

The changing climate for the automotive industry

Automotive Fellowship

16th March 2006

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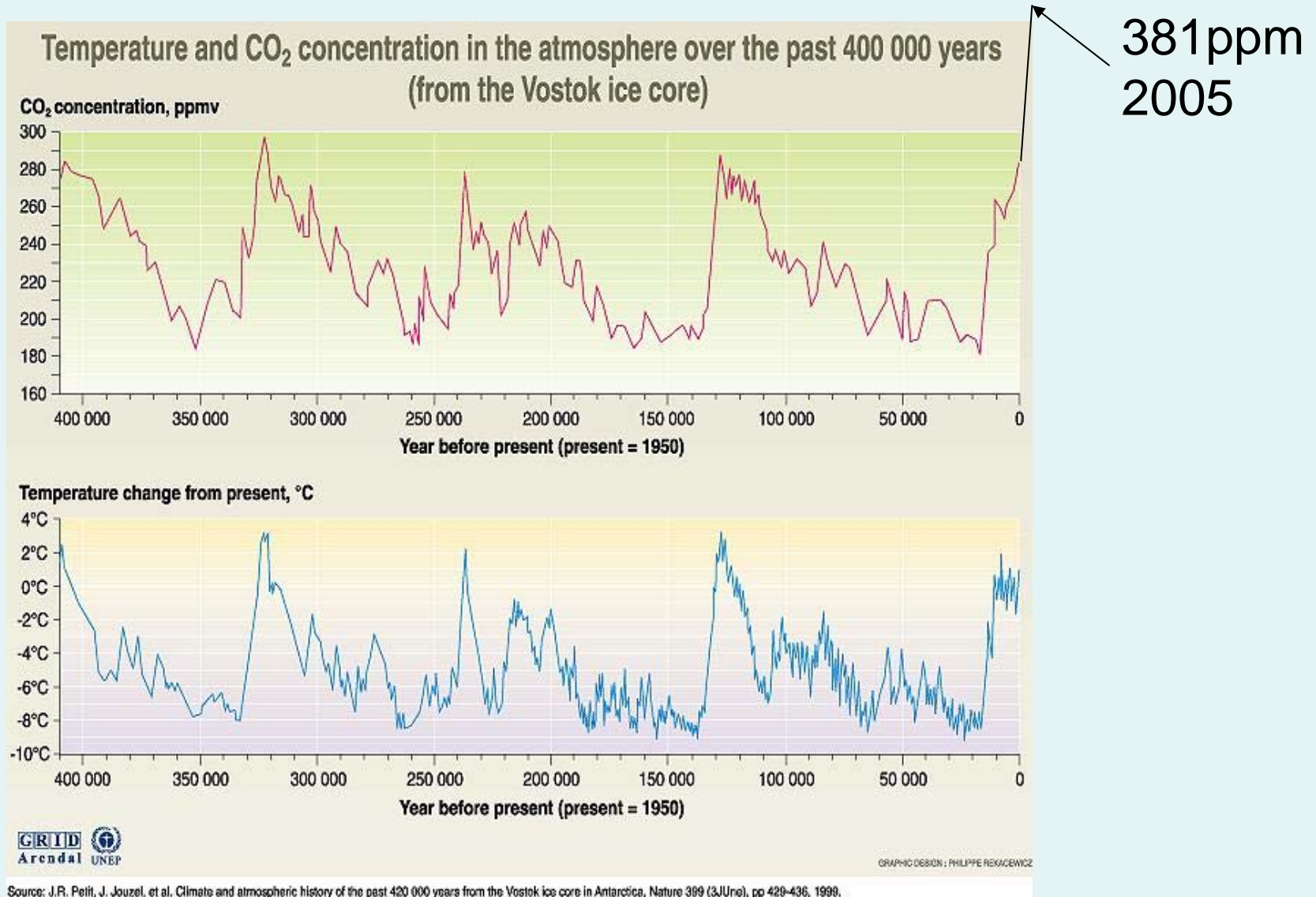
Low Carbon Vehicle Partnership

