



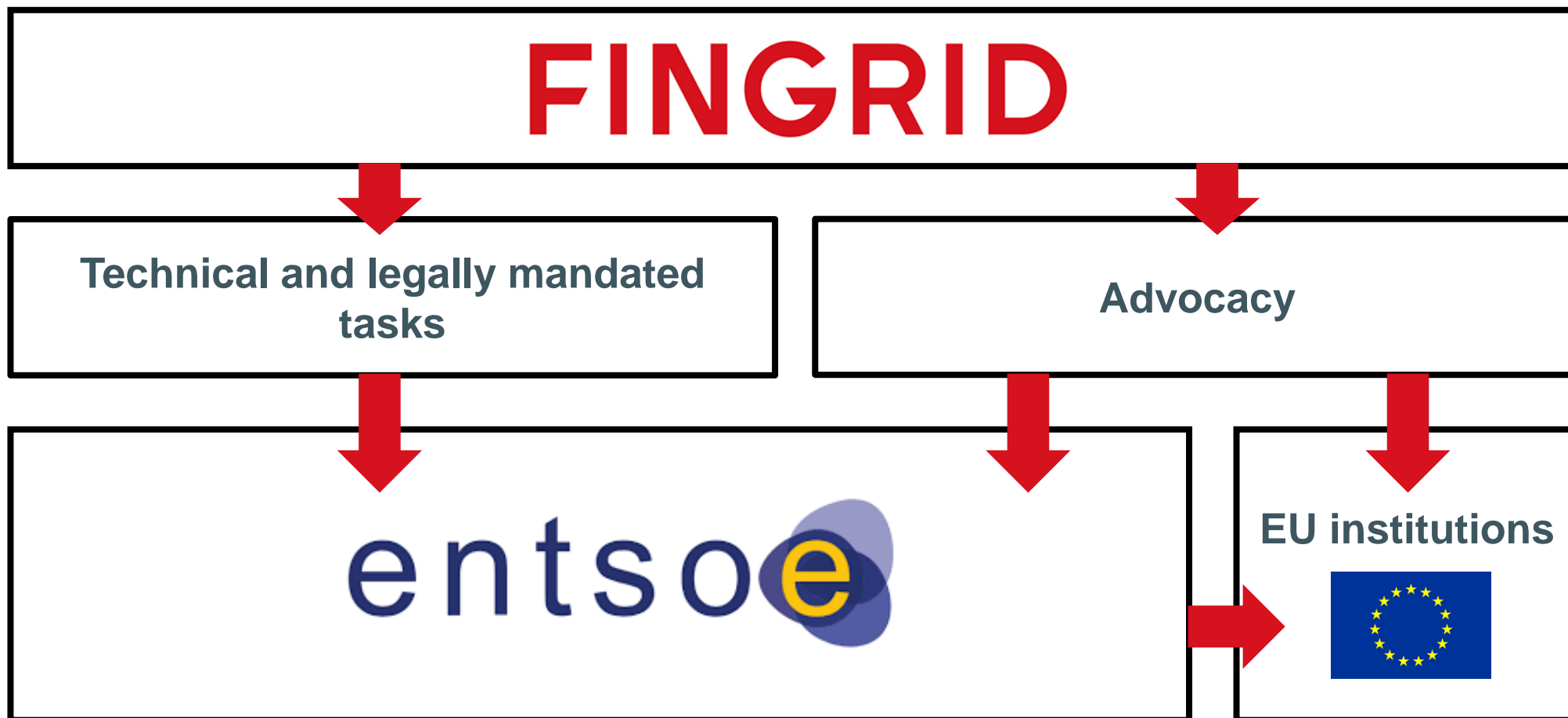
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Sähkömarkkinatoimikunta

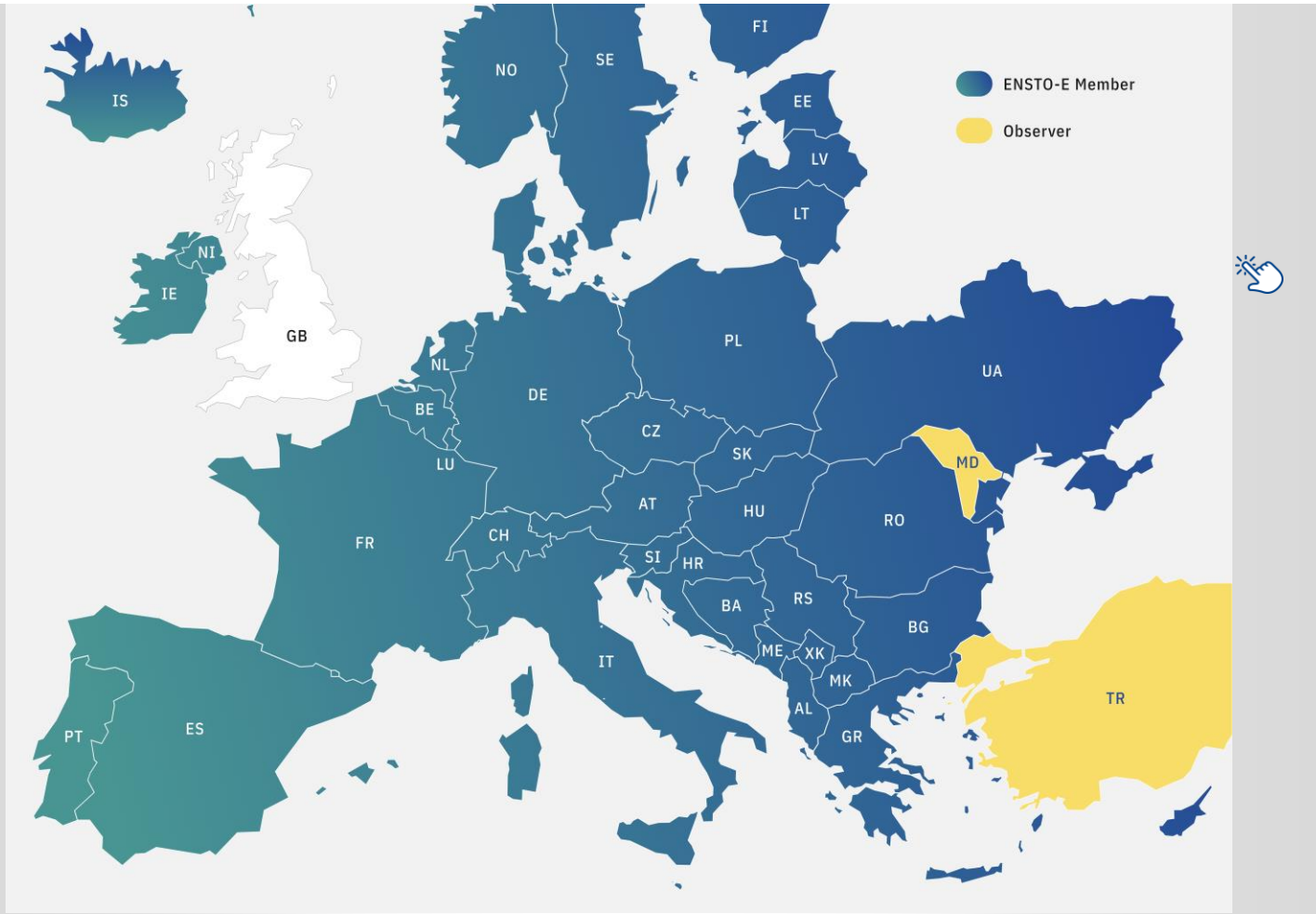
# Introduction to European TSO cooperation and ENTSO-E

