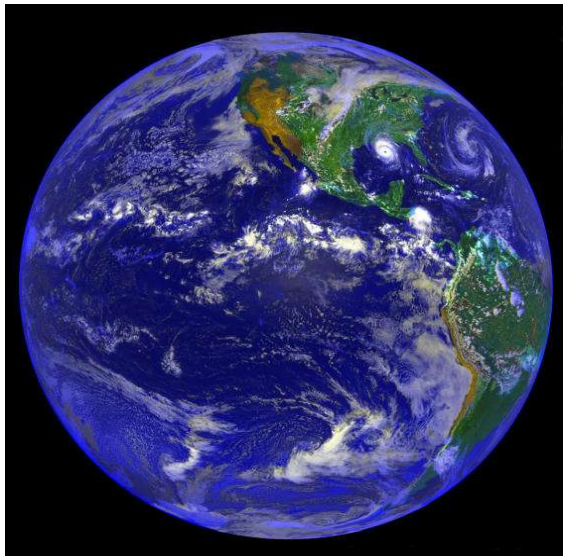
Evaluating Carbon Mitigation Policies for Transport: A UK Perspective



Alon Carmel,
Senior Economic Adviser, UK Office of Climate Change (OCC)

Presentation Overview

Introduction and definitions

The Big Picture – Transport and Climate Change

Energy White Paper 2007

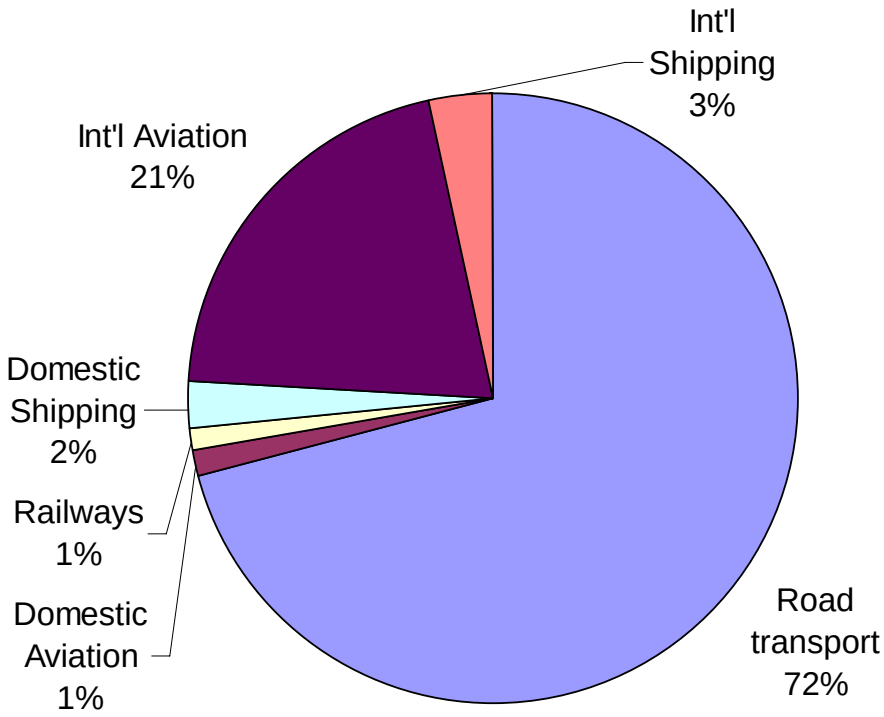
- Stern Review policy framework
- Specific policies

