

Creating the market for low carbon transport

Additives 2009: Fuels and Lubricants for Energy Efficient and Sustainable Transport

York

29th April 2009

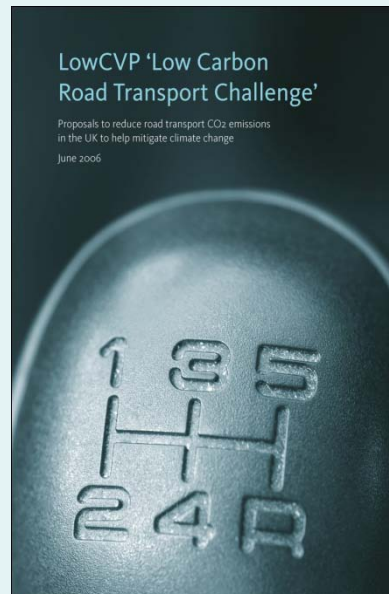
Greg Archer
Managing Director
Low Carbon Vehicle Partnership

Low Carbon Vehicle Partnership

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

Stimulating opportunities for UK businesses

LowC^{VP}
low carbon vehicle partnership



Fuel Economy		Low Carbon Car
CO ₂ emissions (g/km cycle)		
<100	A	B 117 g/km
101-120	B	
121-150	C	
151-180	D	
181-210	E	
211-240	F	
241+	G	
Fuel cost (estimated) for 12,000 miles		£662
VED for 12 months		£50
Environmental Information		
A guide on fuel economy and CO ₂ 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-financial factors play a role in determining a car's fuel consumption and CO ₂ emissions. CO ₂ is the main greenhouse gas responsible for global warming.		
Make/Model:	Low Carbon Car	Engine Capacity (cc): 1396
Fuel Type:	Diesel	Transmission: 5 speed manual
Fuel Consumption:		
Drive cycle	Litres/100km	Mpg
Urban	5.4	53.3
Extra-urban	3.8	74.2
Combined	4.4	64.2
Carbon dioxide emissions (g/km): 117 g/km		
Important note: Some specifications of this model may have lower CO ₂ emissions than this. Check with your dealer.		



LowC^{VP} marketing challenge

CARS NOT CARBON
A competition to promote greener motoring marketing

Event outline

Winners to be announced at the LowCVP Annual Conference
28th June 2007
DTI Conference Centre, Westminster

Accelerating the shift to low carbon vehicles and fuels

energy saving trust | campaign | marketing | BSH/BRUNNEN | greenTV | UNEP



LowC^{VP} marketing challenge

Accelerating the Shift to Low Carbon Vehicles and Fuels

Welcome

LowC^{VP} is a partnership of many UK organisations for the automotive and fuel industries, the environmental sector, government, academia, road users and other organisations who share a common vision to reduce CO₂ emissions from road transport.

Latest news

LowC^{VP} Annual Conference - 28 June, London, Westminster
The LowC^{VP} Annual Conference will feature a high profile line-up of speakers including Transport Secretary Douglas Alexander and will focus on some of the key issues facing the industry to reduce CO₂ emissions from road transport.

Guidance opportunities at LowC^{VP} Conference - 28 June, London
There are a number of opportunities for the automotive and fuel industries to meet with government, academia, road users and other organisations who share a common vision to reduce CO₂ emissions from road transport.

Government and Low Carbon Transport Initiatives
The Government has published a Low Carbon Transport Strategy in 2006, outlining the Government's vision for a low carbon transport system by 2050.

A quick plug !

- ☐ The climate imperative
- ☐ Debate: Investing in a sustainable industry or bailing out past failures?
- ☐ Advanced and alternative fuels - including electric solutions
- ☐ Cutting road transport carbon; driving local action
- ☐ Debate: Delivering the CO2 targets; strategic marketing and technical approaches
- ☐ What Car? Green Awards and Revolve Brighton to London Eco-Rally
- ☐ Vehicle displays and inside exhibitions
- ☐ 'Open mic' session

The Changing Climate for Vehicles and Fuels

Monday 8 June 2009, City Hall, London

**Low Carbon Vehicle Partnership
Annual Conference 2009**



In association with:



revolve
towards zero emissions

Supported by:

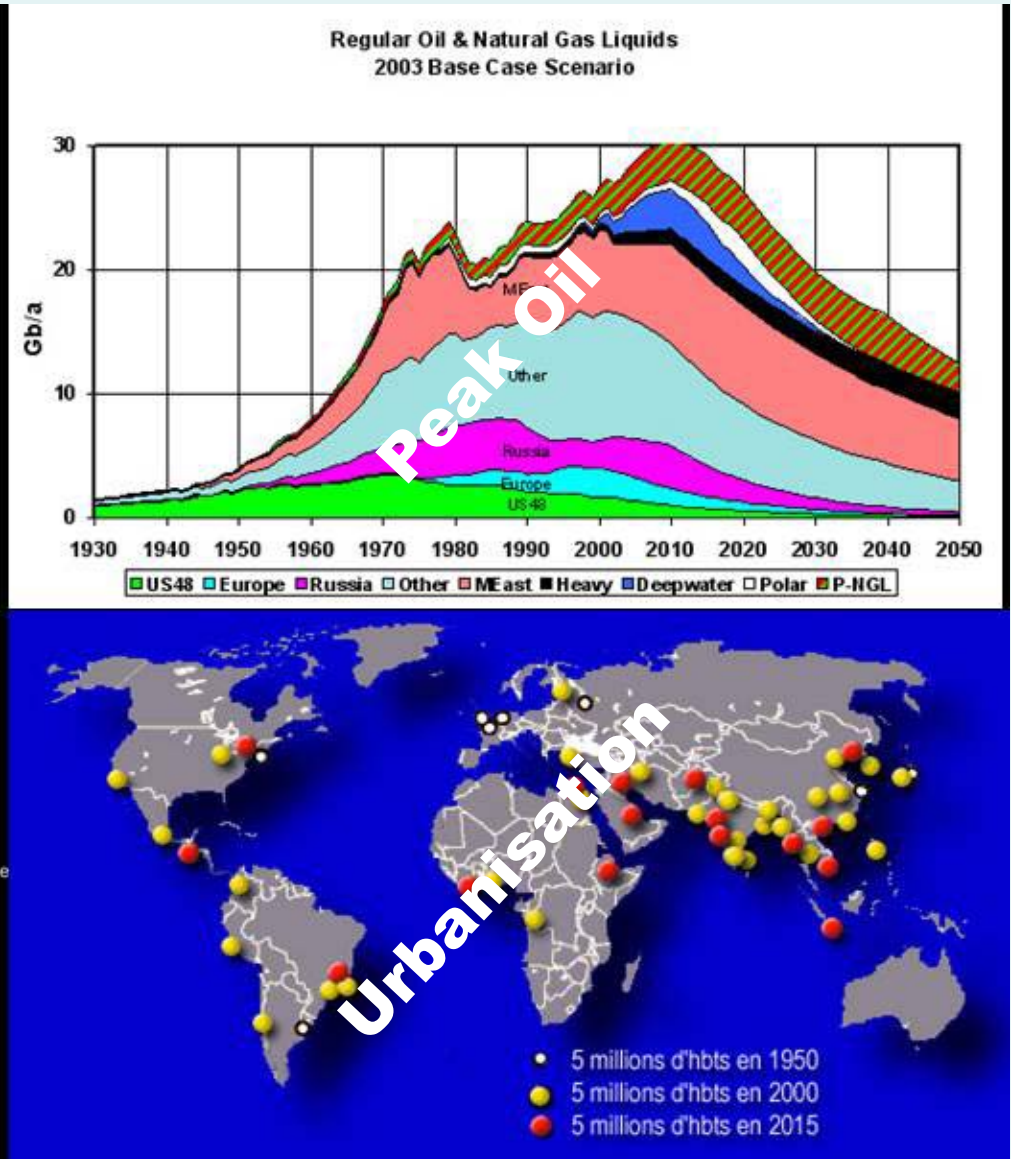
MAYOR OF LONDON

Outline

- ❑ 21st Century transport challenge
- ❑ Progress and approaches to accelerate technology deployment
- ❑ Market readiness of renewable transport fuels
- ❑ Preparing for the future
- ❑ What else is needed?

