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Reducing greenhouse gas emissions from transport

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Department for Transport

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Wicked problems, fuzzy goals

To reduce GHG emissions from transport, DfT officials ministers face big challenges:

- Managing enormous complexity – domestically and internationally;
- Conflicting and evolving goals;
- Huge quantities of data;
- Converting uncertainty into definitive answers

  … which are politically and publicly acceptable.

These are problems faced by all government departments – and not just in tackling climate change.

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The mission

- Global mean surface temperature to be no greater than 2° higher than pre-industrial levels
- To achieve this means stabilising atmospheric CO_2 below 450 ppm (but as low as 350 ppm may be the safe “limit”)
- 2012 average = 394 ppm, and rising by >2 ppm each year

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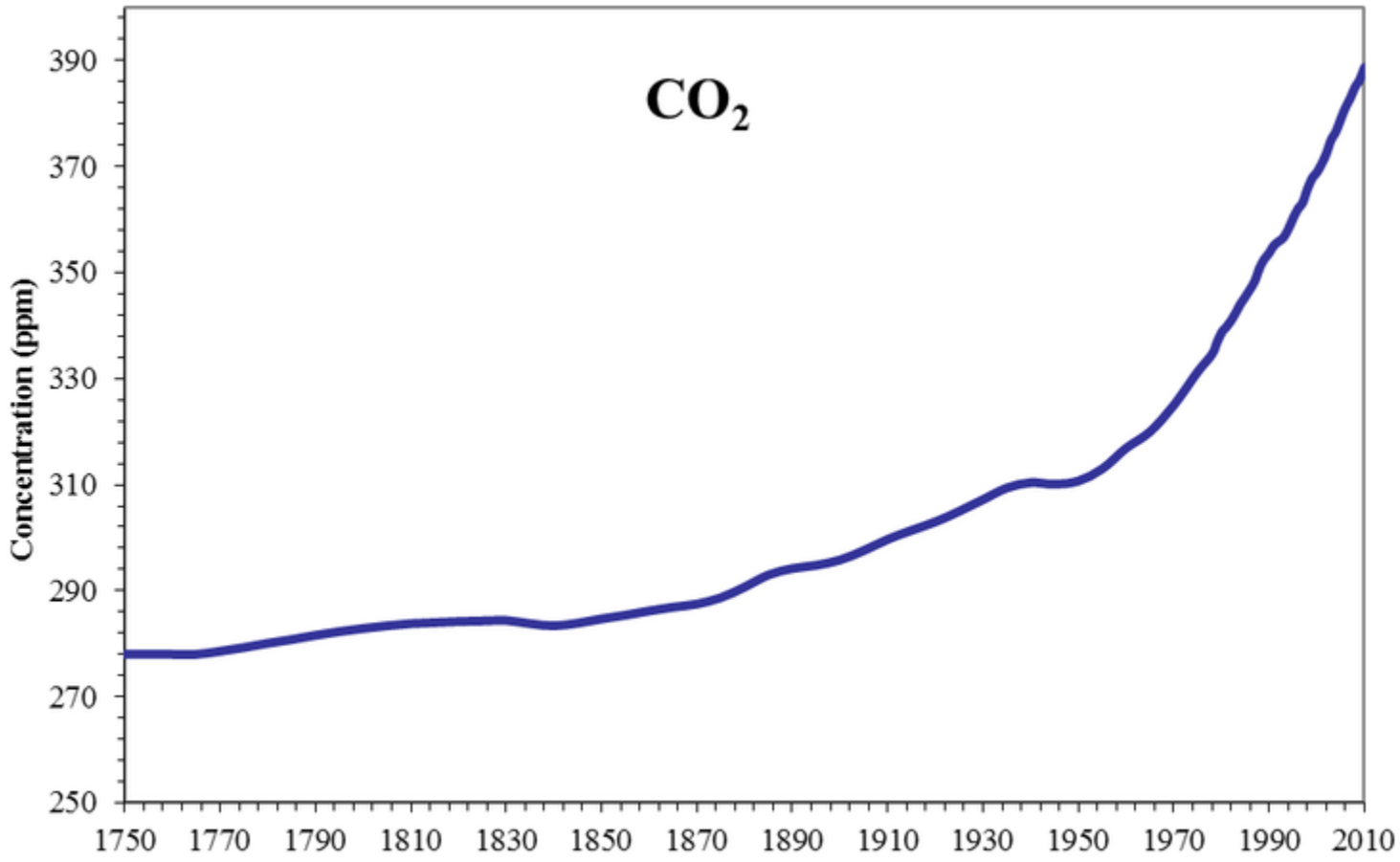
Trend since 1750



