

Climate Change Mitigation

Parliamentary Event

Lord Adair Turner
15 February 2011

www.theccc.org.uk

- 1. The Climate Change Act & the CCC's role**
- 2. Climate science**
- 3. The 4th Carbon Budget (2023-2027)**
 - The 2050 target
 - An indicative 2030 target
 - Budget proposals
 - Costs and Investment requirements
- 4. Upcoming Committee work**

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Climate Change Act (2008) set up the CCC as an independent advisory body to Parliament & Govt.



CCC was set up under the Climate Change Act (2008) which identifies its role as:

- Advising on the 2050 target:
 - 60%, 80%, or other
- Level of 5 yearly carbon budgets:
 - 2008-12, 2013-17, 2018-22
 - Ceilings on emissions
- How much buy-in of credits allowed
- Inclusion of International Aviation & Shipping
- CO₂ budgets or all GHGs
- Fourth carbon budget (2023-27) and indicative 2030 target

Identify implications of proposed budgets for:

- Competitiveness
- Security of supply
- Fuel poverty
- Fiscal revenues
- Scotland, Wales and N. Ireland

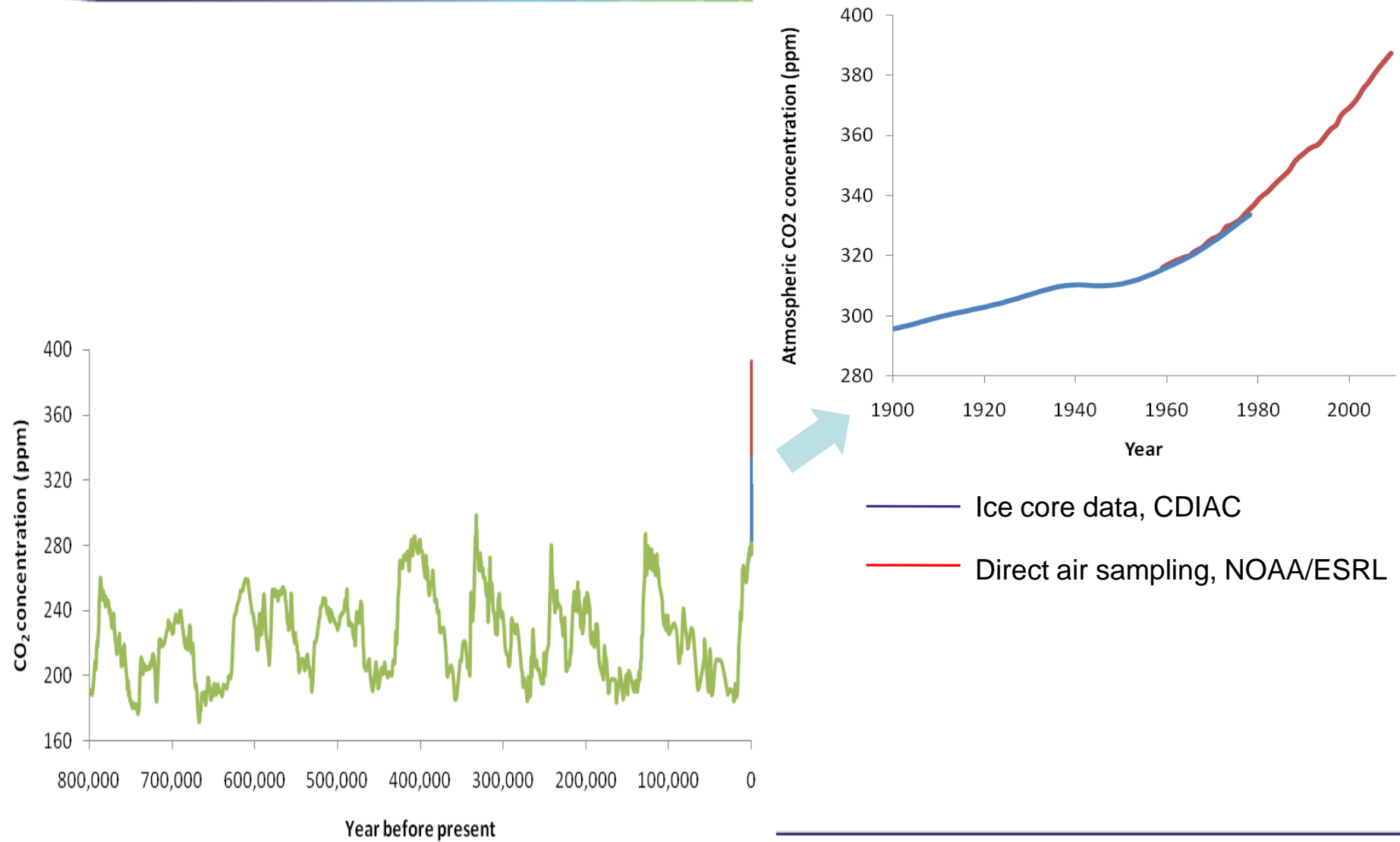
Annual reports to Parliament on:

- Progress against budgets
- Respond to other requests e.g. Reviews of aviation, low carbon innovation & bioenergy