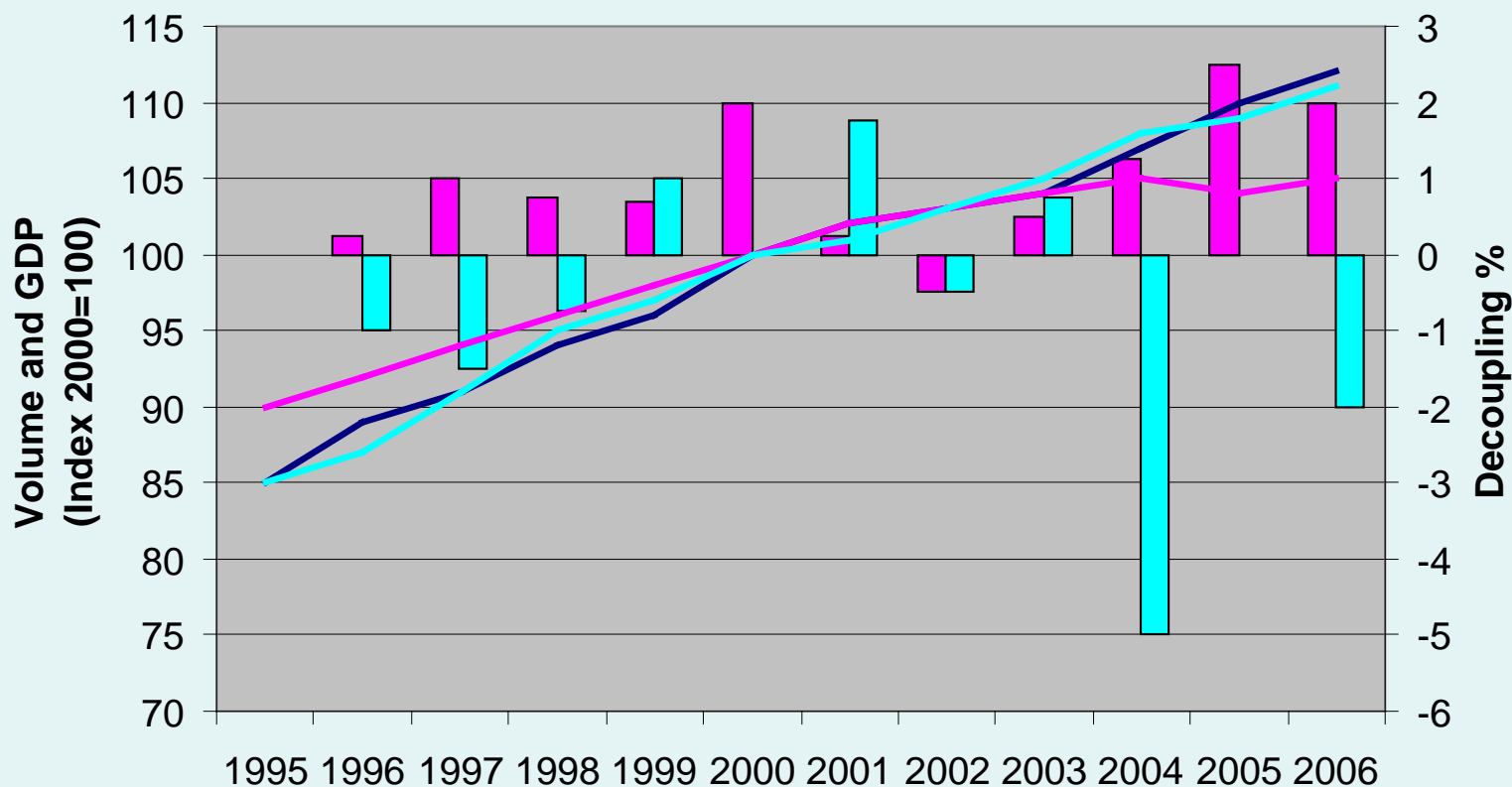


21st Century transport faces three key challenges



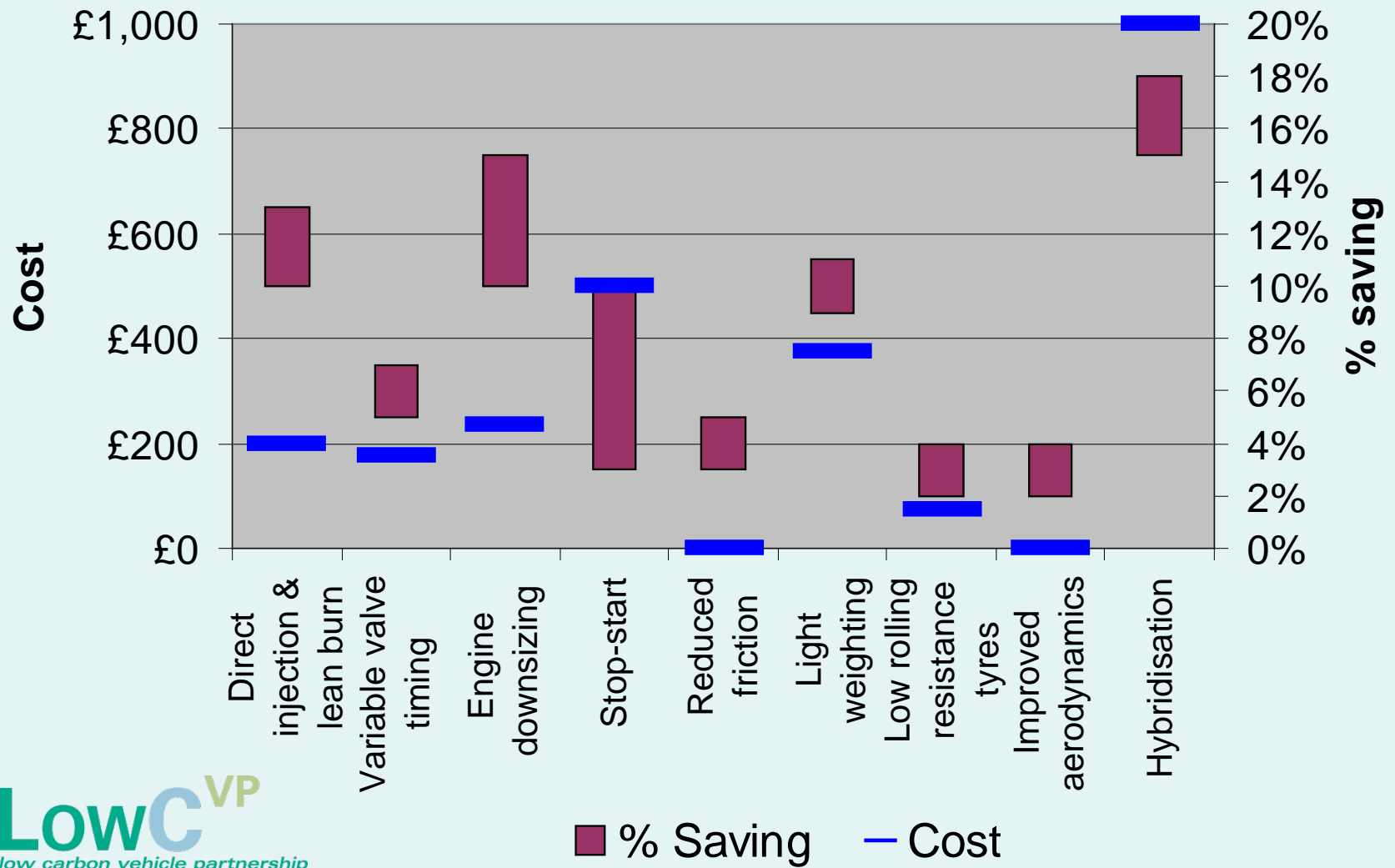
Reducing transport emissions requires delinking demand from economic growth

EU trends in freight and passenger transport compared to GDP



A range of existing technologies are available to reduce CO2 emissions – at a cost

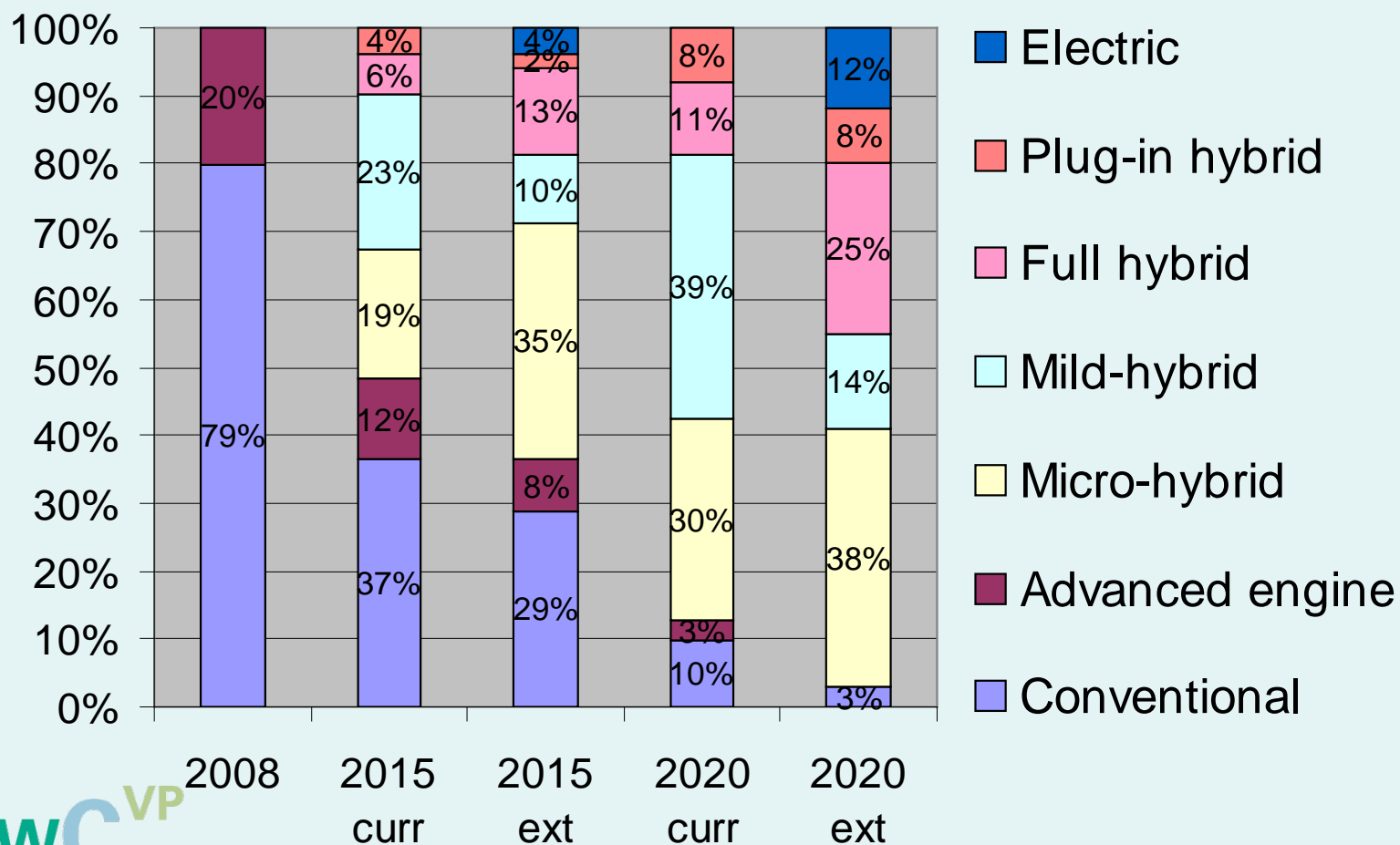
Technologies for improving vehicle efficiency