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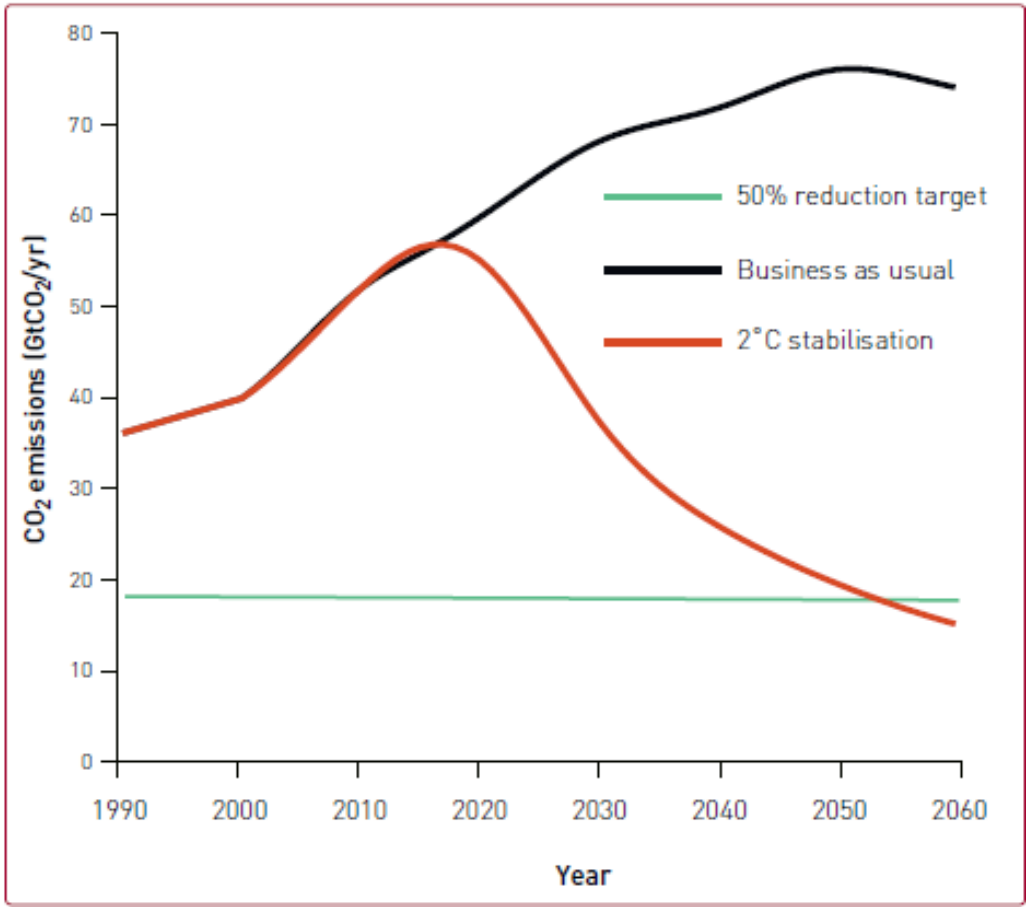
This is what the trend needs to be …

