Prospects for carbon savings from vehicle and fuel technologies in the CV market.

Will incentives be needed?

SMMT Automotive Summit

30th June 2010

Jonathan Murray, Deputy Director

Low Carbon Vehicle Partnership

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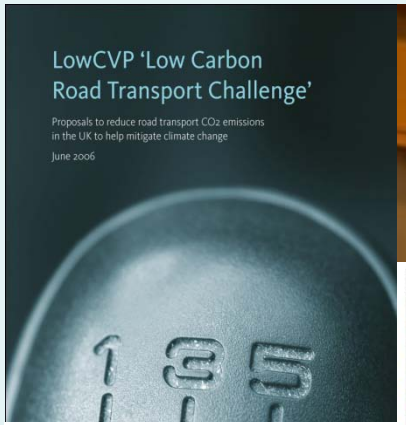
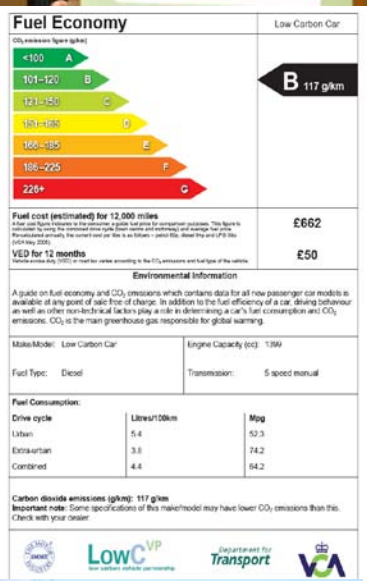
Accelerating a sustainable shift to low carbon vehicles and fuels in the UK

Stimulating opportunities for UK businesses





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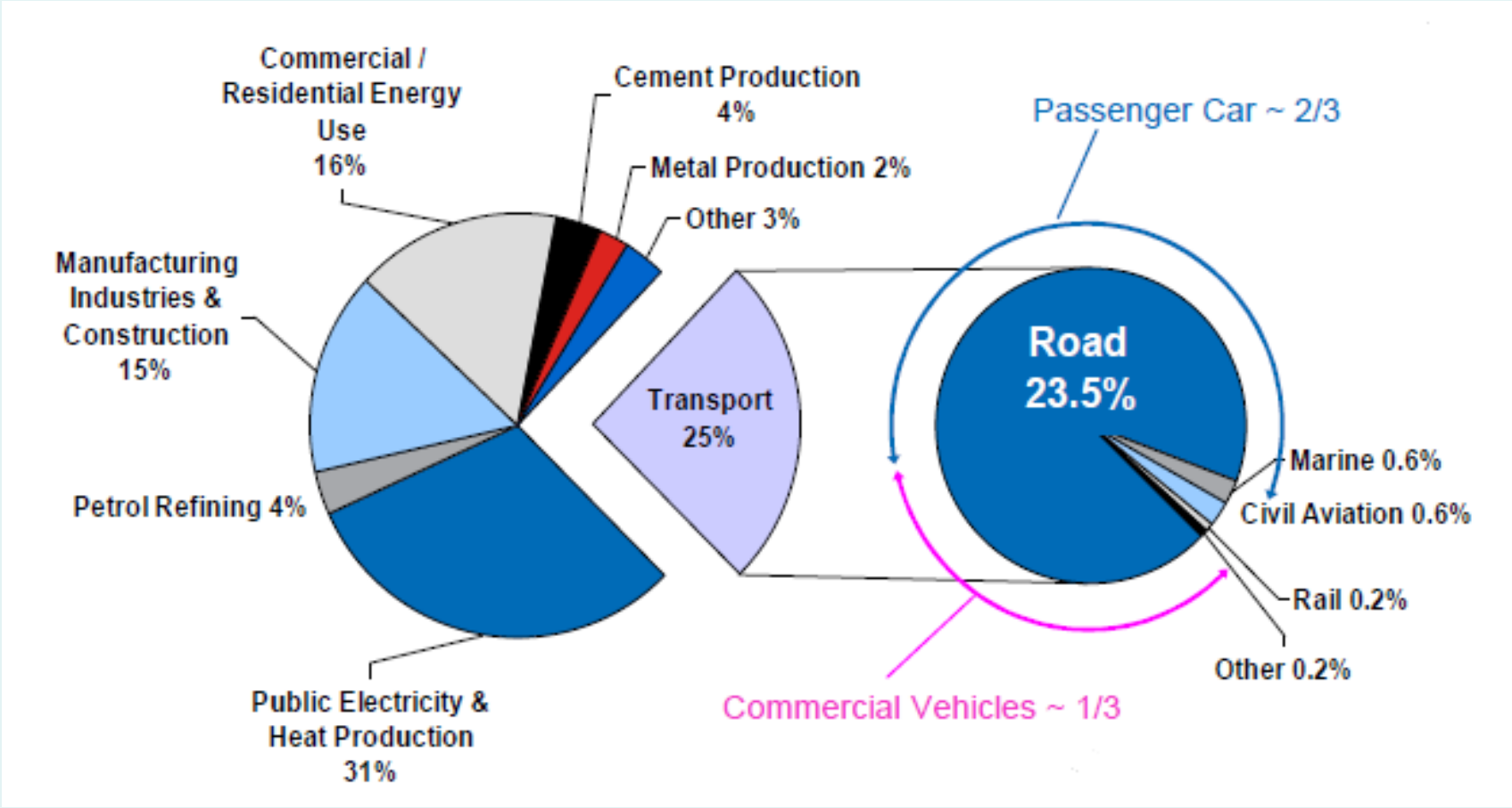
Road transport accounted for 23.5% of man-made CO2 emissions in 2007 and has been increasing since 1990



