

UK experience of and plans for reducing emissions of greenhouse gases

David Warrilow
**UK Department of Energy and Climate
Change**

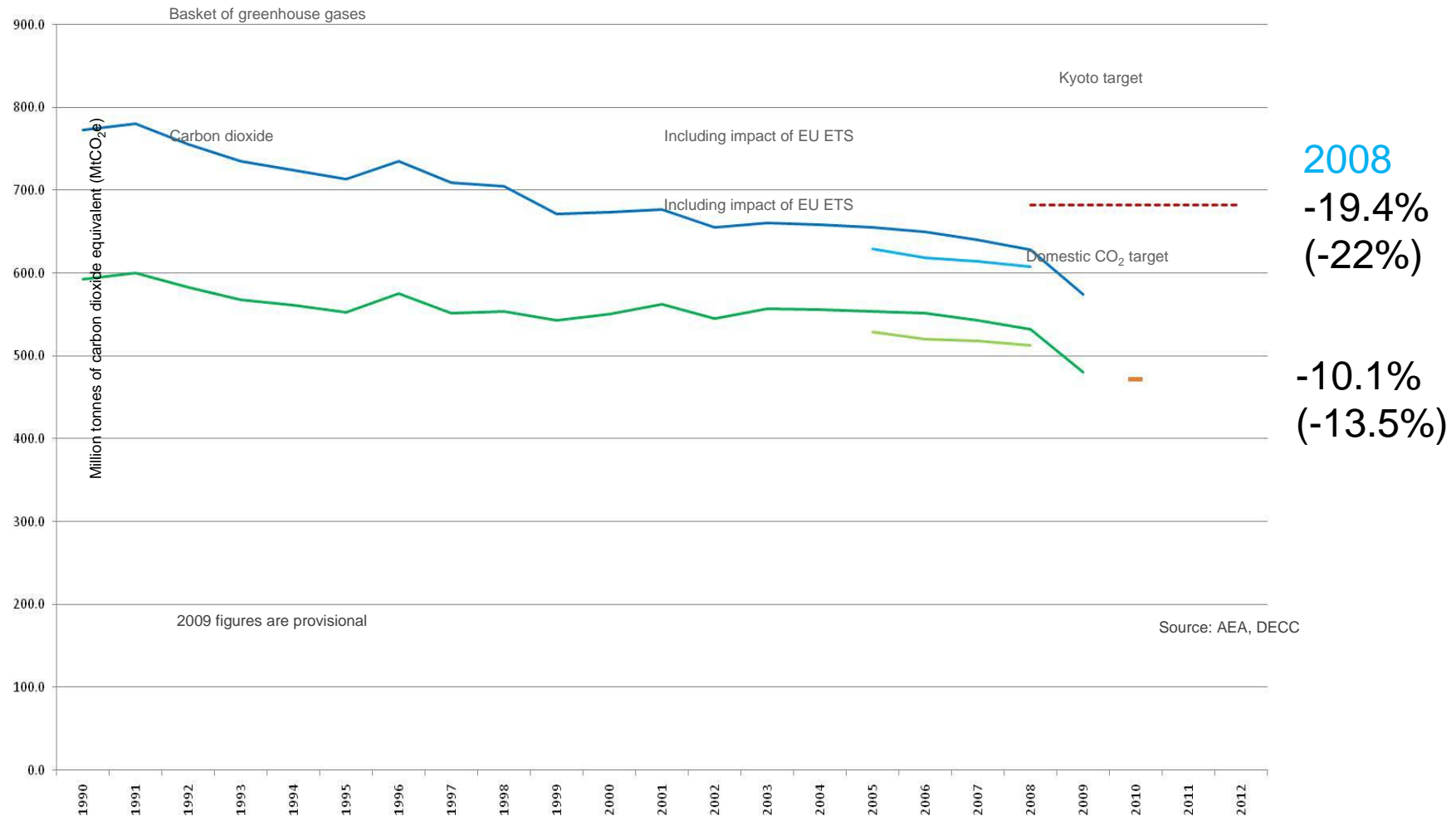
COP16, Cancun, 30 November 2010

The UK experience



- Historic trends and progress to targets
- Legal and organisational structures
- Targets, policies and measures
- Analysis
- Challenges

