

**e.on**

Energy  
Trading

## How to integrate European power markets

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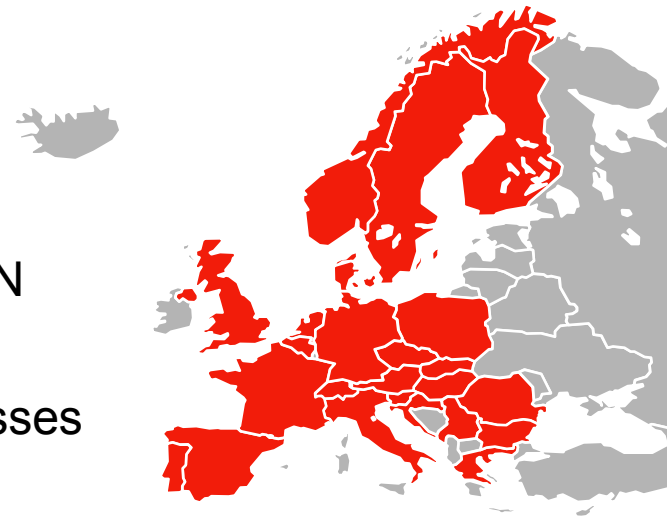
Director of Western European Power & Emissions  
Trading

Svalbard, April 2009

## E.ON Energy Trading AG

### A brief history...

- Formed as a new Market Unit within the E.ON Group – 1<sup>st</sup> Jan 2008;
- The combination of all former trading businesses within E.ON;
- Final Legal integration 1<sup>st</sup> Jan 2009, with the inclusion of E.ON UK trading business;
- Focus on cross commodity and cross border optimization;
- Managing group risks with a holistic view.



### 2008 Traded Volumes

- Power: 878 TWh
- Gas: 938 TWh
- CO2 allowances: 103 mt
- Oil: 46 mt
- Coal: 107 mt

# The background to the discussion... regional price differences

## UK versus Germany

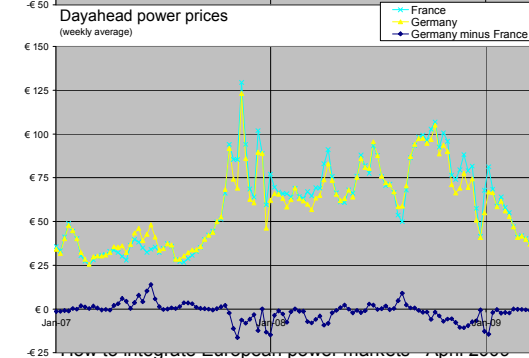
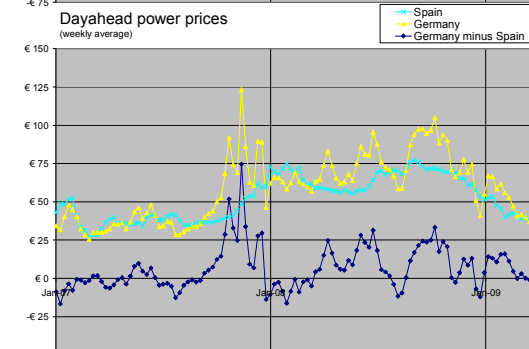
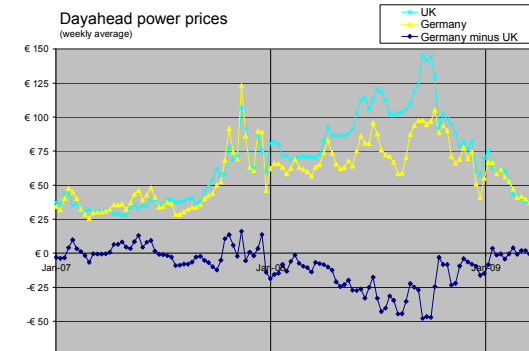
UK spent much of 2008 trading at a premium to German power due to load factor constraints on certain UK coal plants

## Spain versus Germany

Spain spent much of 2008 trading at a discount to German power due to high generation capacity

## France versus Germany

France traded at a premium for Q4-07 and Q4-08 to German power due to tight generation capacity



## The current climate surrounding our markets

- With the current economic and political environment it is more important than ever that our power markets are transparent and efficient;
- Efficient, liquid and transparent markets deliver a fair price, which is important to maintain and build trust from all stakeholders – customers/regulators/participants/politicians.

E.ON supports the current initiatives to couple day-ahead markets in Europe, in order to create more efficient use of infrastructure and greater price harmony.

