

# Supporting clean low carbon buses in the UK

**COMPRO**

**19 June 2009**

**Jonathan Murray - Deputy Director, Low Carbon Vehicle  
Partnership**

**Stephen Smith – Economic Advisor, Department for Transport**

# Low Carbon Vehicle Partnership

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

Stimulating opportunities for UK businesses

**LOWC<sup>VP</sup>**  
low carbon vehicle partnership

LowCVP 'Low Carbon Road Transport Challenge'

Proposals to reduce road transport CO<sub>2</sub> emissions in the UK to help mitigate climate change  
June 2006



**Fuel Economy**

CO <sub>2</sub> emissions (g/km) (petrol)	Low Carbon Car
<100 A	B 117 g/km
101-120 B	
121-150 C	
151-180 D	
181-225 E	
226-275 F	
276+ G	

Fuel cost (estimated) for 12,000 miles: £662  
VED for 12 months: £50

**Environmental Information**

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 make/model may have lower CO<sub>2</sub> emissions than this. Check with your dealer.

Logos: LowCVP, Department for Transport, VCA



LowC<sup>VP</sup> marketing challenge

**CARS NOT CARBON**

A competition to promote a 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

Logos: energy saving trust, campaign, PR WEEK, Marketing, SHANEPUBLIC, greenTV, UNEP

**cenex**

LowC<sup>VP</sup> Accelerating the Shift to Low Carbon Vehicles and Fuels

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**Latest news**

LowCVP Annual Conference 28 June 2007 - [agenda overview](#)  
17:00-18:00  
The LowCVP's bi-annual conference on June 28th will feature a high profile lineup of speakers - including Transport Secretary Douglas Alexander - and will focus on some of the key challenges we face today to reduce the climate change impacts of road transport.  
**Cost-effective opportunities at LowCVP Conference 28 June, London**  
17:00-18:00  
There are a limited number of places for attendees at the LowCVP's annual conference which will be held on 28 June in central London. The event, which has been fully subsidised to meet your business's needs, offers a great opportunity to connect directly and personally with all the key decision-makers responsible for a high profile vehicle.  
**Support our new member directory**  
17:00-18:00  
The Government has designated the Low Carbon Transport Innovation Strategic LCCD alongside the Energy White Paper. The LCCD sets out an overall framework through which

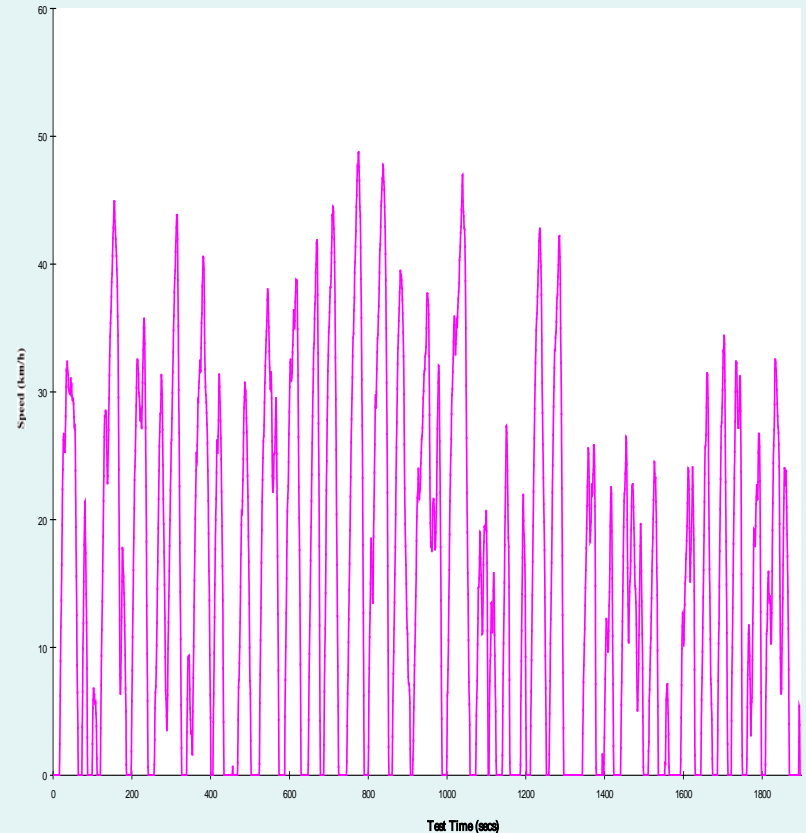
## *Specifying a clean low carbon bus*

- ❑ There are two important issues which need to be tackled in developing a definition of what a clean low carbon bus is;
  - Ensuring the definition is technology neutral and is not bias in some way against specific technologies
  - Ensuring that the definition can be tested and that the test reflects what is happening in reality
  
- ❑ The approach we have taken is to;
  - Develop performance targets for the bus in real life operation.
  - Look at the impact of the fuel production as well as the vehicle on the environment.