Progress on UK greenhouse gas emission reductions

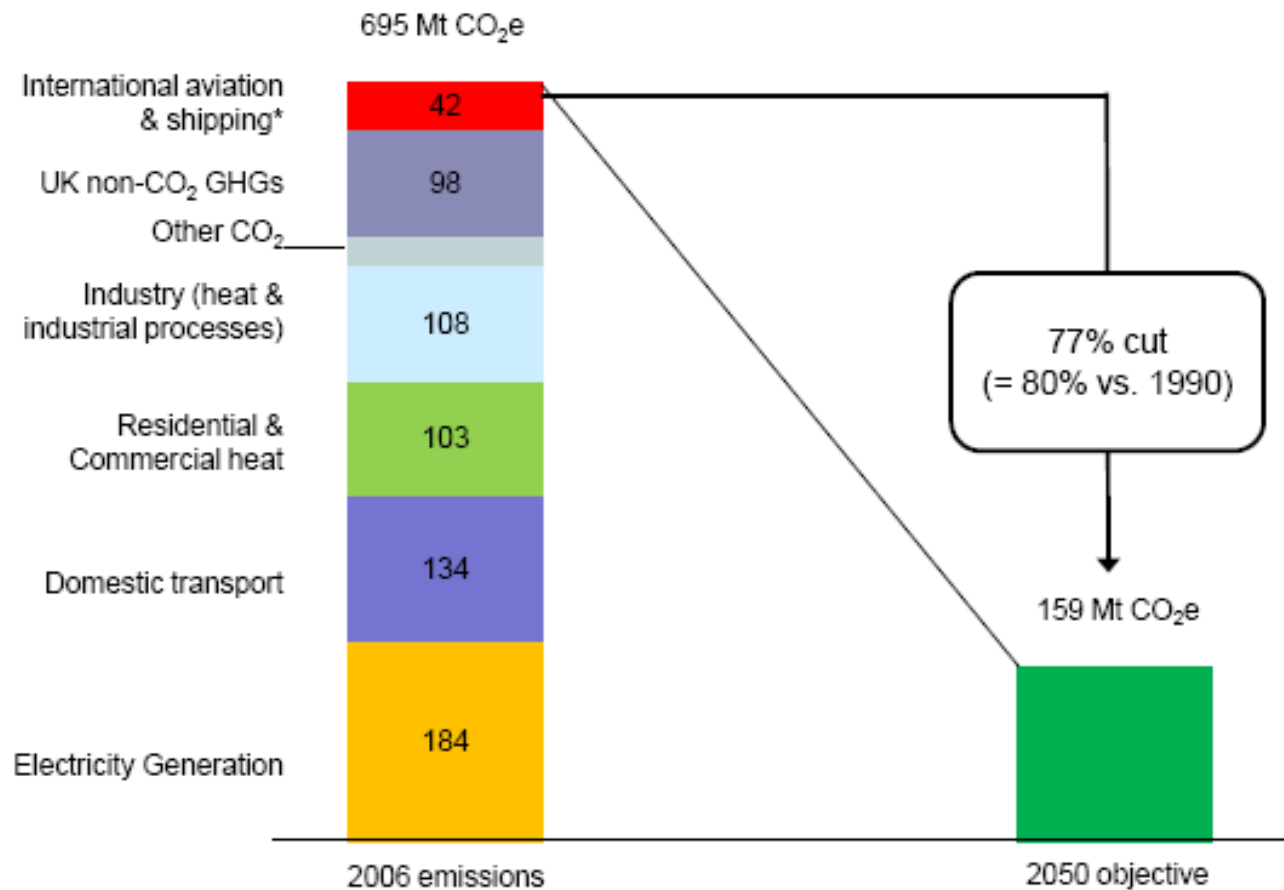


Key elements of the Climate Change Act 2008



Ambitious targets to reduce emissions	<ul style="list-style-type: none">• -34% by 2020• -80% by 2050 relative to 1990 levels
Binding carbon budgets	<ul style="list-style-type: none">• Five-year carbon budgets• Three budget periods ahead• Set trajectory towards 2050 target