Evaluation / Appraisal in the Future

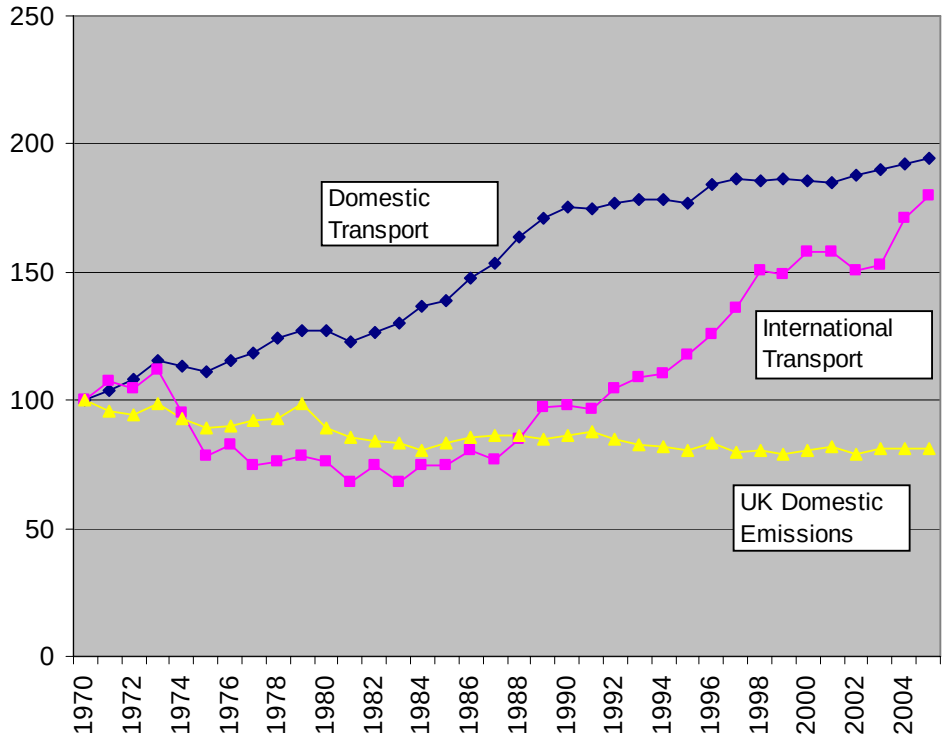
- Climate Change Bill
- Shadow Price of Carbon