An illustration of an emissions reduction trajectory to achieve our 2°C goal



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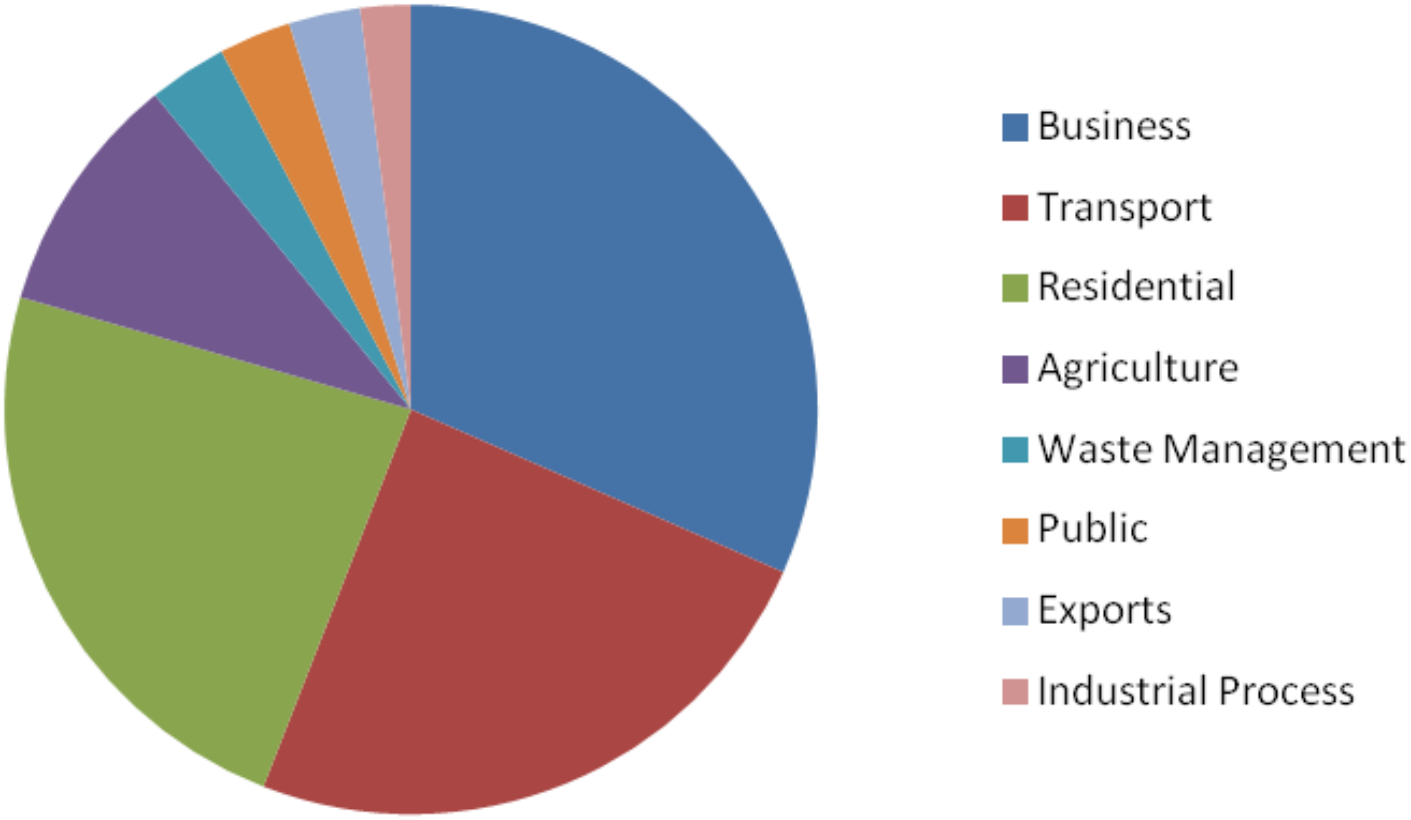
UK greenhouse gas emissions by end user sector, 2011 (excluding LULUCF)



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DfT's overarching vision

- **DfT's vision** is for a transport system that is an engine for economic growth, while also being sustainable, safe, and enhancing quality of life.
- Growth is the government's **top priority.** It needs to be delivered in a way that is consistent with environmental commitments.
- The Government is embarking on a major programme of infrastructure development to address historic underinvestment, and to deliver a high-performing strategic transport network that responds to the mobility needs of a rising population

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Some key tests applied to new policies

- Do they require public funding? How much? For how long?

- Regulatory burden?

- Do they help to deliver economic growth?

- Do they increase choice for business and consumers?

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Impossible remedies

- It is easy to propose impossible remedies – “belling the cat”.
- The voters won’t necessarily stand for it.

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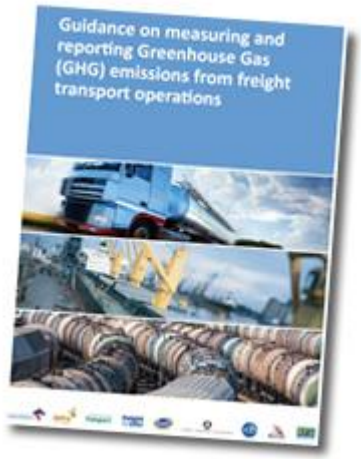
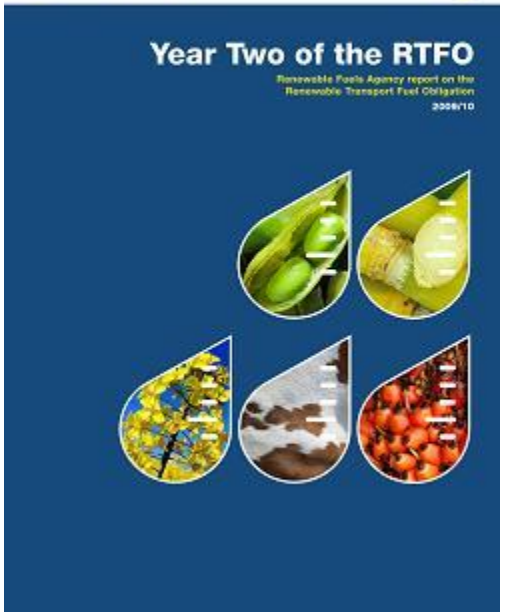
So we need advice on ….

