Future Energy Market Design

Nordic-Baltic Energy Conference 2015

Athanasios Troupakis

Market Advisor, ENTSO-E

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Introduction: the 2030 challenge for Europe's power system

Decarbonising Europe's power system will require integrating unprecedented levels of renewable energy into the system

Europe's electricity system will be at the forefront of delivering the EU's 2030 energy and climate objectives and meeting the goals of the Energy Union strategy

THIS WILL REQUIRE NEW…

HARDWARE

Upgrading existing transmission lines and building new ones

SOFTWARE

Harmonised rules and regulations through Network Codes and a fit-for-purpose market design

Outline

1. Long-term Market Design
2. Network codes: update, next steps, future
3. Transparency Platform
4. Conclusions

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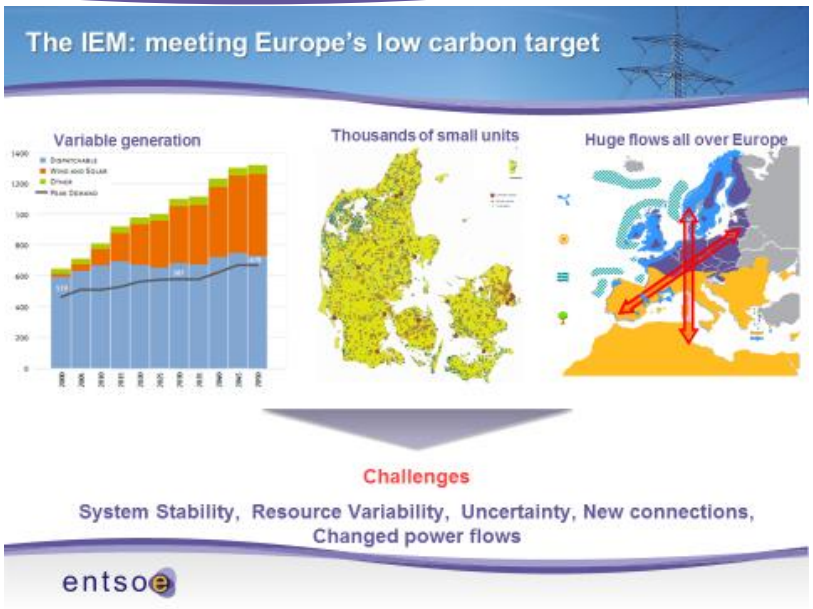
Key challenges ahead

- The power system is facing significant changes and challenges
- The **IEM and adequate** infrastructure address these challenges
- Both address the challenges for 2020 and lay the foundation for 2030



However

- **Value of Security of Supply** and adequacy not reflected in market
- No focus on **long term investments** for adequacy
- Political interventions often **not aligned**
- **Uncertainty** of regulatory framework, market design and of price signals lead to low investments

Key challenges ahead

Effectiveness of price signals to stimulate appropriate investments and performances

- Externalities not reflected in price signals
- Scarcity pricing issue
- Lack of demand side participation in price formation

Operational issues

- Deviations between market outcomes and system needs increase in magnitude and complexity
- These deviations must remain limited and TSOs should require appropriate tools to correct them

In particular, future market design needs to address capacity and flexibility

Improving today's electricity markets

- Direct enhancements of today's electricity markets will contribute to tackling some of the challenges, even though they are not sufficient by themselves

All RES should be fully integrated into the market

- Same duties & responsibilities
- Exposure to market prices
- Incentives to forecast feed-in and hedge volatility

Balancing prices should be reflective of full system costs

- Incentive to act in line with system needs

Demand Side should participate as much as possible in all markets

- DA, ID & Balancing but also AS and potential new market layers
- Requires appropriate market rules

Policy recommendations: Short- and medium-term

Short-term actions

- The Target Model should be fully implemented as soon as possible
- Current market design should be improved with direct enhancements
- Technical system scarcities must be objectively and collectively assessed by TSOs in a coordinated manner and complemented with ENTSO-E's overall adequacy assessment

Medium-term actions

- Appropriate incentives or obligations should be introduced so that market participants take more responsibility for system adequacy – mainly flexibility and capacity
- The hedging dimension of the market design needs to be developed via associated insurance products for capability
- In implementing hedging products (capacity, flexibility or system services products) cross-border participation must be allowed with market participants' involvement

Policy recommendations: Long-term

Long-term actions

- By 2020, based on ENTSO-E and TSOs enhanced system adequacy assessments, long term technical system scarcities must be assessed at regional and European level
- In parallel, based on results from regional solutions of hedging products for capability (spontaneous or regulated), a consistent European market design model must be designed for implementation
- Long-term actions and goals should be aligned to the new strategic framework for the Energy Union

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What is a Network Code?

