

The paper which provides the executive summary of the LowCVP's draft recommendation to DfT on accelerating the market for low carbon HGVs is provided for information to the members of the Bus Working Group (NB: A number of figures have yet to be agreed and are shown as X in the paper.)

## **Low Carbon Vehicle Partnership's draft recommendations for accelerating the market for low carbon HGVs**

### 1 Executive Summary

#### 1.1 Introduction

Heavy goods vehicles (HGVs) are a major source of greenhouse gases (GHG) in the UK, accounting for 23.8 Mt of GHG gases in 2008, 3.8% of UK GHG emissions in that year. Although GHG emissions have been relatively stable over the last decade and are currently at 1990 levels in absolute terms, the Low Carbon Vehicle Partnership (LowCVP) believes this sector could play an important part in reducing GHG emissions and contribute towards achieving the targets established through the Climate Change Act<sup>1</sup>. In particular the LowCVP believes there is potential to reduce GHG emissions from HGV operations through investment in low carbon, fuel saving technologies an area which LowCVP has been investigating since its inception in 2003.

#### 1.2 Background

In the autumn of 2009 LowCVP was invited by DfT to develop recommendations as to how low carbon, fuel saving technologies could best be encouraged in the UK HGV<sup>2</sup> market. The objective of the recommendations being, to achieve an early adoption and high up take of currently available low carbon technologies in order to reduce the costs to UK fleet operators and reduce UK CO<sub>2</sub> emissions. In addition, the recommendations should kick-start the initial adoption of new technologies at an early stage to help reinforce the 'Test Bed UK' strategy to help establish the UK as a location to develop, demonstrate and launch low carbon technologies.

In developing the recommendations, a review was undertaken of which technologies have the potential to reduce carbon emissions and fuel consumption, including both vehicle and fuel technologies, and how these technologies can be encouraged, with particular regard to vehicle technologies. The issue of how to encourage low carbon fuels in the UK was considered out of scope of this project.

The conclusion drawn was that there are a range of technologies which are capable of delivering significant CO<sub>2</sub> and fuel saving which have the potential to provide a return on investment in less than 2 years and hence have the potential to be commercially viable. There are a further range of

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<sup>1</sup> [http://www.decc.gov.uk/en/content/cms/legislation/cc\\_act\\_08/cc\\_act\\_08.aspx](http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx)

<sup>2</sup> HGVs defined as vehicles with a GVW of 7.5t or more

technologies which have the potential to deliver more aggressive CO<sub>2</sub> and fuel consumption savings but will provide a return on investment over a longer period than most fleet operators are willing to consider. These technologies will require fiscal incentives in order to have a significant take up.

This document sets out the barriers and market failures LowCVP has identified which are preventing industry from reducing costs and carbon emissions. It presents LowCVP's recommendations as to how these can best be overcome in the UK in the short to medium term while ensuring the UK remains in step with the development of potential regulation of carbon emissions from HGVs being developed by the European Commission.

### 1.3 Barriers to low carbon fuel efficient HGVs

The LowCVP believes that technology can have a significant role to play in reducing carbon emissions from road freight, help reduce operating costs and provide employment opportunities in a sector hard hit by the economic downturn. However, in order to play this role a number of market barriers and failures have to be overcome. The barriers and market failures which LowCVP believes are restricting the introduction of low carbon technologies are as follows:

- There are a number of vehicle and fuel technologies which have the potential to significantly reduce fuel consumption of HGVs. However the majority of these technologies do not provide a return on investment sufficiently quickly to be considered by fleet operators and particularly SMEs. This is due to the fast return on investment required in this sector and due to the impact of the economic downturn on the haulage industry.
- There is a lack of confidence amongst HGV operators in manufacturer claims regarding their products and their impact on fuel consumption and carbon emissions. This is particularly the case amongst SME fleet operators who lack engineering expertise to judge manufacturers' claims.
- There is no standard for measuring fuel consumption and CO<sub>2</sub> emissions for HGVs and if there was the cost of physically testing all technologies in all vehicle types in all appropriate applications would be prohibitive. As a result industry is not in a position to provide appropriate, consistent and credible information on its own.
- It is often asserted that as fuel is a major cost to fleets they will choose the most efficient vehicles. However the durability and flexibility of vehicles and trailers has a greater impact on the profitability of a HGV fleet than fuel consumption and this is reflected in the priority these factors are given in the vehicle purchasing decision. At times these factors may conflict and as a result the most fuel efficient HGV may not be purchased even if information was provided in an appropriate and consistent manner.
- While government is planning for cuts in carbon emissions over a 10 year timeframe, HGV fleets are focusing on a much shorter timeframe of 2 years although once purchased the vehicles will be in use for a decade. Government policies are required to influence HGV purchase decisions now to bring them into line with government targets set out in Climate Change Act.