## Overview of Market Coupling projects

### Established

Nordic (market splitting)  
FR/BE/NL → End 2006

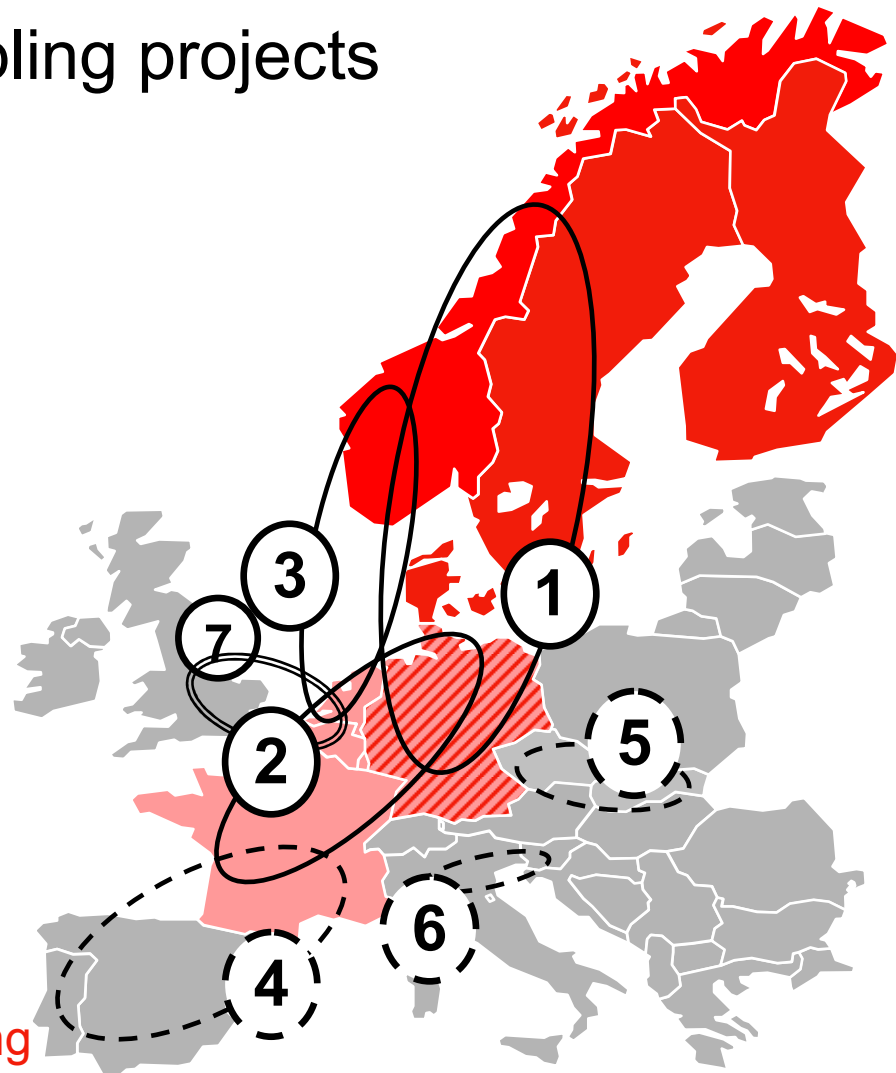
### Running Projects

- ① Nordic/DE → 2nd Q 2009
- ② FR/BE/NL/DE → 1st Q 2010
- ③ NO/NL → end 2009

### Announced Initiatives

- ④ FR/ES/PT
- ⑤ CZ/SK
- ⑥ IT/SLO
- ⑦ UK/NL

→ Initiatives lead by PXs and TSOs;  
essential to actively involve trading  
companies

