



**ENTSO-E**

# Electricity Networks

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**64<sup>th</sup> session of the Economic Commission for Europe**

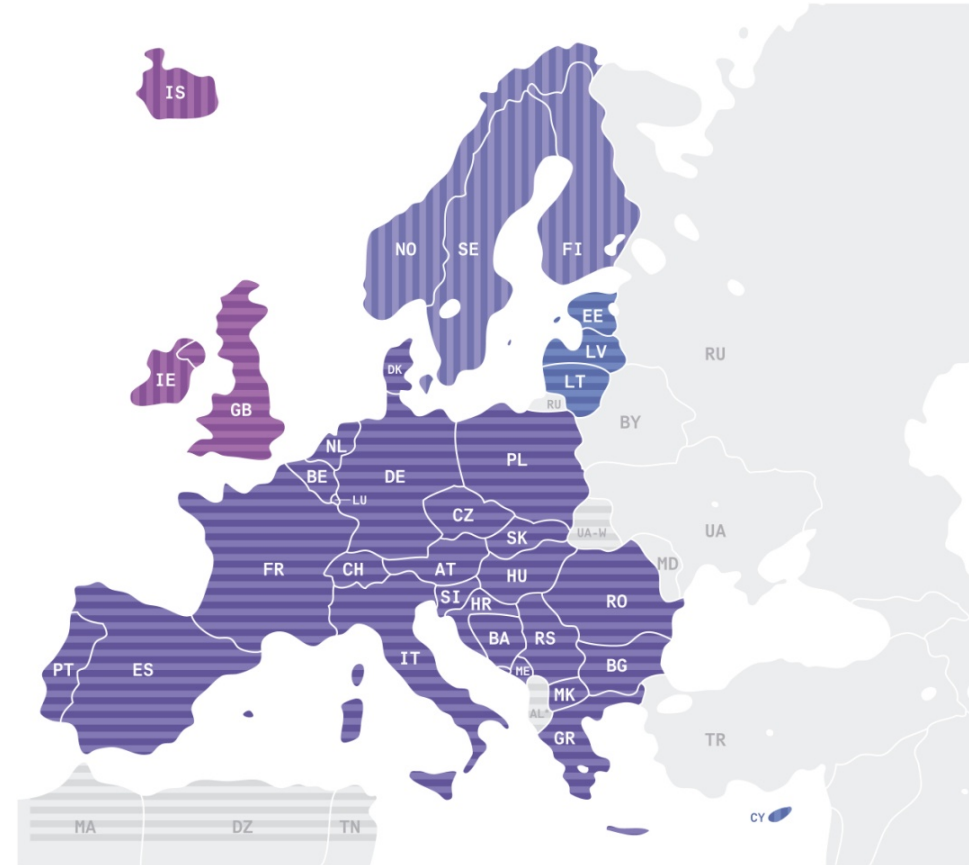
**Geneva 30 March 2011**



Reliable Sustainable Connected

# TSO international cooperation = ENTSO-E

- 41 TSOs from 34 countries
- Fully operational since **July 2009**
- A trans-European network
  - **525** million citizens served
  - **828** GW generation
  - **305,000** Km of transmission lines
  - **3,400** TWh/year demand
  - **400** TWh/year exchanges
- Replaces former TSO organisations: ATSOI, BALTSO, RTSO, NORDEL, UCTE, UKTSOA



# ENTSO-E in Regulation (EC) 714/2009

## • **Article 4: ENTSO-E**

- Completion of IEM

## • **Article 6: Establishment of network codes**

- **Legally binding** through Comitology

## • **Article 7: Issues addressed by network codes**

- **Cross border network issues** and market integration issues without prejudice to the Member States' right to establish national network codes

## • **Article 8: Tasks of ENTSO-E**

- **Ten-Year Network Development Plan**, incl. a European generation adequacy outlook
- Work programme, annual report, summer/winter outlooks, monitoring
- **Research and Development Plan**