**FINGRID**

# ENTSO-E as the main vehicle of EU level engagement



# ENTSO-E: 40 TSOs operating one of the world's largest interconnected grids



- ENTSO-E is the association for the **cooperation** of the European transmission system operators (TSOs).
- 40 member TSOs, representing 36 countries and serving about 550 million citizens, responsible for the **secure and coordinated operation** of Europe's electricity system.
- ENTSO-E is also the **common voice of TSOs in Europe**.
- ENTSO-E **serves the interests of society by optimising social welfare** in its dimensions of safety, economy, environment, and performance.

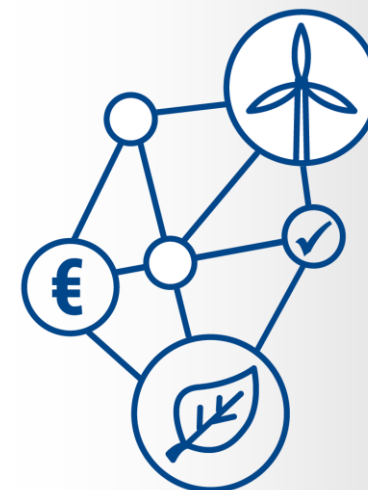
# ENTSO-E: 40 TSOs operating one of the world's largest interconnected grids



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# ENTSO-E and its Members fulfill a common mission

- Ensuring the **security of the interconnected power system** in all time frames at pan-European level
- Ensuring the **optimal functioning and development** of the European interconnected electricity markets
- Enabling the **integration of electricity generated from renewable energy sources** and of emerging technologies, enabling Europe to become the first **climate-neutral continent by 2050**



# Cooperation with EU institutions on legal mandates

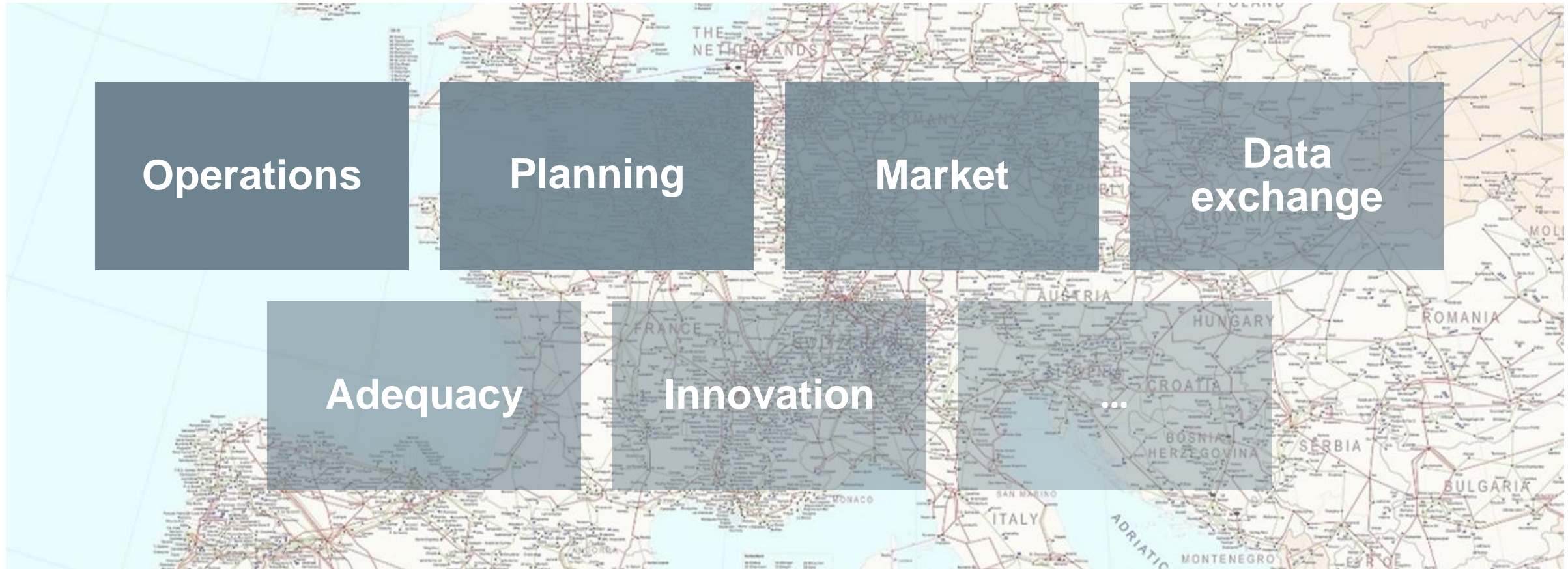
EU law gives ENTSO-E & TSOs responsibilities to develop and implement IEM\* methodologies



