

Congestion management: examples of recent developments

Power Market Design Conference – 10 June 2010

Why improve congestion management?

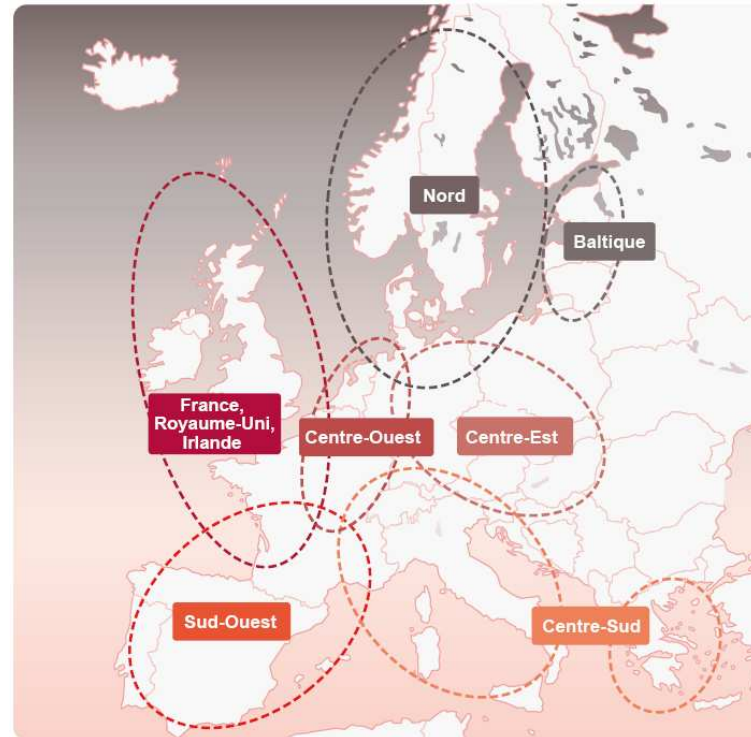
- Electrical interconnections are the vehicle to commercial exchanges. Congestion management needs to be improved:
 - to enhance network security;
 - to develop competition;
 - to benefit from the complementarities of demand and of generation parks;
 - to facilitate integration of wind power (and other intermittent sources) into the market.



