

ROAD TRANSPORT: THE CARBON CHALLENGE

Arval – Strategic Customer Forum

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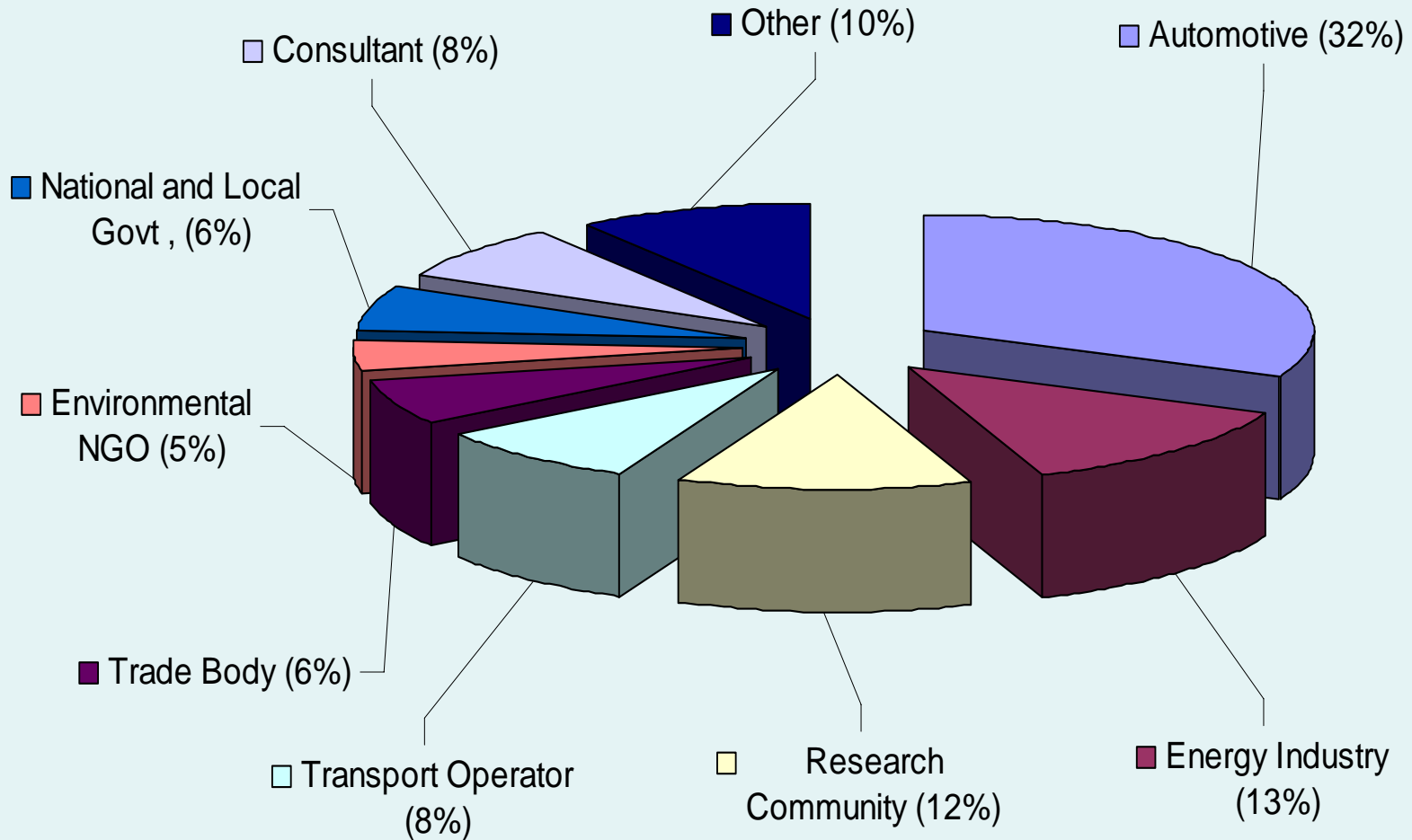
Low Carbon Vehicle Partnership

