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Council of European Energy Regulators

Cross-border wholesale markets and network interconnection

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Fostering energy markets, empowering **consumers**.

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Agenda

- The European Internal Market
- Gas Wholesale Markets in EU
- Electricity Wholesale Markets in EU
- The fourth package and further wholesale markets integration

The EU Internal Market for Energy

- The creation of **market structures** is the most efficient model to assign resources
  - Roadmap of ACER (market mechanisms)

- Setting of **common standards** is needed
  - Standardisation proccess (network codes)

- The **integration of the national electrical systems** as a mechanism to introduce benefits in terms of security of supply, RES integration and competition
  - PCI´s (trans-European energy networks)

The EU Internal Market for Energy: roadmap to market integration

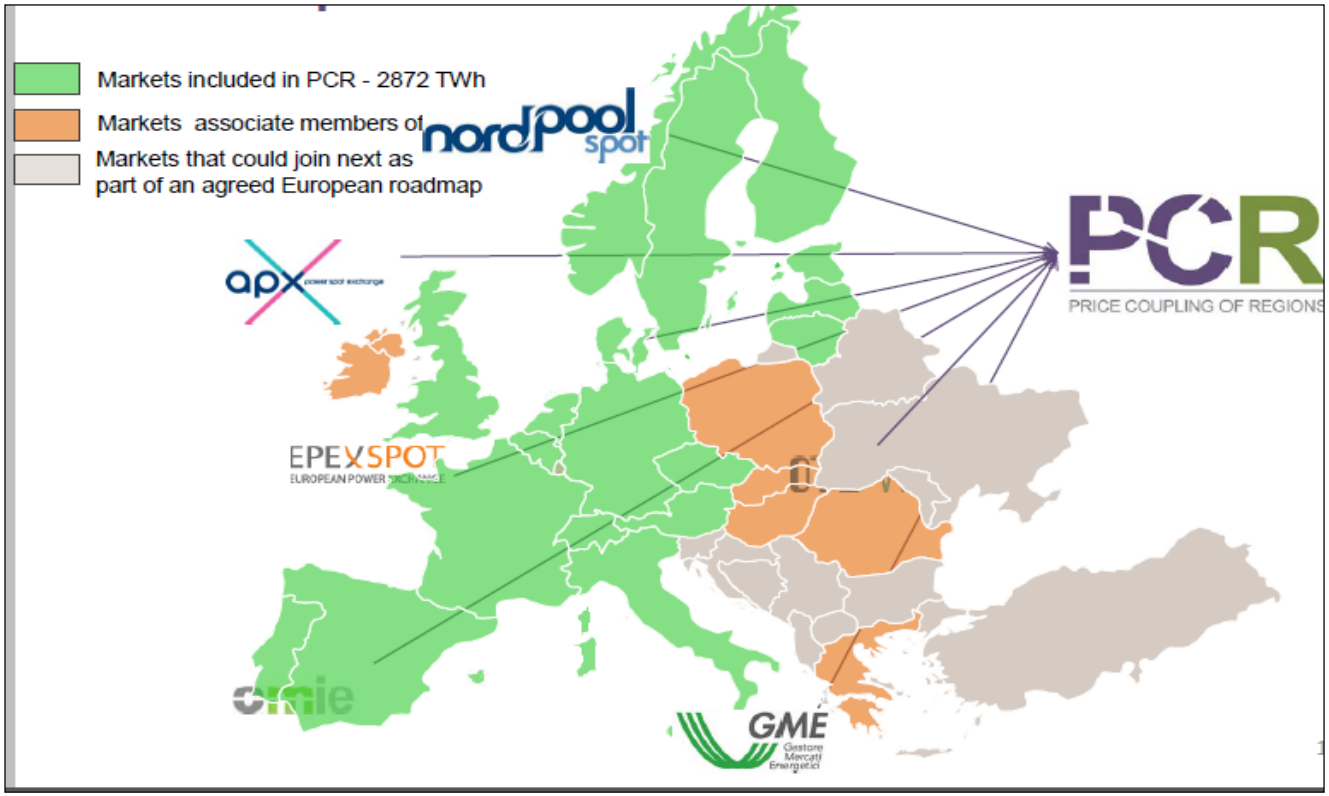
Regional initiative markets

Voluntary initiatives "bottom-up" from MS

(Nord Pool, MIBEL, Irish SEM, ..)