- Radical new automotive technologies
- Fuel technologies, including biofuels
- Behavioural psychology
- Air quality – impacts and trade-offs
- Emissions measurement
- Economic and statistical modelling
- Plus lots more





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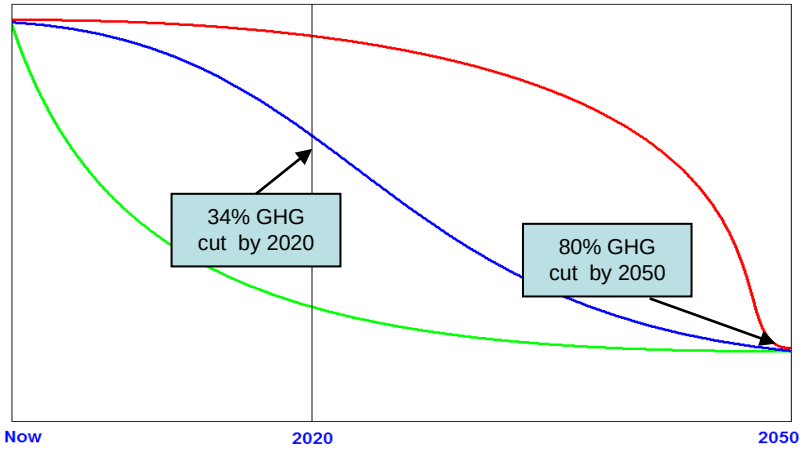
Our analysis (domestic transport)



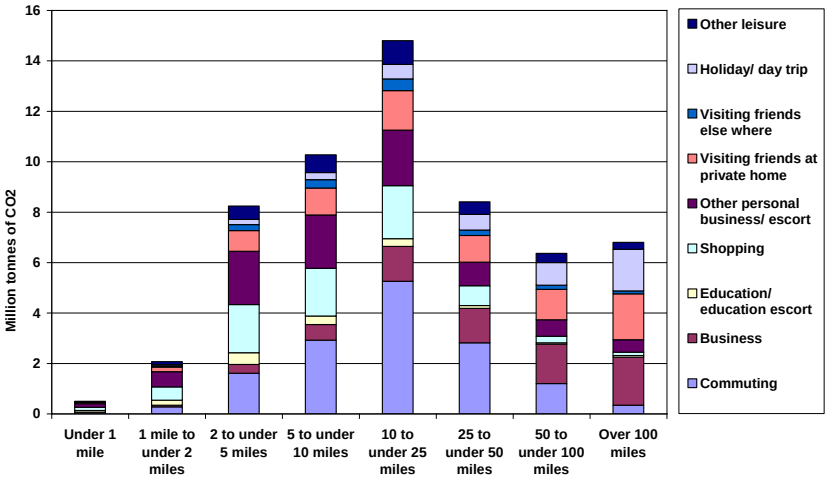
Long term transport de-carbonisation involves:

- electrification of rail and road transport
- reducing CO_2 footprint of electricity generation
- using technology to re-engineer cities & lifestyles
- switching to alternative transport modes

Short term options are more limited:

- new vehicle emission standards & biofuels
- eco-driving, car sharing & 'smarter choices'
- fiscal action (HM Treasury lead)

We know where transport CO_2 comes from (see chart opposite). We have assessed the cost and impact of different policy measures. We have a realistic suite of policies for that will reduce CO_2 significantly without choking off supply. But there are still gaps.



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Key areas for attention

Vehicles we drive

- Support for low carbon technologies such as electric vehicles
- New car and van CO_2 regulations agreed at EU level
- New lorry CO_2 regulations being negotiated at EU level

Fuels used

- Biofuels: EU Directives cover biofuel uptake and the emissions savings from their use
- Electricity: significant proportion of the rail network is electrified; increasing support for electric road vehicles

Travel choices

- Encouraging and supporting sustainable travel initiatives
- Promotion of cycling and walking