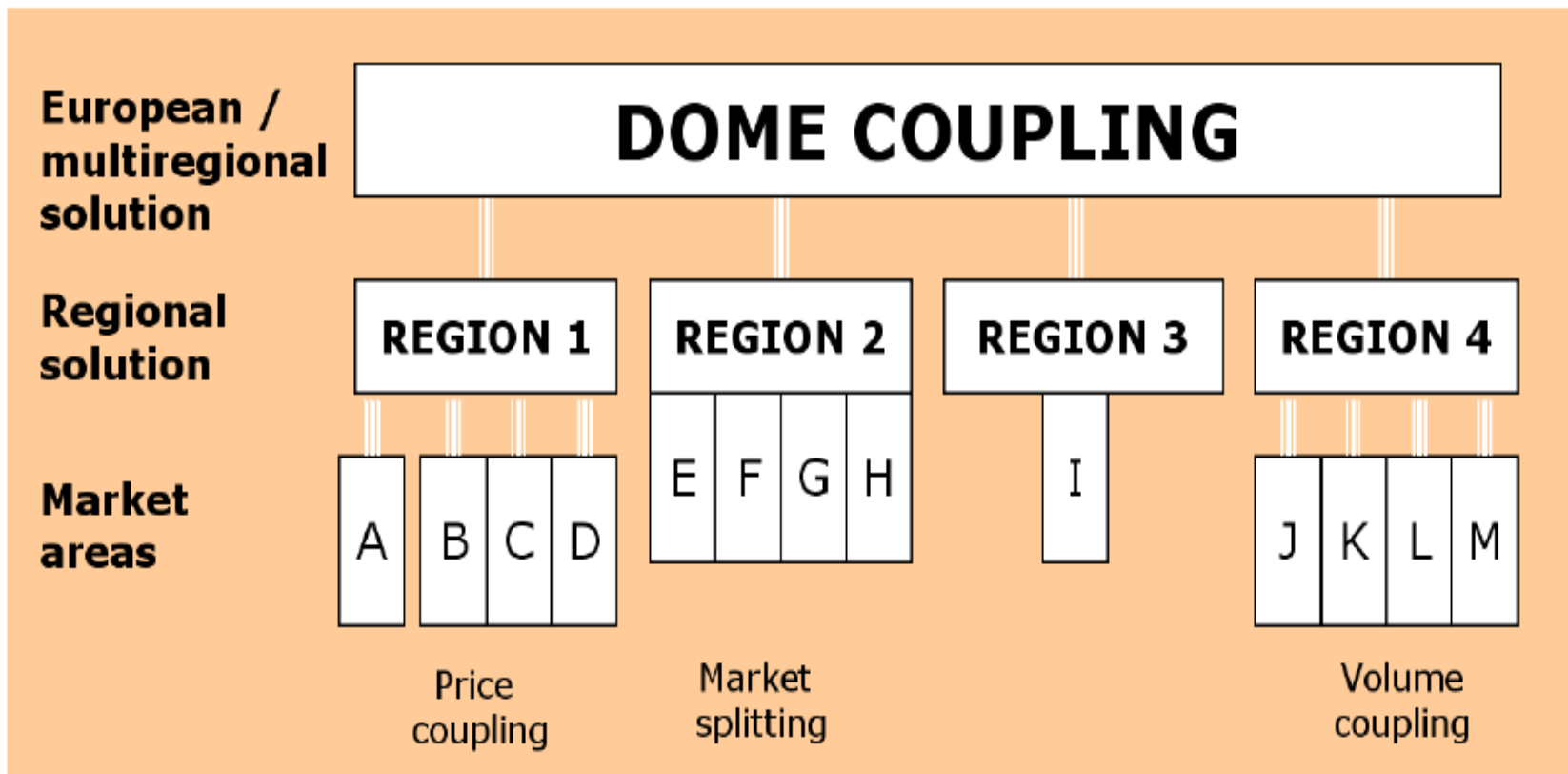


## Market Coupling is not without challenges

- Integration of day ahead markets through coupling requires technical and political alignment,
- To remove price area differences as a result of constraints continued enhancements of rules for capacity usage are required... and significant infrastructure investments.

In order to facilitate a timely implementation within Europe, Dome Coupling has to be accepted – allowing regional market differences to exist in the short / medium term.

Dome coupling could be a pragmatic step until full integration is possible

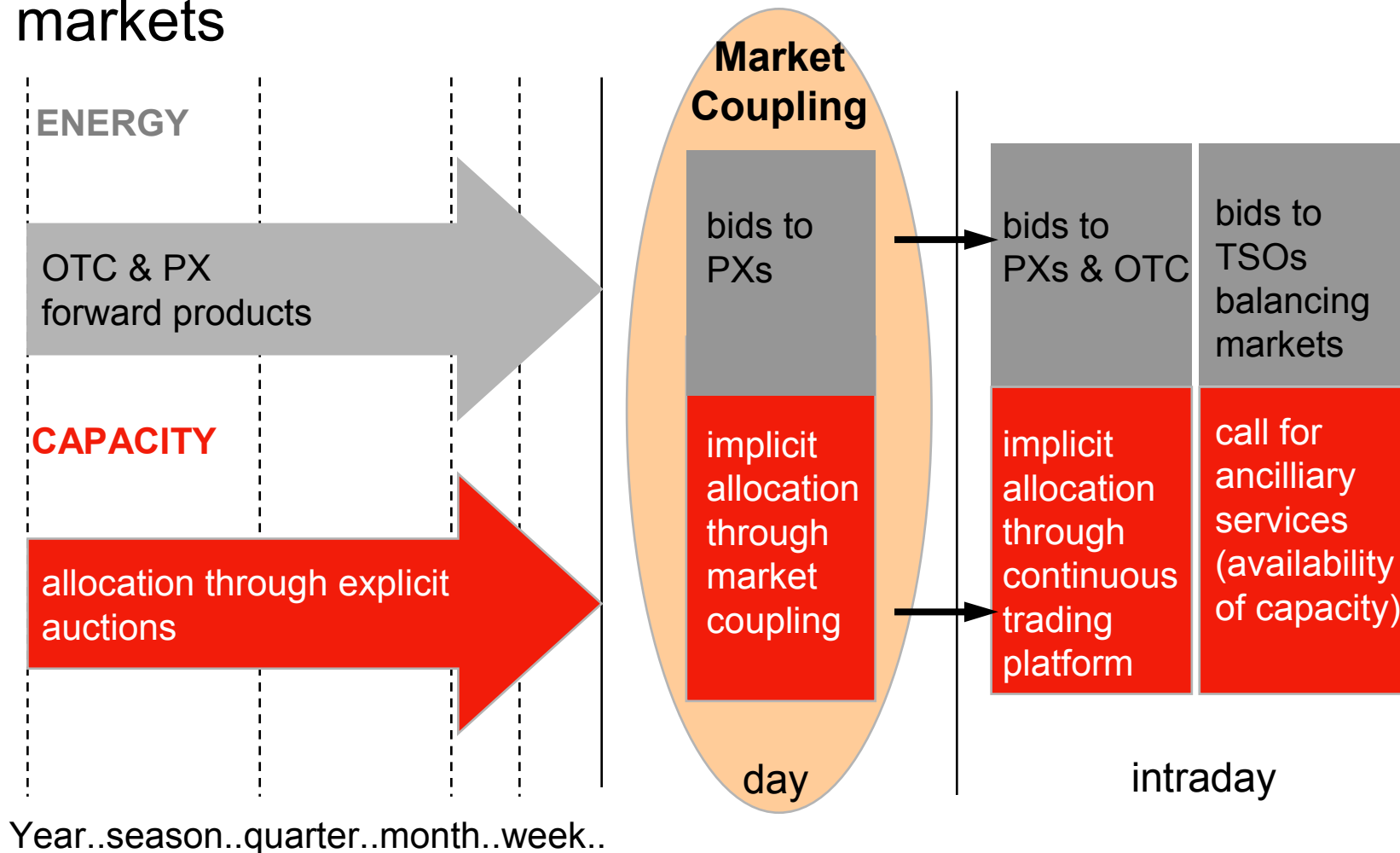


## Nordic is a well functioning electricity market, but...

- CfD market is lacking liquidity, making risk management difficult;
- Splitting up the Nordic market in further price areas would be a step in the wrong direction;
- European integration makes harmonisation necessary;
- Introduction of financial transmission rights in the Nordic market could increase liquidity in price areas.



