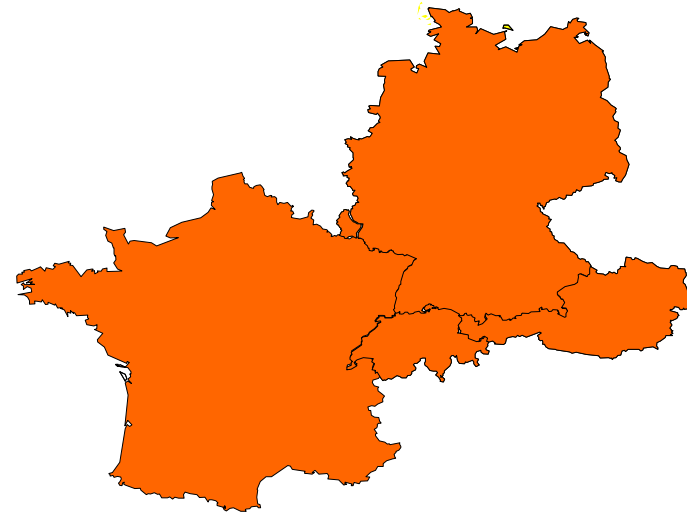


EPEXSPOT
EUROPEAN POWER EXCHANGE



The Central Western European Regional Spot Market

APEX 2009 Conference

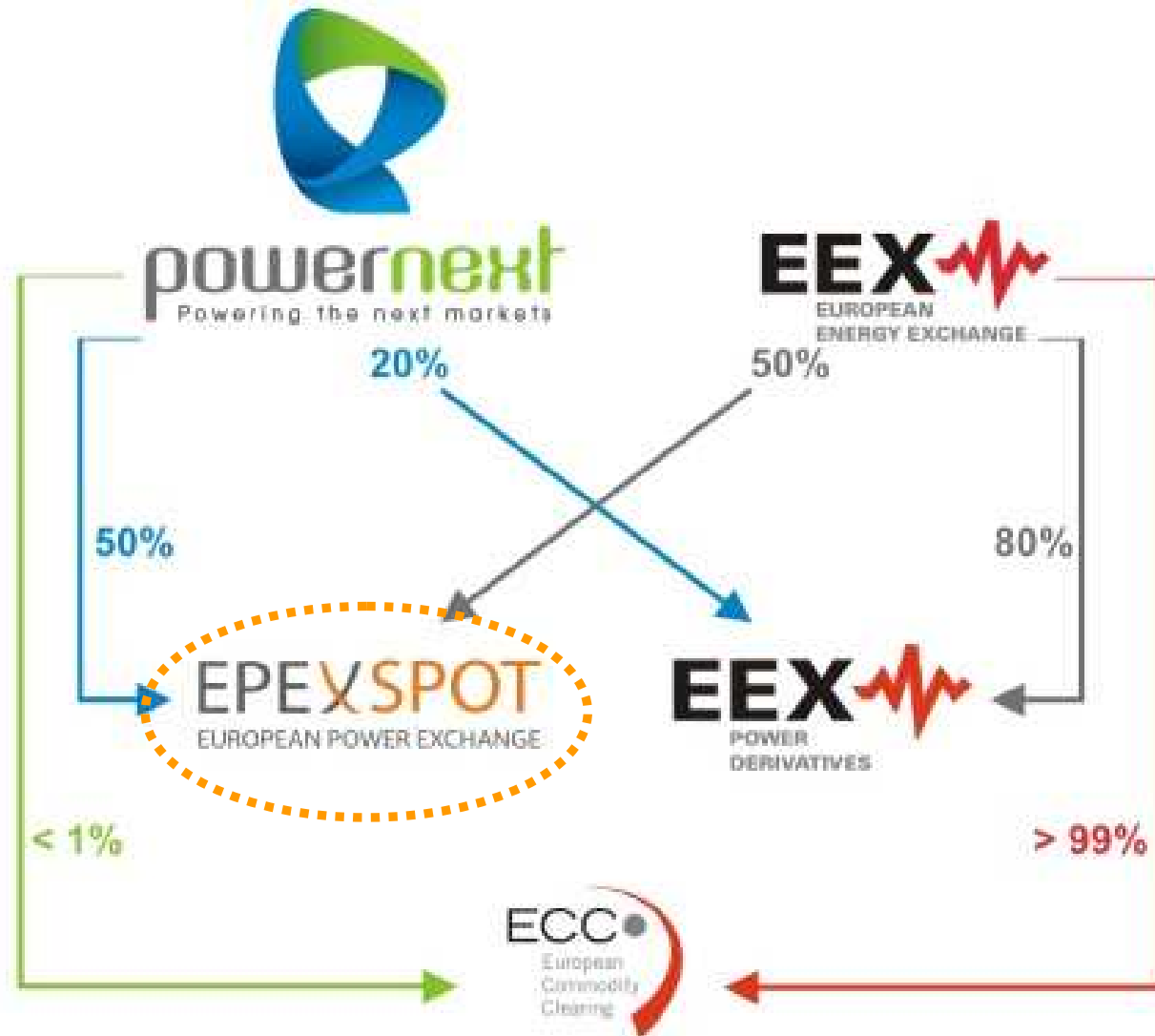
October 12th, 2009 – Boston





About EPEX Spot

EPEX Spot: one of the results of the Powernext – EEX cooperation



EPEX Spot operates spot markets in 4 countries

3 hubs:

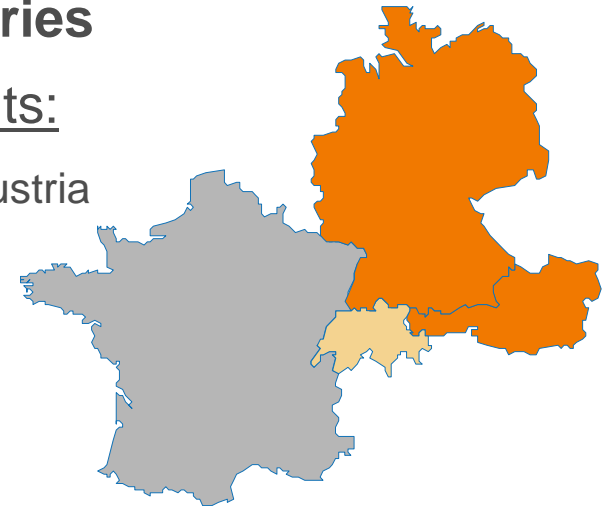


- Germany / Austria
- France
- Switzerland

→ 240 members

5 main market segments:

- Day-Ahead Germany / Austria
- Day-Ahead France
- Day-Ahead Switzerland
- Intraday France
- Intraday Germany



- **Market operations & trading systems for continuous & auction markets**