A set of rules applying to one aspect of the energy sector

Which are developed by ACER, ENTSO-E & stakeholders

And become legally binding after the Comitology process

Hence they will have the same status as any other Regulation

Network Codes form the foundation upon which the IEM is built

Internal electricity market

3 Connection Network Codes

set requirements for

- Generators
- Demand-side
- HVDC connections

…paving the way for offshore wind…

3 Market Network Codes

set market rules for

- Day ahead/intraday & Capacity calculation
- Long-term timeframes
- System balancing

… day-ahead market coupling…

4 Operational Network Codes

set common rules for

- Assessing adequacy
- Planning outages
- System security
- Emergency situations

…regional security coordination initiatives…

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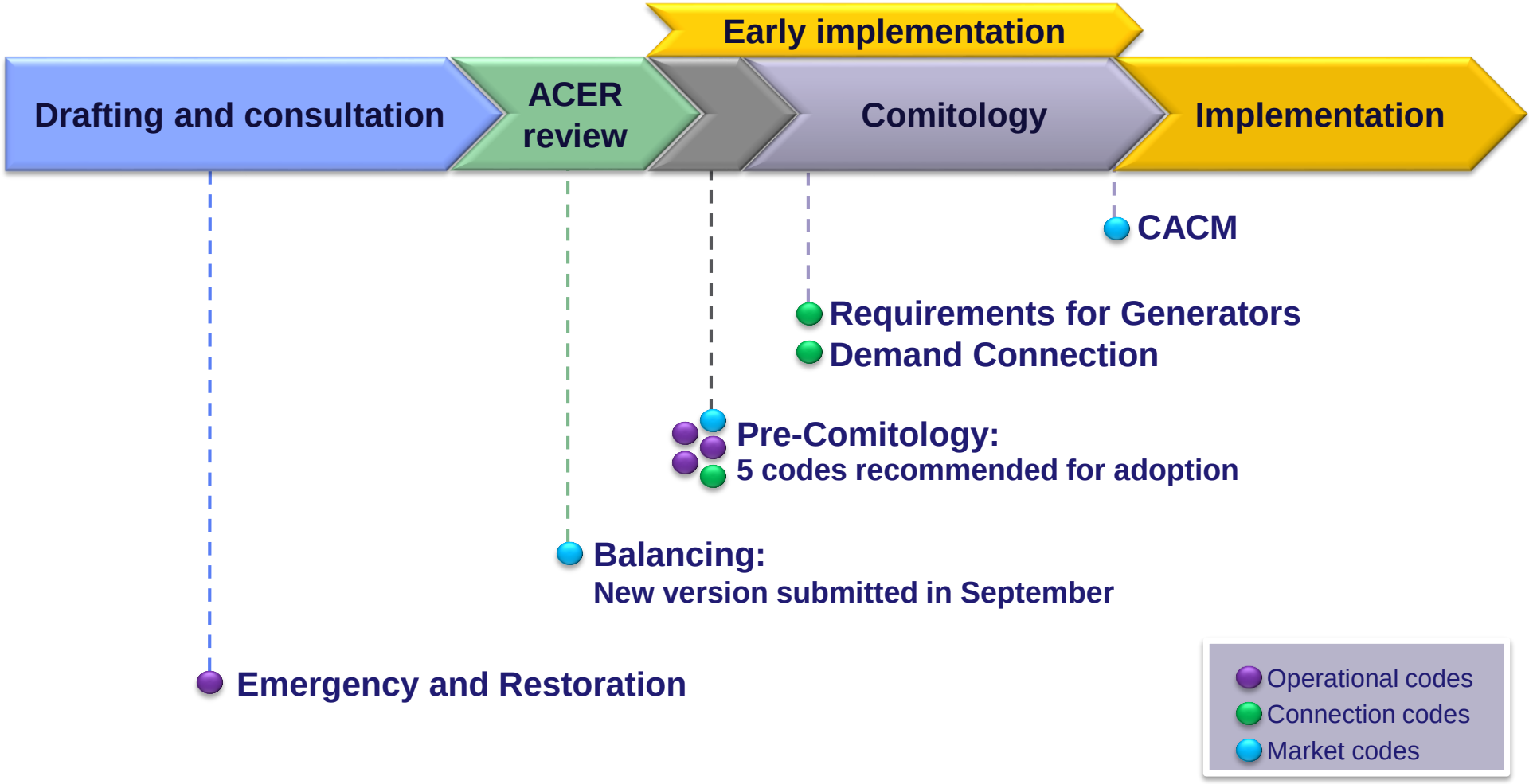
Current status for all NCs



