

EU Member State Energy Policies: UK

**EUCE Conference on Environment & Energy:
Comparison of US and EU Policies**

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Outline

- EU and Member State energy policy
- UK energy policy trilemma
- Electricity Market Reform
- Gas policy

Energy – a shared competence between EU and Member States

“In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim to:

- a) ensure the functioning of the energy market;
- b) ensure security of energy supply in the Union;
- c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
- d) promote the interconnection of energy networks.

“measures shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply.”

Relevant Directorates-General of the European Commission

DG-Energy

- Security of supply
- Energy networks and regulation
- Oil and gas stocks

DG-Climate Action

- Energy and Climate Change Package (renewables, efficiency, CO₂)
- EU Emissions Trading Scheme (ETS)

DG-Competition

- State Aid rules

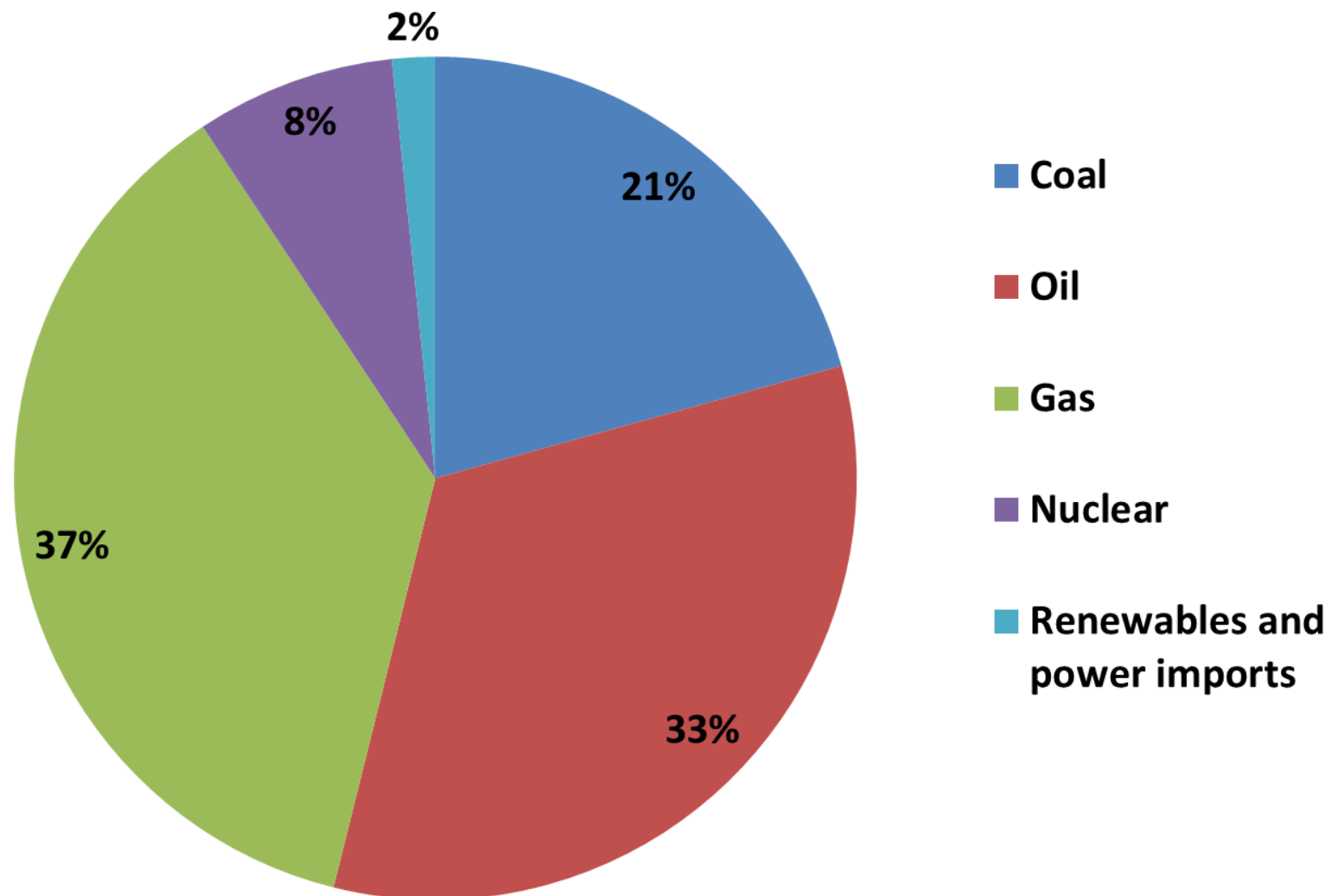
DG-Research

- Strategic Energy Technology (SET) Plan

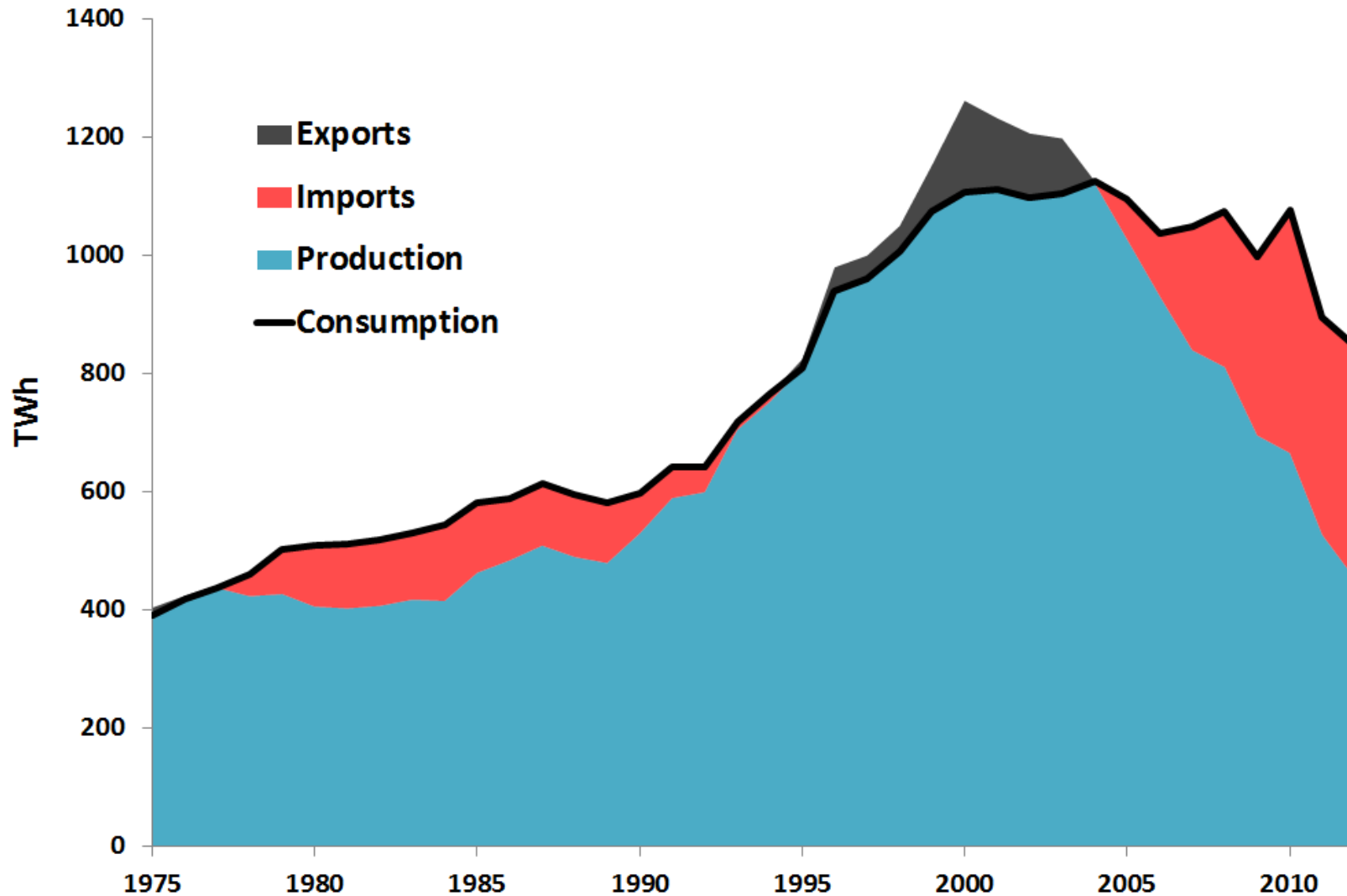
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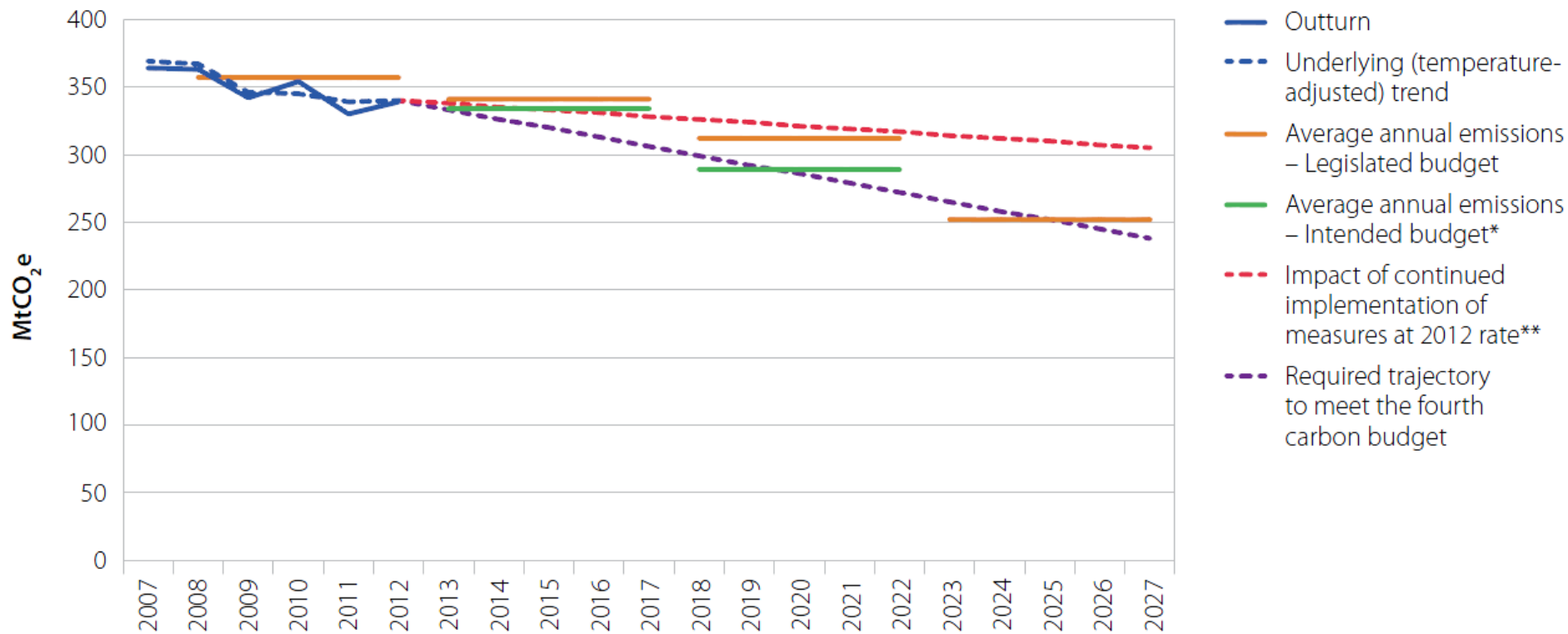
UK energy mix 2012



