

Logistics Carbon Review

May 2013



Incorporating the Third Annual Report of the
Logistics Carbon Reduction Scheme (covering 2005–2011)

CO₂

LCRS Industry Partner

BRIDGESTONE

LCRS managed by FTA

LCRS Industry Partner's Statement



Bridgestone is proud to partner the Logistics Carbon Reduction Scheme. Working closely with industry to find ways to measure and reduce the carbon emissions of the logistics sector is key to the success of this scheme and the long-term sustainability of the transport sector.

Bridgestone is committed to ensuring tyre technology is at the forefront of ecological advances to aid the industry's drive to carbon reduction. As the largest manufacturer of tyres and rubber products worldwide, Bridgestone leads the way in quality, technologically innovative goods and services and is a trusted brand that goes from strength to strength.

Established in Japan in 1931, today it is a multi billion pound business with 183 manufacturing plants, in 26 countries and a presence in over 150 markets worldwide.

Bridgestone is focused on its mission of "serving society with superior quality" through an enviable range of products that satisfy the needs of the customer and society as a whole.



A handwritten signature in black ink that reads 'John McNaught' in a cursive, flowing script.

John McNaught
Managing Director
Bridgestone Europe – North Region



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LCRS in brief

The Logistics Carbon Reduction Scheme, managed by FTA, is the only freight sector-based initiative that records, reports and reduces carbon emissions from logistics. The scheme is free of charge, confidential and easy to take part in. A key principle of the scheme is to analyse carbon reduction progress through five logistics efficiency indicators.

- The challenge** Transport emissions make up just over one fifth of greenhouse gas emissions; freight (hgv's and vans) contributes 30 per cent
- What is the LCRS?** A voluntary initiative to record, report and reduce carbon emissions from freight transport (scheme members have collectively committed to an 8 per cent reduction in the carbon intensity of freight operations by 2015 compared to 2010)
- Why was it set up?** Established by 12 founding FTA members in December 2009 as a response to the climate change challenge (Climate Change Act and DfT Low Carbon Strategy)
- What is its objective?** To demonstrate to Government that logistics is contributing to climate change targets without the need for regulation or additional taxation
- How it works** It collectively tracks carbon reduction progress by logistics and provides a platform to share best practice
- Who does it cover?** Businesses which purchase fuel for commercial vehicles; if you purchase the fuel, you own the emissions
- What does it cost?** There is no cost to participate in the scheme
- What data is needed?** Data required is that normally contained in standard operational performance indicators used by most companies. It is based on Defra's voluntary greenhouse gas reporting framework
- What is its current size?** In April 2013 the scheme had 84 members, accounting for 61,504 commercial vehicles (hgv's and vans)
- Who are the members?** Businesses participating include hauliers, retailers, local authorities and 3PLs

Logistics Efficiency Indicators

- 1 Fuel efficiency**
Monitors improvements in vehicle fuel consumption (mpg) through use of better driving techniques, aerodynamic styling, engine performance etc
- 2 Payload maximisation**
Monitors the use of available load-space or capacity in vehicles. Fuller vehicles mean fewer journeys to move a given volume of goods
- 3 Empty running**
Monitors the proportion of journeys run empty and potentially available to carry goods for another party, saving their journey
- 4 Carbon intensity of fuels**
Monitors the carbon intensity of fuel used to move goods, using fuels such as natural gas, biofuels and electricity which reduce carbon emissions for the same power input
- 5 Modal split**
Monitors the volume of freight moved by lower carbon modes of transport, rail and water



Dear Colleague

I am delighted to introduce FTA's annual review of logistics carbon policy which incorporates the Third Annual Report of the Logistics Carbon Reduction Scheme. Since its inception, the scheme has demonstrated its practicality, ambition and effectiveness; going from strength to strength in the face of a challenging economic climate.

LCRS remains the only scheme in the UK that is recording and reporting a carbon footprint for the freight sector. Scheme membership ranges across different types and size of businesses, from larger, national fleets to smaller operations, of which an encouraging number have joined the scheme in recent months.