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

Stimulating opportunities for UK businesses

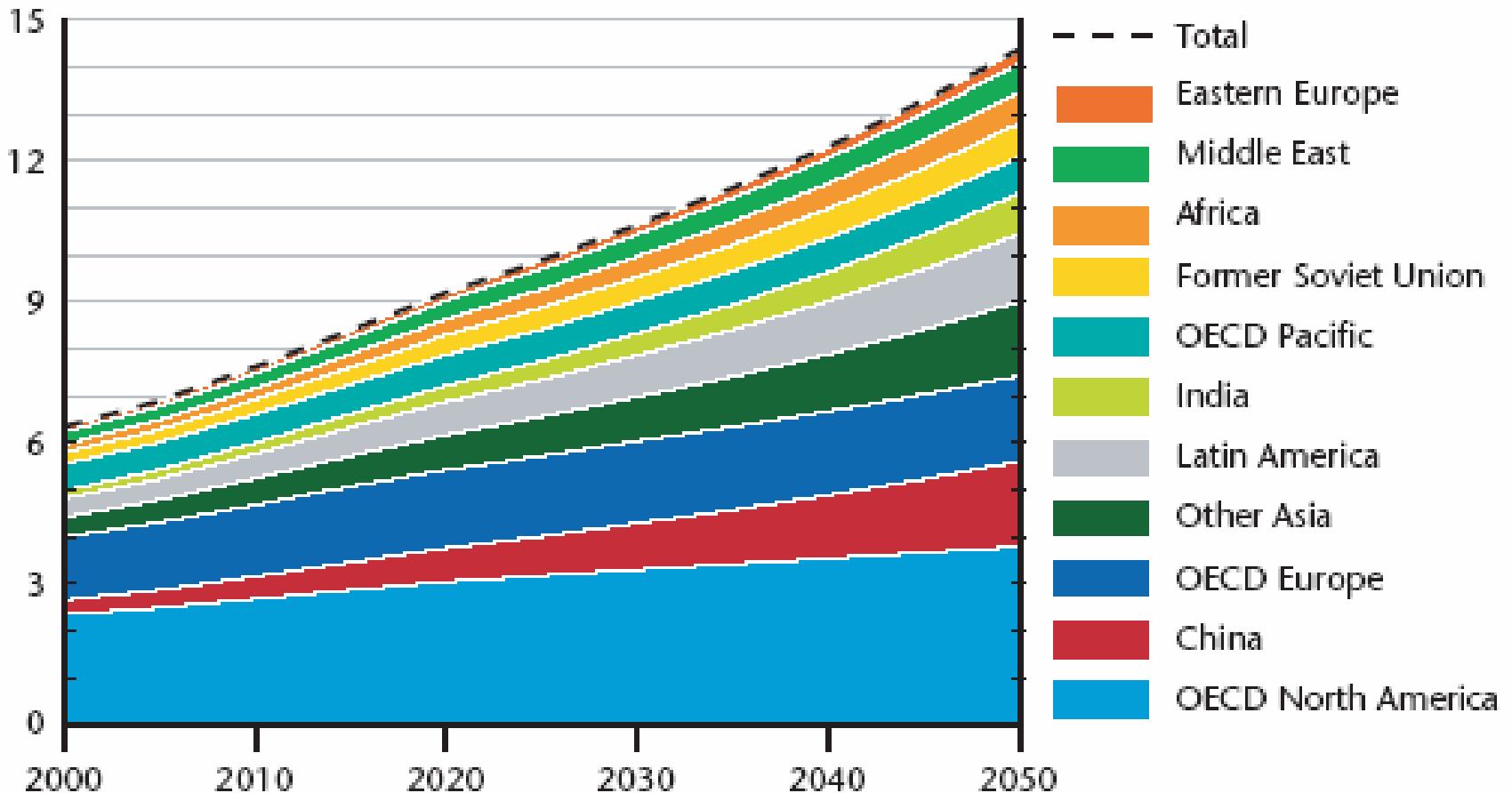


Temperature & CO2 levels are closely linked - current CO2 levels are at unprecedented levels

