



Centre of Excellence for Low Carbon & Fuel Cell Technologies

Low Emission Strategies

CAN

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Andrew Whittles

Project Development Manager

andrew.whittles@cenex.co.uk

Background

Cenex

Low Emission Strategies

- Fleet Work
- Waste
- Procurement
- Permitting
- Planning

Conclusions



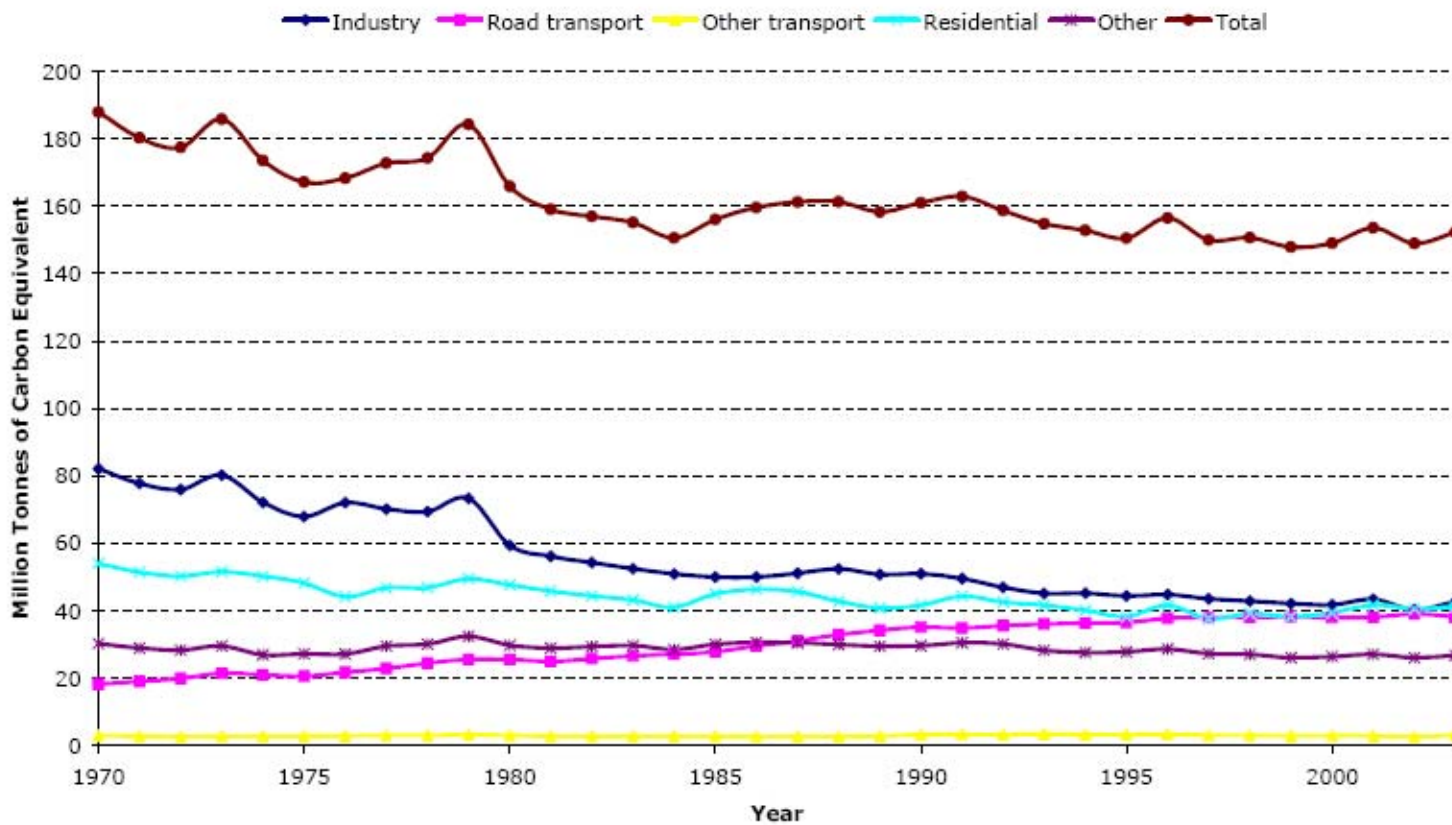


Background to Cenex

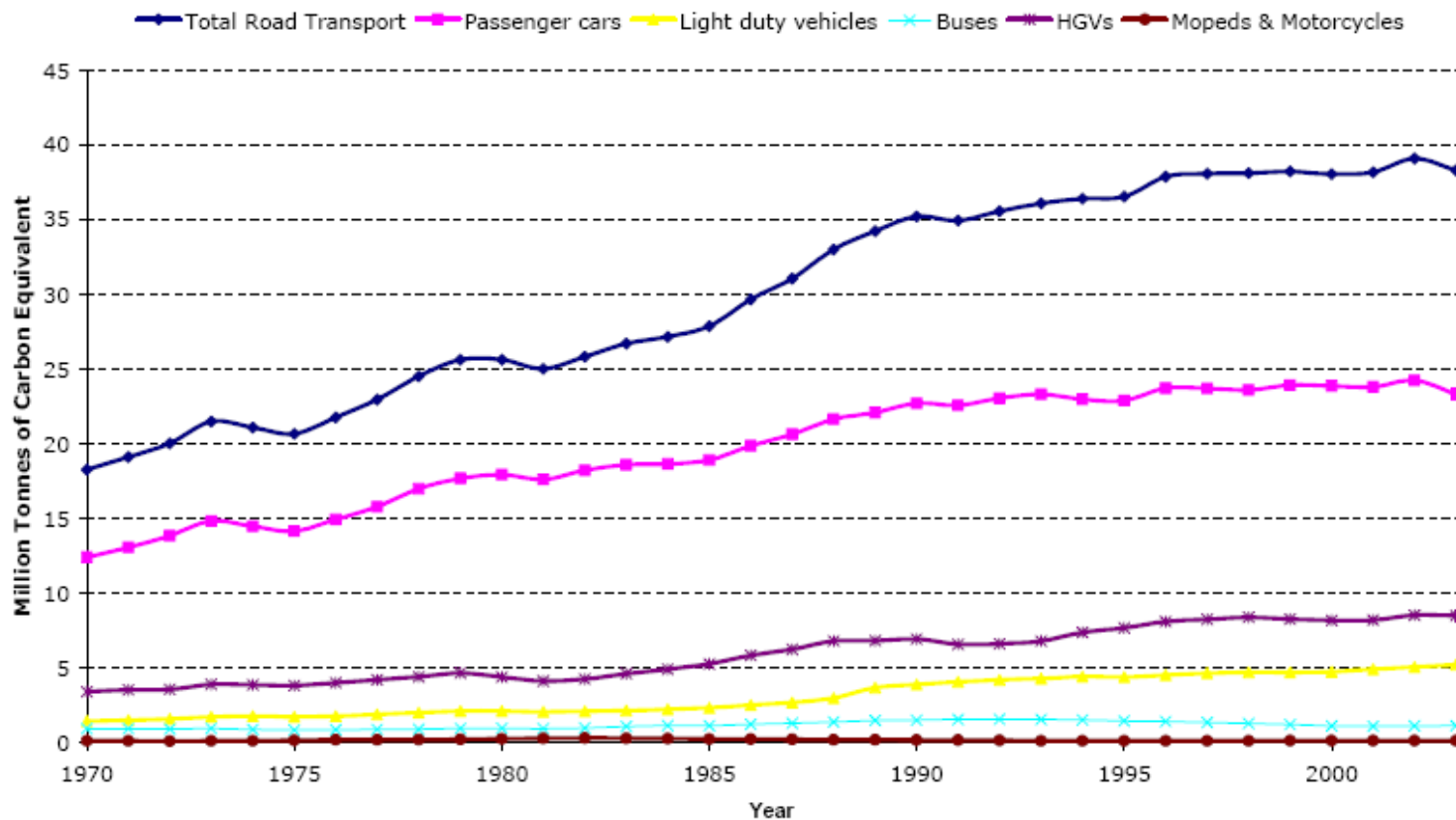
- UK's first Centre of Excellence for Low Carbon and Fuel Cell Technologies
- Formed in 2005 to assist BERR to help catalyse innovation in the UK automotive supply chain
 - Targeting assisting UK motor industry competitiveness
- NOT an R&D Centre of Excellence
 - Emphasis on exploiting the potential of new technology through the early market entry phase
- Run Programmes and deliver projects for National Government and Government Agencies