"Third Energy Package:

Day-ahead market coupling



Day-ahead market coupling

The EU Internal Market for Energy: roadmap to market integration

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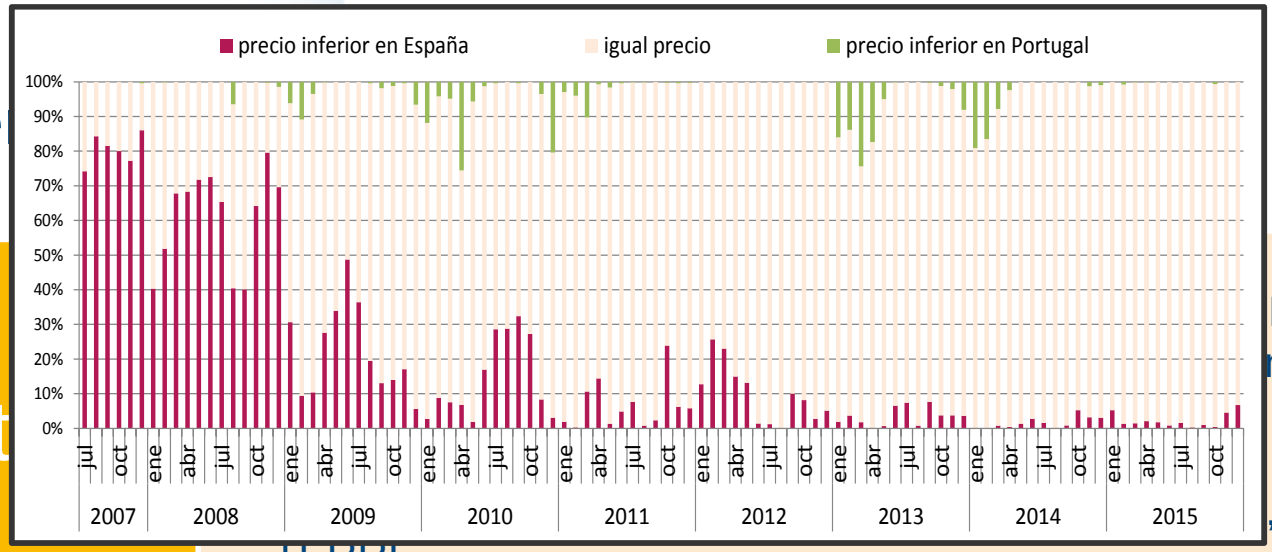