In the three years since the scheme was launched, much progress has been made in establishing a robust yet simple methodology, agreeing a common reporting standard for the sector and developing guidance on a range of measures that operators can use to reduce greenhouse gas emissions over time. Uniquely, scheme members have set themselves a demanding target for carbon reduction, a target this report shows they are on track to reach by 2015.

We made a robust submission to the Department for Transport's (DfT) 2012 Freight Carbon Review and were delighted with Government's conclusion that it will continue to support a voluntary approach to freight carbon reduction. It is clear from the review that the LCRS is a credible and workable alternative for monitoring industry's progress rather than resorting to regulation of the sector.

I have been impressed by the progress scheme members made in putting forward a gas strategy that would allow a breakthrough in take-up of natural gas powered heavy goods vehicles. It was disappointing that the consortium proposed did not qualify for funding from DfT's initiative but, in spite of this initial setback, we will continue to press for a solution for industry.

I would like to take this opportunity to welcome the involvement of our LCRS Partner, Bridgestone Tyres, the first supplier to the logistics sector to back the scheme. Its involvement highlights the role that tyre selection and management can play in supporting businesses' efforts to make improvements in vehicle fuel efficiency.

Last but by no means least the Logistics Carbon Working Group provides invaluable guidance and direction for the scheme as a whole and I would like to take this opportunity to voice my thanks and appreciation for the significant contribution its members make to the success of LCRS.

A handwritten signature in black ink, appearing to read 'S Oades'.

Stewart Oades
FTA President 2009–2013



LCRS progress and objectives

LCRS is the only voluntary carbon emissions reduction scheme in the UK logistics sector, providing a consistent and reliable means of recording and reporting emissions. Established in 2009, the scheme continues to grow in size and influence.

Scheme progress in 2012

Carbon emission results

In 2011, the scheme delivered a reduction of 2.8 per cent in overall carbon emissions compared to 2010; figure 1.1 shows the average number of tonnes of carbon produced each year by LCRS members. Members are collectively committed to reducing the carbon intensity of their freight operations by 8 per cent by 2015 compared to 2010. Analysis of 2011 scheme data, shows that members are on track to achieve this; progress towards the target and detailed figures for the scheme are explained in *LCRS data results* (see page 16).

Increasing membership of the scheme

LCRS membership continued to grow, from 59 members in December 2011 to 78 members at the end of 2012. These companies accounted for 60,245 commercial vehicles (heavy

goods vehicles and vans), a substantial proportion of the UK liveried fleet.

Contributing to Government's Freight Carbon Review

In late 2012, the Department for Transport (DfT) reviewed the extent to which the freight industry had taken measures to reduce its carbon emissions. LCRS submitted key evidence, highlighting the breadth and scale of its membership and its progress to date. The review concluded that Government should continue to support a voluntary industry-wide approach to reduce carbon emissions from freight rather than introduce regulation.

Promoting effective low carbon solutions for logistics

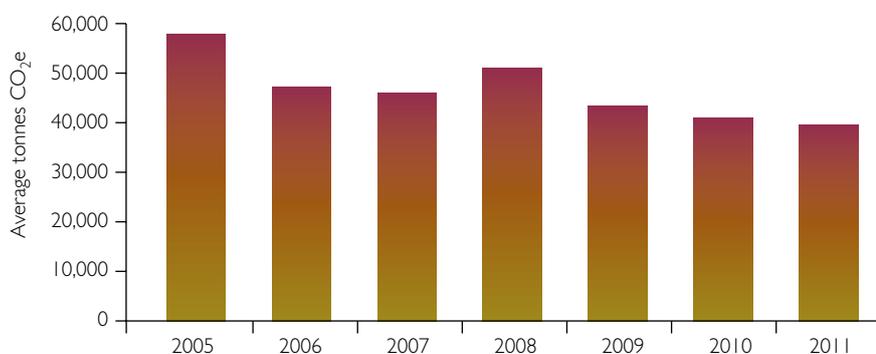
FTA's Logistics Carbon Working Group¹, is compiling a 'roadmap' for operators and policy makers to show the savings achievable under the Logistics Efficiency Indicators (see page 4) and the policy and operational issues that need to be resolved to allow progress.

