

# Energy Sector Inquiry: Policy Implications

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*Joint Cambridge-MIT Electricity Policy  
Conference*

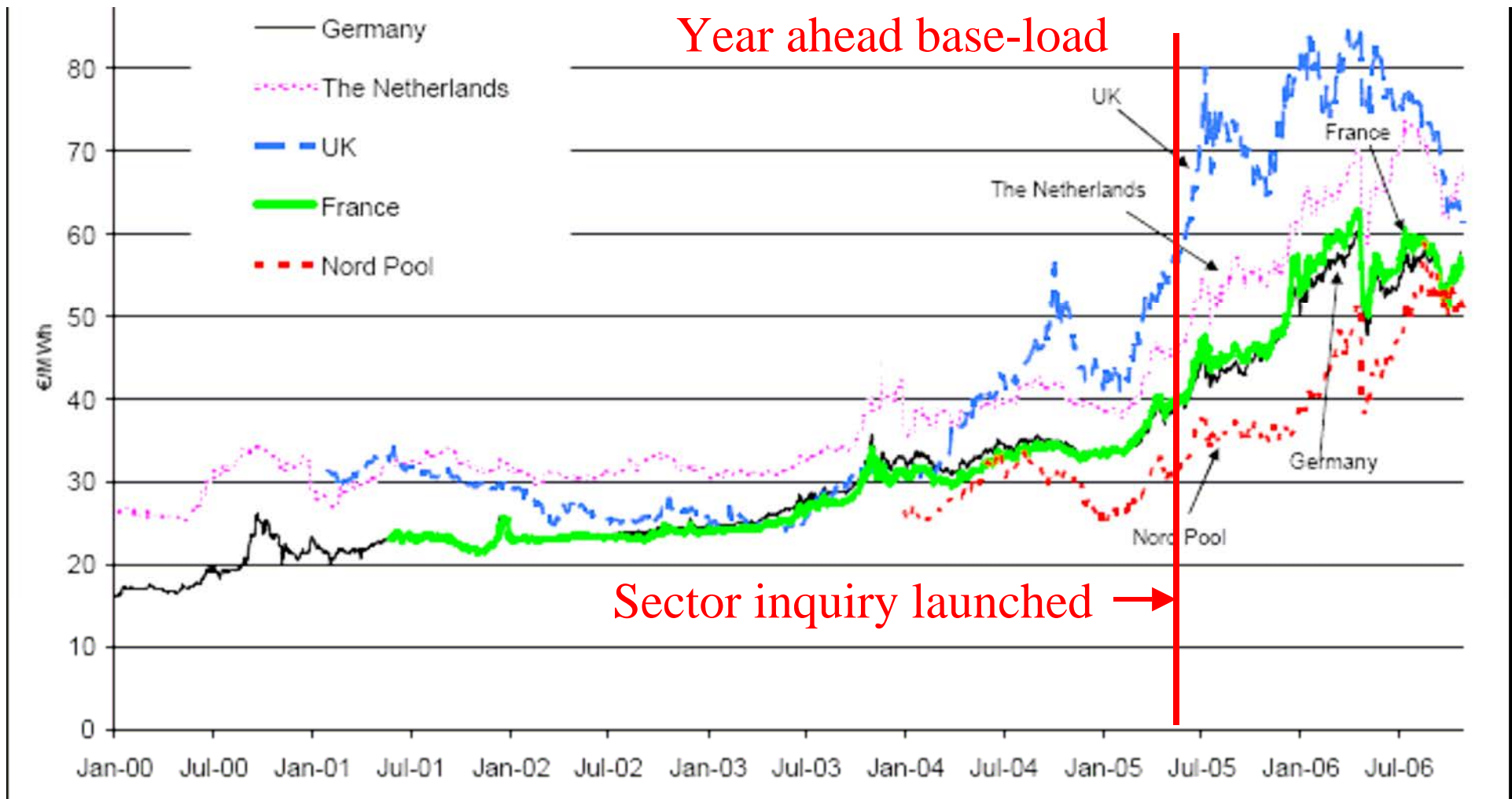
London 27 September 2007

<http://www.electricitypolicy.org.uk>

# Outline

- *Energy Sector Inquiry* identifies problems
  - more in gas than electricity
  - companies have market power but is it abused?
- Unbundling T&G - why attractive?
- Can competition authorities force unbundling?
  - requires finding of market abuse
  - and unbundling as suitable remedy
- How best to achieve competitive markets?

# Rising prices prompt *Inquiry?*



Source: information received within the scope of the Sector Inquiry from Argus Media, Platts<sup>184</sup>, and Nord Pool.

# *Sector Inquiry* calls for action

Key areas calling for action:

- 1) effective unbundling
- 2) deal with cross-border regulatory gaps
- 3) address market concentration, barriers to entry
- 4) increase transparency

