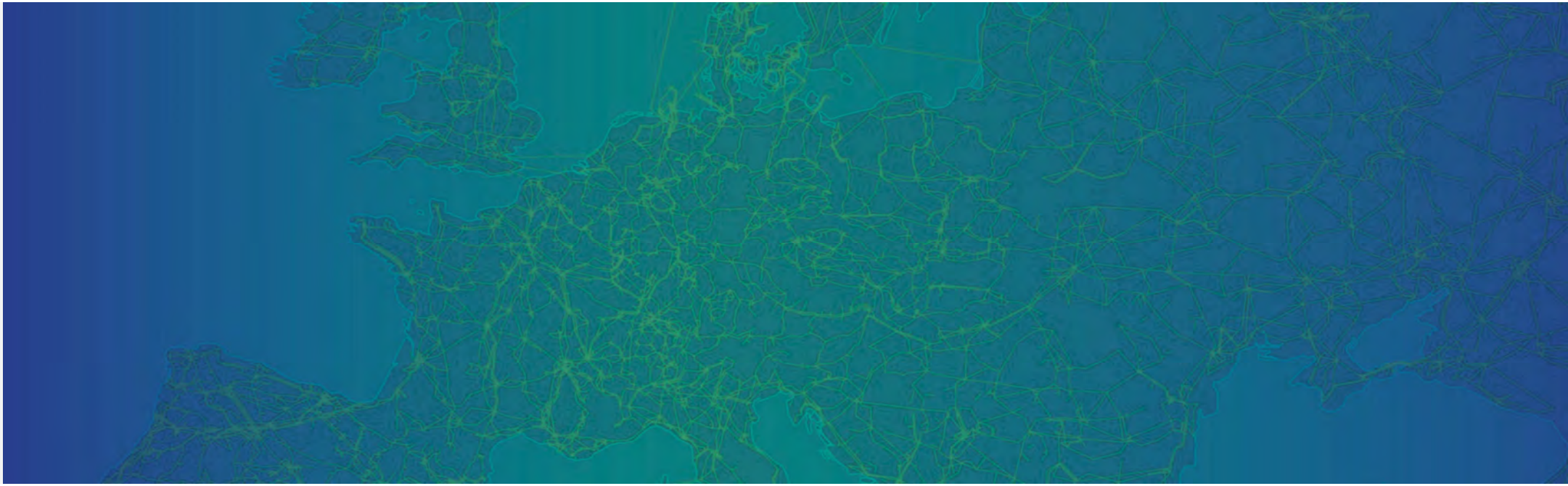
The need for Transmission and Distribution Cooperation on System Planning and its relevance for Power-to-Heat