Objective: create a single electricity market in Europe

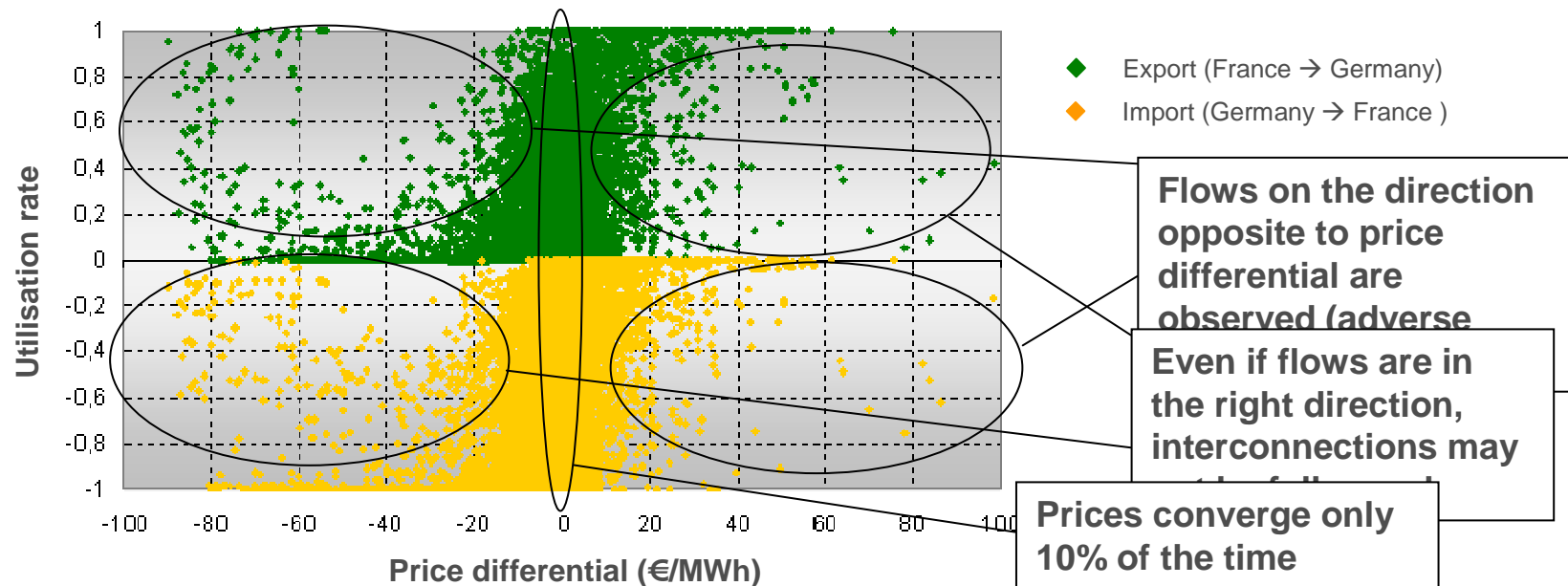
Regional initiatives

- Regulators are organised within **Electricity Regional Initiatives (ERI)** to coordinate projects at the regional level (bottom-up approach)
- France is involved in 4 of the 7 regional initiatives:
 - **FUI** (UK and Ireland)
 - **Central West** (Germany, Belgium, Luxemburg and the Netherlands)
 - **South West** (Spain and Portugal)
 - **Central South** (Italy, Austria, Greece, Slovenia, Germany)



Explicit auctions

- Demand and offer are confronted independently on each market, with a distinct congestion management mechanism.
- Example: congestion management between France and Germany by explicit auctions.

