

# Congestion management: examples of recent developments

Power Market Design Conference – 10 June 2010

# Why improve congestion management?

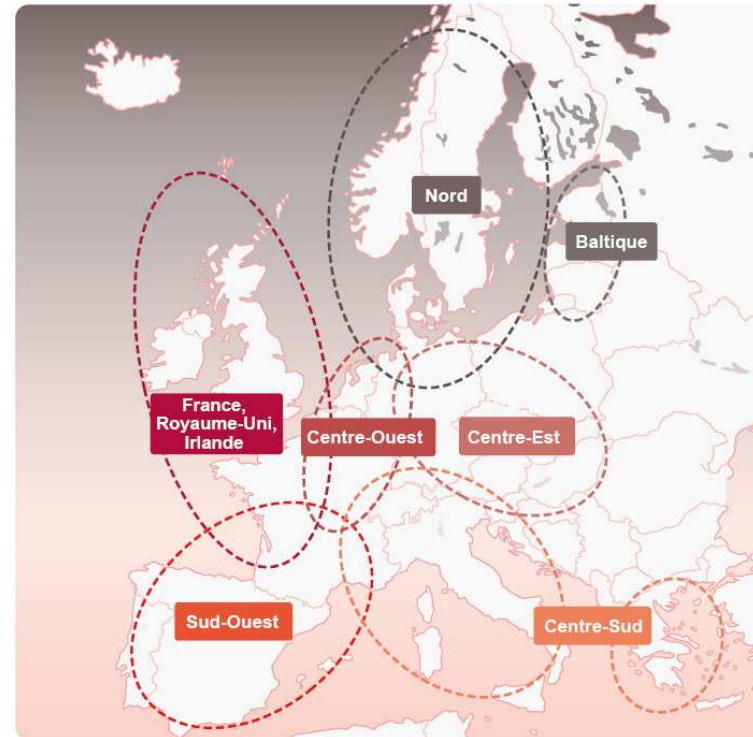
- Electrical interconnections are the vehicle to commercial exchanges. Congestion management needs to be improved:
  - to enhance network security;
  - to develop competition;
  - to benefit from the complementarities of demand and of generation parks;
  - to facilitate integration of wind power (and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



