

Environmental *Change* Institute



RICARDO-AEA

abelscroft
energy intelligence

Energy policy in transition: evidence from energy supply and demand in the UK



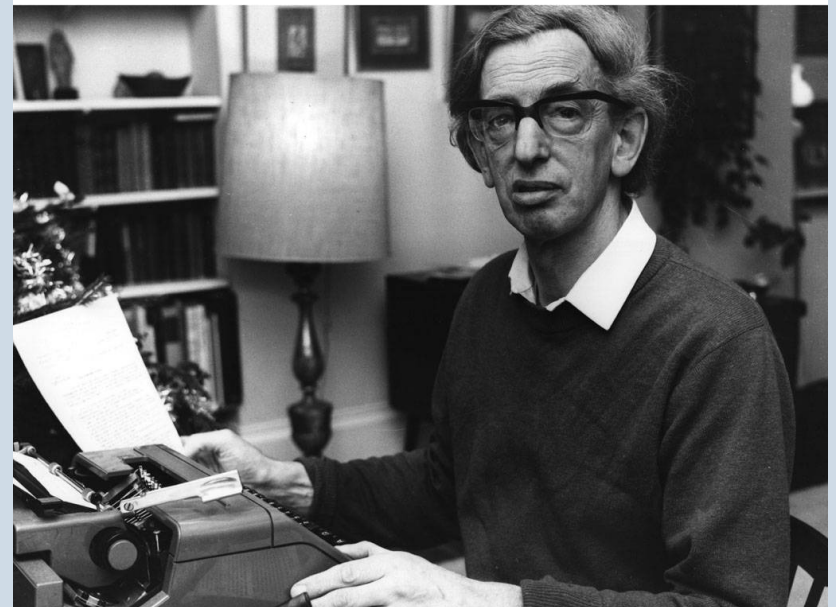
Jan Rosenow, Darryl Croft,
Nick Eyre

ECEEE Summer Study
juni 18, 2013

Ad hocery and policy amnesia

‘Policymaking and planning have pursued a model of scientism and technical manipulation which systematically, and deliberately, neglects [...] historical experience.’

Eric Hobsbawm



Ad hocery and policy amnesia

‘Even lessons that could be learned from the quite recent past are too often overlooked in the rush of near term imperatives, expediencies and policy fashion.’

Stephen Dovers



Transitions in the demand side

Green Deal

Previous situation:

Loans for energy efficiency improvements linked to **person**

Green Deal:

Allows loans to be linked to **property** instead

HATE RISING ENERGY COSTS?

GREEN DEAL WITH IT.



The Green Deal, set up by Government, is a new way to pay for home improvements like insulation, double glazing or a new boiler. It lets you pay for some or all of the improvements over time through your electricity bill. Repayments will be no more than what a typical household should save in energy costs.

Find out more at gov.uk/greendeal or call 0300 123 1234

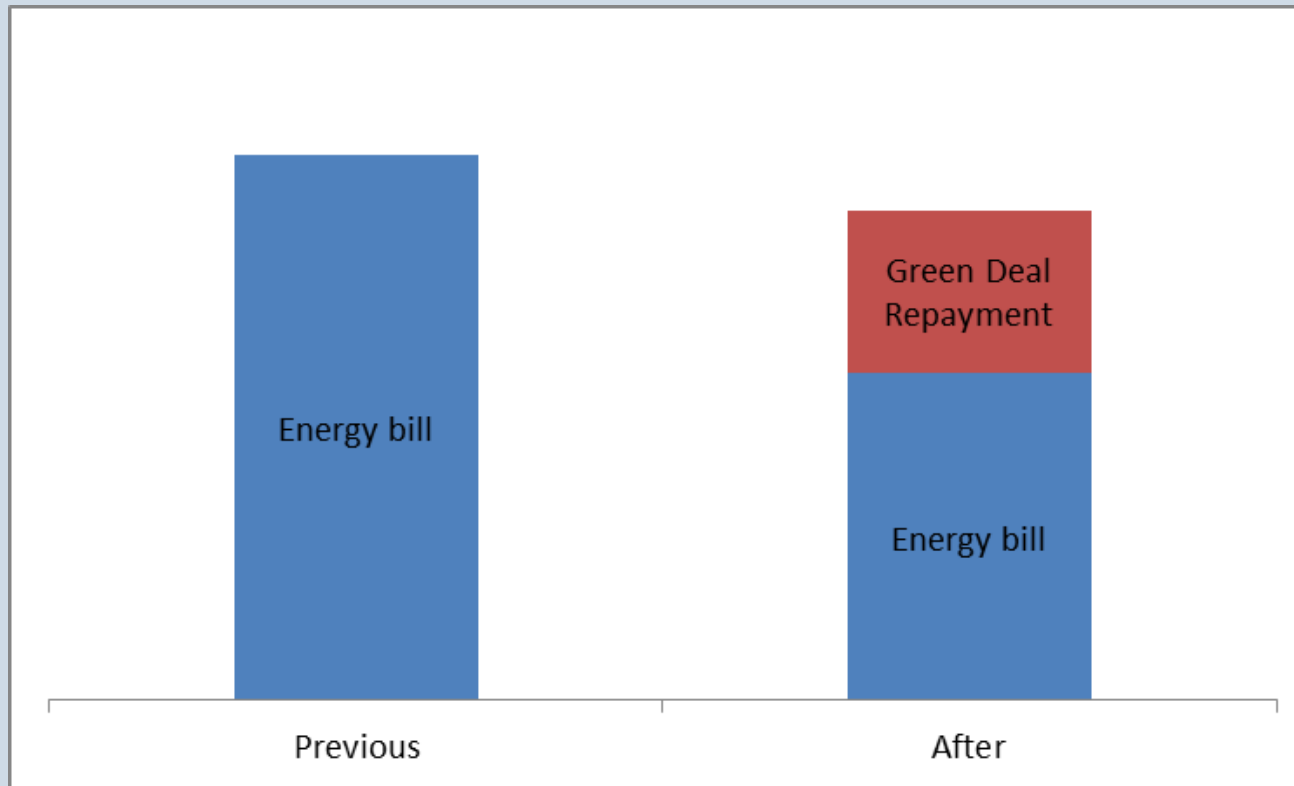
UP TO £1020* CASHBACK
(while funds last)

GREEN DEAL APPROVED

*Based on installing solid wall insulation, loft insulation and a new boiler under the Green Deal. The Green Deal is not available in Northern Ireland. A different cashback scheme operates in Scotland. Full details available at gov.uk/greendeal.