*All easier with unbundled utilities*

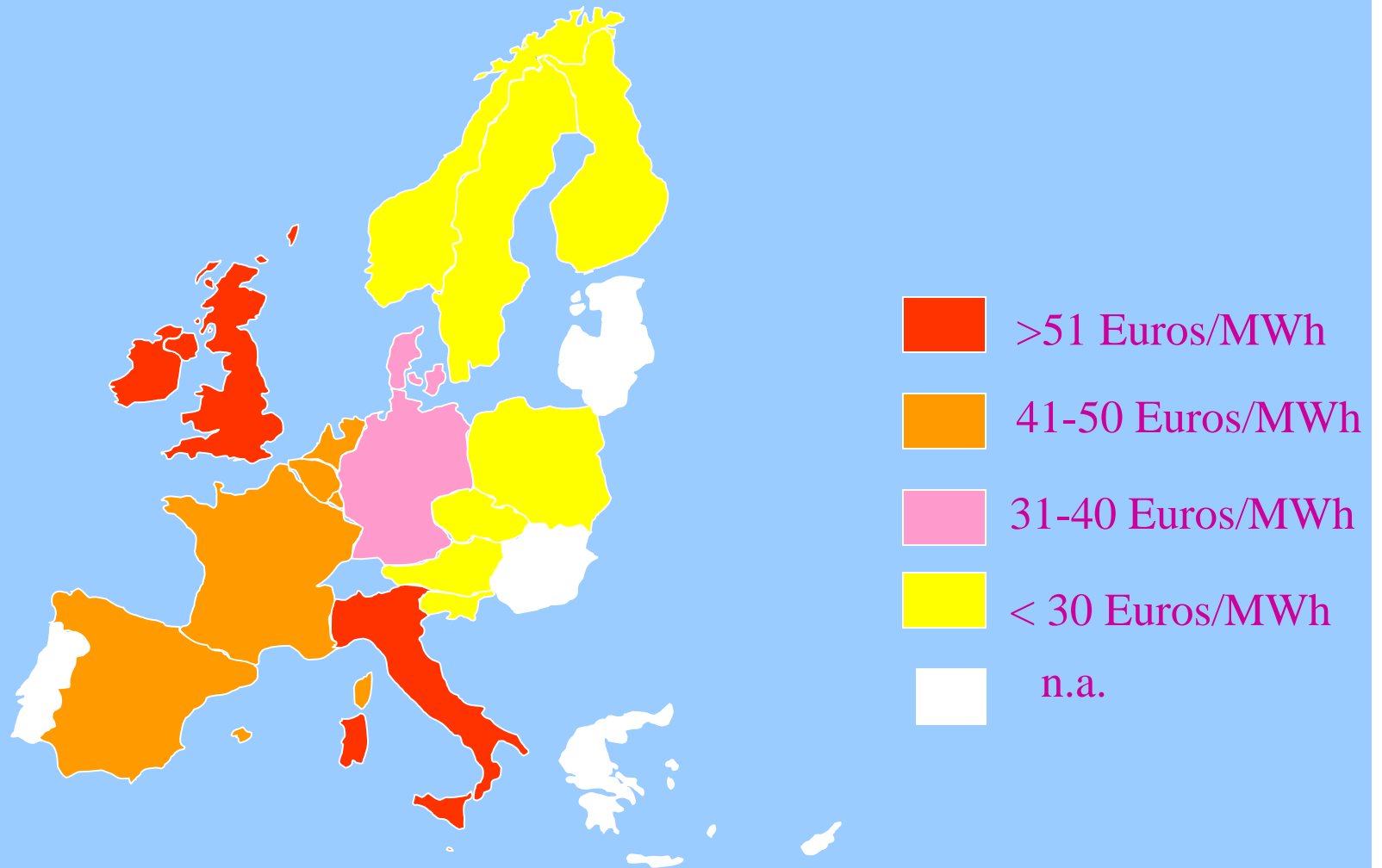
# Unbundling

- Does unbundling prejudice T investment?
  - VI companies may gain from scarce T
  - no incentive to encourage cheap imports
- Does it risk coordination failures?
  - Not where VI co.s aim to protect local markets
- Does it threaten SoS?
  - On the contrary - improves liquidity, flexibility and hence robustness, reduces entry barriers

# Critical role of gas

- electricity prices increasingly set by gas
- merchant generation prefers gas
  - quick, low capital cost, clean, hedged
- a pan-European gas price would equalise entry prices for electricity
  - relax interconnector constraints
  - increase competition, integrate market

# Day-ahead price levels 2005



# Gas problems

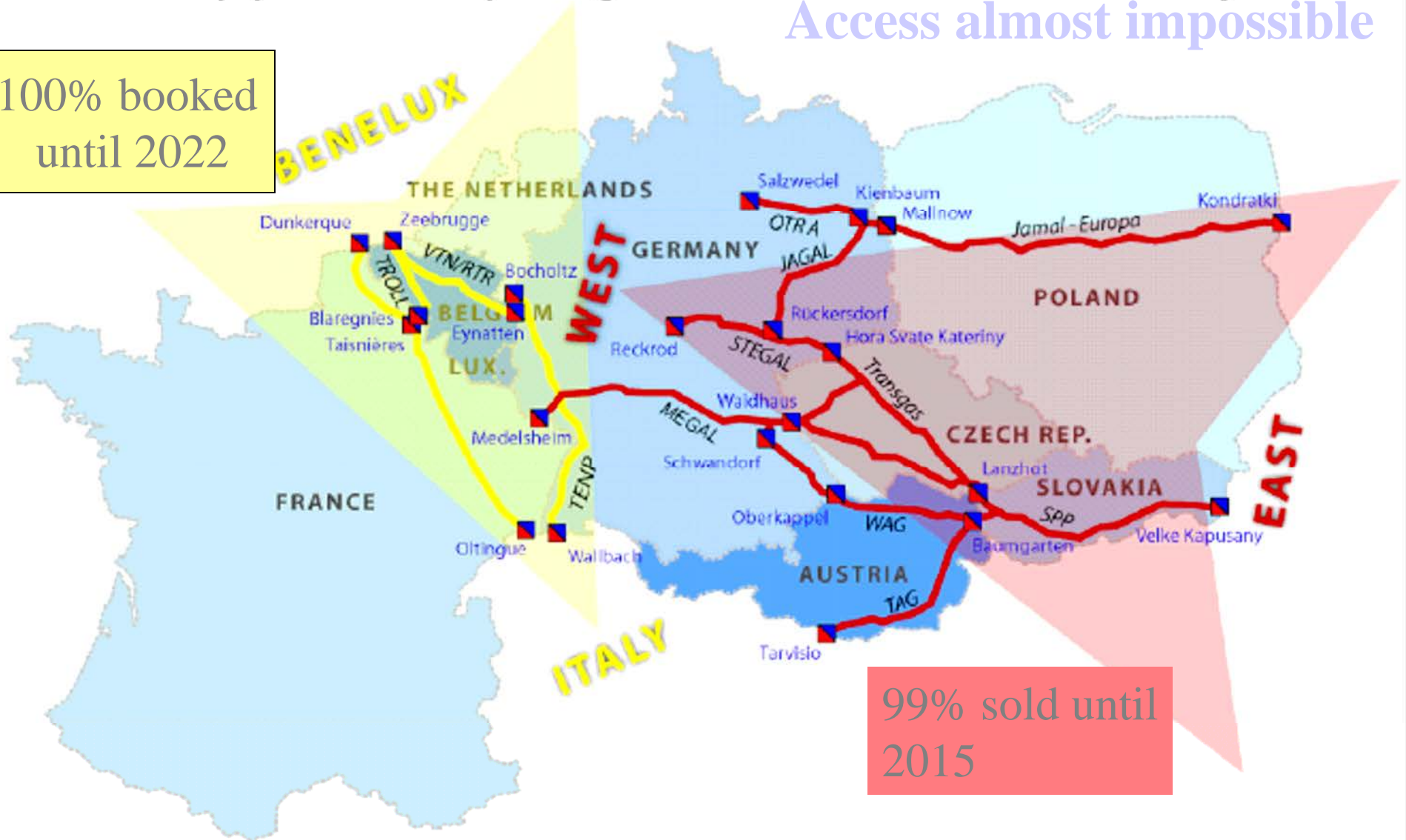
- rTPA for transmission and balancing required but “far from universal”
  - publish *methodology* rather than tariffs
  - nTPA still OK for line pack, storage, ancillary services, new risky investments
- only *legal* unbundling of T & D required
  - only *accounting* unbundling for LNG, storage
- Transparency
  - transit pipelines claim confidentiality exception;  
=> infringement proceedings