### Network Codes 12 topic areas

#### Network connection rules

Balancing rules including network-related reserve power rules

Network security and reliability

Operational procedures in an emergency

Third-party access rules

Data exchange and settlement rules

Interoperability rules

Capacity-allocation and congestion management

Rules for trading

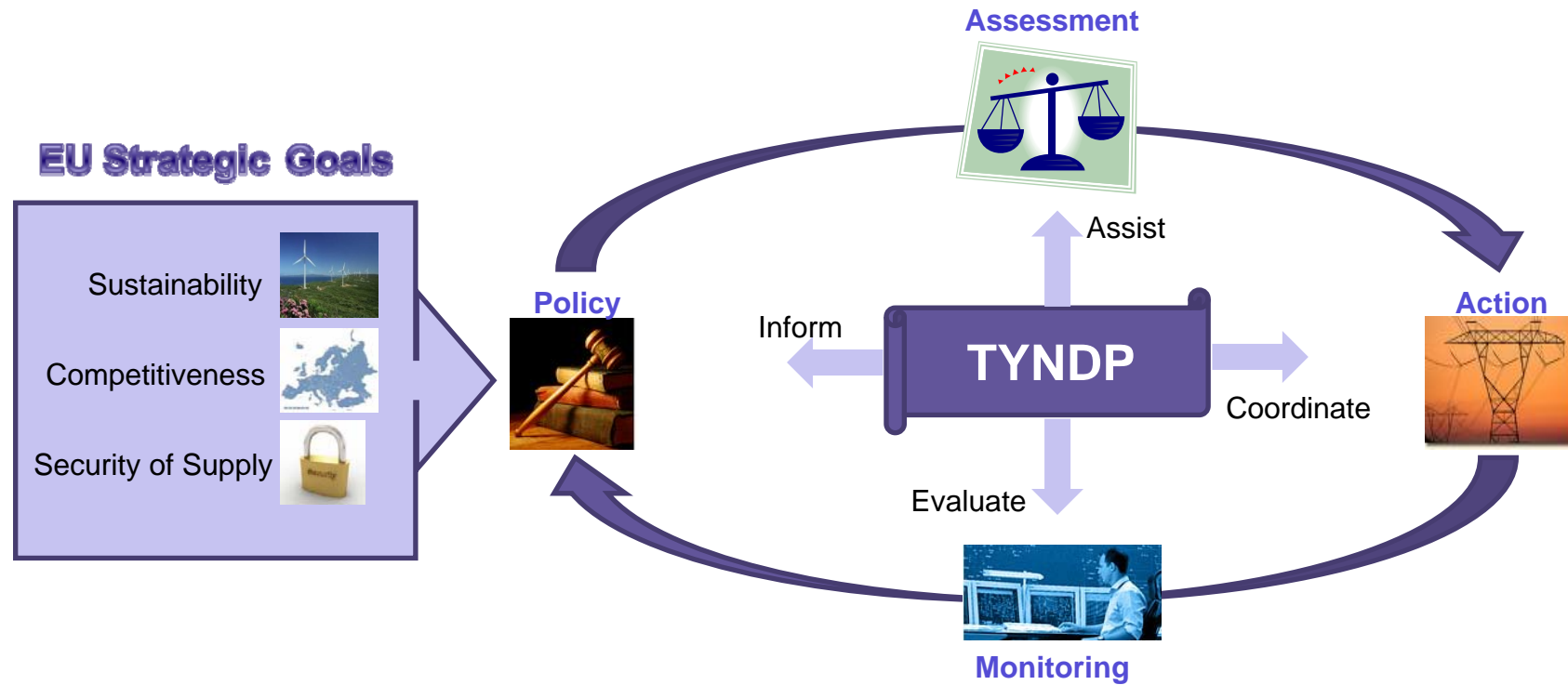
Transparency rules

Rules regarding harmonized transmission tariff structures including locational signals and inter-transmission system operator compensation rules

Energy efficiency regarding electricity networks



# What is the Ten-Year Network Development Plan



*“ENTSO-E shall adopt a non-binding Community-wide ten-year network development plan”*

- Transparency
- Decision making process
- Networks/scenarios/Generation outlook/resilience