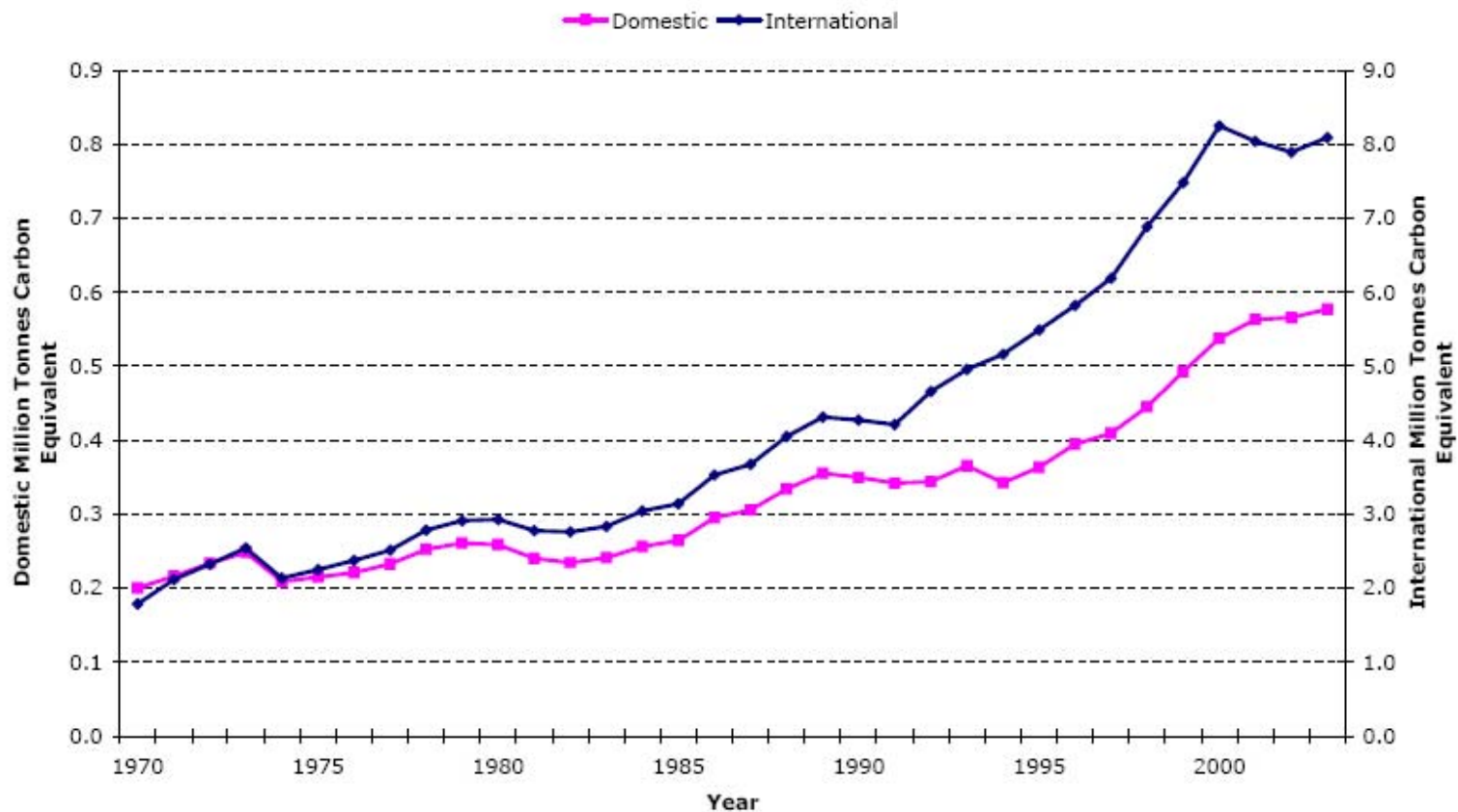
UK CO₂ Emissions by End User



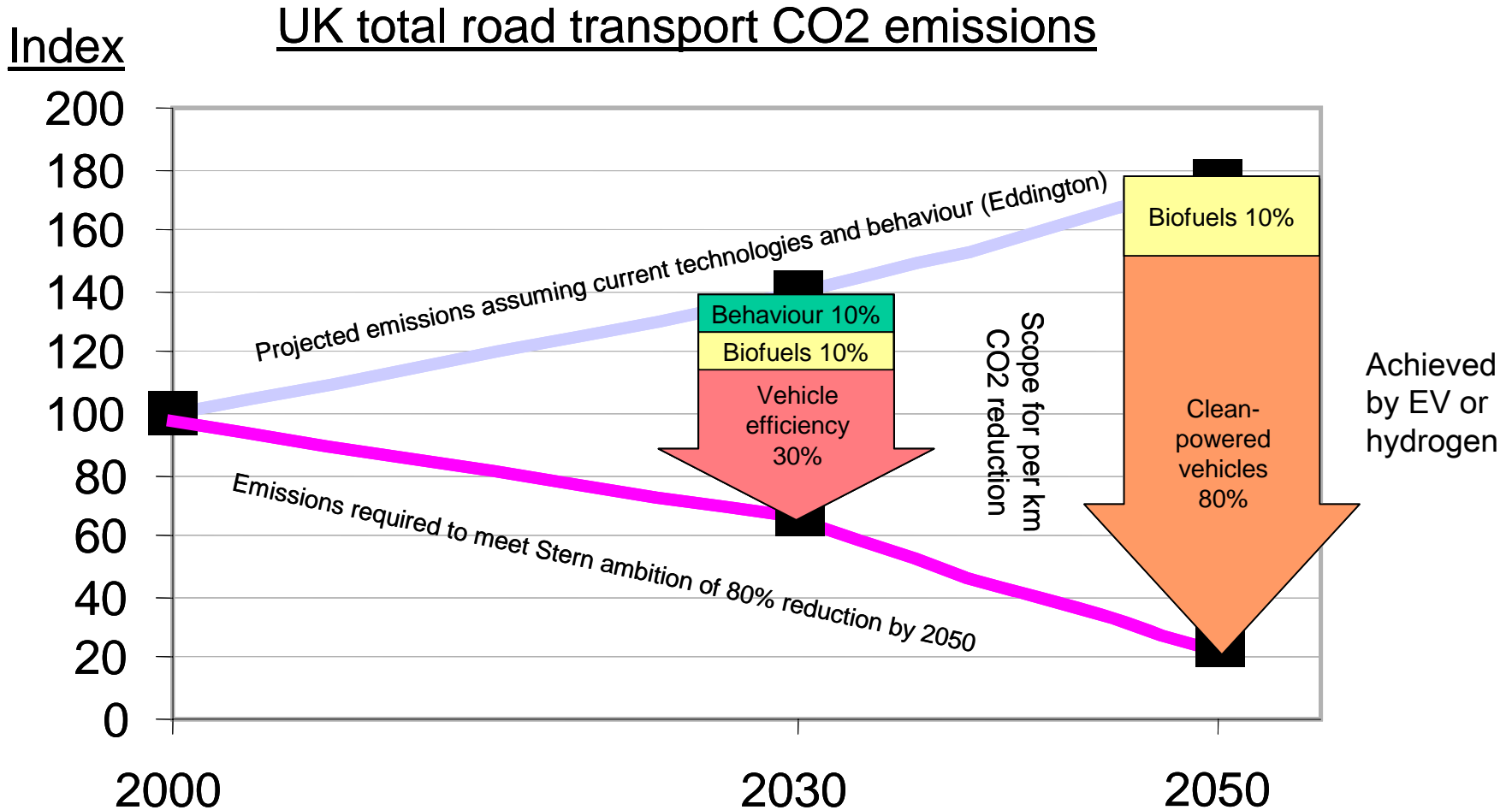
CO₂ Emissions by Type of Road Transport



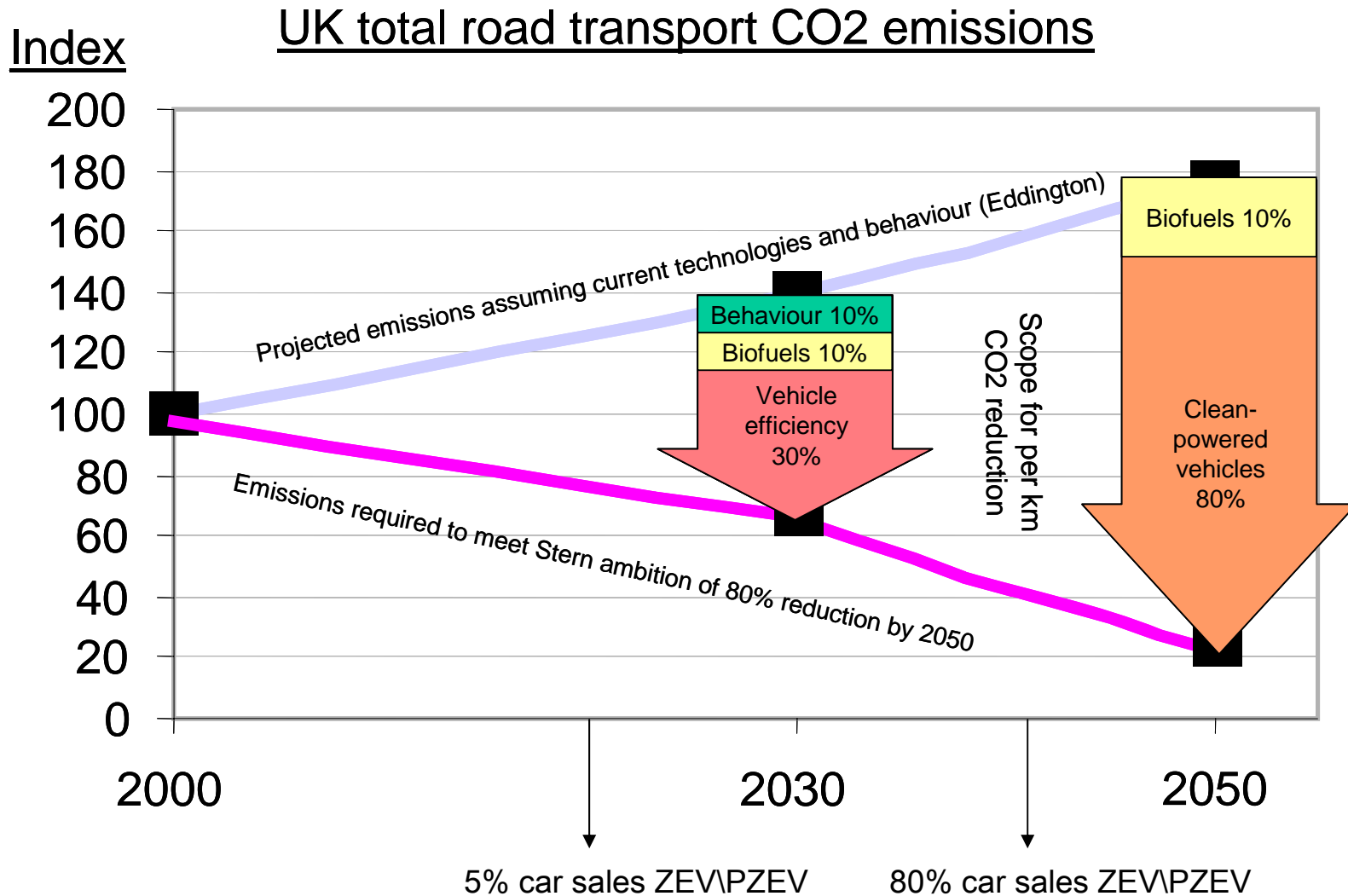
UK Domestic and International Aviation Carbon Emissions



Deployment Opportunity defined by King Review focus on electrification of transport opportunity



“Window of Opportunity” inherent to King Review proposition (2020-2040 window)

