



In what context will competition law be enforced in the future?

Directorate Comp/B Reflection Day
in Overijse:
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Take Home Messages

What will stay?

- Policy driven
- High concentration

What will come?

- Convergence of markets (electricity, gas, CO₂)
- New infrastructure

What might come?

- Sub-national markets
- Capacity market

What might go?

- Importance of day-ahead electricity price
- Importance of national borders



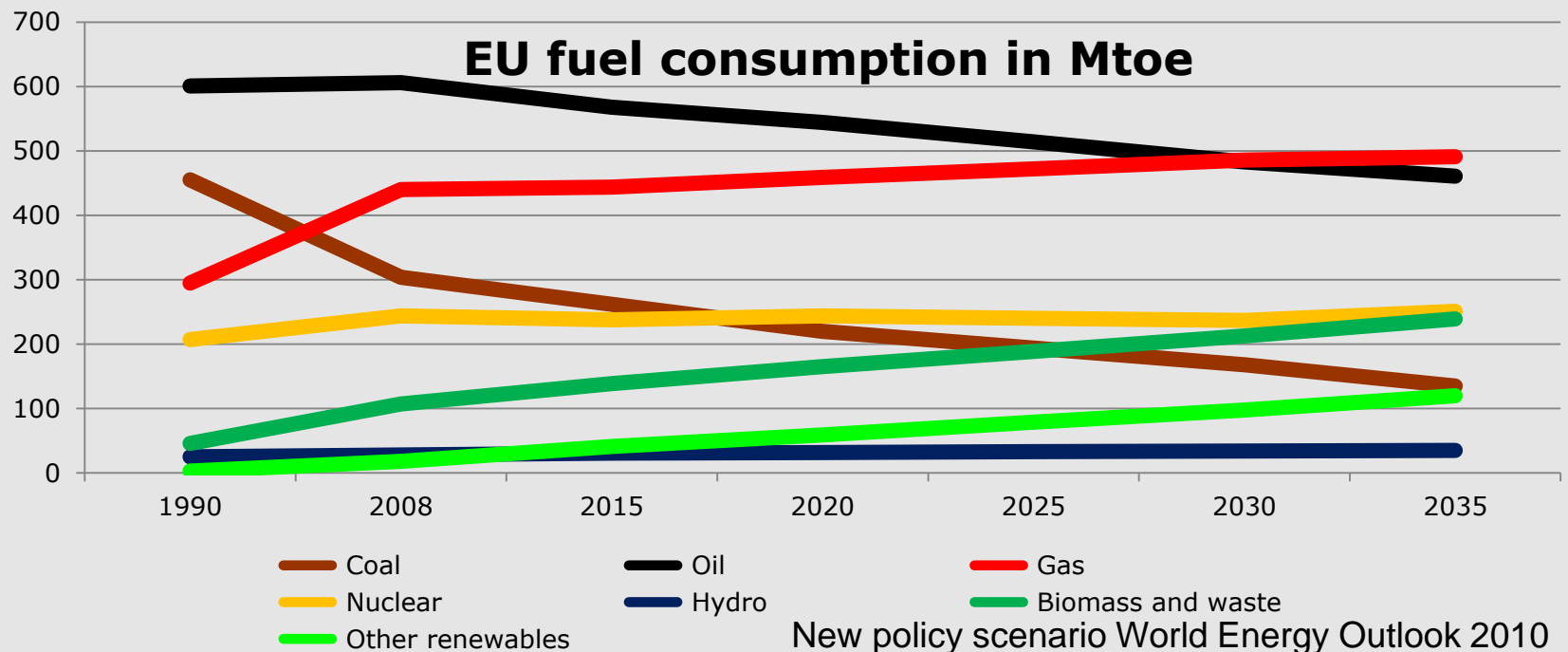
Agenda

- **Long Term Demand and Supply outlook**
- **Electricity wholesale markets**
- **Gas Markets**
- **20/20/20 and beyond**
- **Innovation and Investment**



Energy Demand is going to decrease

- Demand for oil and coal is going to decrease
- Demand for gas increases slightly
- Renewables and Nuclear will increase

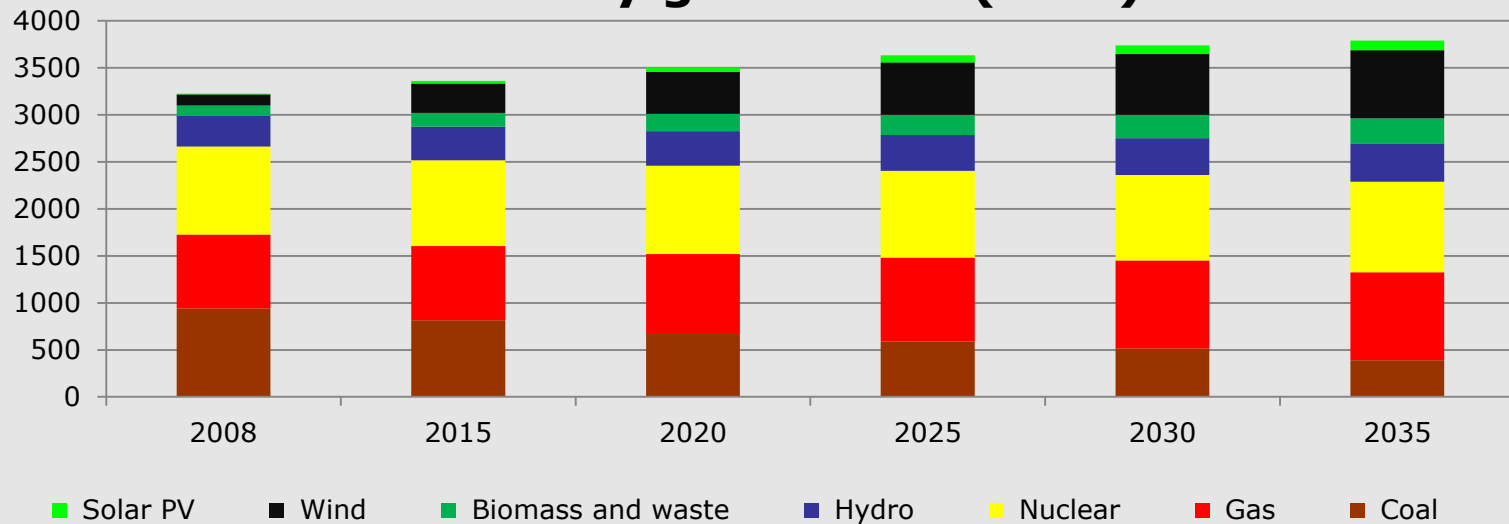




Electricity demand increases slightly

- Generation is predicted to increase by 0.6% pa

Electricity generation (TWh)