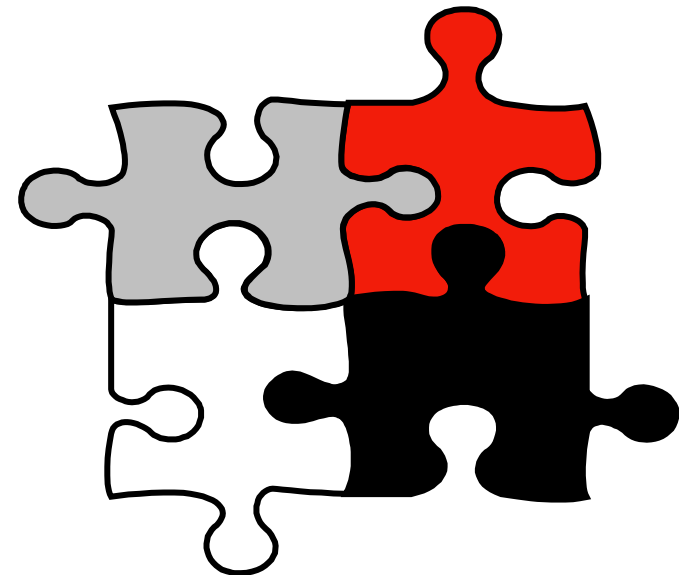
# E.ON's vision of integrated cross-border power markets



## However - Market Coupling is one piece in the jigsaw

### Others pieces are:

- Interconnector access
  - Greater Firmness/auctioning/use it or sell it;
- Market Structures
  - Similar Auctions/robust reference prices/product alignment;
- Exchanges/Clearing
  - Transparency/capital efficiency/market access;
- Market Access Requirements
  - Physical vs financial/IT systems requirements/physical balancing/licensing;
- Green Certificates
  - Linking European schemes to harmonise drivers;
- Renewable Power
  - Volatility/balancing requirements & costs.



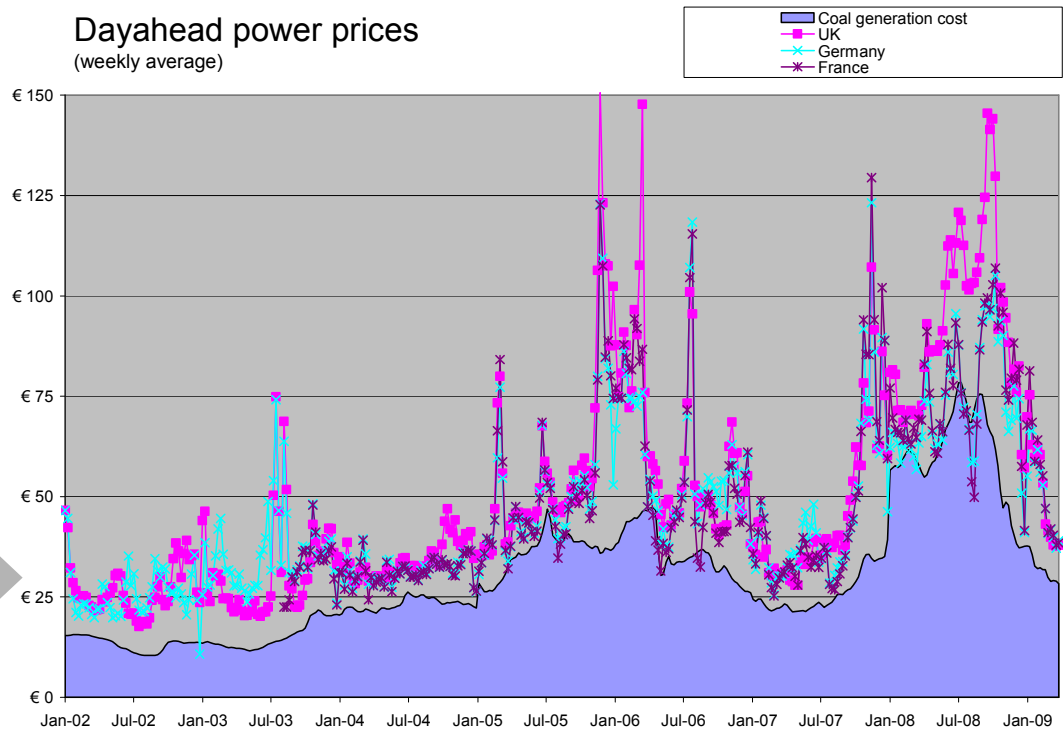
All are important and all have their specific issues & impacts on the degree to which EU markets integrate

Correctly a focus on the day-ahead markets...but what is the wider market context?