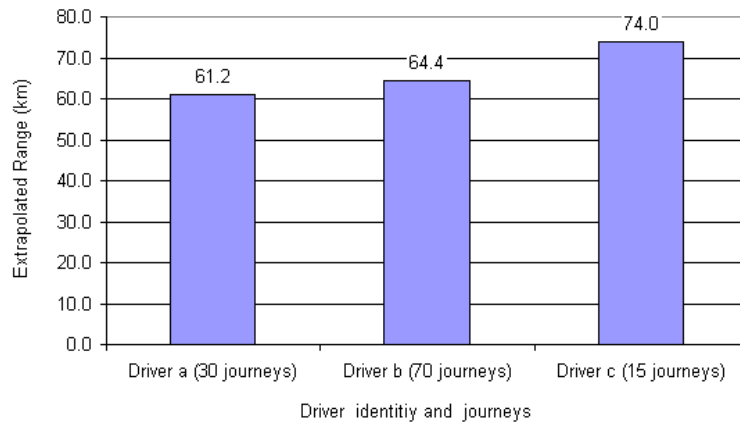




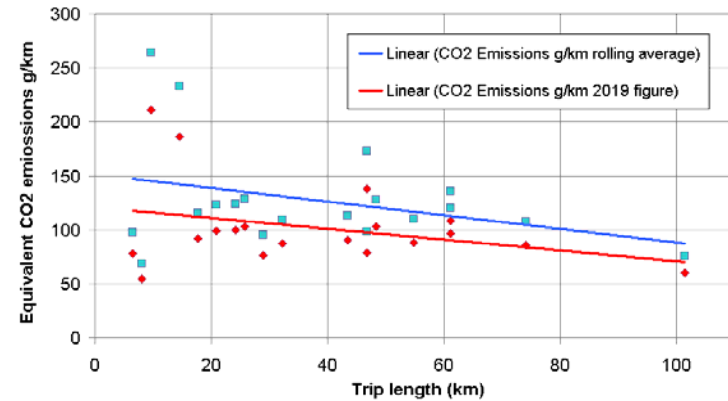


Cenex EV trials

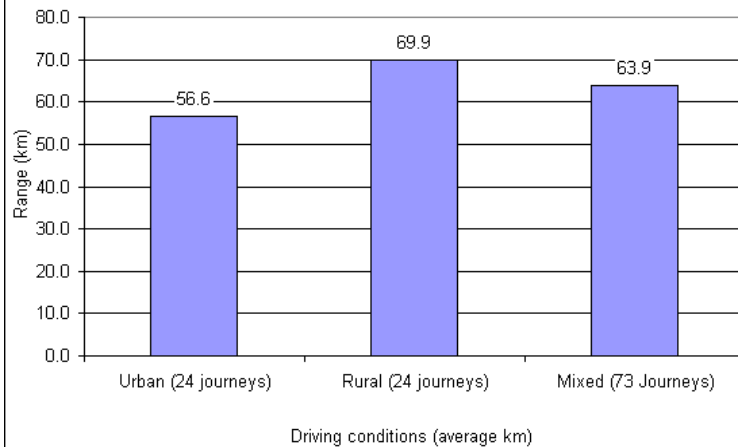
Range by driver (100-0% SOC)



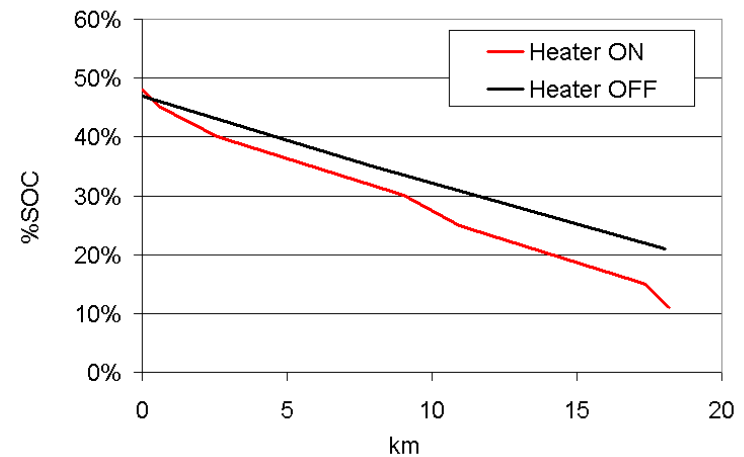
MIEV Equivalent CO2 emissions



Range by driving condition (100-0% SOC)



SOC vs km



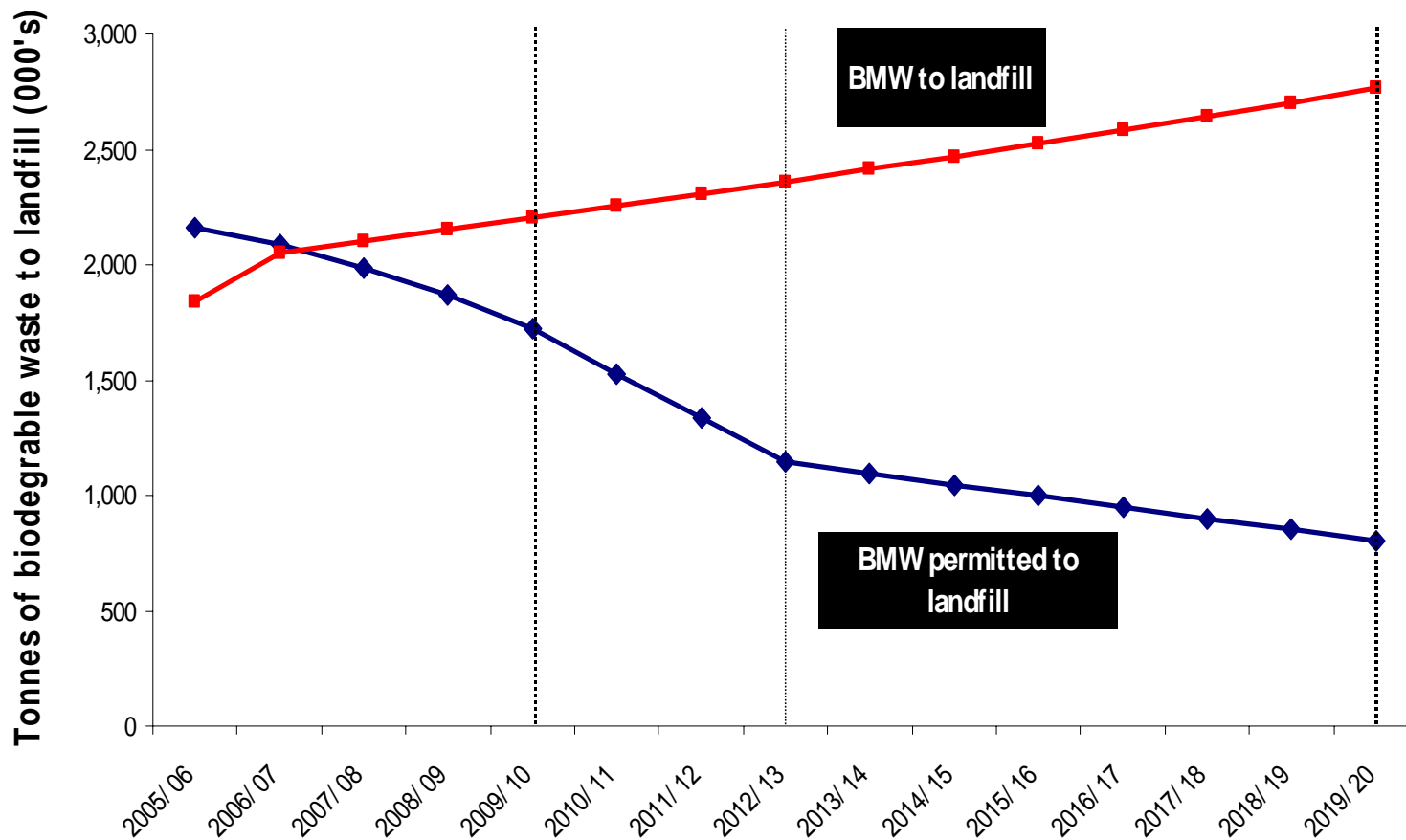








London's Landfill Challenge



Final LATS Allocations

	Base Year	2010	2013	2020
Leeds City Council	246,603	151,189	100,703	70,465
Hertfordshire CC	298,406	219,073	145,918	102,103
Essex County Council	386,319	281,901	187,766	131,386
Greater Manchester WDA	850,010	557,297	371,200	259,740
Greenwich Council	35,515	53,214	35,445	24,802

