Examining Different Regional Power Integration Models

The Case of the European Union and Nord Pool

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The Cases:
EU and NordPool
Key topics

- Governance Structure
- Sustainability
- Infrastructure and Financing
- Regulation and Regulators
- Harmonization and Market liberalisation
- Market integration and Power trading
Evaluation of an Integrated European Electricity Market

- Deregulation in Norway: Statnett Marked (now Nord-Pool) established
- Norwegian-Swedish power market: Nord-Pool established as a joint Norwegian-Swedish power exchange
- A common Nordic wholesale market: Finland joins Nord Pool in 1999 and Denmark in 2001
- European market integration: Ambitious climate goals, substantial grid investments and renewables
- Price coupling in North West Europe: Price coupling established between 13 European countries
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 cornerstones
- 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

- Markets included in PCR
- Markets associate members of PCR
- Markets that could join next as part of an agreed European roadmap
Harmonization: European Union

• 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

entso-e
Reliable Sustainable Connected

ACEER
Agency for the Cooperation of Energy Regulators

CEER
Council of European Energy Regulators

NordREG
Nordic Energy Regulators
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
Role of Regulators: ACER & CEER

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


- 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 parallely
- 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