UK gas balance



UK Climate Change Act 2008: Progress in meeting carbon budgets



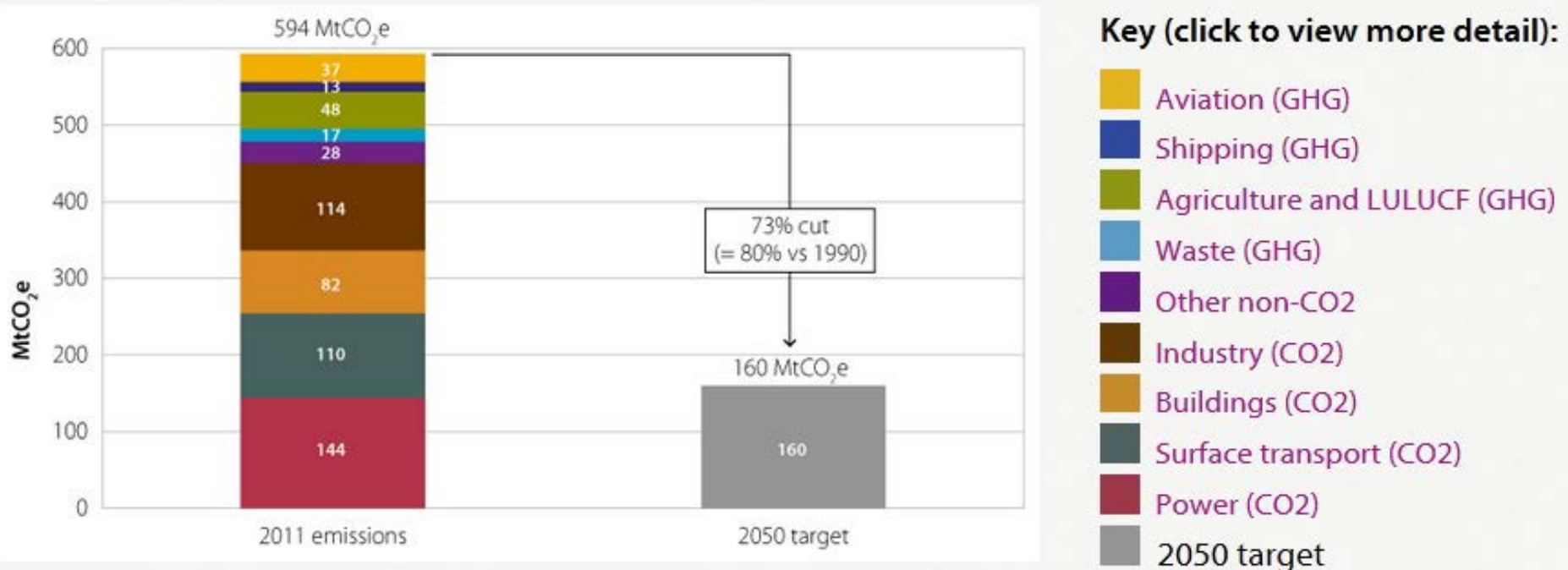
The policy trilemma – changes in the mood music

1. Security of supply \uparrow
2. Affordability \uparrow
3. Security of supply \downarrow

The scale of the UK's climate change challenge

Flagship policies:

- Electricity Market Reform
- Green Deal (UK's thermally leaking housing stock)

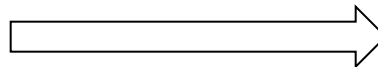


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Electricity Market Reform : What's the problem?