BMW - Tonnes



LEEDS:

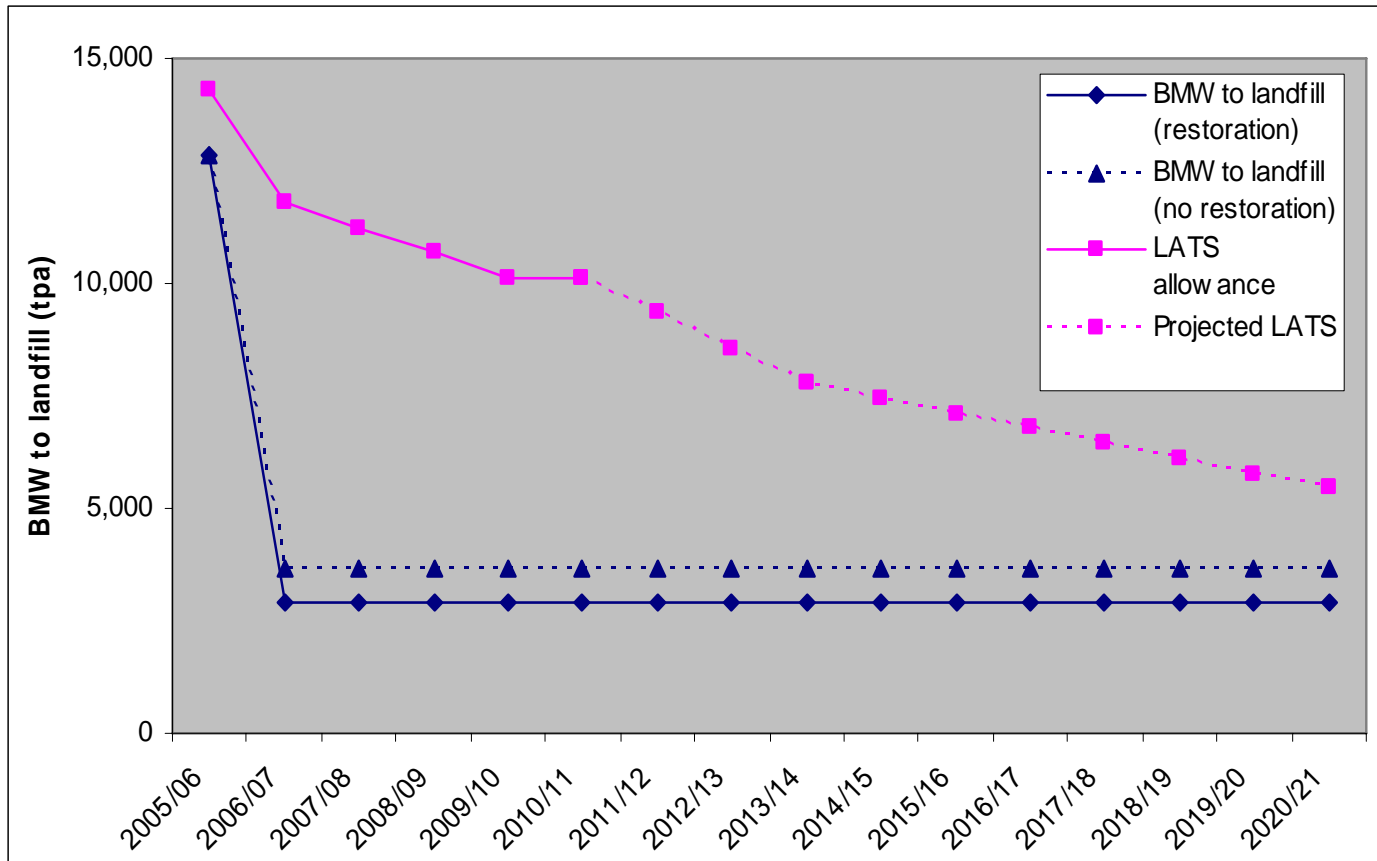
LATS Projection Prior to Long-Term Residual Waste Treatment Solution

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
LATS Allowances	203,667	179,813	151,189	134,360	117,531	100,703	96,383
BMW Landfilled	197,407	185,823	174,756	153,449	143,724	135,713	135,574
Shortfall/excess in LATS	6,260	(6,010)	(23,567)	(19,089)	(26,193)	(35,010)	(39,191)
Bank /Sell /Buy	Bank / sell	Use surplus	buy	buy	buy	buy	buy