New policy scenario World Energy Outlook 2010

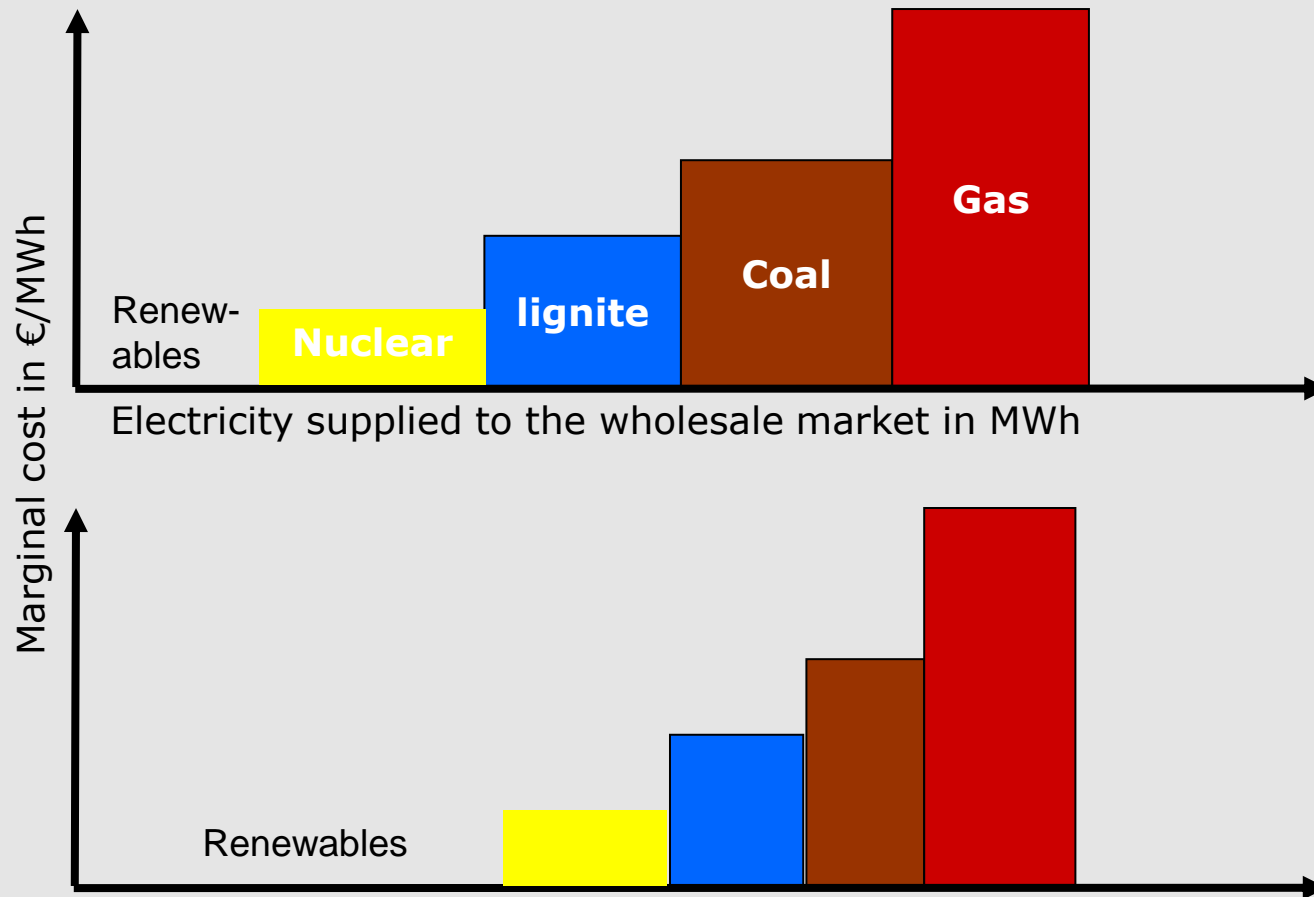
- But due to the intermittency of new sources, capacity has to increase twice as fast as generation (1.2% pa)



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Shrinking competitive segment



Supply side: Increasing share of renewables (2008:17% ->2035: 41%)