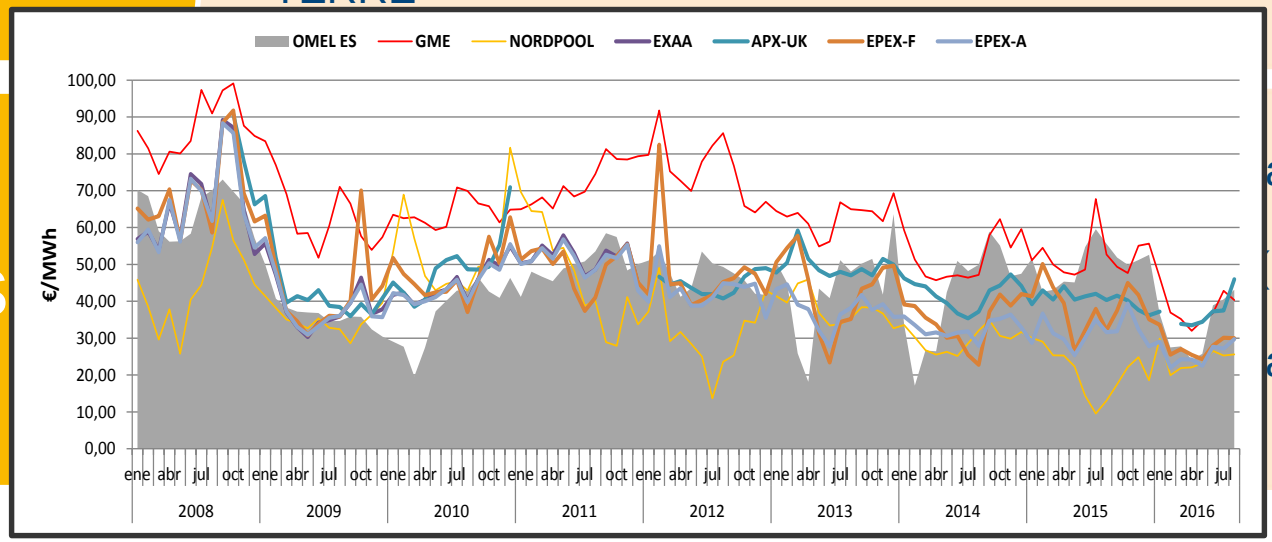

The EU Internal Market for Energy: roadmap to market integration

Day-ahead market coupling in 2014 (PCR)

Harmonization of the **intradaily markets**: single XBID trading platform continuous

Harmonization of the **balancing markets** and provision of reserves

Harmonization of the **forward capacity allocation**: CASC

Harmonization of the methodology to calculate the **capacity of interconnections**: Net transfer capacity or flow based

Hamonization on **capacity mechanisms**

Towards a **joint supervision** of the market: REMIT

The EU Internal Market for Energy:
Standardisation process, Network Codes

- Defines priority areas, Network Codes (NC) to develop and invites ACER to develop the Framework Guidelines (FG)
- Develops FG and submits it to the Commission (6 months)
- Develops NC according FG (12 months)
- Makes sure the NC adequacy to the FG. Reccomends the NC for approval to the Commission (3 months)
- Sends NC to Comitology. Approves the modification of Regulation 2009/715

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The EU Internal Market for Energy:
Standardisation process, Network Codes

Grid Connection Related Codes

- Requirements for Generators (RfG)
- Demand Connection Code (DCC)
- HVDC Connection Code (HVDC)

System Operation Related Codes

- Operational Security Network (OS)
- Operational Planning & Scheduling (OPS)
- Load Frequency Control & Reserves (LFCR)
- Operational Procedures in an Emergency (EP)

Market Related Codes

- Capacity Allocation & Congestion Management (CACM)
- Forward Capacity Allocation (FCA)
- Balancing Network Code (EB)

The EU Internal Market for Energy: Cross-border network interconnection

Projects of common interest (PCI´s)

- The current guidelines established in this way a total of 74 projects of common interest, which represent a total investment of EUR 18,000 million
- The financing of these projects is basically of the operators in the sector. In certain cases, have triggered the financial instruments of the EU, basically the loans of the European Investment Bank (EIB) and the European Fund for Regional Development (ERDF) supports