Based upon King Review Part 1 2008

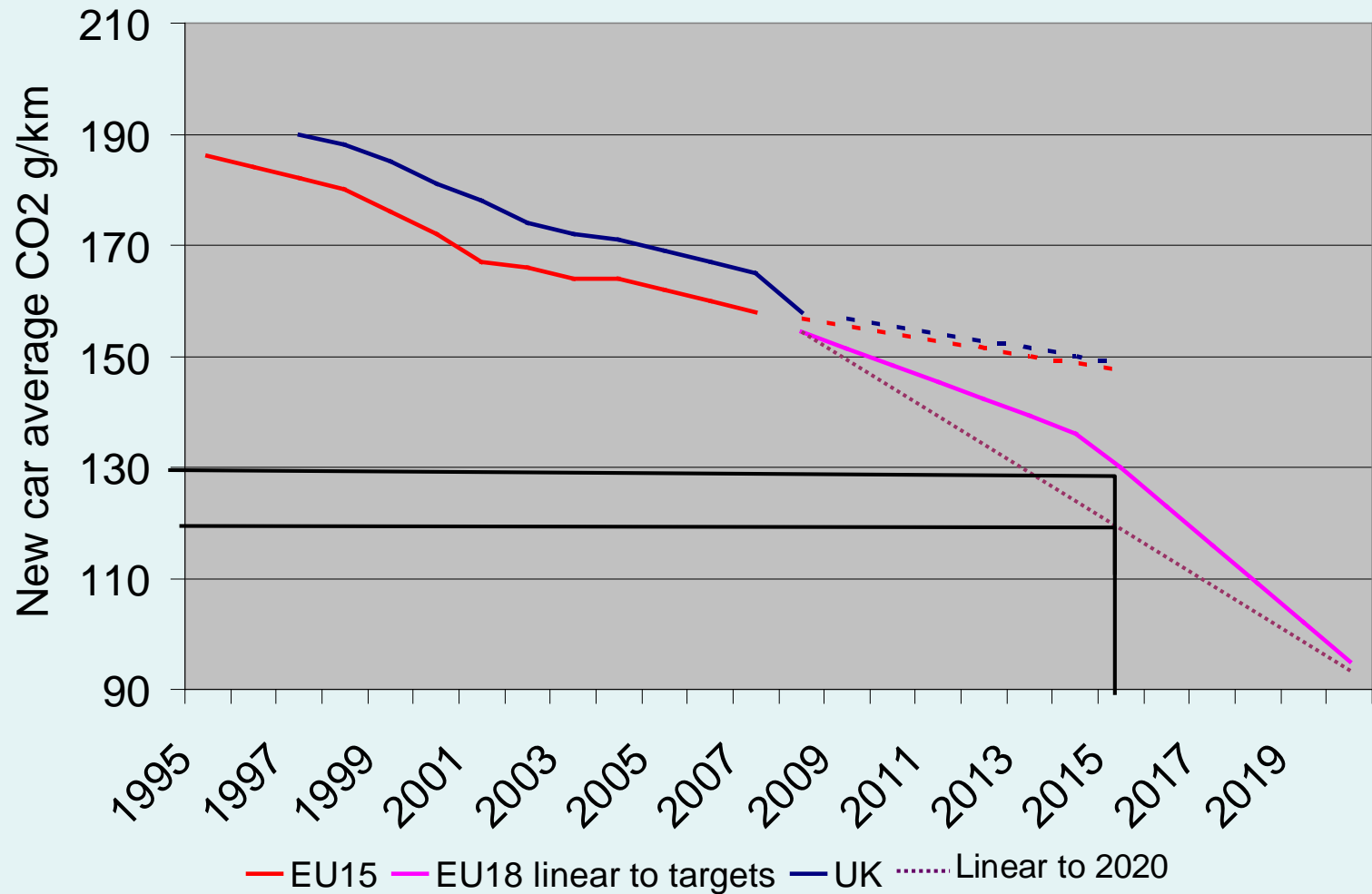
To 2020 most emissions reductions will be through improvements to existing ICEs vehicles

Evolution of technology in new car market



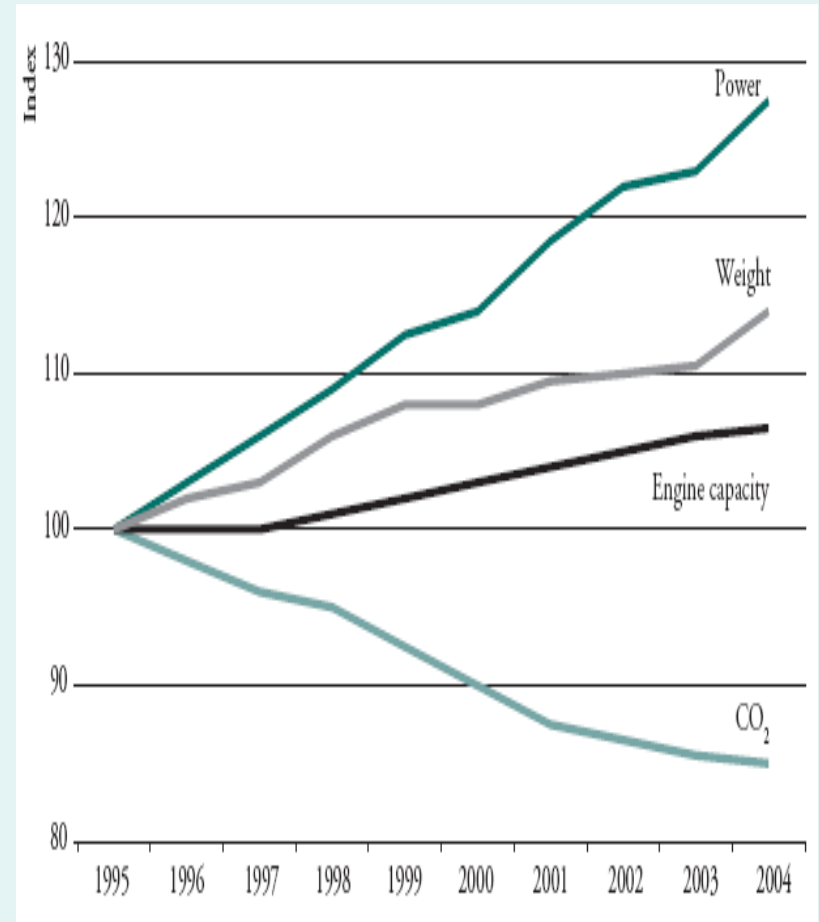
New cars are becoming more efficient – but the rate of progress must be accelerated to achieve targets

EU & UK new car CO2 emissions



Accelerating progress depends upon:

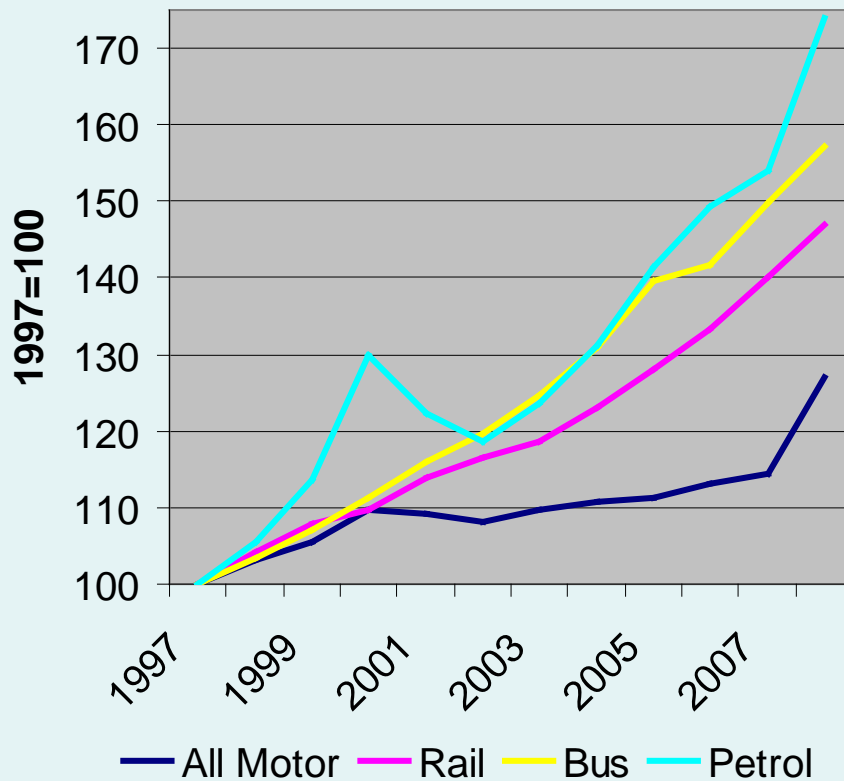
- ❑ Reversing unsustainable trends in vehicle size, weight and power
- ❑ Maintaining consistently high fuel prices
- ❑ Industry-wide action
 - legislation
- ❑ Increased consumer demand
 - Improved information
 - Increased incentives, appeal and model availability