The Golden Rule

- Estimated savings on energy bills must equal or exceed the cost of the investment in energy efficiency measures.



Source: own illustration

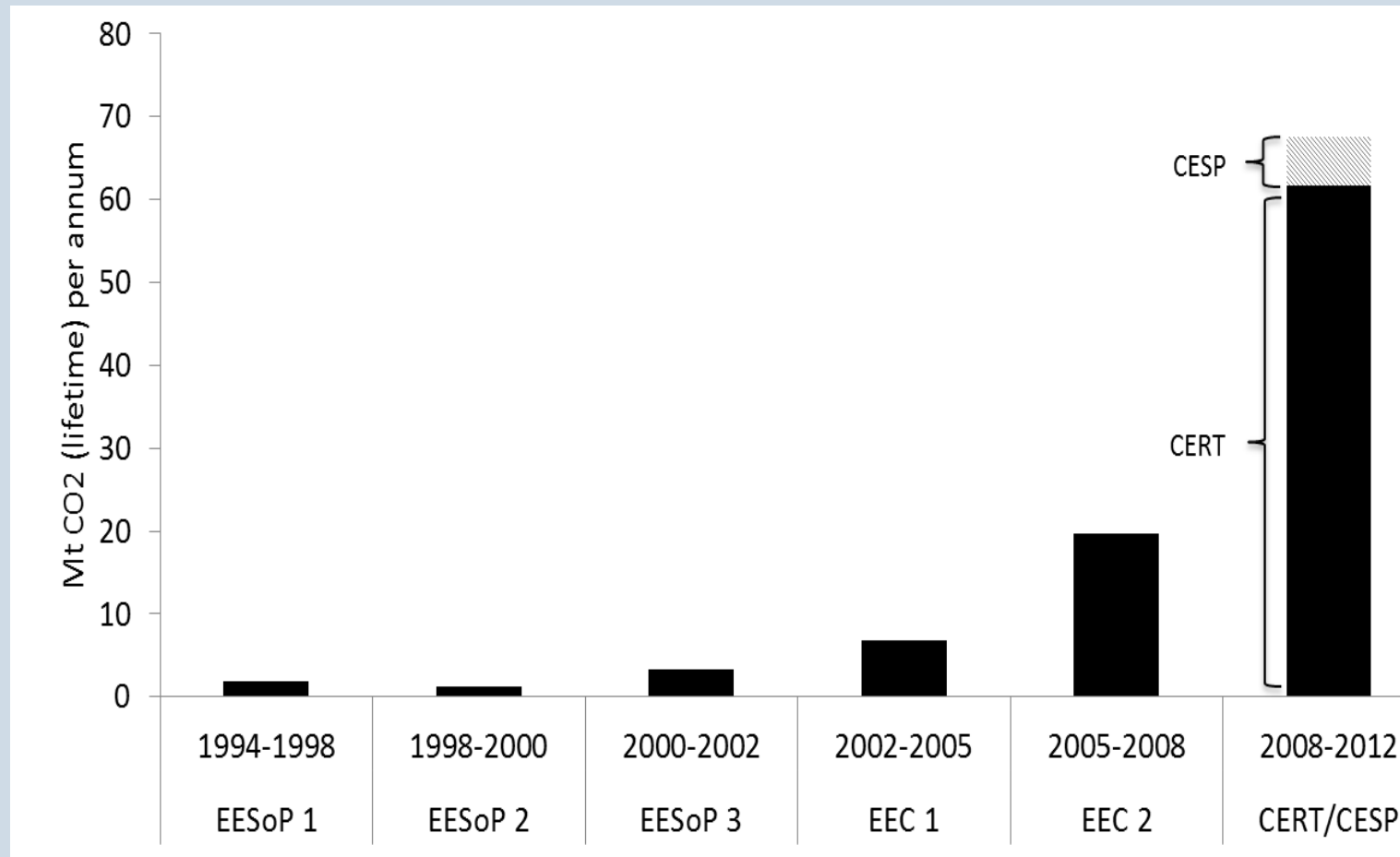
Energy Company Obligation

- successor of the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Target (CESP)
- falls into category of Energy Savings Obligation