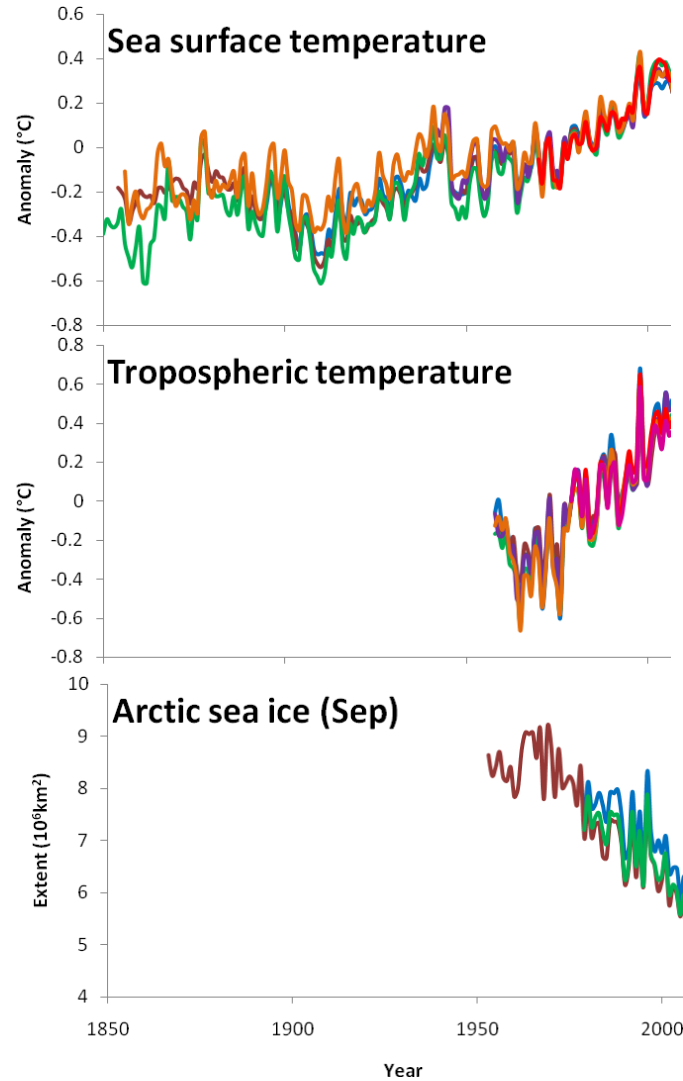
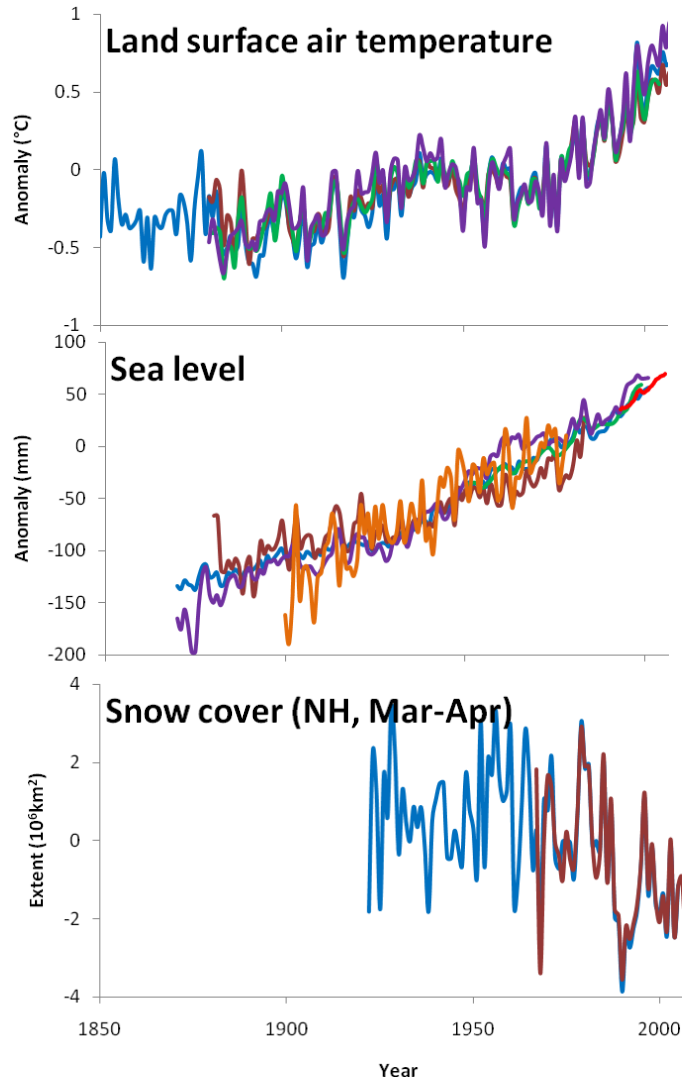
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- Global climate change is already happening
- This is largely a result of human activity
- Without action, there is a high risk of warming well beyond 2 degrees
- Which would have significant consequences for human welfare and ecological systems