King Review 2008 based upon ACEA data

High fuel prices stimulate lower carbon and reduced demand for transport - but not necessarily mode shift

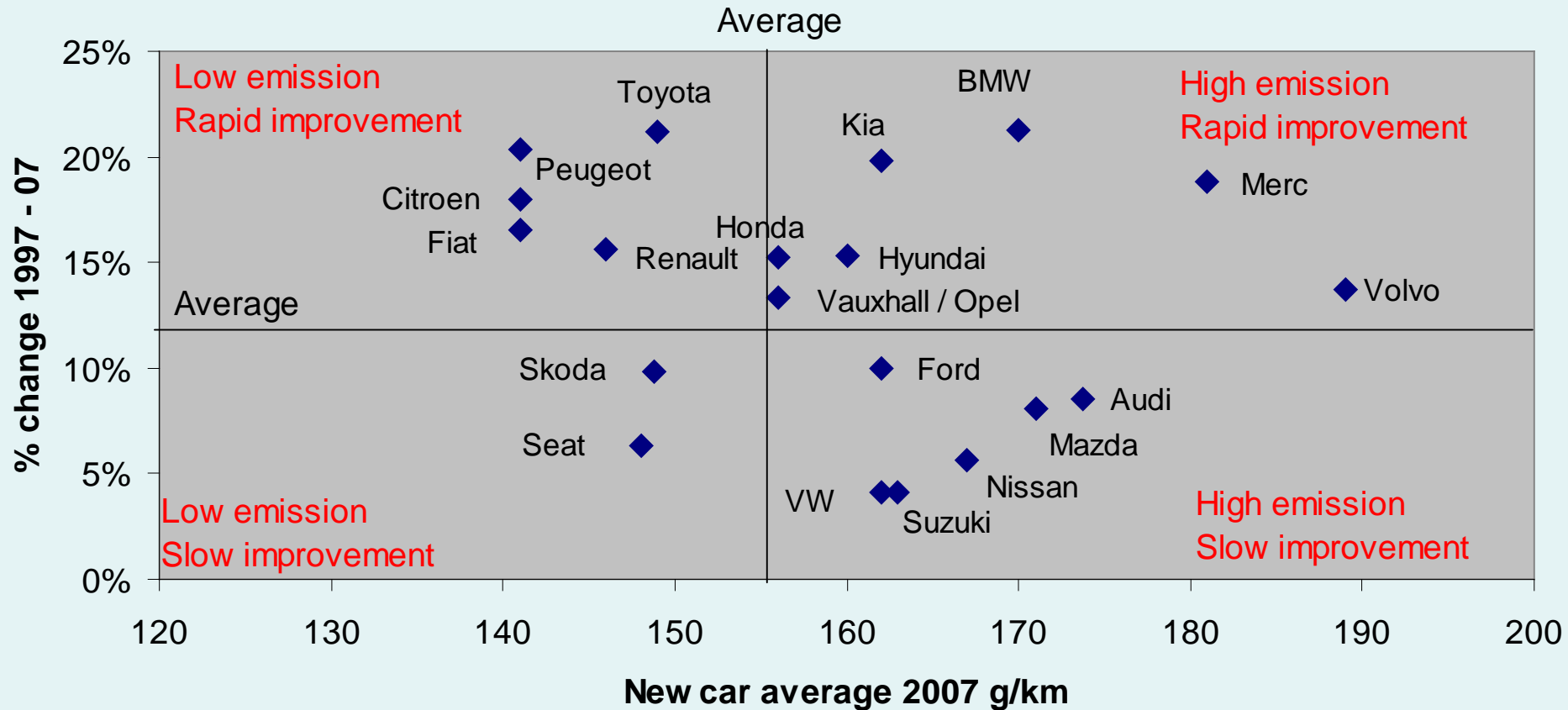
Transport cost comparison



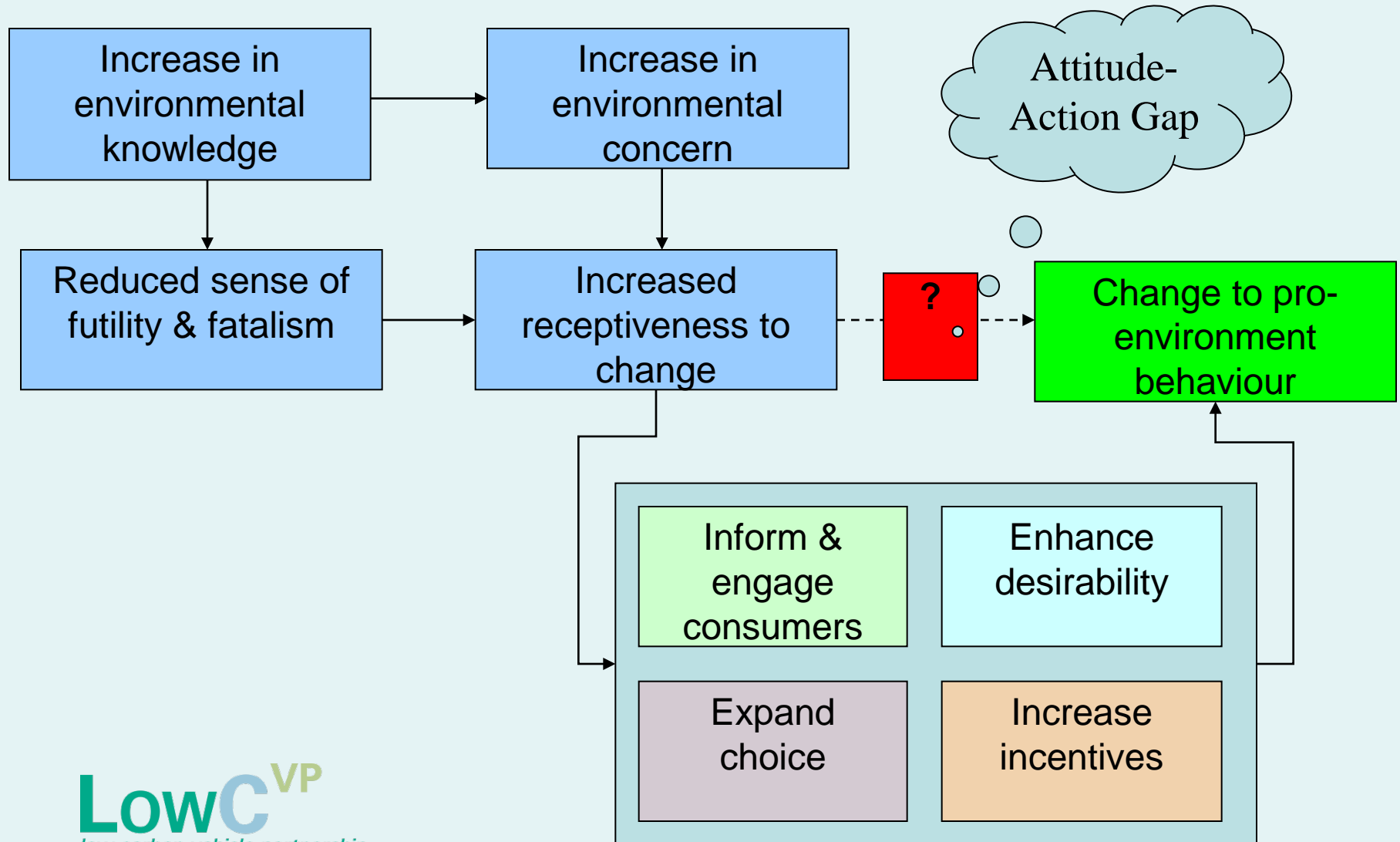
- ❑ High fuel prices short term lead to
 - Fewer journeys
 - Shorter journeys
 - More efficient driving
 - Lower speeds
 - Mode shift
- ❑ High fuel prices long-term lead to
 - Trip destination changes
 - Location changes
 - More efficient vehicles
- ❑ High fuel prices reduce technology payback times
- ❑ Public transport has become increasingly expensive compared to motoring