Source: DfT

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Policy makers looking to technology for CO2 savings. Can it deliver in CV market?

- The *Low Carbon Transport: A Greener Future* states that

  "DfT aims to determine the best incentives – regulation, support for investment or best practice – to encourage greater uptake of lower carbon HGV technologies and help industry achieve significant reductions in fuel consumption and CO2 emissions from HGV operations."

- Low Carbon HGV Programme

  "Develop an objective whole vehicle definition of a low carbon commercial vehicles reflecting different operational requirements which is appropriate for the basis for incentivisation through fiscal or policy measures."

  - Technologies capable of delivering CO2 reductions.
  - Methodology for identifying low carbon HGVs/technologies.
  - Evaluate options to incentivise low carbon HGVs/technologies.

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Technologies were assessed through a four stage process for four types of operation

Technology road mapping process

Select technologies → **Assess CO2 benefits** → **Calculate payback period** → **Construct road map**

Four applications

Heavy Goods

Inter city delivery

City delivery

Utility

Technology Areas

Vehicle		Powertrain		Fuel	
Aerodynamics	Fairings	Efficiency	Combustion	Alternatives	Natural gas
	Trailers		Friction		Biofuels
	Spray suppression		Acillaries		Biogas
Rolling	Low Res tyres		Gas Exchange		Electricity
Resistance	Single wide tyres		Waste heat use		Hydrogen
	Auto tyre pressure		Trans/Driveline		
Driver /	Predictive cruise	Alternatives	Fuel cells/Evs		
Control	AMT		Hybrids/ICE		