**ACER**   
European Union Agency for the Cooperation  
of Energy Regulators

**FINGRID**

# Areas of cooperation



**... as well as common rules and principles**

# Evolution in ENTSO-E mandated tasks

2009	2015	2018	2020	2021 – 2025
<b>Third Package</b> <ul style="list-style-type: none"> <li>• Network codes</li> <li>• TYNDP</li> <li>• Generation adequacy</li> <li>• RDI roadmaps</li> </ul>	<ul style="list-style-type: none"> <li>• TEN-E Regulation/PCIs</li> <li>• Transparency Regulation</li> <li>• REMIT Regulation</li> </ul>	<ul style="list-style-type: none"> <li>• Common Grid Model</li> <li>• Bidding zones study</li> <li>• New TYNDP methodology</li> <li>• Advanced Adequacy assessment – MAF</li> </ul>	<b>Clean Energy Package</b> <ul style="list-style-type: none"> <li>• Electricity Regulation &amp; Risk preparedness</li> <li>• Regional coordination centres</li> <li>• Pan-European resource adequacy assessment</li> <li>• New Network Codes</li> </ul>	<b>Green Deal and Fit for 55 Package</b>

Average of 50 consultations a year



# TSO cooperation in ENTSO-E: fulfilling EU legal mandates to meet energy and climate objectives

**9 network codes and guidelines** + related methodologies & pilot projects

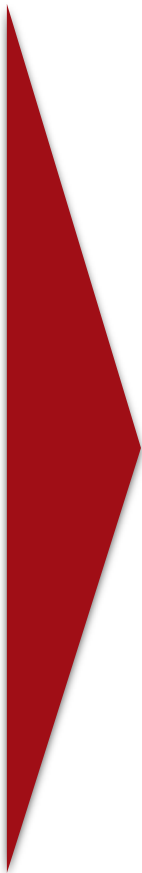
- Pan-European IT**
- Transparency Platform
  - European Awareness System
  - Common Grid Model

**3 research**, development & innovation roadmaps

**6 Regional** Coordination Centres

**7 ten-year network development plans**

**12 security** of supply assessments +  
**29 summer & winter outlooks**



**Competitiveness**

Doubling of cross-border electricity exchanges in last 20 years

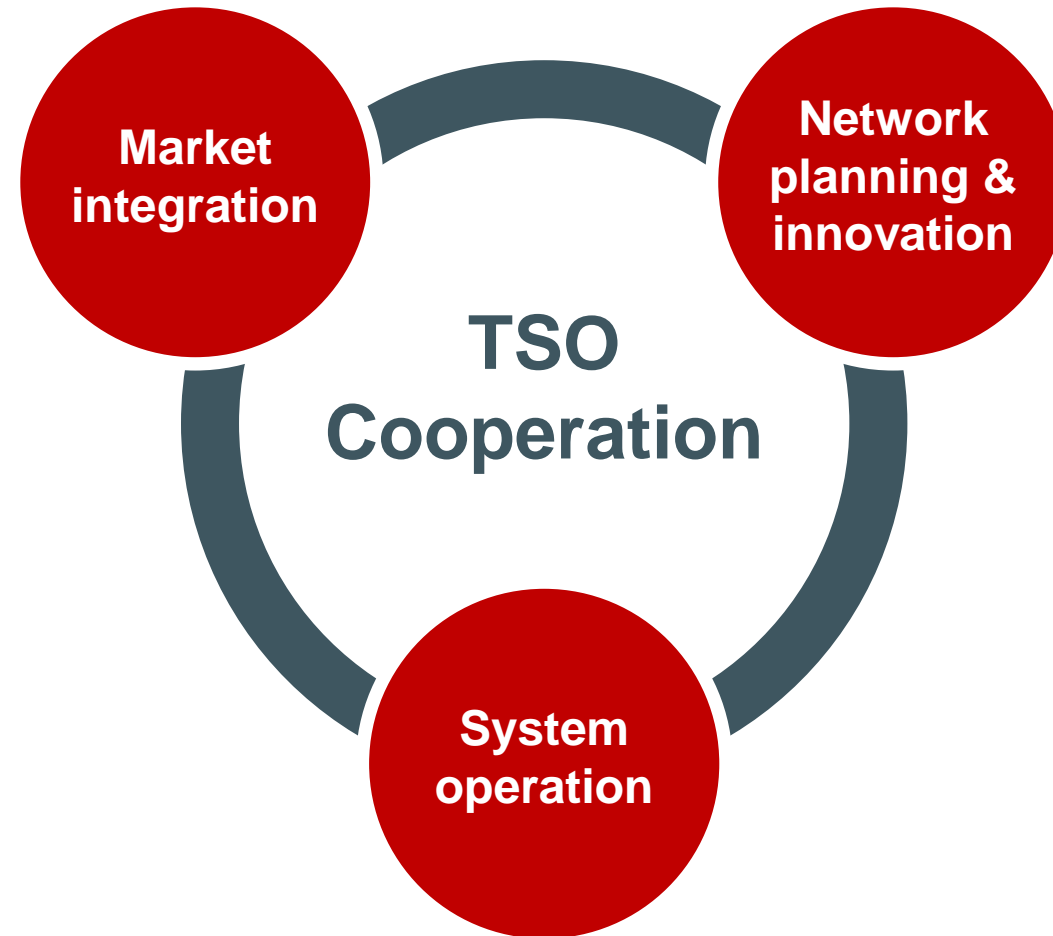
**Security of supply**

Successful coordination in critical situations (solar eclipse, cold spell, pandemic)