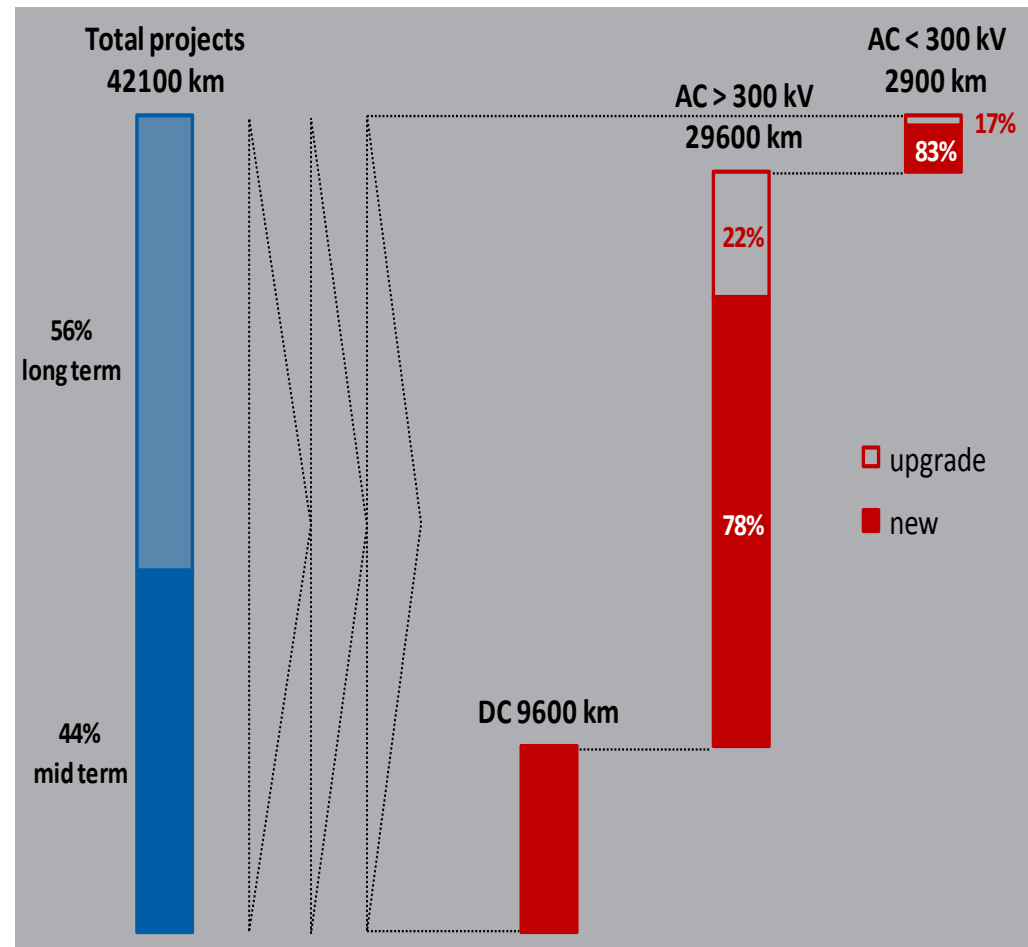
# Results of the Pilot TYNDP 2010

The TYNDP projects represent  
~14% of existing lines



€23 to 28 billion

for the first five years !



# The debate has now started

- “The first 10-year network development plan (TYNDP) forms a solid basis to identify priorities in the electricity infrastructure sector”

*EC Communication*  
**Energy infrastructure priorities for 2020 and beyond**  
28 February 2011

- “Future infrastructure and non-binding TYNDPs should be consistent“.

*Council conclusions on*  
**Energy 2020: A Strategy for competitive, sustainable and secure energy**  
28 February 2011

- “Now, the TYNDP - elaborated by ENTSO-E - is an important first tool [for a clear vision for the development of integrated EU energy grids], which might need to be complemented by other instruments”.

*working document*  
**on Energy infrastructure priorities for 2020 and beyond**  
*Committee on Industry, Research and Energy*  
Rapporteur: Francisco Sosa Wagner

## And « taboos » are dropping in view of the Energy Infrastructure Package



- “It is important to **streamline and improve authorisation procedures**, while respecting national competences and procedures, for the building of new infrastructure; the European Council looks forward to the forthcoming proposal from the Commission in that respect.”
- “The bulk of the **important financing costs for infrastructure investments** will have to be delivered by the market, with costs recovered through tariffs. It is vital to promote a regulatory framework attractive to investment”.

**Conclusions of the European Council**  
4 February 2011

# Time to table proposals

- **Permitting/public acceptance**

- Avoid undue burden on TSOs: 3 - 5 year limit for final decision
- One-stop shops
- Compensation for municipalities?
- Communication : debate “Champions”
- Improvements and streamlining for ALL projects

- **Investments**

- Business case for expansion investment often not stable and attractive enough
- International cost allocation !
- Innovative financing aids, partly to overcome regulatory blockages