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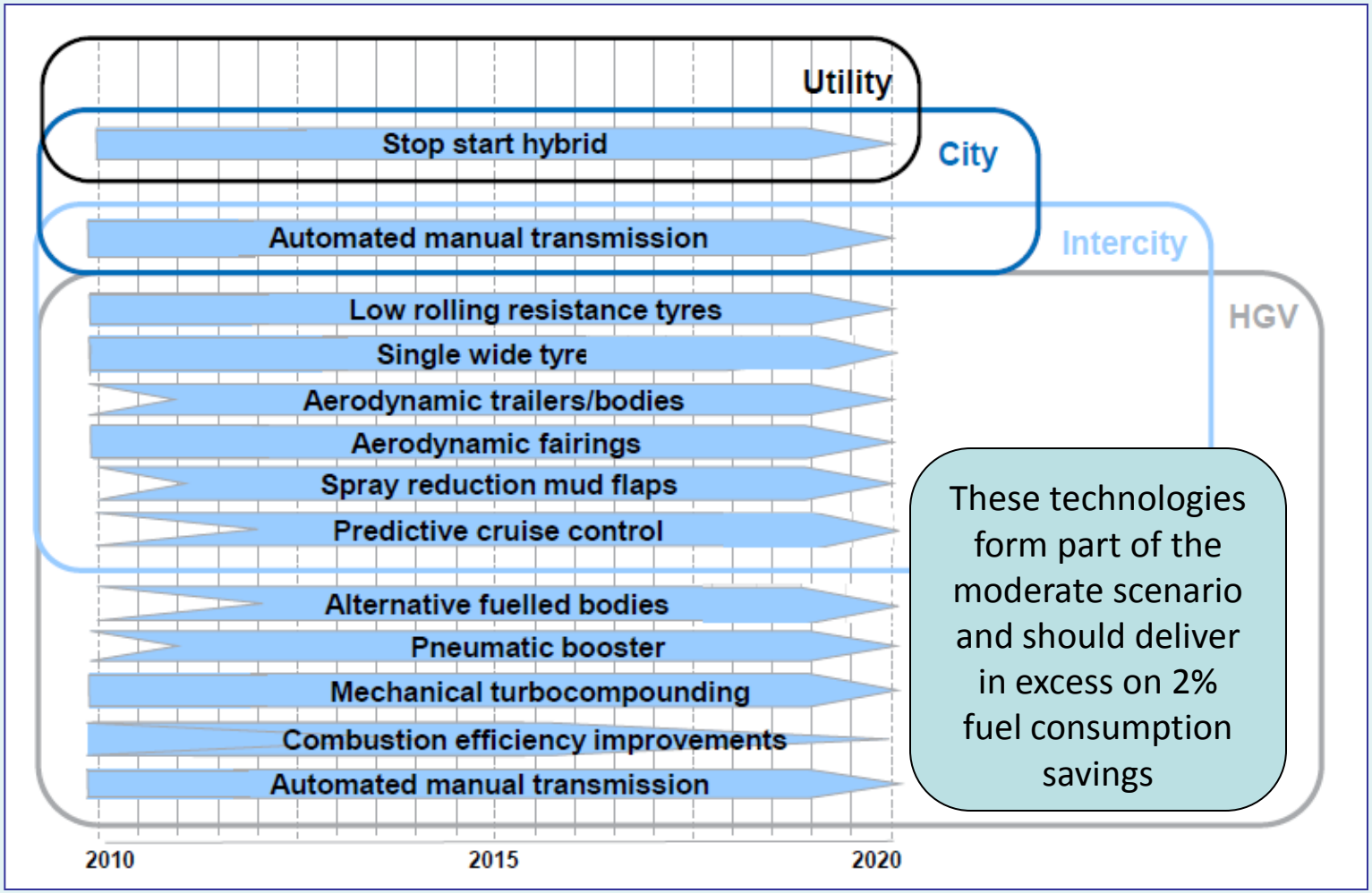
Vehicle and powertrain technologies which are likely to be commercially viable by 2020



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Technologies delivered 2% fuel savings in the moderate scenario.

