



Examining Different Regional Power Integration Models

The Case of the European Union and Nord Pool

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The Cases: EU and NordPool



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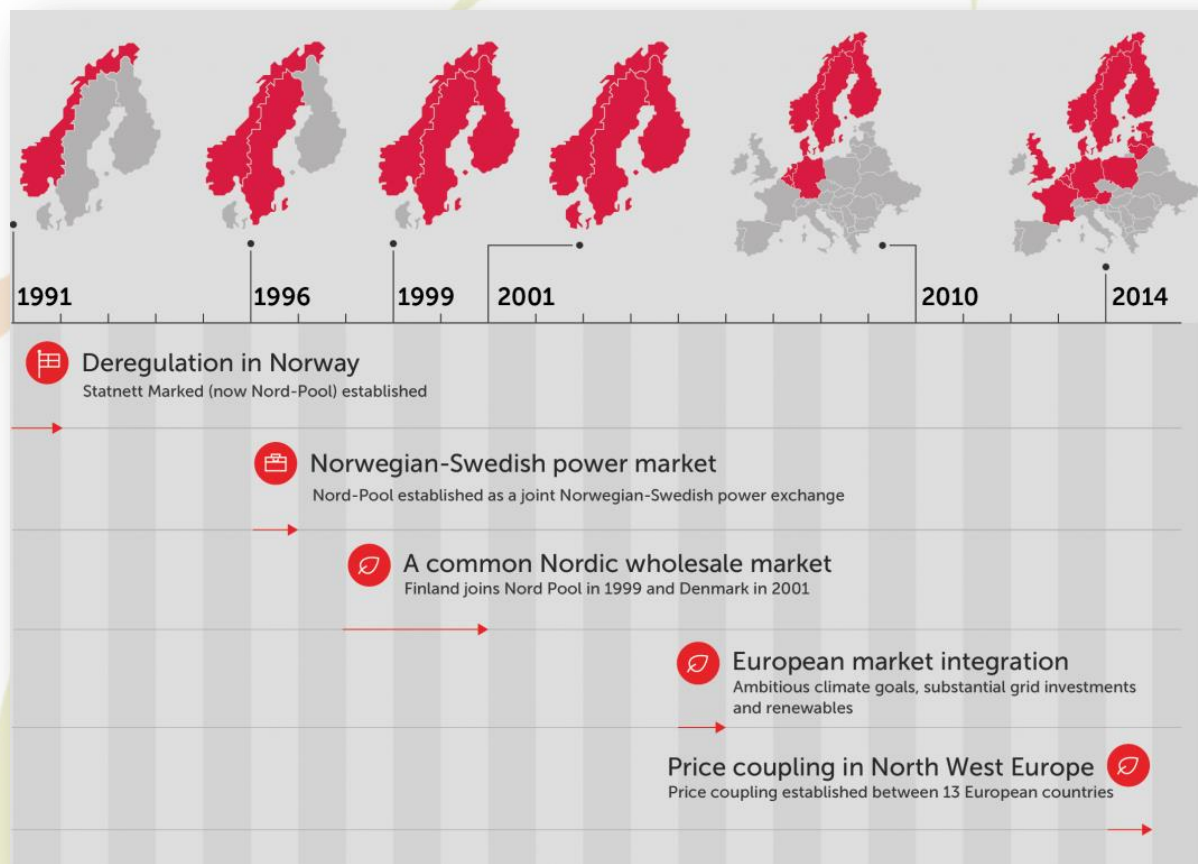
NORD POOL



Key topics



Evaluation of an Integrated European Electricity Market



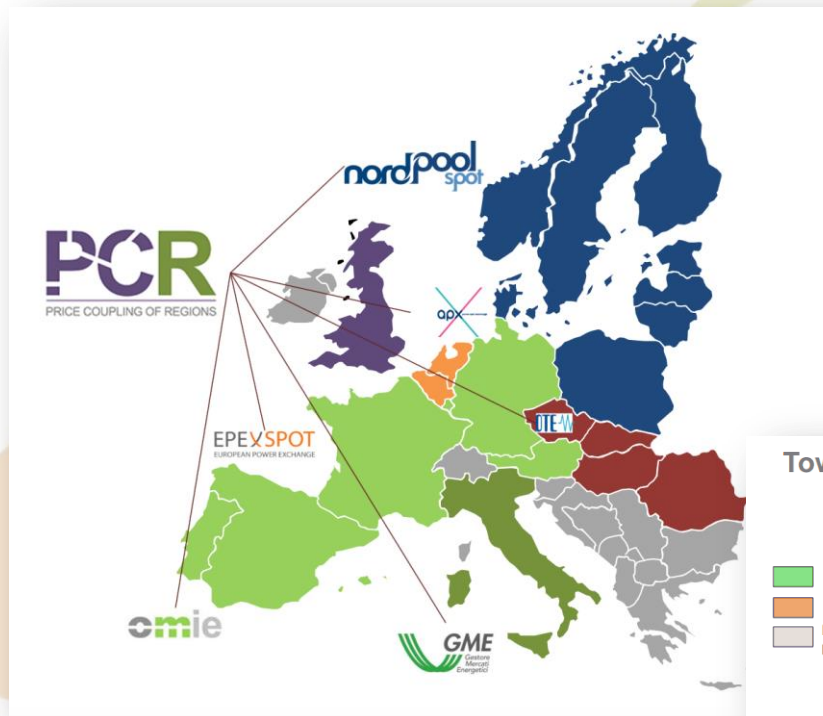
Market integration and regional power trading: European Union

