

Lessons from UK energy policy & Energy Market Reform

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Presentation to meeting of IEA Working Party on Renewable Energy Technologies
“Towards a ‘Third Way’ for electricity market design?”
Paris, 24 March 2015

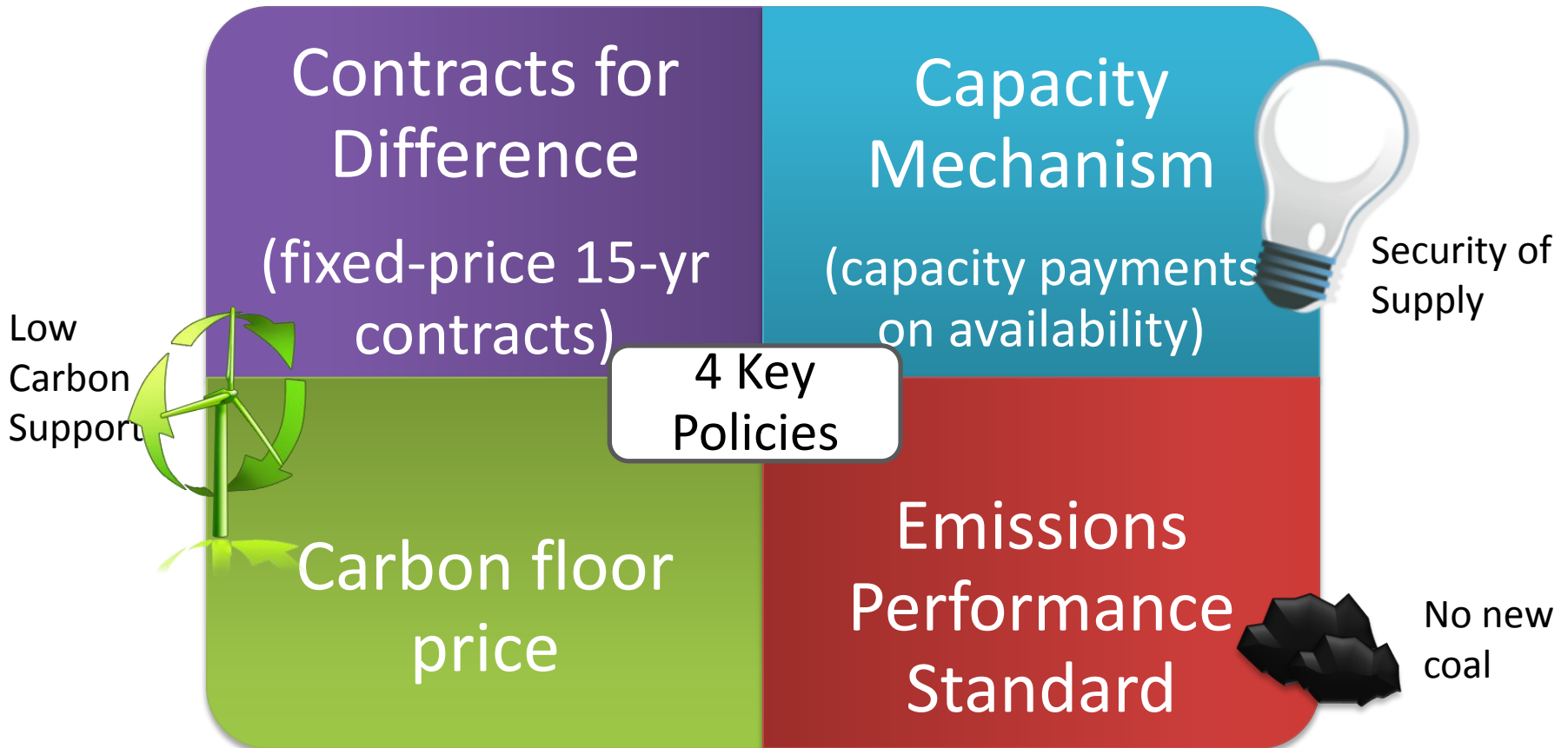


UK Energy Market Reform - Background

“Its complicated ...”

- ‘Pioneer of liberalisation’ concluded the electricity market could not deliver the capital investment needed for security or decarbonisation
- Nuclear & renewables seen as key
- Intellectual evolution:
 - Academic struggles between idealised theory and emerging evidence
 - CCC concern around capital intensive investment
 - Ofgem (Project Discovery, 2009) concern around security adequacy

What is EMR?