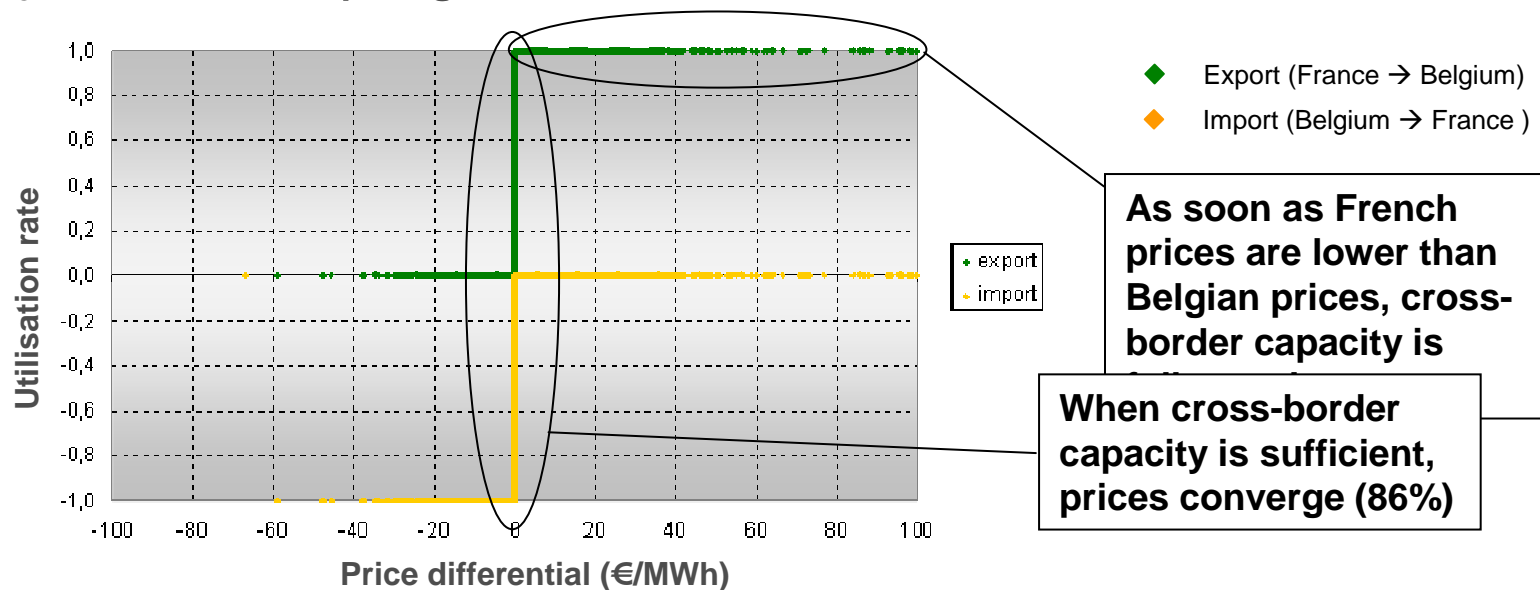


Allocate cross-border capacity while confronting demand and offer

Target model for day-ahead exchanges: market coupling

Example of the Tri-Lateral Coupling

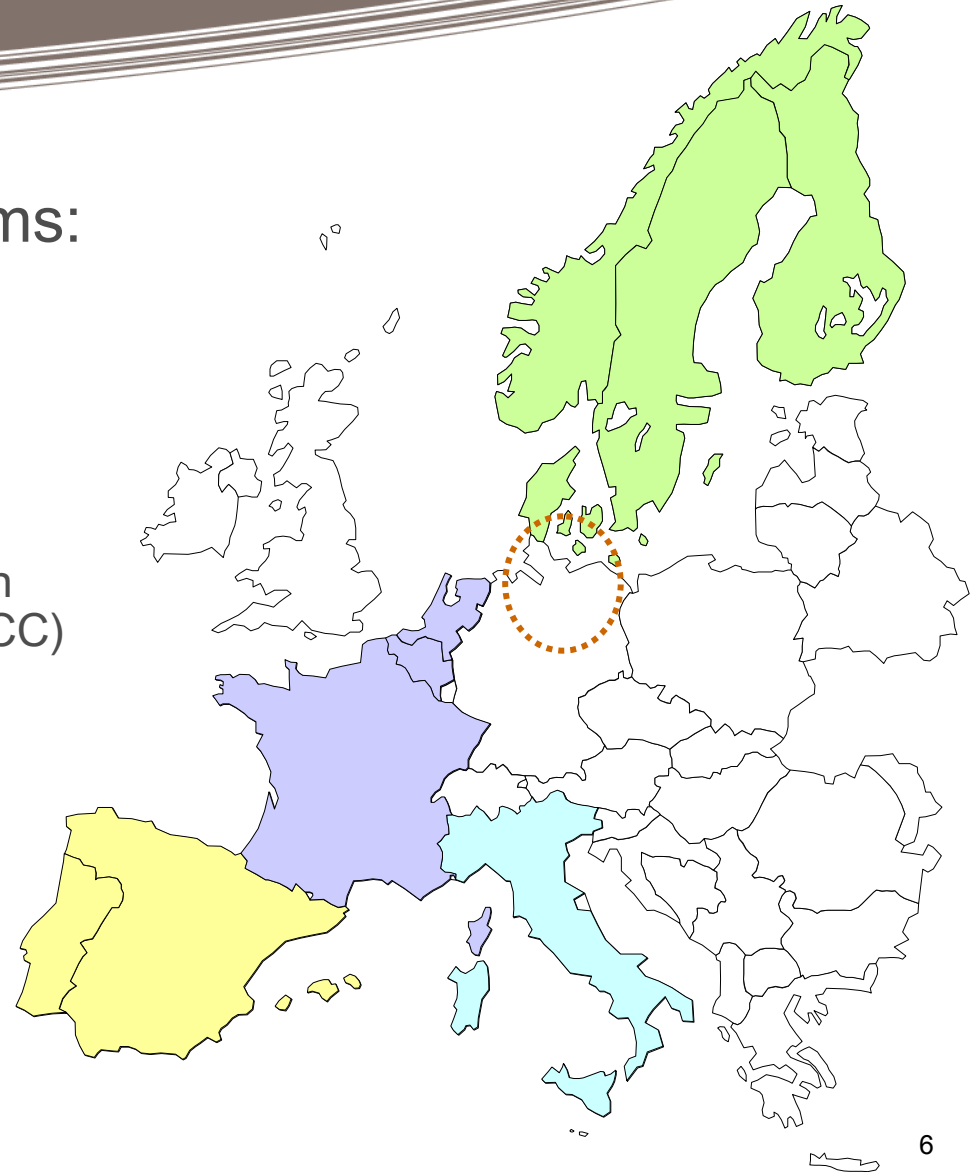
- Unlike explicit auctions, market coupling allocates cross-border capacity implicitly to the most efficient cross-border energy trades.
- Example: congestion management between France and Belgium by market coupling