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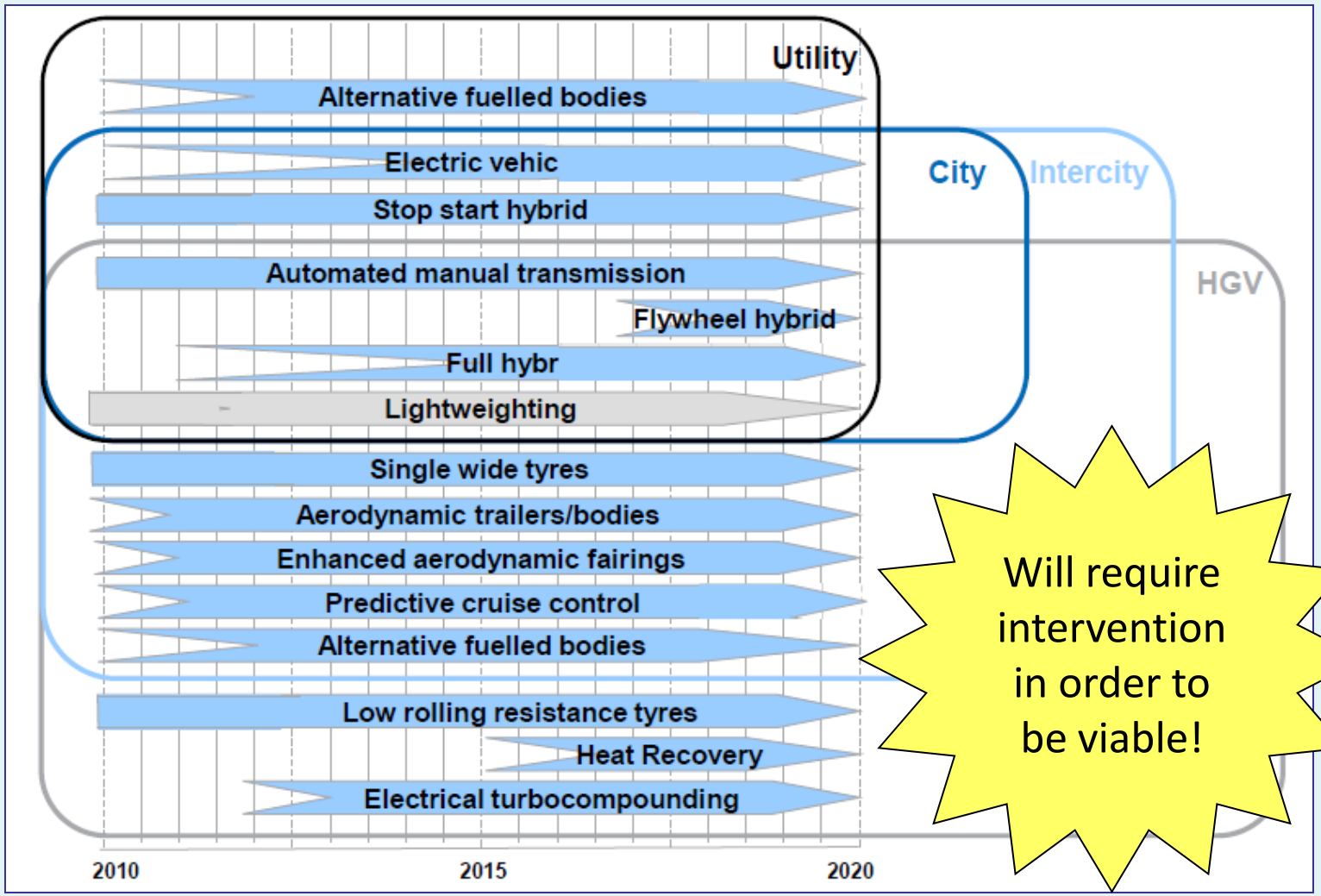
Technologies which can deliver more aggressive fuel savings but are unlikely to be commercially viable



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Technologies deliver in excess of 5% fuel savings in the challenging scenario.