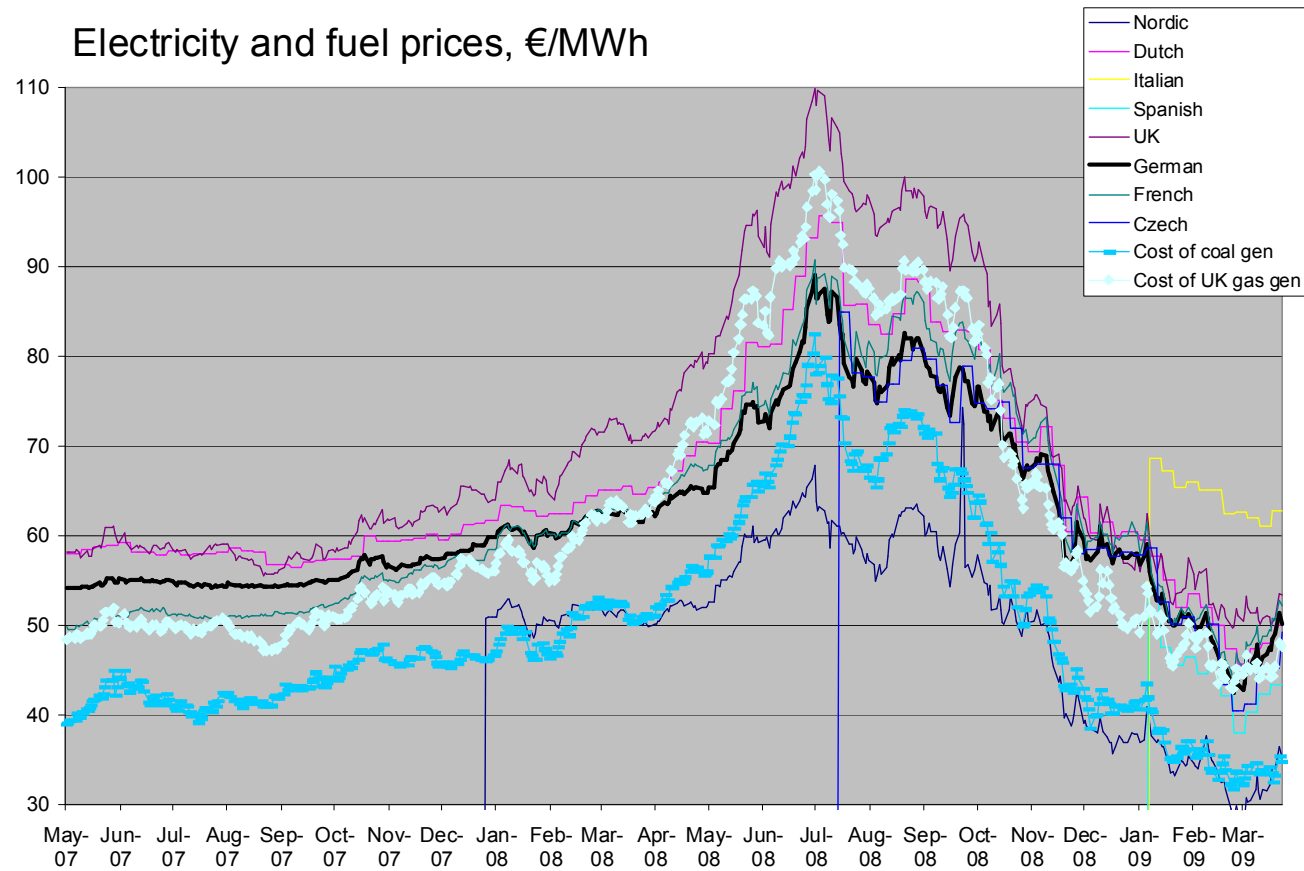
# Despite their differences our markets are increasingly linked