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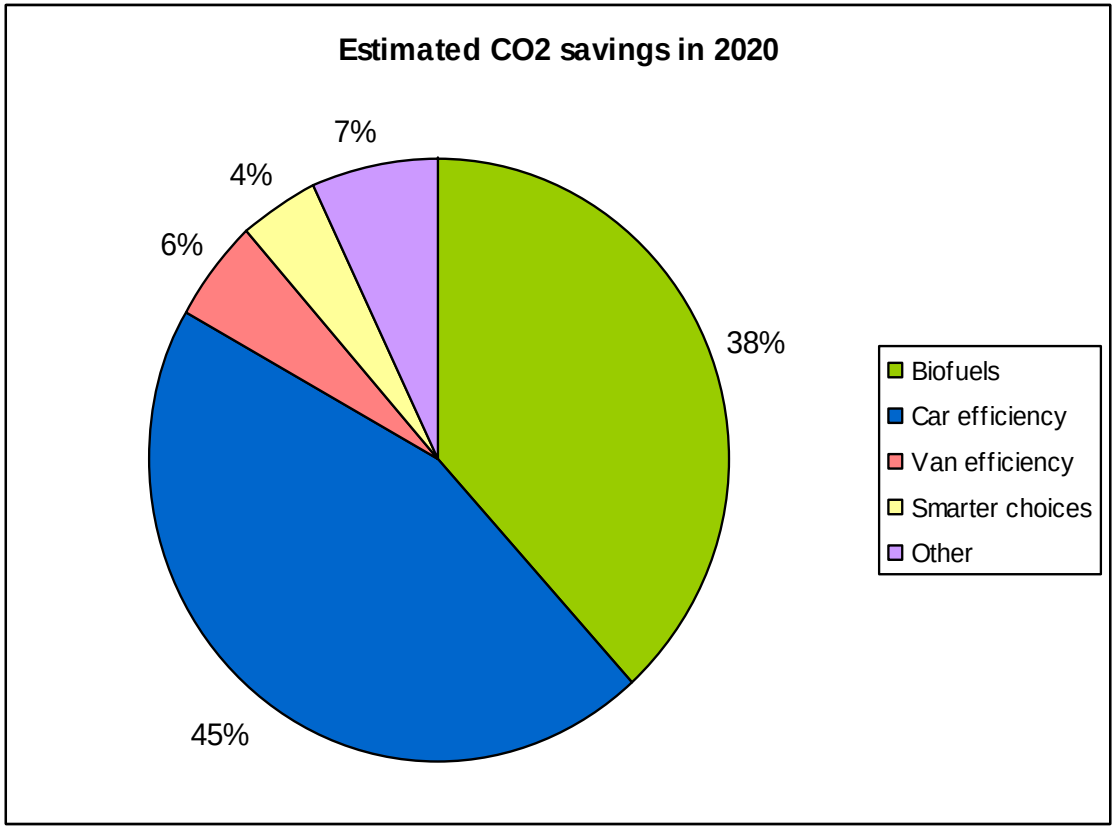
Estimated emissions reductions

- Existing EU and UK measures projected to deliver a **14% reduction** in UK transport CO_2 emissions by 2020, compared to 2008.

- Bulk of savings likely to come from new car fuel efficiency and biofuels.



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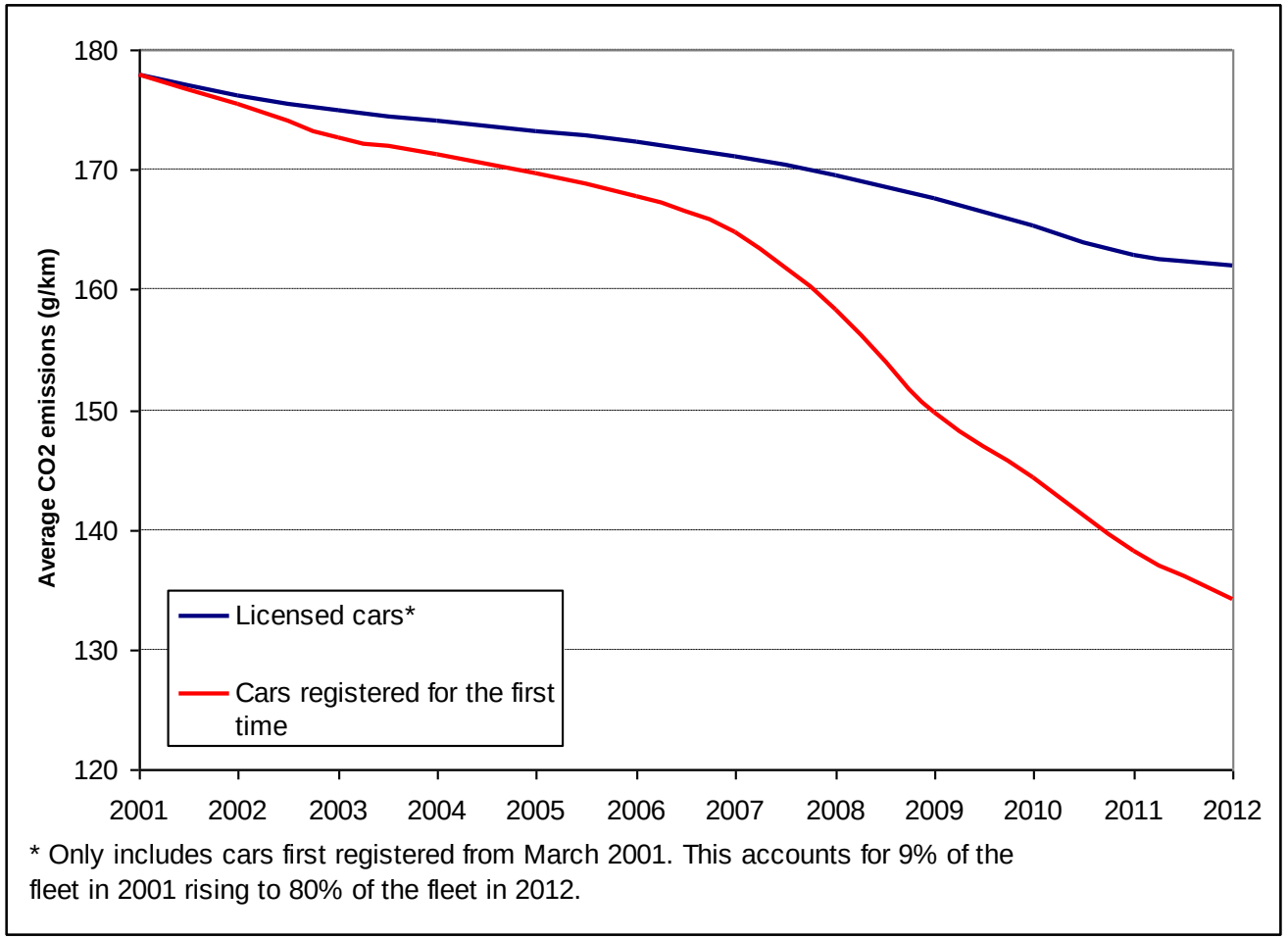
UK new car fuel efficiency