Extension to other modes

Plans to widen the scope of the scheme to include rail freight await more robust conversion factors for the mode to be developed by DfT. LCRS is an important player in the mode shift debate through the management

Figure 6.1 Average tonnes CO₂e by year (per LCRS member)

LCRS members have reduced fuel usage and improved fuel efficiency through decarbonisation methods



¹ The Logistics Carbon Working Group was formed by FTA, initially to develop and later to guide the management of LCRS

of the scheme by FTA which provides the Mode Shift Centre² and the UK's short-sea promotion centre Freight by Water³.

Scheme objectives for 2013

Increase the number of companies in the scheme to more than 100

Extending the number and types of business involved remains a key target to increase the reach of the scheme.

Continue to make the scheme more attractive to smaller haulage companies

This is important to expand operator involvement in carbon reduction and include 'Scope 3' emissions (indirect carbon emissions), to take account of companies that use sub-contractors for distribution.

Develop added value services for scheme participants

This will involve developing sector-based benchmarking in emissions reduction and, through the annual survey, monitoring usage of carbon reduction interventions (see chapter 2, page 8 and chapter 8, page 24).

Recognise the efforts of individual LCRS members to reduce their carbon emissions

The first LCRS Awards to celebrate the decarbonisation efforts of members will be presented in May 2013.

Promote adoption of alternative fuels

Through continued engagement with DfT and initiatives such as its manifesto for a gas refuelling network, FTA and LCRS will provide leadership on the promotion of the adoption of alternative fuels.

Support trials of longer semi-trailers

LCRS will continue to support the ongoing trial of longer semi-trailers (LSTs) to demonstrate the carbon emissions reduction benefits of using high volume transport units.

Development of normalisers

Finding a common normaliser for scheme reporting remains elusive. This is therefore an urgent priority for 2013.

"If used effectively, LSTs can save us one journey in every six which is extremely attractive. However, we need a little more time to identify the right opportunities, integrate them into our transport and warehouse systems and realise the full benefits."

Steve Tainton

Group Energy Sustainability Manager
Wincanton

2 www.modeshiftcentre.org.uk

3 www.freightbywater.fta.co.uk



Case study • Increase average payload weight

Wincanton is trialling longer semi-trailers to improve average payload weight

Wincanton is running 16 longer semi-trailers (LSTs) with a further 53 on order, under licence from the Department for Transport. The fuel and emissions per unit load are expected to be up to 15% less than a standard semi-trailer. The LSTs, developed with Don-Bur, come in two lengths, a 15.65m trailer, which can take two additional rows of pallets, and a shorter 14.6m version.

Wincanton has worked with the manufacturers to ensure that the trailers are safe and drivers can adapt to the new handling requirements. The rear steer back axle helps to prevent poor tracking of the tractor and corner-cutting at junctions. Wincanton is also working with the Cambridge Vehicle Dynamics Consortium on active rear steering which uses an on-board computer to provide a 'path-following' steer system on multiple axles.

Wincanton has a diverse and complex operation which presents opportunities and challenges for the use of LSTs. LSTs have great potential to remove vehicles from the road, and will be well suited to volume-intensive loads. However, fully integrating LSTs into the fleet depends upon identifying the correct loads and on effective planning to make sure they are optimised.

LSTs cost around 20% more and weigh around 250kg more than a standard trailer but are more fuel-efficient per unit carried when used optimally.

What Wincanton has saved

- Optimised LSTs can offer a 15% fuel and CO₂ saving. However, the commercial and operational diversity of the Wincanton fleet means the overall fleet saving will be significantly lower
- Further study is needed to finalise the effect on the total Wincanton footprint

To achieve more, Wincanton needs

- More time to integrate the LSTs into their operations
- The right product portfolio to match the enhanced capabilities of the vehicle

2

Logistics sector progress

Alongside the ongoing reporting of quantitative progress in reducing emissions, the scheme tracks adoption of low carbon practices and technologies by members.