Strong legislation is essential to tackle market failures and stimulate industry-wide action

Comparison of manufacturer CO2 emissions



Increasing consumer demand for environmentally friendly vehicles requires bridging the attitude-action gap



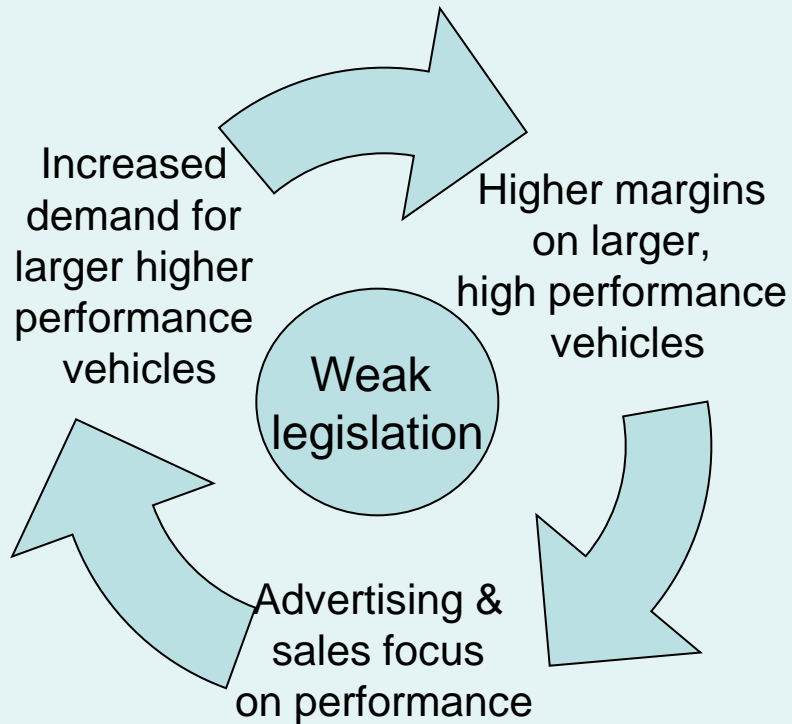
Market leaders are stimulating demand for low carbon technologies

- ❑ Deploying low carbon technologies across their range in most sectors (in which they operate)
- ❑ Promoting environmental performance & efficiency as desirable features in advertising
- ❑ Embedding sustainability into business practices

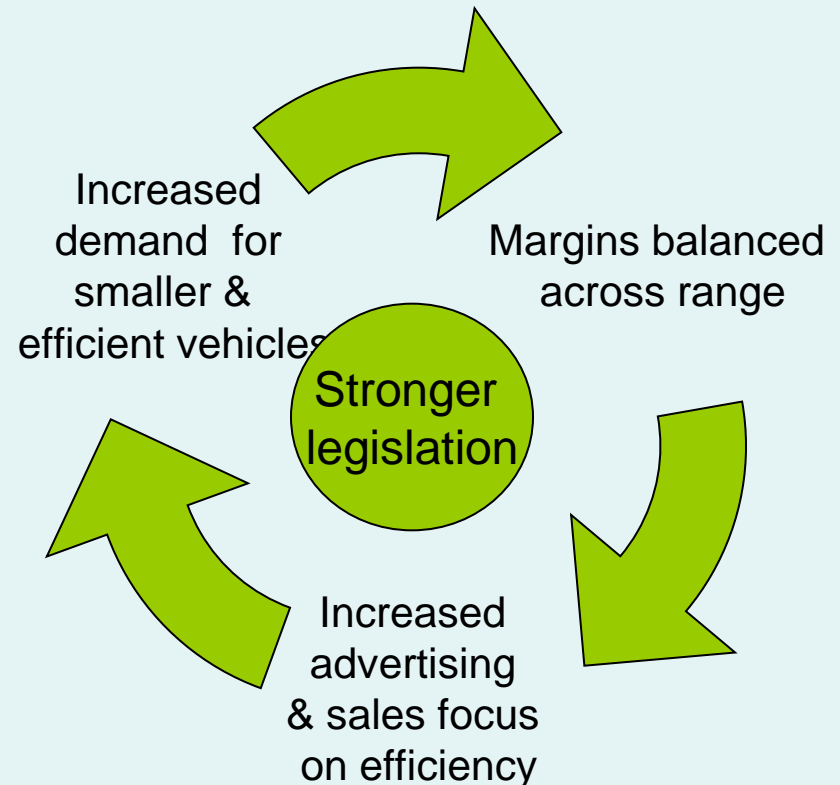


Unsustainable past business models are being challenged by legislation and market leaders