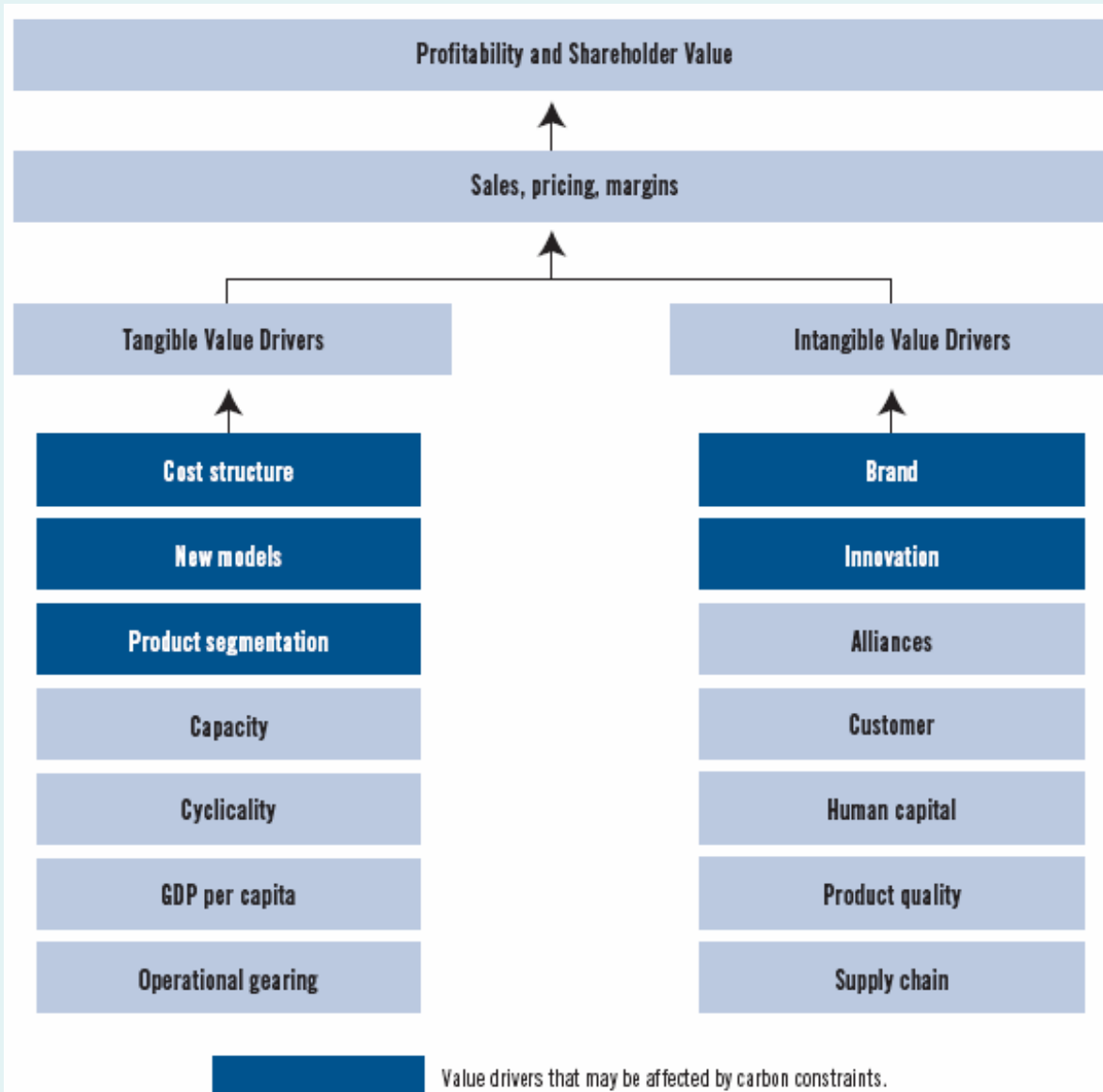


Global GHG emissions from transport are forecast to double by 2050 – intensifying pressures on the environment and oil supply

