

**Innovative DSOs in a Decentralised
Energy System**
Data Management, Flexibility, Storage

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Paradigm shift: Renewable energy and more active consumers

Thousands of small units



Active consumers



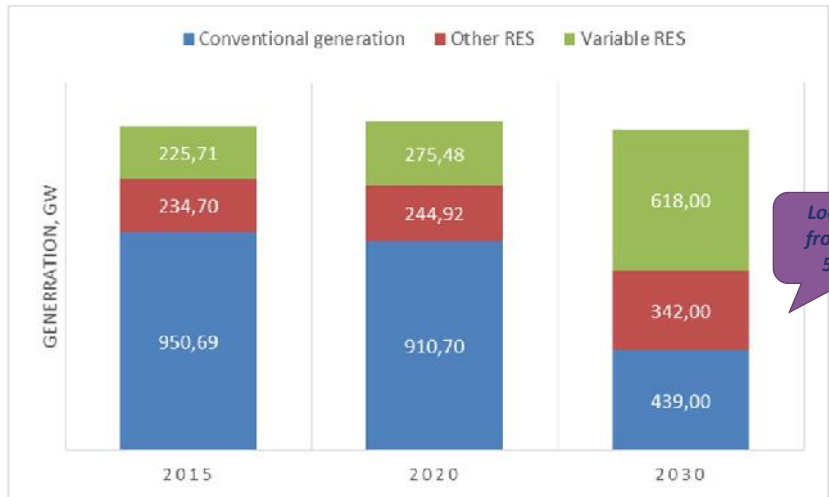
Huge flows all over Europe



Challenges

System stability, Resource variability, New Connections, Changed power flows, Integrating demand side resources including storage, Managing data, Empowering consumers, Unlocking flexibility, **Changes to our power system necessitates enhanced TSO-DSO coordination**

Overview of generation mix 2015-2030



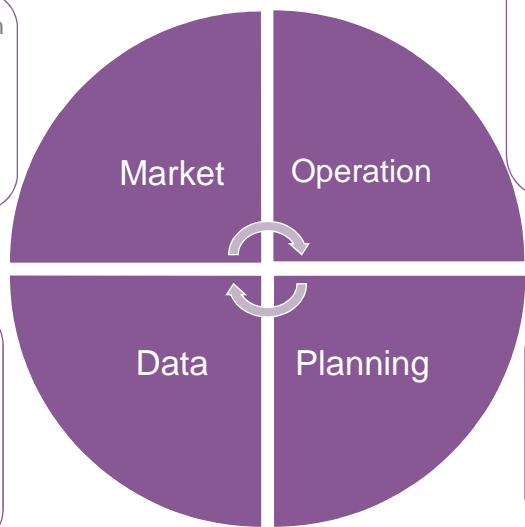
Load varies from 530 to 574 GW

Source: ENTSO-E

TYNDP 2016 vision 4

Enhancing TSO/DSO cooperation

- Ensure consistency between wholesale and retail market
 - Unlock DSR potential
 - One single market, including flexibility (congestion mgt/ balancing)
 - Storage is a market activity
- Data Management Hub neutral, oversight, and at least control area size
 - Several models of party in charge
 - Define data needs, roles
 - IT architecture for data management



- Define needs around observability
 - Active power management actions which have an impact on balancing and congestion in transmission should be overseen by TSOs
 - Define roles of TSOs and DSOs
- Enhance the information exchange
 - Coordination of the assessment of connection capacity