Accelerating the shift to low carbon vehicles and fuels in the UK

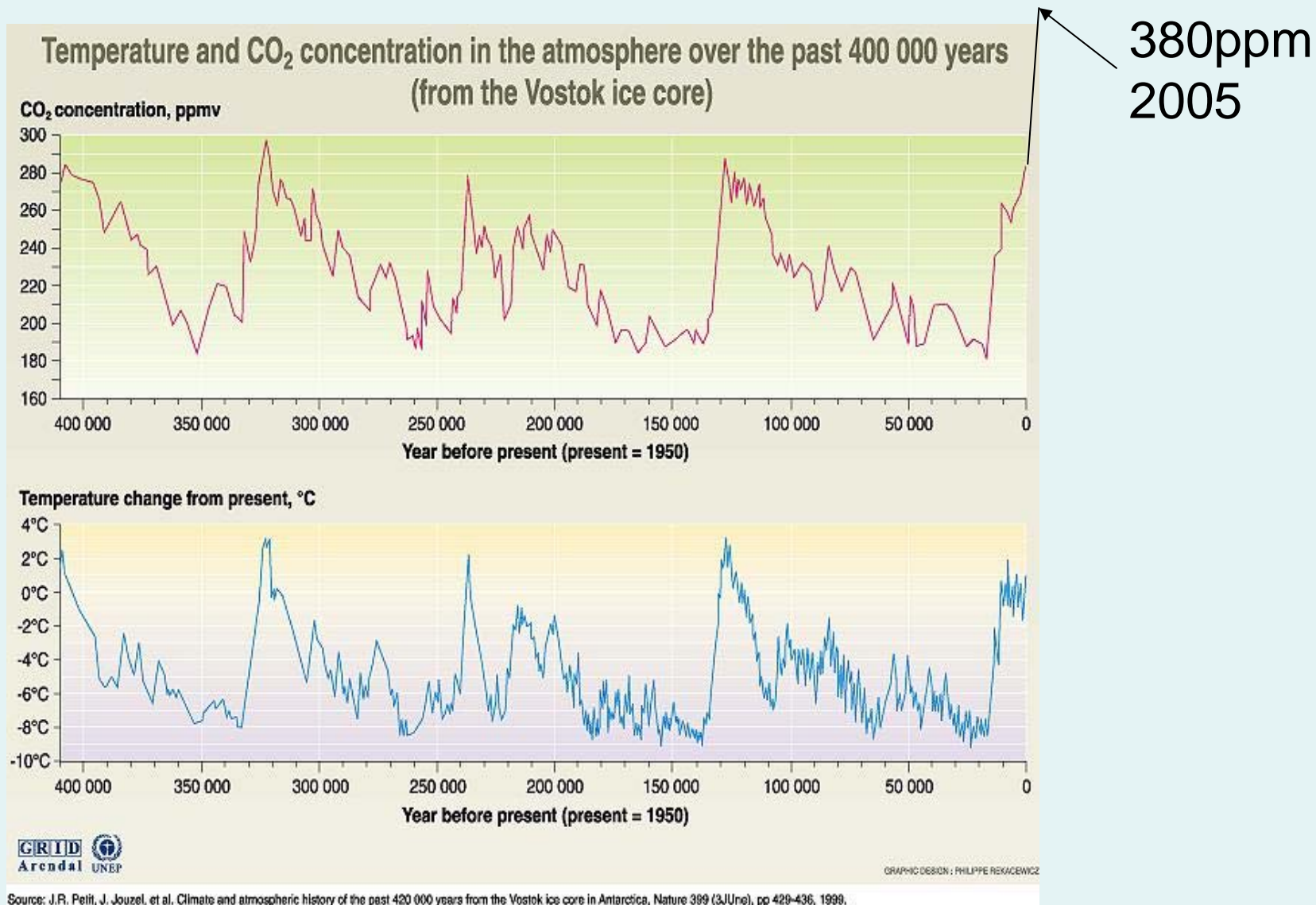
Stimulating opportunities for UK businesses