A clear accountability framework	<ul style="list-style-type: none">• Publish policies for meeting the carbon budgets• The independent Committee on Climate Change advises on budgets and actions• Annual progress reports to parliament by CCC.

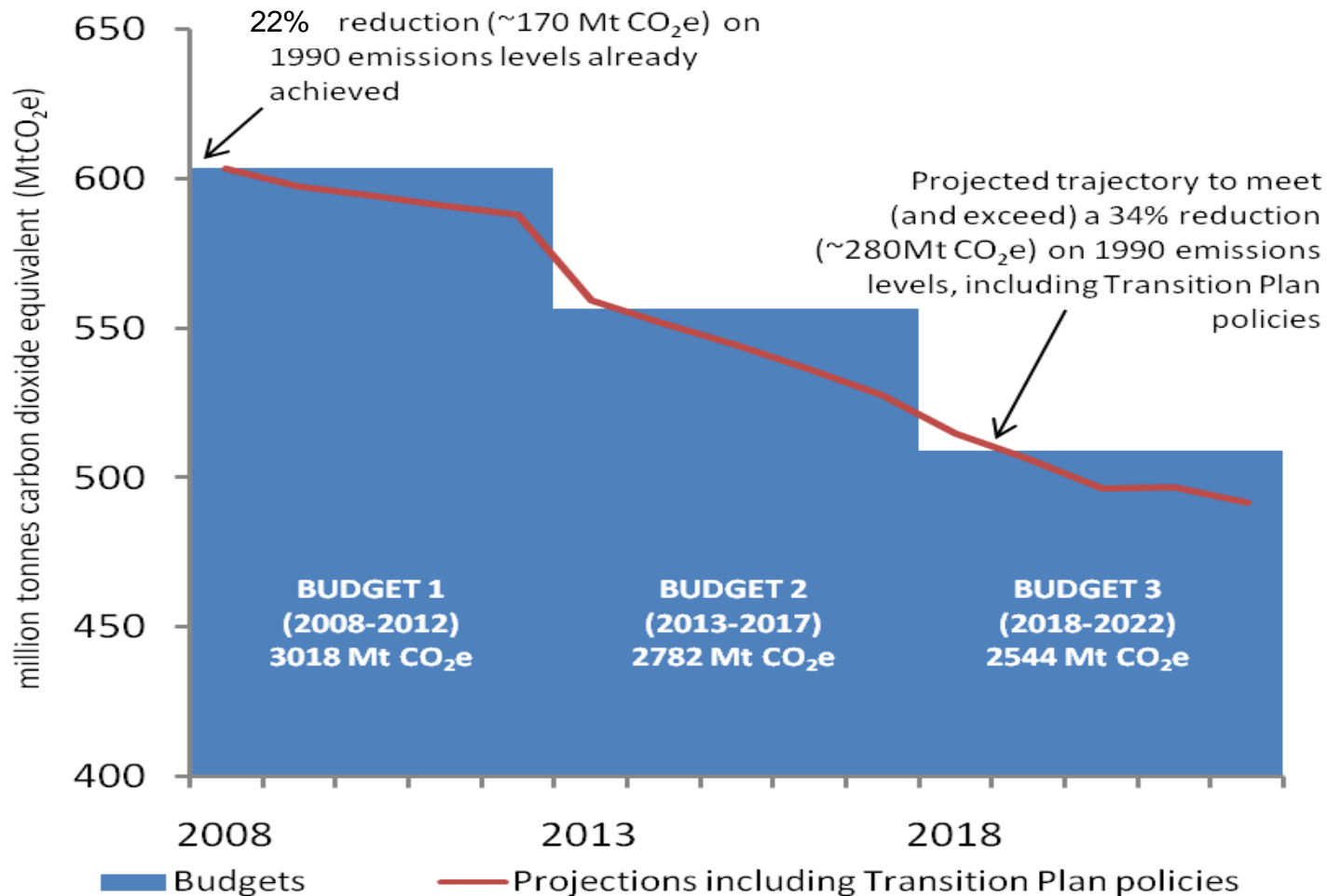
Delivering this level of ambition will be a huge challenge...