Way forward

- Network Code or Guideline?

	Network codes	Binding guidelines
Content	**Set of rules that can be directly implemented** in each Member States	Include items which require **further implementation at cross-border level**
Legal force	**Binding**	**Binding**
Development process	**Defined in Third Energy Package**	In principle development process of binding guidelines can be less formal **In practice same process as for network codes applied so far**
Adoption process	**Comitology procedure**	**Comitology procedure**
Amendment process	**Defined in Electricity Regulation and ACER guidance document**	Not defined **In practice should be the same process as for network codes**

- On-going discussions about the having a new NC on tariffs
- Official procedure requires: Request from EC, Framework Guidelines from ACER, Drafting by ENTSO-E, consultation and submission

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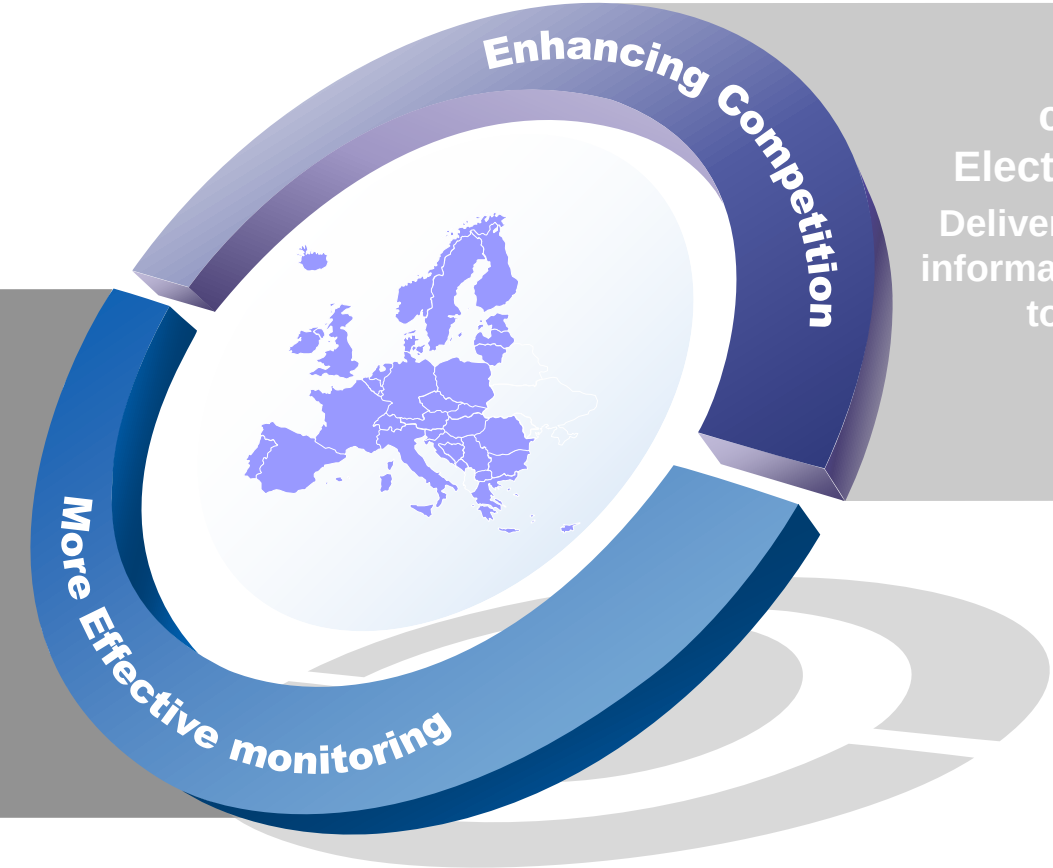
Transparency of fundamental electricity market information