# Transit pipelines comprising the East-West and Benelux-Italy axes

Access almost impossible

100% booked  
until 2022



99% sold until  
2015

Source: Energy Sector Inquiry 2005/2006

# Gas Trading 2003-4

*Hub trading is sparse, illiquid, concentrated*

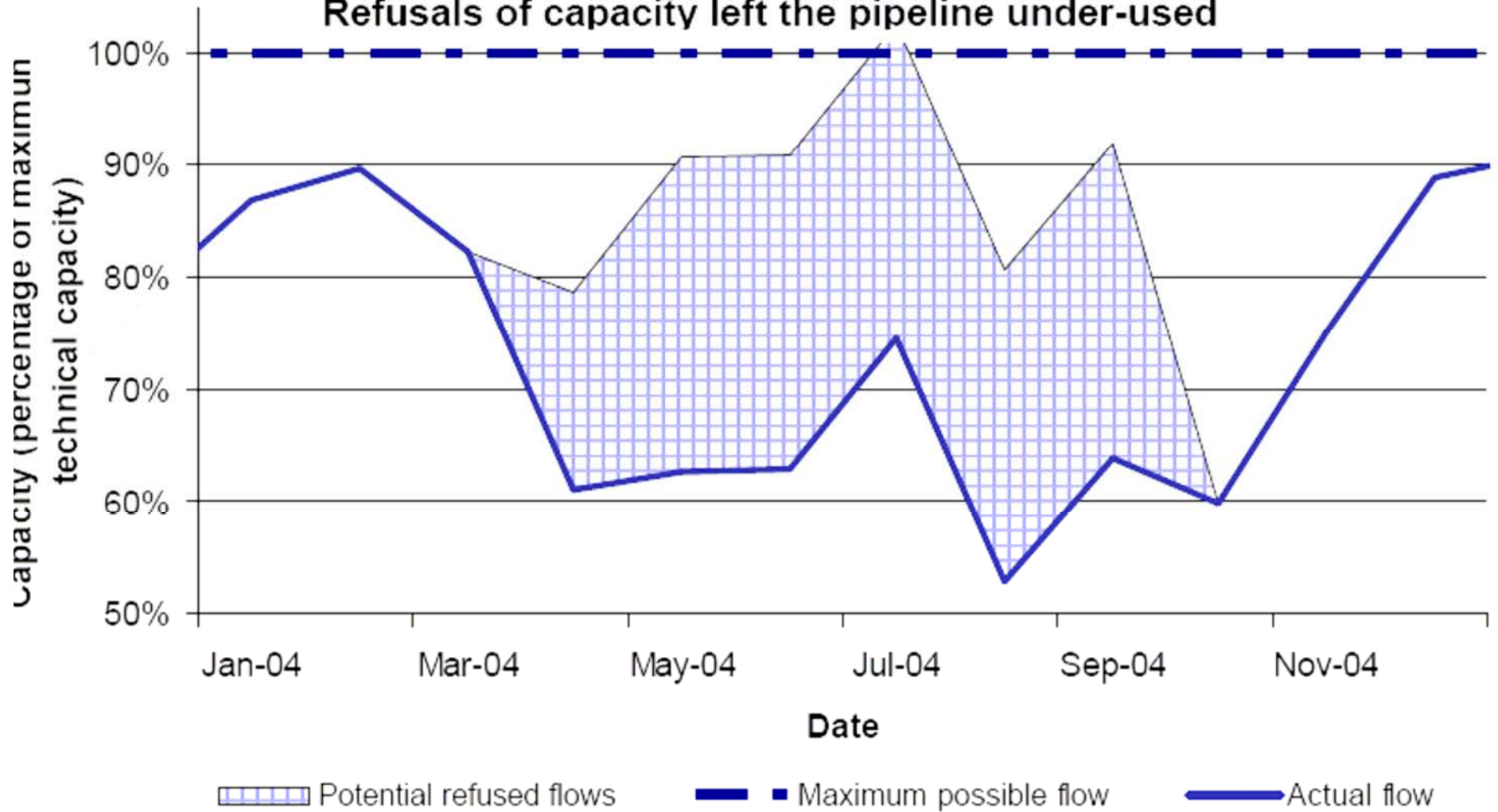
- UK-related trading 86% of *all* EU hub trade
- > 90% hub incumbent purchases by 3 co.s
- 2 co.s account for 87% of hub sales
  - and 80% of hub purchases

*Transit pipelines: 100% booked until 2015-22*

– only 3% capacity for new entrants

# Transit pipelines deny access

Refusals of capacity left the pipeline under-used



Source: Energy Sector Inquiry 2005/2006 fig 27

# Gas assessment

“Cross-border sales do not currently exert any significant competitive pressure”

- nor across TSO boundaries *within* Germany
- Transparency often denied because < 3 rule
- Long-term contract prices linked to oil
  - => remarkably similar levels across all countries
  - => suppresses seasonality of spot pricing

***Entrants: hard to source gas and access hubs***

# Contrast with US (and UK)

- US model: single regulator FERC
  - evolved well-defined rules to set tariffs and protect pipeline investors and report accounts
  - 1935: PUHCA deals with abusive behaviour
  - => encourages unbundling
- complete transparency for regulated pipelines
  - 1992: pipelines relinquish title to gas they ship
  - => efficient, competitive, flexible, secure system that can finance merchant pipelines

# Prospects for Continental gas?

- Strong opposition to unbundling
  - seen as expropriation, threatens national champions
- EC 3<sup>rd</sup> energy package requires at least ISO
- Proposed amendment to 1775/2005 on access
  - requires transmission, storage and LNG system operators to “take reasonable steps to allow capacity rights” to be traded