Gigatonnes CO₂-Equivalent GHG Emissions/Year



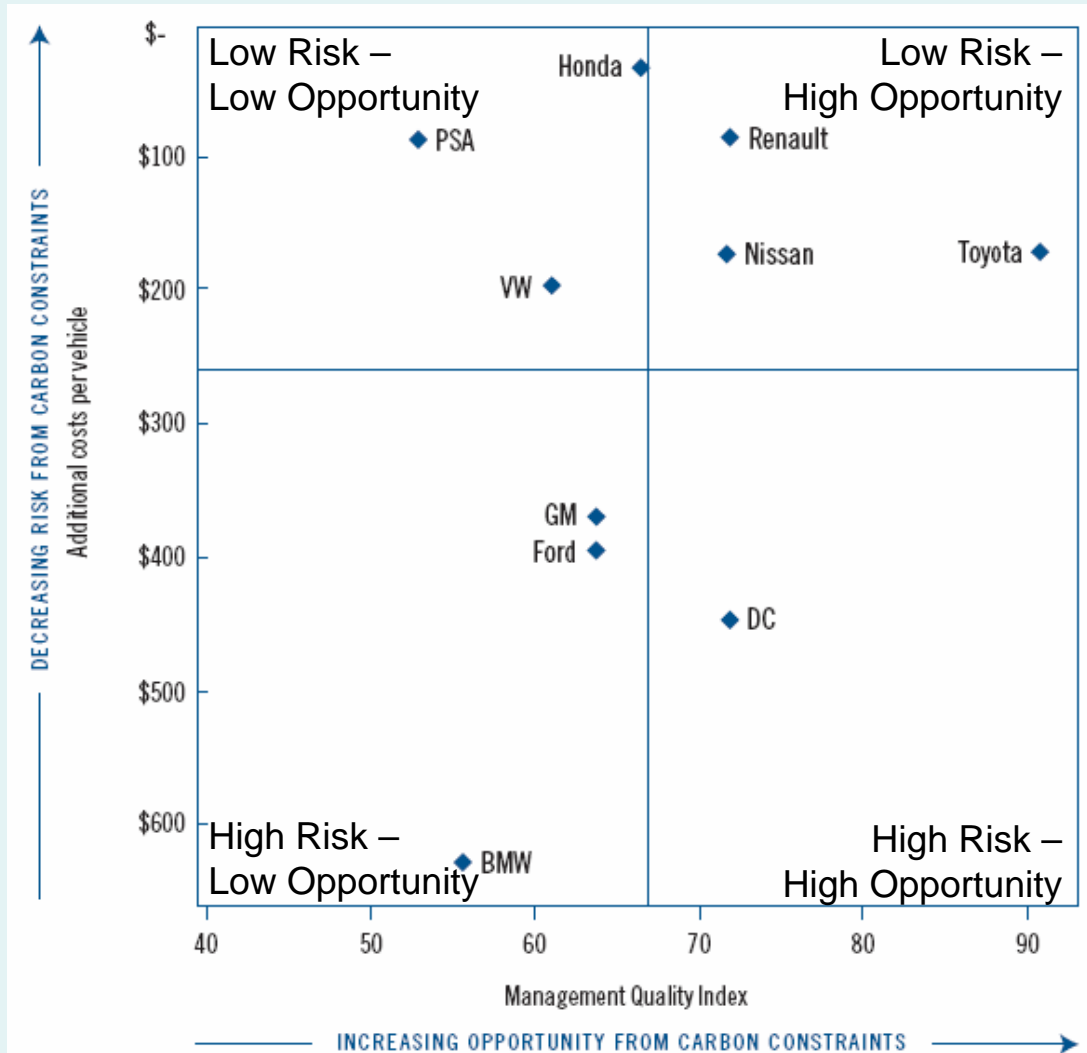
Emerging carbon constraints & high oil price create significant risks & opportunities for the automotive industry



The influence of carbon constraints on value drivers in a typical automotive sector valuation model

WRI 2005, Changing Drivers

Carbon constraints create a range of opportunity & risk for OEMs with the potential to influence competitive balance



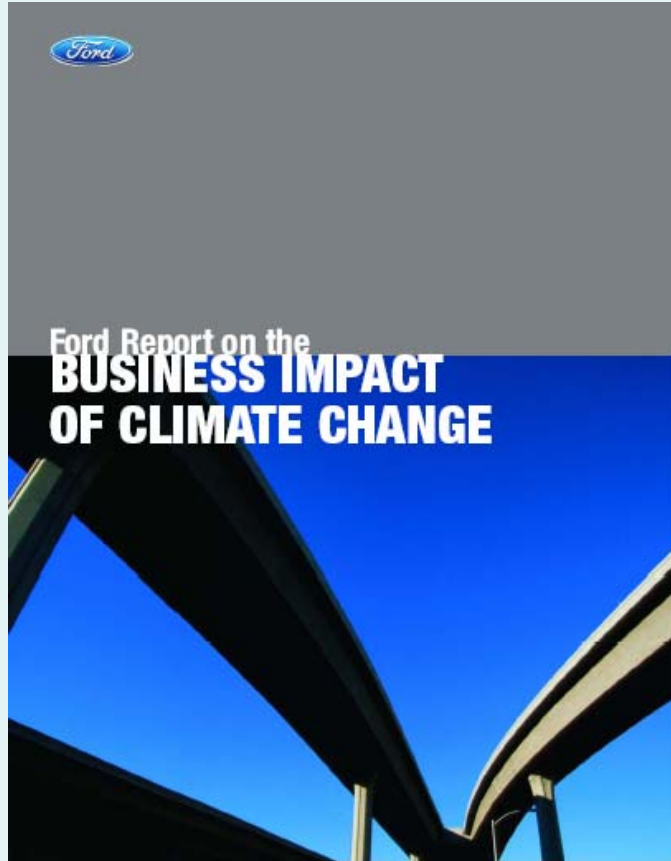
Note: The lines indicate industry averages in each category.