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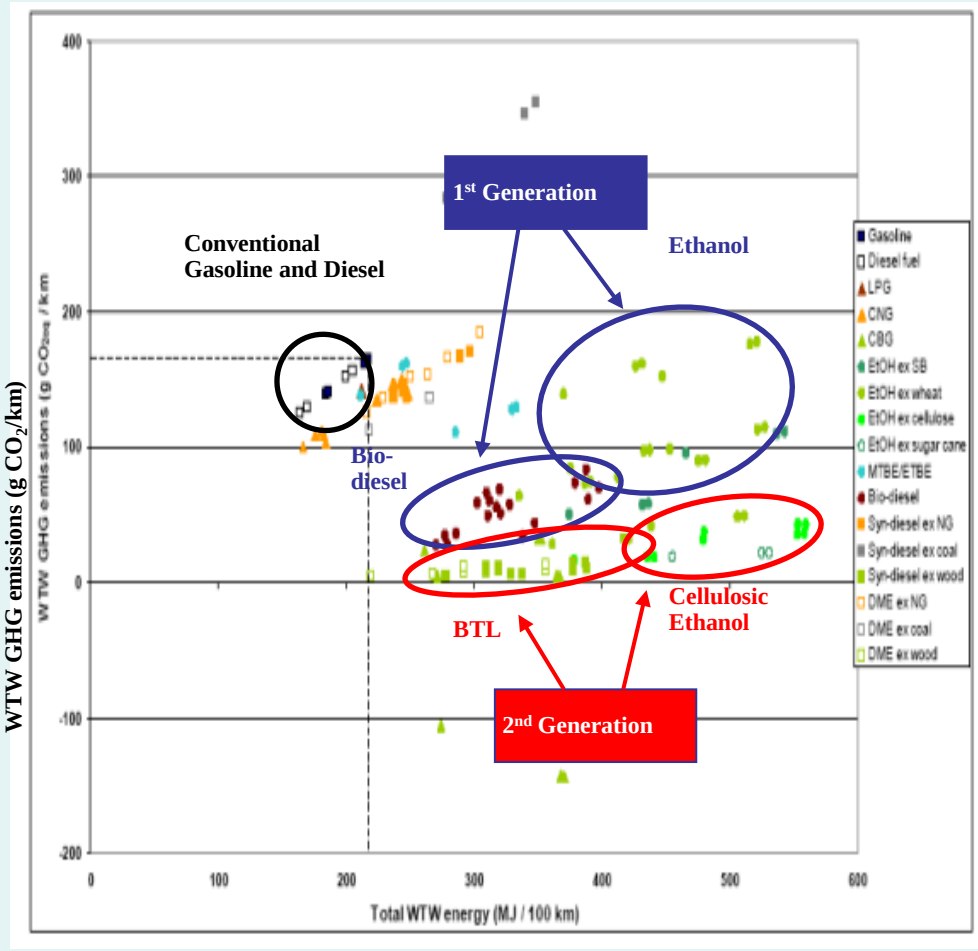
1st generation biofuels can deliver up to 80% WTW CO_2 reductions but 2nd generation expected to do better

- 1st generation biofuels deliver 5%-80% CO2 reductions
  - Highly dependent on production process
- 2nd generation biodiesel gives significant CO_2 benefits when compared to 1st generation fuels
  - BTL (Biomass To Liquid) is expected to give 60-90% reductions
  - HVO (Hydrogenated Vegetable Oil) is expected to reduce WTW CO_2 emissions by 40-60%
  - Less harmful emissions are produced by BTL and HVO than diesel
    - They contain no sulphur or aromatics



WTW Energy to travel 100km (MJ/100km)