Logistics Carbon Interventions Survey 2012

All LCRS members were invited to take part in the survey which is structured around the Logistics Efficiency Indicators and Heriot-Watt University's

Decarbonisation Tool¹. The survey reviews the extent to which low carbon interventions have been put in place by LCRS members since the last survey² which covered 2010 (the baseline year for the scheme).

Measures that are currently being trialled and actions in members' business plans for 2013 are also covered.

Survey results

The survey results relate to 33 returns from LCRS members. Respondents were asked whether they planned to institute, or had already put in place, any of over 30 carbon saving interventions related to operational and vehicle design, since 2011.

The top 10 operational and vehicle design carbon saving interventions are shown in figure 2.1.

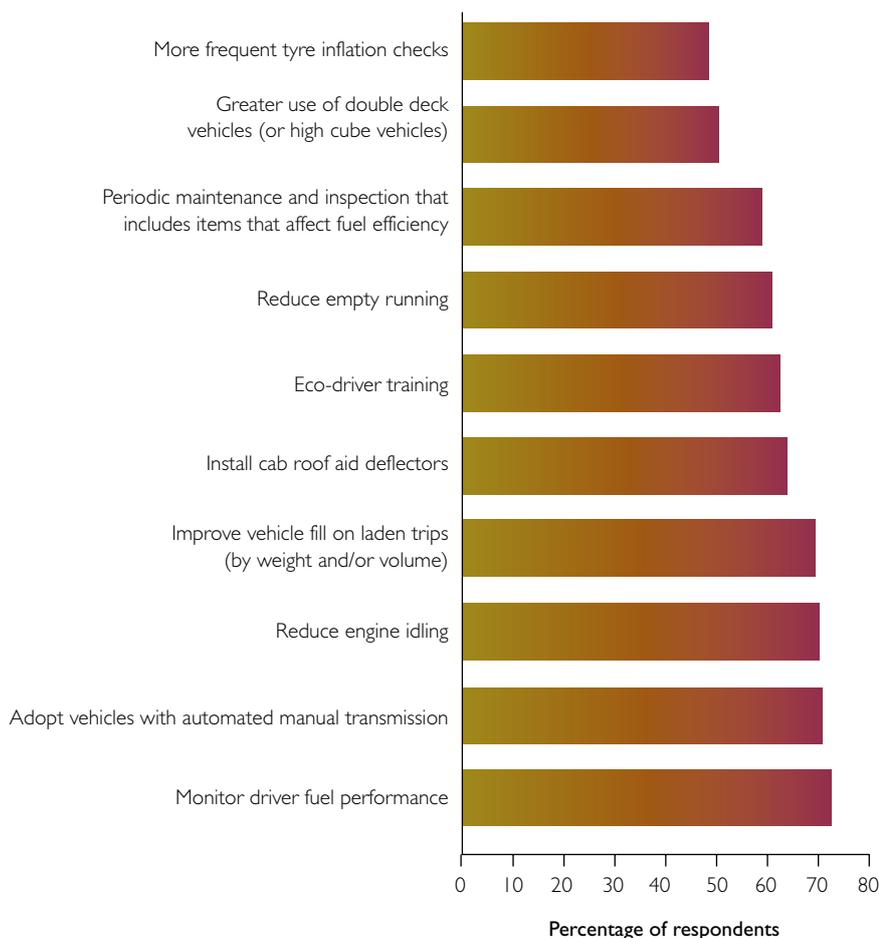
The results show that operators are focused on achieving fuel efficiency through operational measures. To maximise payload, companies are increasing their use of existing vehicle capacity with some investment in longer and higher cube trailers.

