gas / Combined Heat & Power
- Mobility with Power & Gas & Emission Trading
- TSO-DSO
- Microgrid coupling at Gridedge through #Blockchain
Network Code implementation is a key priority!

CACM Guideline
Balancing Guideline
System Operations Guideline

Ensure market integration and integrity:

Optimal capacity calculation
Foster interconnection
Efficient provision of ancillary services
Wholesale/retail integration
Next European transformation milestones

Intraday coupling go-live Q1/2018
RSCs implemented 12/2018 and Synchronous Area Operational Agreement 03/2019
All connection codes implemented 09/2019
Common platform for balancing implemented Q3/2019
Day-ahead market coupling fully implemented 12/2020

Integrate wholesale and retail markets
DSO-TSO cooperation
Realize demand side response
Cybersecurity ……

And more to come…
THANK YOU FOR YOUR ATTENTION

For more information:
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