- **European Union** has the world's largest integrated electricity market
- **Liberalizing** power sectors and free grid access as corner stones
- Substantial increase in cross-border trade volume
- **Nordpool** as frontrunner in electricity market integration and most advanced market in the world, covering 80 percent of total consumption
- **Successful evolution** from bilateral contracts to exchange platform with hundreds of participants.
- Decisive national **power sector reform** in 1990 as a precondition

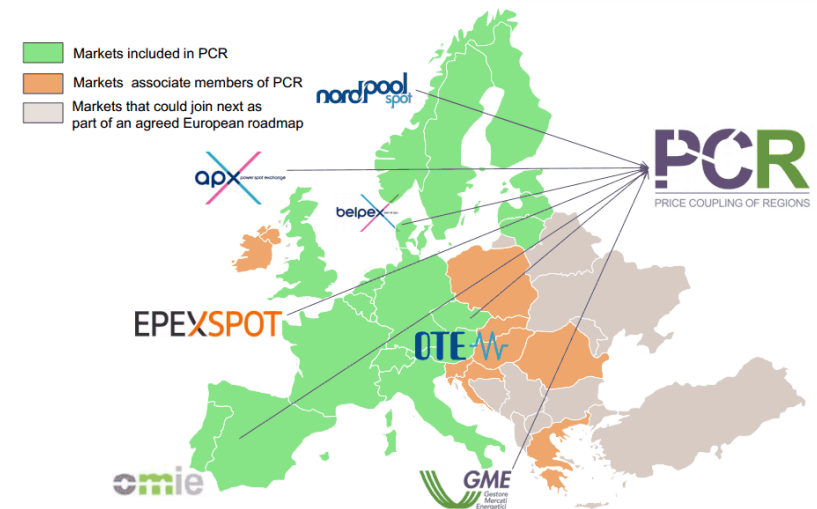
Market integration and regional power trading: Evolution

before 2014

since 2014



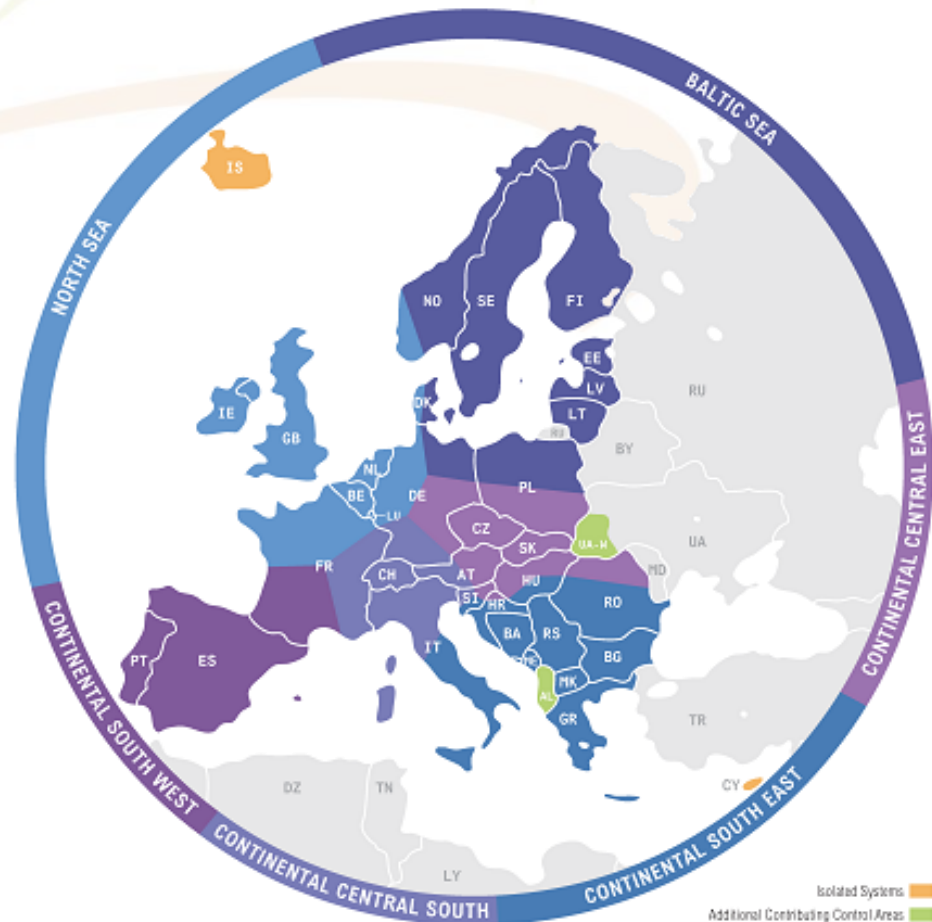
Towards the Single European Market: Next Steps