Quantification of the risks (Value Exposure) and opportunities (Management Quality) of carbon constraints

Care must be taken in interpreting the relative positions of different OEMs due to the large number of uncertain assumptions required

WRI 2005, Changing Drivers

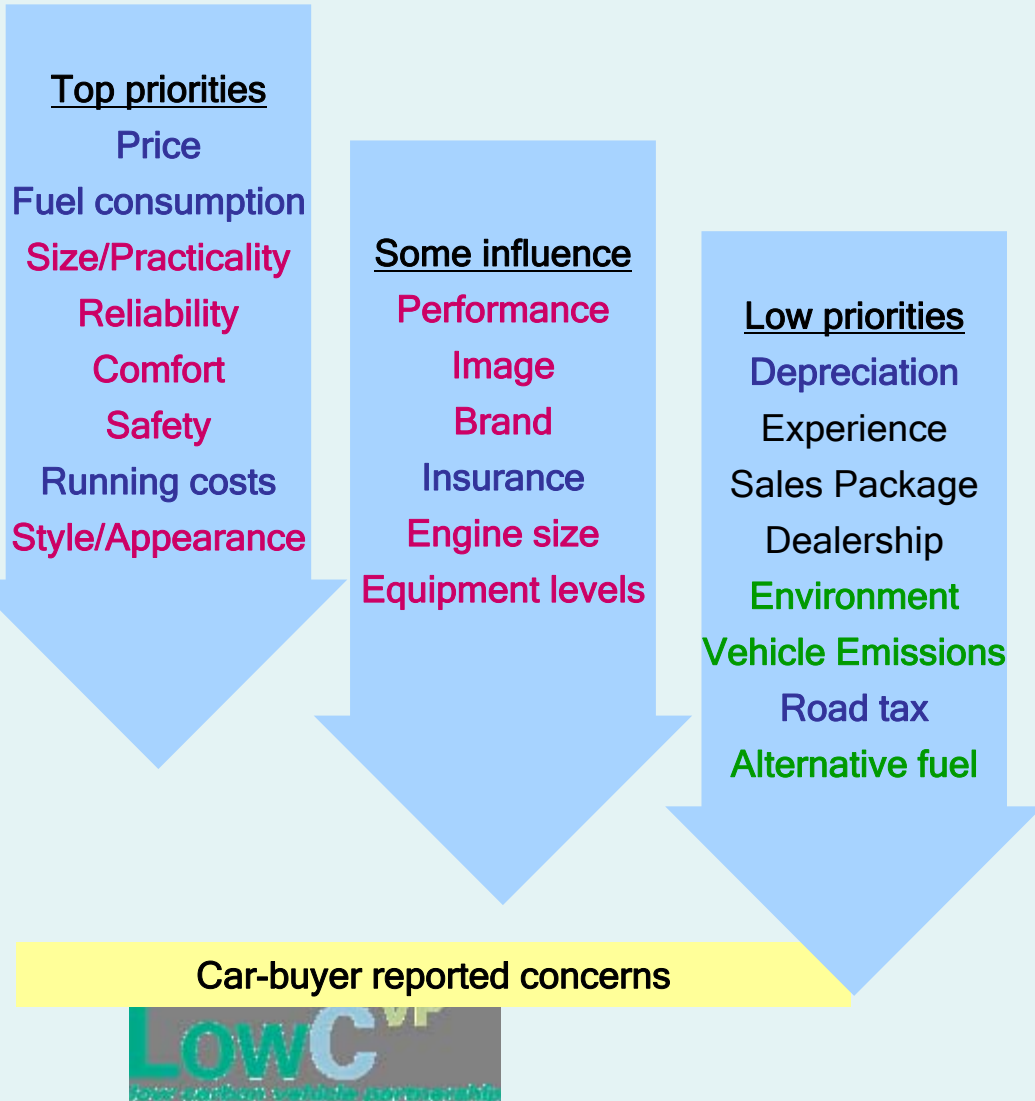
The motor industry is responding to the challenge



- ❑ EU voluntary agreement to reduce CO2 emissions by 25% from 1995 – 2008
- ❑ Substantial R&D expenditure
- ❑ Introduction of alternative fuelled vehicles – E85
- ❑ New hybrid & stop-start technologies
- ❑ Support for consumer information programmes