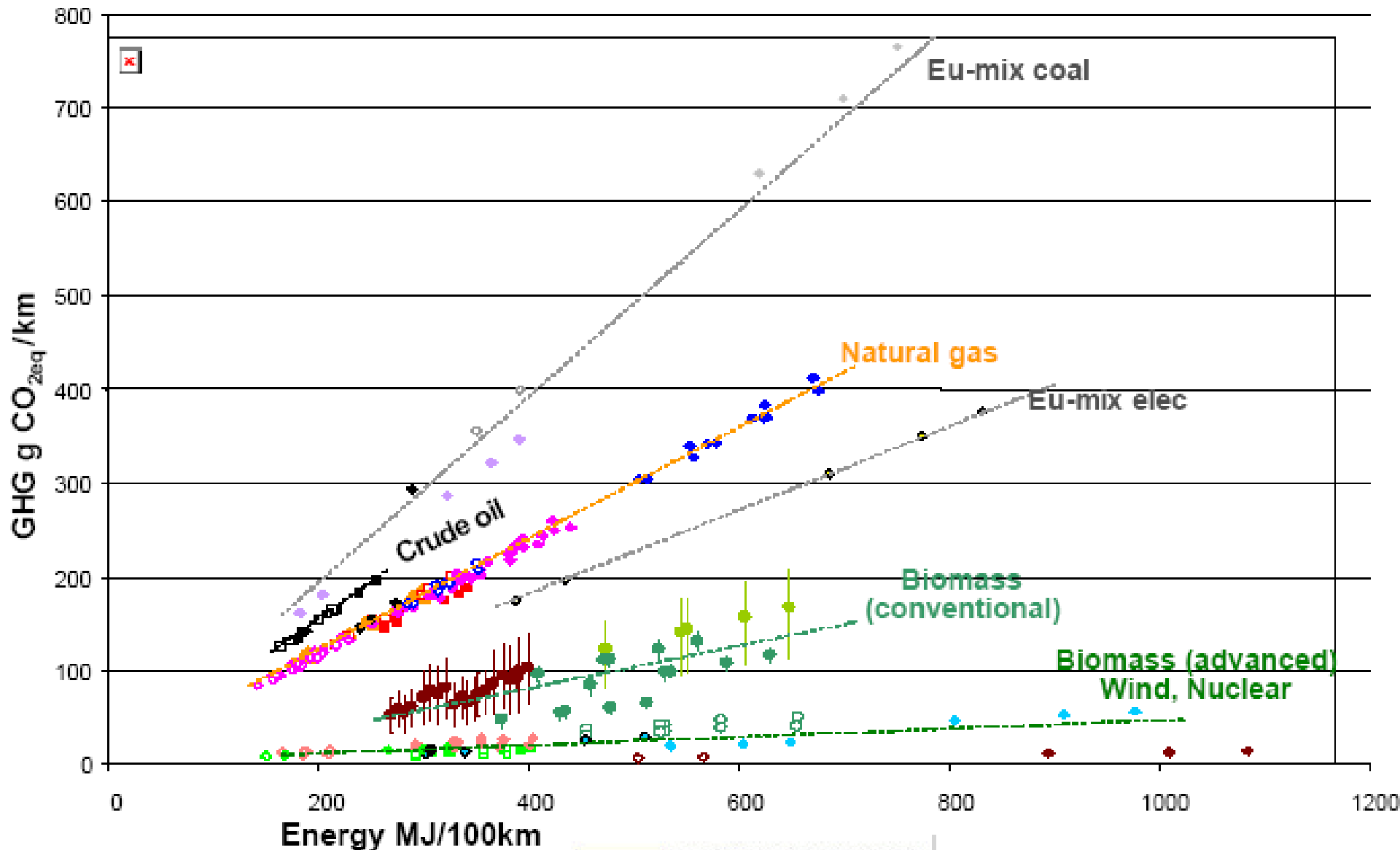
# Based on real life operation

## Millbrook London Transport Bus (MLTB) test cycle

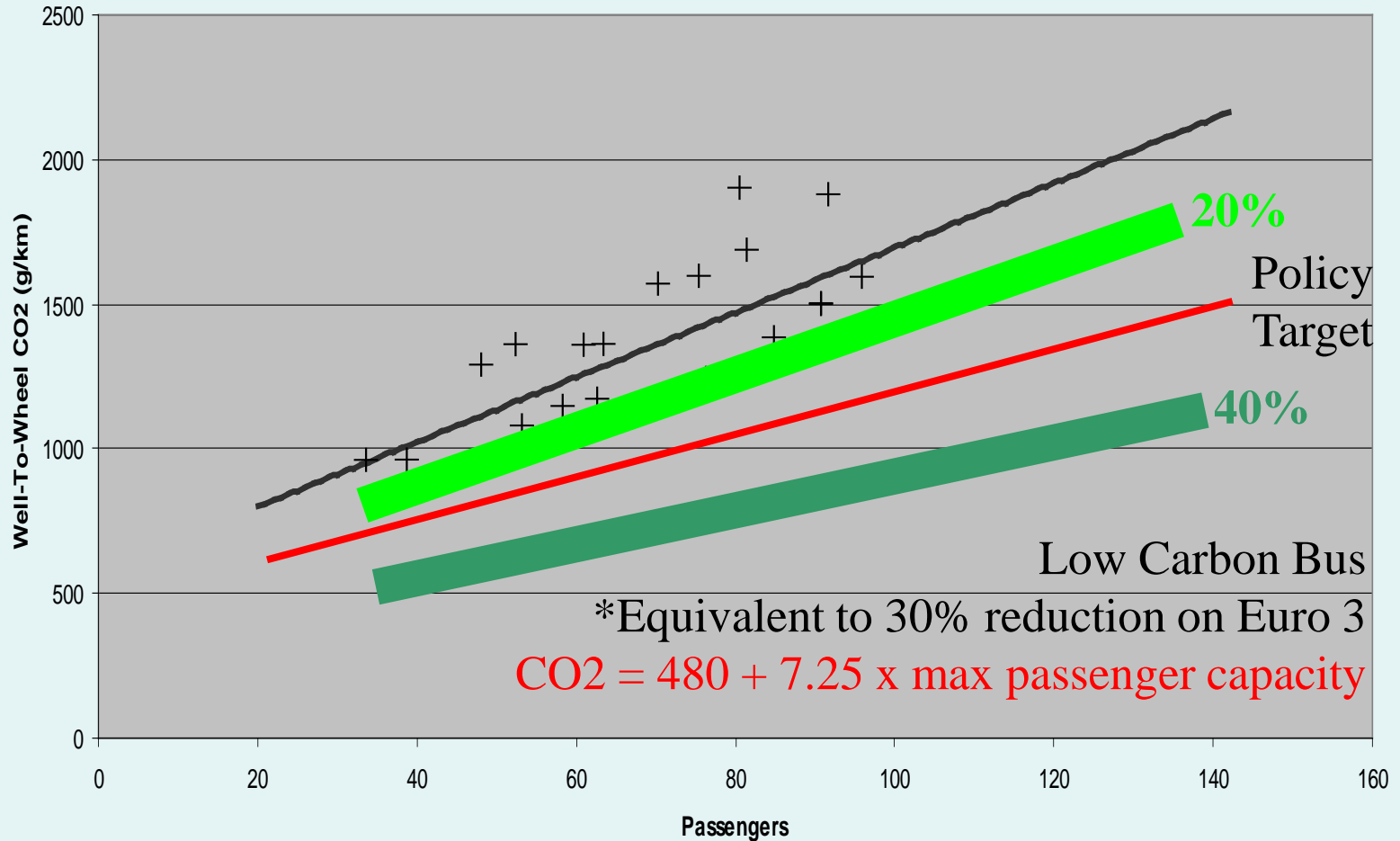
- ❑ Specifically developed for use with buses
- ❑ Derived from data logged from a bus in service within inner London.
  - 159 route from Brixton to Oxford Circus
- ❑ The test cycle is composed of two phases:
  - A medium speed phase representing Outer London. (distance 6.45 km, 1,380 seconds in duration)
  - A low speed phase representing Inner London. (distance 2.47 km, 901 seconds duration)