* bunker fuels basis

Carbon budgets give us the mechanism to manage our response

The UK's first three carbon budgets set in law May 2009 following Parliamentary approval



CCC's second annual progress report June 2010



- Emissions reductions in 2009 largely due to recession
- Should aim to outperform first budget and not bank to second budget

- Step change still needed in pace of emissions reductions
- Limited progress on measures
- Some progress on policies but further action required

Incentives for investment in **low carbon power**:

Electricity market reform
Carbon price floor
Emissions Performance Standard

Delivery mechanisms and incentives to improve **energy efficiency of buildings**

New policies for the **agriculture** sector

Encouraging a move to more **carbon-efficient cars**, including electric cars

Our policy objectives – 'Annual Energy Statement'



- Reduce energy use by households and businesses – 'Green Deal'
- Deliver secure energy on the way to a low carbon future
- Drive ambitious action on climate change at home and abroad
- Manage our energy legacy responsibly and cost effectively

Stimulating low carbon investment



- **Electricity Market Reform** – consultation this autumn, followed by a White Paper in spring
- **Carbon Floor Price/ Support** – proposals to be published in the autumn to reform the climate change levy
- Proposals on the establishment of a **Green Investment Bank** will be published this autumn

Greener Living and individual behaviour change



- Tackling the barriers to investment in energy efficiency by launching the “**Green Deal**”
- Rolling out “**smart meters**”
- Introduction of a **10% reduction target** to be achieved within 12 months for Government departments

Publication of the 2050 pathways analysis in July



- **Energy demand** needs to be significantly reduced
- Substantial level of **electrification** of heating, transport and industry needed
- **Electricity supply** may need to double and be decarbonised
- Sustainable **bioenergy** vital element
- On going need for **fossil fuels** – CCS?
- Need to tackle emissions from agriculture, waste, industrial processes and international transport.

2050 Pathways Calculator

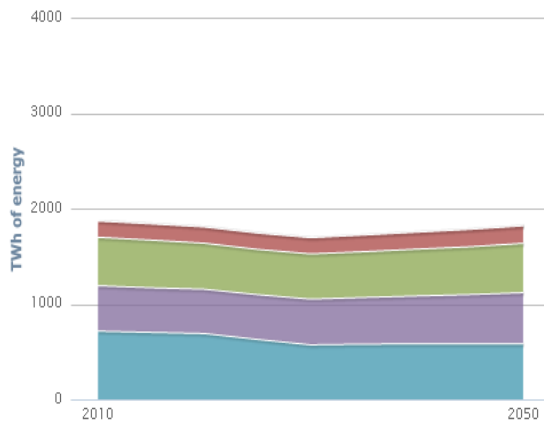


HELP r a b c d e f

This tool uses the assumptions in the DECC 2050 Calculator-1.0.7-20July2010. Help us to improve it.