Enhanced competition in Electricity Markets

Delivering much more information than exists today on a single platform

The most efficient solution

Reinforcing the benefit of the Network Codes and enabling more effective market monitoring

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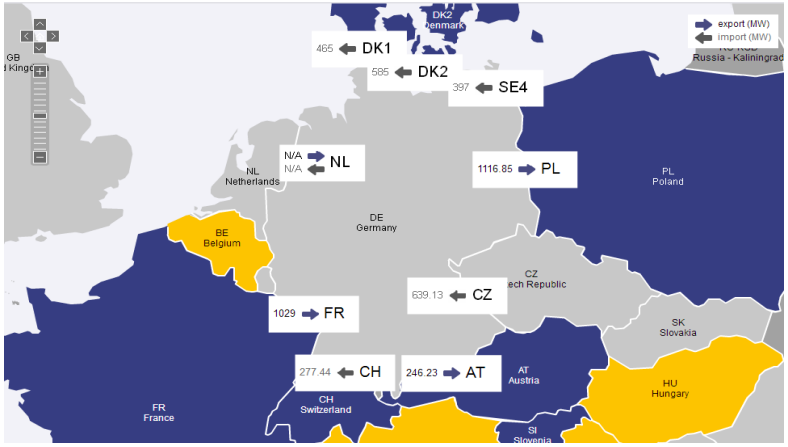
Benefits from increased market transparency

- ✓ Trust & visibility
- ✓ Data symmetry
- ✓ Reduced uncertainty
- ✓ Easing market entry
- ✓ Supporting analysis, planning & decision-making
- ✓ Improved monitoring

Regulation 543/2013

- Entered into force in June 2013
- Mandates ENTSO-E to create a European transparency platform
- Mandates ENTSO-E to establish a Manual of Procedures