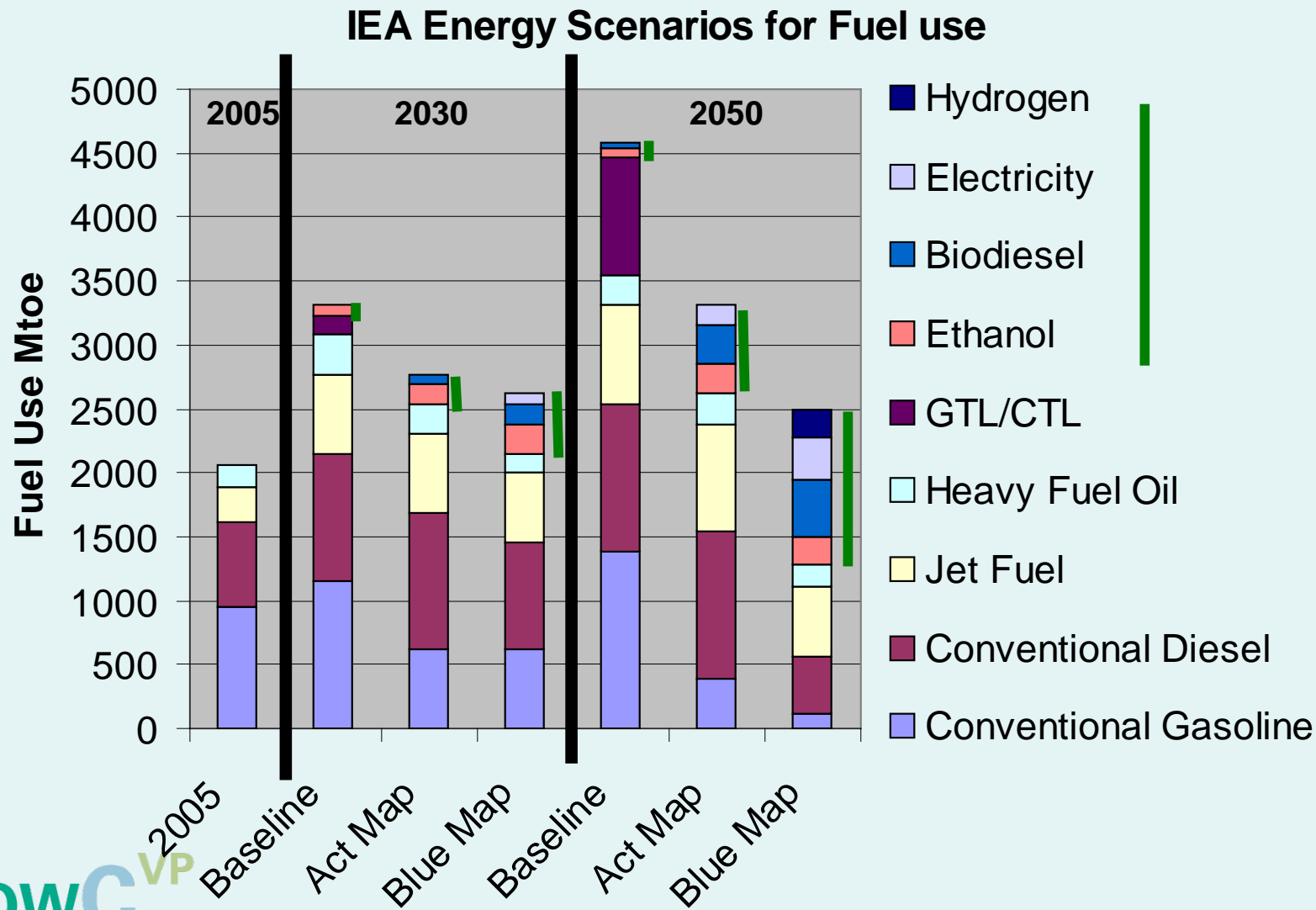
Unsustainable (past) behaviour




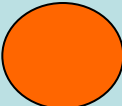
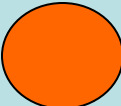
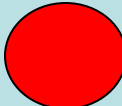

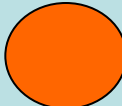

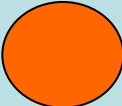
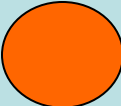
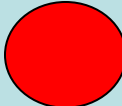
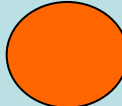
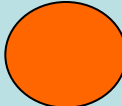


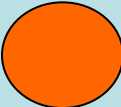
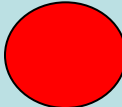
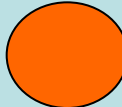
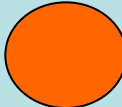


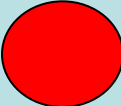
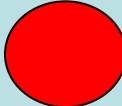
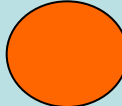
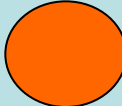


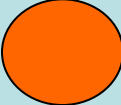
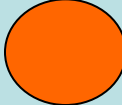

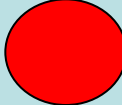
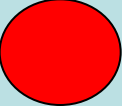
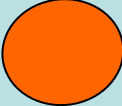
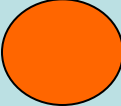



Sustainable (emerging) behaviour



Beyond 2020 IEA scenarios show an increasing penetration of renewable transport fuels to meet increasing demand



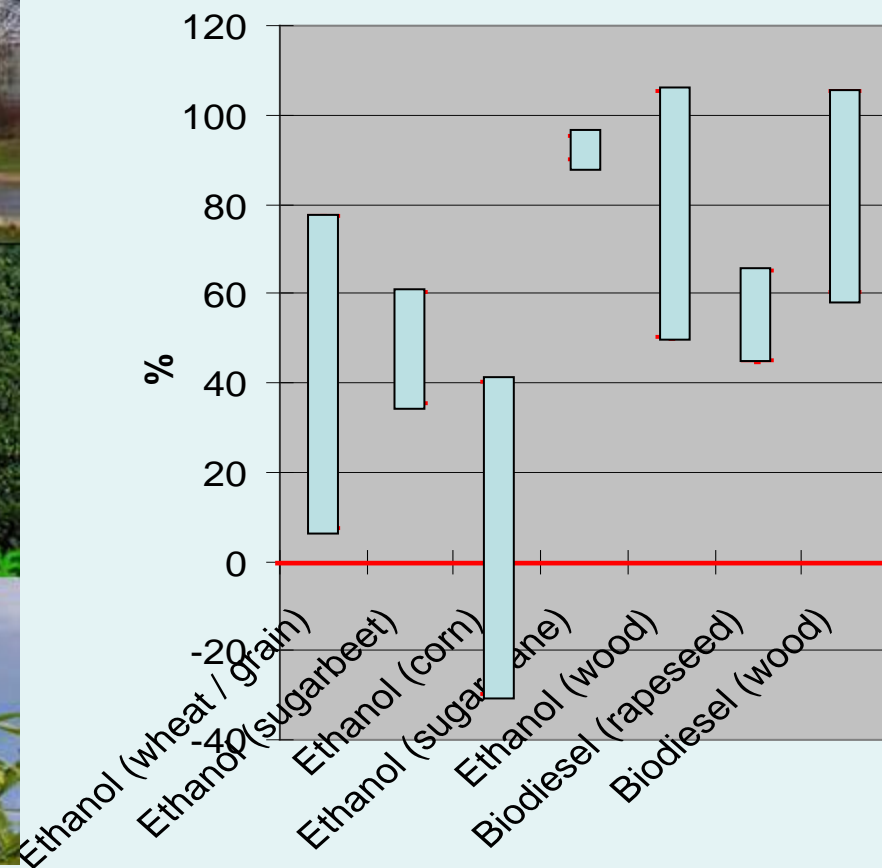
To 2020 the challenge is to ready the market for renewable fuels – but which option?