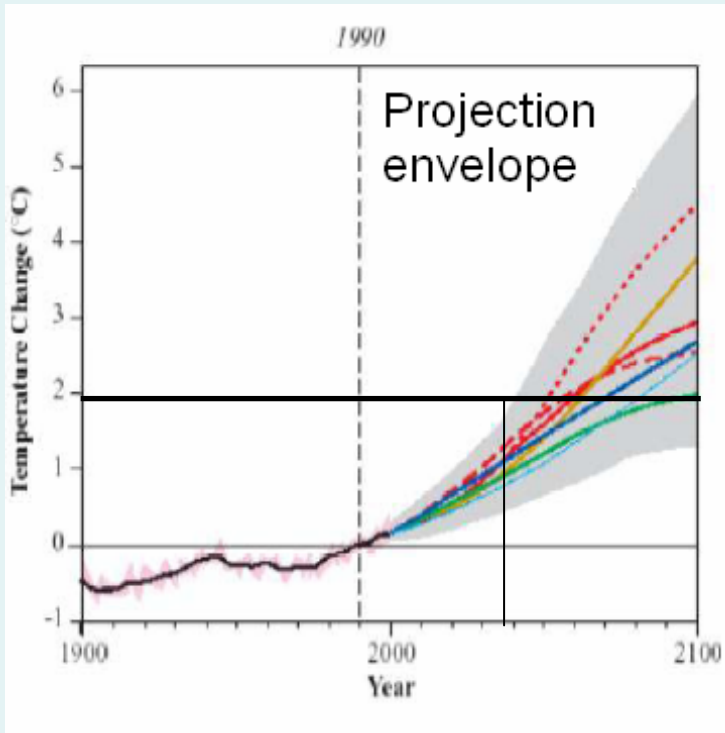
The LowCVP: 190 Members ... and growing



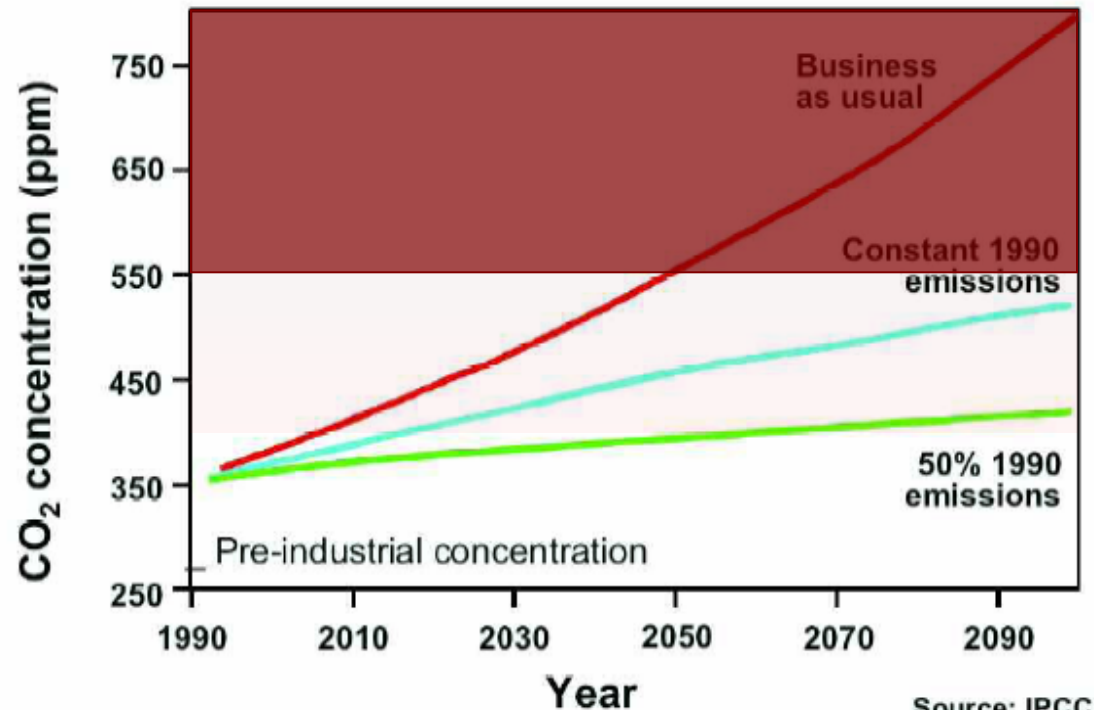
Geological time series show global temperature and CO₂ levels are highly correlated – current CO₂ concentrations are at unprecedented levels



2°C is increasingly being accepted as “safe” level of global warming



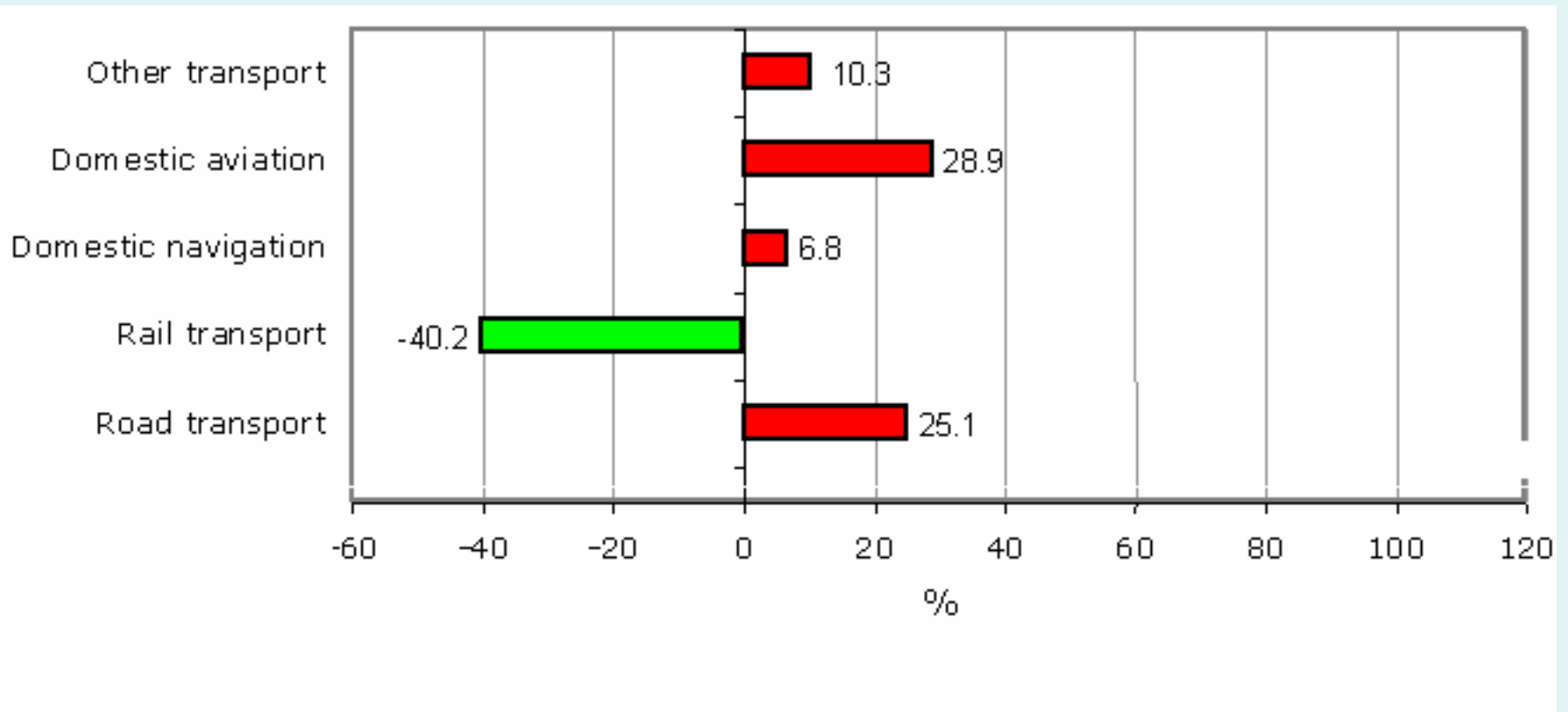
The risk of “dangerous climate change” increases as CO₂ concentrations stabilise above 400ppm. At 550ppm there is considerable risk of significant harm