Market coupling projects

● Existing implicit mechanisms:

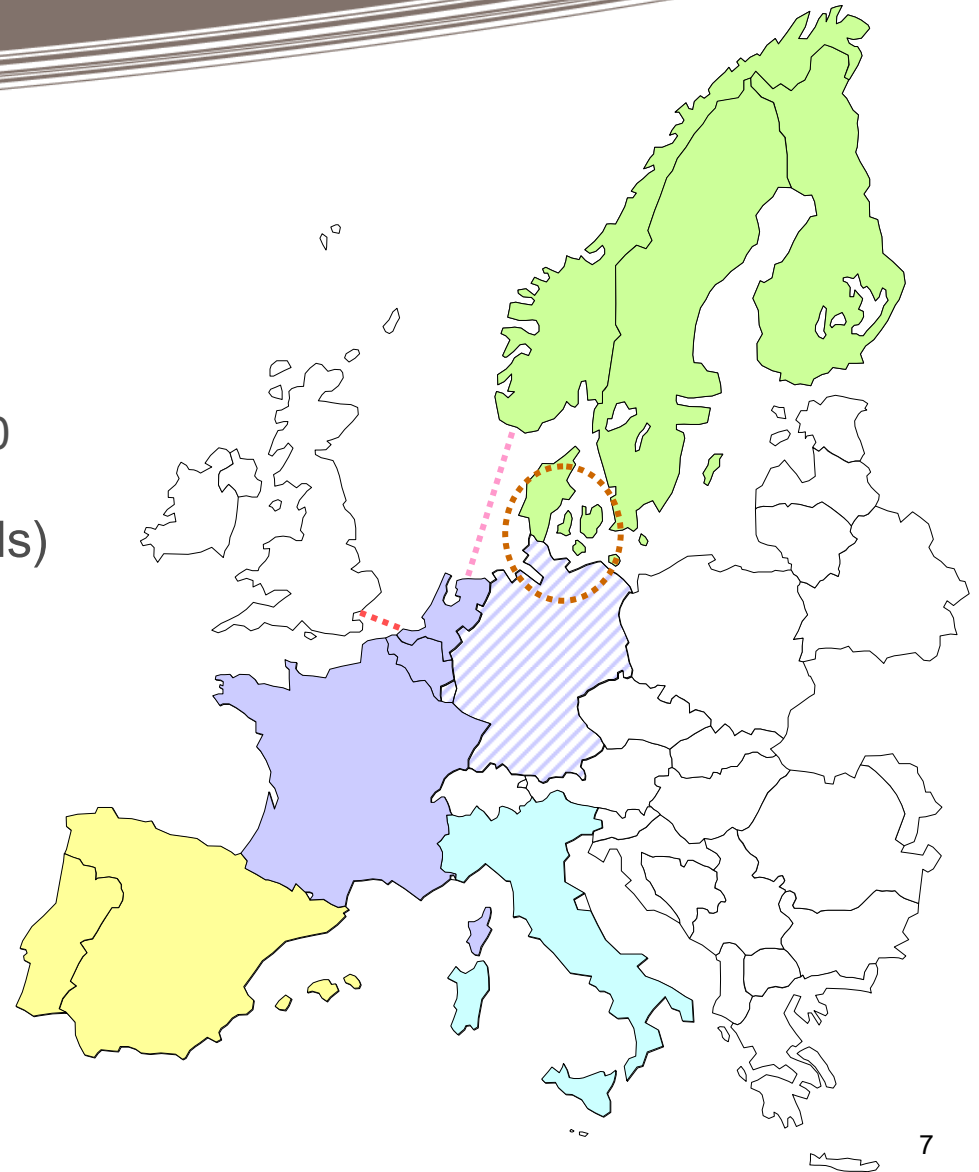
- « Market coupling » between organised markets (PXs):
 - « Price coupling » between France, Belgium and the Netherlands (TLC)
 - « Volume coupling » between Germany and Denmark (EMCC)
- « Market splitting »: a single Power Exchange deals with several price zones.
 - Nordpool in Scandinavia
 - OMEL in Spain and Portugal
 - GME in Italy