Emissions have increased dramatically over the last century



The world is warming in response

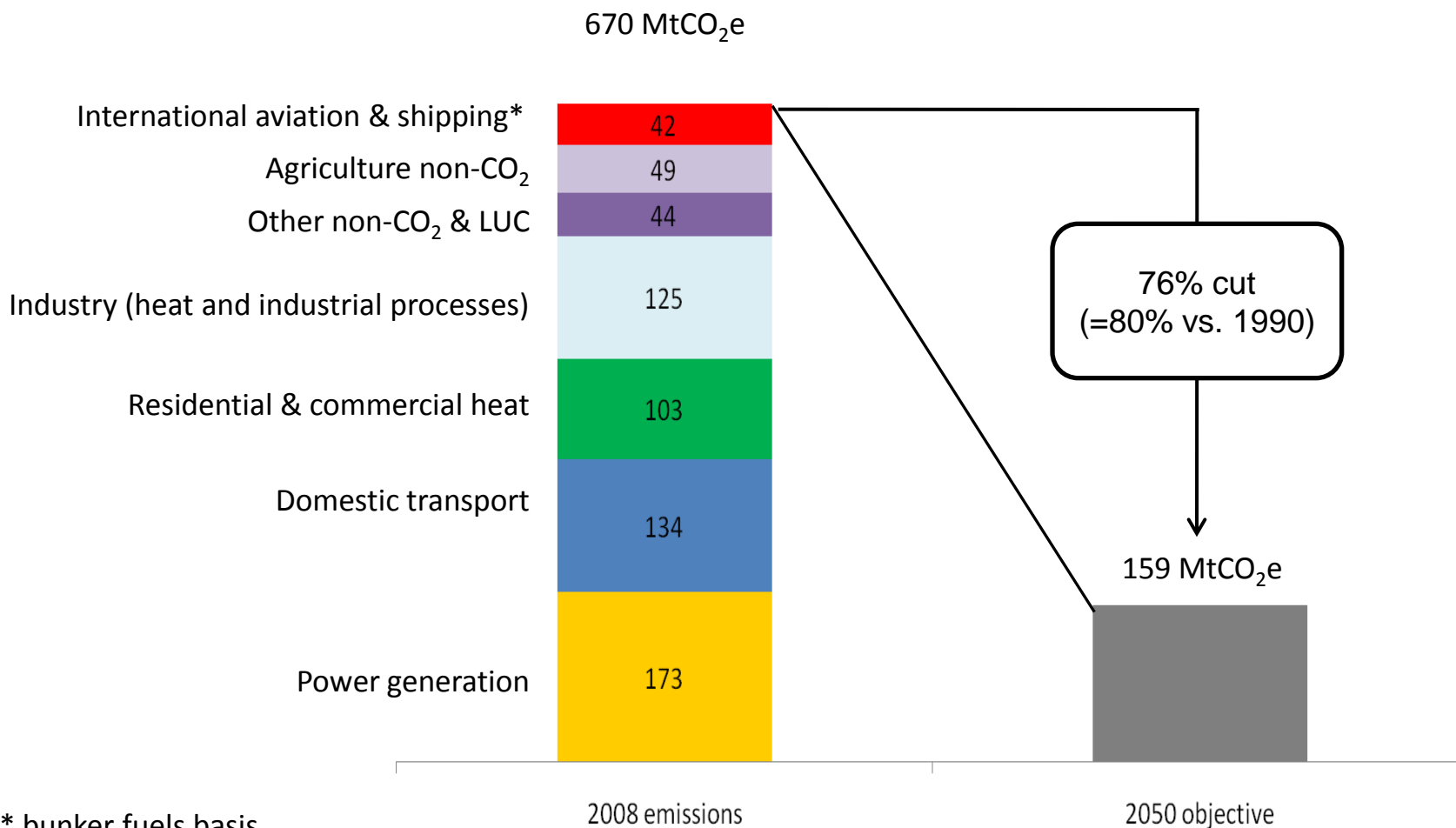


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(2010) STATE OF
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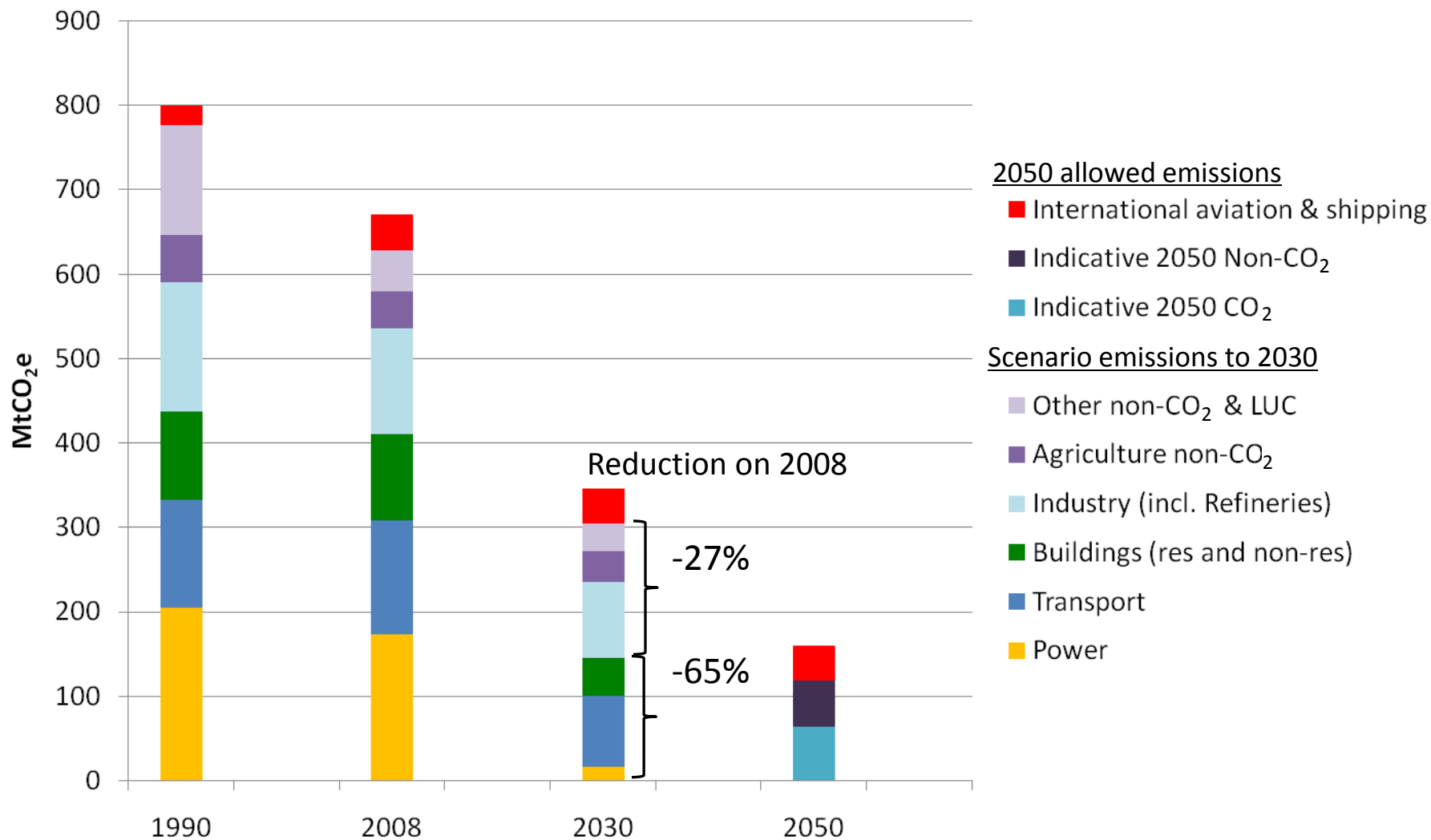
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- ④ Develop an indicative 2030 target
 - Minimum ambition consistent with 2050 target given capital stock turnover, new technology development, pace of supply chain expansion and changing consumer preferences
 - Cost effective abatement given costs and carbon price projections
 - Contribution to global cumulative budget
- ④ Fourth budget consistent with 2030 target
- ④ Implications for first three budgets

