Delivering secure low carbon energy

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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
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?

A. Targeted Reforms
   - Minimum carbon price
   - Improved ability for demand side to respond
   - Improved price signals
   - Enhanced obligations on suppliers and system operator
   - Centralised renewables market
   - Replace RO with renewables tenders

B. Enhanced Obligations (EO)
   - Capacity Tenders
   - Tenders for all capacity

C. EO & Renewables Tenders

D. Capacity Tenders

E. Central Energy Buyer
   - Central buyer of energy (including capacity)

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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