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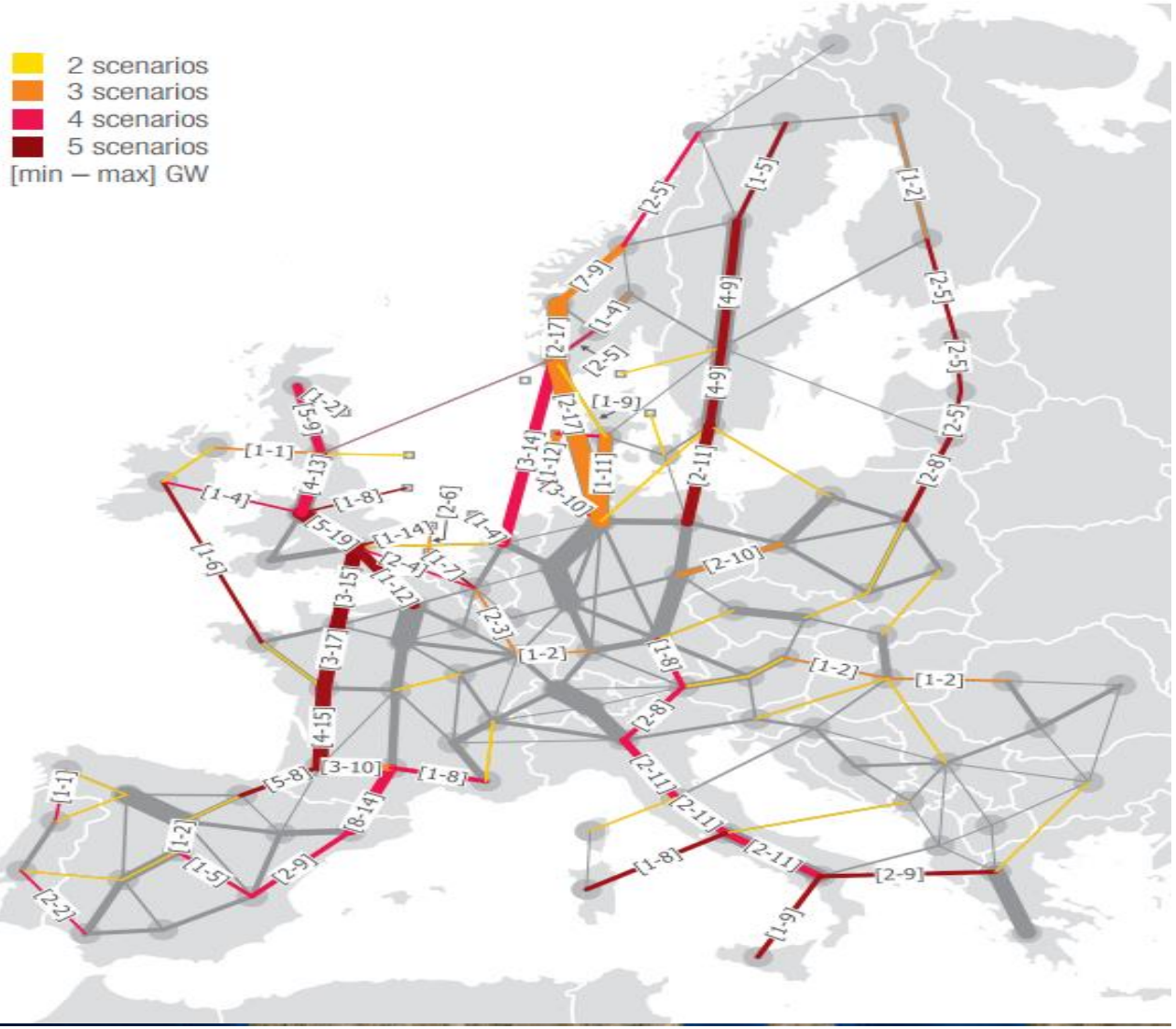
The EU Internal Market for Energy: Cross-border network interconnection



Recommendation on gas wholesale markets (1)

- Refrain from introducing new market model rules, pending the ongoing implementation of the Gas Target Model and of the Network Codes. The ongoing effort to redesign the electricity wholesale market may not necessarily warrant a (similar) change in the gas market model, which seems to be working well. The market needs to play fully without undue intervention.

- Address any remaining infrastructure bottlenecks. In a few EU MSs, the limited interconnection capacity seems to explain higher market concentration and supply sourcing costs. Examples of such critical gaps are the bi-directional corridors linking Greece-Bulgaria-Romania-Hungary and Poland-Baltics.

- Investments in new regulated infrastructure shall nonetheless be selective, have a regional perspective and be based on validated CBA methodologies to reduce the risk of any overinvestment.

tends to be lower in gas than in electricity

Source: ACER/CEER Market Monitoring Report 2016

EU Gas Wholesale Markets

While the gas hub model is working better, the heterogeneity in hub development impacts retail competition

A ranking of EU hubs based on 2015 monitoring results

Established hubs	Advanced hubs	Emerging hubs	Illiquid hubs
Broad liquidity	**High** liquidity	**Improving liquidity from a lower base,** taking advantage of enhanced interconnections	**Reliance chiefly on long-term contracts**
Sizeable forward markets which contribute to supply hedging	More reliant on spot products and balancing operations	Liquidity partially driven by market obligations imposed on incumbents	**Early-stage** organised market places or lack of a hub
Price reference for other EU hubs and for long-term contracts indexation	Progress on supply hedging role, but relatively **lower longer-term products liquidity levels** results in weaker price risk management role	**Still significant reliance on long-term contracts**	Absence of an entry-exit system in some markets