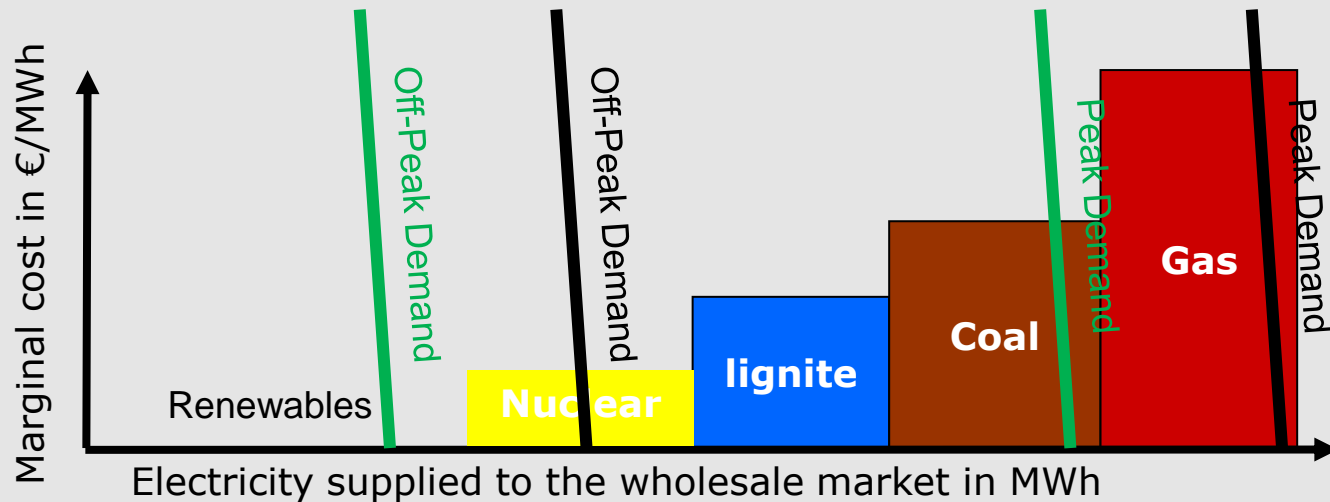
Less conventional power plants needed

⇒ overcapacity in the short run

⇒ **more concentration in the long run**



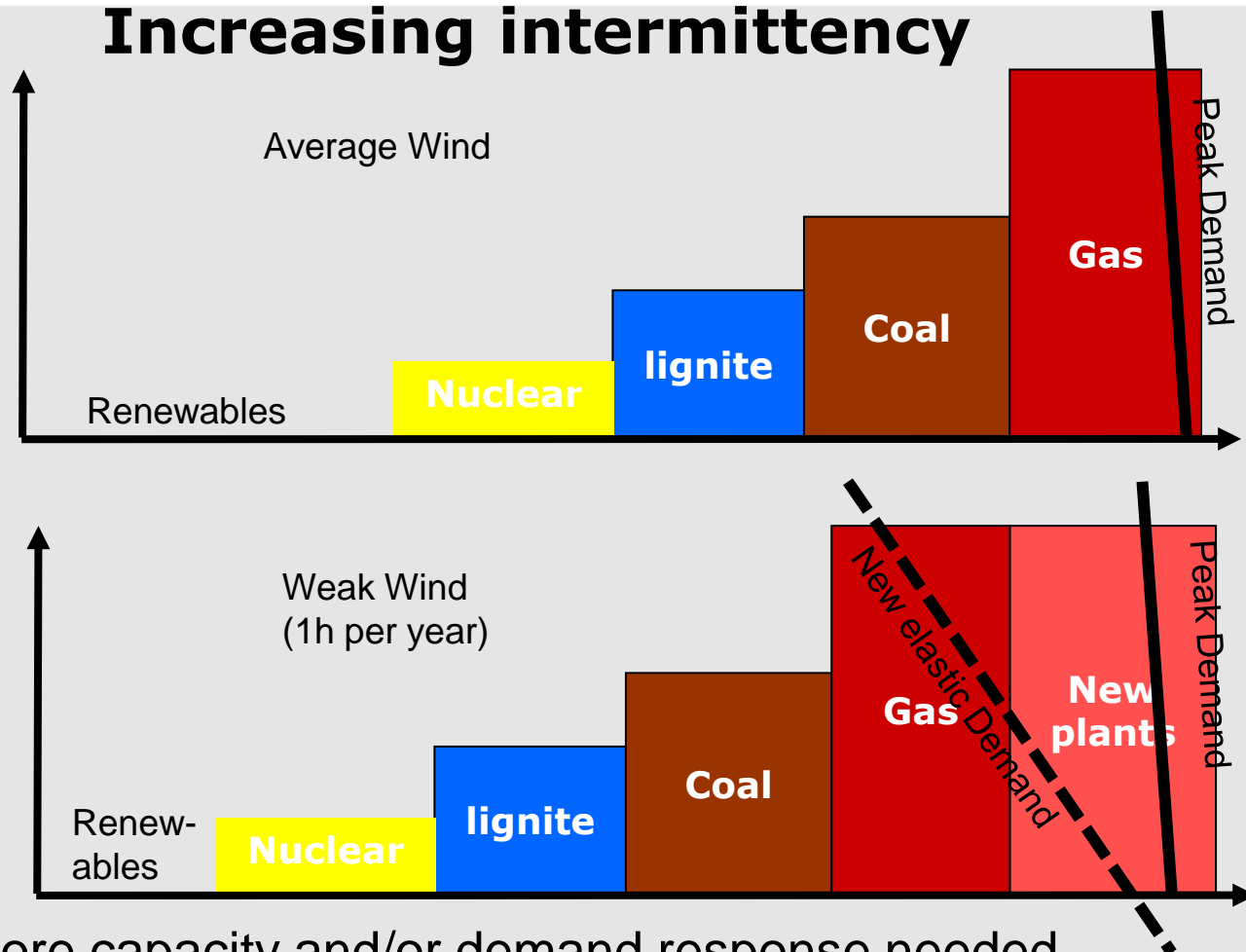
Administrative energy efficiency measures



Even less conventional power plants needed on average



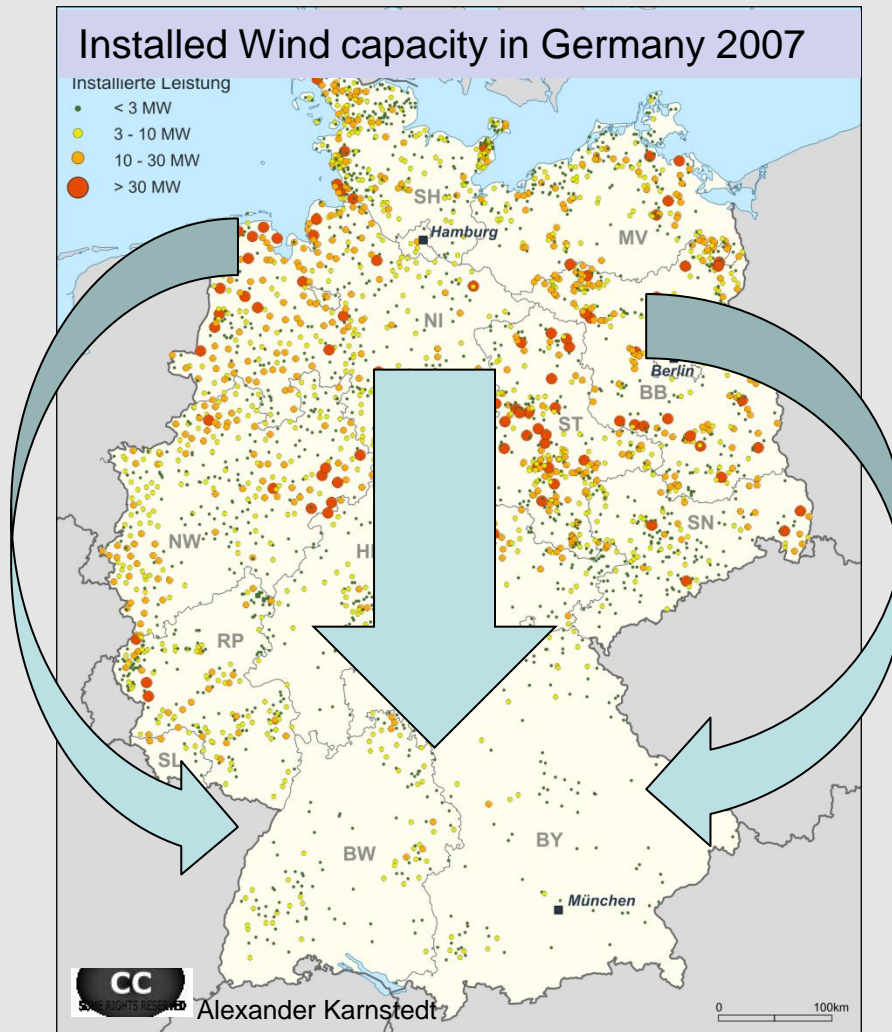
Increasing intermittency



- More capacity and/or demand response needed
=> Possibly capacity markets will develop
- Real-time markets will become more important
=> Day-ahead electricity price will lose importance