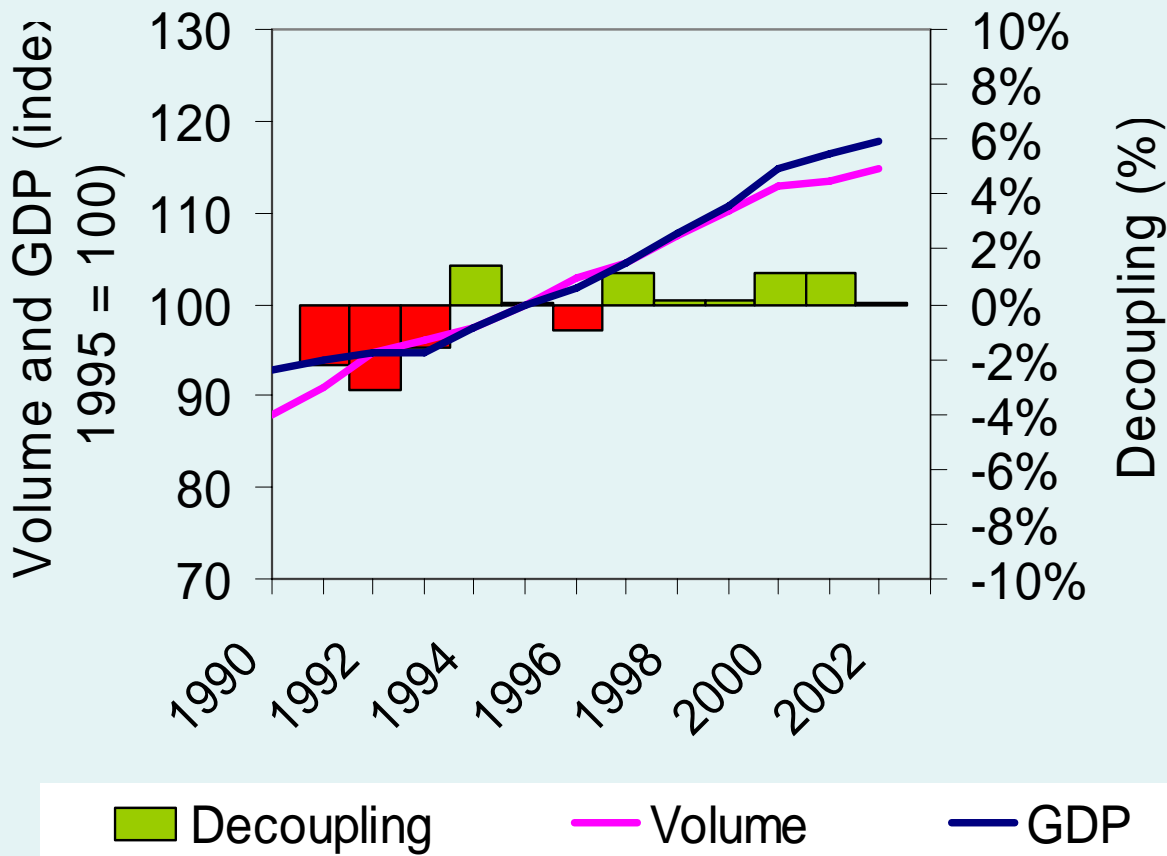
Schneider, 2005,
Avoiding dangerous climate change

The scale of the challenge

Change in EU15 GHG transport emissions 1990 – 2003



Passenger transport and GDP growth in the EU25



Decoupling is the annual difference in growth rates between GDP and transport volumes