- **Operations of isolated markets and coupled markets with neighbouring exchanges**



- Putting wholesale markets such as Germany, Austria, Switzerland and France together is a decisive step towards the EU objective

- In this process exchanges play an important role alongside OTC markets, by:
 - Establishing reliable reference prices
 - Creating a “level playing field“ through anonymous trading and clearing facilities
 - Lowering transaction costs through standardization of trading and settlement

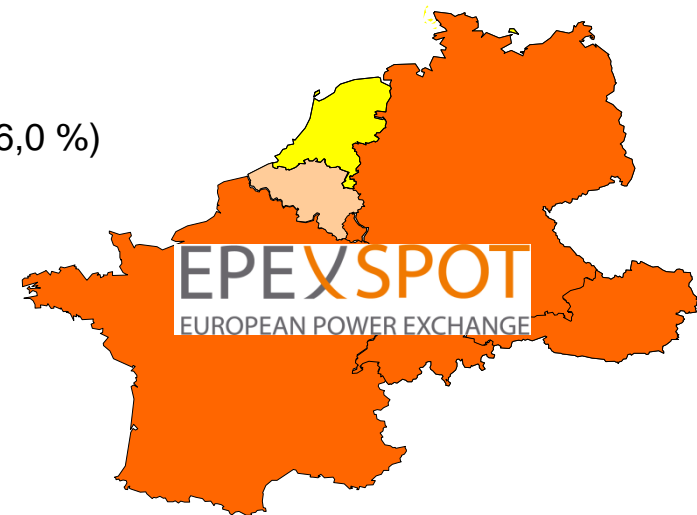
- Moreover, consolidation of spot PXs facilitates the governance and implementation of European spot market integration projects

EPEX Spot: a regional Exchange, facilitating integration

Selected countries*:

Austria	67 TWh (2,1 %)
France	478 TWh (14,7 %)
Germany	559 TWh (17,2 %)
Switzerland	63 TWh (1,9 %)

1167 TWh (36,0 %)
3 price areas



TOTAL Europe 27+2 3.243 TWh

Approximately 200 TWh/year are traded on the spot exchange

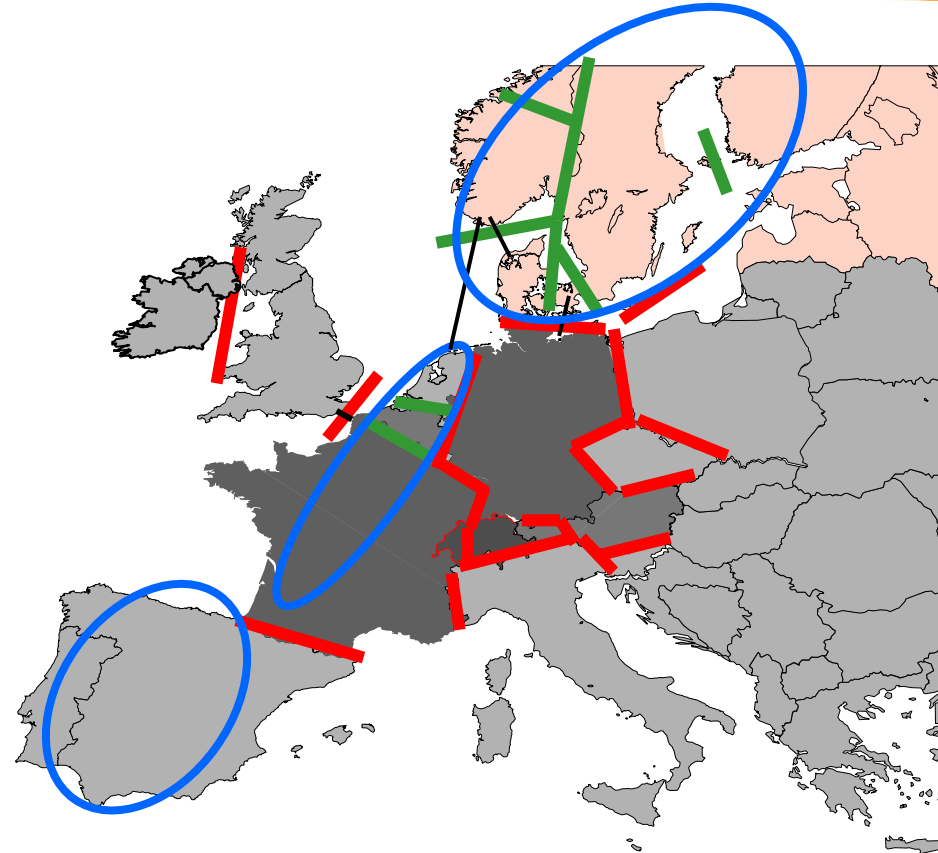
*Source: Prospex Research – EU 27 (plus Norway and Switzerland) Power Consumption, 2006



Central Western (CWE) spot market: more integration to come as of April 2010

Market Coupling is going to mitigate some of today's shortcomings, e.g.:

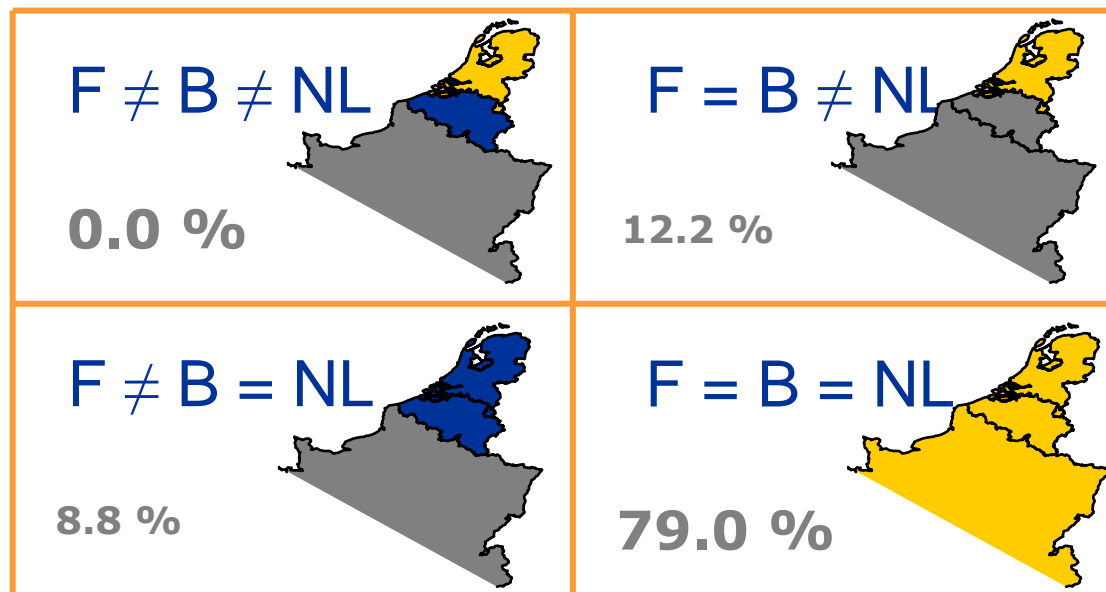
- Volatile prices
- Variable liquidity
- Transparency issues
- Inefficient use of capacity
- High level of market concentration in local market: market power issues