**Objective: create a single electricity market in Europe**

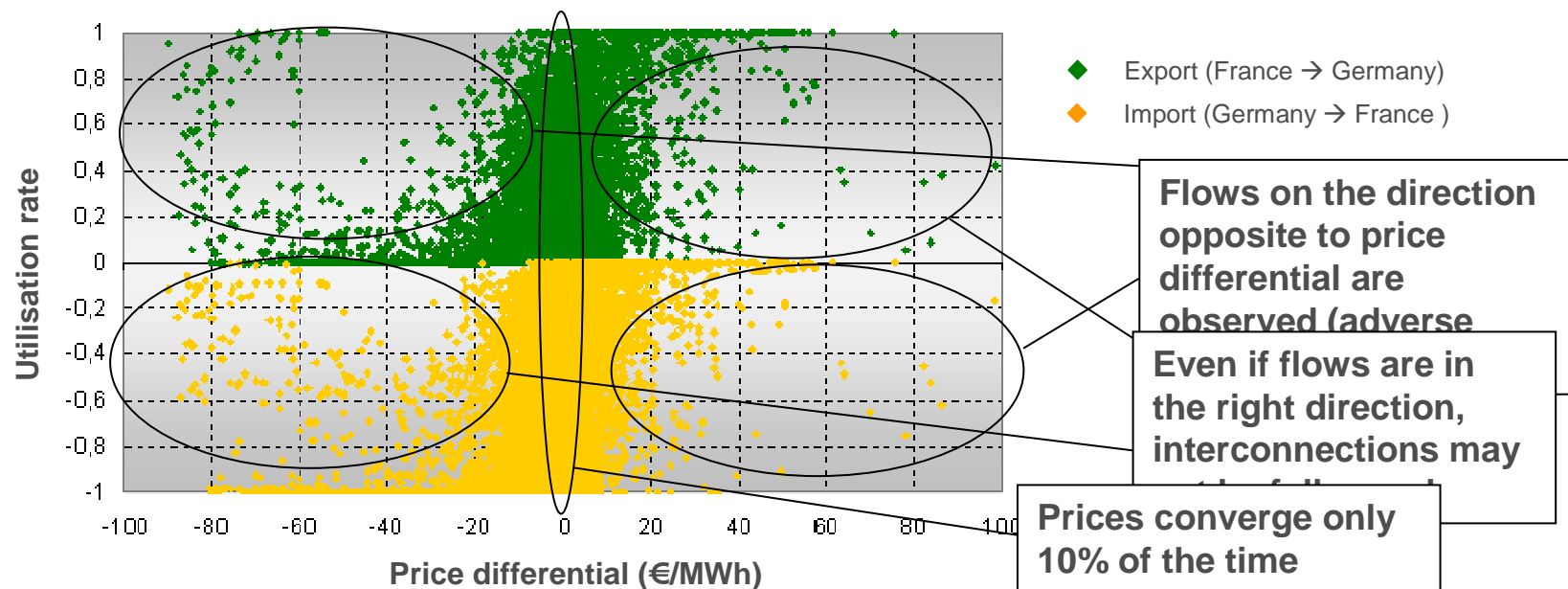
# Regional initiatives

- 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.