*Will this facilitate effective access and liquid markets?*

# Impact on electricity

- Gas prices apparently similar across EU  
=> fine if gas used in base-load electricity
- high gas price => GTs run intermittently
  - needs access to liquid gas market
  - => risky to build GTs => coal generation
  - => deters entry, entrenches incumbents
  - => encourages gas+electricity mergers

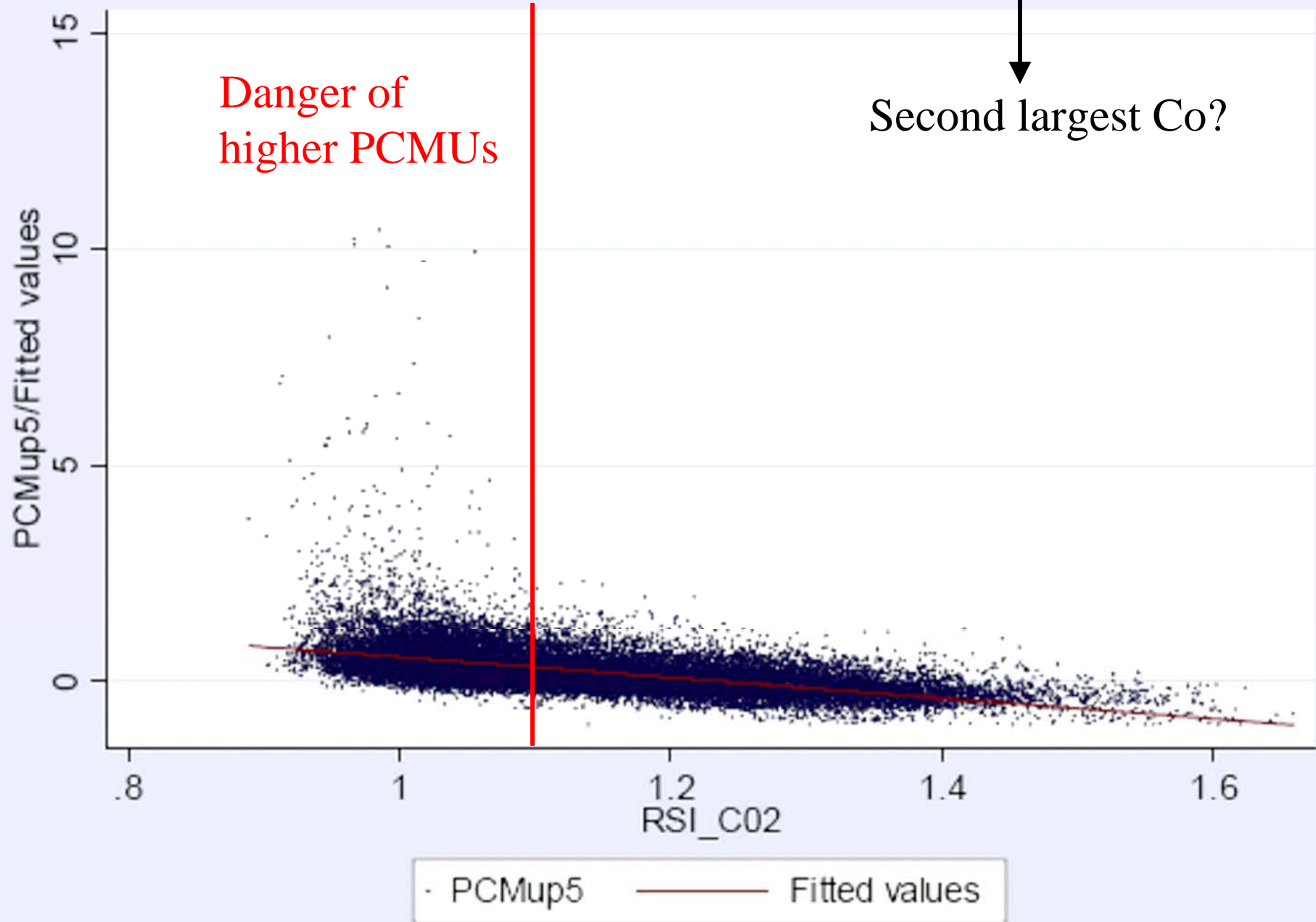
*Builds up more resistance to market reform*

# London Economics data analysis

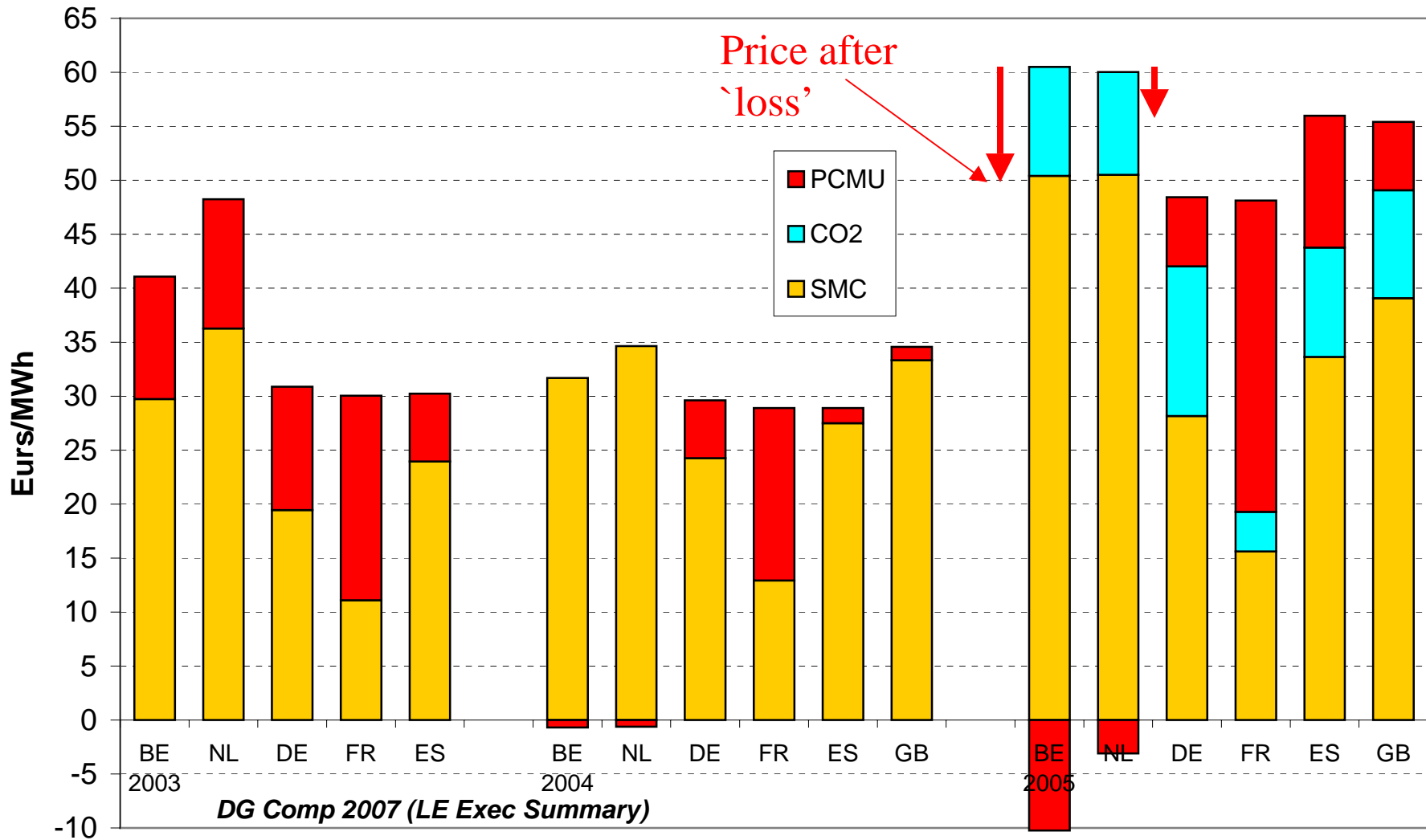
- 1 billion data points - an analyst's dream
  - uses Residual Supply Indices
    - corrected for LT contracts, interconnectors
    - based on PX prices (OTC prices slightly higher)
    - uses a dispatch model to compute SMC
- => significant relation between RSI and PCMU  
- confirms theoretical predictions***



