

The  
Cambridge-MIT  
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Electricity Project



# Consensus on good market design

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*2nd SESSA conference: Addressing market power*

Stockholm: 8 October 2004

[http:// www.econ.cam.ac.uk/electricity](http://www.econ.cam.ac.uk/electricity)

# Goals of market design

- confidence in supply security
  - efficient dispatch, reliable power, high quality
- sustainable competitive outcomes
  - for energy, capacity and ancillary services
  - for retail markets
- efficient free entry and investment
  - in the efficient locations
  - using the right fuel, technology and emissions
- efficient cross-border trading
- socially efficient emissions (at EU level)

# Market design and market power

- “as-if” competitive outcomes can be imposed through contracts (c.f. Spain)
  - but are not sustainable with free contracting
- sustainable competition requires
  - adequate spare capacity
  - sufficiently numerous generators/imports
  - => individual generators rarely pivotal
- choice of market design unlikely to offset poor market structure

# Wholesale market design

- Pool systems: advantages:
  - single price for contracting
  - provides liquid balancing market
  - facilitates entry
  - daily (or longer) bids reduce market power more than hourly bids
- problems
  - allows gaming (?)
  - facilitates collusion with few participants

# Capacity payments

- capacity payments or energy-only bids?
  - VOLL.LOLP has attractions
  - but can be gamed with few generators
  - works well in a Pool setting
  - problematic without?
  - Problems if neighbours make different choices?
- Alternatives:
  - capacity obligations on suppliers? effectively one-sided CfDs with high strike price and deliverability

# Balancing - issues

- Efficient non-discriminatory balancing essential for competitive entry
- Single marginal price market: advantages
  - good scarcity signals
  - encourages bidding into market rather than self-balancing
- Disadvantages
  - occasionally very high prices?
  - Amplifies market power in tight markets?
  - Facilitates collusion?
  - Addressed by extending balancing market across borders?

# Harmonising markets

- integrate spot with interconnector market
- Single marginal price for liquidity
- Desirable integration likely to come from extending balancing market and making more liquid and more international
  - easier for TSOs to promote than full harmonisation
- Liquidity and competition spread back from real-time and prompt markets
  - encourages further harmonisation

# Desirable market structures

- unbundled ownership of grid and generation
- if impossible, ISO essential as second-best
  - but hard to incentivise an ISO
- allow integration of generation and supply?
  - reduces liquidity
  - impedes entry
  - unnecessary with liquid contract market
  - second-best solution to market power?

# Cross-fuel issues

- Mergers between dominant gas and electricity companies very bad idea
  - forecloses competitive entry by gas company into electricity generation and supply
- Importance of efficient gas (and electricity) balancing markets
  - to facilitate competitive entry and dispatch
- Gas liberalisation reduces stress on electricity interconnectors

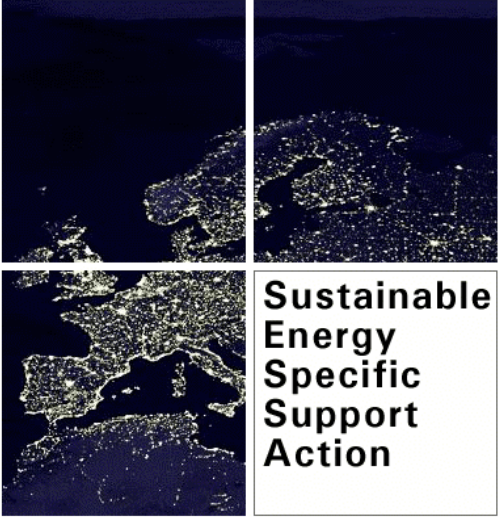
# Transmission pricing

- nodal pricing allows market integration
  - but reduces liquidity
- market splitting preferable to synchronised auctions
- netting important in any case
- compensation for cross-border flows encourages inter-TSO cooperation
  - undermined by vertical integration?

# Emissions

- allocation of emissions permits should
  - not distort plant entry or exit
  - nor fuel choice
  - should encourage socially efficient merit order
  - and reduce regulatory uncertainty
  - while facilitating efficient electricity trade

*NAPs appear to ignore most of these requirements*



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