- Low carbon electricity generation tends to be high capital cost/low running cost
- Investment in such plant is exposed to additional market risk in a volatile “energy only” market
- Gas plant has a natural hedge because gas prices drive electricity prices and hence has lower risk
- The cost of capital is therefore higher for low carbon generation

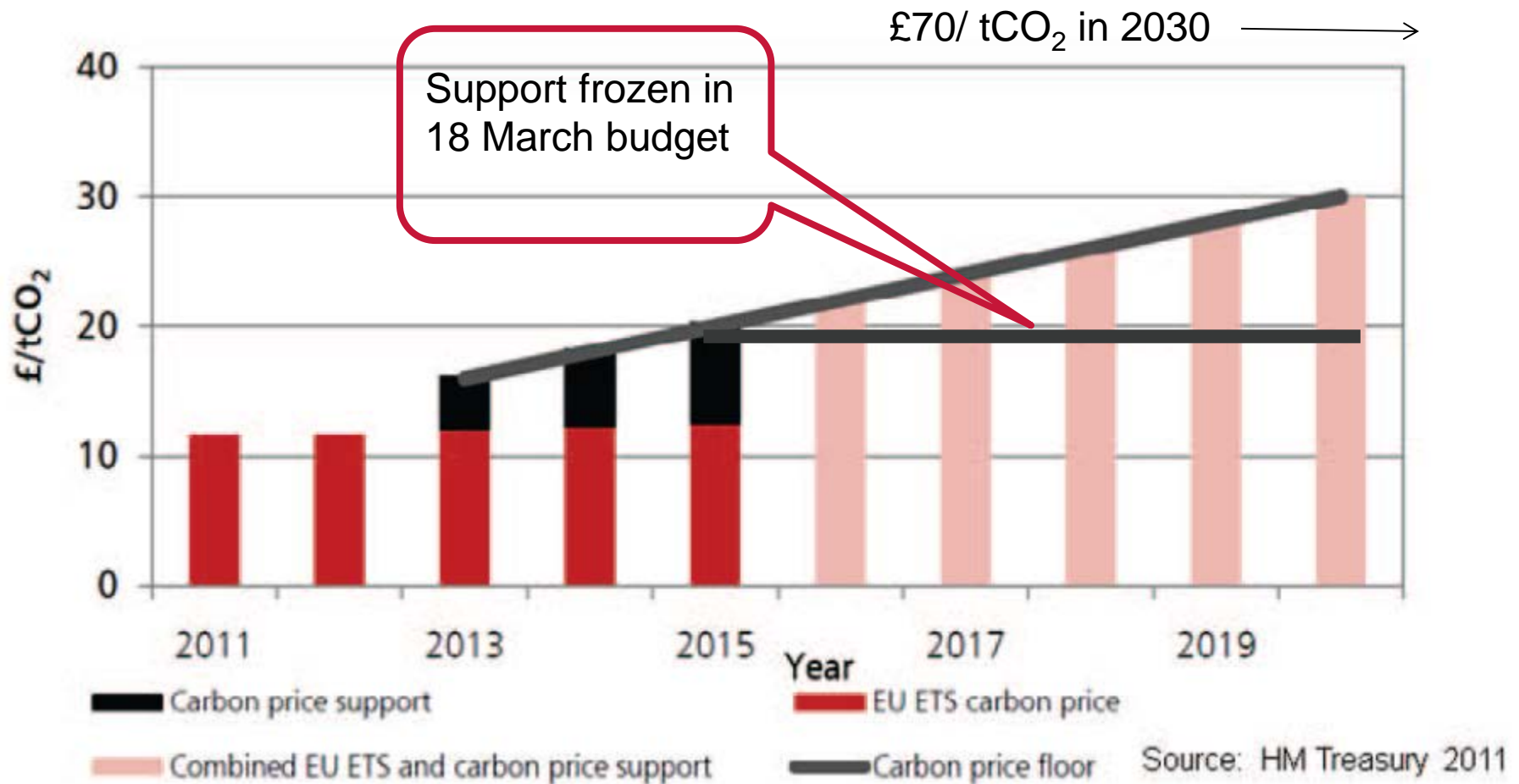


- ***The purpose of Electricity Market Reform is to reduce market risk for low carbon generation by offering stable prices***
- This also helps to contain the cost to consumers of low carbon electricity supply