Figure 6.24: PCMU Regression on RSI 0436-S-DE



# Price formation in 6 EU countries 2003-5

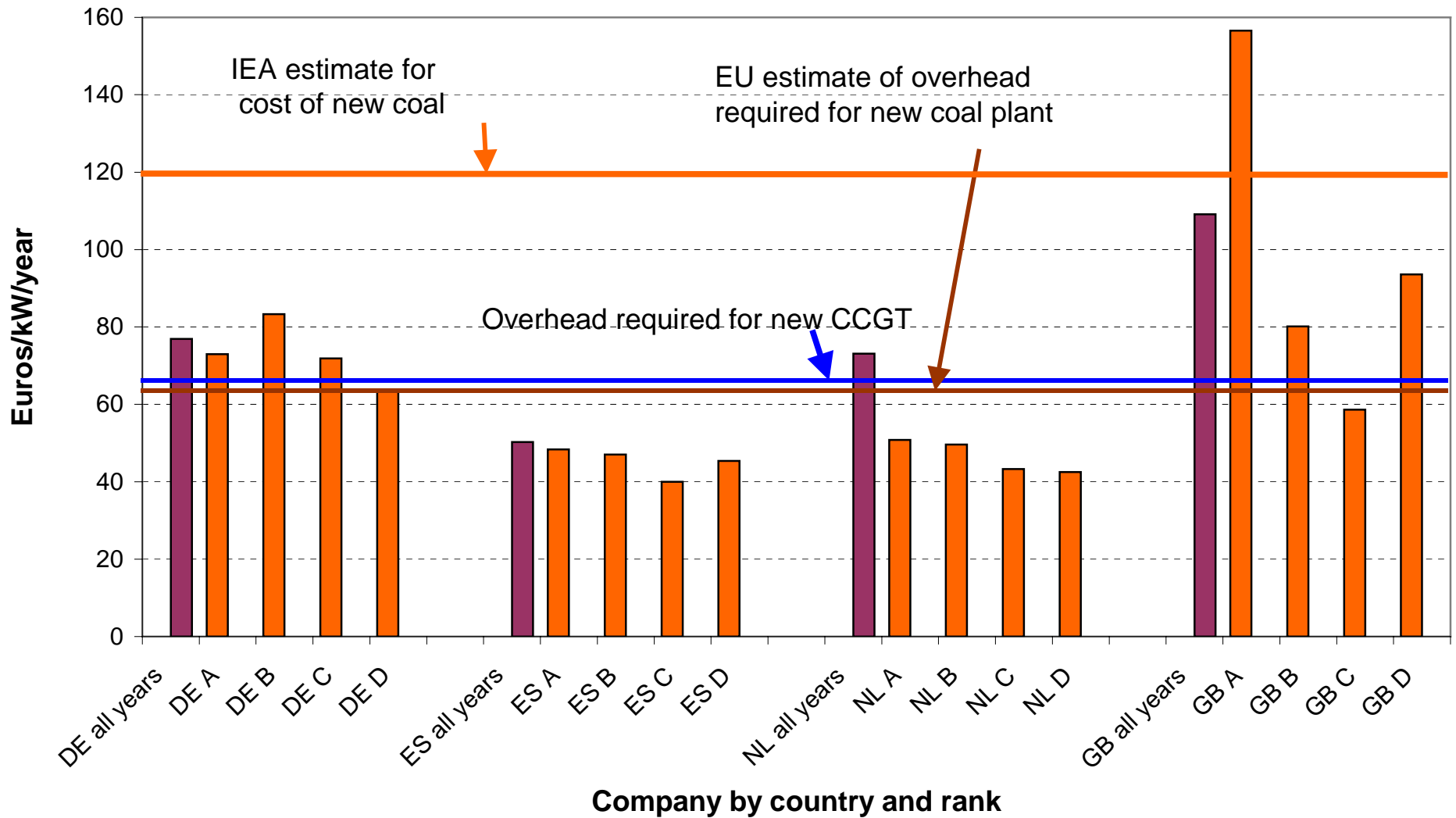


# Market abuse?

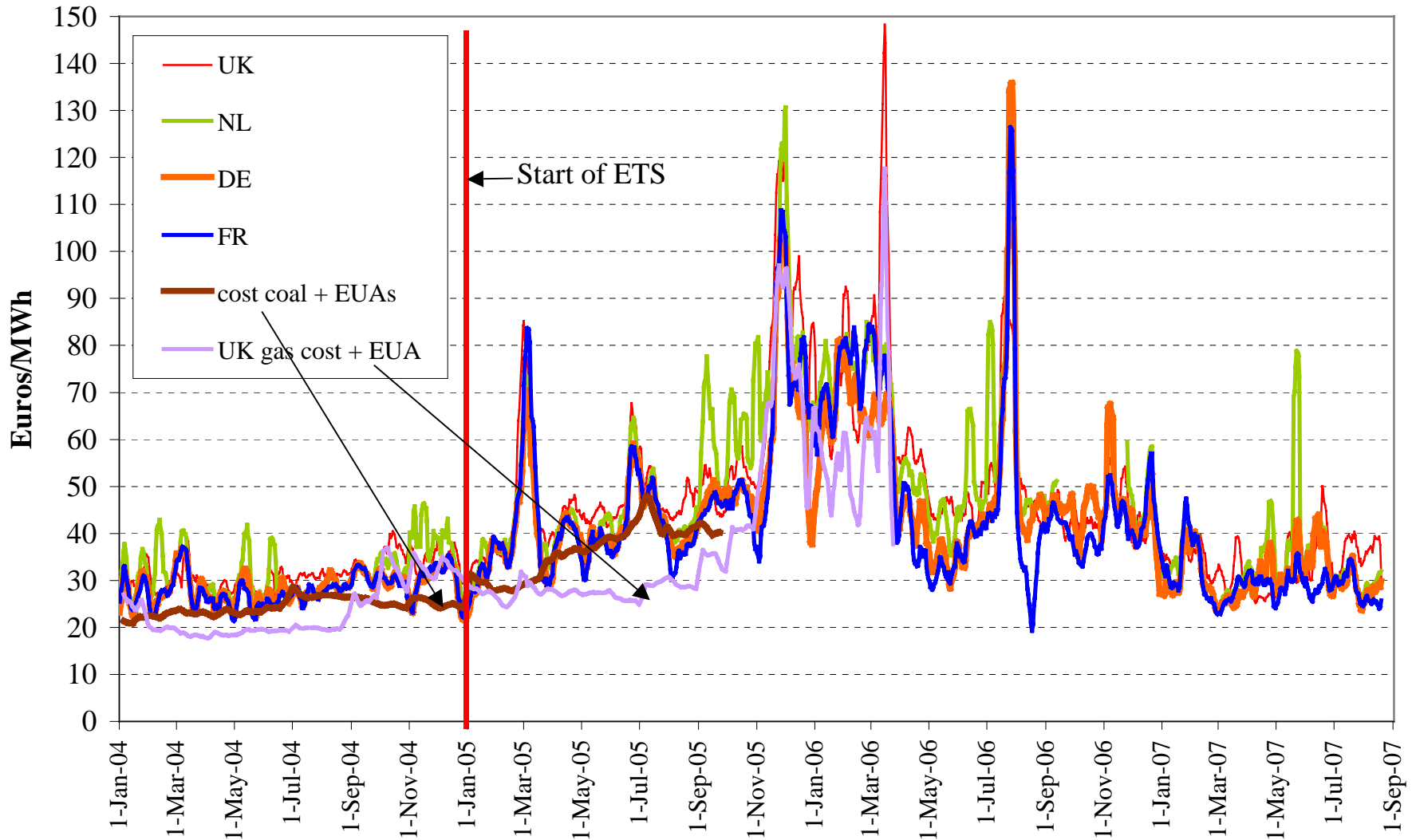
- Regional wholesale prices are converging
  - despite differences in costs