# Well-to-wheel Green House Gas emissions



# Establishing a target for clean low carbon bus



## *Proposed performance specification for procurement*

<b>Parameter</b>	<b>Requirement</b>
Greenhouse gas carbon-dioxide equivalent performance	WTW CO <sub>2</sub> = 480 + 7.25 x passengers Equivalent to 30% reduction wrt Euro 3 buses
Gradeability (with maximum load)	10%
Range / Endurance	250 miles / 400 km
Range (zero emissions) - optional	4 miles / 6.4 km
Drive-by noise performance (exterior)	80 dB(A) as per EU Directive
Drive-by noise performance (interior)	As per current TfL requirements
Air quality emissions	Reductions to be obtained on the MLTB drive cycle
Refuelling	Once a day
Construction & Use	EU Bus & Coach Directive 2001/ 85
Life cycle assessment (LCA)	ISO 14000 series

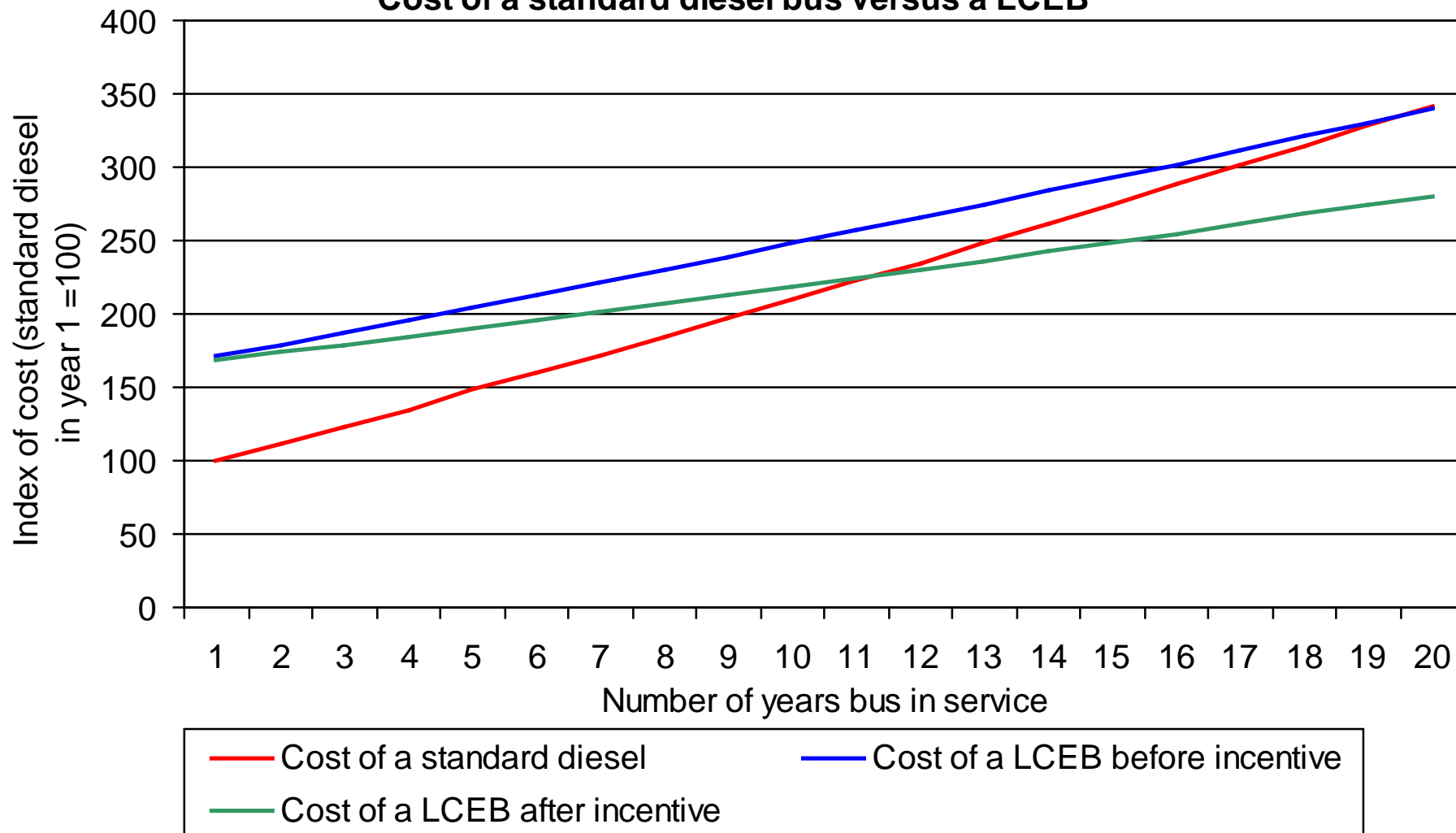
# Government policy to transform the UK bus market