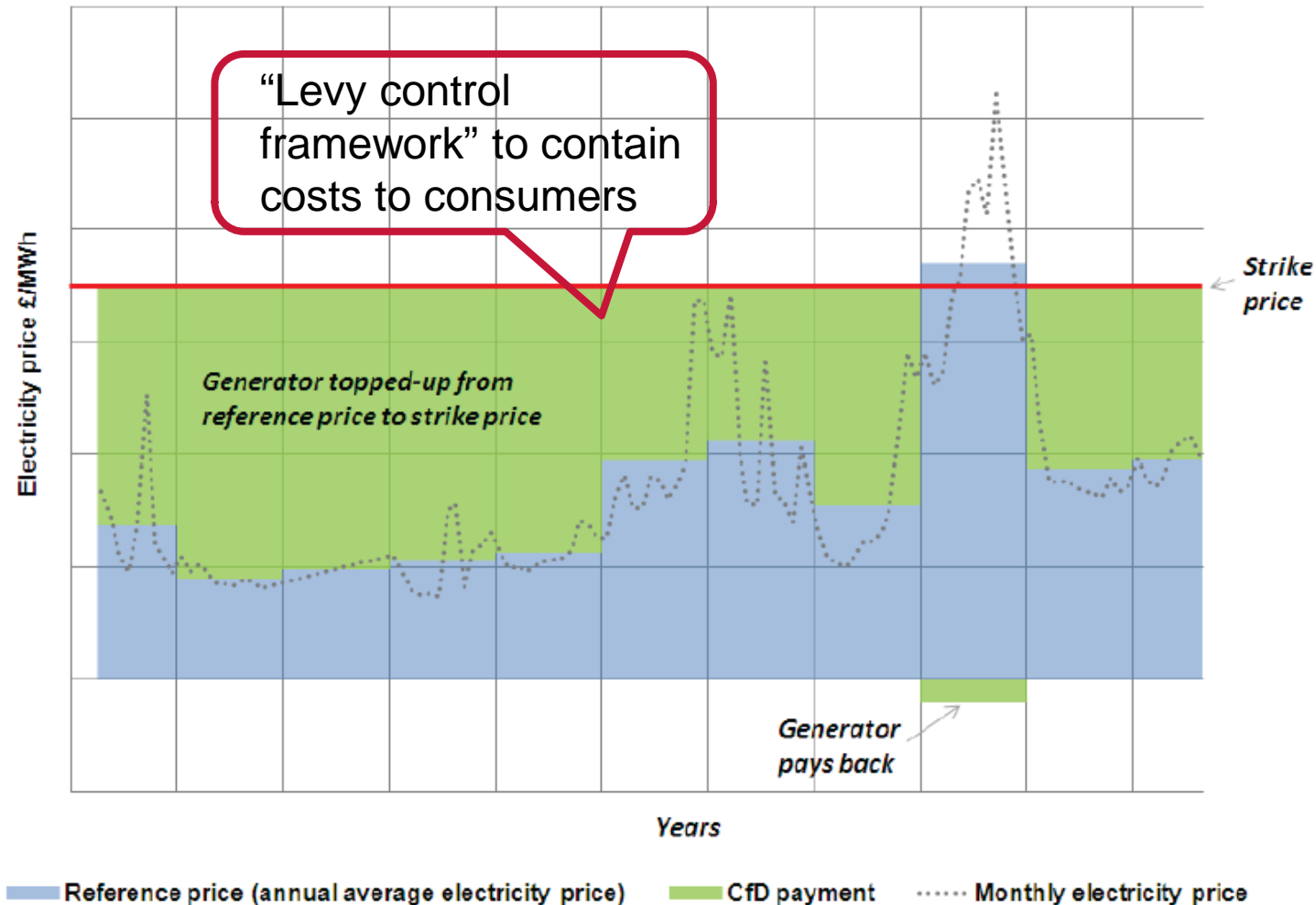
The elements of Electricity Market Reform

- ***Carbon Price Floor***
- ***Feed-in Tariff with Contracts for Difference***
- Capacity Mechanism
- Emissions Performance Standard

Carbon price floor illustration



Operation of the Feed-in Tariff (FiT) with Contracts for Difference (CfD)



Strike prices for low-carbon generation (£/MWh)

	2014/5	2015/6	2016/7	2017/8	2018/9
Onshore wind	95	95	95	90	90
Offshore wind	155	155	150	140	140
PV	120	120	115	110	110
Biomass conversion	105	105	105	105	105

- *Proposed strike price for Hinkley Point nuclear station: £92.50/MWh, £89.50 if second site developed*
- *Current wholesale price: ~£50/MWh*

State Aids and Electricity Market Reform

- Renewables: block exemption
- Not so nuclear. Commission doubts about UK case for State Aid approval
- Hinkley Point may not provide a *Service of General Economic Interest* - baseload power is a competitive market not targeted at security of supply
 - recipient must have public service obligations to discharge and the obligations must be clearly defined
 - the compensation must be established in advance in an objective and transparent manner
 - the compensation cannot exceed what is necessary to cover the costs incurred in the discharge of public service obligations
 - the compensation must reflect the costs which a typical undertaking would have incurred and a reasonable profit