Generation Fuels are less regional and become a fundamental link across markets

Cost of coal generation sets floor price for power prices



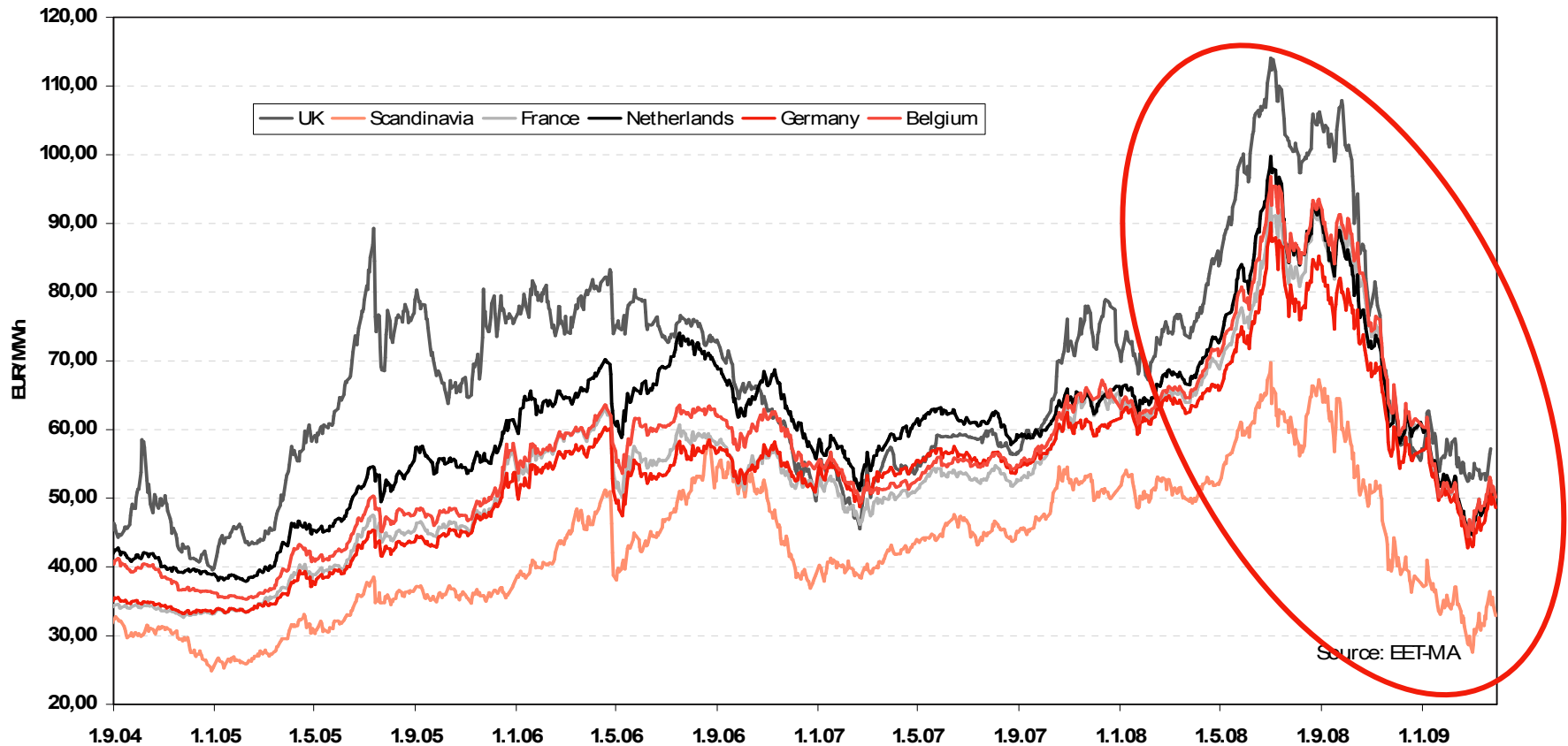
# This fuel link is even stronger in forwards markets



Cal10 Baseload

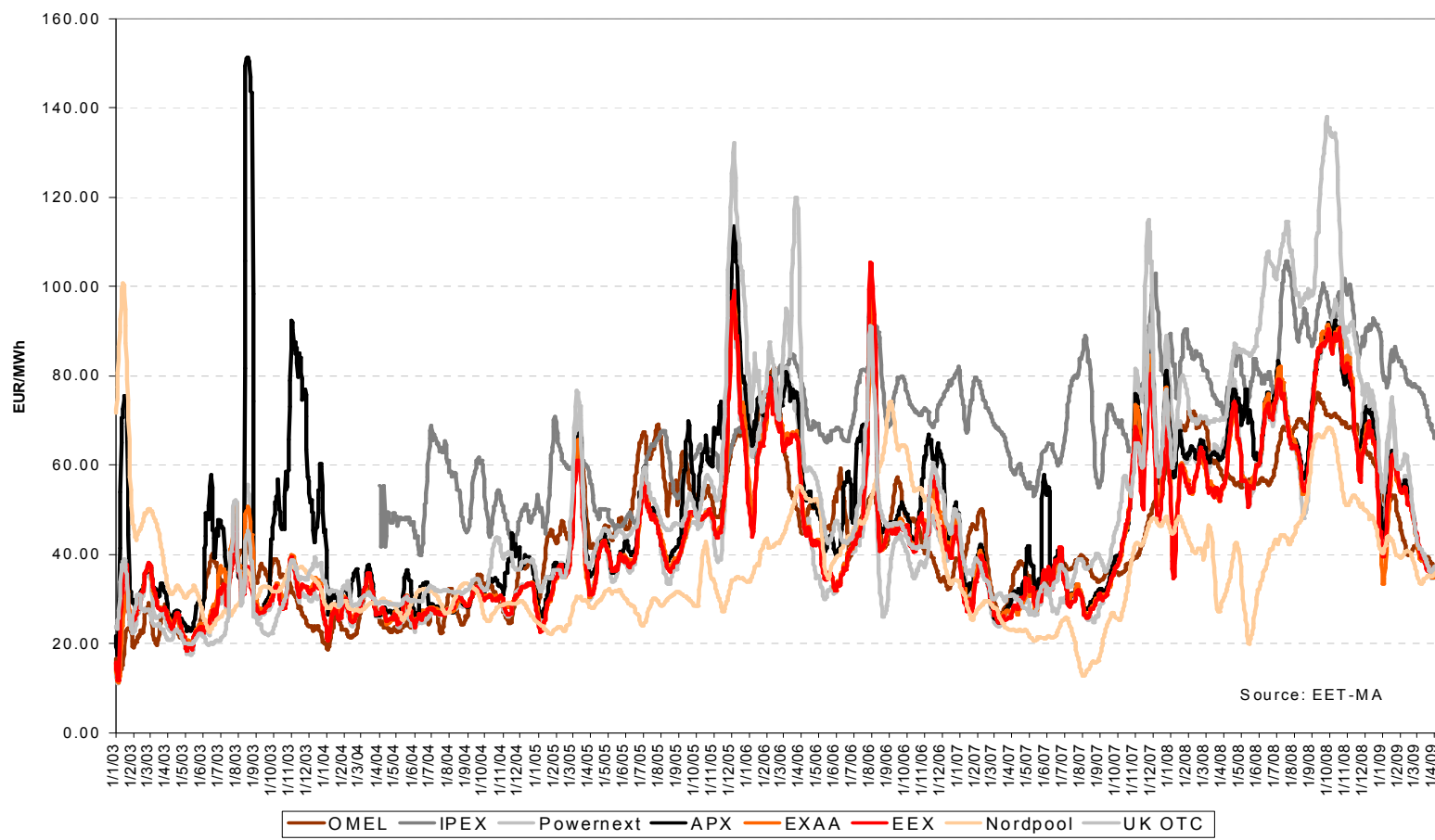
# The markets are themselves integrating...