— Explicit auctions
○ Coupled market

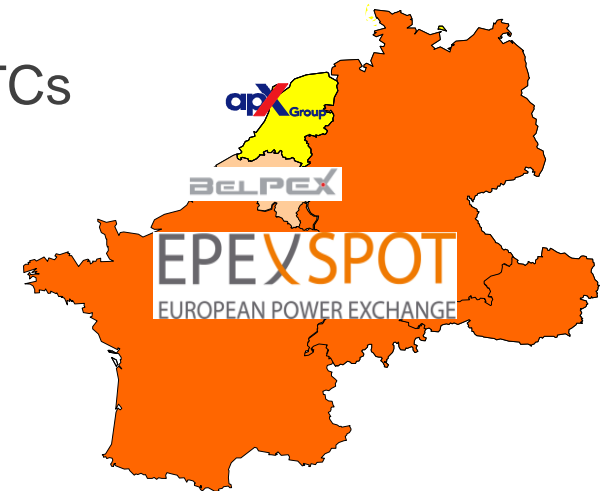
- Day-ahead price coupling mechanism since November 2006
- No operational incident during the last 3 years
- Market results are published in average 15' after GCT
- Average full price convergence of 65 %

Example : price convergence in Sept. 08



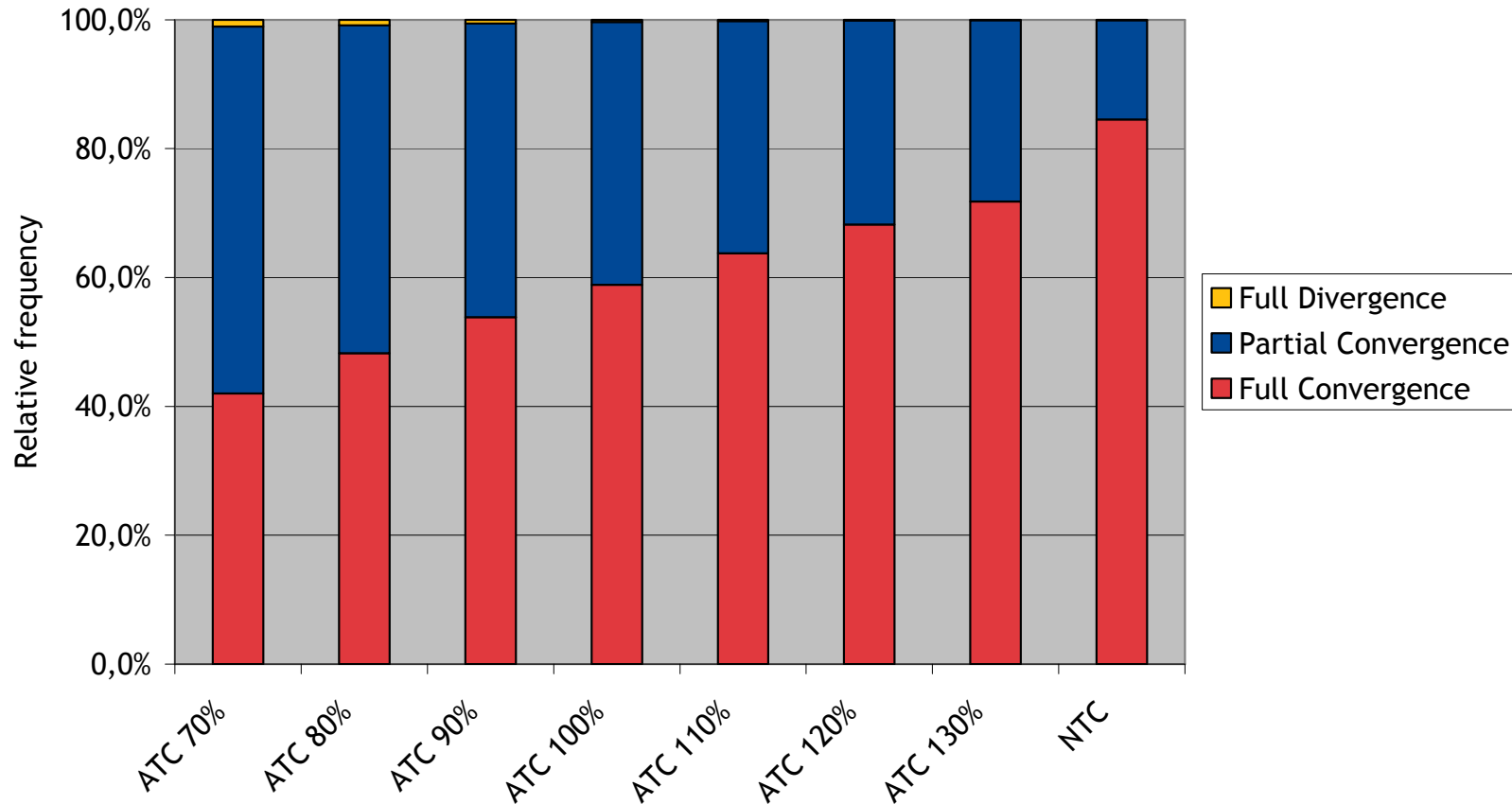
CWE day-ahead price coupling

- 3 exchanges and 7 transmission system operators involved
- Price coupling the BE-NL-FR-DE hubs using ATCs
- Gate closure time will be harmonized at 12:00
- Publication of market results at 12:25 (or 12:45)
- Spot price convergence expected to be higher
 - in the range of 60 % - 80 % for the region, based on simulations
- Tight planning but project currently on schedule
- Switch to flow-based market coupling early 2001
 - if 9-month parallel run process satisfactory