- ❑ ACEA advocate an “Integrated Approach” involving all stakeholders

Environmental concerns are presently a low priority for most private car buyers



❑ Whilst mpg is reported as a key decision making factor there is little evidence to demonstrate this

❑ Motorists have a poor understanding of vehicle running costs and will bear additional annual costs of £1-1.5k before considering downsizing their vehicles

❑ Public understanding of vehicle emissions and new technology is very limited

❑ Whilst motorists are concerned about climate change few understand its causes and less take personal responsibility

By 2010, consumer interest may have tipped in favour of low carbon cars



AP/St. Petersburg Times

Hurricane Katrina,
New Orleans 2005

- ❑ Significant tips in consumer behaviour can result from social & environmental concerns

- ❑ For low carbon vehicles such tipping points may be stimulated by
 - **Increased frequency of severe weather events**

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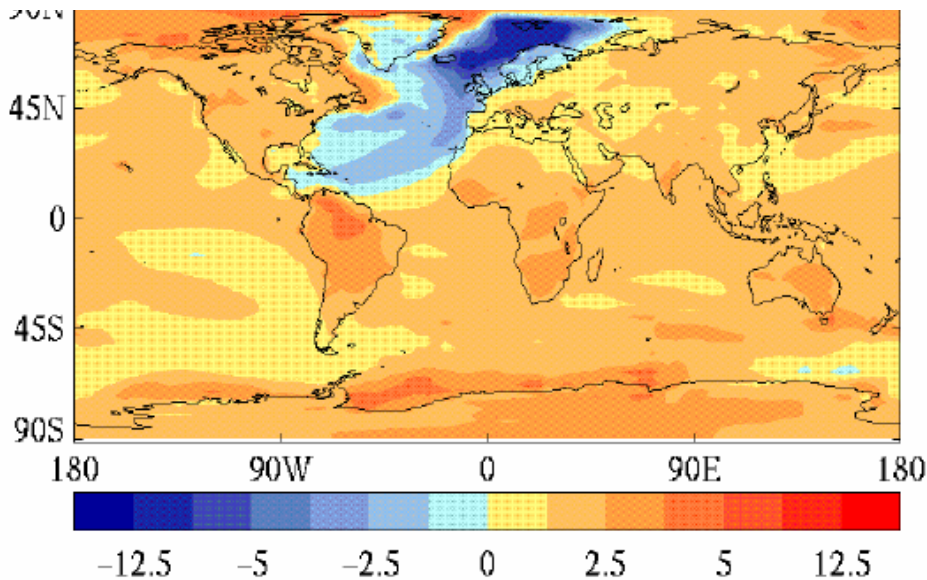
By 2100 there is a 50% chance of a major reduction in the gulf stream leading to substantial cooling in Western Europe

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❑ For low carbon vehicles such tipping points may be stimulated by

- Increased frequency of severe weather events
- **New evidence of accelerated climate change**

Cooling effect of a shutdown of the gulf stream



Wood 2005, Dangerous Climate Change

By 2010, consumer interest may have tipped in favour of low carbon cars

- 78% of the public are concerned about climate change
- Just 4% are not at all concerned

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**Growth in UK press articles on climate change
(proxy for awareness)**



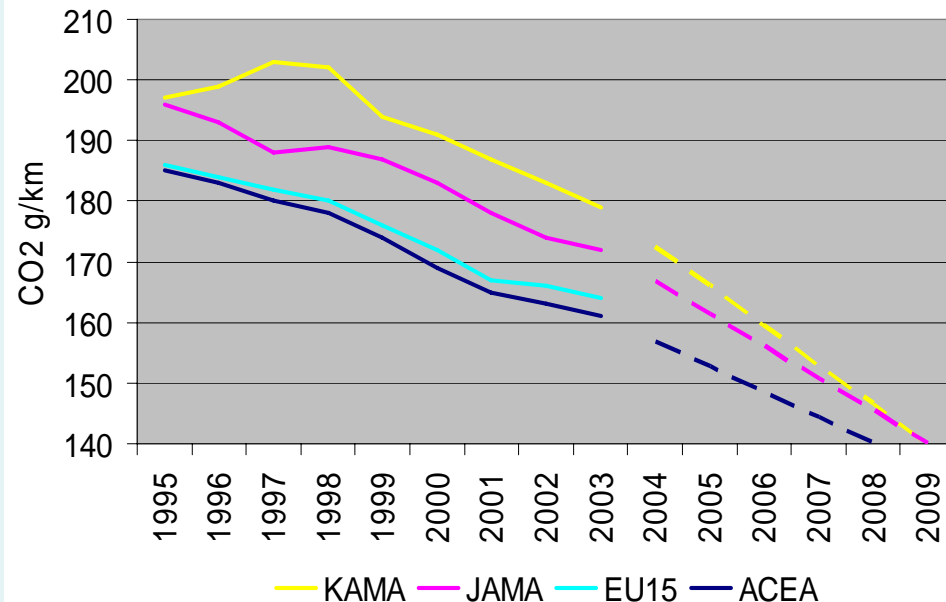
- Increased frequency of severe weather events
- New evidence of accelerated climate change
- **Media attention & concern**