Interaction of Green Deal and ECO

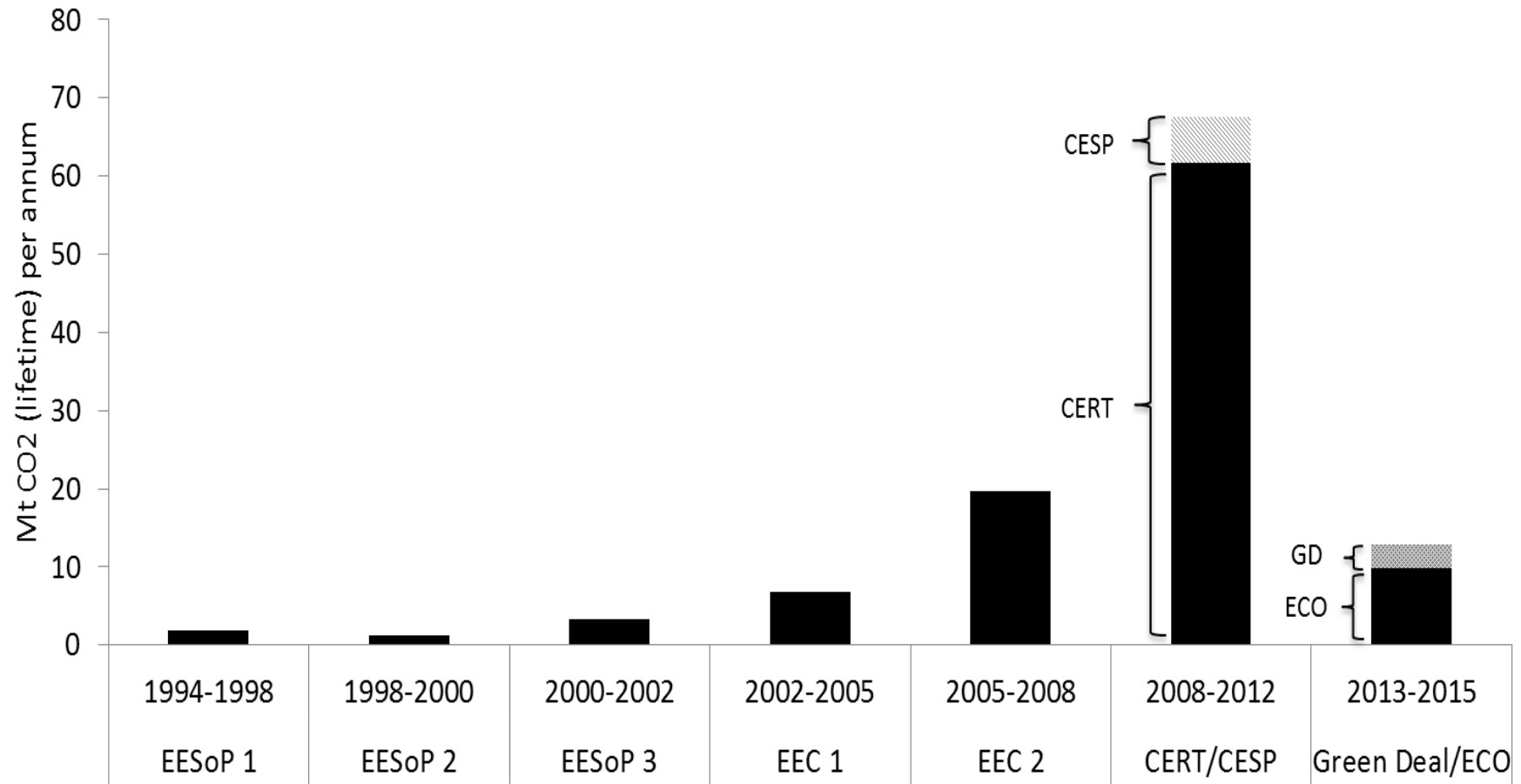
- Government expects many properties to receive funding both from ECO and Green Deal
- **ECO** will mainly do **high cost measures** which do not qualify under Golden Rule, **Green Deal** will do **cheaper measures**
- introduction of **brokerage mechanism** for ECO carbon savings by which Green Deal Providers and energy suppliers trade carbon savings

Carbon targets in 2012 ~80 times higher than in 1994



Source: based on Rosenow (2012) , Eyre et al. (2012), DECC (2012c)

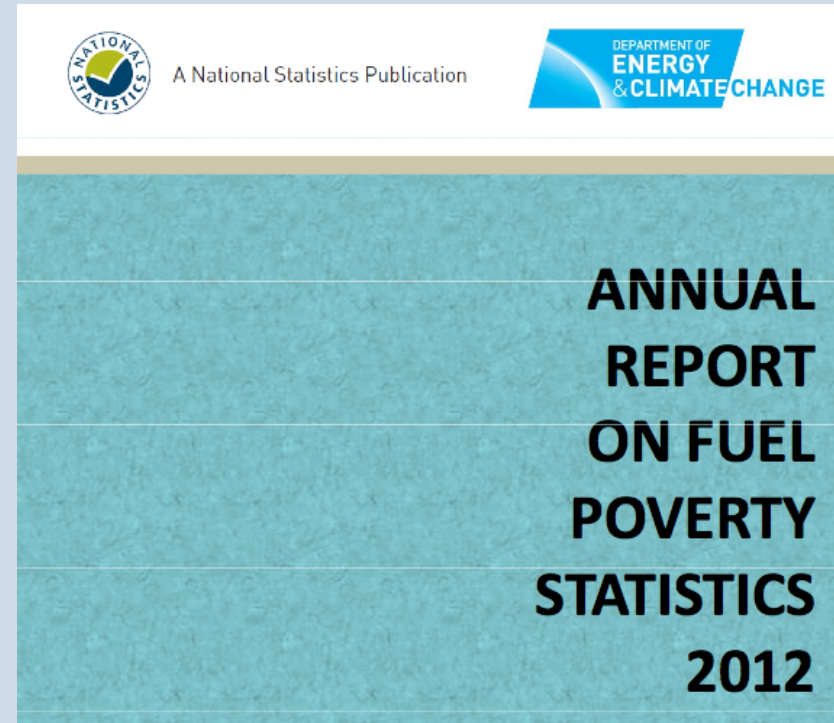
Green Deal + ECO will achieve less than ~1/3 of previous Supplier Obligations