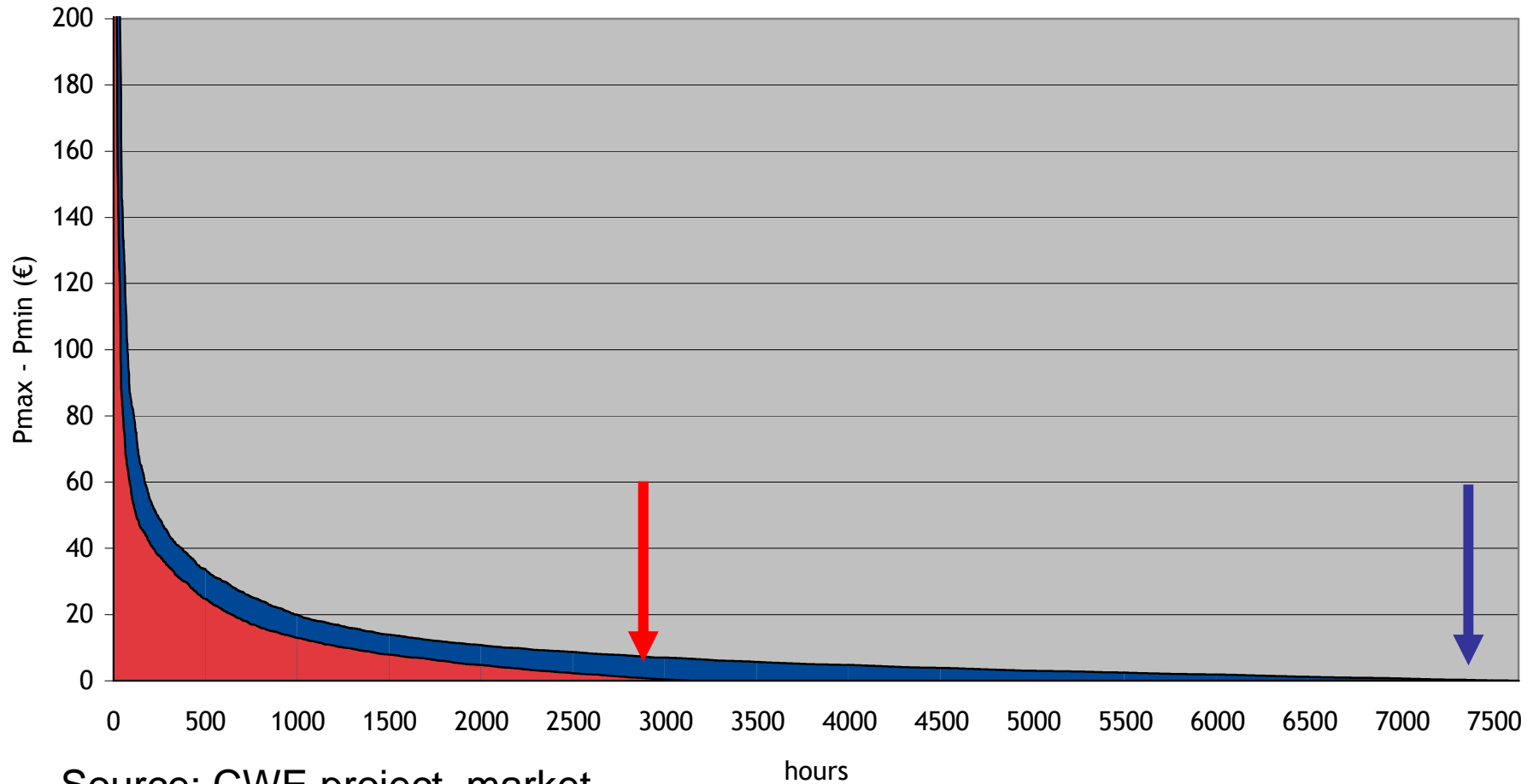


ATC Sensitivity Analysis: Price Convergence

Convergence



Source: CWE project, market validation study, data 2007

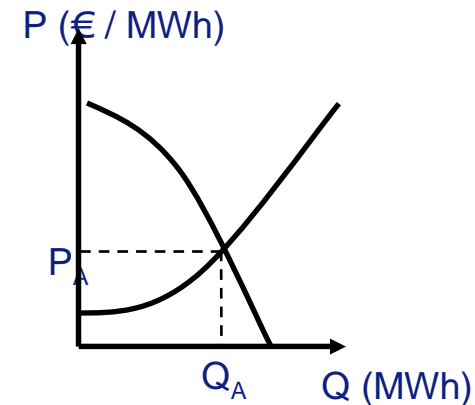


Source: CWE project, market validation study, data 2007

■ Historical ■ ATC

“One-Shot” Price Coupling Calculation

- Determination of hourly prices and volumes of the different hubs
 - Taking into account
 - interconnections
 - ATC
 - OR
 - Flow-based
 - order books of the PX's
 - Hourly orders
 - AND
 - Block orders
- With existing local rules in terms of price ticks, volume ticks, price boundaries,...