- The Climate Change Act (2008) is a legally binding target to reduce greenhouse gas emissions by 80% by 2050.
- 2009 Budget introduced the first ever statutory carbon budgets, committing the Government to reducing emissions by 34% by 2020.
- Key policy areas in relation to buses to help meet this target include:
  - Reform of the Bus Service Operators Grant (BSOG);
  - Local Transport Act (2008);
  - Low Carbon Transport Innovation Strategy;



A key change to BSOG is an additional payment of 6 pence per kilometre to bus operators with a low carbon emission bus

**Cost of a standard diesel bus versus a LCEB**



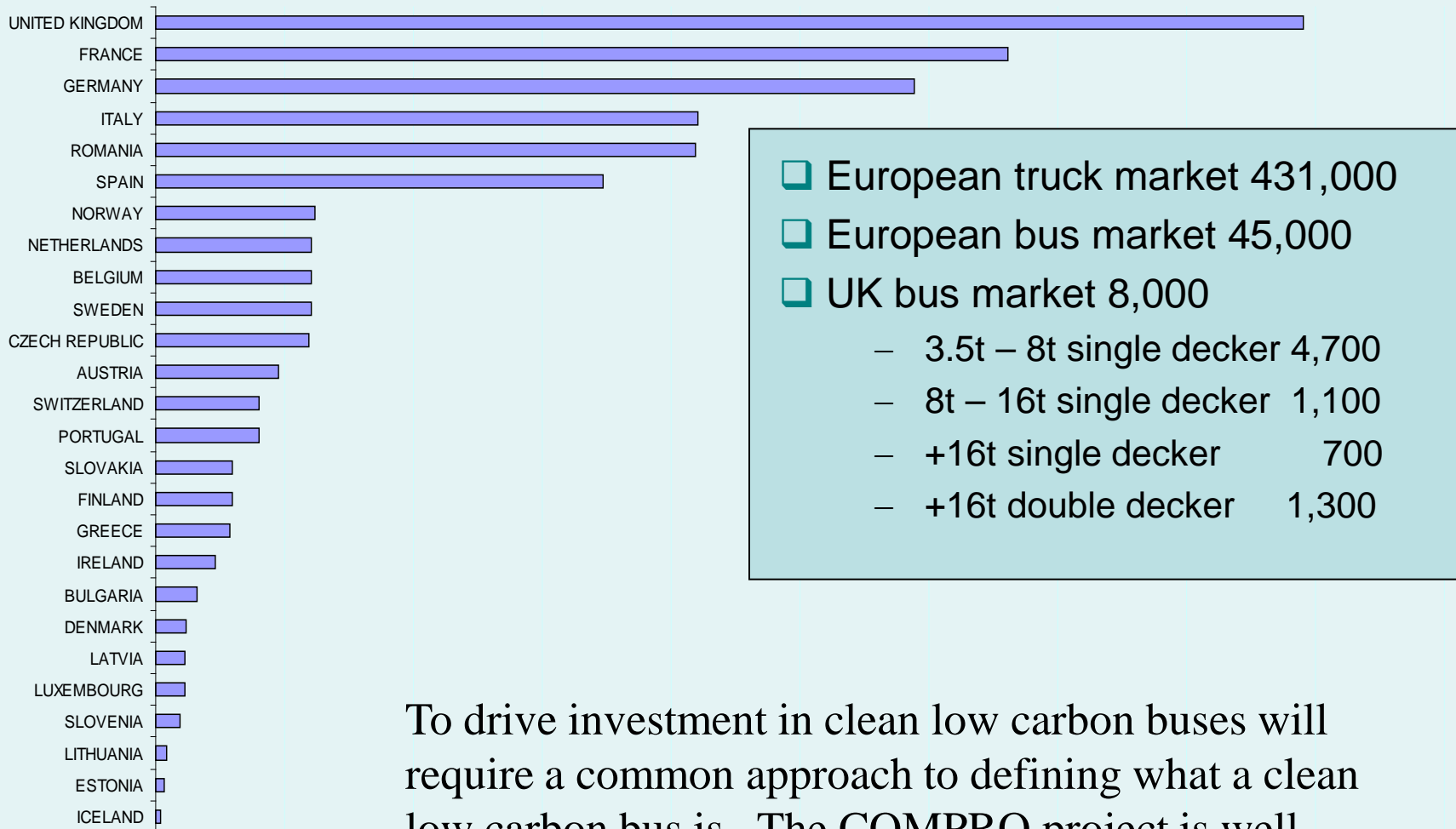
# Other measures that will help transform the UK bus market