Example: Cross Border Physical flows in Germany

More information:
https://www.entsoe.eu/major-projects/

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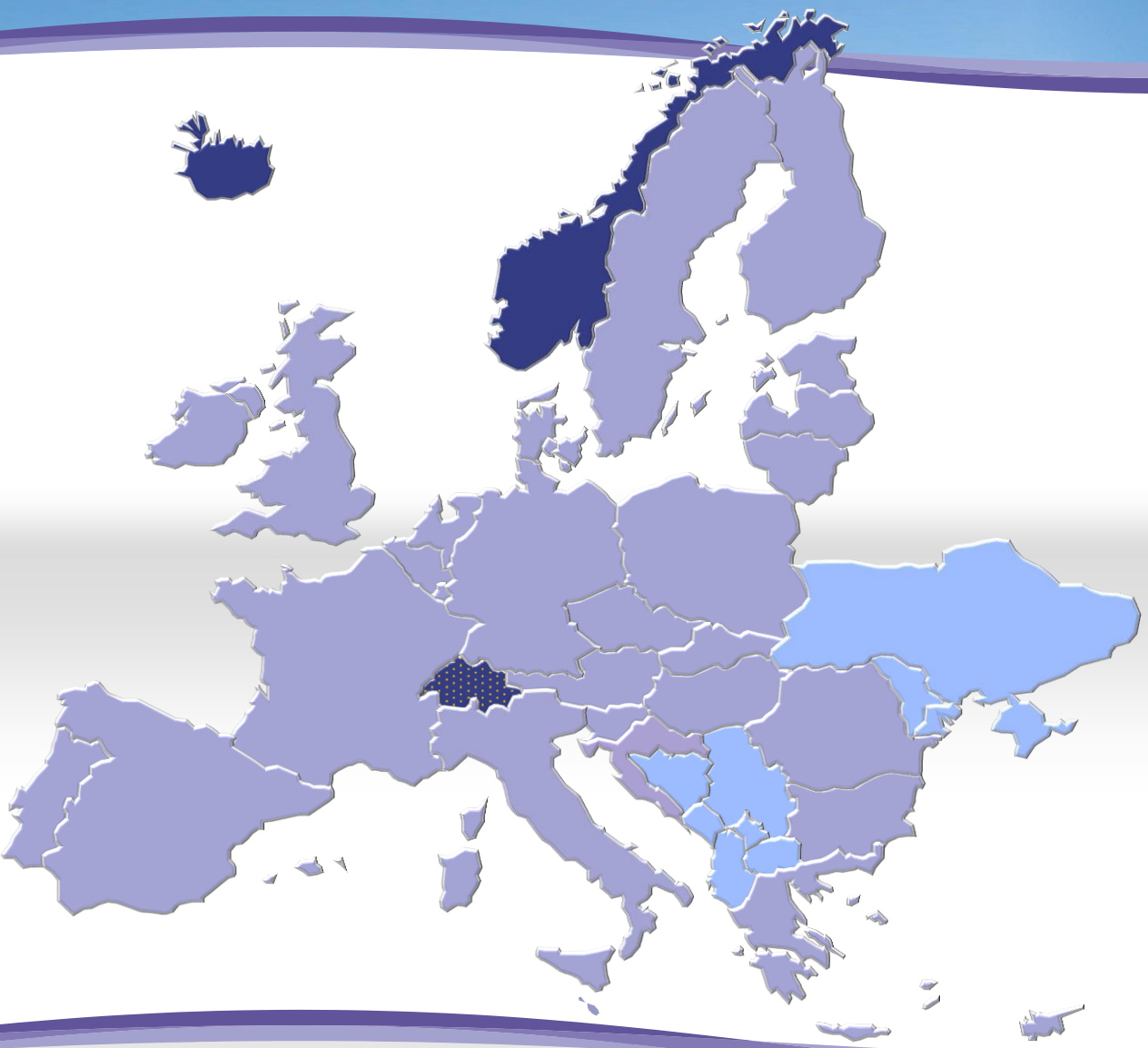
Geographical application



Future Transparency Regulation mandate for EU member states

….and countries under the European Economic Area agreement

….and the Energy Community

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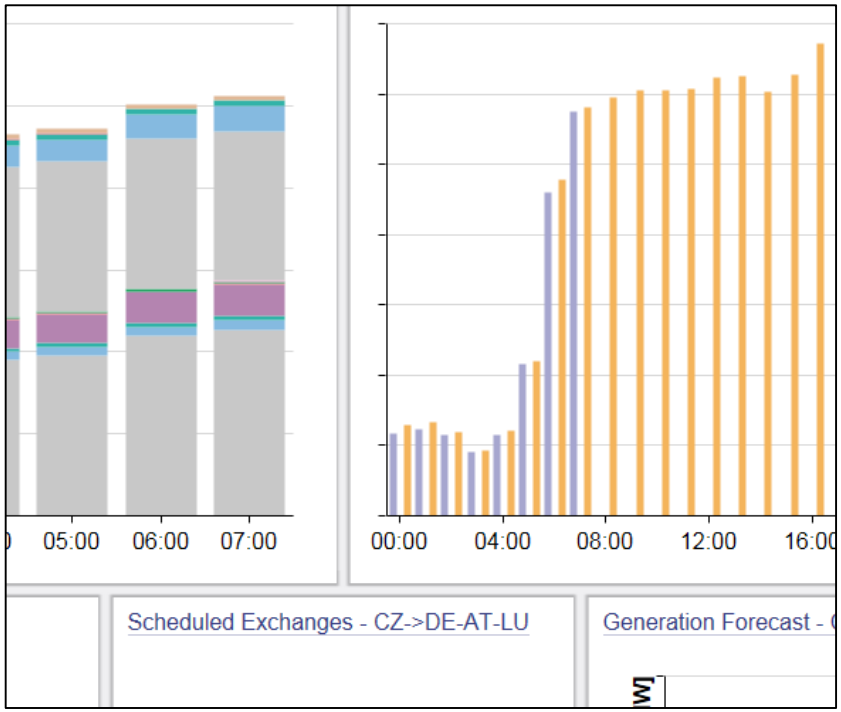
Platform requirements and deliverables