Forward Price Development (Front Year Base)

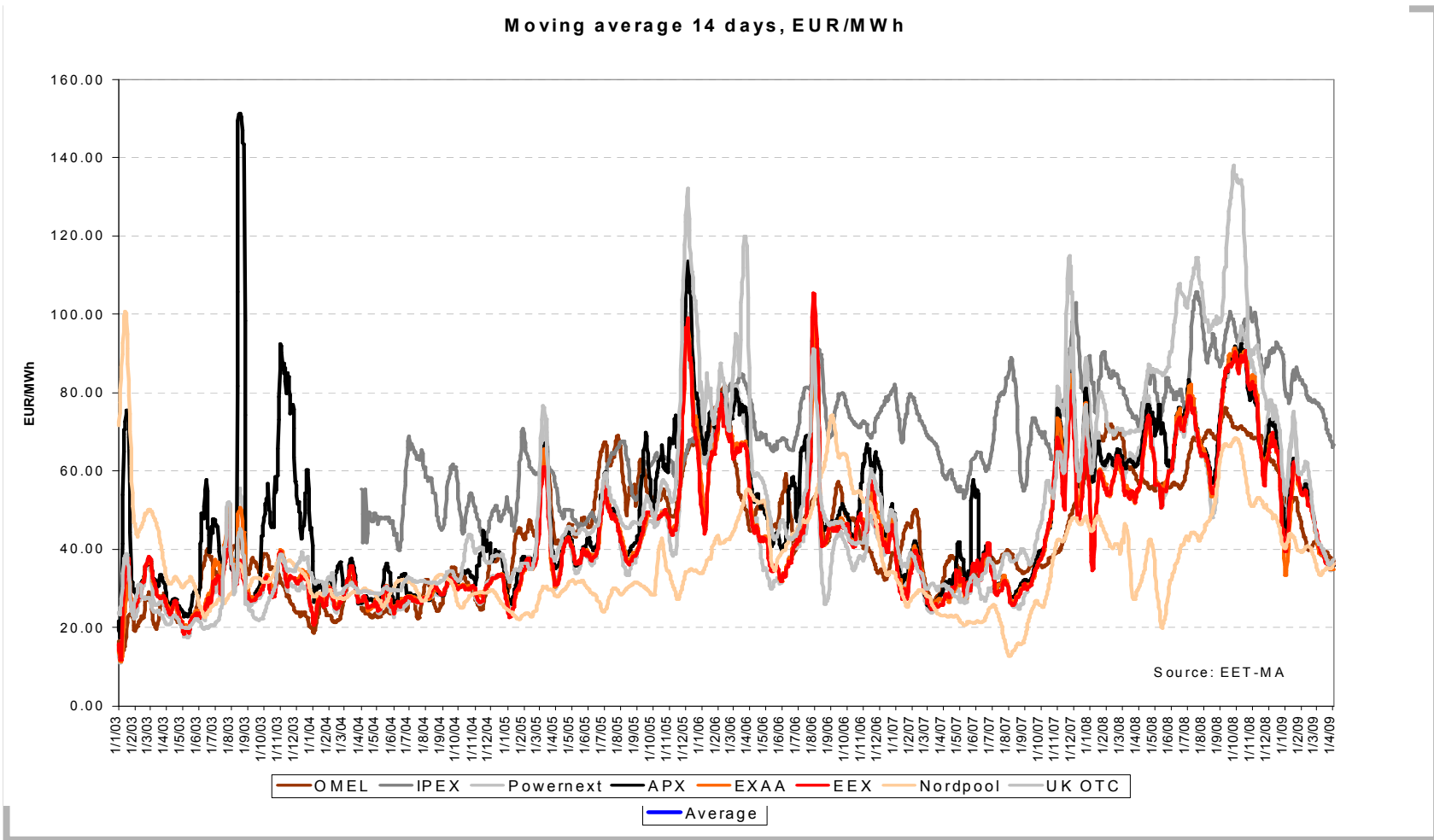


..although this is less emphasized in spot markets..

