European Electricity Market Integration
Challenges and perspectives

International Seminar “Integration and Electrical Security in Latin America”
Rio de Janeiro
25 August 2016
Optimising the use of generation assets

Electricity production per capita by fuel type (2013)

Source: European Commission, DG Energy
Day ahead market coupling

- 2006: Trilateral Market Coupling
- 2010: MC Central Western Europe
- 2010: MC South Western Europe (SWE)
- 2014: MC North Western Europe (NWE)
- 2014: MC SWE / NWE
- 2014: 4M Market Coupling
- 2015: MC Italian borders
Day ahead market coupling

Western Europe: Flow-based market coupling. Central and Eastern European countries (Poland, the Czech Republic, Slovakia, Austria, Hungary and Slovenia) will join in Q3 2018.

Source: APX /DG ENER
How did the internal electricity market evolve?

1. The rules – the market design
2. Infrastructure – Interconnectors
# 1. The Rules – The EU's energy and climate policies

## Commercial rules

<table>
<thead>
<tr>
<th>Year</th>
<th>Directive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>First Electricity Directive (96/92/EC)</td>
<td>Third-party-access to electricity infrastructure</td>
</tr>
</tbody>
</table>

## Under competition law

<table>
<thead>
<tr>
<th>Year</th>
<th>Directive</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>First Electricity Directive (96/92/EC)</td>
<td>Third-party-access to electricity infrastructure</td>
</tr>
</tbody>
</table>

## EU competences for Energy

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Third Energy Package</td>
</tr>
<tr>
<td>2009</td>
<td>EU-internal energy market</td>
</tr>
<tr>
<td>2009</td>
<td>ISOs, TSOs</td>
</tr>
<tr>
<td>2009</td>
<td>ACER, ENTSOE</td>
</tr>
</tbody>
</table>

## Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>Lisbon treaty</td>
</tr>
<tr>
<td>2006</td>
<td>Regional initiatives + Target model for market integration</td>
</tr>
<tr>
<td>2008</td>
<td>2nd trading period</td>
</tr>
<tr>
<td>2013</td>
<td>3rd trading period</td>
</tr>
<tr>
<td>2020</td>
<td>4th trading period</td>
</tr>
<tr>
<td>2028</td>
<td>Energy Union</td>
</tr>
<tr>
<td>2030</td>
<td>2030 Framework</td>
</tr>
</tbody>
</table>

- Electricity
  - Projects of common interest (PCI)
    - Electricity storage
      - after 2020
      - between 2017 and 2020
      - before 2017
  - Substation
    - after 2020
    - between 2017 and 2020
    - before 2017
  - Phaseshift transformer
  - High-voltage line
    - before 2017
    - between 2017 and 2020
    - after 2020
  - Electricity Baltic synchronisation
  - Electricity offshore hubs
**EU electricity markets built top down and bottom-up**

- **Rules harmonisation through Network Codes**

  - Connection Codes: connection requirements for generators and large customers, development of HVDC lines
  
  - Operational Codes: specify how TSOs should operate: grids’ operational security, planning and scheduling; frequency and load regulation
  
  - Market Codes: these are three codes that deal with harmonisation of individual markets (day-ahead, intraday, futures markets and balancing markets).

- **Regional projects**

  - E.g. Pentalateral Energy Forum (Benelux, France, Germany, Austria, Switzerland): Next project: cross-border intraday market, regional integration of balancing markets
New challenge: Fragmentation through national energy policies

1. National Renewable Support Schemes

[Map showing different renewable energy support schemes across Europe with legends for Feed-in tariff (FIT), Feed-in premium (FIP), Quota, and Tenders.]

Note: This map does not include secondary support instruments like tax incentives, investment grants, etc.

Source: Ecofys
New challenge: Fragmentation through national energy policies

2. Capacity Markets for Electricity

- Energy Only Market
- Capacity Market under construction
- Capacity Market operational
Possible solutions

EU support framework for RES with common rules for national support schemes

• Roadmap of market integration for RE towards 2030. All support schemes should move towards market based (e.g. tender) and market responsive support (e.g. premiums)
• Cooperation agreement in which MS choose the design options for opening and clarify the details (volume; technical issues, share of costs and RES amounts); reciprocity of opening;

EU Minimum Blueprint elements for capacity mechanisms

• All capacity mechanism should be temporary. Where introduced, a phase-out-roadmap is required
• Must be open to cross-border participation: needs to differentiate between market-wide mechanisms and capacity reserves operating outside of the market

OR: Focus on local market development instead?
Thank you for your attention.