Market coupling projects

● Ongoing projects:

- CWE market coupling
 - Extend TLC to Germany
 - Target date: September 2010
- NorNed (Norway - Netherlands)
 - Awaiting
- BritNed (UK - Netherlands)



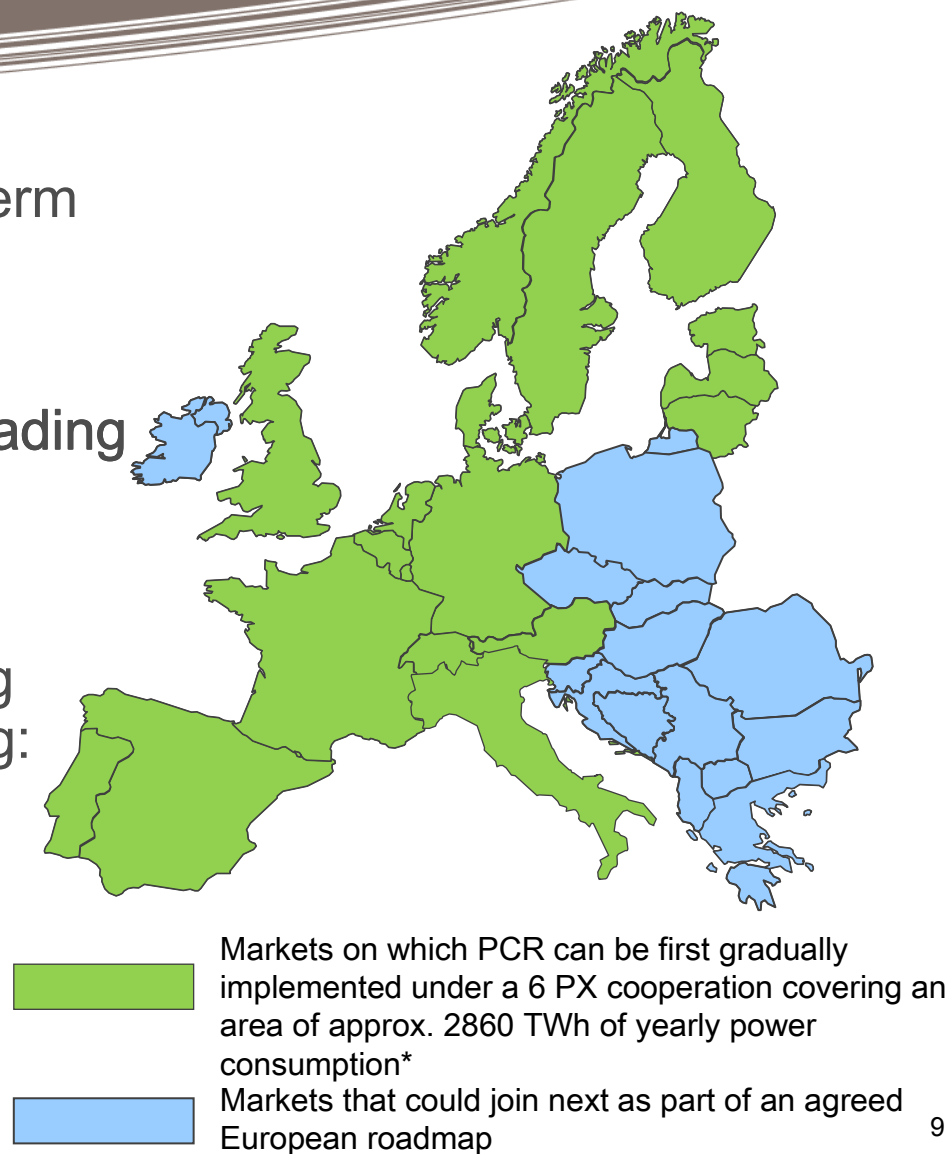
Coherence and convergence must be ensured ex-ante and projects must be coordinated so as to avoid incompatibilities

Need for a top-down approach...