# Working towards a longer term

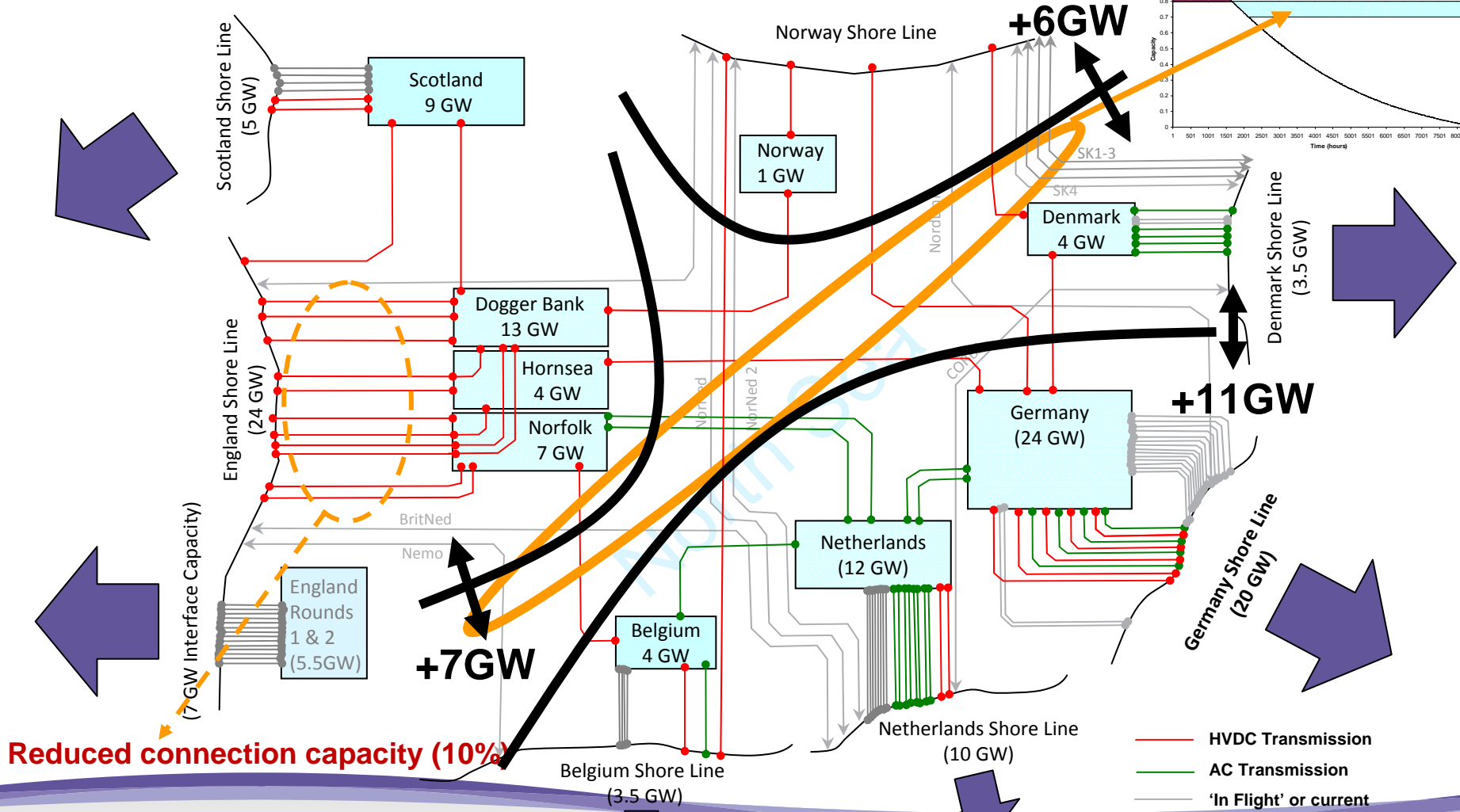
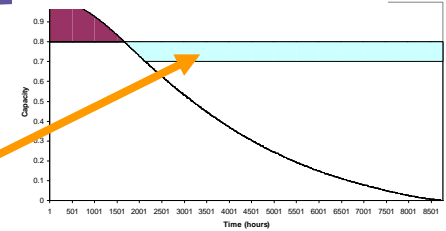
- **Transmission Grid infrastructures peculiarities:**
  - Long life cycle: Decision today - Commissioning 2020 - Economic value 2020 – 2050 +

**Changing the structure of the grid is a slow process  
Longer term approach (20 to 30 years) also needed**

- **Target Year 2050 :**
  - define policy targets, underlying scenarios,
  - identify candidate technologies, grid structures, R&D efforts
- **Intermediate Target Year (2030...)**
  - ensure a viable path between present and long term,
  - avoid short term decisions leading to stranded investment

# Optimised integrated offshore grid development

Efficient use of Transmission Capability



# Towards 2050 pan European System : the ENTSO-E study roadmap



- An ENTSO-E Study Roadmap will be available by July 2011 (after consultation process)
  - Describe a comprehensive study package covering all relevant issues
- Electricity highways issues:

Technological  
issues

Economic/financial  
issues

Political/sociopolitical  
issues

- In context of SET Plan, the realization of study package will be done by a large consortium (TNOs, DSOs, universities, institutes, manufacturers, ...).
- First comprehensive concept on **Electricity Highways System** (also showing important corridors) is intended to be available by end 2014.

# Conclusions

- SoS and RES development taken by EU policy call for massive development of transmission grids, **both between and within countries**
- ENTSO-E's first Ten-Year Network Development Plan has been a timely initiative that has enabled the policy debate
- Seamless integration of Electricity Highways into the 400kV grids demands that TSOs operate and have strong ownership stakes
- **Permitting and public acceptance is the key issue** ; without radical changes policy objectives will not be met
- A huge financial effort requires new financing tools and regulatory stability