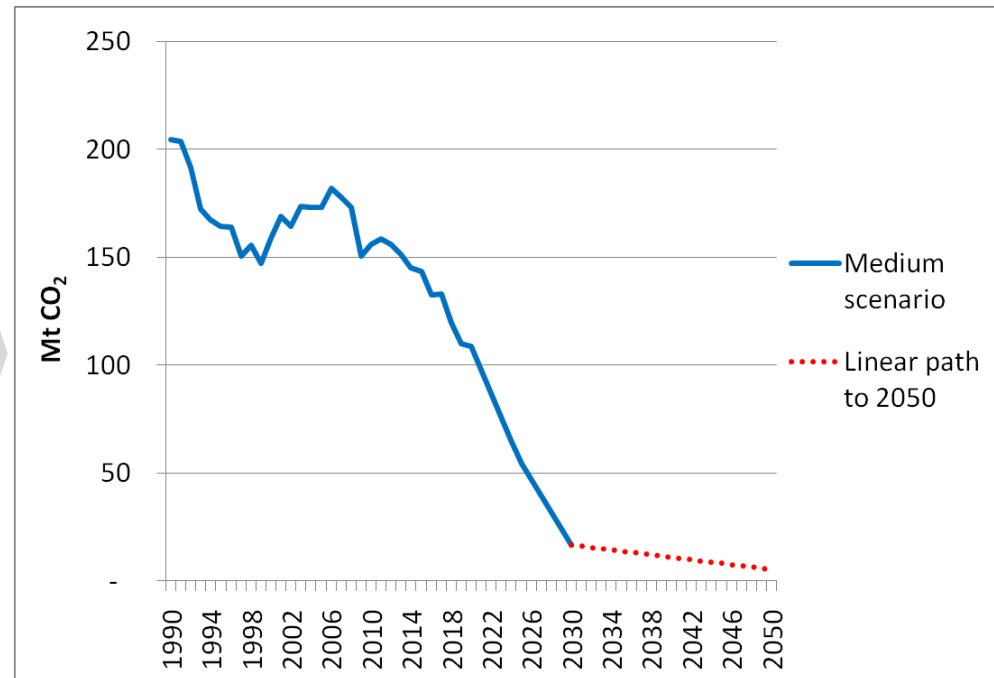
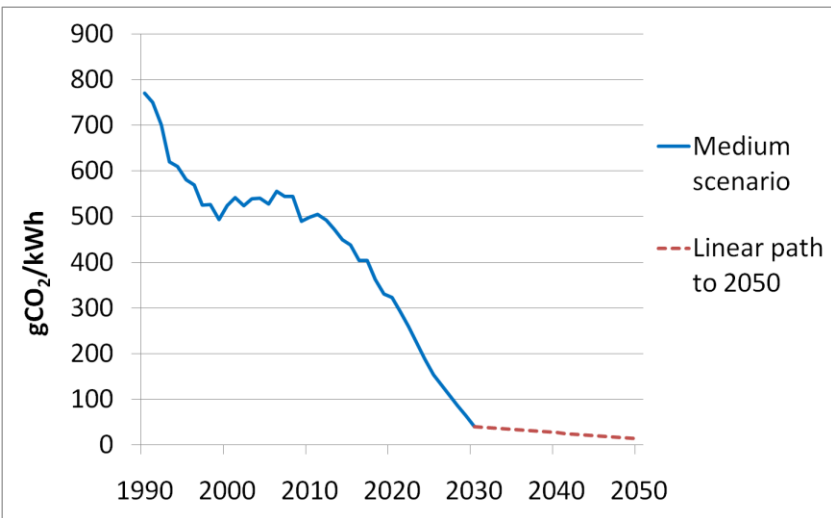
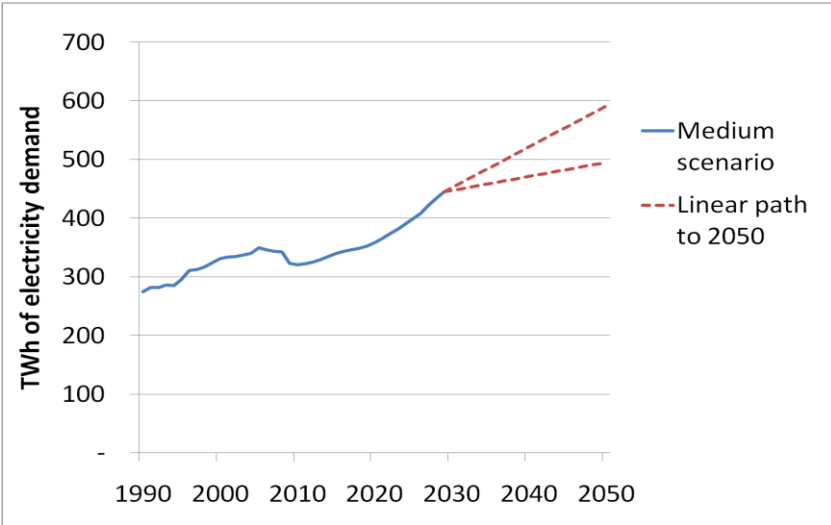
The UK's 2050 target



We have developed a feasible and cost-effective planning scenario for 2030 that is compatible with the 2050 target



Power sector: Emissions intensity will have to decrease, whilst demand is likely to increase...

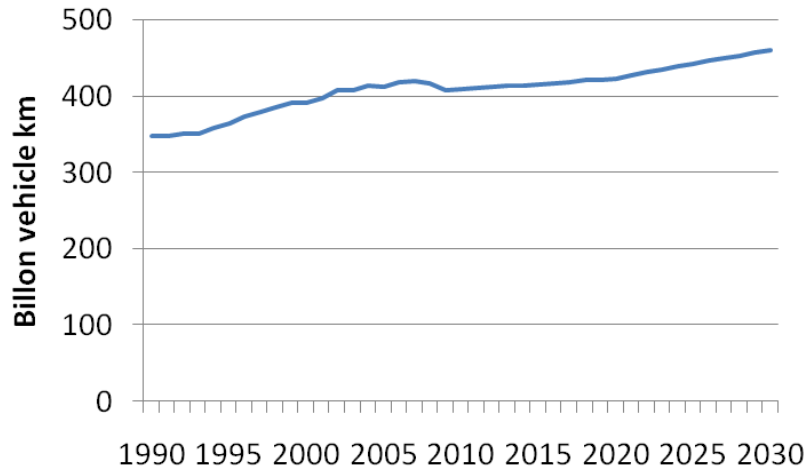


Source for 2050: range of MARKAL model runs for CCC (2010)

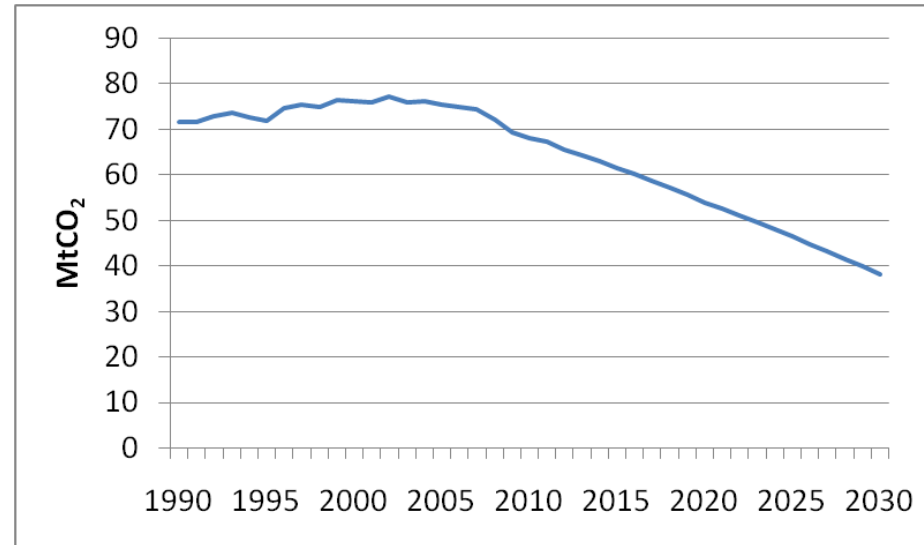
- ⦿ Options for decarbonising power sector to 2030:
 - Nuclear
 - Renewables (wind, marine)
 - CCS (coal and gas)
- ⦿ Current electricity market arrangements unlikely to deliver required investment
- ⦿ New arrangements based on long term contracts would provide most confidence that investments will be forthcoming at least cost to the consumer

Transport: Emissions reduction will come from reducing g/km, while km likely to increase