Well-functioning hubs provide more options to hedge supplies, which also helps to promote competition in retail markets

Source: ACER/CEER Market Monitoring Report 2016

Recommendation on gas wholesale markets (2)

- A well-functioning, independent Virtual Trading Point (VTP), built on an entry-exit system,is key for a competitive gas market to develop.
- Promote contractual supply mechanisms based on shorter-term hub-based transactions, especially in regions with still less functioning market dynamics.
- To this aim, facilitate cross-border trading by revising those regulatory obligations that go beyond security of supply needs and may hamper trade (e.g. distortive storage obligations, capacity booking requirements for financial players).
- In MSs where incumbent players have limited incentives to provide hub liquidity,gas resale obligations could initially trigger competition. The presence of market makers in those less liquid hubs couldhelp raise market liquidity.

Recommendation on electricity wholesale markets (1)

- Implement day-ahead market coupling on the remaining (12) EU borders (out of 40) -250 million euro/year welfare benefit still to be gained

- In the intraday and balancing timeframes, there is scope to improve both the performance of national markets and the use of cross-border capacities by:

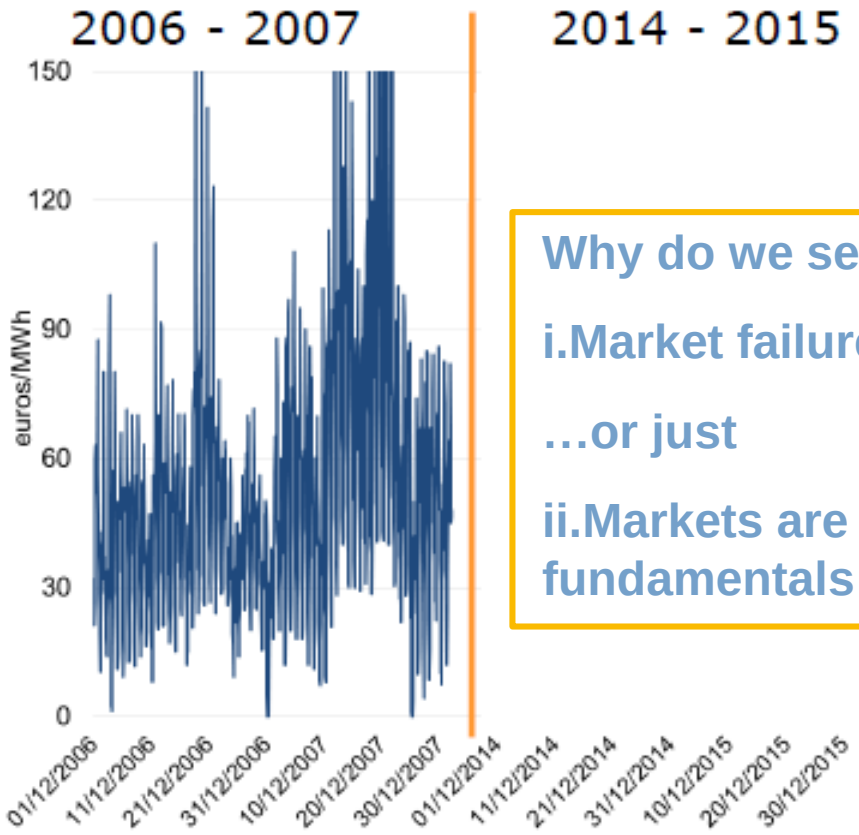
  - measures that support and foster intraday liquidity, such as full balancing responsibility for all technologies and cost-reflective balancing charges.
  - optimise the procurement of balancing capacity, as this will support balancing energy prices to accurately reflect the real-time conditions of the system, including at times of scarcity.
  - increase the exchange of balancing resources, including balancing energy, balancing capacity and cross-border sharing of balancing reserves.
  - early implementing the Network Code on Electricity Balancing.