**Sustainability**

35% share of renewables in the electricity mix

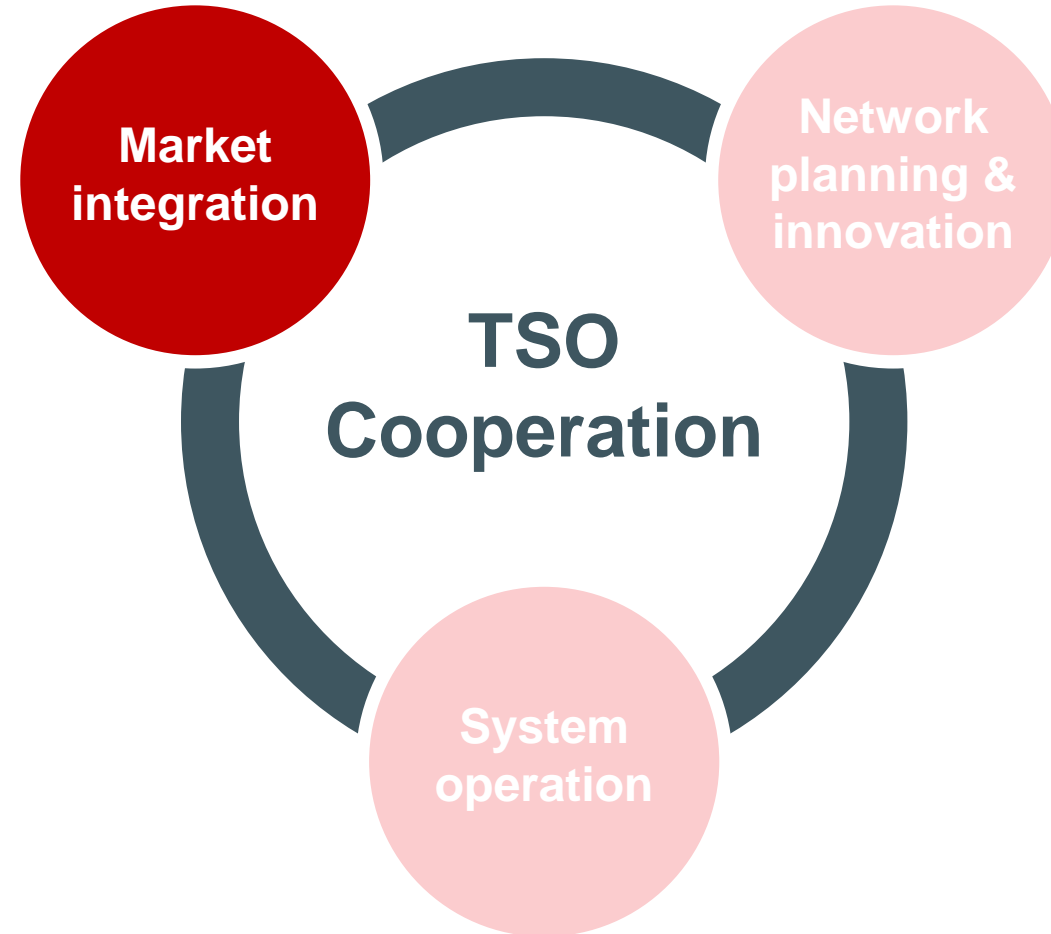
# TSO cooperation as foundation for RES integration



# TSO cooperation as foundation for RES integration

## Market Integration

- TSOs help interconnecting markets
- TSOs' initiatives foster increased cross-border trade
- TSOs' initiatives foster price convergence



# Long-term markets – JAO acts as a cross-timeframe service provider

The **Joint Allocation Office (JAO)** acts as the single allocation platform (SAP) operator for FCA

- In operation as of 1 November 2018
- It auctions cross-border transmission capacity rights
- As of 2022 it covers 65 bidding zone directional borders and has 300 registered market participants
- More than 3500 auctions have taken place since SAP operations began



# Short-term markets – One common DA allocation for all EU countries

## Single day-ahead coupling (SDAC)

- SDAC uses the day-ahead market coupling operator function with the **EUPHEMIA** algorithm. It calculates electricity prices across Europe and implicitly allocates auction-based cross-border capacity
- **27 countries with 32 TSOs and 17 NEMOs** currently involving 61 bidding zones.
- In total, **more than 3 000 market sessions** have been successfully completed since the go-live in February 2014
- The integration of the borders PL–DE, PL–CZ, PL–SK, CZ–DE, CZ–AT and HU–AT in June 2021, and BG–RO in October 2021, into the SDAC marked a milestone of the integration of European electricity markets  
→ **One common SDAC is now in operation across all EU countries**
- On 8 June 2022, **implicit flow-based allocation has been implemented in the Core CCR**. This will make the allocation of cross-zonal capacity much more efficient for  
13 countries, 278 million people and an annual electricity consumption of 1,500 TWh