Assumes implementation of recycling strategy to meet 50% target by 2020

Leeds CC landfilled 77% of domestic waste collected in 2006/07

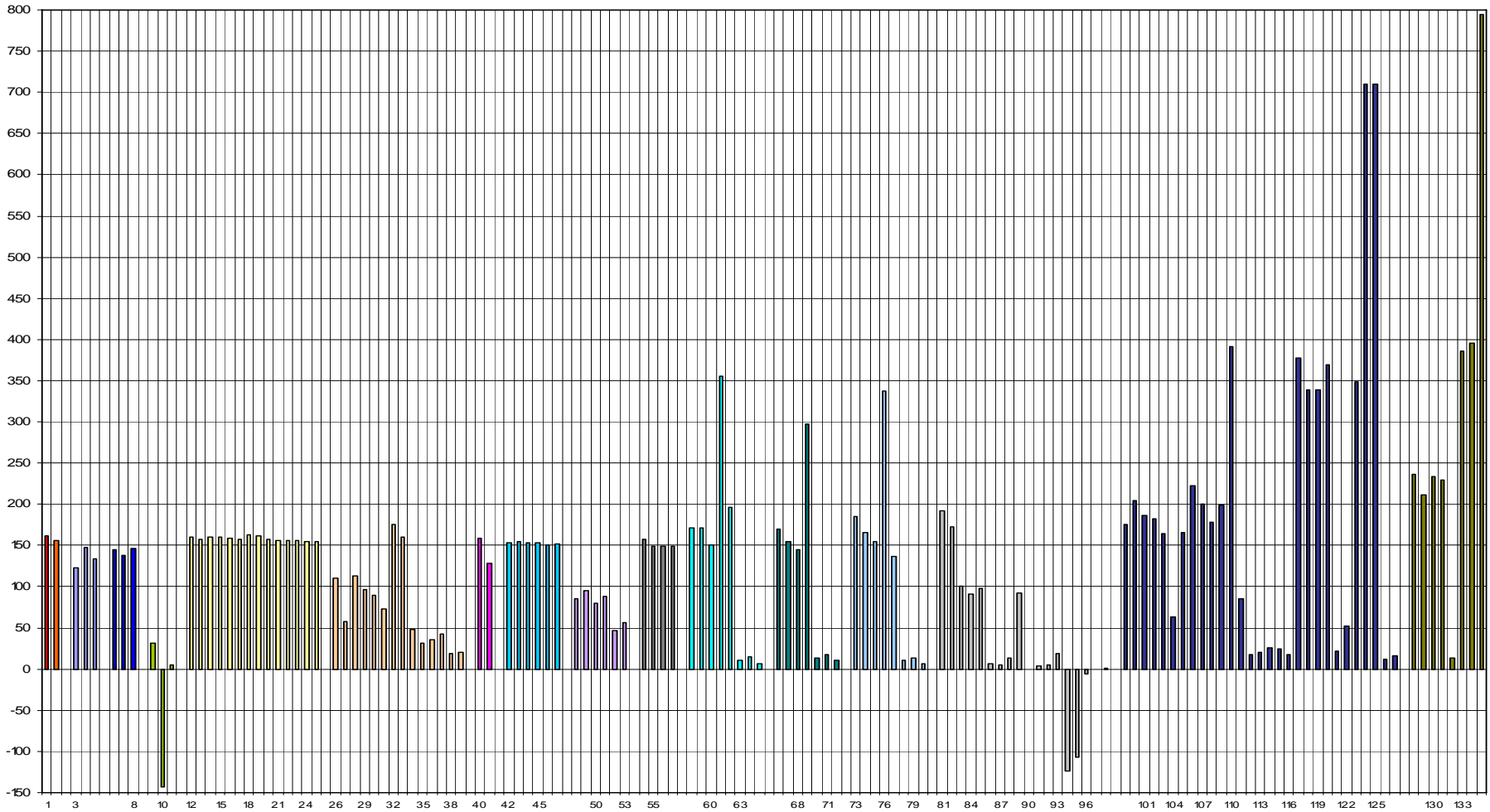
Landfill Allowance Trading Scheme (LATS)