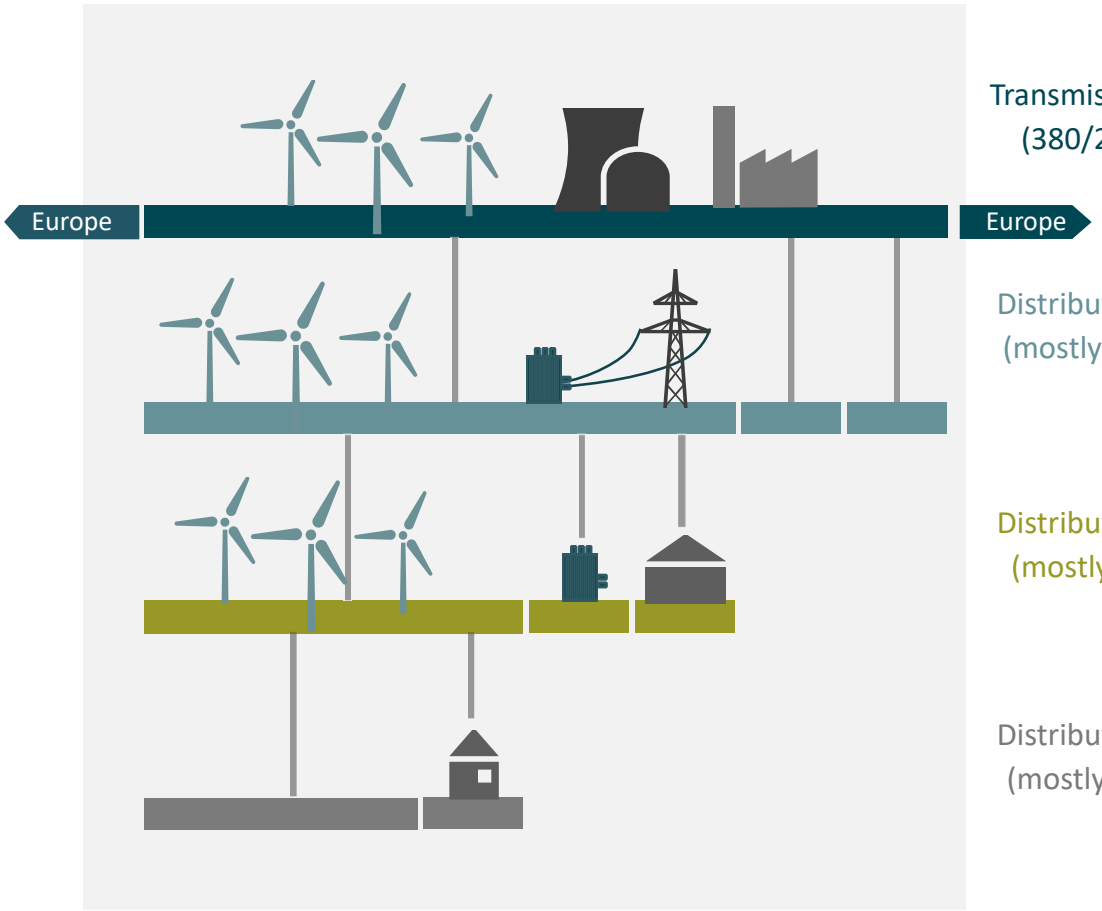
Michael Jesberger, Chair of ENTSO-E Steering Group on TSO-DSO Interface



entsoe
Reliable Sustainable Connected

Transition in European Energy System

From



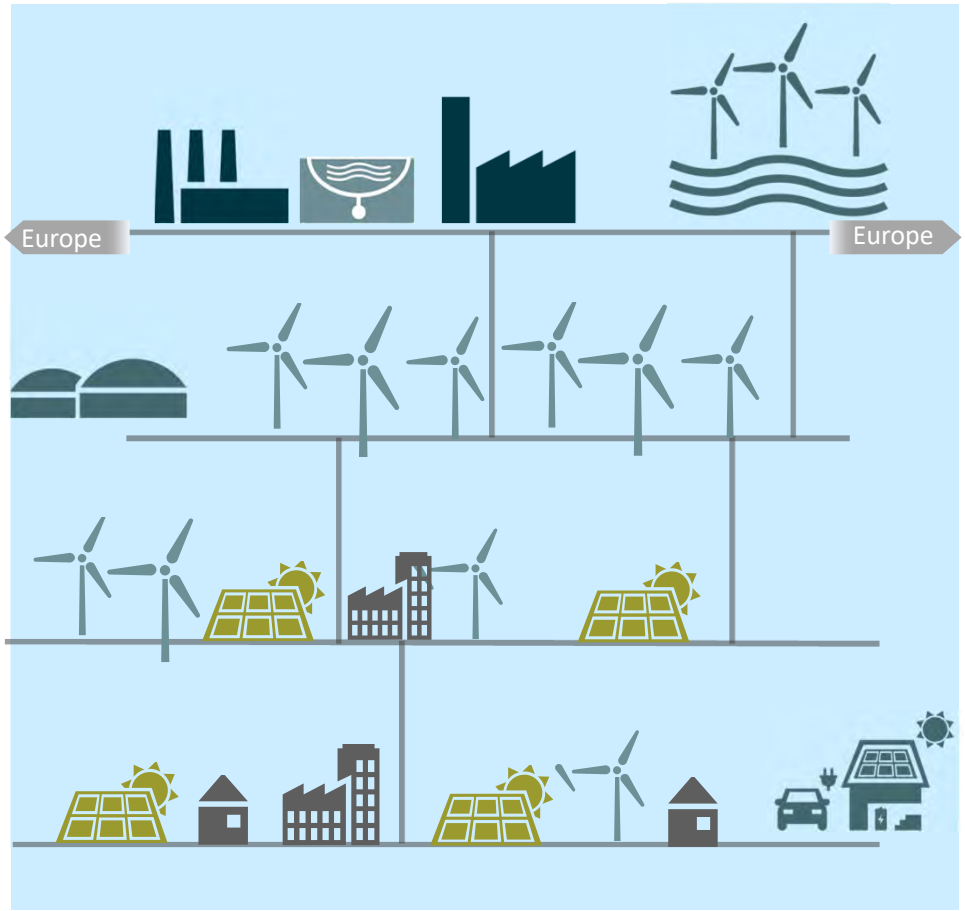
Transmission Grid
(380/220 kV)