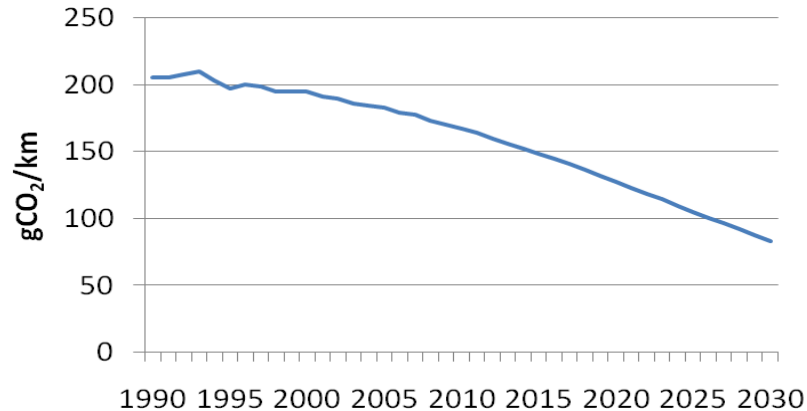
Car km



Car emissions



Car g / km



Vans: 17% emissions reduction to 2030

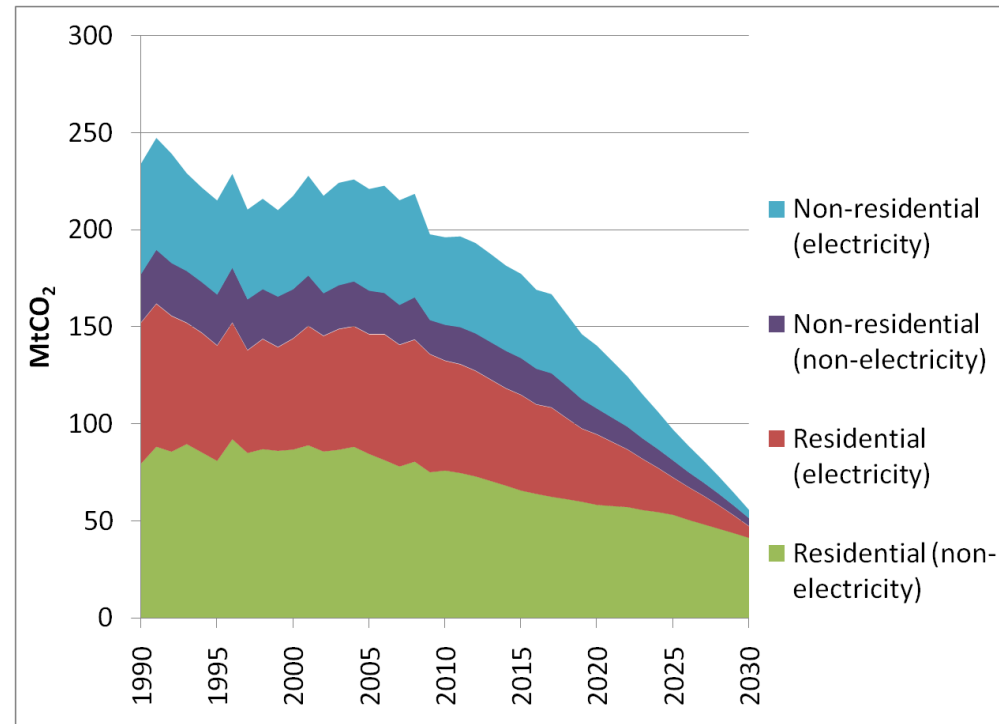
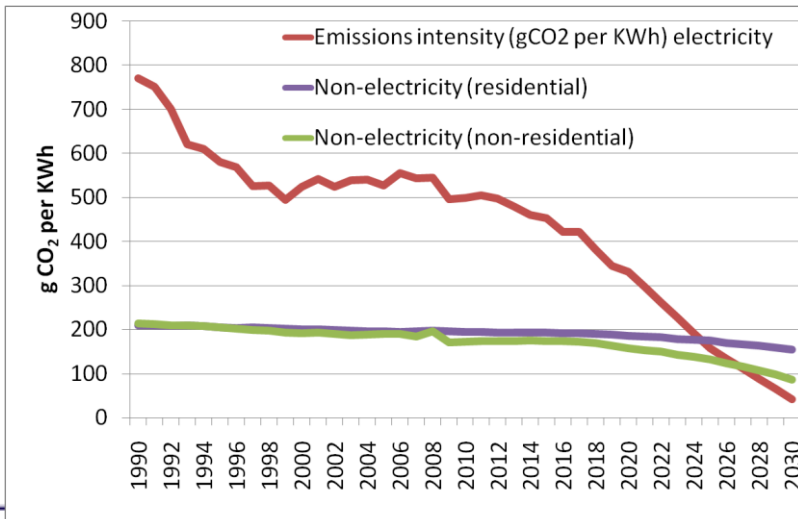
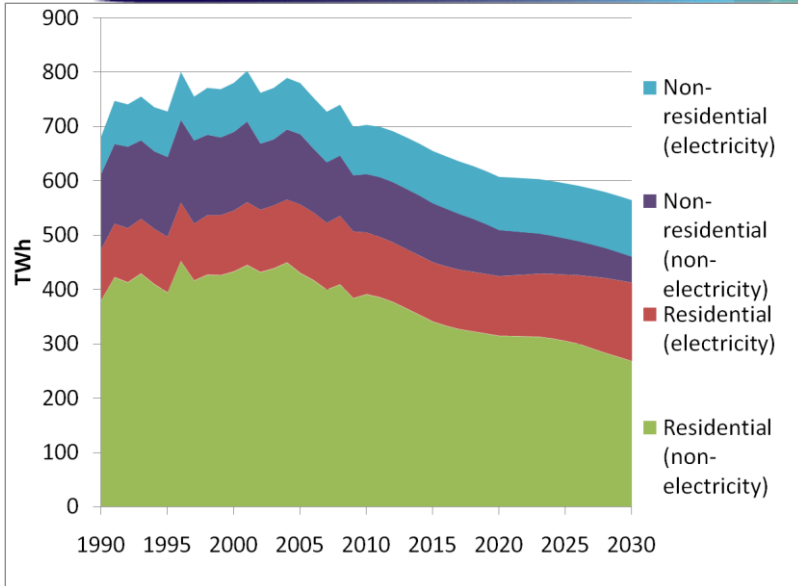
HGVs: 33% emissions reduction to 2030