Website-based platform, more than just a database…



- ✓ Available 24/7, free of charge
- ✓ Easy to use and navigate, no training needed
- ✓ Availability of data: 5 years
- ✓ Data available for online consultation, file downloads or via machine-to-machine connection

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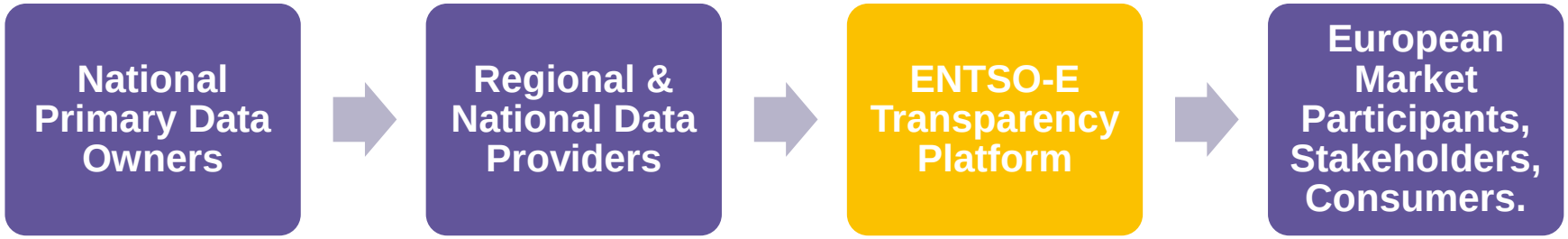
The data journey: from owner to user



DATA OWNERS

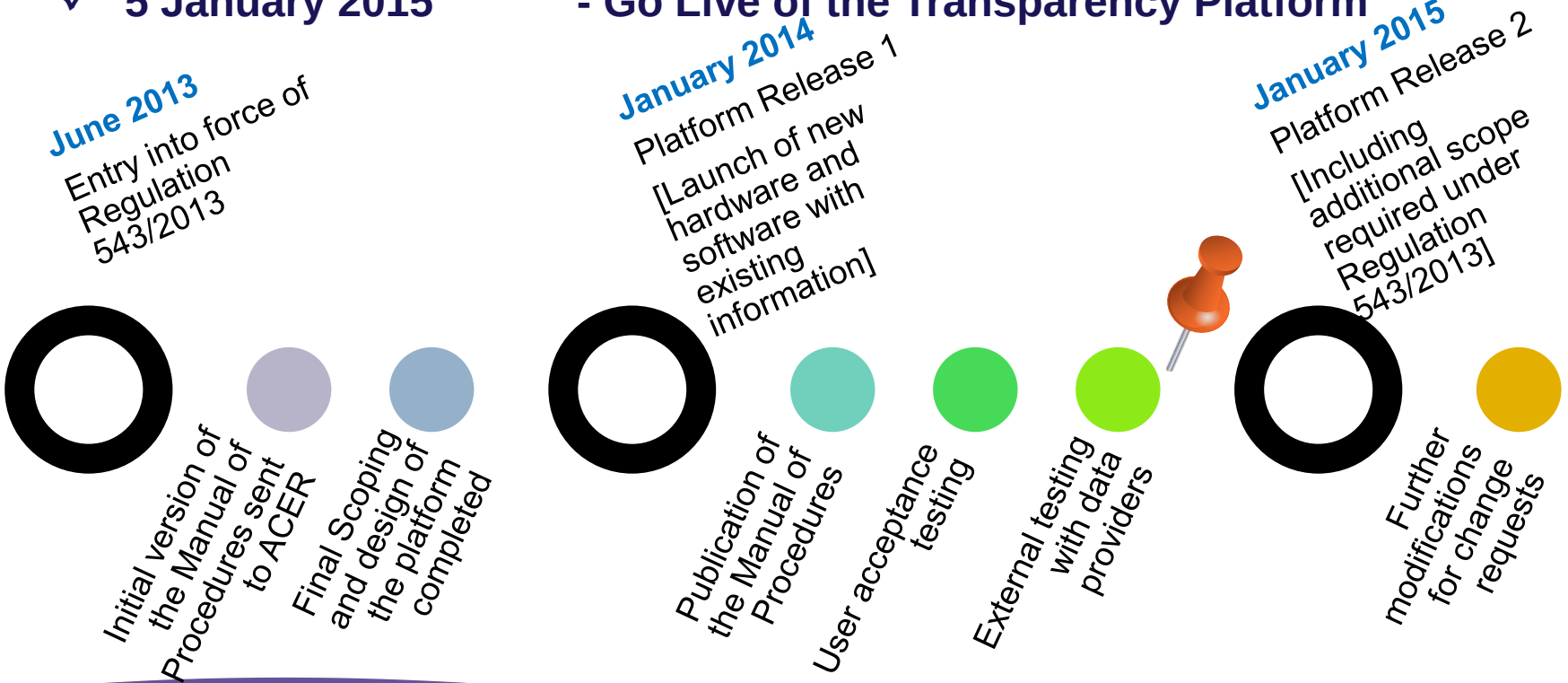
generation companies, power exchanges, capacity allocation offices, transmission & distribution system operators, market balancing operators, large consumption units…