# Short-term markets – SIDC extended in September 2021

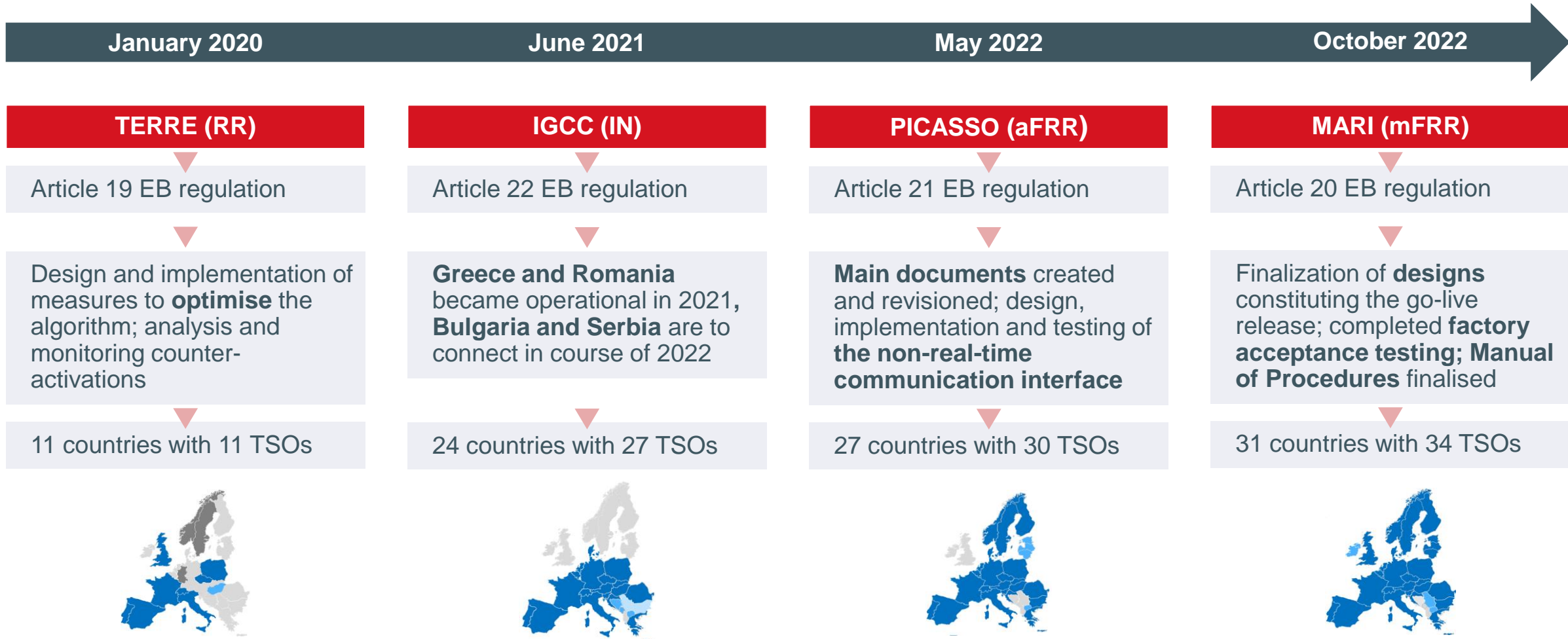
## Single Intraday Coupling (SIDC)

- SIDC enables **continuous cross-border trading across Europe**. It is based on a common IT system with a shared order book, a single capacity management module and a shipping module
- It covers **27 countries**, 22 of which are operational with at least one border, 30 TSOs and 15 NEMOs
- The **third go-live wave** on 21 September 2021 integrated the Northern Italian borders (IT–FR, IT–AT and IT–SI) and the Italian internal bidding zone borders into the already coupled intraday region
- More than **165 million trades** have been executed within SIDC since its inception in June 2018



# Balancing Markets

4 balancing platforms to increase security of supply and economic efficiency of balancing activities in Europe



# Background: ENTSO-E Transparency Platform

## Regulatory Framework

EU Regulation 543/2013  
on submission and publication of data in electricity markets Article 5



EU Regulation No 543/2013 of 14 June 2013 mandates the European Member State data providers and owners to submit fundamental information related to electricity markets to the ENTSO-E Transparency platform.

This is a significant step towards the implementation of the Internal Electricity Market (IEM), as the platform serves as a central information platform by publishing the market related data for all the market participants on a non-discriminatory basis across Europe.

