Towards a Better Integration of the EU Electricity Market in the short but also in the long term

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Towards a Better Integration of the EU Electricity Market Contents

- Introductory (naive) thoughts
  - Benefits of interconnecting electric power systems
  - Measures to optimize RES-E penetration
  - Poor quality of EU regulation
- Some short-term market design criteria
- Physical, Financial Transmission Rights or just Contracts for differences?
- Capacity Remuneration Mechanisms (CRMs) and cross-border trade

Benefits of interconnecting electric power systems

- **Increased operation reliability** based on sharing reserve margins and diversifying resources
- **Cost reduction** resulting from the economic exchanges
- Environmental costs reduction
- More reliable energy supplies due to the resulting **resources diversification**
- Increasing the size of the relevant market fosters **competition**

Measures to optimize RES-E penetration

- Centralized day-ahead market clearing
  - Locational Market Pricing in the US ISOs
  - EU Target model for electricity market integration
- Coordination / integration of balancing areas
  - US regulation markets
  - Framework Guidelines on Electricity Balancing (ACER)
- Centralized monitoring & control of RES-E
- Grid codes to enhance demand response role

Poor quality of EU regulation

- Too much **uncertain interference from regulatory support** to diverse technologies
  - Is there any market left?
- **Insufficient economic signals**
  - Market prices, adequate ancillary services, CO2 prices
- Growing irrelevance of the spot market
  - The preferred option for an investor is to get some regulatory support rather than competing in the market
- All sorts of tricks by NRAs to **support local (typically industrial) consumers** & spurious interests
  - Regulated tariffs for households is not the problem, the matter is the way they are consciously miscalculated
- While the barriers embedded in the short-term market design are very slowly weakening...
  ... the ones related to the long-term decision making are growing at fast pace

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  - RES-E and day-ahead market design issues
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Some market design criteria (very naïve for the EU context, I know)

RES-E and day-ahead market design issues

- Increased penetration of RES-E amplifies the differences in market prices resulting from different market rules
  - **Nodal pricing** (as in the US ISOs) are increasingly superior to zonal pricing
    - Particularly in those cases where VER might be concentrated in areas with poor network access
  - **Complex bidding** (as in the US ISOs) seems to be superior to simple bidding (as in most EU PXs)
    - Why? If there is a strong presence of VER, it reduces risk for generators and inefficiency in dispatch
  - Complex bidding with **uniform/linear pricing** (as e.g. in Ireland*) seems to be superior to discriminatory bidding (as in the US ISOs)
    - Why? It sends sounder signals for new generation investment
- In the EU "priority of dispatch" in reality is "obligation of dispatch"
  - Zero market prices will be more frequent with more RES-E penetration; however negative prices will eventually disappear

(*) This is meant for the overall approach, not necessarily for the specific implementation details

Some market design criteria (very naïve for the EU context, I know)

Balancing market design and the impact of RES-E

- A single balancing area (at least per TSO)
  - would take advantage of a wider coordination
    - offsetting the variability and uncertainty more efficiently and reliably
  - would remove a key market entry barrier for small new entrants
    - Dual imbalance pricing (penalizing any imbalance, positive or negative) aggravates this problem, since it rewards self-balancing
- Balancing mechanisms should be replaced by balancing markets
  - At least a last-resort price reference
- Reserve-up and reserve-down should be different products and therefore should be independently priced
  - Especially relevant for demand-side response

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- Some short-term market design criteria
- Physical, Financial Transmission Rights or just Contracts for differences?
  - Terminology
  - FTRs slightly better than PTRs
  - Not just CfDs
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PTRs, FTRs or just CfDs?

Terminology

- PTRs and FTRs
  - Transmission risk hedging contracts
  - issued by the transmission network owner (the TSO in the EU)
  - linked to the congestion rents

- PTRs = PTRs + UIOSI

- Contracts for Differences (CfDs)
  - Financial products offered by other market players
  - not directly related to the congestion rent

PTRs, FTRs or just CfDs?

FTRs better than PTRs

- The market value of PTRs & FTRs is equivalent under ideal circumstances
  - Harmonized and coordinated markets at both ends
    - If this is not the case, PTRs are the only choice
  - No regulatory intervention on the market price formation
  - Liquidity

- FTRs allow for larger transparency (mirror bids in the PX)
- FTRs also allow widening the size of demand, increasing competition and market liquidity

- FTRs into two option contracts are superior than obligations

Not just CfDs

- The owners of the interconnectors should auction in the long term

  - **at the maximum** the transmission capacity that is expected to be physically/commercially available
    - TSOs are regulated entities, they should not incur in any financial risk

  - **but not less** than this amount
    - the congestion rent is a natural source of hedge against the price spreads at both sides of an interconnection
    - Therefore P/FTRs are crucial instruments to inject liquidity into forward markets so as to develop competition and the integration of markets

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  - The future Internal Electricity Market (IEM) for left-overs
  - Harmonization levels
  - Other key messages for EU regulatory authorities

The future Internal Electricity Market (IEM) for left-overs

- The development of the **short-term IEM** (for tomorrow) is moving into the proper direction towards a coordinated and single market
  - Price Coupling between Regions
  - Balancing markets coordination
- But at the same time the **long-term IEM** (for ever) is evolving into the opposite one
  - Some countries implement **capacity mechanisms/markets**
  - One might think that the objective of these latter is to cover all the different alternatives conceivable, e.g.
    - Capacity payments in Ireland and Spain
    - Strategic reserves in Sweden
    - Bilateral capacity markets in France (TBD)
    - Long-term capacity auctions in GB and Italy (TBD)

- **A certain degree of harmonization would be essential for the well-functioning of the IEM in the long run**

Harmonization levels

A. Mandate, or just encourage, that any capacity mechanism that a MS decides to create is open to agents of other MS

- Article 4.3 of the SoS EU Directive. Cross-border agreements should have full priority over domestic needs.

B. Make sure that the regulations and the coordination between Member States do not allow that any given adequacy or firmness value of a power plant is sold twice.

C. Member States with capacity mechanisms should coordinate their implementation, exploring for ways to implement common designs.

D. Some level of harmonization of the adopted capacity mechanisms would be desirable, in order to reduce inefficiencies.

Other key messages for EU regulatory authorities

- Assuming the Target Model is implemented, **CRMs do not interfere with short-term market efficiency and cross-border trade** IF
  - reliability contracts/obligations are related to market prices,
    - e.g. not to temperatures or discretional decisions of TSOs
    - performance is not measured as a percentage of the peak
  - the Article 4.3 of the Security of Supply Directive is respected,
    - Firm imports and exports linked to the SoS mechanism have priority over any domestic demand without such commitments
    - Limited by the actual interconnection capacity limits (zonal auction)
    - **No need for capacity reservation (P/FTRs)**
- Demand response has to play a crucial role
  - TSOs have to open grid codes to take advantage of the DR potential

Thank you very much and excuses