Conventional technology and engine downsizing is bringing big reductions in new car CO_2 emissions



* Only includes cars first registered from March 2001. This accounts for 9% of the fleet in 2001 rising to 80% of the fleet in 2012.

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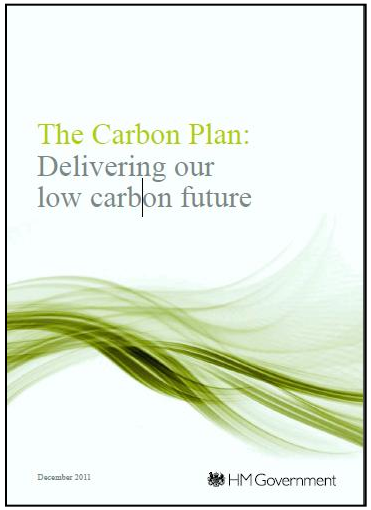
More radical de-carbonisation of cars

- In the long term, **almost complete electrification** of road transport is necessary to meet climate change targets



The Government's Carbon Plan, December 2011

- Promoting ULEVs is an important part of attracting **inward investment and high-tech jobs** to the UK

Jaguar LimoGreen 2013?

- **Infrastructure** provision could be facilitated via inclusion in the 'Regulated Asset Base' for utilities; or through amendments to the national planning framework; but the amount and mix of technology is unknown.

- **The cost of EVs** will be a barrier in the early years
- The evidence for market intervention is diverse, compelling and growing

Mitsubishi Imiev - 2010

Nissan Leaf - 2011

Vauxhall Ampera - 2012

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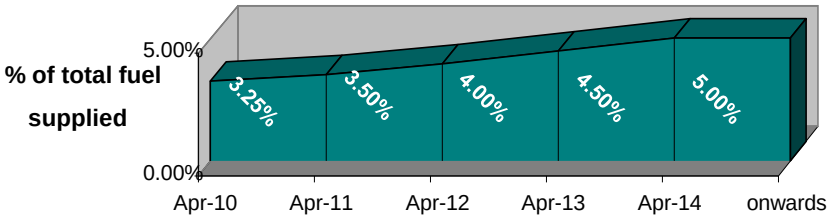
Renewable transport fuels