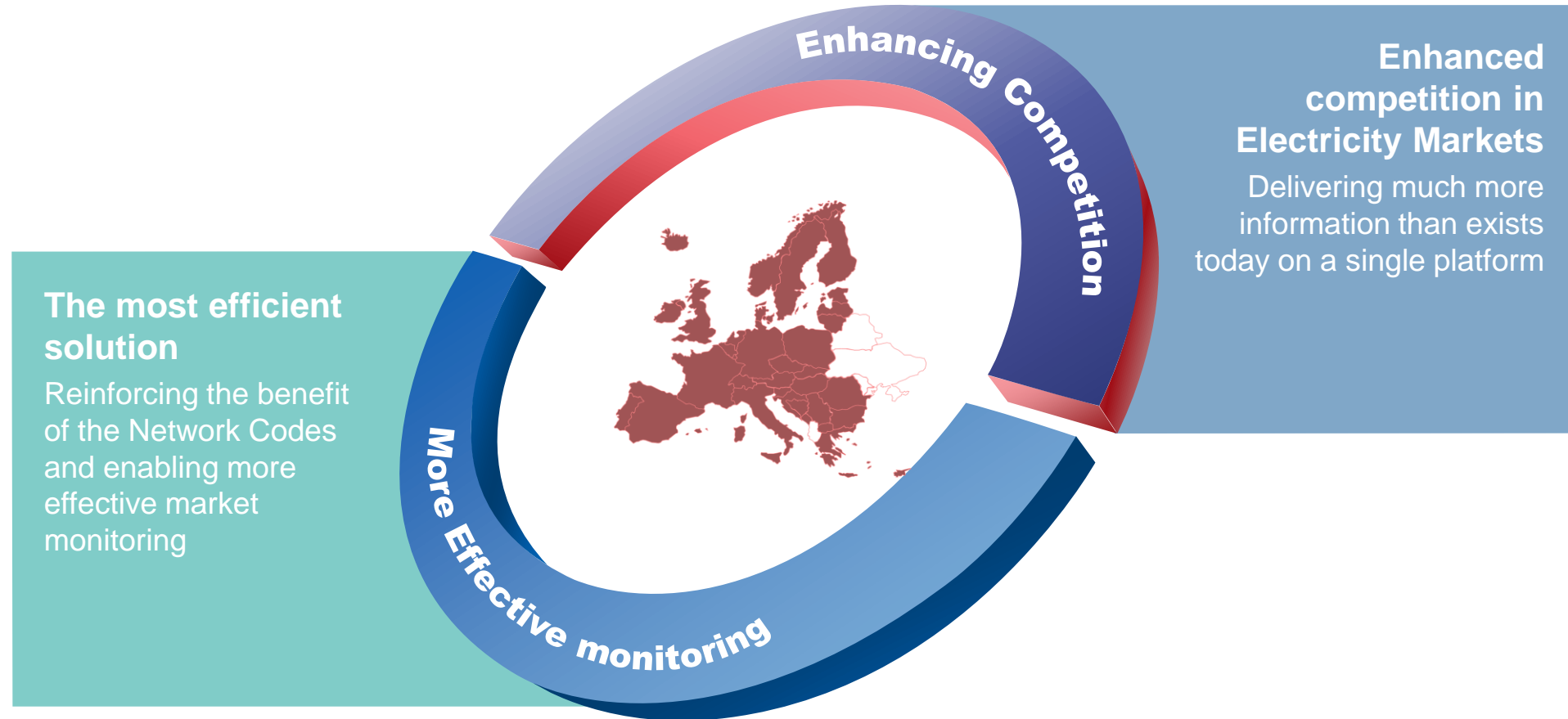
Platform reinforces the benefit of the Network Codes, and enables more effective market monitoring.

Enhances competition in electricity markets by delivering information on a single platform, and thereby creating an efficient, liquid and competitive wholesale markets.