DATA USERS

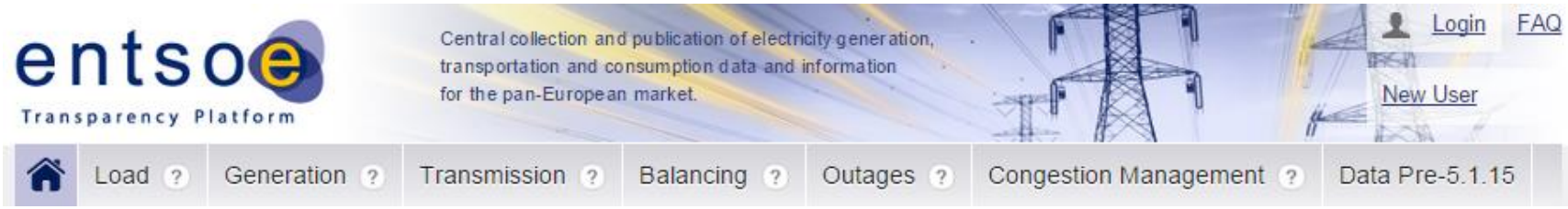
analysts from trading, financial, governmental, regulatory and NGO organisations, academics, research, press and publishing, data owners and providers…

ENTSO-E Transparency Platform timeline

- ✓ **January 2014** - **Release 1 went live *(www.entsoe.net)***
- ✓ **May 2014** - **Manual of Procedures was published**
- ✓ **September** - **Release 2 UAT was completed**
- ✓ **Sept – Dec 2014** - **Interoperability testing with data providers**
- ✓ **5 January 2015** - **Go Live of the Transparency Platform**



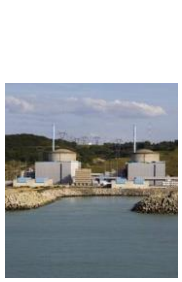
Experience from the GoLive



- **Successful launch on 5th of January 2015**
- **Not yet up to full speed, the ENTSO-E Transparency Platform is already receiving 80,000 data files per day**
- **This converts to around 3 million published data values per day in timeframes ranging from 15 minutes to yearly, depending on the data category. The previous entsoe.net platform published 300,000 values a day.**

- **Official launch event of the TP on January 28**
- **50 participants: press, industry, regulatory, EC**

Next step: Transparency Platform and ARIS – Q2-Q3 2015





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ACER
Agency for the Cooperation of Energy Regulators

ARIS

The ENTSO-E Central Transparency Platform will make fundamental data available to the ACER Platform in compliance with the recently approved REMIT Implementing Regulation