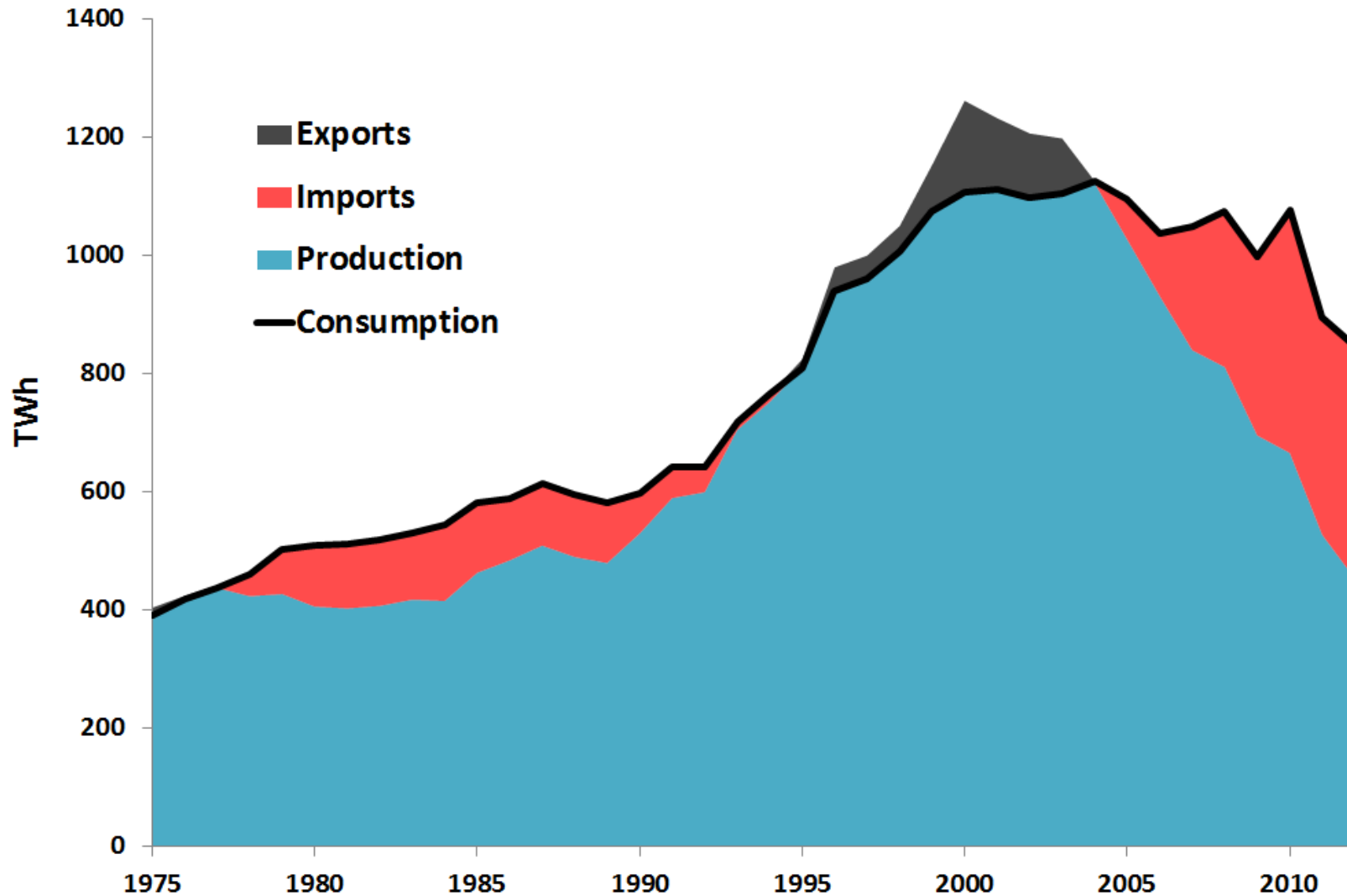
Four stages of EMR

Stage 1 To 2017	Stage 2 2017 – 2020s	Stage 3 2020s	Stage 4 late 2020s/beyond
Current arrangements (RO) alongside new Contracts for Difference with prices set administratively. Capacity auctions could be initiated depending on the security of supply outlook	Technologies mature (but at different rates) and some are able to enter competitive, technology-specific auctions. The Capacity Market could be fully operational if initiated	All technologies have matured and move to technology-neutral auctions. Demand side response, and additional storage and interconnection, will play an increasingly large role in managing supply and demand	Technologies are mature enough and the carbon price is high and sustainable enough to allow all generators to compete without intervention
Capacity auctions run if needed			