## 1.4 Recommendations

In order for low carbon technologies to play a more effective role in reducing carbon emissions from road freight and reduce costs to operators through improved fuel efficiency the LowCVP makes the following recommendations:

1. An independent certification scheme for the performance of low carbon technologies for use with HGVs be established. This should be Government endorsed for credibility but could be self financing. This potentially could save XX MtCO<sub>2</sub> by 2020 and cost £X k/year to operate giving an average abatement cost of £XX/MtCO<sub>2</sub>'.
2. An incentive mechanism such as, an Enhanced Capital Allowance or grants, be introduced to help kick-start the market for qualifying low carbon HGVs and extend the range of technologies which are commercially viable. This would deliver an additional XX Mt CO<sub>2</sub> savings by 2020'

A credible independent certification scheme for low carbon technologies for use with HGVs is necessary to provide the vast majority of HGV operators with the confidence to invest and adopt these technologies. LowCVP believes this can only be achieved by a Government endorsed certification scheme. Without such a scheme operating costs, fuel savings and reductions in carbon emissions are unlikely to achieve their potential.

LowCVP estimate the total cost of operating a certification scheme, once fully established, would be between £50k and £100k per annum. This would comprise of the administration of the scheme, the testing and witnessing of the tests would be covered by the technology manufacturer. The cost of operating the scheme until 2020 £Xm net present value and provide potential CO<sub>2</sub> savings resulting from the scheme of XX MtCO<sub>2</sub> by 2022.

3. The certification scheme should be designed to minimise the cost to the public purse. LowCVP believes this will best be achieved by a scheme which is controlled by Government, administered by a Government agency or third party on a commercial basis, with testing being undertaken to an agreed procedure by third parties paid for by the technology manufacturer. The maximum cost to government to centrally administer the scheme is expected to be £xm per annum although the scheme could be self funding once established paid for through an administration charge to certified suppliers of low carbon HGVs.
4. The certification scheme should be designed to minimise the cost of certification and the risk of mis-certifying or of undermining air quality and other regulated areas. In order to achieve this, the scheme should allow for physical test and computer simulation to be used to provide the evidence of compliance overseen by a body with engineering expertise relating to all aspects of vehicle testing and regulation. Both physical tests and computer simulations will need to be independently witnessed. LowCVP believes these should be witnessed by DfT executive agencies.
5. To minimise the cost of establishing the scheme LowCVP recommends that initially the scheme is based upon back-to-back testing or computer simulation of HGVs with and without the technology being assessed. Evidence presented to LowCVP indicates physical

tests will allow differences down to a minimum of 2% change in fuel consumption and tailpipe CO2 emissions to be identified and that computer modelling is capable of simulating physical tests accurately. This system should be augmented in time with a scheme based upon a threshold based upon a metric appropriate for HGV operation in order to reduce testing costs, such as the Low Carbon Emission Bus scheme used by DfT for determining eligibility for incentives through BSOG and the Green Bus Fund.

The LowCVP is aware that there is a huge range in the size of HGV fleets and that the vast majority of vehicles are operated by small and medium sized fleets which historically have been difficult to engage with through Government funded schemes.

6. In order to be most effective the scheme should be designed to be accessible to small and medium size fleet operators, as well as larger fleets. To achieve this, the scheme should be designed to be delivered as an integrated offering with other Government backed schemes targeting HGV fleets.
7. It will be important that the certification scheme be credible and can demonstrate that certified technologies and vehicles deliver benefits in operation. To achieve this it will be important that fleets are given access to professional advice in technology selection and that a number of early fleets are monitored and used to provide case studies.

The LowCVP understands that the European Commission is undertaking research in this area<sup>3</sup> and that it is likely that future regulation of CO2 may come from Europe. While LowCVP does not believe this should delay the introduction of a certification scheme in the UK, the scheme should take account of the final form of any regulation coming from the European Commission.

8. The certification scheme should adopt drive cycles and classes of operation common to those adopted by regulation as and when it is developed in Europe. Against this framework a set of thresholds and appropriate metrics for use with HGVs should be developed against which vehicles and technologies may be tested.
9. LowCVP believes the experience of the certification scheme will provide invaluable evidence in informing the UK position in negotiating any future European regulation of CO2 from HGVs. The LowCVP also recommends that DfT continue to engage with the European Commission on HGV CO2 and support observers' posts on the European research programme into CO2 from HGVs.

The LowCVP, through its secretariat and its close to 200 members, is engaged with the Automotive Council and in particular its work on establishing a UK industry vision on a Commercial Vehicle/Off-road Technology Roadmap. LowCVP is also aware of other industry initiatives, none of which conflict with the proposals in this paper.

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<sup>3</sup> Towards a green house gas certification method for complete heavy-duty vehicles and their components, AEA