Reducing road transport emissions will require a combination of measures

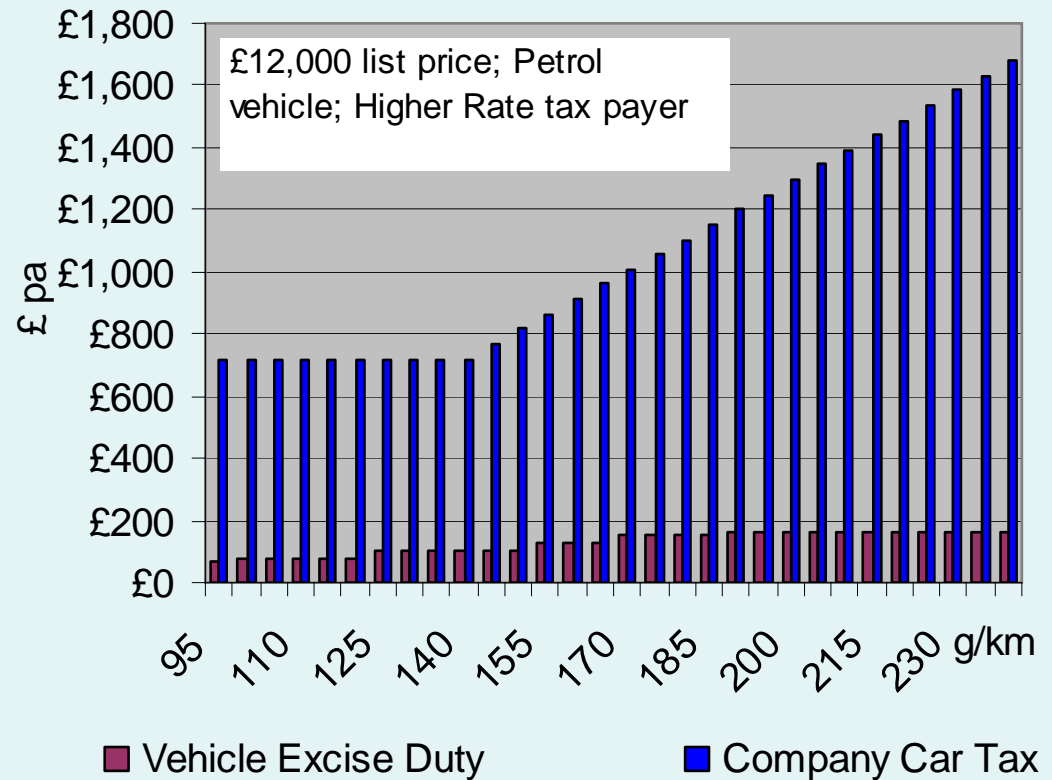
- ❑ Improved vehicle efficiency
- ❑ Low carbon / alternative fuels
- ❑ Improved driver behaviour
- ❑ Reduced vehicle use
- ❑ Better freight distribution
- ❑ Modal shift
- ❑ Land-use planning



UK vehicle taxes are linked to CO₂

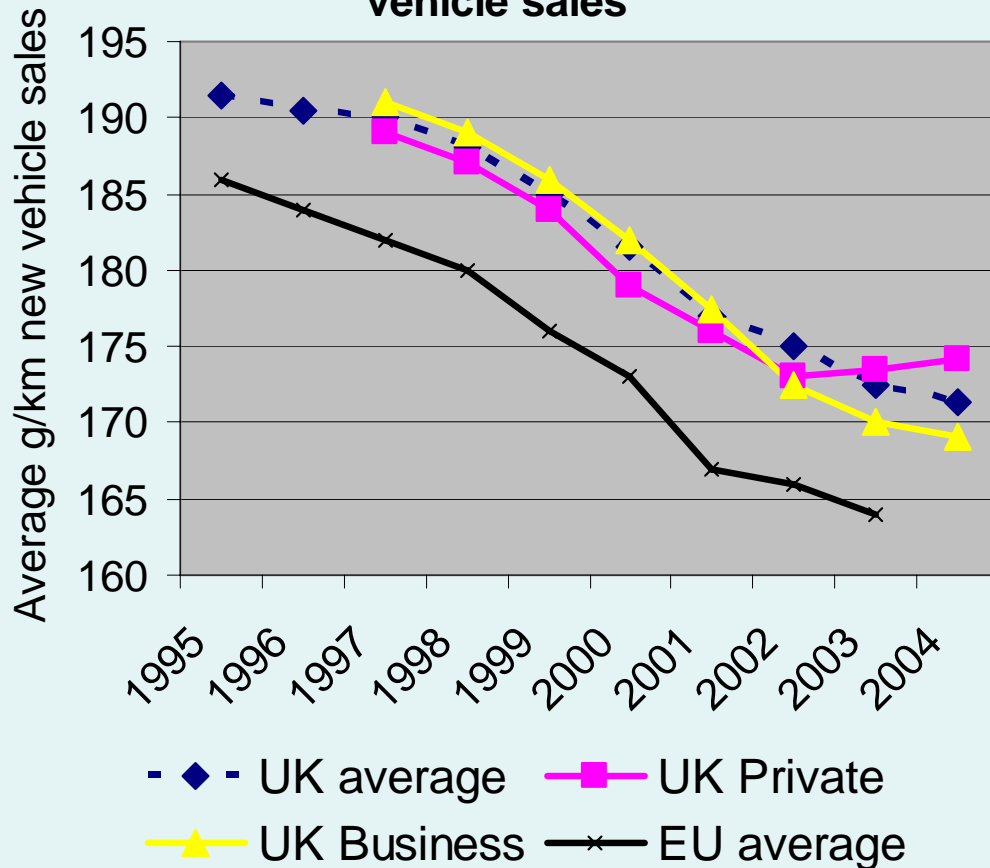
- ❑ Company Car Tax strongly linked to tail-pipe CO₂
- ❑ Vehicle Excise Duty graduated in CO₂ bands
- ❑ Fuel Duty reduced for alternative fuels
- ❑ Purchase Grants for low carbon vehicles awaiting EU approval