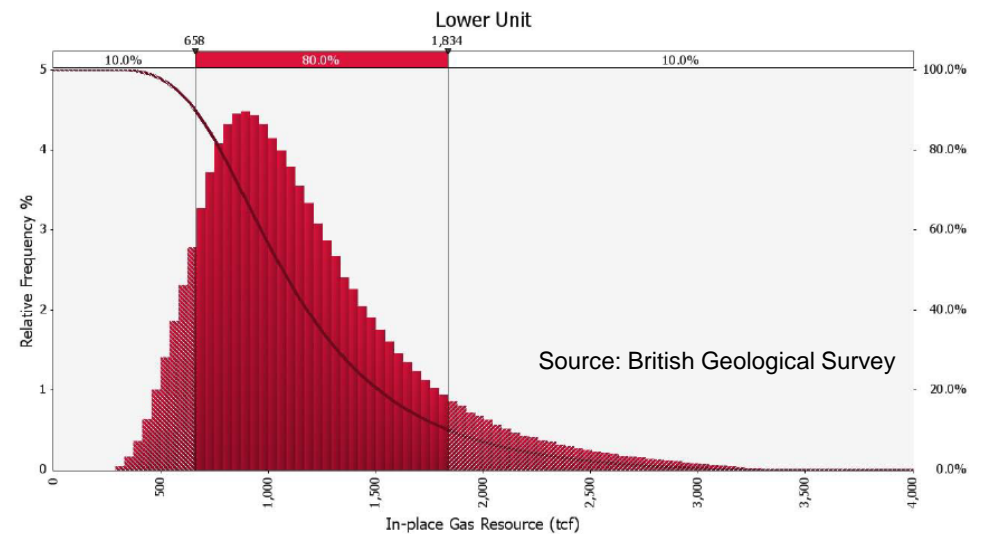
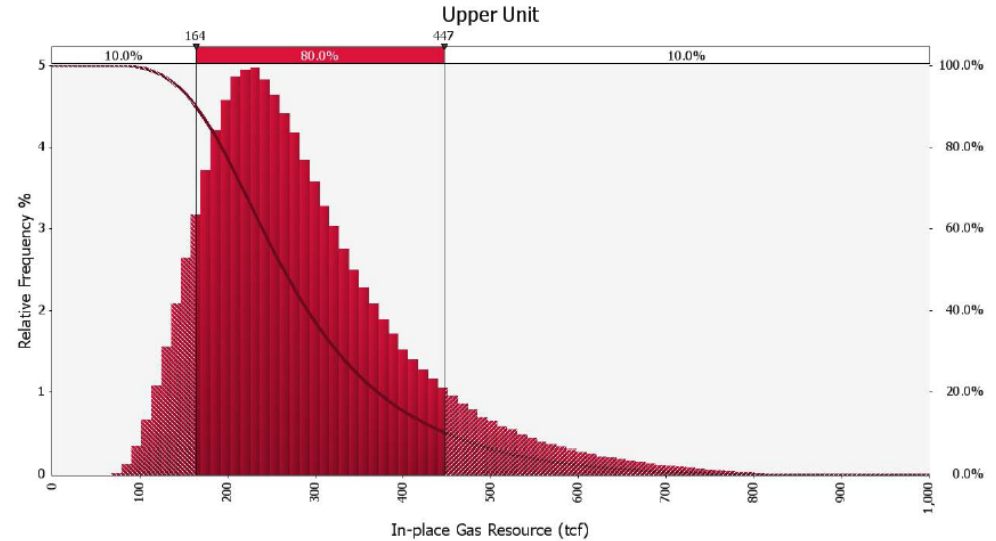
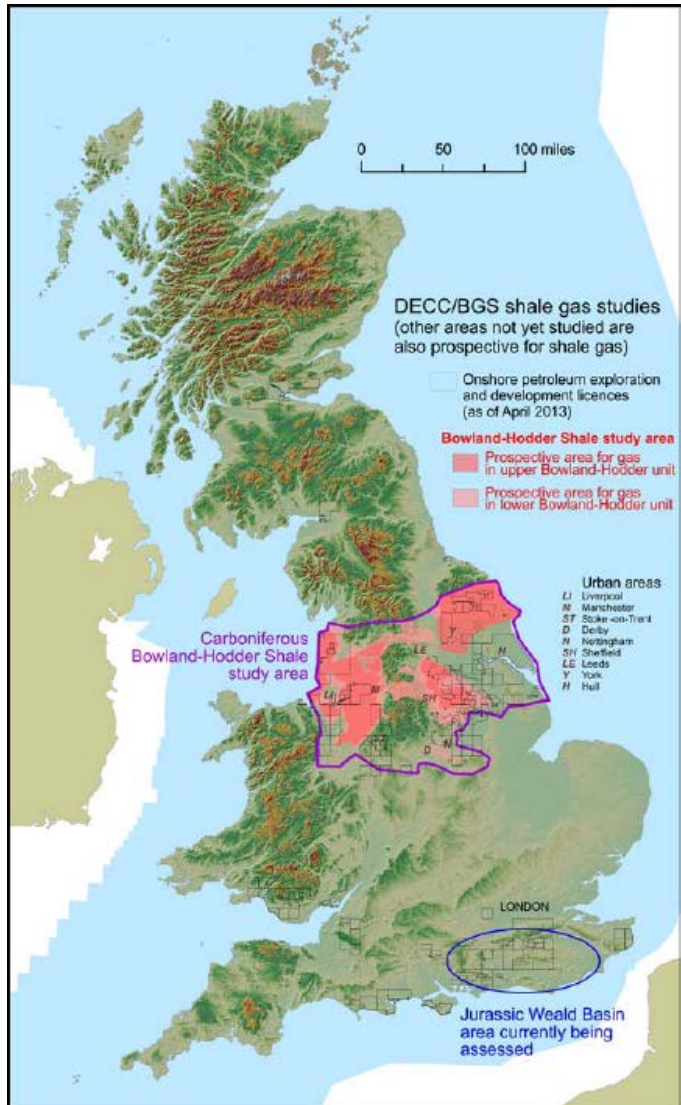
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UK gas balance



UK shale gas: the resource base



Bowland shale resource in-place versus current offshore reserves/use (tcf)

	P90	P50	P10
Upper unit	164	264	447
Lower unit	658	1065	1834
Total	822	1329	2281
North Sea ultimate recovery	93	101	109
Used to date		84	
Current annual use		3.1	