¹ Heriot-Watt University, working with FTA and LCRS members, has developed a tool to allow fleet managers to prioritise the most effective carbon saving techniques to invest in. The tool sets out over 30 separate interventions, and provides an indicative carbon saving linked to each intervention to allow the impact of future actions to be modelled against a baseline fleet scenario set by the operator

² The first survey was in 2011 and is presented in the LCRS Second Annual Report

Figure 2.1 Top 10 operational and vehicle design carbon saving interventions since 2011

Operators prioritise driver fuel performance monitoring



Telematics is being used to optimise vehicle utilisation and core fleets are being deployed more effectively.

Responses highlighted that a step change in alternative fuel usage requires investment in refuelling infrastructure to allow wider take-up. LCRS members are keeping non-road modes under review and, although their use is not widespread, a small number of scheme members are significant users of rail. For further details of the survey findings see chapter 8, page 24.

Conclusions

The findings of the Survey highlight the wide range of technologies and techniques vehicle operators are deploying to reduce their carbon emissions. For most operators, the imperative for implementing a first tranche of measures to reduce fuel usage is clear; lowering fuel usage both reduces business costs and has environmental benefits. Significant improvements have been achieved through measures that are relatively straightforward to implement, such as fuel efficient driver training.

Companies can be under pressure to continue to improve efficiency by going beyond operational measures. Some will pursue techniques that involve a higher initial investment and changes to their operations which can

offer worthwhile carbon savings; for example many have investigated the effect of changes to vehicle specification and design or invested in telematics systems. The survey also shows the importance of carbon savings through the elimination of journeys (through modal switch, improved payloads or empty running reduction).

The value of using the Logistics Efficiency Indicators (LEI) in the survey (fuel efficiency, payload maximisation empty running, carbon intensity of fuels, modal split), means that LCRS considers each of the five categories in the context of carbon emissions reduction, rather than purely focusing on the narrow issue of fuel efficiency on the one hand or technological and engineering developments on the other.

“Our cleaner fuel strategy is viable for the whole fleet, starting with CNG and progressively moving to biomethane as it becomes more widely available. It differentiates us in the marketplace and reduces both our carbon footprint and that of our customers’ supply chains.”

Catherine Crouch
Corporate Responsibility and Sustainability Director
Howard Tenens Group



Case study • Reduce carbon intensity of fuels

Howard Tenens has created a whole fleet strategy for a lower-carbon fuel

Howard Tenens has identified compressed natural gas (CNG), and eventually biomethane, as a viable alternative to diesel, cutting its carbon footprint substantially. Currently 26 of its 110-strong vehicle fleet are dual fuel, of which 19 use biomethane. By the end of 2013, thanks to funding from the Technology Strategy Board (TSB), Howard Tenens will expand its dual fuel fleet to 56 vehicles, comprising 75% of its 18-tonne-plus fleet.

The company has worked with various conversion companies to incorporate gas tanks in its vehicles, and has also invested heavily in its three refuelling stations at Boston (Lincs), Avelley (Essex) and Andover (Hants).

Despite hgv conversion costs being up to 50% of the truck's original price, Howard Tenens can achieve breakeven within the truck's standard first life. The conversion is then removed before sale.

Currently gas containment on the vehicles is sized to allow almost all journeys to be made entirely on dual fuel, with vehicles only refuelling when returning back to depot. As the number of refuelling stations grows, assisted through TSB funding, the gas containment could be reduced, allowing better payload.

Howard Tenens aims to maximise its use of biomethane as this is a far more sustainable fuel. While dual-fuel CNG can offer up to 15% carbon improvement compared to pure diesel, biomethane dual fuel cuts CO₂ by up to 60%. Current availability of biomethane is severely limited but there are many anaerobic digestion plants due to become operational and this will lead to increased biomethane availability in the near future.