- A Project Coordination Group was launched in 2009 to define target model for each topic / timeframe (long-term, day-ahead, intraday, balancing and capacity calculation).
- The PCG, which conclusions were presented during the December 2009 Florence Forum, enabled to comfort the agreement on price coupling as the target model for day-ahead exchanges.
- The next step is for regulators to draft Framework Guidelines, which will guide new projects and be the basis for TSOs to draft their network codes.

However, concrete projects should still continue to pave the way!

- CASC, which operates long-term auctions in CWE, will be extended to CSE.
- Implicit continuous intraday trading will be implemented between France and Germany.
- A PXs initiative is investigating the extension of price coupling: Price Coupling or Regions.

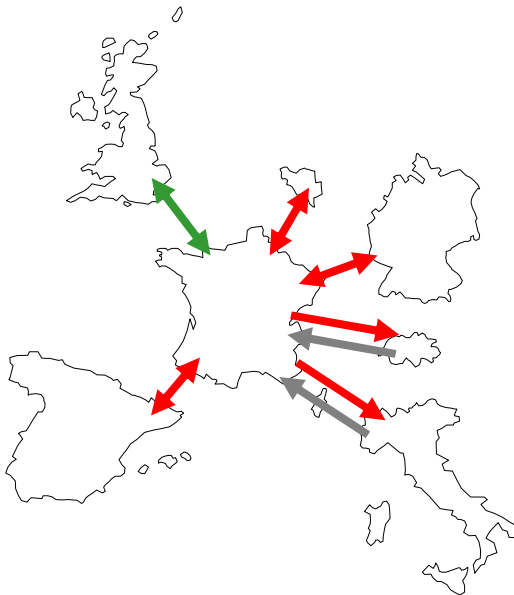


Another concrete project: flow-based market coupling

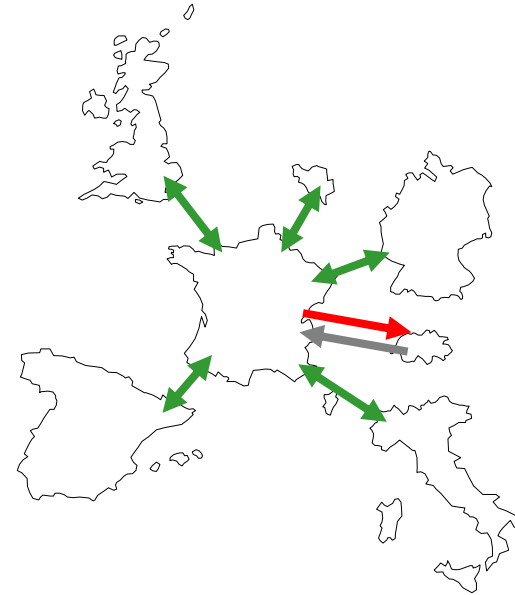
- Rather than allocating only cross-border transmission capacity (aggregated value), the flow-based approach takes into account all potential « *critical branches* » (lines which may limit cross-border exchanges).
- This should further improve the network utilisation, by taking loop flows and network topology better into account.
- However, first simulations in the CWE region do not enable to confirm its superiority to the current ATC-based approach.
- In particular, this model does not include information on generation localisation (« *portfolio bidding* ») and zones may be too heterogeneous.

Appendix: Evolution of congestion management

Situation in 2004




Situation in 2006



- Non market-based mechanism ; priority to long-term contracts
- Coordinated market-based mechanism (auctions)
- No congestion

Appendix: Role of the regulators in congestion management

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- According to EU legislation, regulatory authorities shall:
 - Approve the general scheme for cross-border capacity calculation and review the structure for the allocation of capacity between different timeframes,
 - Review the congestion management methods,
 - Review the level of transparency and the information published by TSOs,
 - Ensure compliance with the Regulation and the Guidelines,
 - Ensure non-discrimination, effective competition and efficient functioning of the market.
 - They may also grant exemptions for new merchant interconnections.