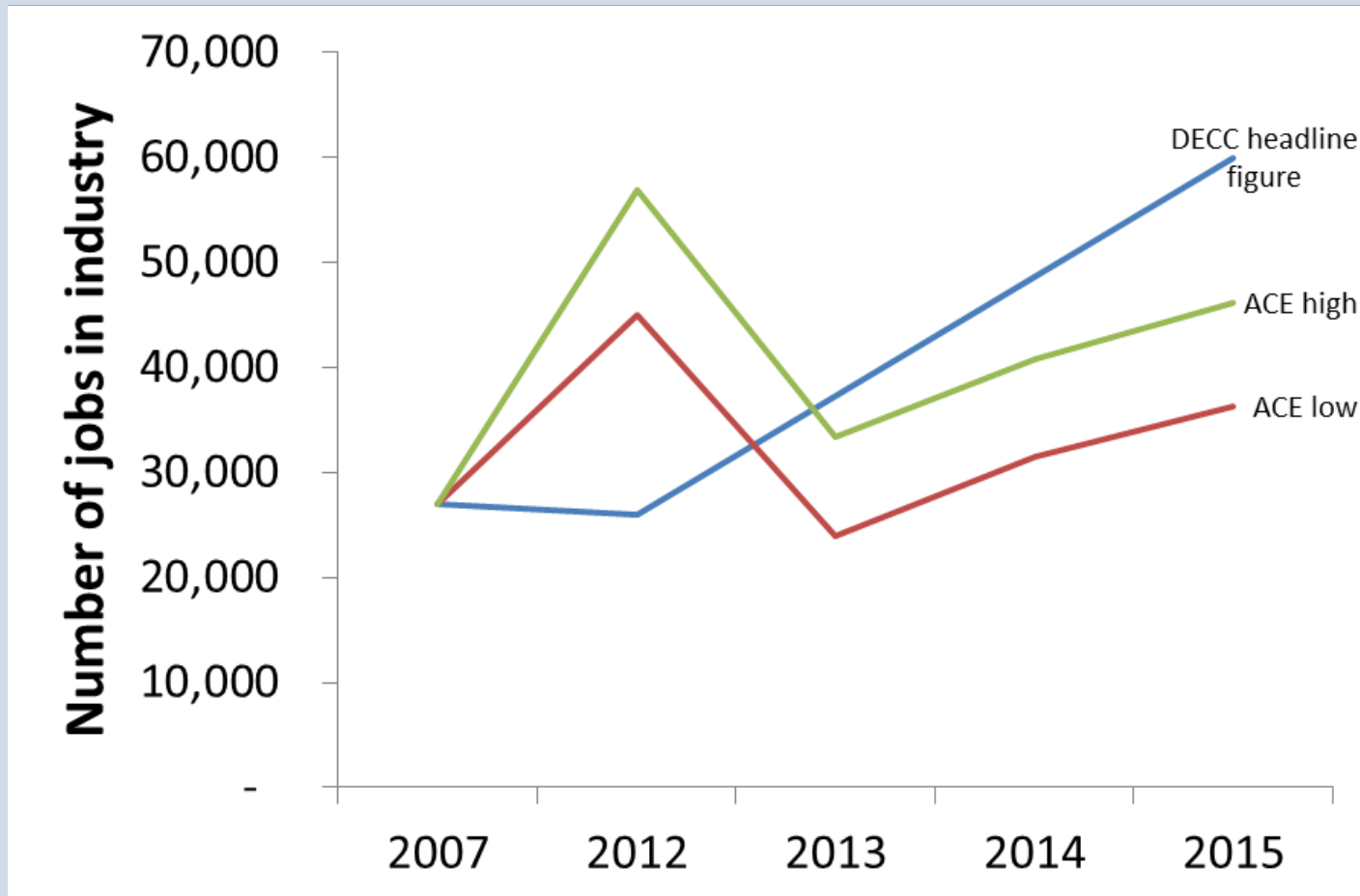
Source: based on Rosenow (2012), Eyre et al. (2012), DECC (2012c)

Fuel poverty

- fuel poverty impact of ECO will be to take **125,000–250,000 households** out of fuel poverty by 2023 (DECC 2012c)
- currently almost **5 million households** in fuel poverty (DECC 2012d), statutory obligation to eradicate fuel poverty by 2016 ‘as far as reasonable practicable’

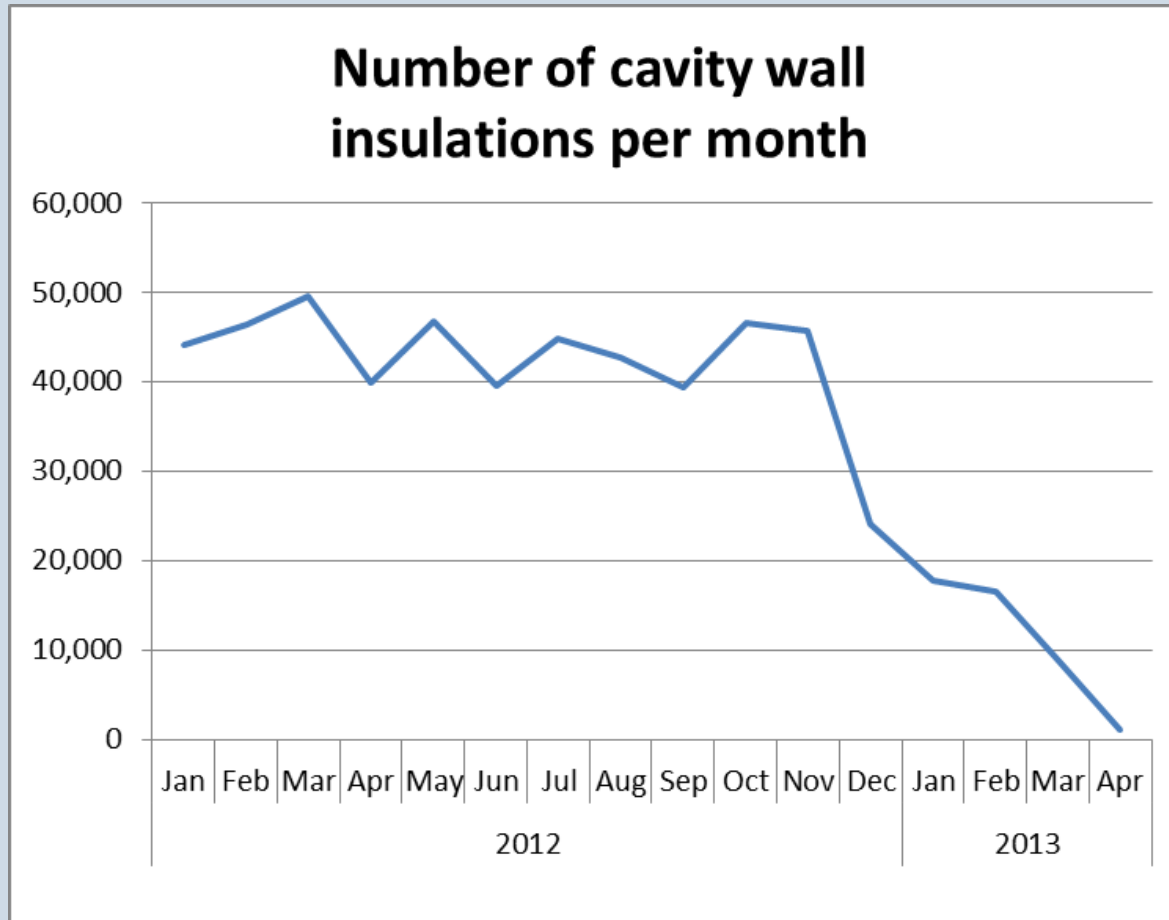


Employment impact: assumptions about base year misleading



Source: based on DECC (2012a) and ACE (2012)