Transport = around 25% UK emissions

2005: 46.2 MtC



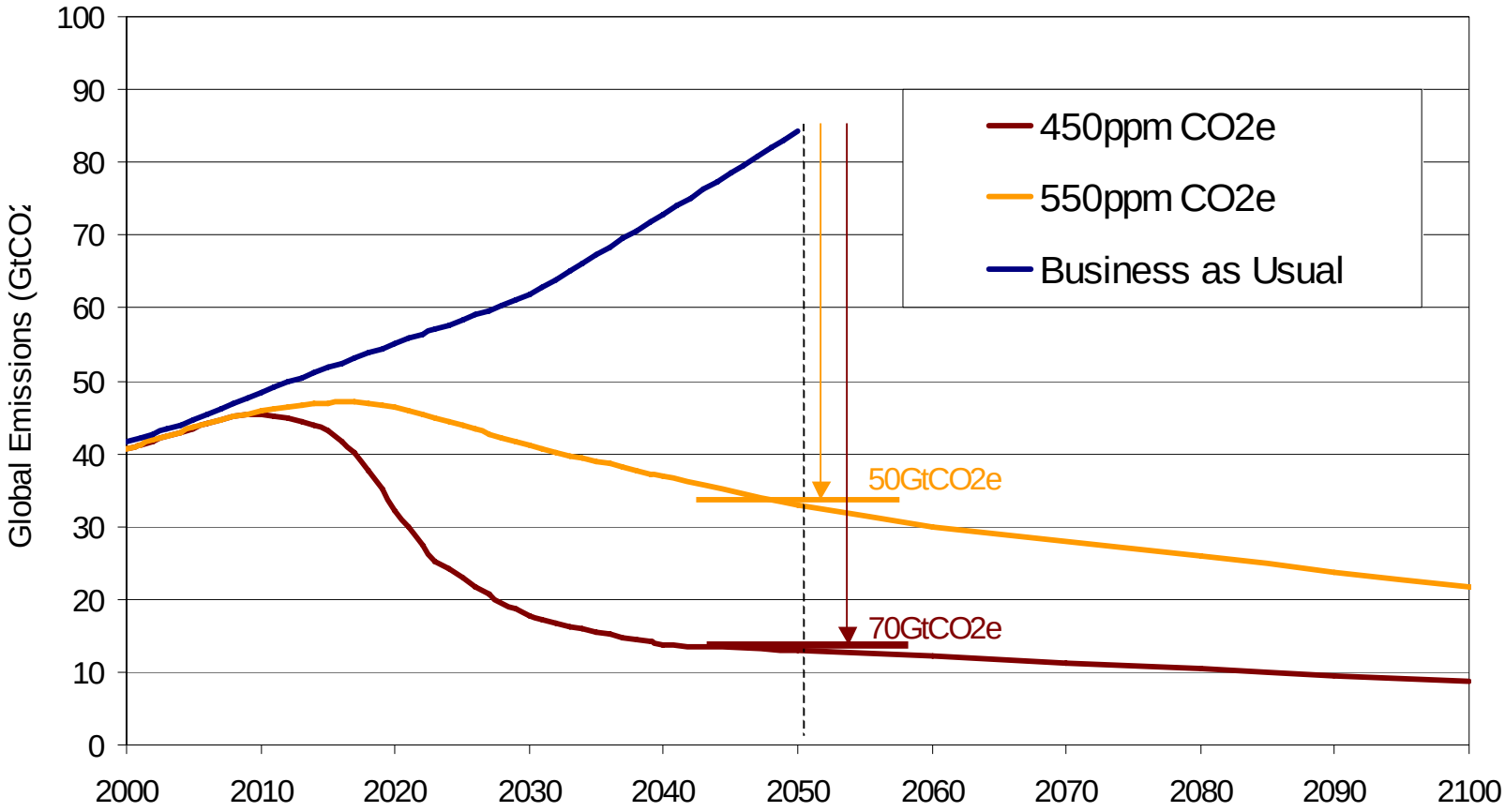
1970-2005: CO2 Emissions



Stern Review Summary

- Business as usual emissions unsustainable
- Strong economic case for urgent action