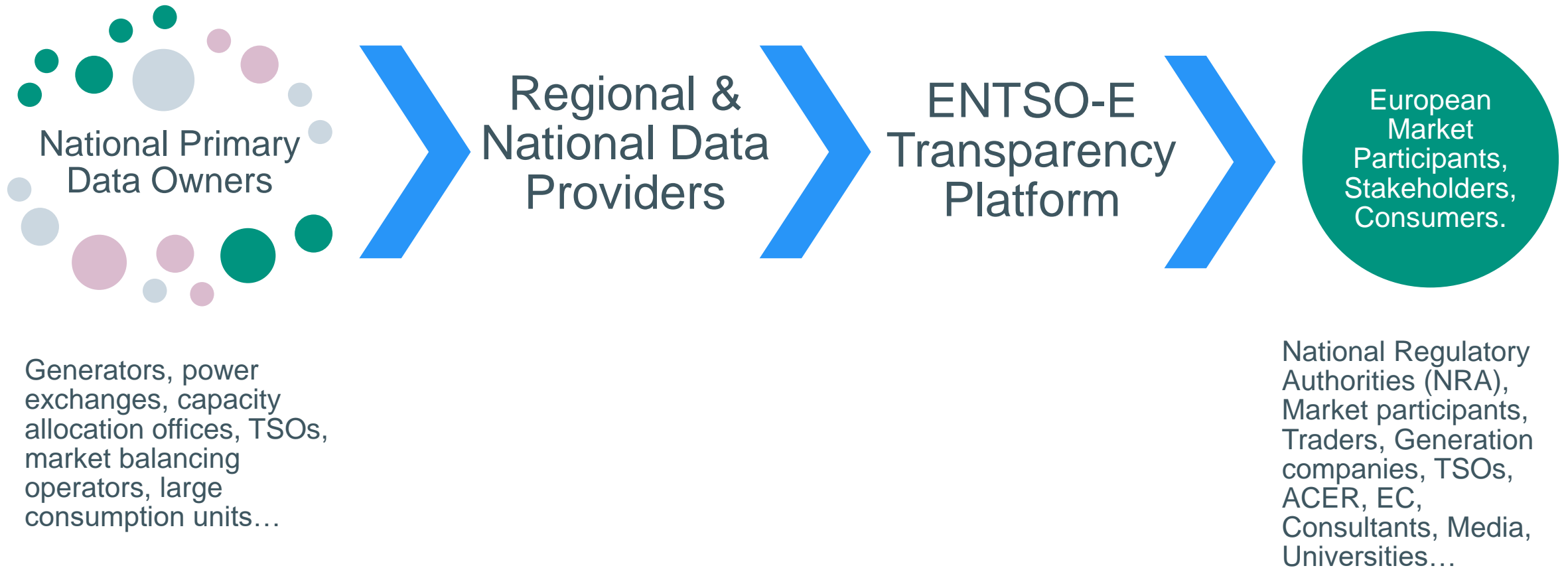


# Background: ENTSO-E Transparency Platform

## Transparency for the European Electricity Market

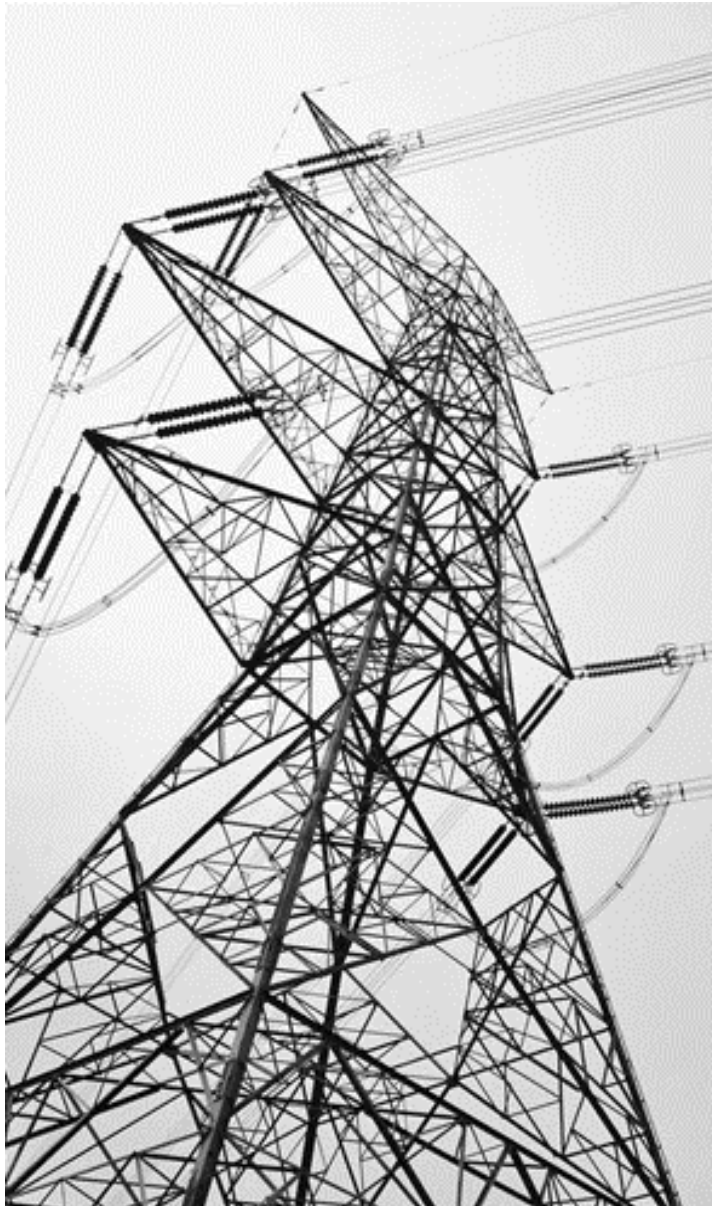


# Procedure for reporting on the Transparency Platform



# Transparency Platform

## Conclusions



~ 62 Data Providers

TSOs  
Non TSOs  
Power Exchanges  
Auction offices (NordPool Spot, JAO, DBS,...)  
3rd parties (Elexon)



Our users, clients

Traders, Consultants  
The European Commission  
ACER, TSOs  
Media, Universities  
Individuals



~78000 files/per day

Amount of daily received data increased ~4 times from 2007/5



Data Completeness

Missing data decreased from initially ~40% to ~5-7%



Data submission channels

ftp(s)  
ECP (Energy Communication Platform)  
web services

# TSO-DSO cooperation at European level – Rationale



**Unleash the potential of distributed flexibilities**



**Operate the System of Systems**



**Plan and design the grid**



**Empower our customers**



**Other transversal issues**

# TSO-DSO cooperation at European level – Background

**2016**

The European Commission sets up the **Distribution & Transmission Cooperation Platform** to facilitate TSO-DSO dialogue at EU level



**2020**

A joint TSO-DSO task force starts developing the **Memorandum of Understanding** and Non-Disclosure Agreement



**2019**

The **Clean Energy Package** mandates the creation of the EU DSO Entity and requires both Associations to cooperate (articles 30 & 55)

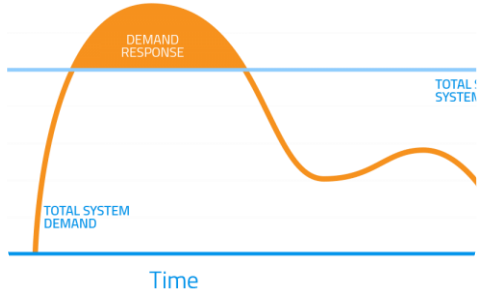
**2021**

The **EU DSO Entity** is officially established and the MoU is approved by the Assemblies of both Associations

# Main areas of cooperation with DSO Entity in 2023



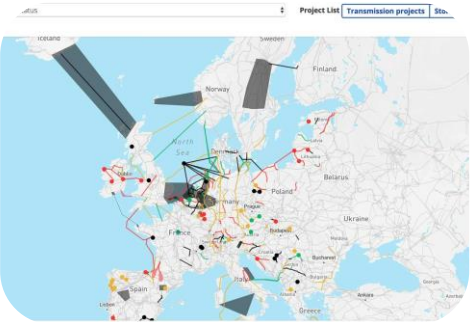
**Data Interoperability and Access**



**Network Code Demand Response**



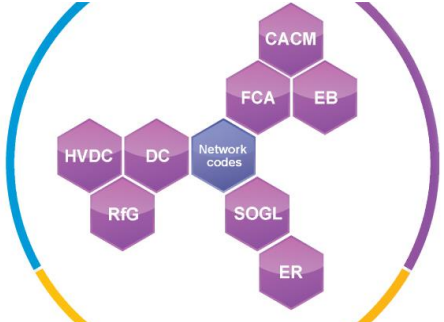
**Network Code Cybersecurity**



**Joint Scenarios Building (TYNDP)**



**Digitalisation of the Energy Section EU Action Plan**



**Evolution of Existing Network Codes and Guidelines**

# Regional cooperation: A prerequisite for EU level engagement

Regional TSO alignment and coordination is a key element of influence at the EU level