Implications for supply chain



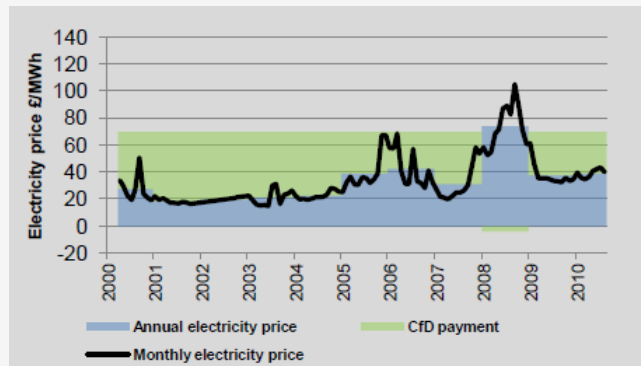
Source: based on CIGA (2013)

Transitions in the supply side

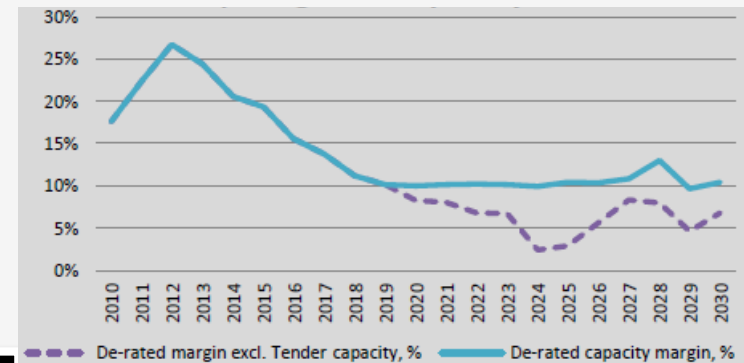
Electricity Market Reform

Comprises of four key aspects

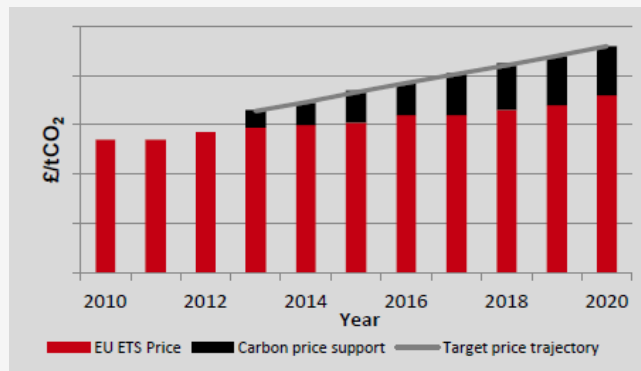
FIT with contracts for difference (CfDs)



Capacity mechanism



EMR



Carbon price support

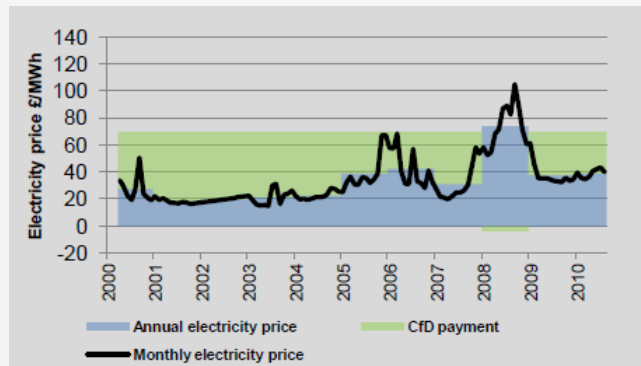


Emissions performance standard

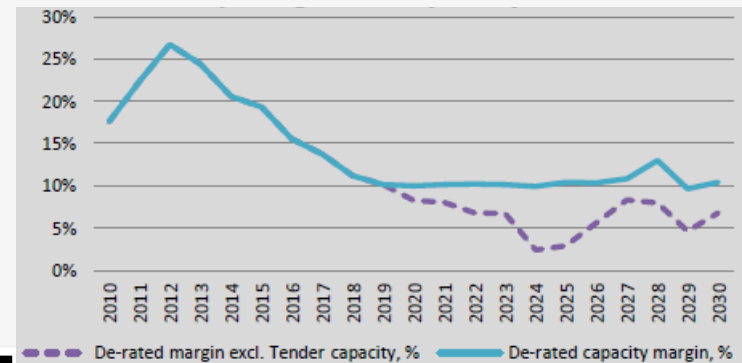
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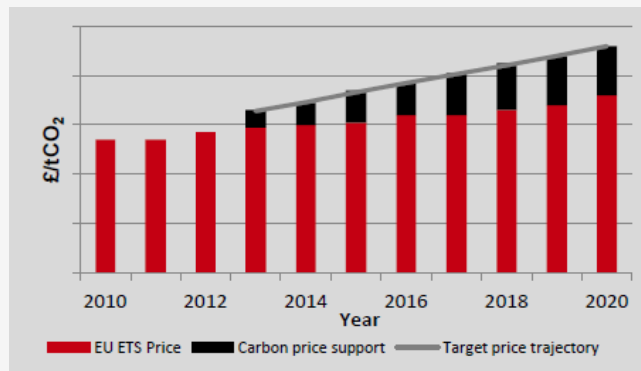
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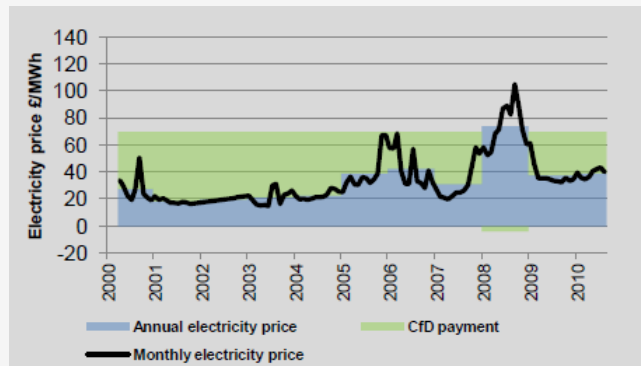