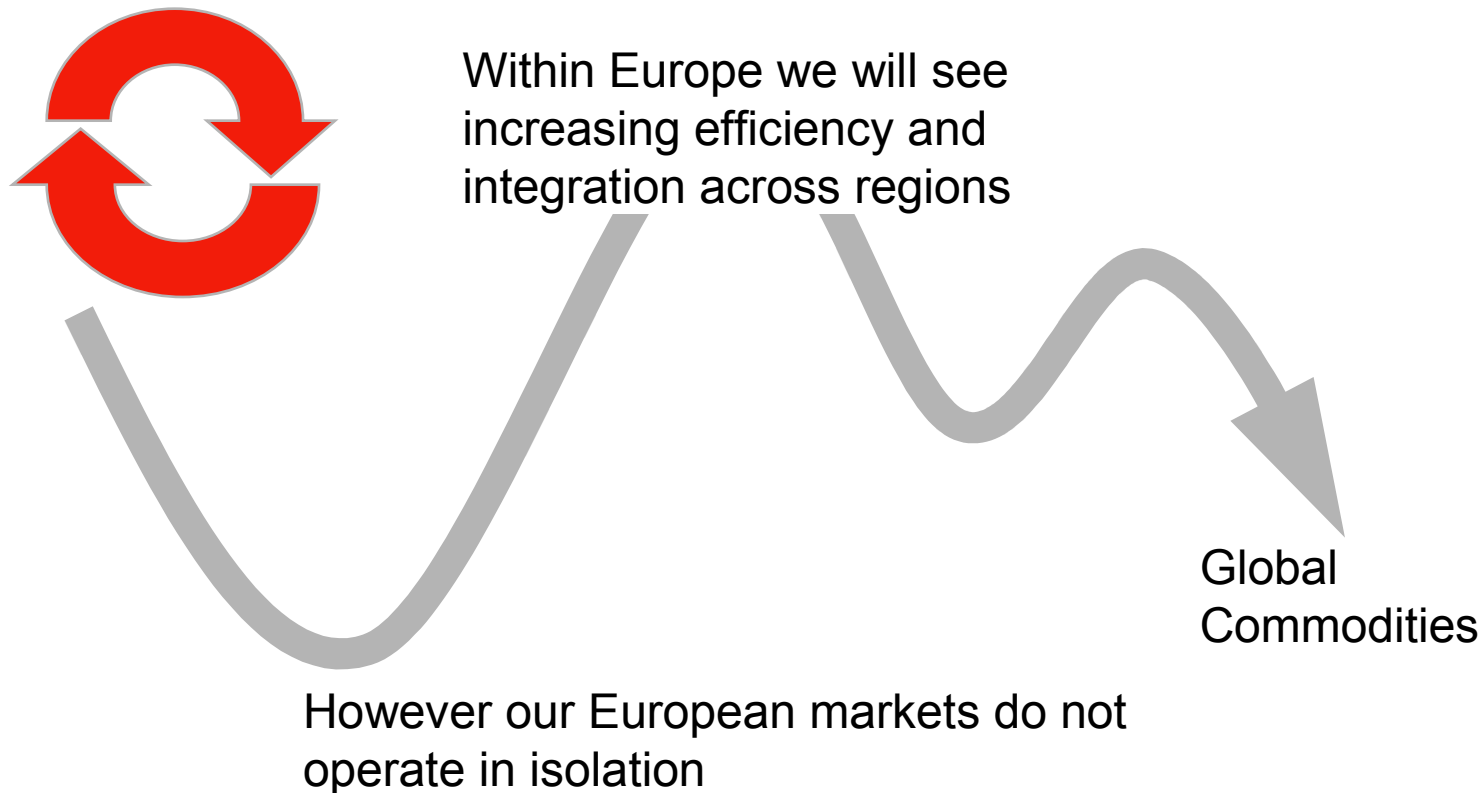
Moving average 14 days, EUR/MWh



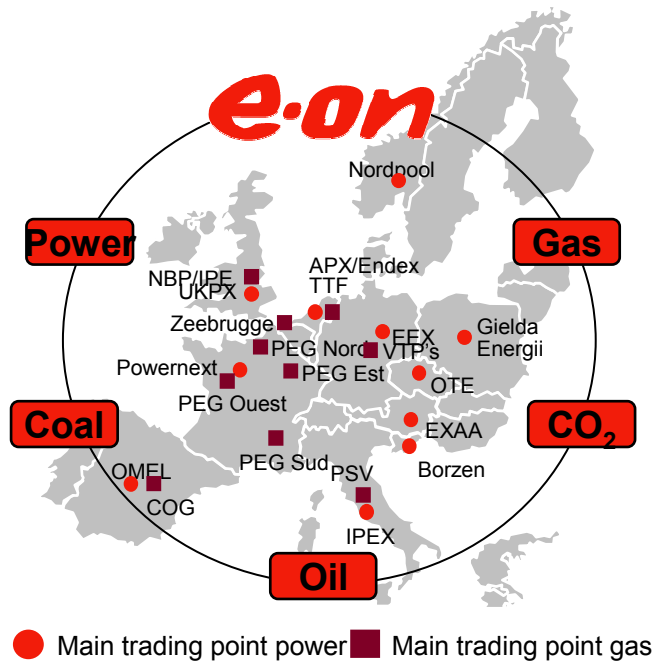
# Greater integration may lead to this....



# Our European markets will continue to be influenced by global commodities...



## E.ON Energy Trading is strongly positioned to respond to Europe's integrating energy markets



- **Market developments**
  - Increased convergence of European energy markets;
  - Increased competition;
  - Volatile commodities;
- **E.ON**
  - Excellent asset and contract base;
  - Belief in markets and liberalization;
  - Strong european footprint;
- **E.ON Energy Trading**
  - Deep heritage from separate units;
  - Focus on cross commodity and cross border optimization;
  - Managing group risks with a holistic view.

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