Distribution Grid
(mostly 110-kV)

Distribution Grid
(mostly 20-kV)

Distribution Grid
(mostly 0,4-kV)

To



Background: Enhanced T-D cooperation on system planning

Clean Energy Package requirements

- Large **DSOs will produce national TYNDPs** from 2021 in consultation with TSOs (Electricity Directive)
- **ENTSO-E** cooperates with the four DSO associations and **will cooperate with EU DSO entity** and adopt best practices on the coordinated operation and planning of transmission and distribution systems (Electricity Regulation)

Stakeholders' expectations

- The **Copenhagen Infrastructure Forum** 2019 invited ENTSO-E and DSOs associations to develop a **roadmap for T-D cooperation in grid planning** starting with scenarios building and coordination principles
- While **ENTSO-E Advisory Council** acknowledged the need for swift implementation of grid investments, it also stressed that flexibility procurement is complementary to grid expansion and invited ENTSO-E to develop a **methodology to assess flexibility options**

Relevant TSO-DSO activities *(see also next slide)*

- A **joint TSO-DSO Task Force on system planning** organises exchanges on scenario building. It is officially part of the 2020 Work Programme of the TSO-DSO Platform, which has been agreed with the European Commission.
- ENTSO-E Steering Group on TSO-DSO Interface is open to further cooperate on **optimisation of grid investment costs** via flexibility solutions in 2021

T-D cooperation is important for Power-to-Heat

Areas for strengthened cooperation between system operators

Joint scenarios building (ongoing)

Taking into account DSOs projections for the uptake of heat pumps and air conditioning systems in the grids in TYNDP scenarios for 2022 edition

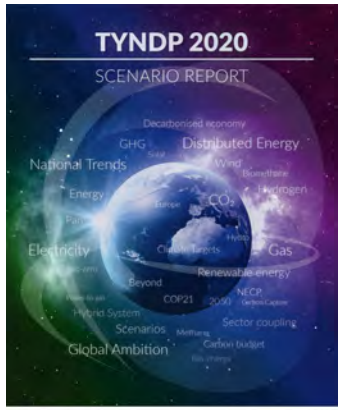
Assessment of flexibility solutions (from 2021)

Developing a common methodology to assess flexibility as an additional solution to grid reinforcement.

- Which amount of flexibility potential do we expect?
- Which system needs do we see (long-term)?
- Which market mechanisms and volumes do we expect?

Synergies between the electricity and heat systems (future)

Assessing flexibility potential provided by power-to-heat units, especially in areas with high renewables penetration, require to develop multi-scale analysis e.g. of heat demand profile vs. various parameters such as renewable electricity production.



ENTSO-E TYNDP 2020 **scenario report**

Example of '**green urban heating**': this new Power-to-Heat plant in Rostock will help reducing the stress on German transmission network (source: 50 Hertz)