What Howard Tenens has saved

- In 2011–12, 1,000 transport CO₂ tonnes, or 8% of the entire fleet output, was saved

To achieve more, Howard Tenens needs

- Continued development of a CNG refuelling infrastructure
- Confidence that dual fuel options will be available for hgv's for Euro VI vehicles and beyond
- Widespread availability of biomethane
- Duty differential between gas and diesel to be maintained over the long-term

3

Government progress

The Coalition Government has reaffirmed its commitment to carbon reduction policies. Through LCRS, logistics is focusing on the task of reducing its greenhouse gas emissions; Government can help by encouraging use of carbon saving technologies and practices.

UK greenhouse gas emissions and logistics

The latest official figures show that 21 per cent of UK greenhouse gas emissions are from transport¹, this is around the same level as in 1990. Of these emissions, hgvs account for 20 per cent (figure 3.1) and logistics remains under continued pressure to improve efficiency and reduce emissions.

Climate change policy

The Climate Change Act 2008 binds the Government to achieve greenhouse gas emissions reductions of at least 80 per cent by 2050 against 1990 levels. Transport emissions are not

currently included in plans for statutory carbon reduction and trading schemes. However, transport emissions will come into scope of mandatory greenhouse gas reporting for UK quoted companies later in 2013. Table 3.1 shows the key policy developments affecting logistics expected this year.

Government's Freight Carbon Review

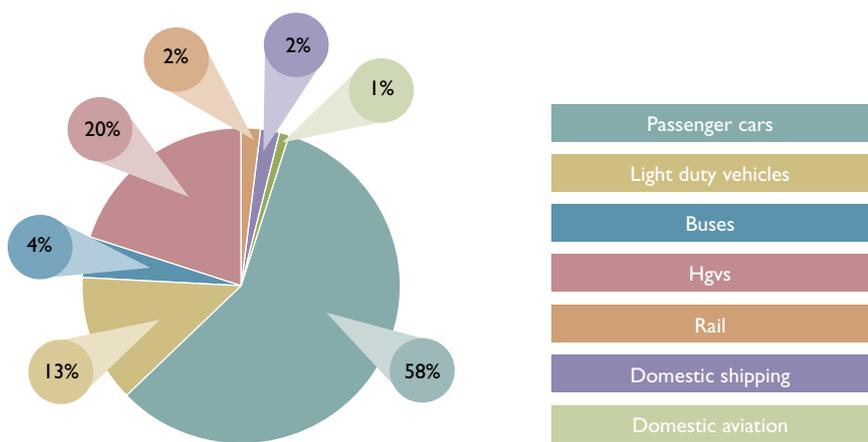
During 2012, the Department for Transport undertook a Freight Carbon Review to assess the progress the freight industry is making towards fuel and emissions reduction. The review was promised in 2010, when Government decided not to make eco-driving training a mandatory element of the Driver Certificate of Professional Competence. LCRS formed an important part of the review and evidence was submitted to DfT on behalf of all scheme members. DfT concluded that it would continue to support a voluntary approach for freight carbon reduction.

DfT Low Emission HGV Task Force

The task force, of which FTA is a member, aims to promote the uptake of fuel efficient, low emission road freight technologies. Workstreams are being taken forward on: switching to gas; improved aerodynamic efficiency/reduced roll-

Figure 3.1 Breakdown of UK transport greenhouse gas emissions by source in 2011

Hgvs account for 20% of transport emissions



Source: DECC

¹ UK greenhouse gas emission statistics, 2011 final UK figures, Department for Energy and Climate Change

ing resistance of tyres; and take-up of hybrid and electric vehicles.

Policies that work with business

Effective Government policy could provide incentives to reduce greenhouse gas emissions from logistics through promotion of initiatives that positively impact on the scheme's five Logistics Efficiency Indicators.

Fuel efficiency

Ministers can create a greater level of certainty to encourage businesses to invest in new technologies by reducing the rate of fuel duty and minimising fuel price volatility caused by fluctuations in world oil markets.

The tightening of Euro standards to improve air quality (and in particular nitrogen dioxide levels) in cities could make engines less fuel efficient and produce more carbon. Measures to encourage take-up of low carbon vehicles, particularly in urban areas, would mean a fall in carbon emissions as well as local air quality improvements. Government should embrace this relationship between carbon reduction and better air quality.