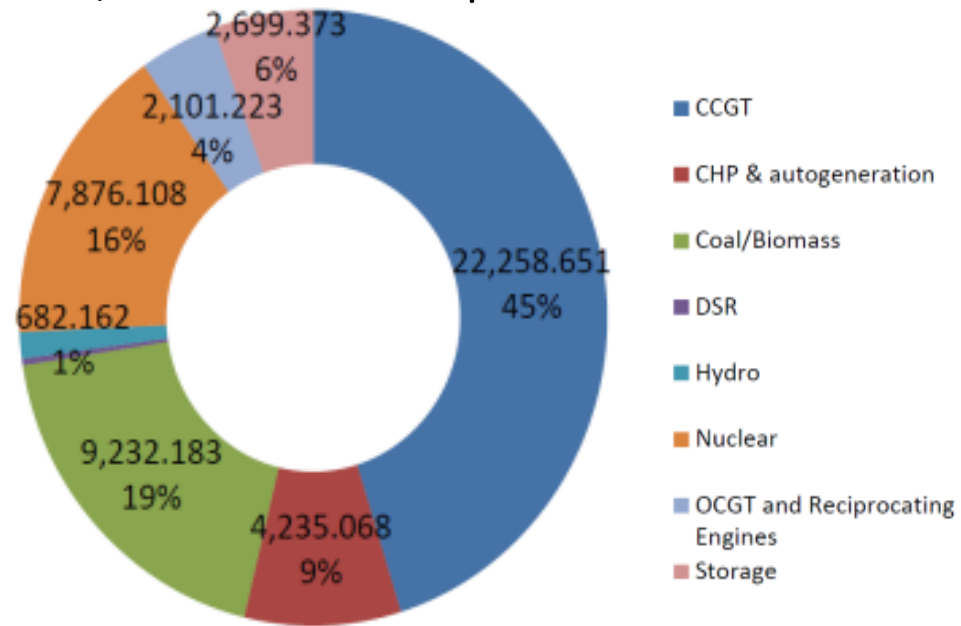
EMR brings major changes to the market. Ofgem's main input has been on the design of the Capacity Mechanism and the overall institutional design.

Capacity Market: First auction, Dec 2014

- for 4-year ahead delivery in 2018/19

- 49.3GW awarded at clearing price of £19.40/kW/year. Total cost of £960m (in 2012 prices), under half prior estimates of government (and wider expectations).
- £960m == £11 per average household, but market expected to react with lower wholesale prices, so the net impact lower, estimated c. £2 per household.

- Mix of 1-year, 3-year (refurbishment) and 15 year (new build) contracts
- Mainly old gas and coal generators successful
- One new CCGT (Trafford, 1,650MW) wins an agreement.
- 174MW of DSR wins an agreement



2.5GW of capacity is reserved for the 2017 auction, so existing plant and DSR that missed out have another chance.

Contracts for Difference

- First CfD auction successfully completed Jan 2015, 15-year contracts, differentiated by technology clusters
- Over £315m/yr new contracts offered to five renewable technologies, incl 15 onshore wind, two offshore wind, and 5 solar projects.
- Over 2GW of new capacity expected, costing £110m/yr less than the cost implied by the administrative strike price in 2014.

	Capacity	Admin Strike price (£/MWh)	Lowest clearing price (£/MWh)	Maximum % saving on admin strike price
Solar PV	71.55	120	50	58%
Onshore Wind	1162	95	79.23	17%
Energy from Waste CHP	94.75	80	80	0%
Offshore Wind	748.55	140	114.39	18%
Advanced Conversion Technologies	62	140	114.39	18%

UK Energy Market Reform

Key lessons

- For Strategic (“Third Domain”) investments – eg security and sustainability - a role for government is inescapable
 - *The public benefits exceed any risk-adjusted return in spot market*
- Can shifting risk to government reduce costs? Yes if
 - *the risks arise from private perception of policy risk;*
 - *markets (particularly capital markets) are myopic*
 - *the benefits are partly public (eg. Due to inadequate environmental pricing, or innovation / learning, etc)*
- Do we need a Capacity Mechanism in addition to low carbon supports?
 - *Yes in UK conditions – but scope is crucial, so too is design to minimise risk of perverse incentives*
- Institutional complexities
 - *contracting bodies and their governance*
- Terms and constraints for long term contracts
 - *Hinkley Point (35yr) vs renewables (15 yrs)*
 - *State Aid struggles*