Annual UK Vehicle Taxes



New cars are more efficient

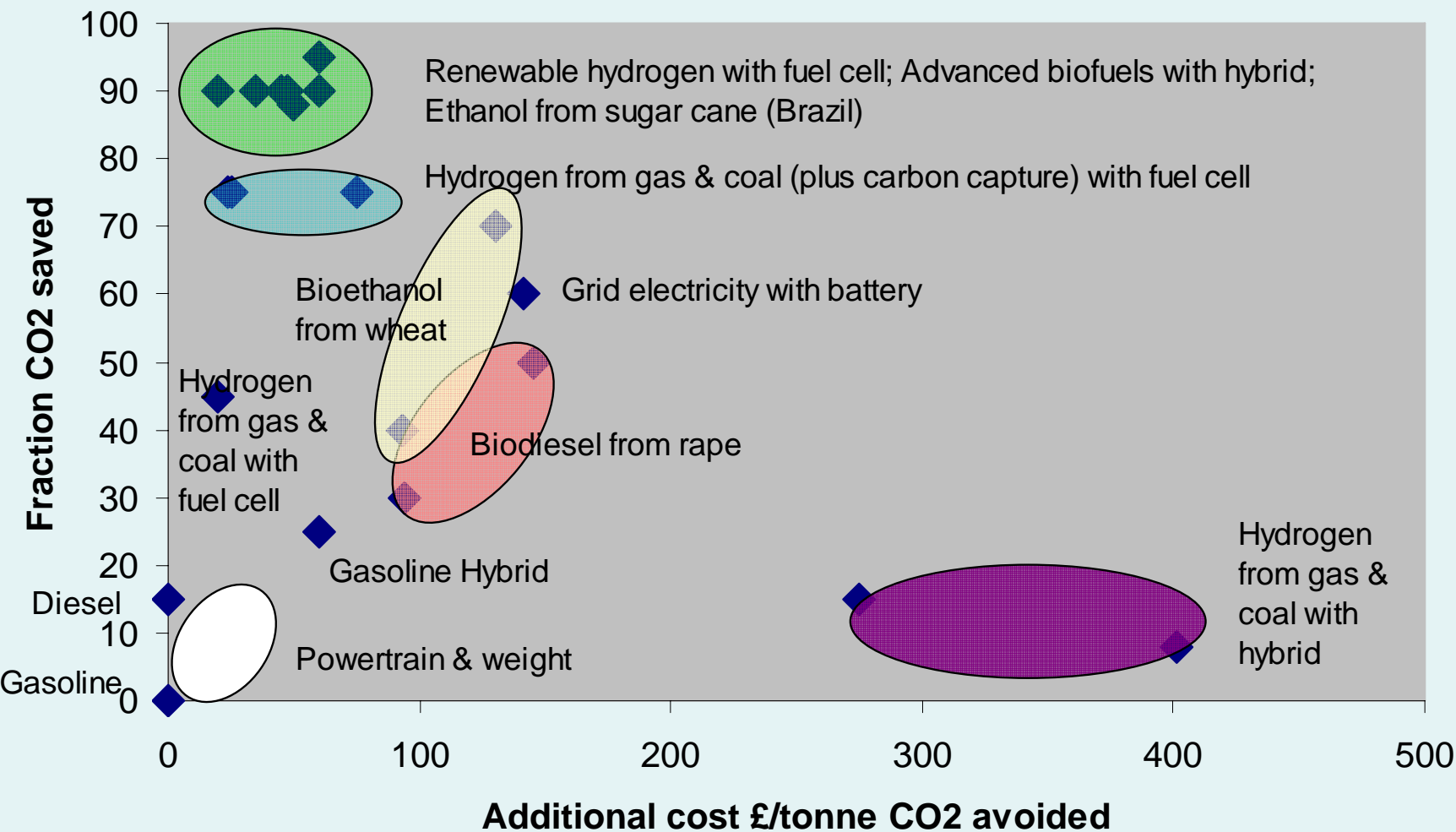
Fleet average emissions for new vehicle sales