- The Low Carbon Transport Innovation Strategy sets out a framework through which the Government will encourage innovation and technological development in lower carbon technologies.
- The Local Transport Act helps to empower local authorities to take appropriate steps to meet local transport needs.
- The Act gives local authorities the right mix of powers to improve the quality of local bus services and the opportunity to review and propose their own arrangements for local transport governance.

# The UK Government has created a framework for clean low carbon buses

- The adoption of an official definition of a low carbon emission bus and the implementation of a clear incentive.
- The cost effectiveness of different carbon reduction measures will be important.
- With an increase in demand for low carbon emission buses, it is likely purchase costs will fall thus increasing their low commercial attractiveness.
- We are keen for the UK or similar definition of low carbon emission buses to be adopted more widely and are keen to work with you.
- We expect the BSOG reforms and other measures to help shift the market for low carbon emission buses.

# A coherent market for clean low carbon buses is needed



To drive investment in clean low carbon buses will require a common approach to defining what a clean low carbon bus is. The COMPRO project is well placed to achieve this.

# *Another Red bus going Green for London*

- ❑ TfL is effectively undertaking a form of Forward Commitment currently
  
- ❑ Conducting trials of hybrid buses
  - Batches of hybrids to be trialled across London
  - 56 buses operational currently
  
- ❑ Public statement from Mayor that all buses will be hybrid once vehicle technologies have proved successful.
  - London fleet 8,000 buses
  - TfL committed to 300 more by 2011
  - Approximately 500 buses purchased per year
  
- ❑ London not sufficient to secure economies of scale from hybrid bus production



Source: TfL 2009

# *Feasibility of low carbon bus procurement outside London*

- ❑ LowCVP commissioned the study to assess the feasibility of using a Forward Commitment Strategy to procure low carbon buses in the UK. The key findings were;
  
- ❑ Significant support from stakeholders in the UK bus market to form the basis for a Forward Commitment for low carbon buses.
  - All the major bus manufacturers and system suppliers active in the UK want to be involved. Many of which are involved in trials of hybrid buses in London with TFL.
  
  - Significant interest from local transport authorities to improve the environmental impact of buses and a willing to develop a joint procurement of low carbon buses.
  
  - There was also interest amongst bus operators, despite concerns regarding commercial viability reliability of new technologies.
  
- ❑ Local Transport Act provides new enabling powers for local transport authorities with the potential to create value for CO2 emission reductions
  
- ❑ Offers potential for introducing low carbon buses, in particular;
  - on subsidised routes, contracted routes, in-house services and through Quality Partnerships and Contracts.

## *Low Carbon Bus procurement in addition to London – potentially 1,000 buses per year by 2012*

### **Milestone for demonstration**

100 low carbon buses demonstrated in the UK outside London.

### **Shifting to low carbon buses**

500 or more low carbon buses coming into operation per year by 2012 outside London.

### **Motivating future improvements**

Call for target for ultra low carbon buses coming into operation in 2020 to drive innovation.



## *Summary and conclusions*

- ❑ Low carbon vehicle technology will be a key element on the UK strategy to reduce CO2 emissions
  - Buses are well placed to be extremely low carbon as a passenger transport system
- ❑ The use of joint procurement to bring forward low carbon technology will become increasingly common in the UK and Europe.
- ❑ To ensure joint procurement delivers clean low carbon buses it will need to be based upon a specification;
  - Derived from real life whole vehicle test cycles
  - Incorporating well-to-wheel emission levels
- ❑ The UK Government has put in place a framework to create a market for clean low carbon buses
  - Potentially 1,000 buses per year by 2012.
- ❑ The COMPRO project can play a critical role in securing agreement on the specification of clean low carbon buses and creating demand across Europe.



*Thank You!  
Any Questions?*

+44 (0)20 3178 7859

The Low Carbon Vehicle Partnership

[jonathan.murray@lowcvc.org.uk](mailto:jonathan.murray@lowcvc.org.uk)

[www.lowcvc.org.uk](http://www.lowcvc.org.uk)