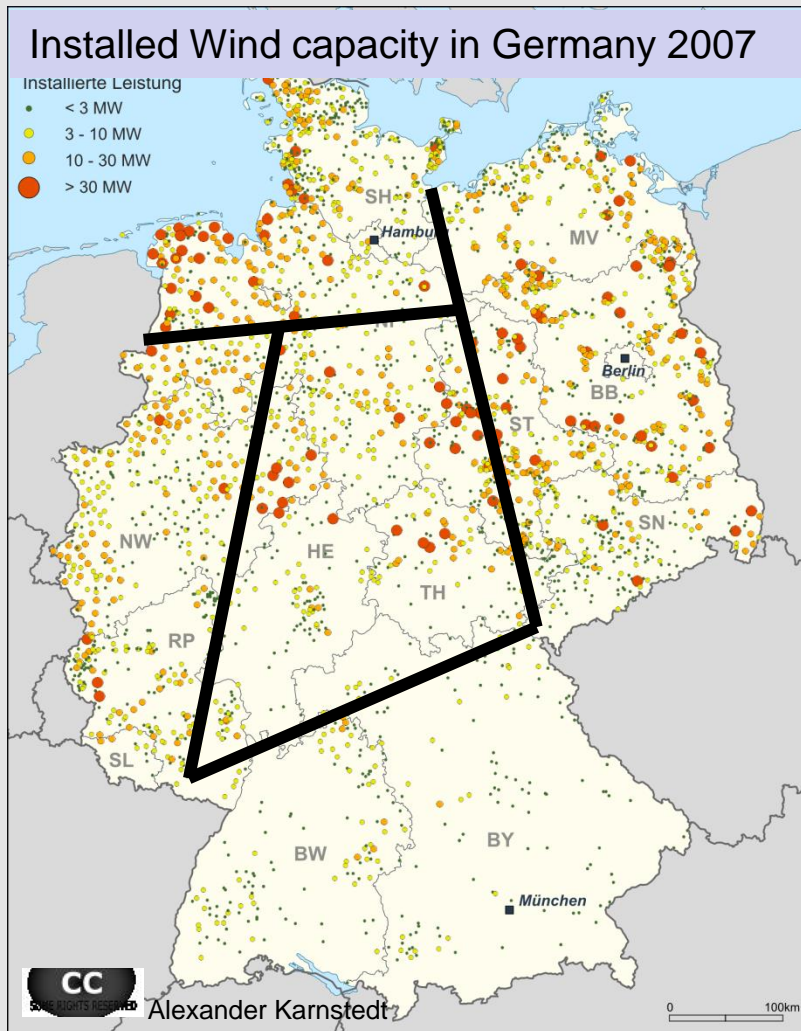
Unique price zones become unsustainable



- Intermittent power and local demand response might make large **unique price zones become unsustainable**
- **Cross-border mergers of TSO** a way to internalize



Unique price zones become unsustainable

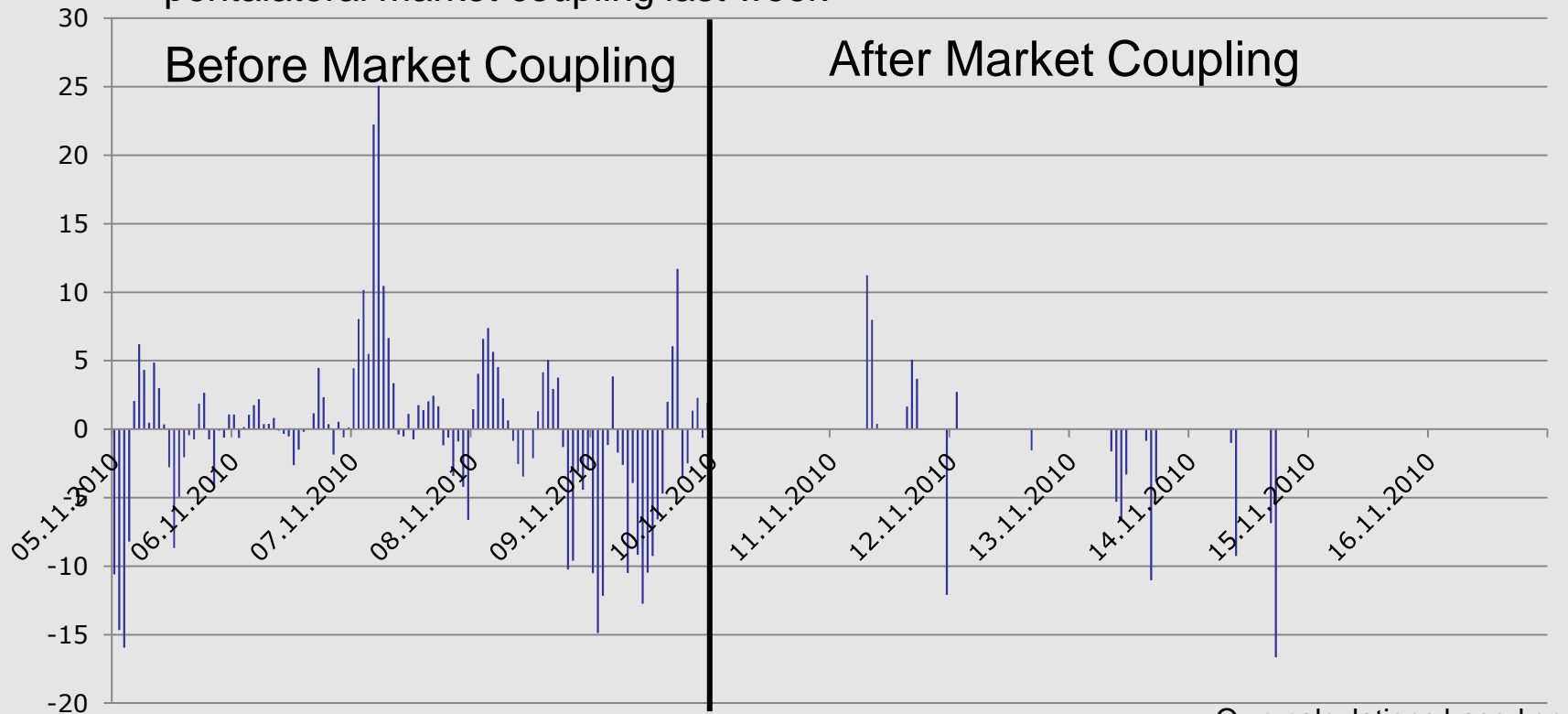


- Currently congestion is solved using intransparent rescheduling
- In smaller zones, high regional market concentration is revealed
- Transparency of price signals eases market power monitoring



Changing congestion management schemes

Price Differential France-Germany after the introduction of the pentilateral market coupling last week