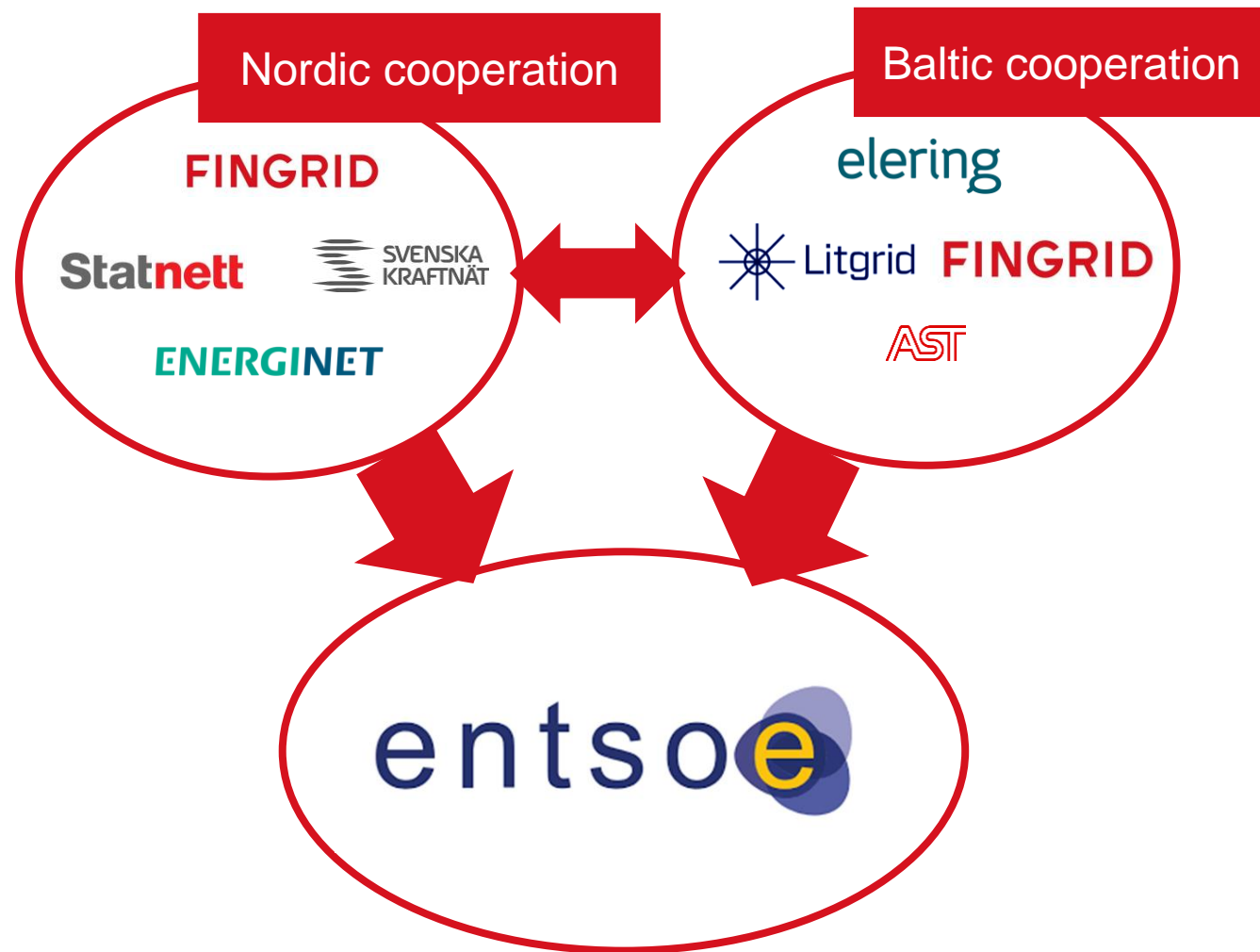
- Formalised regional cooperation and governance structures form an underlying layer of all EU level collaboration.
- European legislation, physical interconnection and common regional operational systems necessitates regional TSO collaboration.
- Fingrid is a member of both the Nordic and Baltic Capacity Calculation Regions (CCRs).



# Regional cooperation: A prerequisite for EU level engagement

Regional TSO alignment and coordination is a key element of influence at the EU level

- Fingrid like other Nordic TSOs is an active member of ENTSO-E and strongly committed to advancing all aspects of the association's key objectives and development.
- Fingrid cooperates closely with Nordic and Baltic TSOs to amplify common positions in ENTSO-E to ensure efficient, forward-looking and market-oriented solutions to the regulatory and technical challenges facing TSOs at the European level.





# Fingrid as a key player and contributor in ENTSO-E

Growth coupled with successful staff recruitment campaigns has enabled Fingrid to expand its footprint in ENTSO-E through assigning more personnel to key Working Groups across all five ENTSO-E Committees (Markets, System Operations, System Development, Research & Innovation, ICT).

Expanded footprint across Committee WGs

Vice  
Presidency of  
Assembly and  
Chairmanship  
of the Market  
Committee

2011-2013

Chairmanship of  
Market Integration  
WG during key  
CACM and FCA  
GL development

2014-2018

Vice  
Presidency  
of Assembly

2023-2025

10 Y

2019

Fingrid hosts 10 year  
anniversary of ENTSO-E  
in Helsinki

# Fingridin prioriteetit ENTSO-E:ssa vuonna 2024



Kapasiteettimekanismien hyväksymisprosessien keventäminen ja nopeuttaminen



Vaikuttaminen pitkän aikavälin suojausmarkkinoiden eurooppalaiseen tavoitemalliin



Meriverkkojen kustannustenjakoperiaatteet – Vaikuttaminen Suomen kannalta hyväksyttäviin periaatteisiin



European Resource Adequacy Assessment – Realistinen kuva sähkön riittävydestä Suomessa



RES flex/overproduction – kannusteet markkinaehtoiselle joustolle

# Thank you

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