  - Stabilisation at 450-550 ppm CO2e
  - Cost – around 1% of 2050 GDP
- Cost of Inaction – 5-20% GDP
- Action must be international

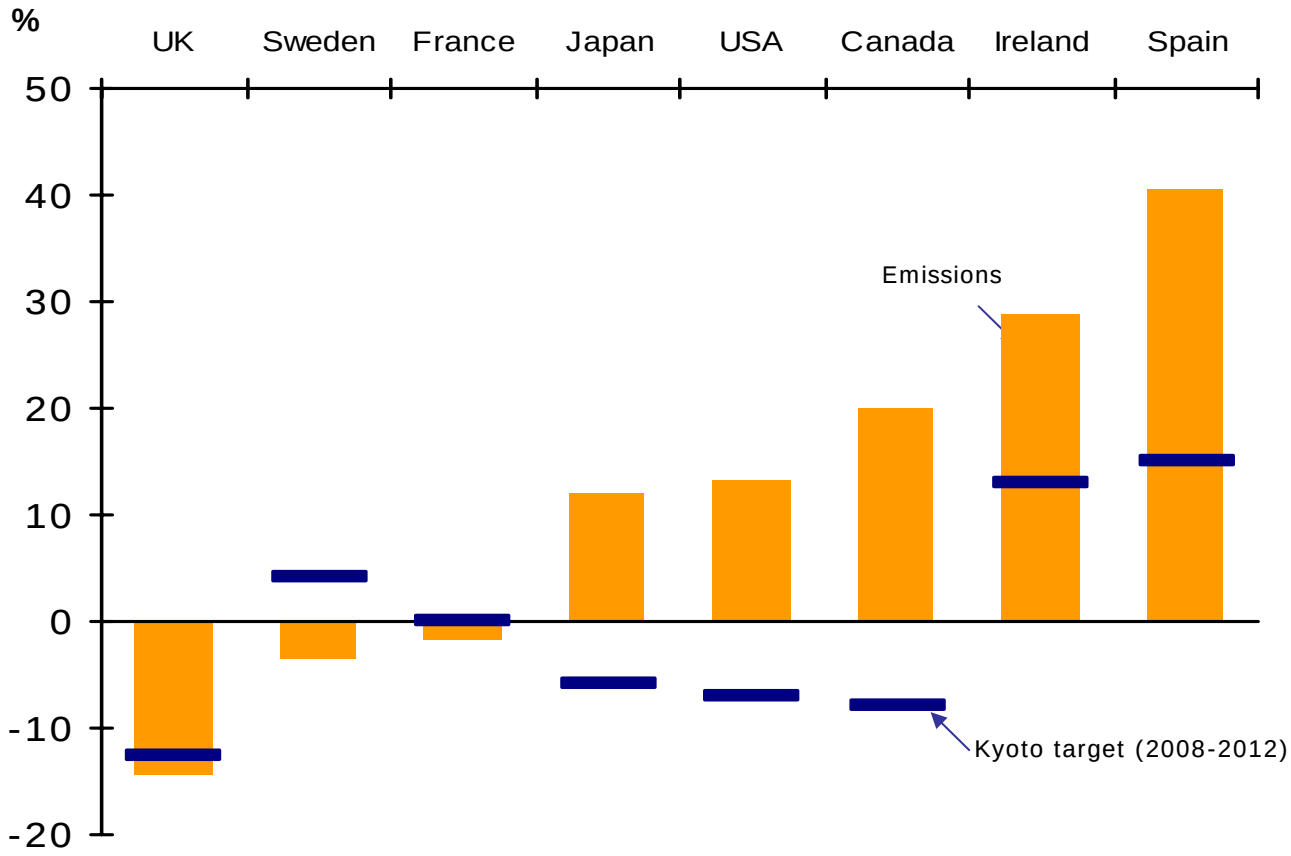
How much do emissions need to fall?