Transport: Low-carbon vehicles need to be 60% of new sales in 2030

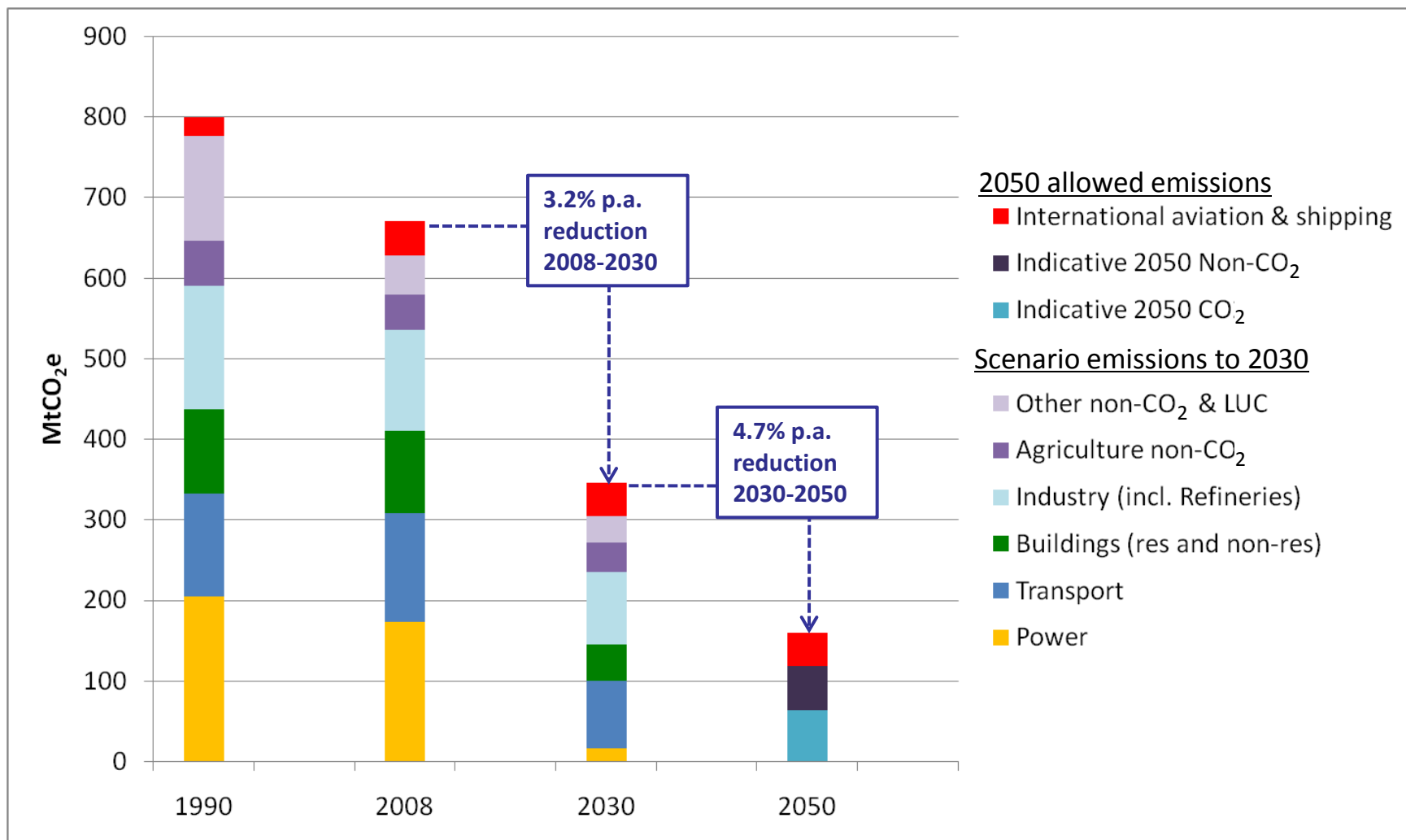


	<u>2030</u>			
	<u>Share of new car sales</u>	<u>Share of miles</u>	<u>Emissions Intensity</u>	
Conventional cars	40% →	70% ✘	80-125 g/km	<p><u>Average emissions intensity in 2030</u></p> <p>New cars purchased: 52g/km (versus 150g/km today)</p> <p>All cars on road: 81 g/km (versus 173 g/km today)</p>
Plug-in hybrids	40% →	20% ✘	50 g/km	
Pure electric vehicles	20% →	10% ✘	0 g/km	

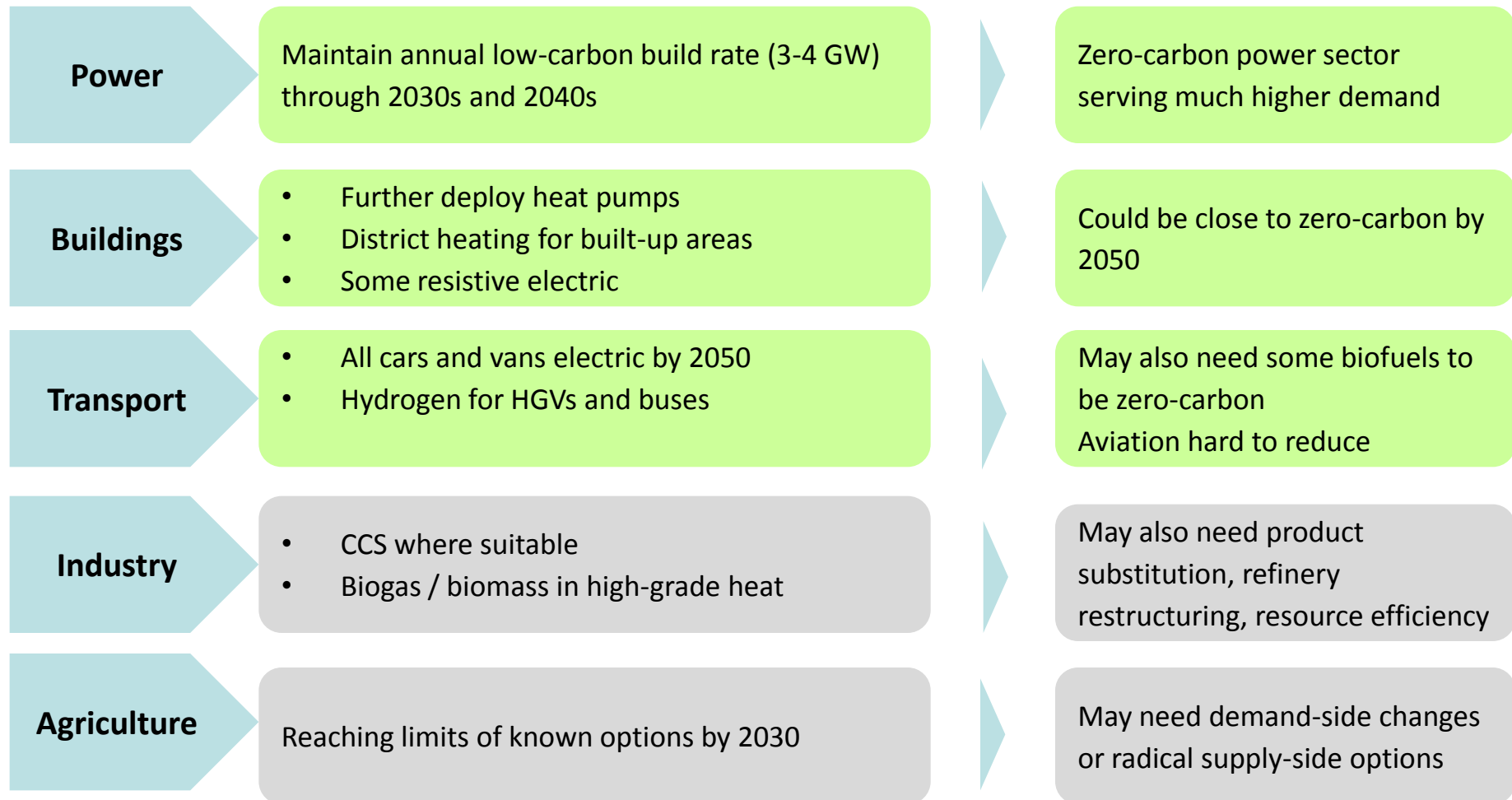
Buildings: Emissions reduction to 2030 from improved efficiency and shift to use of (low-carbon) electricity