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Beyond 2008 it is likely CO2 emissions from cars will be regulated in the EU – possibly linked to trading of allowances

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EU Voluntary Agreement - Progress & Projection



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- New evidence of accelerated climate change
- Media attention & concern
- **Regulation in Europe & elsewhere**

By 2010, consumer interest may have tipped in favour of low carbon cars

Could luxury with responsibility become the new motoring chic?

Carbon Trust 2004, Brand Value at Risk from Climate Change



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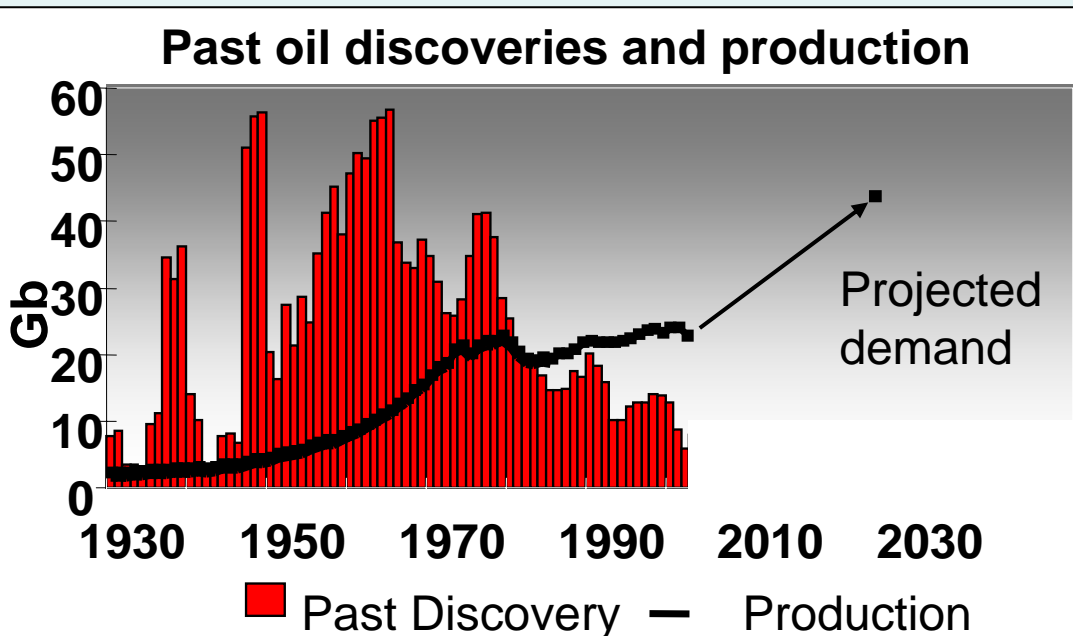
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- Increased frequency of severe weather events
- New evidence of accelerated climate change
- Media attention & concern
- Regulation in Europe & elsewhere
- **Increased choice of vehicles**
- **Brand differentiation**

By 2010, consumer interest may have tipped in favour of low carbon cars

High oil prices and security of supplies concern are reinforcing messages that vehicles efficiency needs to improve

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The London Congestion Charge lead to a doubling of sales of exempted vehicles in the London area following the introduction of the scheme