- Mark-up = spot price *less* fuel cost of marginal *flexible* plant
  - but plant has to cover capital and O&M costs

*Compare prices with cost of new entry*

# Contribution to overhead costs of selling at SMP 2004



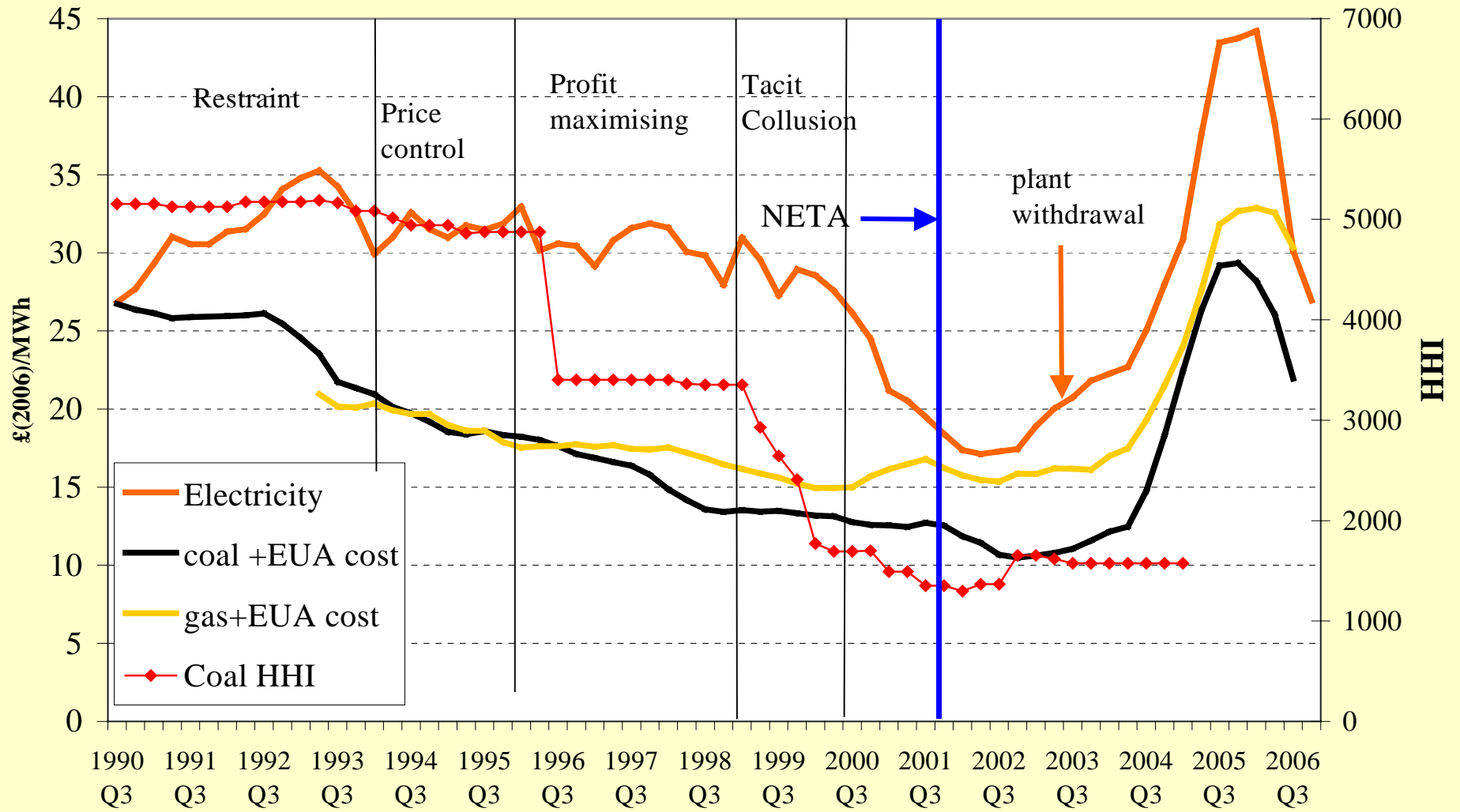
# Weekly average baseload spot prices 2004-Aug 2007