Source: ACER/CEER Market Monitoring Report 2016

EU Electricity Wholesale Markets

Against 'predictions', the increasing frequency of overall low-price periods is not accompanied by an increased frequency of price spikes

Hourly Day-Ahead prices in the Netherlands - December 2006 – 2007 and 2014 - 2015 (euros/MWh)



Why do we see low price levels?

i.Market failure (sometimes argued)

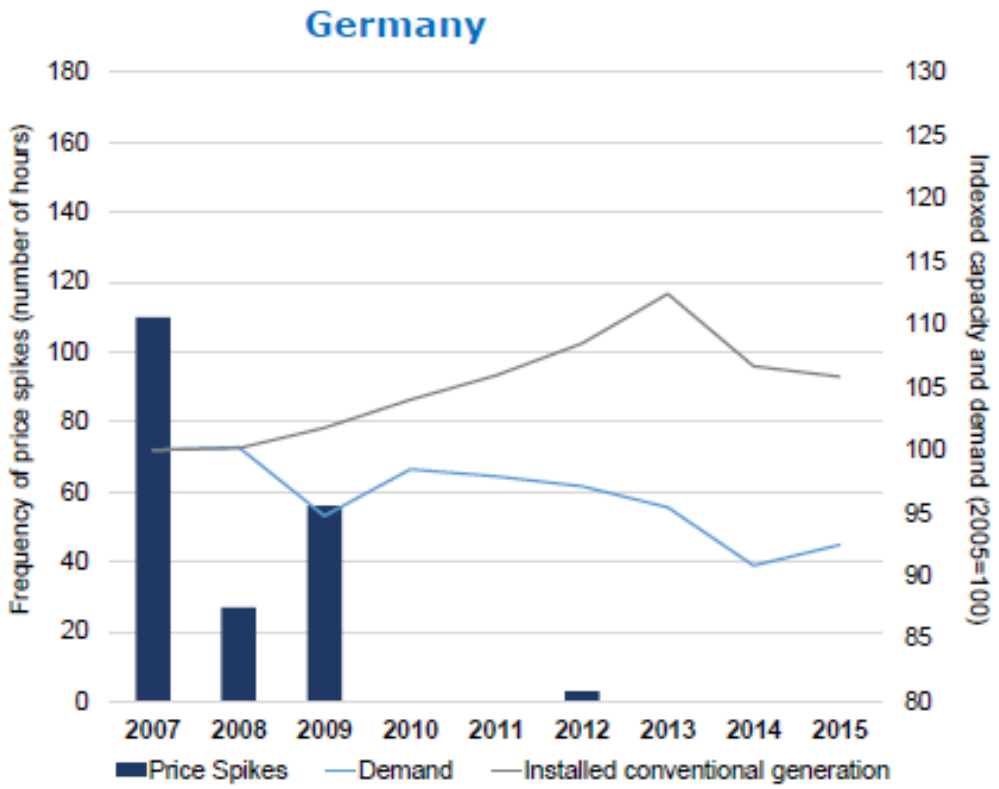
…or just

ii.Markets are reflecting fundamentals

EU Electricity Wholesale Markets

Market prices seem to reflect generation over-capacity, which explains the lack of price spikes

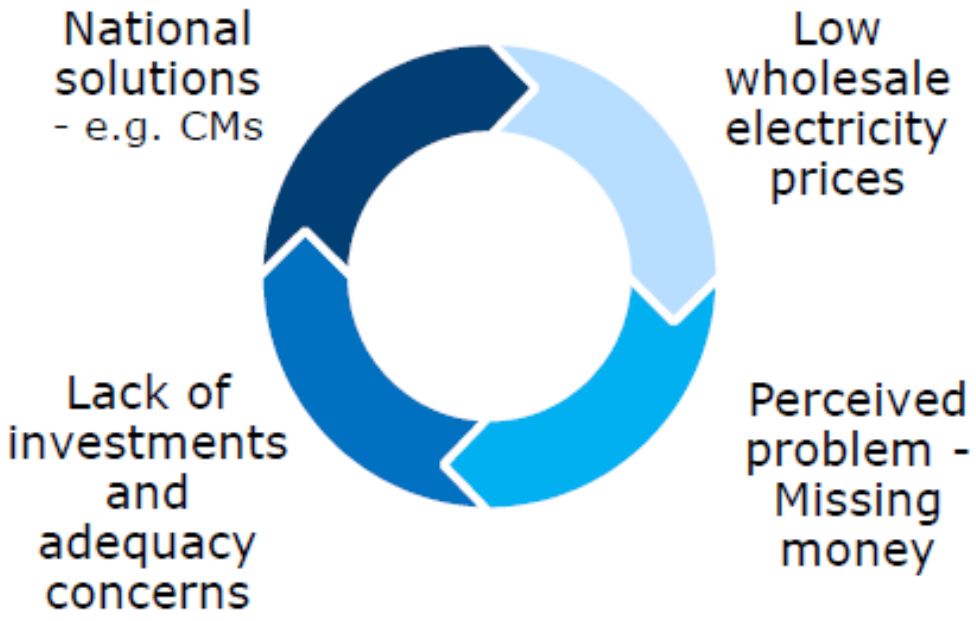
Evolution of the aggregated installed conventional generation capacity and aggregated energy demand (indexed to 2005 = 100) and the frequency of price spikes (number of hours per year) in the Netherlands and Germany – 2007 to 2015