Stern suggests that rich countries should bear more **responsibility** for this, cutting emissions by **at least 60% on 1990 levels by 2050**. This allows modest growth in developing country emissions.

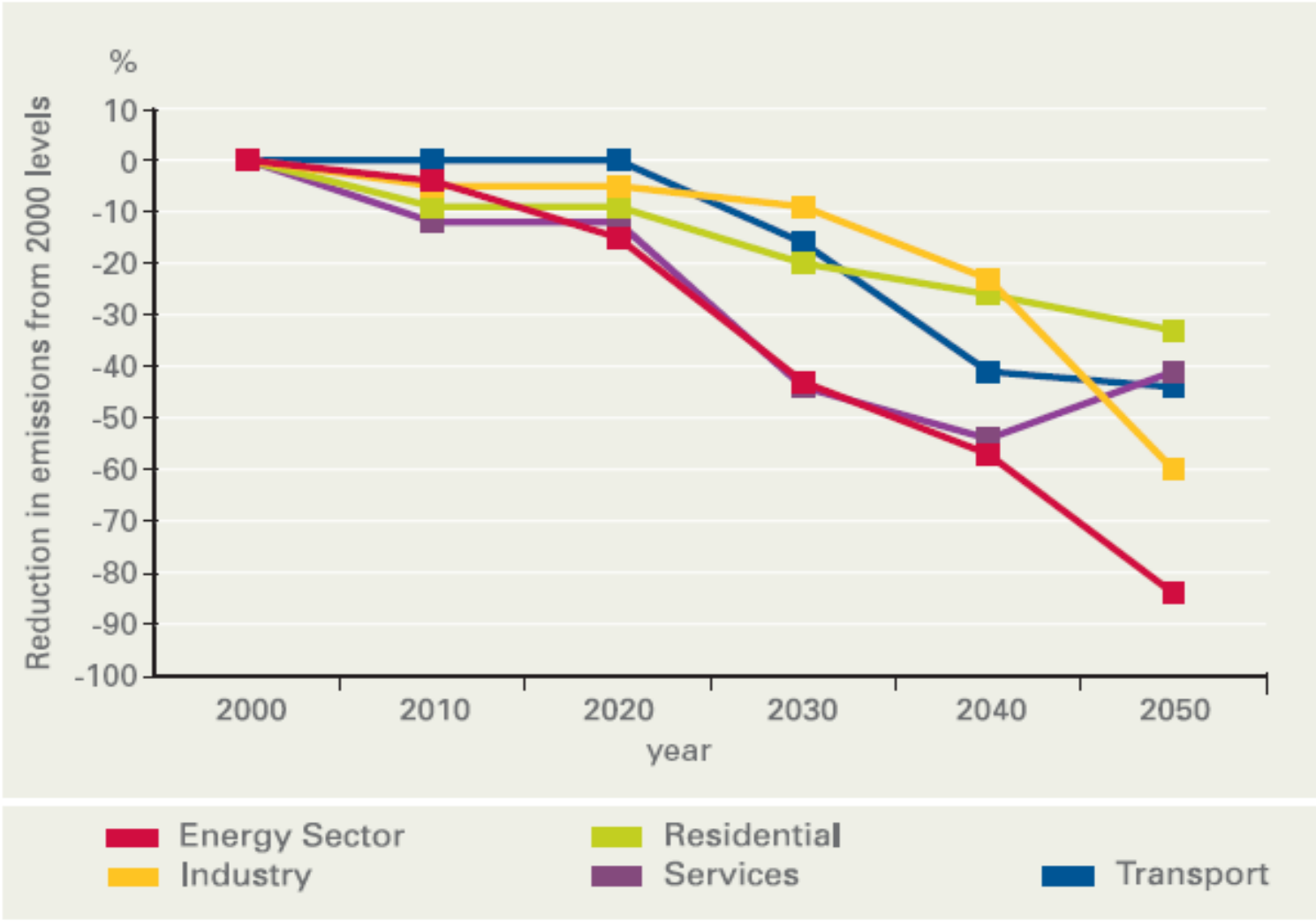
UK on track to hit Kyoto target

Change in GHG emissions 1990-2003



But need significant contribution from Transport

FIGURE 7.1. UK MARKAL MACRO CARBON EMISSIONS REDUCTION BY SECTOR – SCENARIO SHOWING LEAST COST ROUTE TO 60% REDUCTION BY 2050.



Climate Change Bill (Draft) – February 2007

Statutory targets

- 2050 60% reduction
- 2020 26-32% reduction
- 5 year Carbon Budgets – set 3 at a time

Committee on Climate Change

- Independent advice on performance
- Advise on 5 year budgets

Enabling powers

- To introduce traded regulations

Reporting and monitoring

Stern Policy Framework and UK Transport Policies

Carbon pricing

- Tax – e.g. VED (Vehicle Excise Duty)
- Aviation in EU ETS
- **Surface Transport in EU ETS????**
- RTFO (Renewable Transport Fuel Obligation)
- Successor to EU Voluntary Agreements

Technology and Innovation

- Low Carbon Transport Innovation Strategy (LCTIS)
- RTFO – 2nd Gen biofuels
- Successor to EU VAs

Remove barriers to change

- Public transport
- Smarter Choices
- Act On CO2 campaign

How choose the “best” policies?

Policy Review and update processes

- ➔ The Climate Change Programme Review (CCPR) 2006
- ➔ The Energy White Paper 2007
  - Evaluation Synthesis Report