Source: Platts, UKPX, EEX, zfk  
D Newbery

London Sep 07

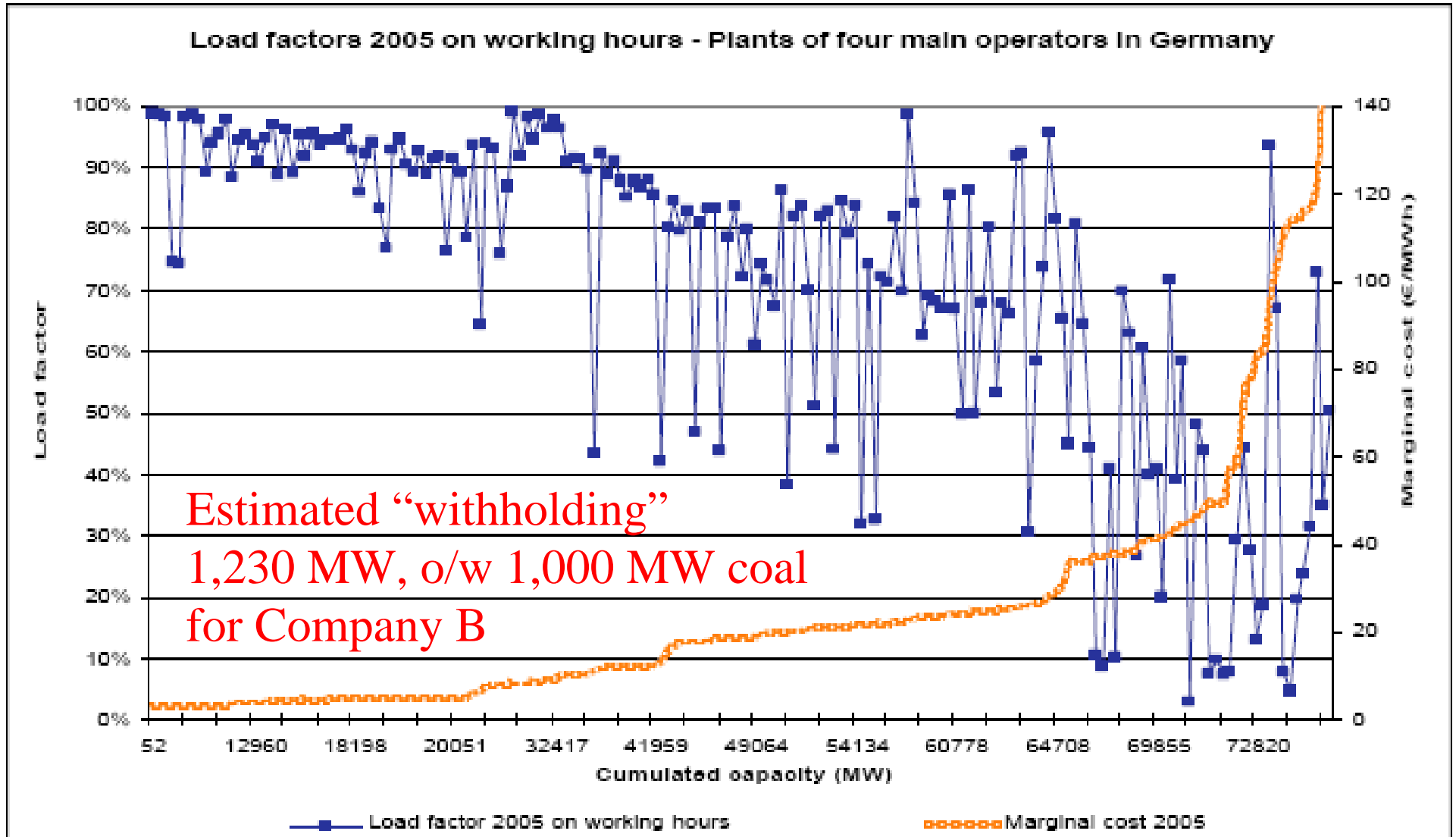
# Real GB electricity and fuel costs 1990-2007



# Assessment on prices

- Prices rose because of gas and carbon prices
  - ⇒ less variation in cost of different fuels
- Wholesale prices mostly below entry price
  - tight markets (GB) lead to higher margins
- Incumbents able to deter entry
  - and continuing to buy companies cheaply?
- France is pricing off neighbouring markets
  - but subsidising local consumers