Biogas_{as a} road transport fuel

An
assessment
of the
potential
role of
biogas as a
renewable
transport
fuel

AGGREGATED WELL to WHEELS EMISSIONS



CONCAWE – March 2007



LONDON HYDROGEN PARTNERSHIP

MAYOR OF LONDON

Strategic hydrogen infrastructure options for London to 2015

London Hydrogen Partnership

February 2007

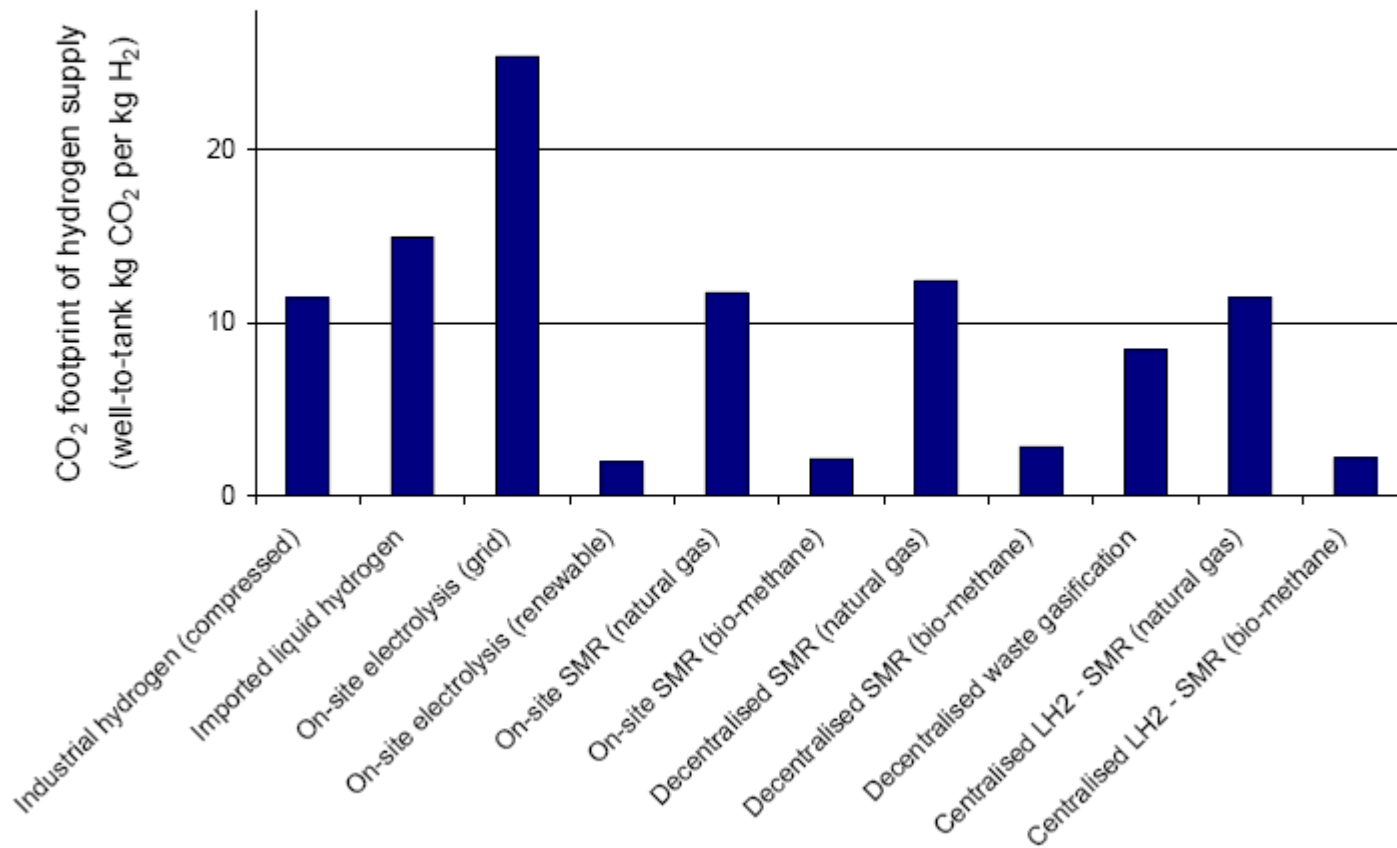
A report commissioned by the London Hydrogen Partnership and carried out by David Joffe



Bio-Hydrogen from Waste



Figure 2 Well-to-tank CO₂ emissions for different pathways





Hydrogen vehicles

- Hydrogen project
- Hydrogen ICE Transit van
- Fuel cell vehicle (microcab)









LYMPICS





Greenwich Millennium Village & Waste Barge

Fuel Economy

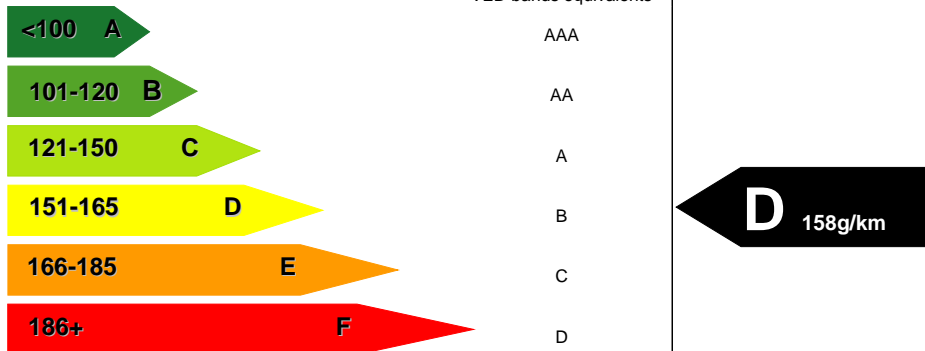
Ford Fiesta 1.4 ZETEC



Carbon dioxide emissions

CO2 grams per kilometre

VED bands equivalents



Running costs

Fuel cost for 10,000 miles (16,000 km)

Calculated on a combined (town centre and motorway) drive cycle with a base fuel price of 80 pence/litre. Fuel costs may differ from this due to driving behaviour as well as other non-technical factors.

£858

VED for 12 months

Vehicle excise duty (VED) or road tax is graduated according to the CO2 emissions of the vehicle and can be paid for 12 or 6 months.

£125

Environmental Information

A free guide on fuel economy and CO2 emissions which contains data for all new passenger car models is available at any point of sale and on the web at: www.vca.gov.uk. Some specifications of this make/model may have lower CO2 emissions than this. Check with your dealer. 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. Carbon dioxide is the main green house gas responsible for global warming.

Make/Model **Ford Fiesta 1.4 ZETEC**
 Engine capacity (cc) **1399**

Fuel type **Petrol**
 Transmission type **5 speed manual**

Fuel Consumption

Measured according to Directive 93/116/EU

Drive cycle	Litre/100km	mpg
Urban (e.g. town centre)	8.8	32.1
Extra-urban (e.g. motorway)	5.4	52.3
Combined (e.g. town centre and motorway)	6.7	42.2

Carbon Dioxide Emissions: 158g/km

Important note: Some specifications of this make / model may have lower CO2 emissions than this. Check with your dealer.



Low Emission Strategies

Using the planning system to reduce transport emissions

Good practice guidance -
Pre-consultation copy

Prepared by the
Beacons Low Emission Strategies Group
March 2008



‘to mitigate the transport impacts of development by accelerating the uptake of low emission transport fuels and technologies in and around a new development...’

‘secured through a combination of planning conditions & legal obligations...’



Low Emission Strategies

Building on Good Practice

‘Encouraging wider adoption of low emission strategies by local authorities and supporting the effective use of associated policies and measures’

www.lowemissionstrategies.org





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Project Development Manager

andrew.whittles@cenex.co.uk

Low Carbon
and Fuel Cell
Technology

Knowledge Transfer Network