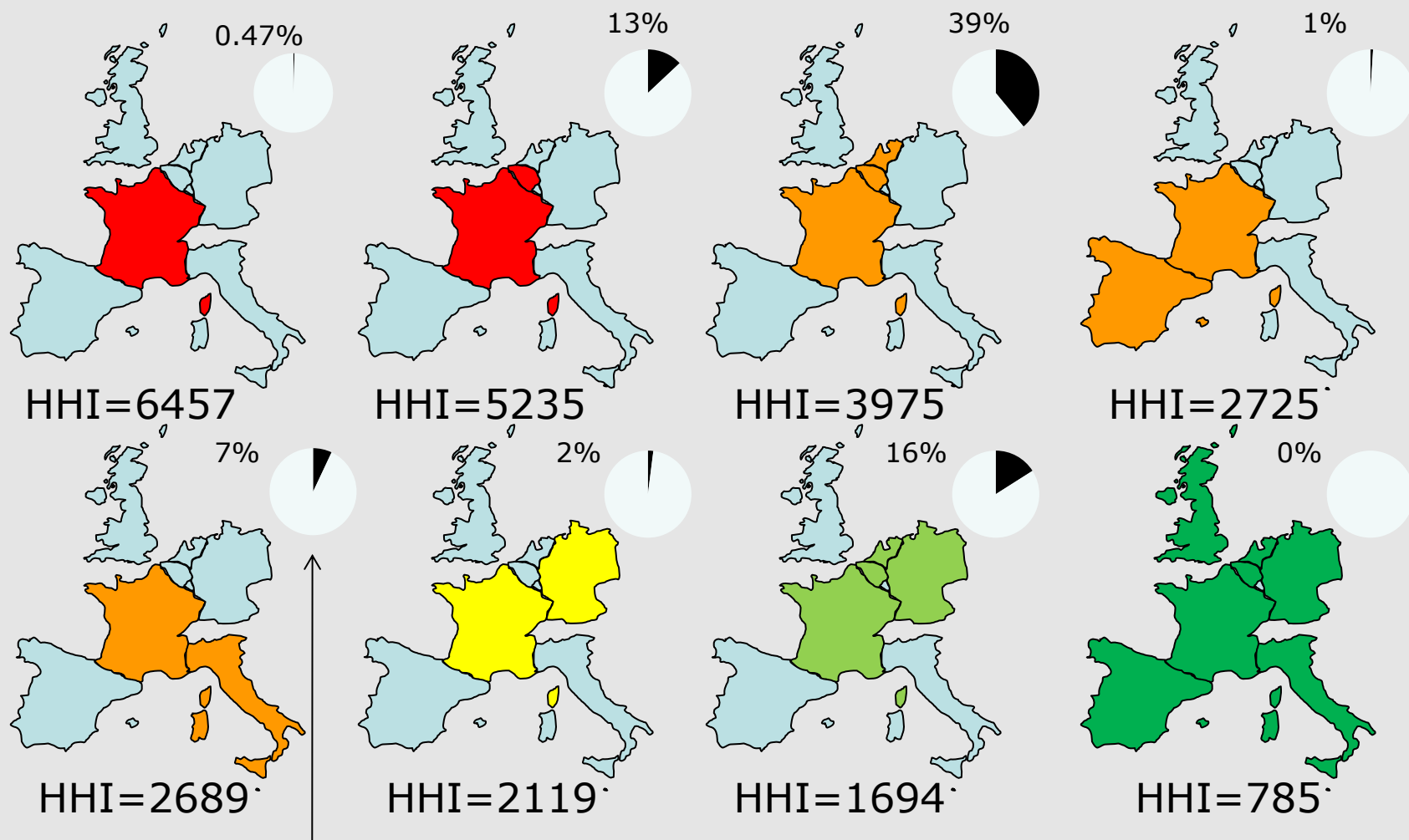


Own calculations based on
www.epexspot.com

=> National borders lose importance for market definition



France is rarely the relevant market

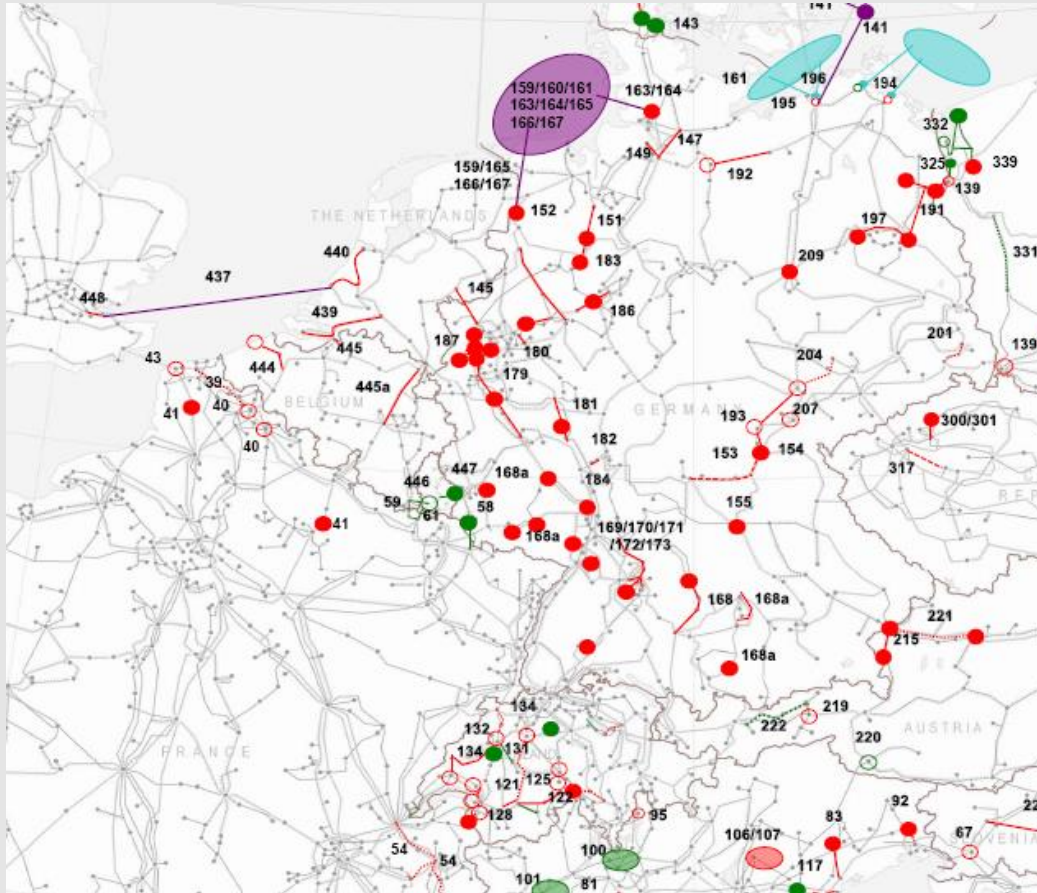


Frequency of a French producer being part of the French-Italian market

Perrot, Zachmann (2009)

Remedies based on international asset swaps are largely futile

Massive investments politically desired



ENTSO-E 2010: Ten Year Network Development Plan

- Large impact of networks on competition
- Network investments have many strategic components