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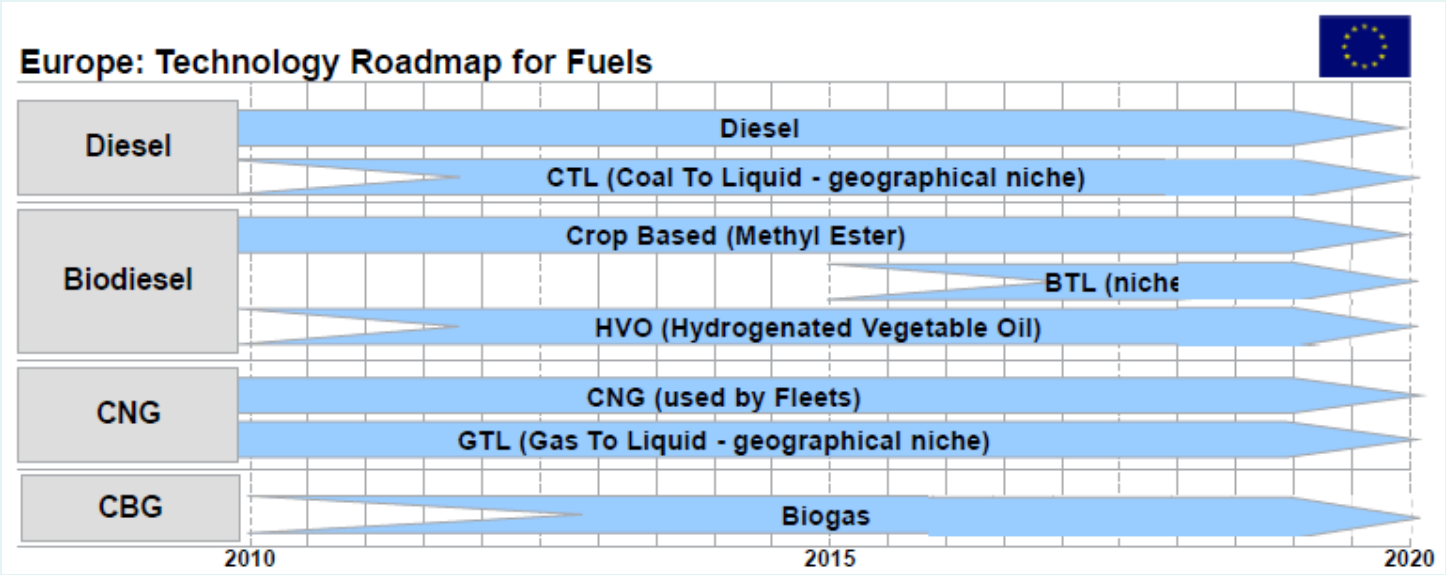
It's expected there will be a diversification of fuels used for heavy duty on-highway applications



- FAME (Fatty Acid Methyl Ester) is currently used as a blended component in diesel fuel
- HVO is currently a niche product with a small number of Neste plants supplying HVO [1]
- BTL (Biomass To Liquid) is expected to remain a niche product up to 2020
  - Currently only pilot plants for production of BTL exist [2], with further R&D and development of industrial scale processes and logistics required
- GTL and CTL are expected to remain as niche products, used where they are favoured geographically
- DME (Dimethyether) can be produced from biomass or fossil feedstock but is expected to remain a small volume niche fuel