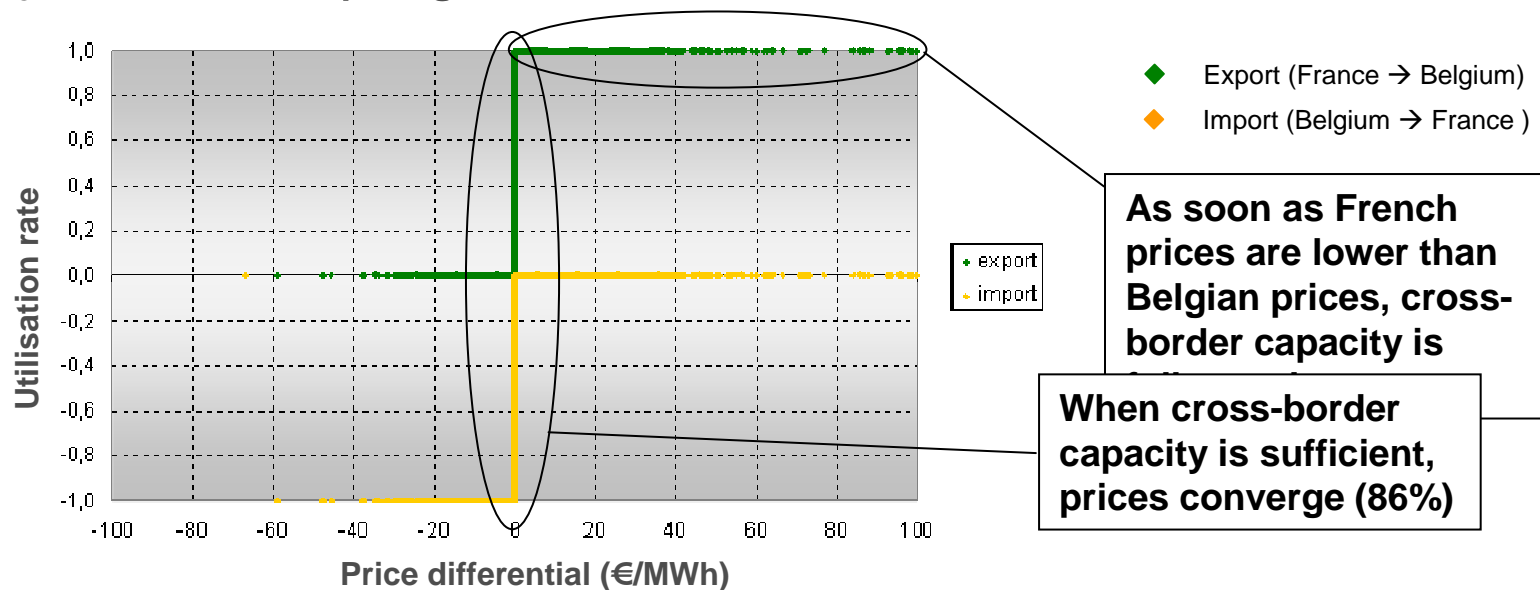


Allocate cross-border capacity while confronting demand and offer 4

# Target model for day-ahead exchanges: market coupling

## Example of the Tri-Lateral Coupling

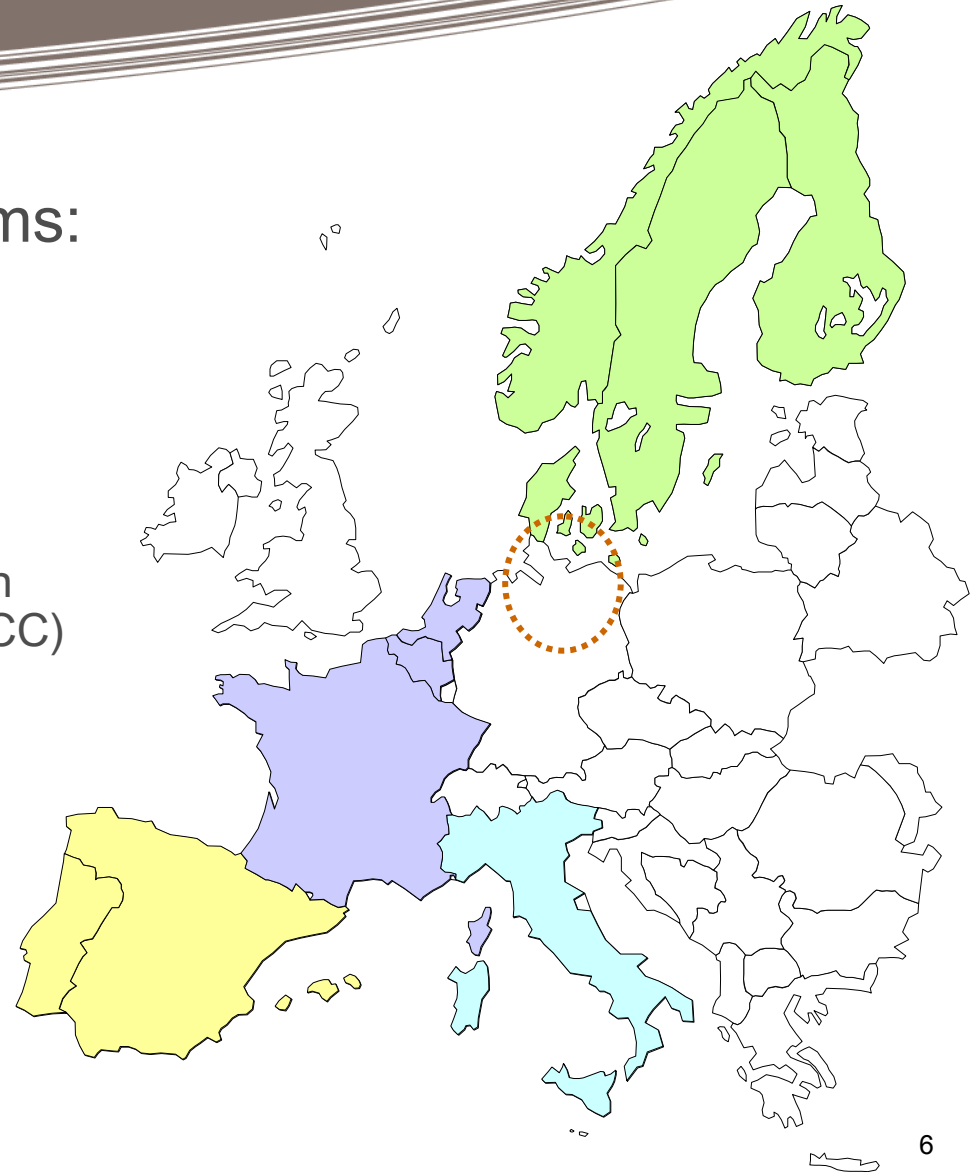
- Unlike explicit auctions, market coupling allocates cross-border capacity implicitly to the most efficient cross-border energy trades.
- Example: congestion management between France and Belgium by market coupling