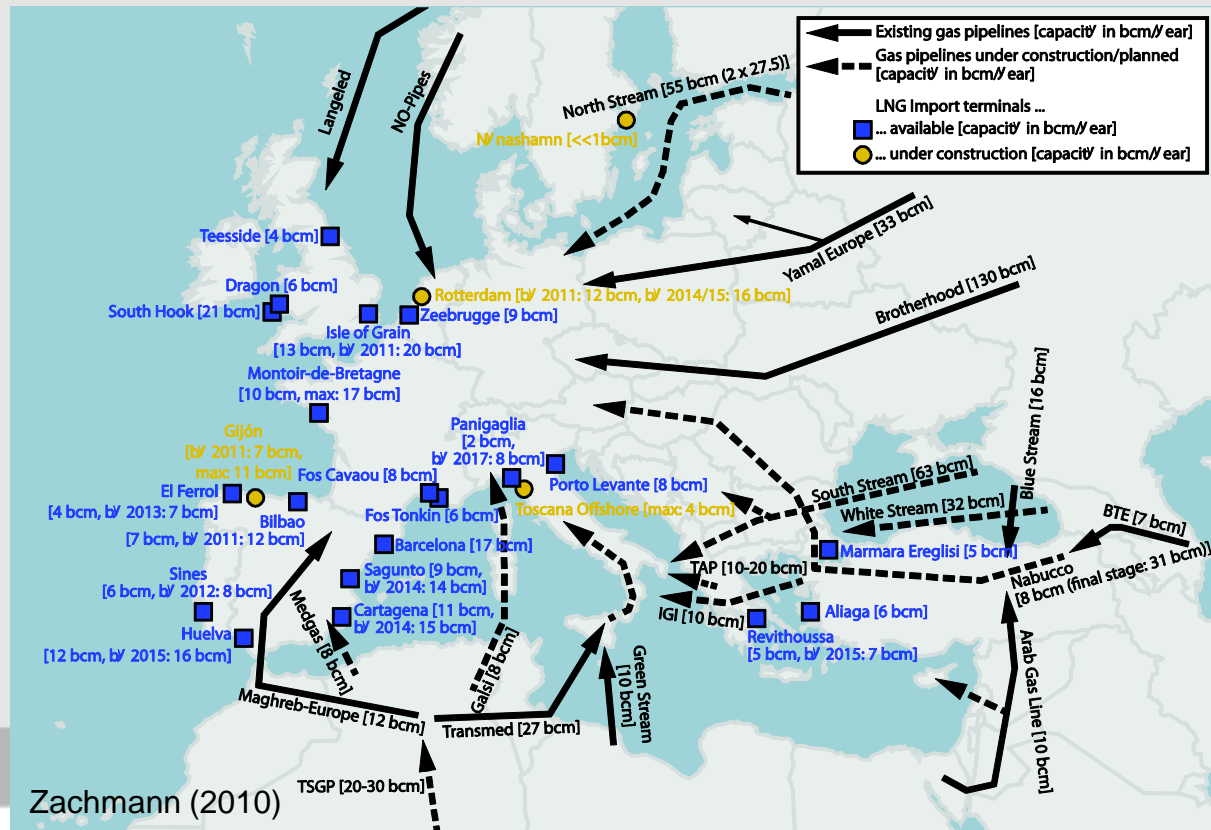
=> New infrastructure might change the playing field



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Security of supply at increasing import dependency

- Demand constant or slightly increases
- Indigenous (+Norway) production declines
- But, high world demand also stimulates new producers => diversity of suppliers



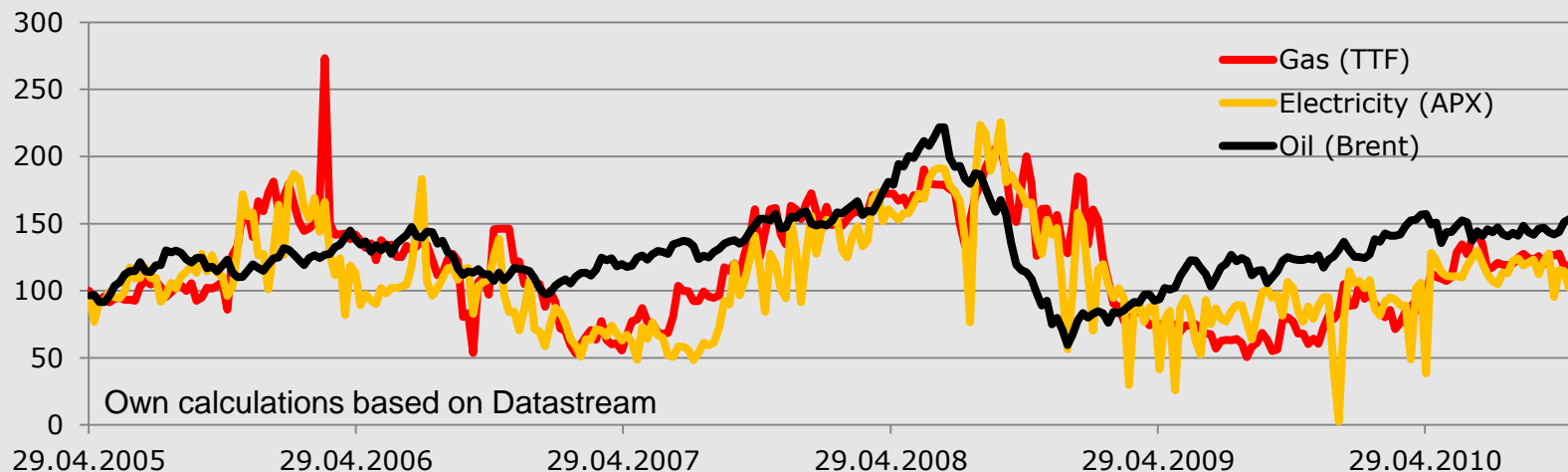


Convergence of electricity and gas markets

▪ Increased substitutability

- Heat pumps
- Storing gas instead of electricity
- Transport electricity instead of gas

▪ Divergence of gas and oil markets



=> Convergence of markets (electricity, gas, CO₂)



- **Long Term Demand and Supply outlook**
- **Electricity wholesale markets**
- **Electricity retail markets**
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20/20/20 and beyond

- **Massive state aid to renewables, energy efficiency and emission mitigation**
- A wide **portfolio of interacting measures**: obligations, feed-in tariffs, preferential credits, grid connection, tax breaks, direct subsidies, ... (eg., potentially, a whole new CCS industry based on govt. support)
- Significant industrial policy motives
- **Mistrust in markets** (certificates, allowances)
 - Enforcing 20% renewables and 20% efficiency by administrative measures will make the ETS almost redundant
 - ETS: An indefinite extension of free allowances to leakage sectors will lead to strategic games

=> Energy markets will remain largely climate and industrial policy driven



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Innovation and Investment

- Innovation and Investment are the big long-term drivers (Öttingers trillion)
- Large size of typical unit investments
+ lack of deep forward markets
=> difficult for new entrants
- Withholding of investment in capacity and innovation might be an individually profitable strategy
 - ⇒ Underinvestment in electricity generation capacity
 - ⇒ Underinvestment in transmission lines
 - ⇒ Underinvestment in carbon mitigation technology
- EU brings competitors around the table to discuss new technologies (SET Plan)



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Policy Conclusions

- Adopt geographic market definitions to changing realities
- Adopt product market definitions to changing realities
- Monitor newly developing markets
- Assist containing the distortions to competition due to green industrial policy

Both, merger control and antitrust will continue to be essential in the next decades.