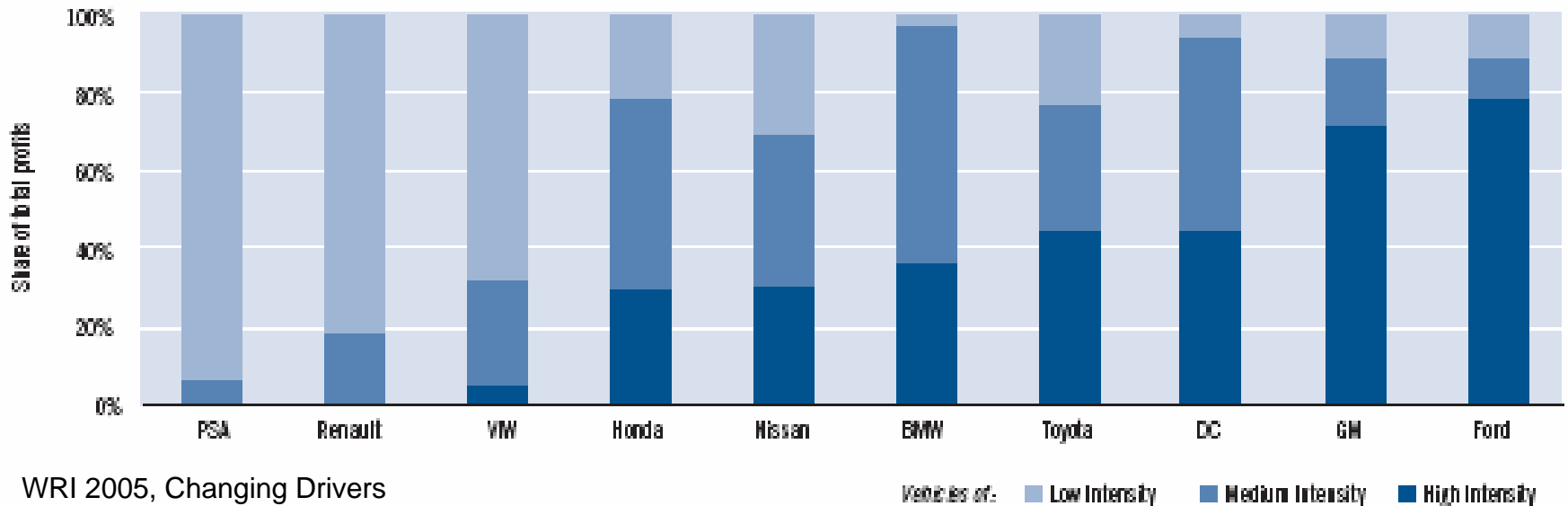
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 - Regulation in Europe & elsewhere
 - Increased choice of vehicles
 - Brand differentiation
 - High Oil price and security of supply concerns
 - **Pull from leading countries / US States - linked to effective incentives**

How would a tip in favour of fuel efficient vehicles affect the market?

- Increased, but variable vehicle costs
- Changed brand value
- Growth in smaller market segments
- Higher margins in fuel efficient segments
- Higher residual values for fuel efficient models
- Increased consumer awareness of fuel efficiency / environment

CARBON-INTENSITY OF OEM'S PROFITS, 2002



Energy efficient labels now displayed in new cars showrooms

Fuel Economy		Ford Fiesta 1.4 TDCi ZETEC
CO ₂ 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 76p, diesel 78p and LPG 58p (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>		
<small>Make/Model</small> Ford Fiesta 1.4 TDCi ZETEC <small>Fuel type</small> Diesel	<small>Engine capacity (cc):</small> 1399 <small>Transmission type:</small> 5 speed manual	
Fuel Consumption:		
Drive cycle	Litres/100km	Mpg
Urban	5.4	52.3
Extra-urban	3.8	74.3
Combined	4.4	64.2
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 (Nov 2005)
- Need for dealer staff to be better informed about fuel economy & environmental issues
- Potential to expand coverage to the nearly new market – subject to dealer agreement

Summary

- ❑ Road transport is a significant and growing source of greenhouse gases
- ❑ Rising public concern, economic costs & environmental impacts of climate change will increasingly drive political action to constrain CO2 emissions
- ❑ High oil prices & security of supply concerns reinforce the pressure to improve vehicle efficiency
- ❑ There are significant & different risks & opportunities for OEMs
- ❑ The industry is responding to the challenge – but pressure to improve vehicle efficiency will, and is growing
- ❑ UK consumer demand for low carbon vehicles is presently low, but
- ❑ By 2010, consumer interest may have tipped in favour of low carbon cars
- ❑ Significant demand for low carbon cars would create significant market disruption with clear winners and losers
- ❑ Vehicle labelling is drawing consumer attention to vehicle CO2 and running costs – with the potential to expand this to the nearly new market



www.carbontrust.co.uk



There's something
business needs
to talk about

IT'S TIME TO CUT THE CARBON. CALL 0800 085 2005

The Carbon Trust is funded by the Department for Environment, Food and Rural Affairs, the Scottish Executive, the Welsh Assembly Government and Invest Northern Ireland