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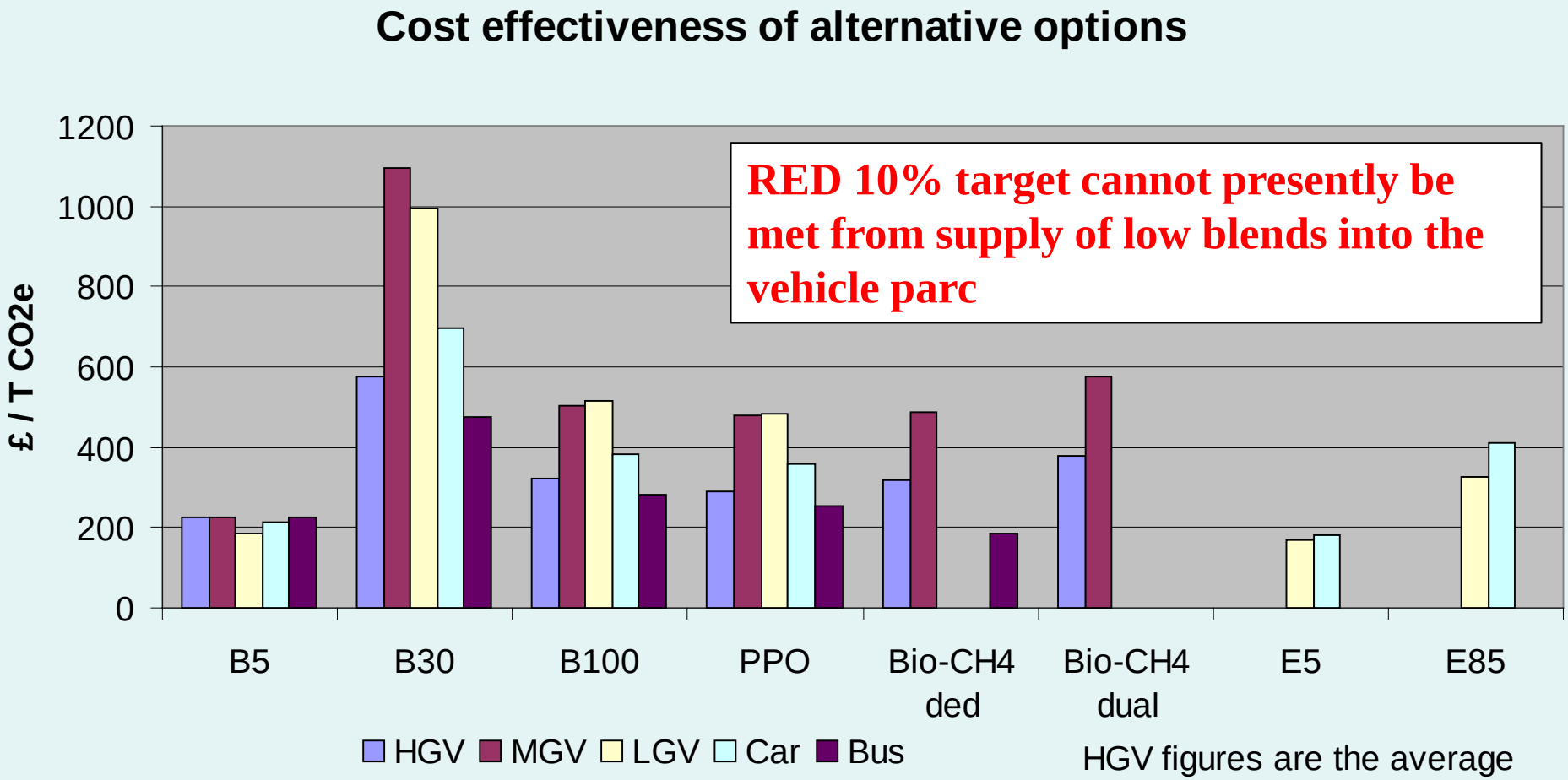
Low blends are (generally) more cost effective than other options particularly for HGVs & buses.



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Source: TTR

Summary

- Road transport is an important source of carbon dioxide and fuel consumption is a major cost to the transport industry.
  - We need to reduce both.
- There are a range technologies with the potential to deliver carbon savings.
  - Clear guidance which is backed up with evidence is needed
- Commercially viable low carbon technologies may not offer significant savings when set against other requirements e.g. Euro 6.
- To deploy vehicle and powertrain technologies capable of more aggressive reductions in carbon emissions may require incentivises.
- Market forces will lead to low blend biofuels, delivering limited CO2 WTW savings
  - No clear policy on how to comply with the RED and secure greater WTW CO2 savings.
- At a European and national level a consistent strategy to promote low carbon vehicle and fuel technologies is needed.