- Comprehensive and strategic framework of the “Energy Union” based upon the **principles of common market** and **climate protection**:
Free exchange, competition, economic gains, security and sustainability
- **Main obstacles**
 - National monopolies and interests („collaboration vs. autonomy“)
 - Uncoordinated planning and different technical standards
 - Ensuring secure and reliable operation of complex networks
 - Lack of investment
- **Main fields of actions**
 - Unbundling of SOE and TSOs (2003) — Establishment of regulatory bodies: ENTSO-E, ACER, CEER;
 - Transparency and information
 - Progressing from day-ahead to intra-day markets
 - Optimizing the financial instruments

Role of Regulators: EU and NP

- Main bodies of regulations



Main functions

• **ENTSO-E** (2008)



- Ensuring the secure and reliable operation of the increasingly complex network
- Facilitating cross-border network development
- Enhancing the creation of the Internal Electricity Market, IEM.
- +
- Developing policy positions
- Drafting of network codes and contributing to their implementation
- Technical cooperation between TSOs
- Publishing outlook reports for electricity generation for the short term system adequacy overview
- Developing of long term pan-European network plans (TYNDPs)
- Coordinating Research and Development plans, innovation activities

Main functions

•ACER (2003/2011)



- Independent European Agency for cooperation among European energy regulators
- Creating a more competitive, integrated market
- Guaranteeing the free movement of energy across borders and the transportation of new energy sources
- Enhancing security of supply for EU businesses and consumers
- Monitoring the energy market and deterring abusive practices

•CEER (2000)



- The voice of Europe's national energy regulators at EU/global level
- Cooperation of national regulators and exchange best practice
- Strengthening the consumers' interests
- Close cooperation with ACER

Main functions of NordREG



- Developing a common **balance management**/settlement system
- Harmonizing switching procedures** in the whole Nordic market
- Unbundling, regulating and monitoring the TSOs to ensure **neutrality**
- Promoting **competitive market** structures
- Ensuring a **smooth interaction** with other European regions
- Ensuring a well-functioning **power exchange** and **transmission**
- Ensure an adequate level of **transparency** in the market
- Promote market-based and **legal environment** for supply security

- **Strategic goal**

Power exchange in one integrated, liberalized market (EU/NordPool)

- **Current status and next steps**

- Day-ahead market covers 85% of electricity markets of 19 countries — mostly „over the counter“ (OTC)
- Introduction of the Cross-Border Intraday Market Project (XBID) for short-term optimization
- EU-Target Model on Capacity Allocation and Congestion Management (CACM) :
 - Rules for calculating cross-border capacity
 - Defining and reviewing bidding zones
 - Operating day ahead and intraday markets

Infrastructure development and financing

- **Network Integration** and intelligent management as bottleneck
 - Huge intraregional variations in supply and demand
 - Integration of Renewables
 - Increasing energy security (in combination eg with LNG)
- Estimated **17 b€/a investment** needed into grid infrastructure
- **Coordination** of national and transnational network development plans: avoiding parallel structures, overcoming national interests and rebalancing national energy mixes.
- **Integration** and balancing of **Renewable Energy** feeding
- **Strengthening** the role of the **European Commission** to harmonize national development plans
- Creating **stable expectations** for public-private investments

Sustainability and the Role of Renewable Energy

- **Emissions reductions** and **increase of efficiency** as main goals of European Energy Union
- Absolute **demand tends to decline** in long-term perspective (Western Europe) due to efficiency gains, saturation and increased off-grid production (different in East and South East Europe)
- **Huge variations** in regional and local consumption due to short-term weather and long-term climatic changes
- Future role of **energy storage**?
- **Uncertainty** about INDC and national energy mixes

Topics to be considered for ASEAN

- No successful cross-border integration without **substantial reform of domestic markets?**
- But: crucial elements of integration processes can be created on different levels (national, regional) in advance and parallelly
- Creating a **consensus** on basic principles
- Providing **transparency** to create mutual trust
- Creating **stable expectations** for public/private investments
- Better „**selling**“ of the economic **gains** of integration
- Coordinate with **other policy fields** (eg. climate, industrial innovation)
- Framing efforts with **financial market innovations**

Thank you



**Regional Project Energy Security
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MISSION: Sustainability

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