	1 st G Bio	2 nd G Bio	H2-IC	H2-FCV	Bio- CH4	EV
Technology readiness						
Cost competitiveness						
Vehicle availability						
Infrastructure deployment						
Driver acceptability						
Sustainability						

There are good and bad ways of producing biofuels that assurance schemes can distinguish between

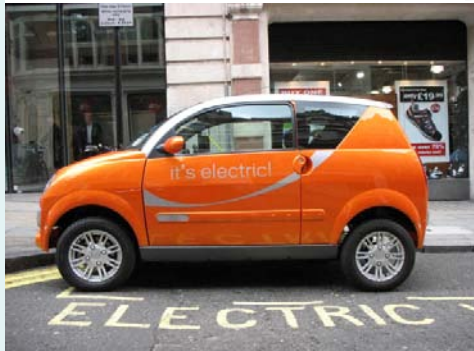


**% WTW GHG savings
compared to petrol or diesel**



Derived from Concawe 2006

There is considerable renewed interest in electric vehicles following advances in lithium-ion battery technology and ultra capacitors



Hydrogen fuel cell vehicles offer significant but still distant prospects

Key challenges:

- ☐ Higher costs per unit of energy
 - Adequate price of carbon mitigation
- ☐ Supply of renewable hydrogen
- ☐ Development of refuelling infrastructure and practical storage
 - Chicken and egg supply problem
- ☐ Supply of a range of affordable vehicles
 - Fuel cell costs, durability and reliability
- ☐ Improving public acceptability
- ☐ Alternative LC-options
- ☐ RD&D funding



Preparing the market for renewable fuels requires:

- ❑ Coordinated support throughout the innovation chain
- ❑ Tackling market failures & supporting niche applications
- ❑ Long-term commitments to promising alternatives
- ❑ Adequate incentives to reward low carbon
- ❑ Bridging the customer attitude-action gap
- ❑ Preparing for the rebound effect and changes to transport fuel tax revenues



Fuel duty revenues

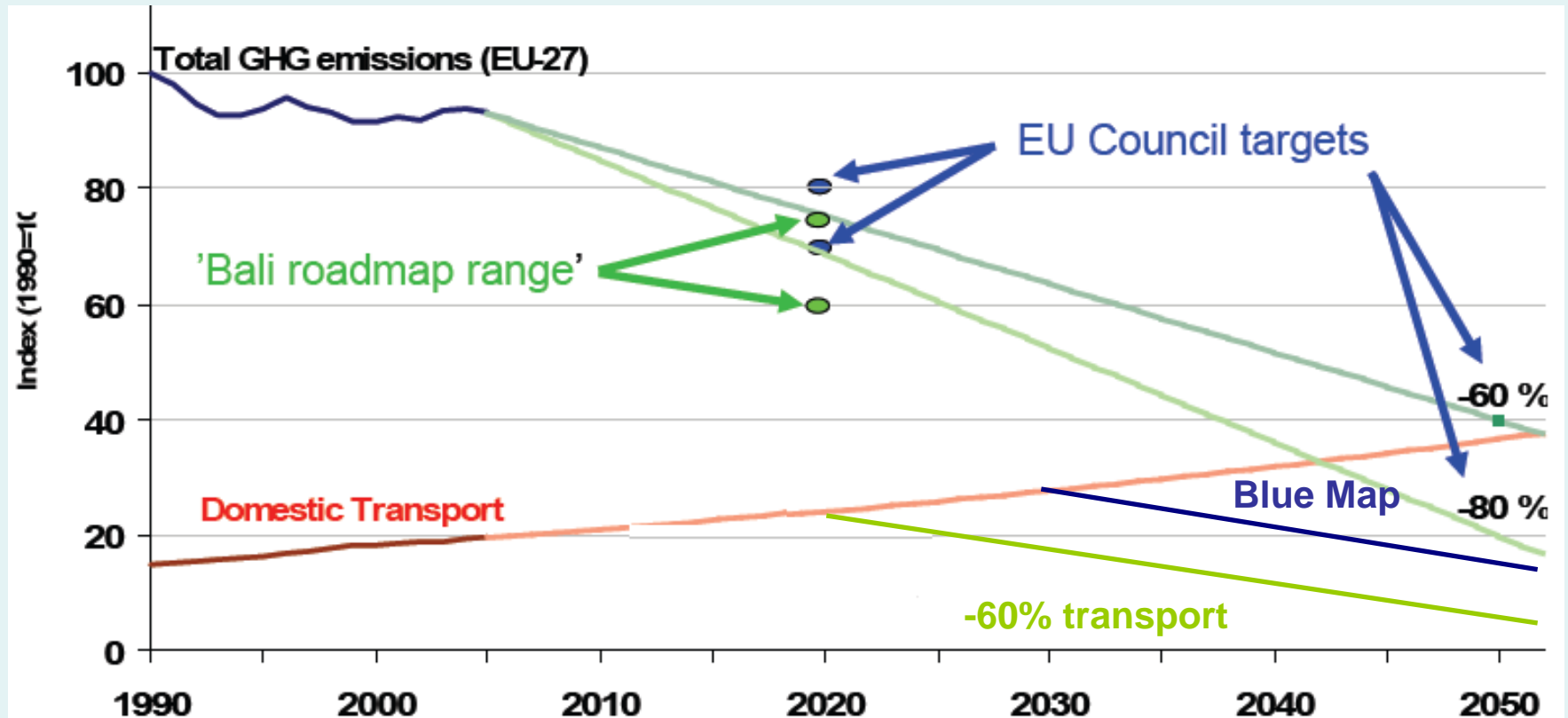


Recent history shows there are no “silver bullets”



EU domestic transport emissions will consume the CO2 budget on current trends –

Even ambitious IEA Blue Map scenarios may not leave sufficient headroom for other sectors



Adapted from EEA 2009 & TNO 2009

Technology can only be part of the solution - demand management and mode shift are also needed – in part to manage rebound effects

- ❑ Smarter driving improved driver behaviour
- ❑ Reduced vehicle use
- ❑ Better freight distribution
- ❑ Modal shift
- ❑ Land-use planning
- ❑ Tele-working



Messages

- ❑ The transport sector must rapidly address tri-21st Century challenges
- ❑ Technology deployment, not availability is the key issue
- ❑ Current progress in improving vehicle efficiency must be accelerated by:
 - Reversing unsustainable vehicle characteristics trends; consistently high fuel prices; legislation; and, increased consumer demand
- ❑ Industry response is patchy but market leaders are stimulating consumer demand and deploying technology across their ranges
- ❑ Beyond 2020 renewable fuels will play an increasing important role notably biofuels, electricity and (possibly) hydrogen – there are no “silver bullets”
- ❑ On current trends transport will occupy the entire EU CO₂ cap by 2050
- ❑ Technology is only part of the solution – demand management and building public transport infrastructure to encourage modal shift is crucial

Any Questions?

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