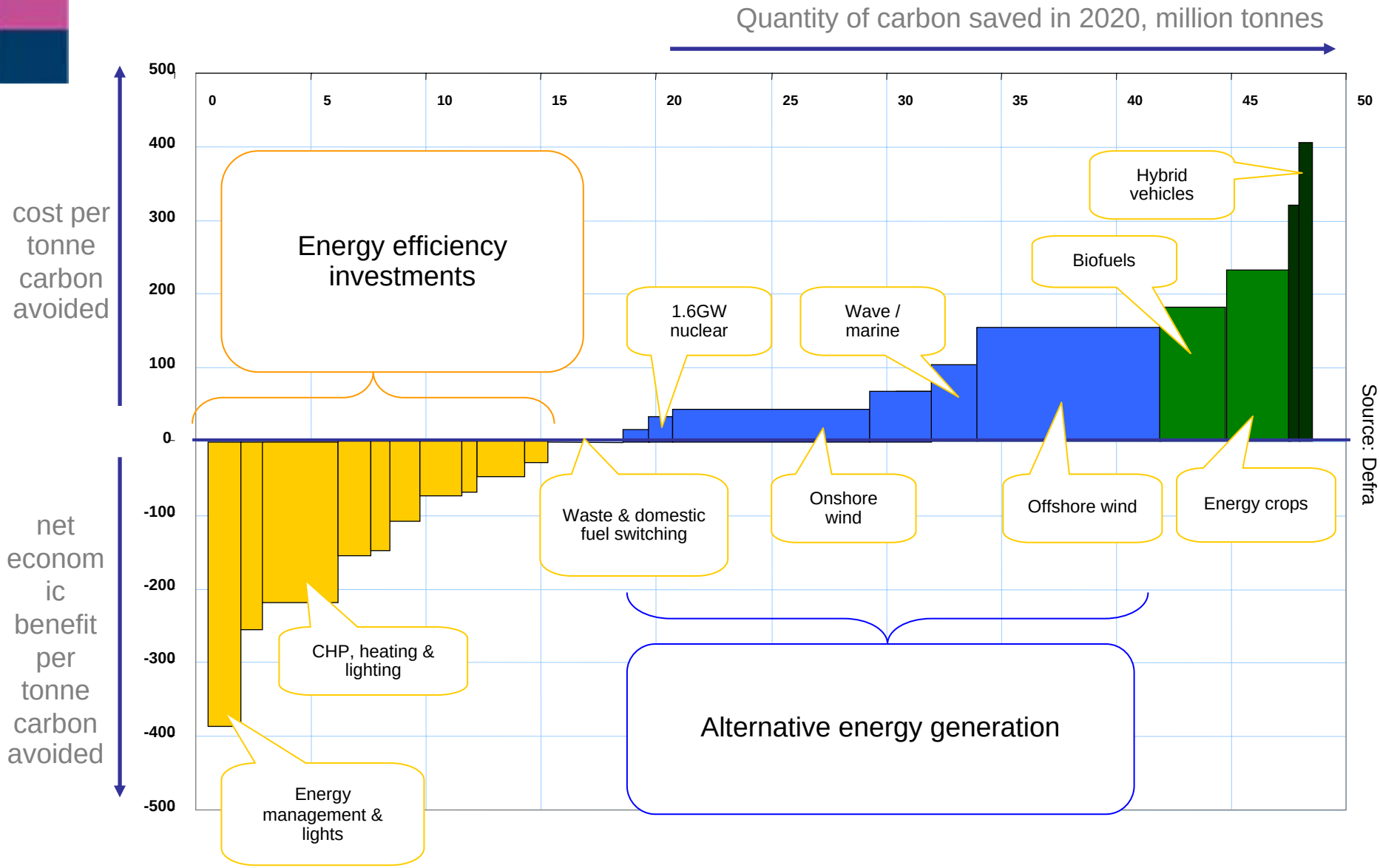
Cost Benefit Analysis (CBA) or Cost-Effectiveness Analysis (CEA)

- ➔ Rank policies by £/tCO2

Inter Departmental Analysts Group (IAG)