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Annex



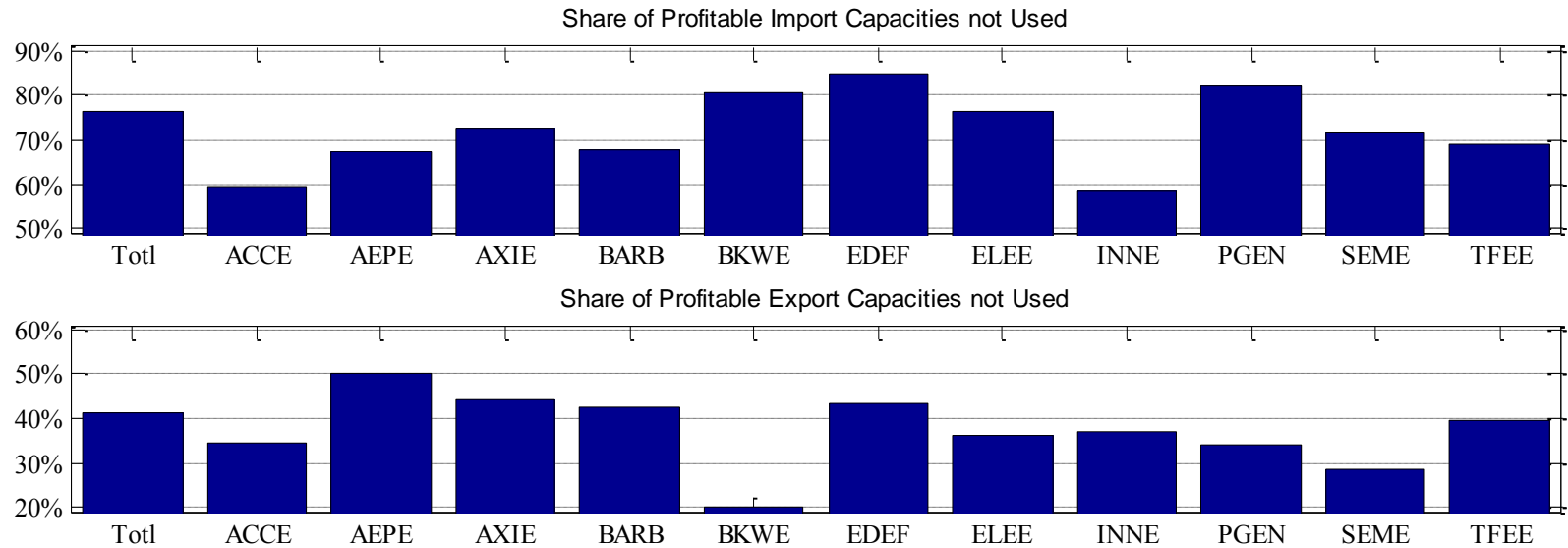
The Anglo-French Interconnector



- Theoretical Prediction: A dominant with low generation cost in one market withholds more importing transmission capacities relative to traders and its own export capacities.
- The dominant exports more often against the price differential relative to the traders behaviour and relative to its imports.



Company-level import/export decision at the Anglo-French interconnector



- Powergen and EDF export more irrespective of price differences and other players trading decisions
- They react less on price differences
- They trade less in line with all other market participants

Changing Pattern in electricity flows due to renewables

Figure 7.3 - ACS Power Flow Pattern for 2009/10

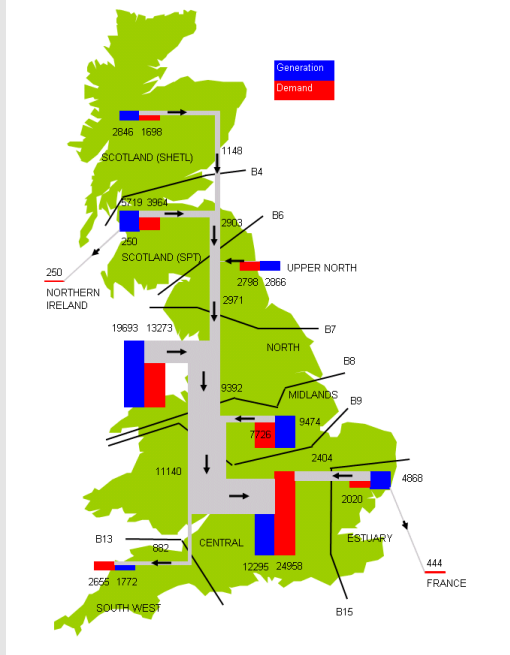
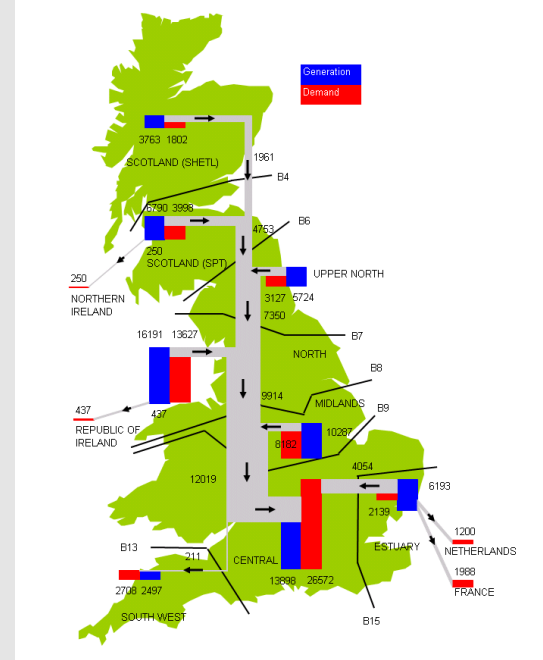
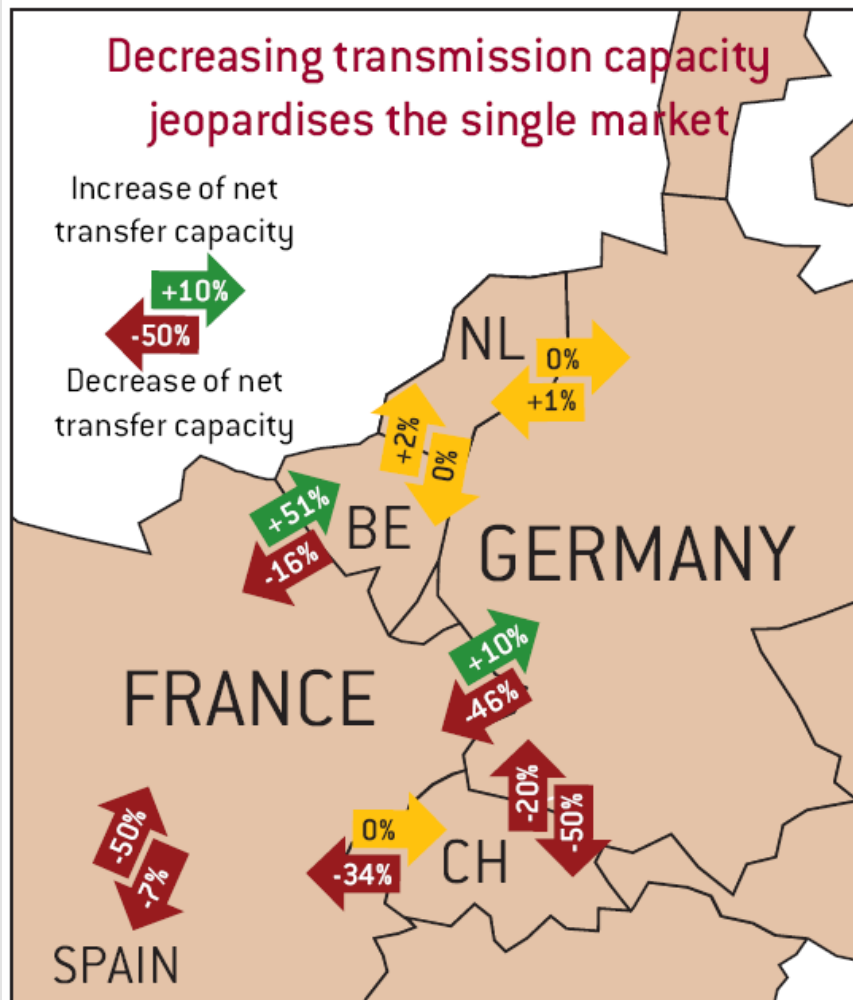