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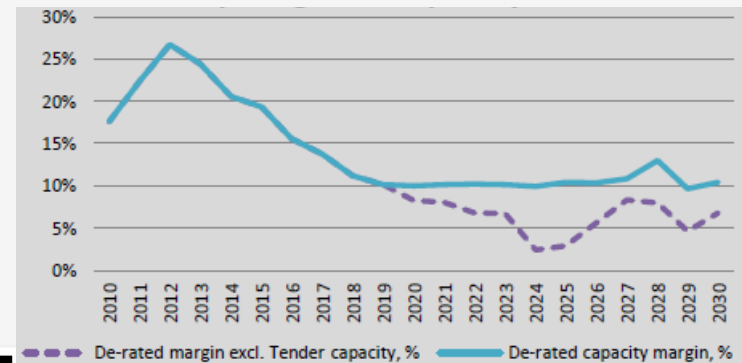
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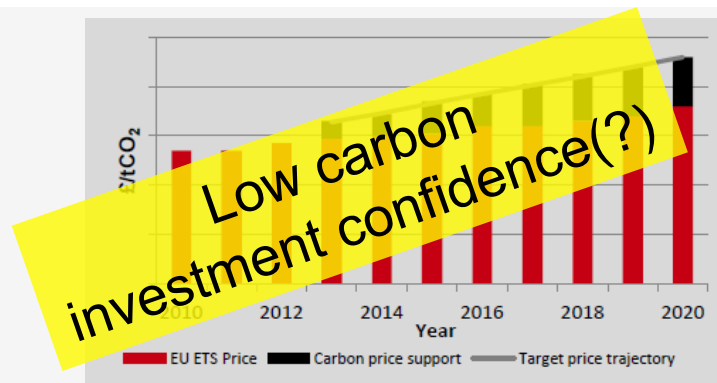
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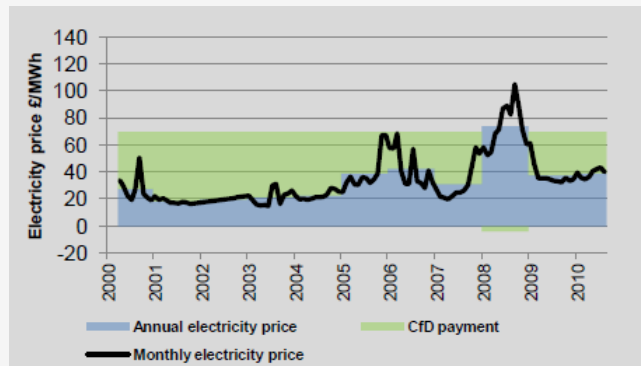


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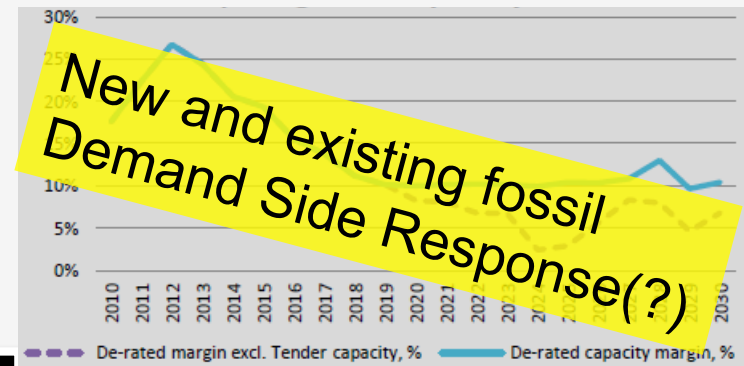
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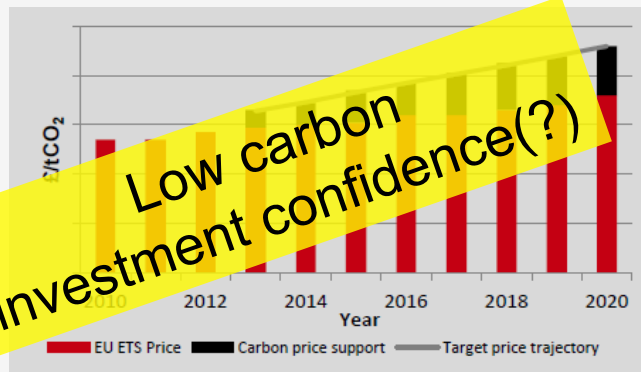
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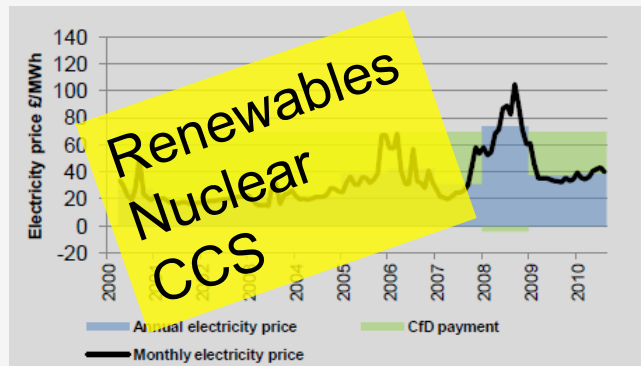


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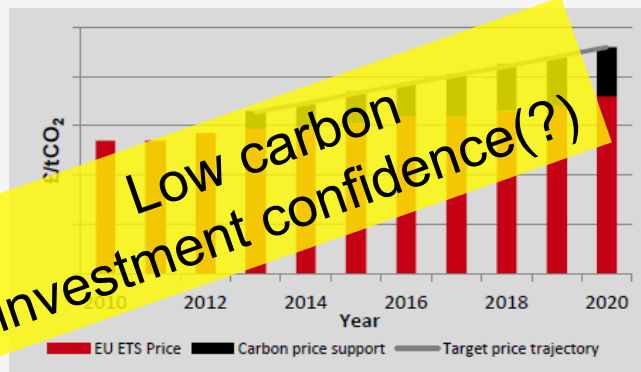
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Emissions performance standard