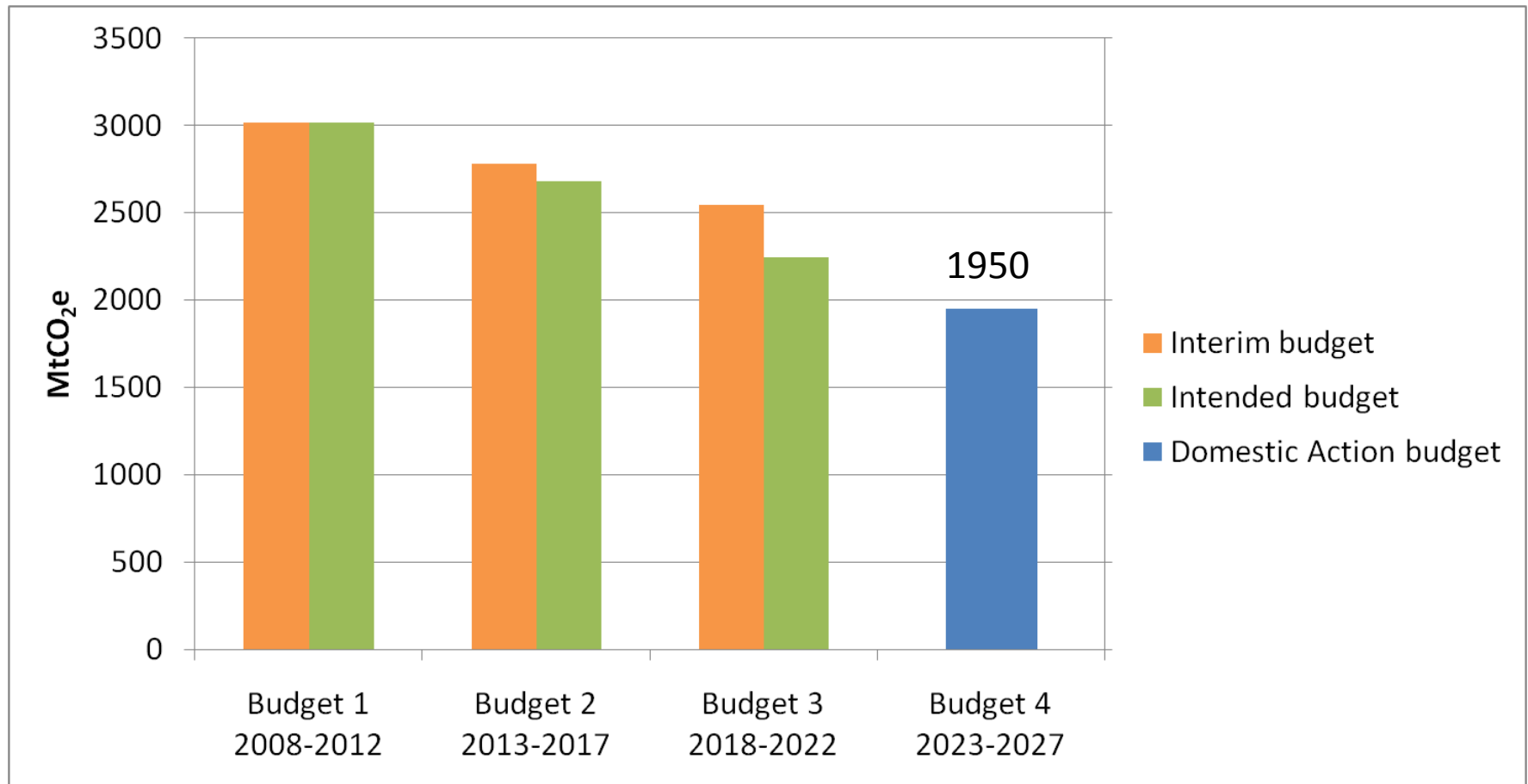
Emissions reductions will have to accelerate again from 2030 to 2050



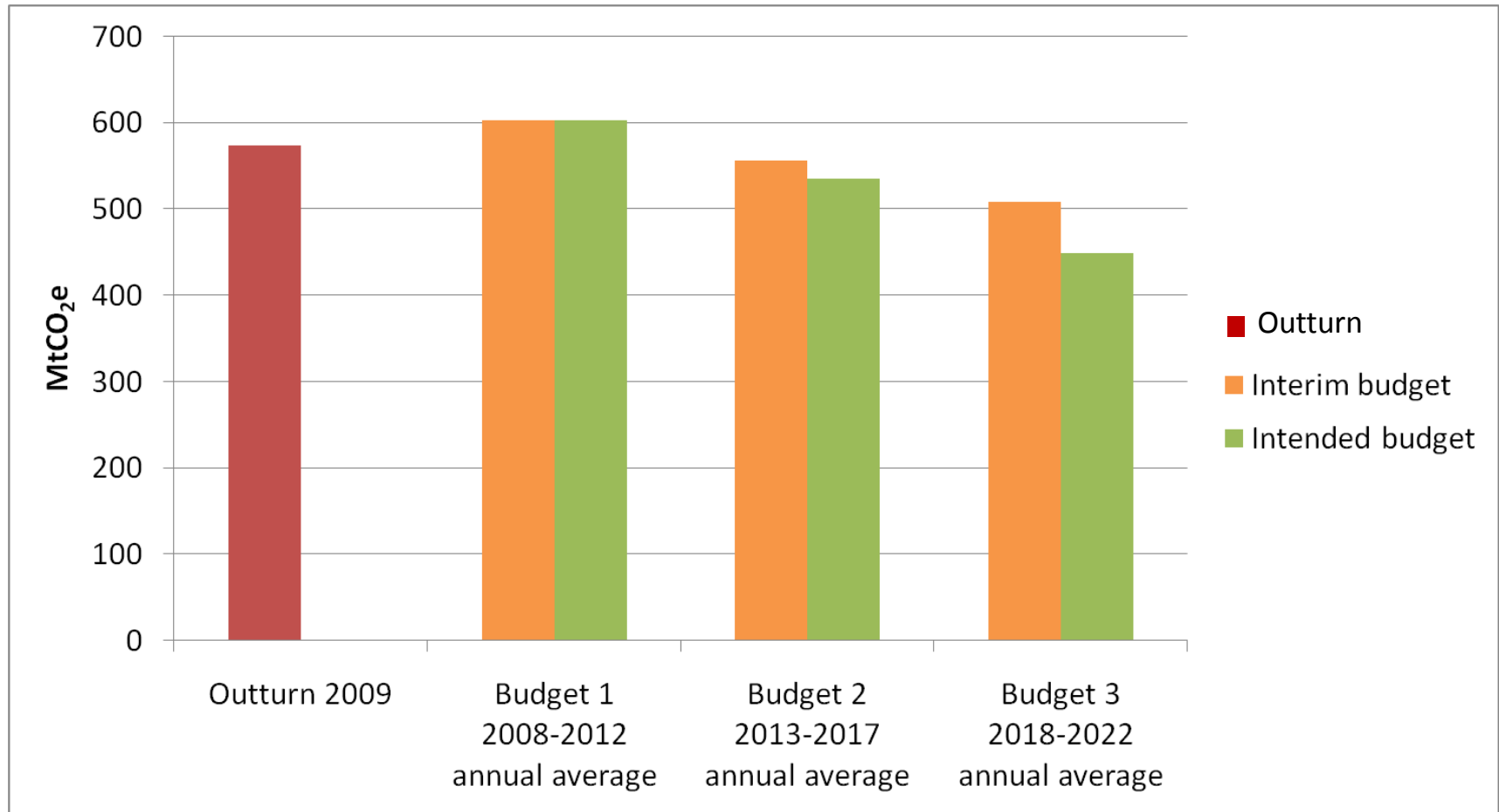
2030 to 2050 – detailed assessment of opportunities suggests ‘back-ending’ is feasible