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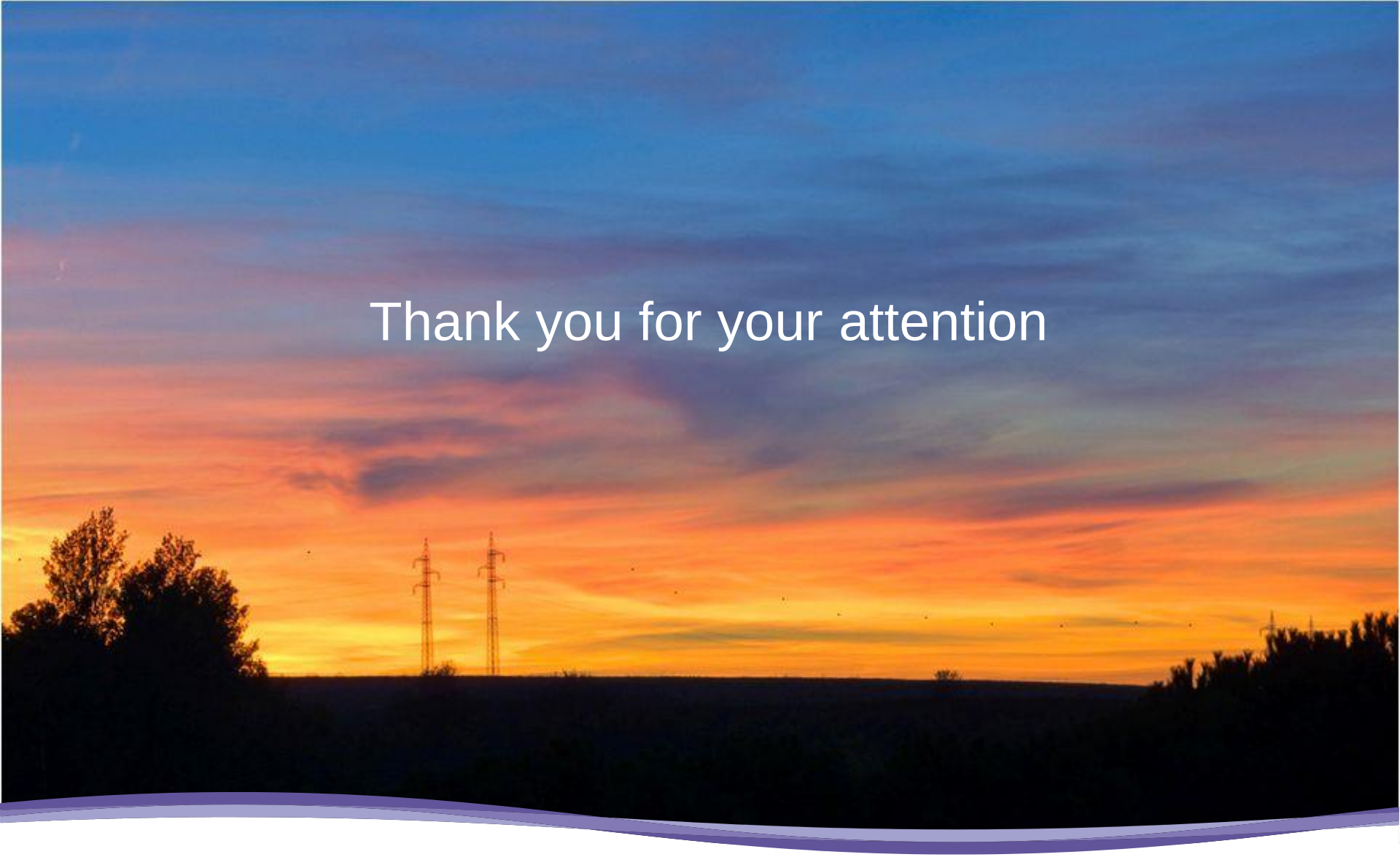
Concluding remarks

- The evolution of the energy sector is relevant to most of the goals of EU policies: economic growth, sustainability, coverage of needs at affordable and competitive price
- Due to the inherent complexity and interactive nature of the sector there is no one single accepted path towards achieving these goals
- The electric system is impacted by changes in the generation portfolio. Managing these changes is politically, financially and technically challenging
- ENTSO-E delivered policy recommendations for short-, medium- and long-term
- Market participants should be incentivized to contribute solving the system scarcities for which they are responsible
- TSOs are responsible for system security: the market design must provide the means to carry out this task efficiently
- NCs set the path for achieving the goals of the IEM and the future market design



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