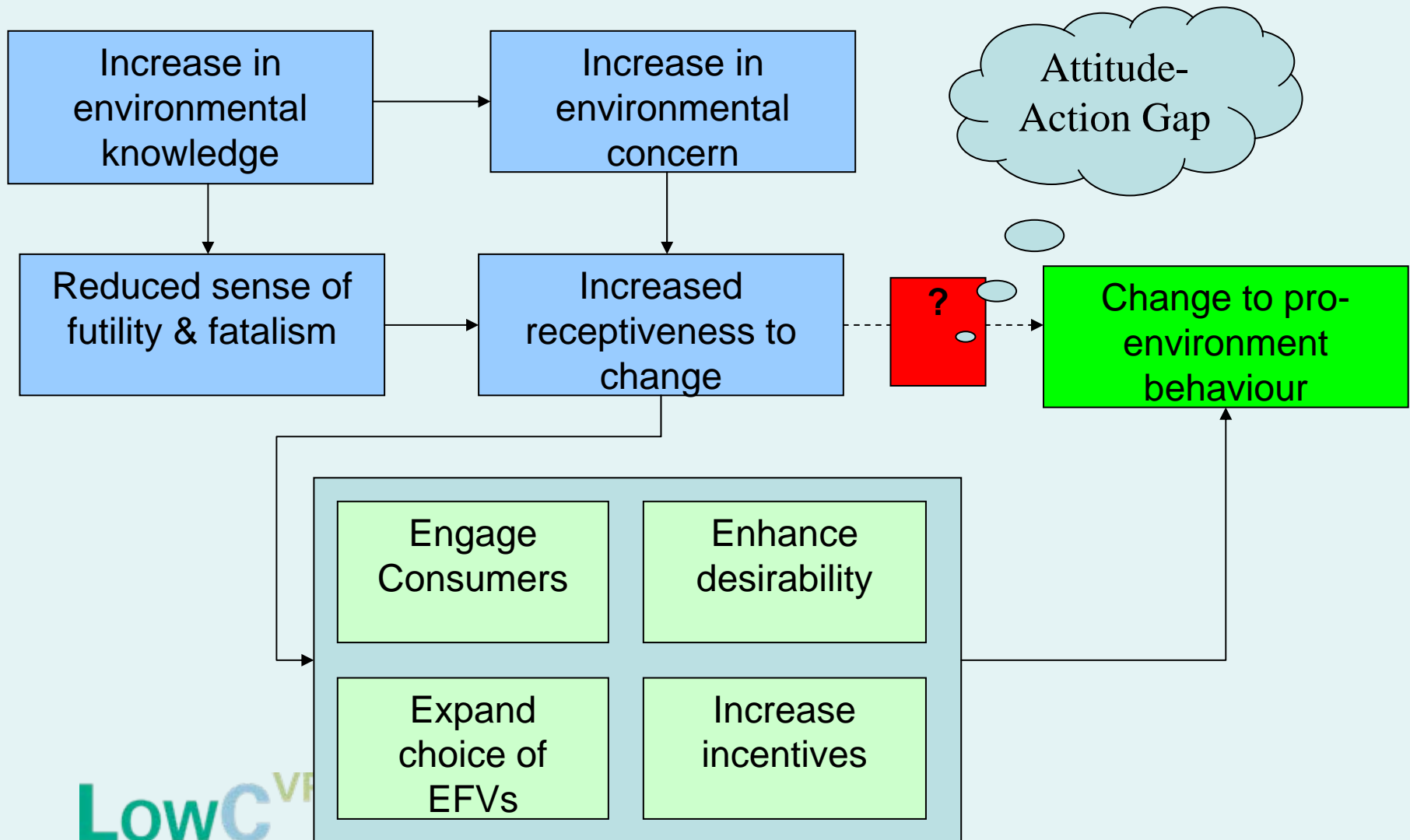
UK new car CO₂ improved by 11% in 10 years

- Fleet and business car efficiency is continuing to improve
- Private consumers have started to purchase less efficient vehicles
- Achieving EU targets is challenging

Wide range of CO2 savings & cost-effectiveness for alternative fuels and vehicle technology



Increased demand for EFVs requires bridging the attitude-action gap



Enhancing Consumer Information

Fuel Economy		Ford Fiesta 1.4 TDCI ZETEC												
CO₂ emission figure (g/km) 		B 117 g/km												
Fuel cost (estimated) for 12,000 miles <small>A fuel cost figure indicates to the consumer a guide fuel price for comparison purposes. This figure is calculated by using the combined drive cycle (town centre and motorway) and average fuel price. Re-calculated annually, the current cost per litre is as follows – petrol 75p, diesel 75p and LPG 30p (VCA May 2004).</small>		£662												
VED for 12 months <small>Vehicle excise duty (VED) or road tax varies according to the CO₂ emissions and fuel type of the vehicle.</small>		£85												
Environmental Information <small>A guide on fuel economy and CO₂ emissions which contains data for all new passenger car models is available at any point of sale free of charge. In addition to the fuel efficiency of a car, driving behaviour as well as other non-technical factors play a role in determining a car's fuel consumption and CO₂ emissions. CO₂ is the main greenhouse gas responsible for global warming.</small>														
Make/Model Ford Fiesta 1.4 TDCI ZETEC Fuel type Diesel	Engine capacity (cc): 1399 Transmission type: 5 speed manual													
Fuel Consumption: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Drive cycle</th> <th>Litres/100km</th> <th>Mpg</th> </tr> </thead> <tbody> <tr> <td>Urban</td> <td>5.4</td> <td>52.3</td> </tr> <tr> <td>Extra-urban</td> <td>3.8</td> <td>74.3</td> </tr> <tr> <td>Combined</td> <td>4.4</td> <td>64.2</td> </tr> </tbody> </table>			Drive cycle	Litres/100km	Mpg	Urban	5.4	52.3	Extra-urban	3.8	74.3	Combined	4.4	64.2
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Carbon dioxide emissions (g/km): 117g/km <small>Important note: Some specifications of this make/model may have lower CO₂ emissions than this. Check with your dealer.</small>														

Voluntary car industry initiative

– brokered by LowCVP

Combination of simple and statutory information:

– Label shows CO₂ emissions, estimated fuel costs and test cycle data

Bands linked to UK Vehicle Excise Duty

Labels presently in 75% of showrooms

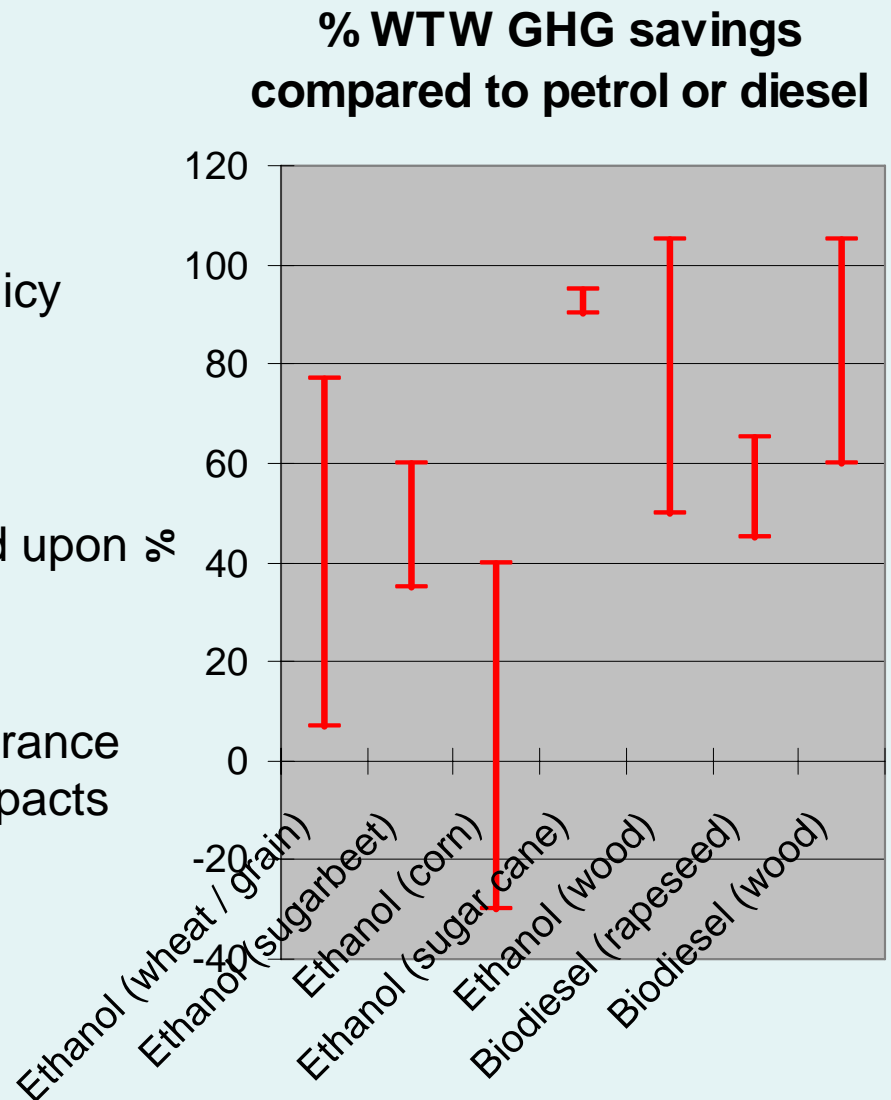
Congestion Charge discounts stimulated the market for cleaner vehicles

- ❑ London Congestion Charge achieved a 20% CO₂ emissions reduction
- ❑ Registrations of alternative fuel vehicles with C-Charge discounts in London doubled - hybrids & LPG
- ❑ Proposed national road pricing may also influence CO₂
 - +5% to -8%



Carbon certification and sustainability assurance are essential elements of the RTFO

- ❑ Costs, GHG savings and sustainability issues vary widely for different biofuels
- ❑ Complex markets require complex policy instruments to manage unintended consequences
- ❑ Commitment to a future system based upon actual GHG savings needed
- ❑ Robust sustainability reporting & assurance systems needed to minimise adverse impacts



Cenex - Centre of Excellence for Low Carbon and Fuel Cell Technologies



- ❑ Established April 2005, by 10 leading companies
- ❑ £6.5M Government funding matched by industry
- ❑ Show-case UK expertise and encourage inward investment
- ❑ Knowledge Transfer Network
- ❑ Leverage public procurement to create new markets



Holywell Campus,
University of Loughborough

Summary

- ❑ Technology offers the potential to significantly reduce greenhouse gas emissions from road transport – but responsible vehicle use and other behaviour changes also have important roles
- ❑ A wide range range of fuel and vehicle technology options
- ❑ Low carbon technologies are more expensive and need additional incentives are needed to change the attitudes and purchasing behaviours of most consumers
- ❑ Biofuels can make a useful contribution but assurance/accreditation needed to ensure potential carbon benefits are realised
- ❑ Partnership between all levels of Government, Industry and Civil Society is needed to effectively tackle road transport greenhouse gas emissions and:
 - Identify and deliver effective policies and incentives
 - Educate and inform consumers
 - Create markets for new technology through public procurement

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