# Market coupling projects

## Existing implicit mechanisms:

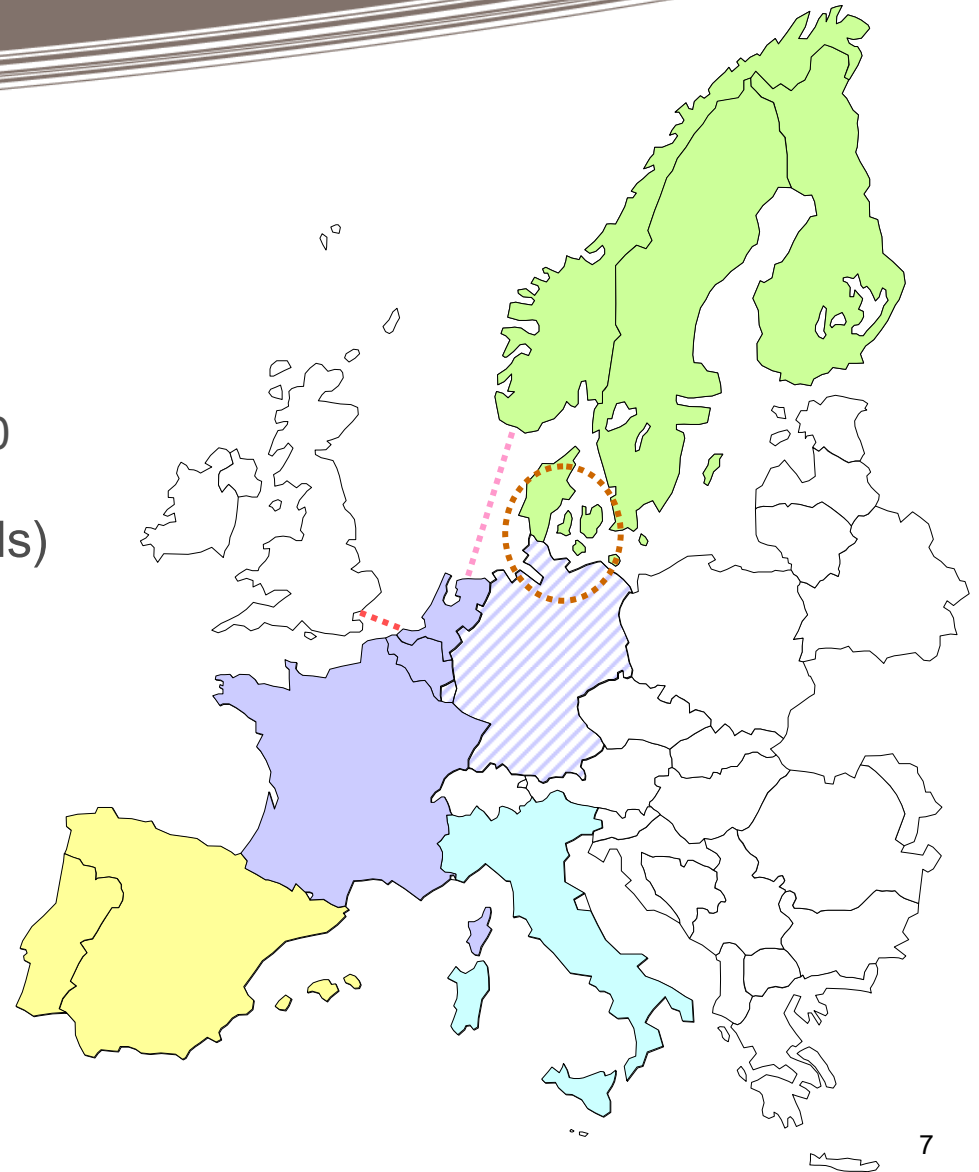
- « Market coupling » between organised markets (PXs):
  - « Price coupling » between France, Belgium and the Netherlands (TLC)
  - « Volume coupling » between Germany and Denmark (EMCC)
- « Market splitting »: a single Power Exchange deals with several price zones.
  - Nordpool in Scandinavia
  - OMEL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