Targets & Expectations

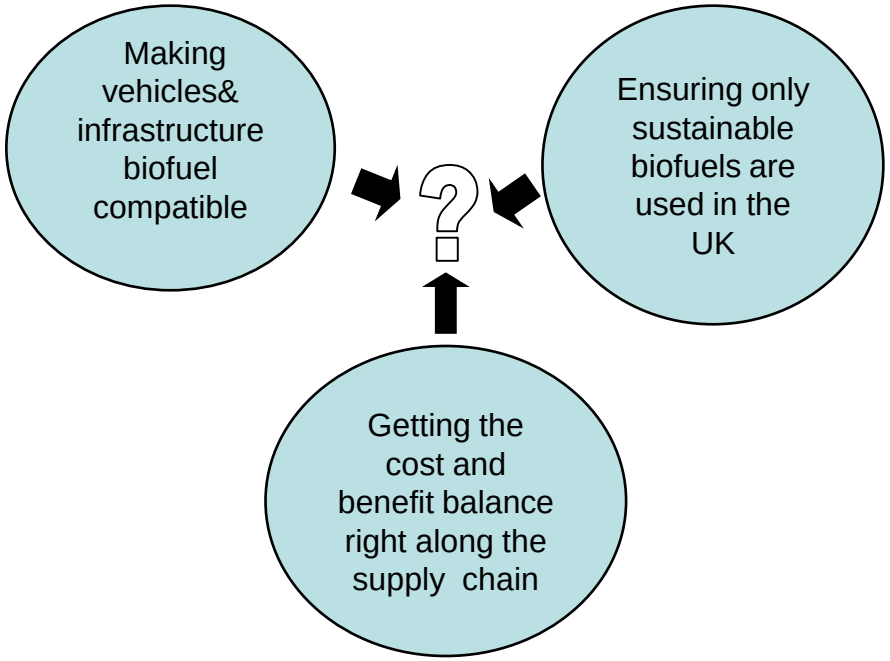
Existing laws & publications assume 10% biofuel use by 2020 will provide:

- ~40% of our projected CO_2 savings from transport in 2020
- 20% of total UK renewable energy use in 2020



We have an obligation (the RTFO) that requires 5% biofuel use by 2014

Challenges



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Supporting sustainable transport

- £600m Local Sustainable Transport Fund for local authorities to support the delivery of 96 sustainable transport projects.

- £107m to improve cycle safety, cycling and walking routes, as well as bike and rail facilities.

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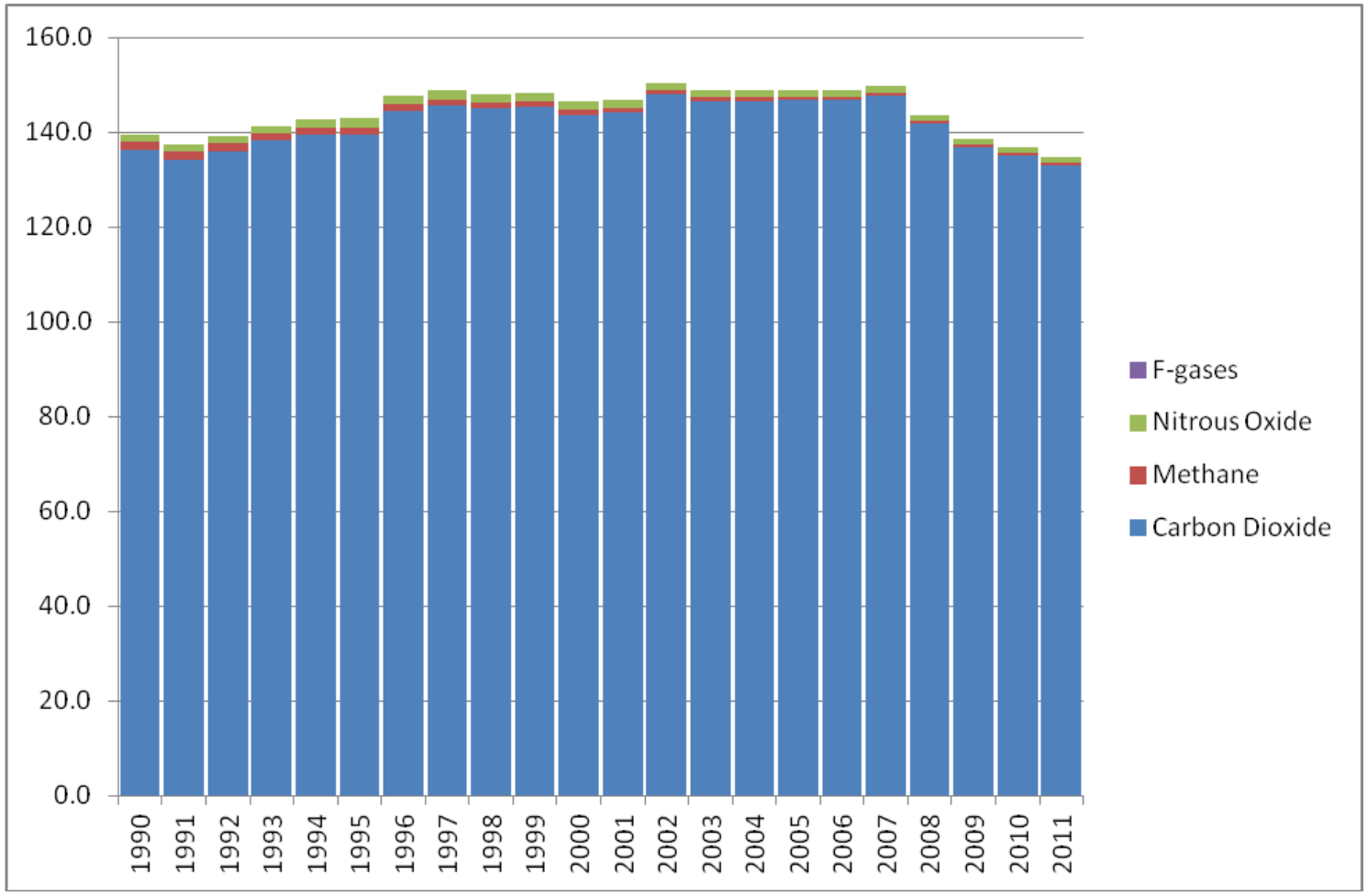
Greenhouse gas emissions from transport, 1990-2011 ($MtCO_2e$)