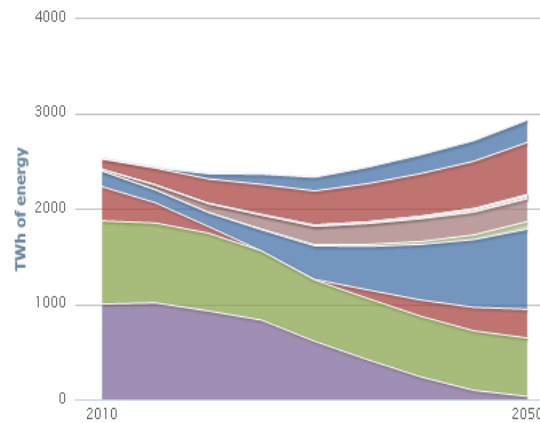
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UK demand for energy

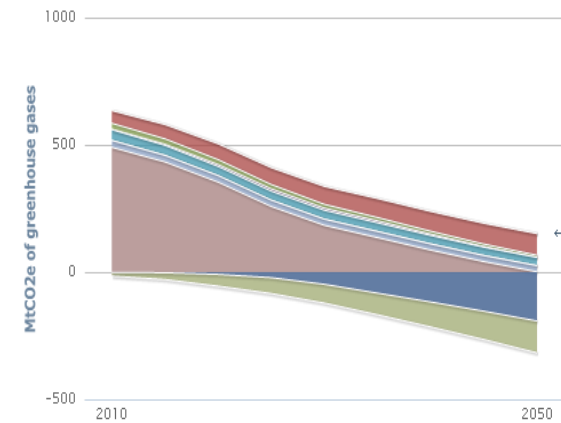


UK supply of primary energy

Switch to chart showing just electricity



Net UK Greenhouse gas emissions



Demand measures:	1	2	3	4
Average temperature of homes	1	2	3	4
Home insulation	1	2	3	4
Home heating electrification	A	B	C	D
Home heating that isn't electric	A	B	C	D
Commercial heat / cooling demand	1	2	3	4
Commercial heating electrification	A	B	C	D
Commercial heating that isn't electric	A	B	C	D
Home light & appliance demand	1	2	3	4
Home light & appliance technology	A	B	C	D
Commercial light & appliance demand	1	2	3	4
Commercial light & appliance technology	A	B	C	D
Industrial processes	A	B	C	D
Individual transport behaviour	1	2	3	4
Electrification of individual transport	1	2	3	4
Domestic freight	1	2	3	4
International aviation	1	2	3	4
International shipping	1	2	3	4

Supply measures:	1	2	3	4
Combustion + CCS	1	2	3	4
Nuclear power	1	2	3	4
Onshore wind	1	2	3	4
Offshore wind	1	2	3	4
Hydroelectric	1	2	3	4
Marine	1	2	3	4
Geothermal	1	2	3	4
Distributed solar PV	1	2	3	4
Distributed solar thermal	1	2	3	4
Micro wind	1	2	3	4
The type of fuels from biomass	A	B	C	D
Quantity of bioenergy imported	1	2	3	4
The way we use our land	A	B	C	D
Waste arising	A	B	C	D
Marine algae	1	2	3	4
Electricity imports / exports	1	2	3	4
Storage, demand shifting, backup	1	2	3	4

Geosequestration	1	2	3	4
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Some of the consequences of this pathway

2020 emissions	33% below 1990 levels
2030 emissions	55% below 1990 levels
2050 emissions	80% below 1990 levels
2020 electricity	328 gCO ₂ M/Wh
2030 electricity	148 gCO ₂ M/Wh
2050 electricity	28 gCO ₂ M/Wh
2020 energy imports	35% of primary energy
2050 energy imports	25% of primary energy
2050 5 still winter days and	100% of electricity reserves used
Difficulty	2 GW of standby generation required
	74 Lowest: 35. Highest: 140

Key milestones



Dec 2010 - 4th carbon budget (2023-2027) advice from CCC

June 2011 - UK must set 4th carbon budget in law

June 2011 – CCC 3rd annual report on progress in meeting carbon budgets

More on Energy market reform

Conclusions

- The UK has exceeded emission reductions required under the KP
- The UK has put in place a legal framework for long term reductions in GHGs
- The UK is committed to reduce emissions by at least 34% by 2020
- The UK is working on the details of how to reduce emissions by 80% by 2050