Electricity Policy Research Group

UNIVERSITY OF CAMBRIDGE

Delivering secure low carbon energy

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DECC

London 12 February 2010

http://www.electricitypolicy.org.uk

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Outline

- No-brainer actions needed
  - CCC case for a proper carbon price
- Market design issues
  - Congestion management, plant operation
  - Location/type of generation and nodal pricing
  - Transition and treatment of existing assets
  - liquidity, entry, balancing, contracting

Criteria for market design

- Ensure adequate price for carbon
- Deliver efficient dispatch
- Foster competition and entry => efficiency
- Incentives for timely, efficient (location and type) and adequate investment in G and T
  - minimising avoidable risk: FIT/tenders for RES
  - SO offers longer term contracts for reserves?
- treat RD&D RES/CCS support as public good

  => need efficient revenue source, not tax on electricity

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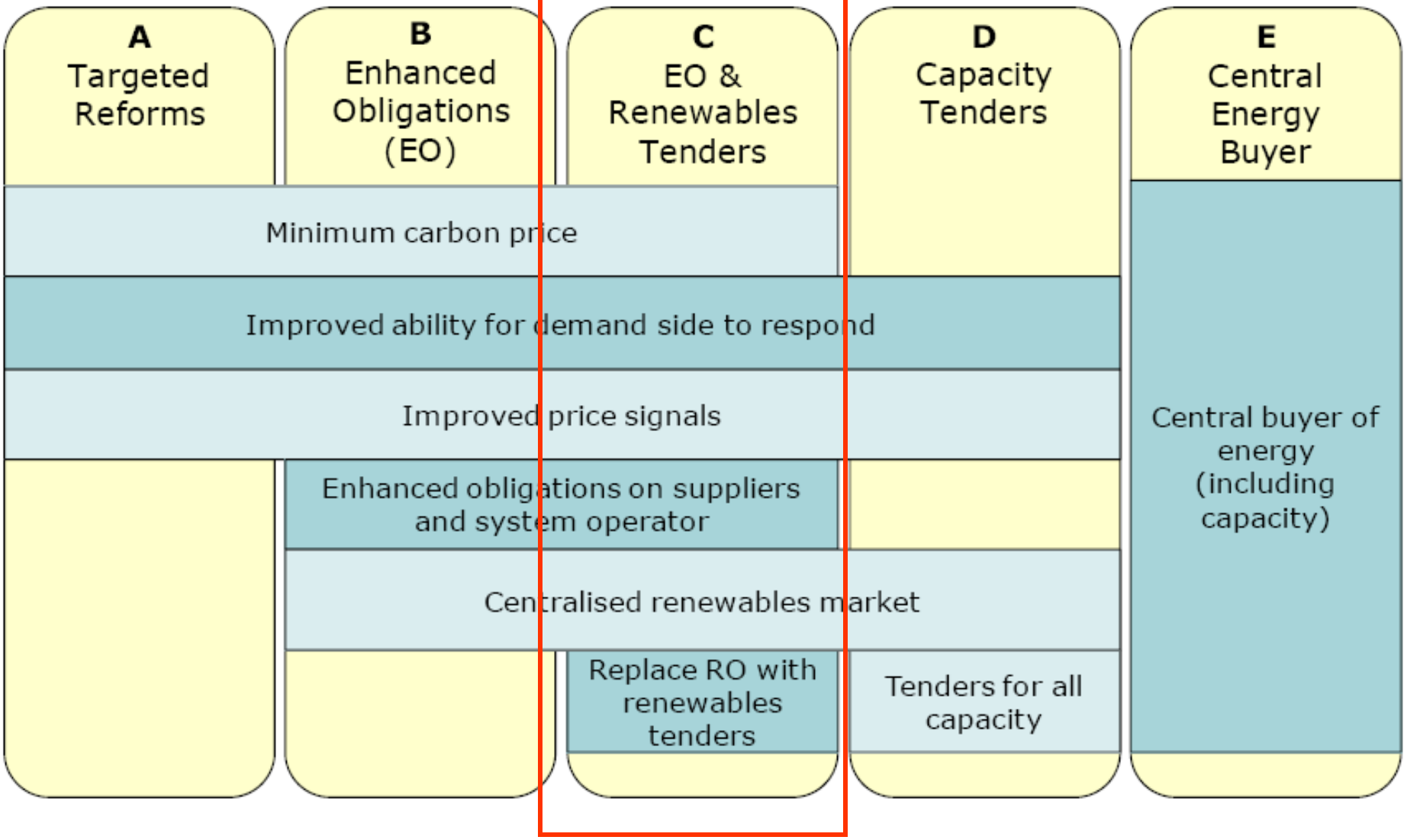
The case for a carbon tax

- Current EUA price too low and too risky
- Decide desired trajectory of C price
- Charge fuels full C tax with rebates up to value of EUAs surrendered
  - and possibly for exposed traded sectors (cf Scandinavia)
  - Extends coverage to all sector - helps decarbonise
  - Can replace CCL (and start at same level?)
- Needed by 2015+ so can choose gradual increase
- Is fiscally sound
  - Could replace distortionary renewables tax

What is needed to allow market to work?



Source: Ofgem Project Discovery Final Feb 2010

Proposed GB transmission access

- Proposing "Connect and manage socialised"
  - still for firm access?
  - worsens locational incentives?

=> excessive T capacity for wind

- TSO uses contracts and Balancing Mechanism to manage congestion
  - weak incentives on G to manage output
  - costly to deal with Scottish congestion

Spatial and temporal optimisation

=> nodal pricing + central dispatch

- Nodal price reflects congestion & marginal losses
  - lower prices in export-constrained region
  - efficient investment location, guides grid expansion
- Central dispatch for efficient scheduling, balancing
- PJM demonstrates that it can work
  - Repeated in NY, New England, California (planned)

Recreate a pool for liquidity, entry and contracting

Transition for existing plant

- Existing G receives long-term transmission contracts but pays grid TEC charges
- for output above TEC, sell at LMP

⇒ G significantly better off than at present

⇒ No T rights left for intermittent generation

Challenge: devise contracts without excess rents and facilitate wind entry

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