# Suggestions of plant withholding in DE?





# Is unbundling the answer?

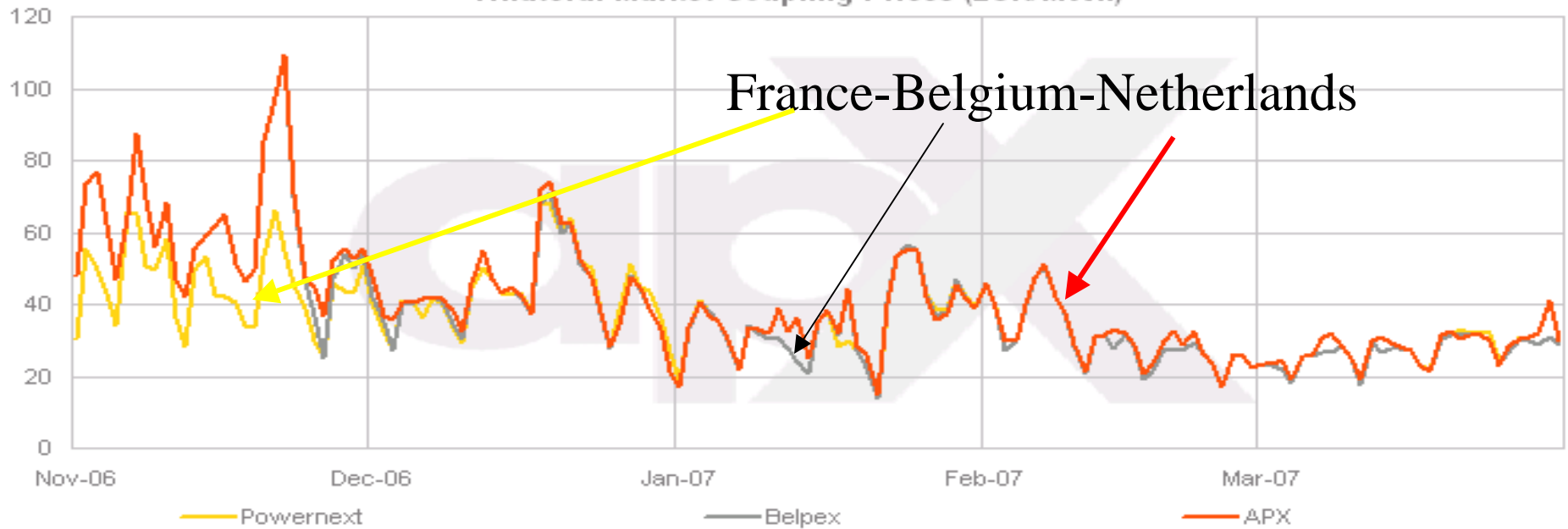
- Evidence supports *ownership* unbundling of Transmission - which is resisted
- 19 Sep CEC adopts 3rd package of measures for electricity and gas markets
  - *advocates* ownership unbundling
  - but *accepts* ISO solution (also for SOEs)
    - with possible derogations for new infrastructure
- ISOs also responsible for *investment*  
*but how financed?*

# Critical role of cross-border trade

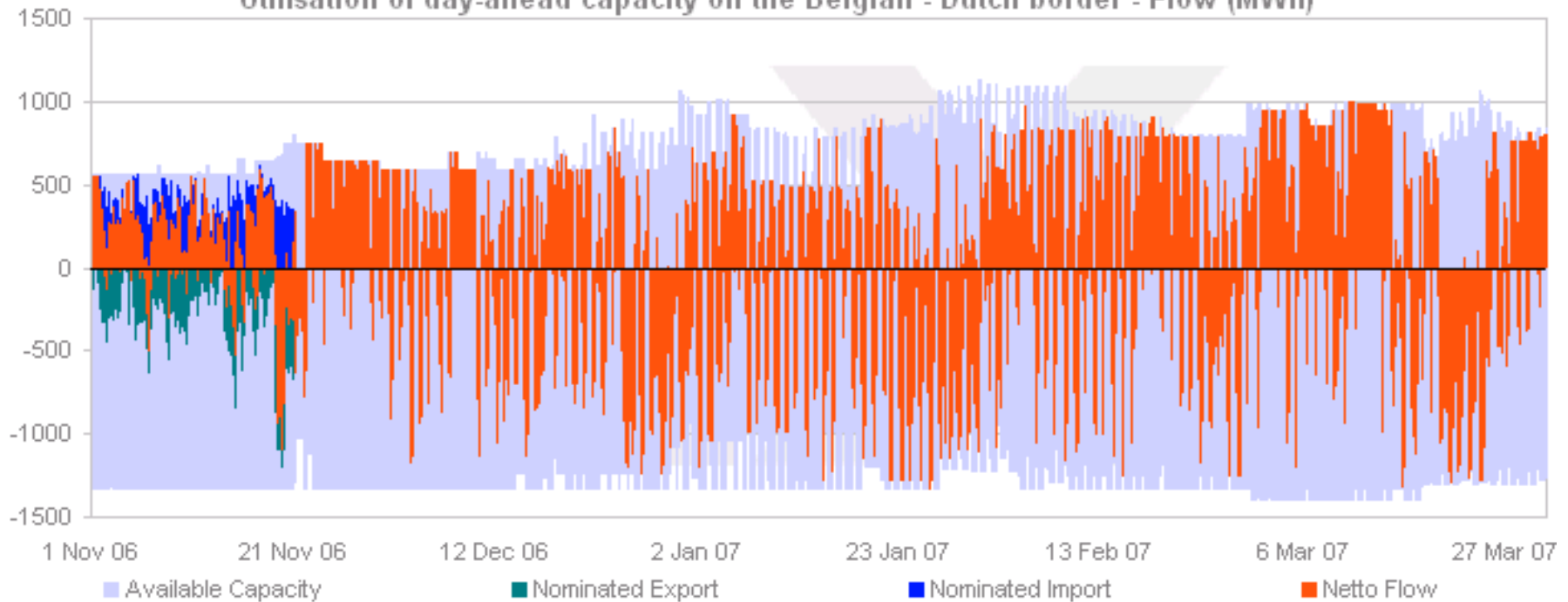
- effective unbundling could remove obstacles to cross-border cooperation
  - and facilitate market coupling
- national concentration and transmission constraints limit effect on market power
- plan more cross-border capacity?

*Is there a good economic case?*

Trilateral Market Coupling Prices (EUR/MWh)



Utilisation of day-ahead capacity on the Belgian - Dutch border - Flow (MWh)



# EC cross-border proposals

- Agency for Cooperation of European Regulators for contentious cross-border issues
  - “no power of discretionary substantive decision”
- European network for TSOs to *plan* investment
- Energy release programmes where excessive concentration?
- Transparency requirements extended - somewhat
- Data to be *retained* by all relevant companies

# What else can be done?

- Mergers - resist more concentration
  - prognosis not encouraging
  - at least trade approval for *ownership* unbundling
- Improve trade
  - better cross border management (market coupling as in Nordpool, Benelux)
  - more transparency - obligatory data provision
- Competition policy route unpromising?
  - Unless specific abuses can be proved

# Conclusions

- EC's 3<sup>rd</sup> energy package: sound analysis  
=> lack of unbundling damaging
  - but so is market power with limited interconnection
  - removing access restraints may allow entry
    - but this is a long-term solution
- Remedies limited by lack of jurisdiction?
  - and difficulty of establishing abuse

*Slow evolution rather than dramatic progress?*

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