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Some outstanding questions

- Does the EMR takes us back towards public control or new forms of competition arising from auctions?
 - *More State involvement – but still using competition, in more efficient way?*
 - *Some risks of perverse incentives remain (eg. Metered output)*
 - *“Subsidising” coal (CM) whilst trying to phase it out (CfDs)*
- “Exit Strategy?” - Revolution or evolution?
 - *May be an evolving revolution*
 - *Can / should we move towards a “contracts market” (eg. long term green consumer contracts, community energy, bundled service contracts) as costs fall?*
 - *Thereby injecting some product differentiation into electricity*

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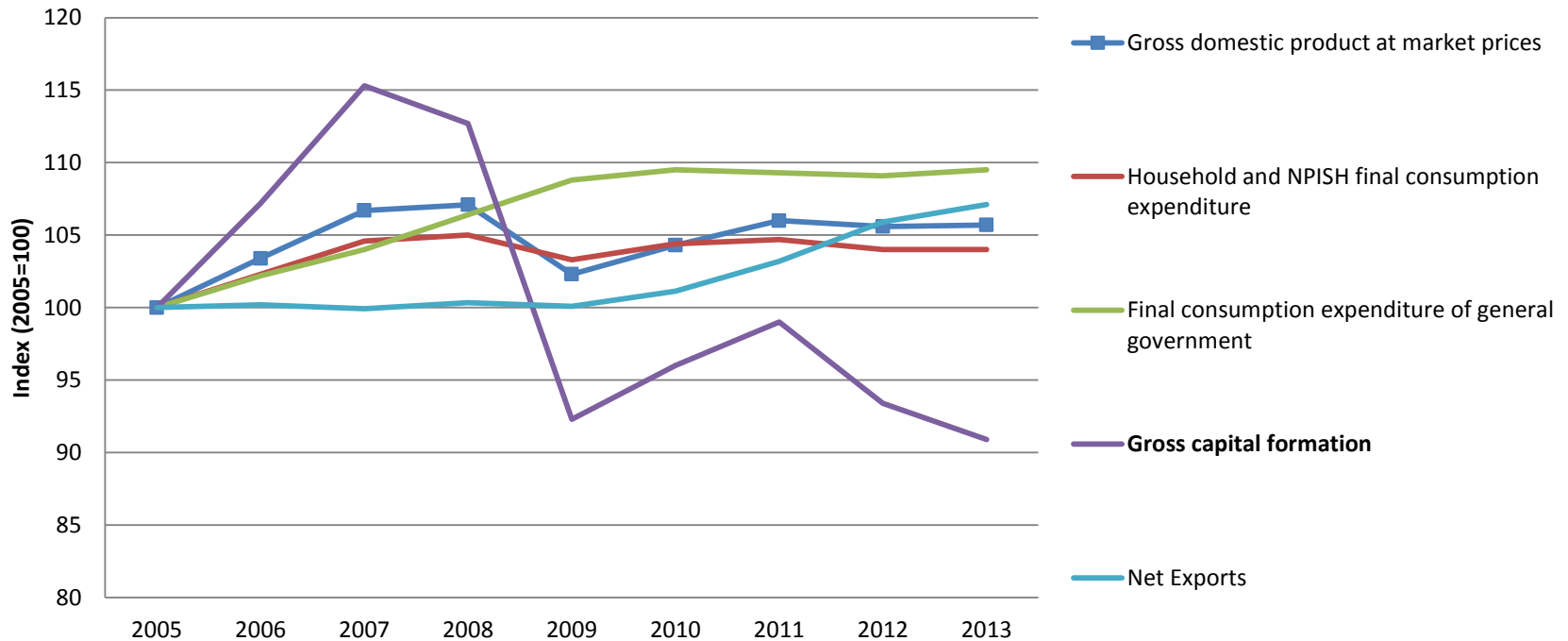
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Growing emphasis on need for stable investment environment in aftermath of financial crisis

Relative decline of gross capital formation in the EU



Source: Spencer T, O. Sartor et al, "What is Needed in the EU's 2030 Climate and Energy Framework?" *Climate Strategies* working paper, forthcoming 30 Sept 14

See also House of Lords, EU Subcommittee D report, 2013:

'No country is an energy island: securing investment for the EU's future'