Electricity Market Reform

Comprises of four key aspects

FIT with contracts for difference (CfDs)

- Scope: Renewables, nuclear, CCS
- Timing: Available from 2014
(RO remains open to 2017)
- Impact: Fundamental change in low carbon support

Capacity mechanism

- Scope: New and existing flexible plant
(Gas mainly)
- Timing: powers from 2014;
implemented as required
- Impact: depress power prices

EMR

- Scope: Electricity generators
- Timing: Begins in April 2013,
Floor price of £16/tCO₂ 2013 => £30/tCO₂ 2020
- Impact: Increase electricity prices.
No investor confidence due to risk of revocation

Carbon price support

- Scope: New generators
- Timing: Introduced with energy bill
- Impact: no unabated coal

Emissions performance standard

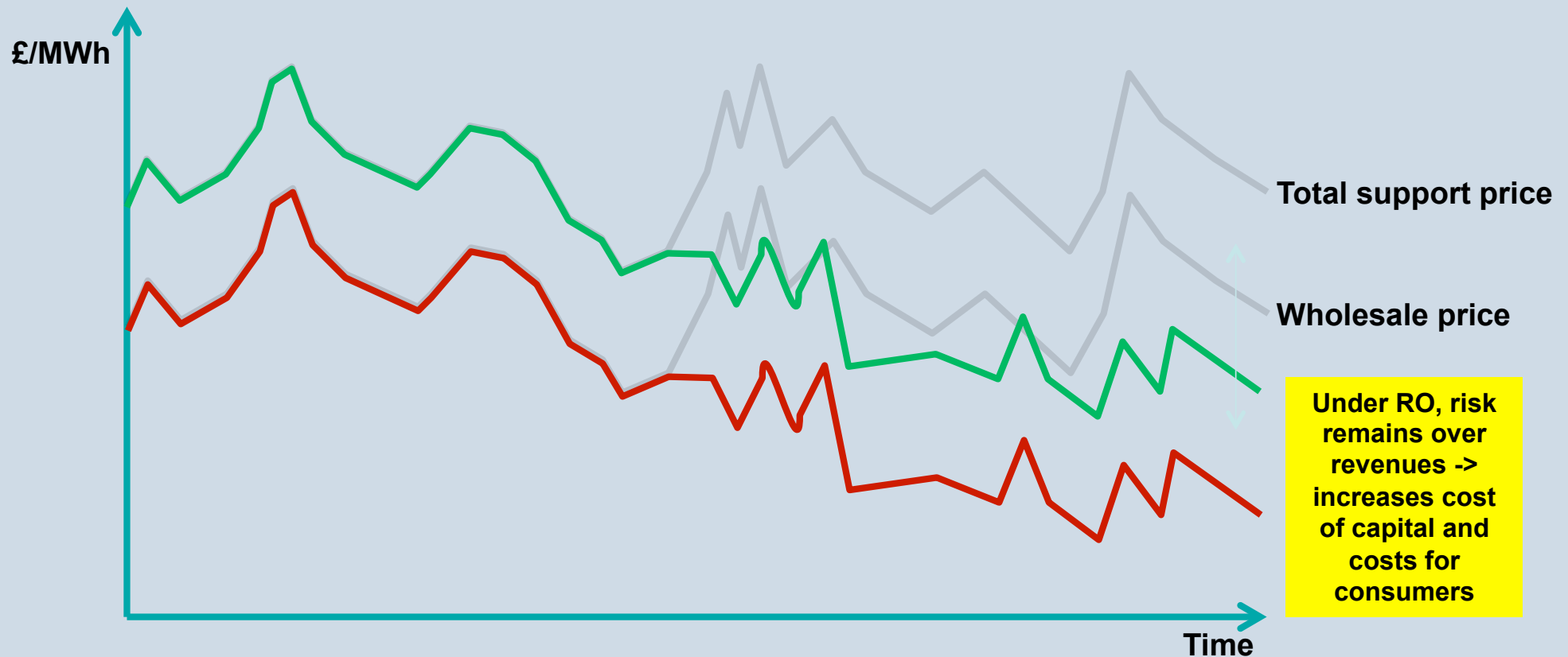
CfDs

- CfD replaces the RO
- RO a defacto premium payment – consistent top up on the power price