Common CWE partners selection process

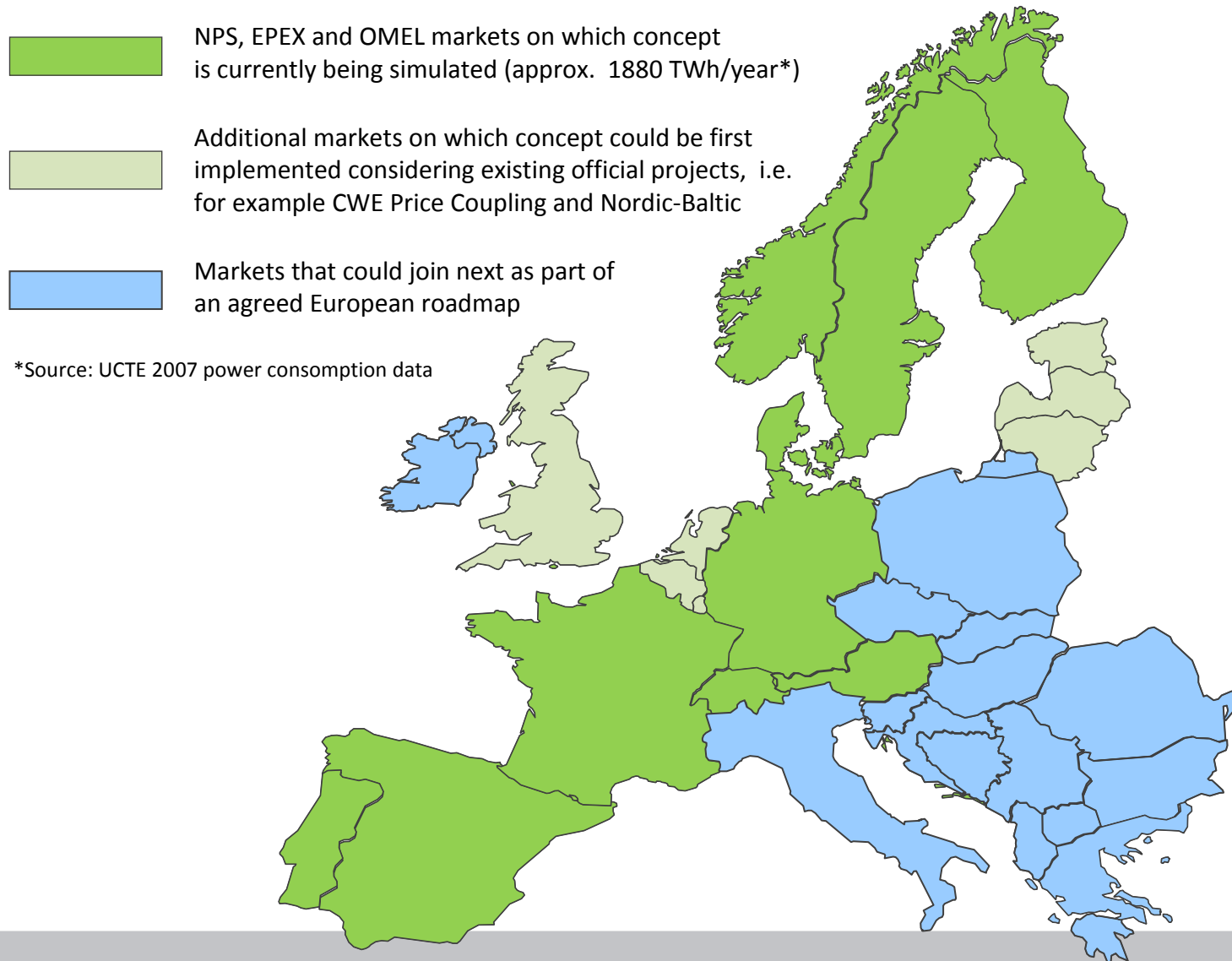
1. Determination of requirements for an enduring algorithm
2. Evaluation of different algorithms of the partners
3. Cosmos is unanimously chosen by internal and external experts as fixing algorithm for CWE market coupling
4. Cosmos is owned jointly by Belpex, APX-Endex, EPEX Spot

Coupling Of Spot Markets with Optimal Solutions



Looking Beyond Central Western Europe?

Cooperation of Power Exchanges on European Price Coupling Concept



PCR: European Price Coupling of Regions

- Pragmatic initiative from OMEL, Nord Pool Spot and EPEX Spot to coordinate price formation in an area of organized spot markets trading over 700 TWh/year
 - Launched in June 2009 in response to market requests
 - Based on price coupling, supported by European stakeholders
 - Building on existing infrastructures and regulatory frameworks
 - Partners are confident about the results of the cooperation
- Designed to be open to other PXs on fair and equal terms
- TSOs as key partners: target date for go live to be agreed jointly
 - Efficient project structure is key to success

Some Final Remarks

- In order to achieve convergence and equal markets, a competitive, fair and transparent European wholesale market is required
- EPEX Spot, a new regional PX, is an innovative driver and initiator for a pan-European power market
- The EPEX Spot concept is characterised by
 - a transparent and reliable wholesale price formation mechanism
 - centralised and increased liquidity
 - standardisation and harmonisation of processes
 - open to other PXs

EPEXSPOT

EUROPEAN POWER EXCHANGE



Thank you very much for your attention!

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