UK shale gas: Strategic Environmental Assessment

Biodiversity	-/?
Economic	++
Communities /social impacts	-/--
Health and safety	-/--
Soil, geology, land use	-/--
Water efficiency and quality	-/--
Coastal/flooding	?
Air quality	-/--
GHGs	--
Waste	--
Sustainable resource use	?
Historic/cultural heritage	-/?
Landscape/visual	-/--

The politics of shale: totemic technologies



“Wind farm operators are being paid millions for “wasted” electricity under a complex system known as constraint payments”

versus

“Shale gas is Britain’s golden opportunity: the discovery of shale gas in north-west England could revolutionise Britain’s energy market”



UK shale gas: the Battle of Balcombe

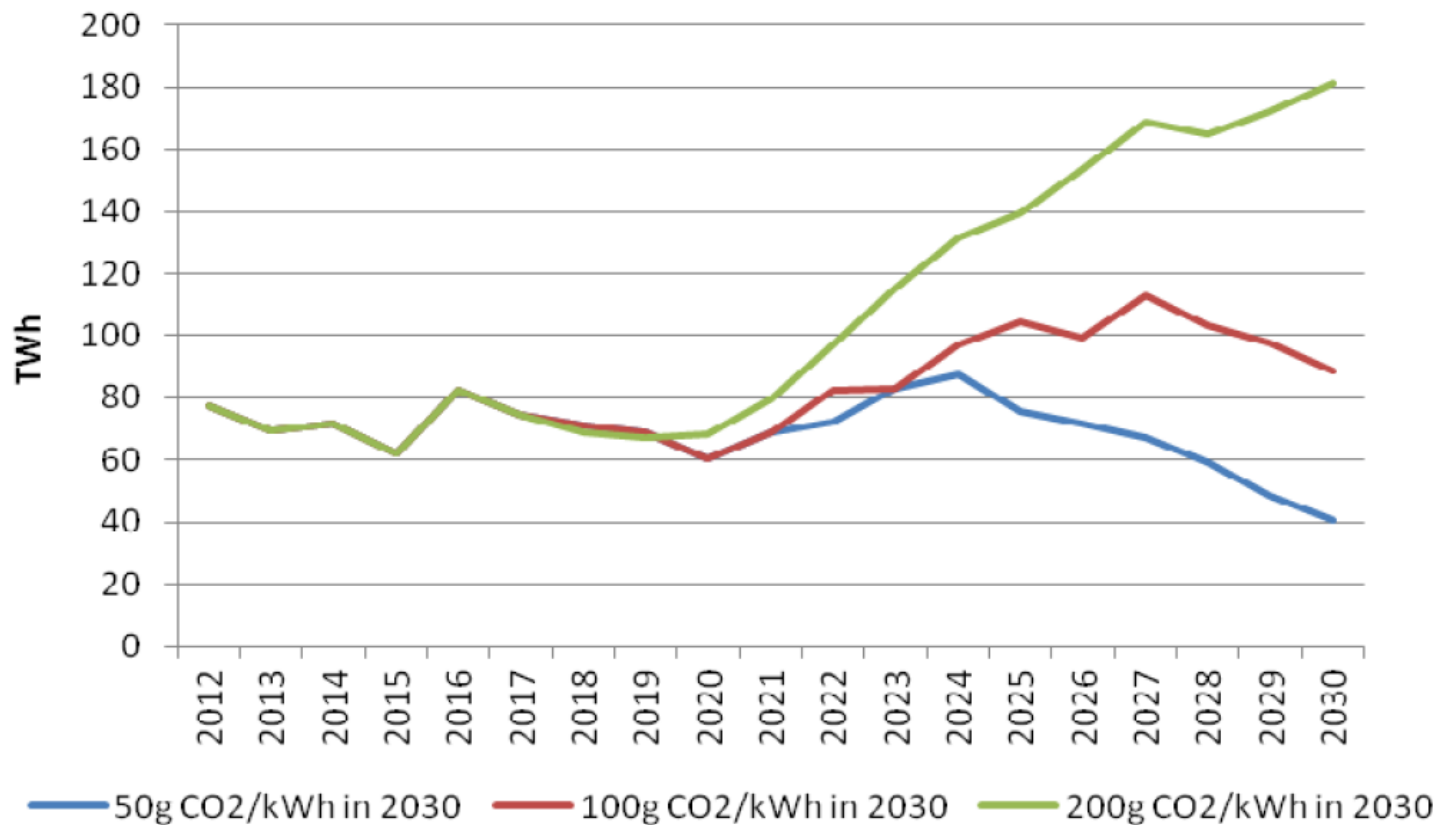


UK shale gas: the politics and economics

- “Britain must be at the heart of a shale gas revolution which could bring down energy prices and help re-industrialise the economy”
- Prime Minister, December 2012
- "We are connected to the rest of the world and we are importers, so if we are import displacing we will still be at a world price, but we will be more energy secure."
- Angela Knight, Director Energy-UK, February 2014
- Treasury (Finance Ministry) offering tax breaks for shale gas development but would subsequently tax production – economic rent would support public finances rather than lower costs driving down prices

(the UK is practised at fiscal regimes for fossil fuel production in the North Sea)

Policy schizophrenia: The Gas Generation Strategy



Source: DECC

Thank you!

<http://www3.imperial.ac.uk/rcukenergystrategy>