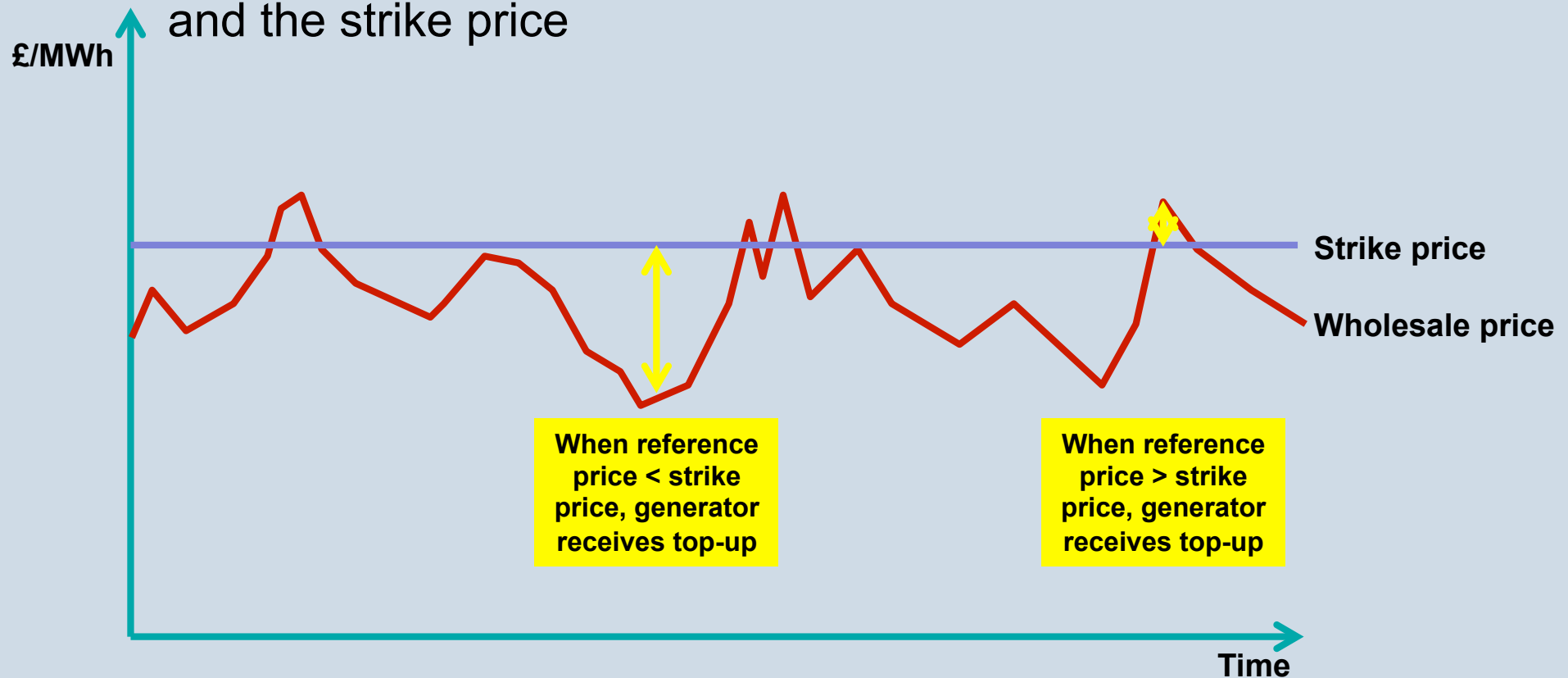
CfDs

- However, risks to Government of overpayment (if wholesale prices rise) or to developers of underpayment (if wholesale prices fall)



CfDs

- Under CfD, reduced price risk
- A 'strike price' is set for a specific generator
- Generator is paid/repays difference between a reference price and the strike price



CfD and RO differences

- In addition to the manner in which projects are supported, there are further difference between the RO and the CfD

	RO	CfD
Eligibility	Most renewable electricity generators	Renewable generators plus nuclear and CCS
Wholesale price	Exposed to fluctuations and basis risk	CfD provides hedge against wholesale price risk
Support per MWh	Value of ROC is fairly stable with limited risk of oversupply	Will vary inversely with the wholesale price. Strike prices set administratively by DECC initially, before moving to technology specific auctions.
Total policy support	Effectively unlimited thus far. Paid pay suppliers, costs passed through to consumers	Costs will be capped based on the Government's Levy Control Framework. A CfD budget will be created, and contracts allocated within budget.
Length of support	20 years	Likely to be 15 years for renewable generators
Contract awarded	After the commissioning of the first turbine	Only subject to available budget. Contract awarded either through first-come first-served or an auction. Earliest application after planning permission and promise of grid connection.
Penalties	Plant can be fined or ROCs revoked	Failure to commission on time or meet milestones can ultimately result in CfD termination and stranded investment

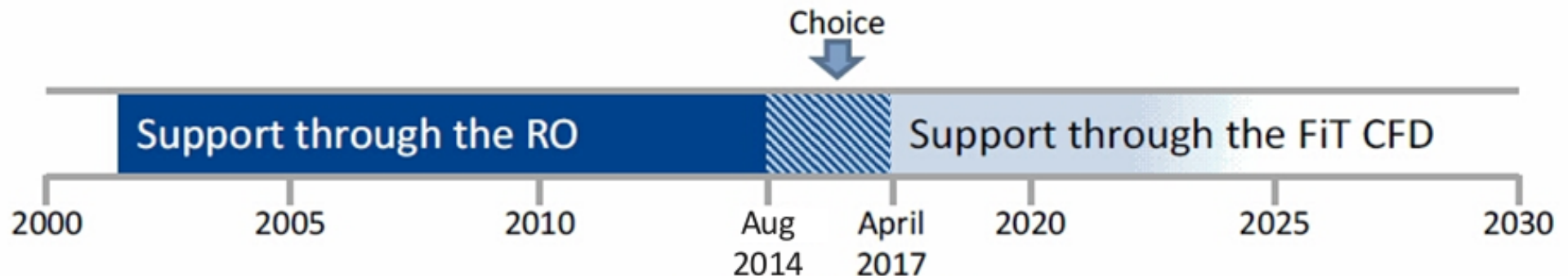
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Length of support	20 years	Likely to be 15 years for renewable generators
Contract awarded	After commissioning (i.e. successful operation) of the first turbine	Only subject to available budget. Contract awarded either through first-come first-served or an auction. Earliest application after planning permission & grid connection promise.
Penalties	Plant can be fined or ROCs revoked	Failure to commission on time or meet milestones can ultimately result in CfD termination and stranded investment

RO -> CfD transition

- Unlike CERT -> ECO/Green Deal, the UK Government *has* put in place a transitional period for the supply side.
- The RO will close to new entrants from April 2017. [Subject to Royal Assent and State Aid clearance] CfDs can be signed from August 2014.
- This gives a 32 month transitional period of concurrent operation.



Differences supply and demand

- same Department has taken very different approaches to policy transitions affecting demand and supply: no transition deemed necessary for energy efficiency policy, but transitional period for low carbon generation
 - Why?
- difference in direction of transitions:
 - on demand side, moved from a regulated approach to one that integrates market-based solutions
 - supply side reforms sees Government with far more control over setting strike prices and technology volumes.
- no integration between supply and demand reforms, despite unique opportunity of synchronous reforms

Conclusions

- need for bold policies to address challenges
- BUT: need to allow for transition when changing policies
- staged implementation rather than abrupt overhaul
- more haste, less speed!

Thank you for listening

Sources

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