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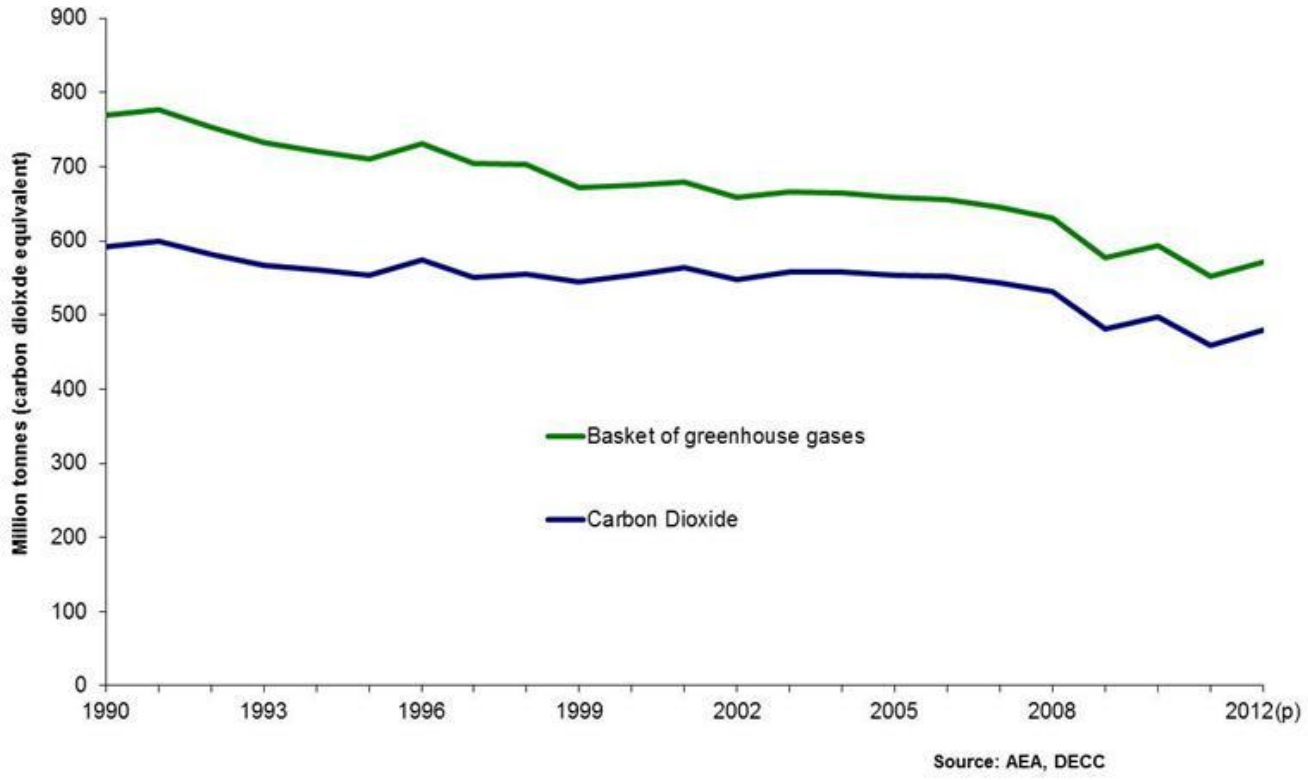
Emissions of UK greenhouse gases, 1990-2012 (provisional)



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Conclusions

- The Government aims to **deliver a transport system** which supports the economy whilst reducing greenhouse gas emissions

- Are the policies **right**? Are they **evidence based**? Do they promote **growth**? Do they command **popular support**?

- And more will be needed

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Discussion

Thank you for listening

Over to Neville and Robin