Figure 7.4 - ACS Power Flow Pattern for 2015/16





Limited network extension



decrease in net transfer capacity in continental Europe (ENTSO-E) by **~15%** from 2004/05 to 2009/10

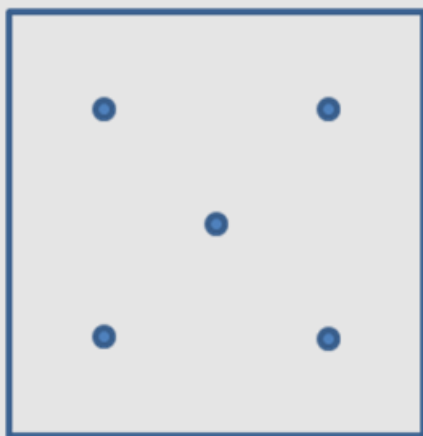
Source: ENTSO-E.
Figure shows change in net transfer capacities between winter 2004/05 and winter 2009/10 in direction of arrow



Three Alternatives to linking national copperplates

- a centrally optimized European copperplate,
- a centrally optimized system of subnational zones
- or a centrally optimized nodal pricing system

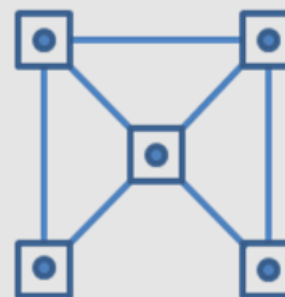
copperplate



Zonal system



Nodal system





Smart Grid

- “Smart grid” is the upgrading of transmission and distribution grids with information and communication technology.

Economic benefits:

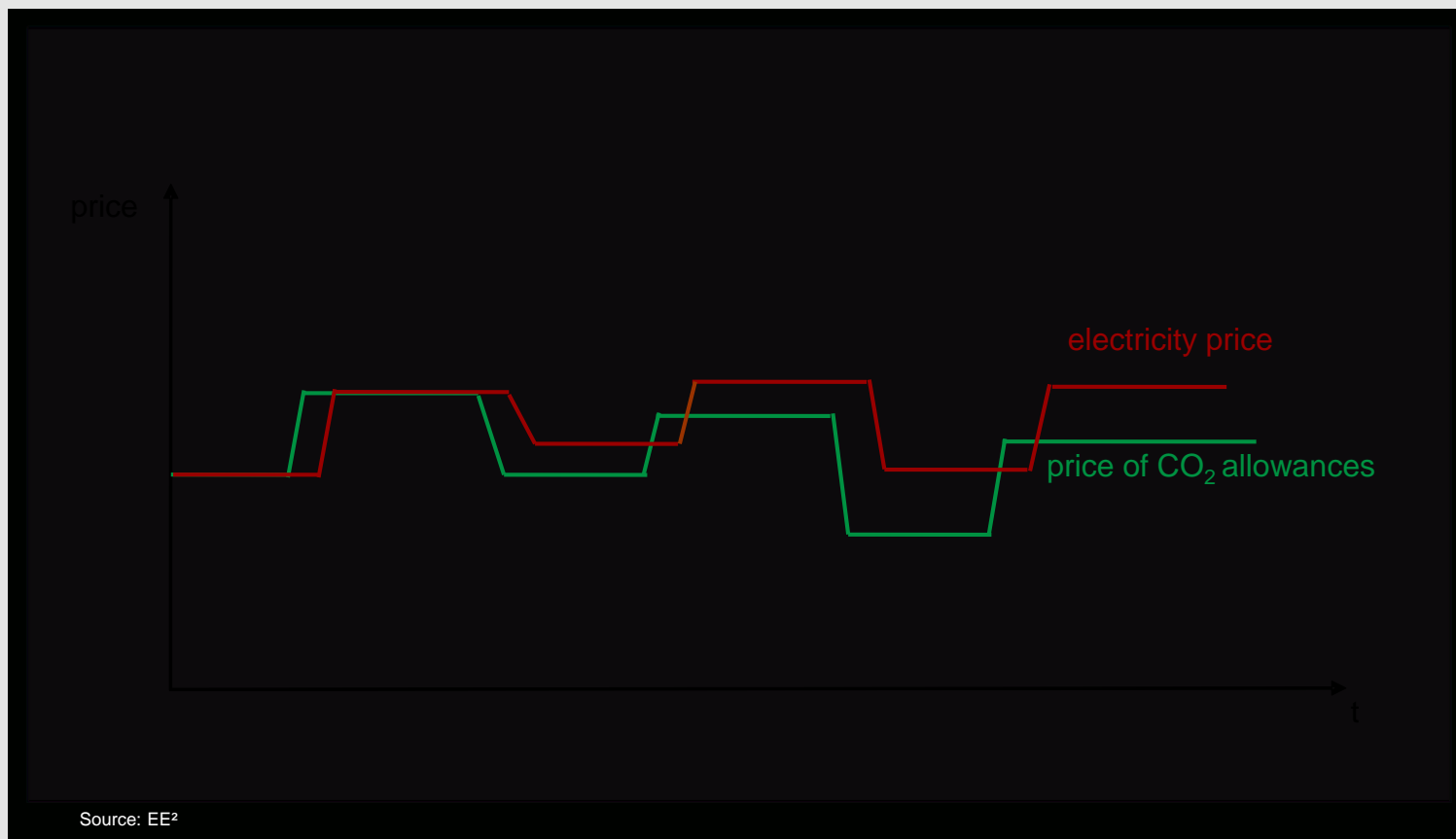
- **Demand Response:** Reducing demand at certain moments and certain locations can provide extraordinary savings
- **System cost:** Optimizing system operation with respect to system losses, maintenance, metering, ... could be beneficial
- **Integrate new technologies:** renewables, electric vehicles

But:

- **Net benefits of end user demand response are difficult to prove**
 - Unclear demand elasticity
 - Comparatively high cost of meters



Stylized Effects of Asymmetric Cost Pass-Through





Russian gas cut might decrease Belgium electricity prices