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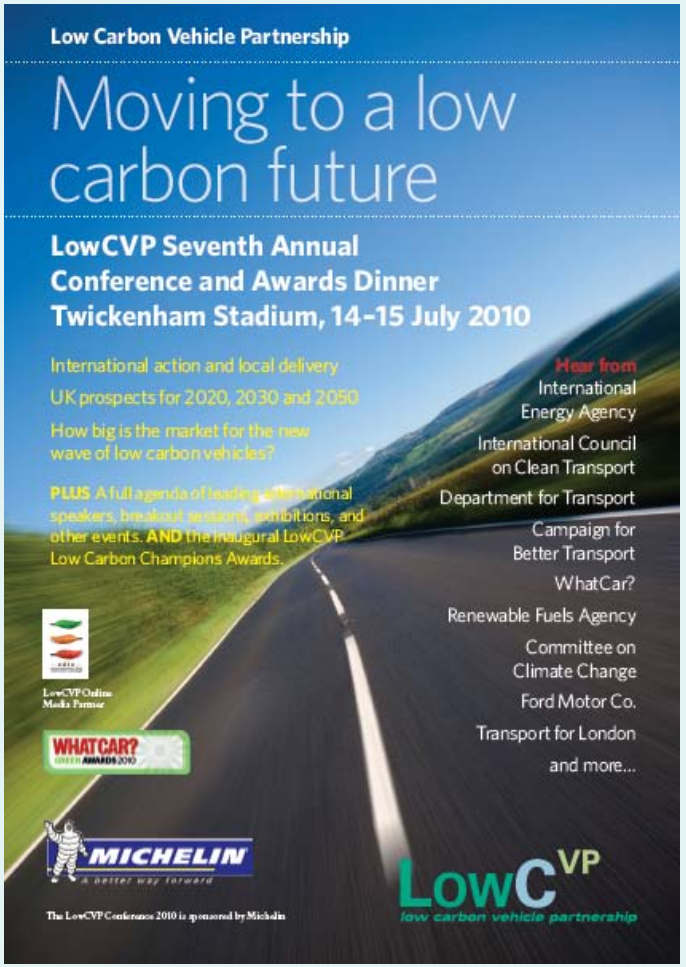
LowCVP Annual Conference 14-15 July, Twickenham Rugby Stadium

- Key issues covered
  - Policy leaders national and international
  - Best practice in cutting carbon
  - Focused session on low carbon commercial vehicles
- Winners of the LowCVP Low Carbon Champions
  - Road Freight

THE LOWCVP LOW CARBON CHAMPIONS AWARDS 2010

- Launch of Technology Challenge 2
  - Low carbon technologies for HGVs
- For details see LowCVP website
  - www.lowcvp.org.uk



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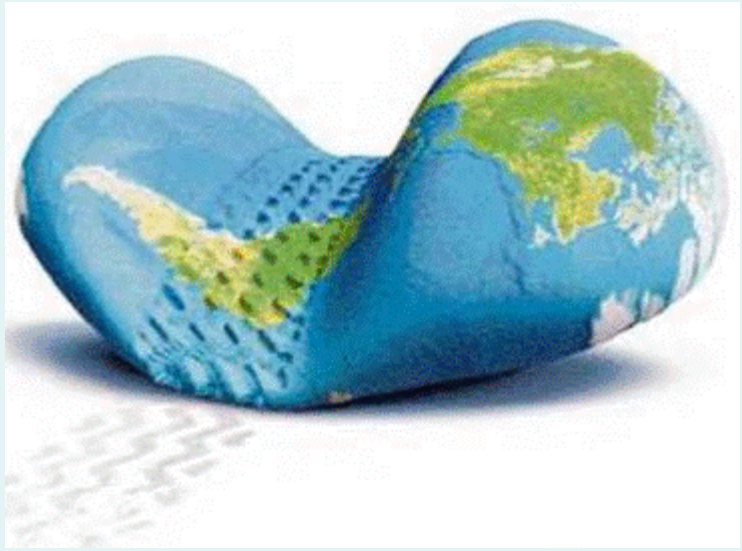
Thank You!



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