- ➔ Consistent guidance (Social Cost of Carbon)
- ➔ Peer Review

Marginal Abatement Cost Curve for 2020



A successor to voluntary agreements on new car fuel efficiency

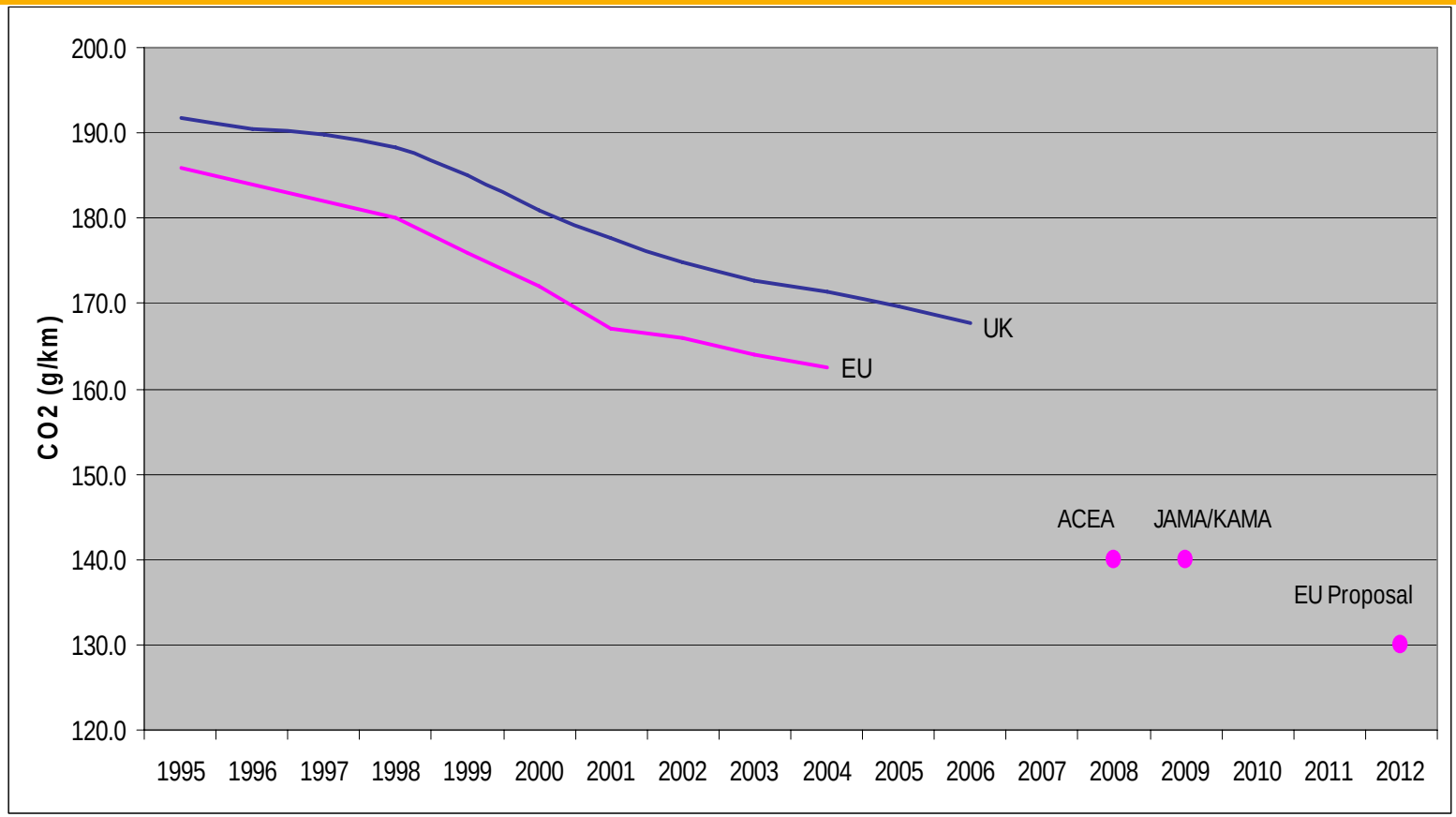
Voluntary agreements between EU and car manufacturers on new car fuel efficiency due to expire in 2008/9

Set a target of 140gCO2/km by 2008/9- unlikely to be met.

Past progress has been around 1.5% improvement p.a., slower in recent years.

Latest EU proposals: 130gCO2/km by 2012. Corresponds to 3-4% annual improvement.

Past progress to target



Smarter Choices

Wide range of policies aimed at enabling travellers to make more sustainable transport choices

- Sustainable Travel Towns
- Workplace travel plans
- School travel plans
- Cycling improvements (cycle lanes, cycle training)
- Encouraging car sharing and car clubs

Initial results – very cost effective

More evidence needed

- Generalisability?
- Impact sustained over time?

So why adopt these measures?

Transport measures may have higher costs than other sectors, but need to deploy them to get closer to long-term targets

Need direct intervention to bring forward investment in renewable fuels & fuel efficiency to bring down the cost of carbon abatement through transport measures

Plus, expected to lead to significant carbon savings.

But still likely to be a costly way of reducing CO_2 relative to other sectors…

Conclusions

Cost of climate change > cost of action

Goal: International stabilisation target

- ➔ Action needed now to stabilise by 2050

Transport ➔ Needs to decarbonise but possibly on later trajectory

Mix of policies (long term, credible, flexible, cost-effective)

- ➔ Carbon pricing, e.g. Aviation in EU ETS
- ➔ Technology Policy - Incentivising low-carbon technology is crucial – RTFO, Voluntary Agreements on new car fuel efficiency
- ➔ Remove barriers to behavioural change – e.g. investment in public transport, Smarter Choices

Further information

Department for Transport (DfT)

- www.dft.gov.uk

Energy White Paper 2007 (Ch. 7)

- www.berr.gov.uk

Stern Review

- www.sternreview.gov.uk