Source: ACER/CEER Market Monitoring Report 2016

EU Electricity Wholesale Markets

National solutions tend to address a "missing-money" problem, but these uncoordinated policies are creating a vicious circle away from an efficient IEM design



Recommendation on electricity wholesale markets (2)

- The use of non-market based support and other mechanisms that inhibit the market to render a price that reflects the true value of the electricity supplied should be limited, especially if national in scope and uncoordinated.

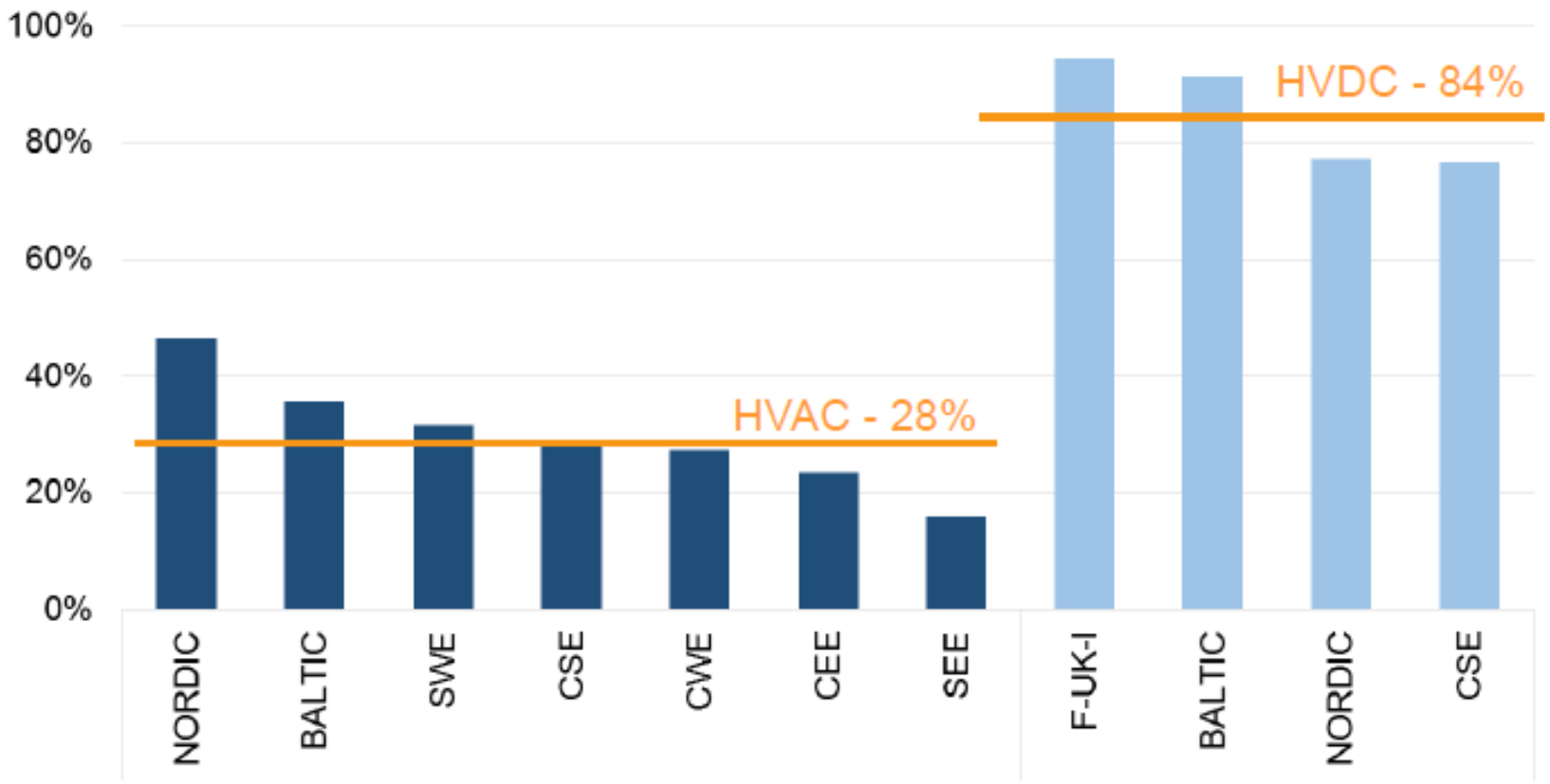
- When considering or implementing a capacity mechanisms, MSs should present a credible action plan, with the following elements:

  - coordinated national approaches to Security of Supply, including a European-wide coordinated adequacy assessment.
  - an assessment of remaining barriers and regulatory failures.
  - an assessment of the reasons why these failures have not yet been addressed.
  - a roadmap to remove these failures.
  - the design of the CM should minimise distortion to the IEM.

EU Electricity Wholesale Markets

In Europe, a large share of the physical interconnection capacity is not used for trading

Share of the between aggregated thermal capacity of interconnectors made available for trading – 2015 (%)



Source: ACER/CEER Market Monitoring Report 2016

Limitations of cross-zonal capacity

Physical cross-zonal capacity can be limited during the capacity calculation process*:

- for grid maintenance during a certain period
- to accommodate flows resulting from internal exchanges (i.e. Loop Flows) and flows resulting from non-coordinated capacity allocation on other borders (i.e. Unscheduled Allocated Flows)
- to relieve congestion inside a bidding zone (control area)
- to account for a lack of coordination between TSOs

Empirically disentangling these reasons would require detailed data, which are currently not available.

** Beyond what is needed for the application of the N-1 criterion and a reasonable level of reliability margin.*

EU Electricity Wholesale Markets

Recommendation on electricity wholesale markets (3)

Making more capacity available for trading through:

- Performing more coordinated capacity calculation in all timeframes.
- Implementing flow-based capacity calculation methods where appropriate.
- Ensuring an equal treatment of internal and cross-zonal exchanges through improved capacity calculation methods.

Moving forward: Market design improvements in the EU Fourth Package

Efficient wholesale Price formation

- *Putting consumers' value into the energy price*
  - *Allow prices to move to the level consumers are willing to pay to drive demand response, demand for flexible capacity, innovation and efficient use of transmission grid*
- *Level playing field between technologies*
  - *All market participants should face the same signals and balance responsibilities*
- *Removal of barriers to efficient price formation should allow participants to hedge against short-term volatility*
  - *Barriers to efficient Price formation in and between all timeframes (balancing, intraday, dah ahead and forward) should be removed while taking into account specificities of each time frame*
- *Efficient procurement of energy and reserves*
  - *It is important that balancing signals are reflected in the energy Price as much as posible to avoid undue fragmentation of markets between different services*

Moving forward: Market design improvements in the EU Fourth Package

Efficient Renewable Energy Integration

- *All market players should be dispatched ccording to the merit order in the energy market so that demand is covered by the cheapest generation at any time.*
  - *Removal of priority dispatch*

- *Redispatching should be transparent and non-discriminatory where RES compete with other sources and where efficient and feasible*
  - *Market prices should be the driver of RES curtailment, avoiding overprescriotive measures*
  - *Innovation in distribution systems (Smart distribution systems), together with the procurement of local non-frequency ancillary services by DSOs (flexibility in managing the grid) will reduce the need for curtailments of small-scale RES generation*

- *Self-generation should be market compatible and self-consumption should reflect a fair allocation of system costs*
  - *Traditional net-metering regulations should be avoided*

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Gracias por su atención

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