Interim, Intended and Domestic Action budgets



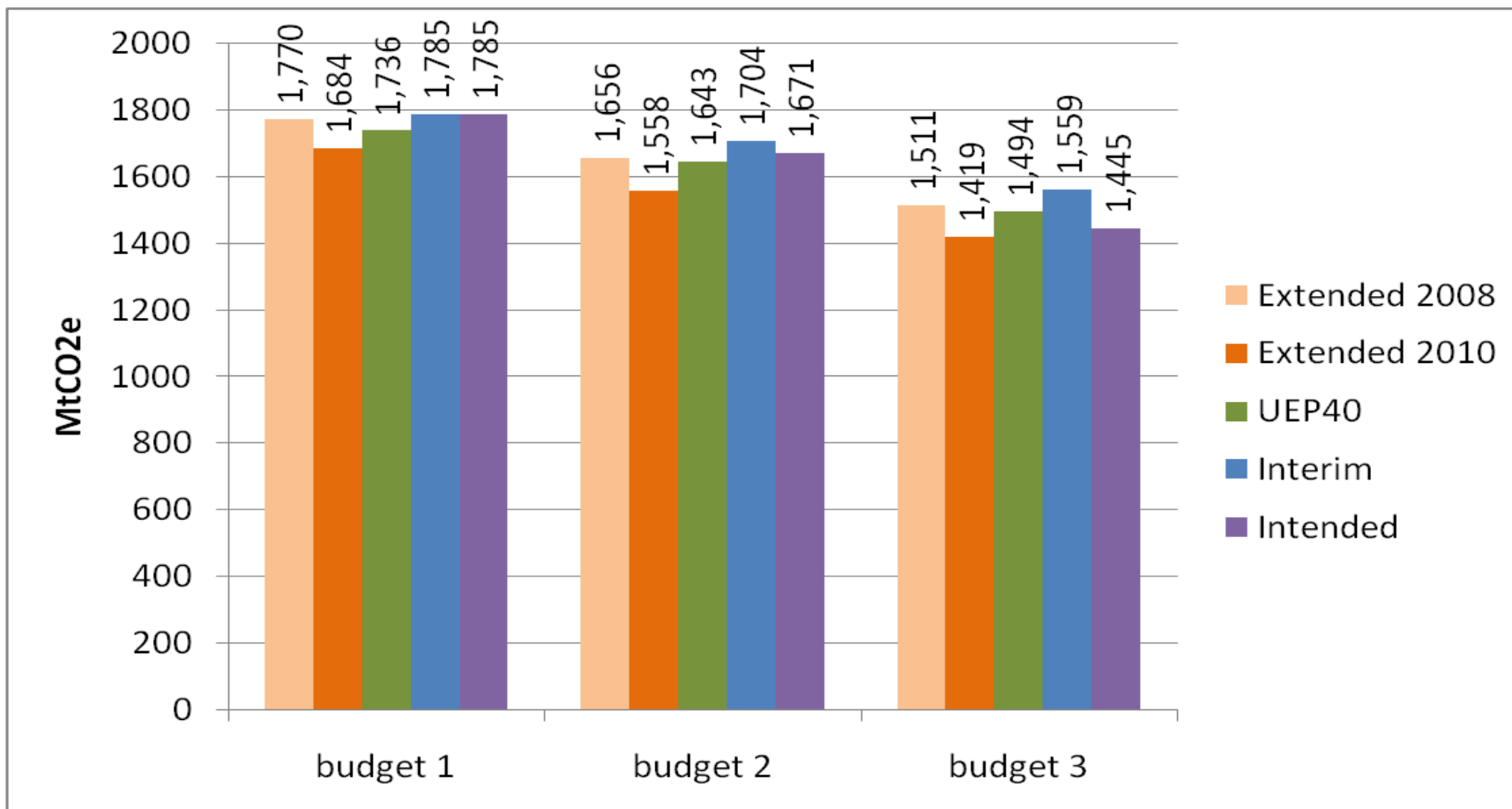
2009 emissions are already below required levels for the first budget



Emissions fell by 8.7% in 2009 during the recession

Suggesting that the first three Intended Interim and Intended budgets could be achieved through domestic action

Non-traded sector: projections versus budgets



- ◉ **Fourth budget and indicative 2030 target can be met at under 1% of GDP.**
- ◉ **Main investments are low-carbon capacity in power**
 - Investment in generation £10 billion per annum
 - Compared to £2 billion in power / £200 billion economy-wide in recent years.
- ◉ **Potential implications for the fiscal balance, fuel poverty, and competitiveness are foreseeable and manageable given appropriate policy response.**
- ◉ **Potential benefits for security of supply, from reduced reliance on volatile energy commodities.**

Summary of recommendations

- The UK's **2050 target** of an 80% emissions reduction remains appropriate. Implies 85% reduction excluding international aviation and shipping.
- By **2030** the UK should aim for a 60% reduction on 1990 excluding international aviation and shipping = a 46% reduction from today, leaving a 63% reduction to 2050 excluding international aviation and shipping.
- Legislate the **Domestic Action** budget (1950 MtCO₂e) now
 - Aim to deliver this through domestic abatement (without credits)
 - Be willing to go further (possibly with credits) – indicative minimum **Global Offer** (1800 MtCO₂e).
- Move to the **Intended budget** for the non-traded sector for 2nd & 3rd budgets.
- **Policy implications:**
 - Electricity market reform & carbon price underpin
 - Support development of new technologies & markets
 - Make the step change to deliver the first three budgets.

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Upcoming Committee work in 2011



- ◉ Review of Renewable Energy Ambition – published 9 May 2011
- ◉ 3rd Annual Progress report to Parliament – by 30 June 2011
- ◉ Adaptation Sub-Committee – 2nd Progress report – by 10 July 2011
- ◉ Annual Report & Accounts – 15 July 2011
- ◉ Review of International Shipping Emissions – end October 2011
- ◉ Review of Sustainable Bioenergy – 30 November 2011