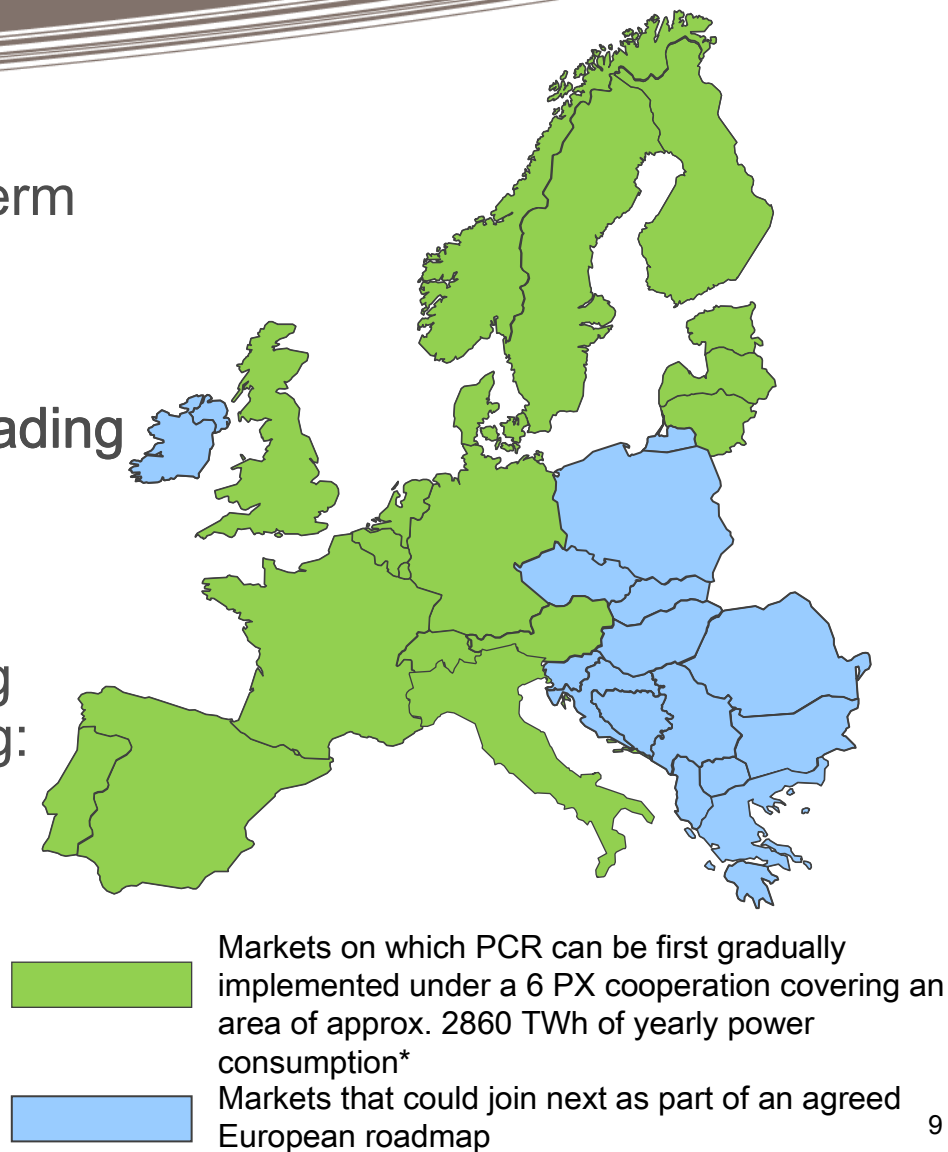
# Need for a top-down approach...

- 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.

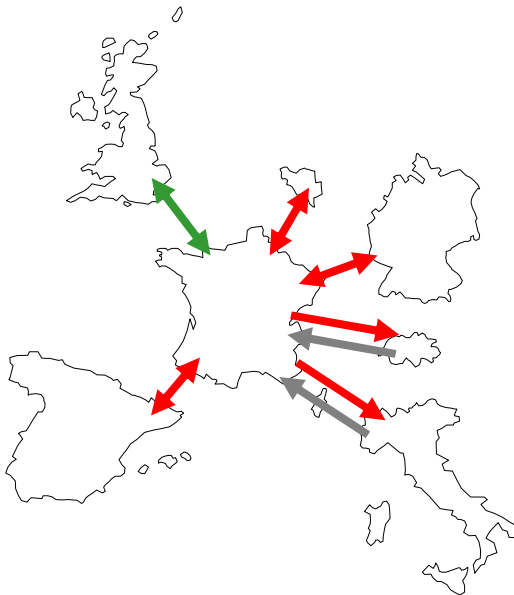


# Another concrete project: flow-based market coupling

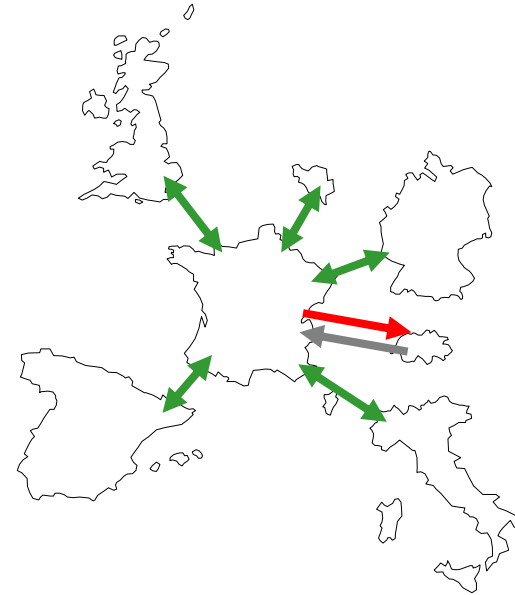
- Rather than allocating only cross-border transmission capacity (aggregated value), the flow-based approach takes into account all potential « *critical branches* » (lines which may limit cross-border exchanges).
- This should further improve the network utilisation, by taking loop flows and network 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.