Payload maximisation

Based on evidence supplied by LCRS, DfT was successful in its defence of the UK's currently permitted vehicle and trailer heights, in the face of EU attempts to limit these to 4 metres. Use of double-deck and high-cube trailers enables substantial savings in carbon emissions. Longer semi-trailer trials are also expected to generate measurable reductions in carbon emissions.

Empty running

Official DfT statistics indicate that empty running rates are continuing to rise but the reasons remain unclear. Government needs to better understand the statistics to assess empty running more accurately.

Carbon intensity of fuels

Hgv emissions can be reduced through use of fuels with a lower carbon content. Government recently extended the fuel differential on natural gas and biogas for a further year but operators require this period to be extended to at least 10 years to allow operators invest in gas vehicles with confidence.

To move from small scale operational trials to use of natural gas as a mainstream fuel requires significant upfront investment in refuelling infrastructure. LCRS members have called on Government to review the case for dedicated natural gas refuelling infrastructure on main motorway routes².

Modal split

Making best use of modes other than road is an important element of reducing logistics' carbon emissions. Government grant funding is

important to sustain some existing services and allow new ones to start, as well as supporting investments in infrastructure. Continued spending on rail infrastructure also needs to be maintained to encourage companies to invest in using rail. Recent changes to the rail freight track access charges regime are also of concern; FTA is seeking ways to mitigate the impact of the Office of Rail Regulation's changes on rail freight investment and usage.

From 2015, all ships operating in the English Channel and North Sea will have to comply with an Emission Control Area that will reduce the sulphur content of fuel to 0.1 per cent. There is concern that this will reduce the range of services available and increase costs. FTA is pressing the UK Government and EU to allow flexibility in the way the rules are applied and to support research into technological solutions.

Improved connectivity to ports would help promote use of short sea shipping services, particularly if link roads from ports to the motorway network could be treated as part of the strategic road network.

Table 3.1 Policy developments expected in 2013

Policy	Impact	Date effective
Mandatory greenhouse gas reporting	Government will introduce mandatory greenhouse gas reporting for UK quoted companies (for Scope 1 and Scope 2 emissions) for years ending on or after 30 September 2013. In 2015, ministers will decide whether to extend the approach to all large companies.	Introduced from 30 September 2013
Government's strategy for switching hgv's to gas	A strategy with options and specific actions for how to achieve a switch towards gas fuelled hgv's in Britain. The strategy will need to be shared and subsequently delivered by Government and industry.	Reporting expected by December 2013

² A national gas refuelling network for hgv's, FTA, October 2012

4

LCRS Roadmap

During 2013, the LCRS will establish a Roadmap to indicate where the greatest carbon savings can be made within logistics operations to inform investment decisions. The Roadmap will focus on both operational and technological measures.

The LCRS, working with the Centre for Sustainable Road Freight, will develop the Roadmap to assist operators in deciding the best carbon abatement measures for their fleets. The Roadmap will also provide further evidence to Government of the continued potential for the logistics sector to decarbonise.

The objectives of the Roadmap will be to:

- construct a coherent, realistic roadmap for achieving an 80 per cent reduction in CO₂ emissions from road freight by 2050, in line with the UK Government's 2008 Climate Change Act goal
- define a series of interim targets for the years between 2013 and 2050
- prompt a programme of research into the various carbon abatement measures that need to be implemented to meet the interim targets
- develop and apply a transparent methodology for measuring

industry's progress towards the interim targets

The Roadmap will be based on the five Logistics Efficiency Indicators (page 24) and will be updated as research generates more accurate information. It will guide industry towards the most cost-effective actions to reduce future emissions and identify where Government policy can support opportunities in areas such as low emission technologies.

Initial project tasks will include a comprehensive review of previous road mapping studies conducted in the UK and elsewhere to show possible carbon reduction pathways for the road freight transport sector. The work will also identify the various carbon reduction measures that can be deployed and assess their feasibility and abatement potential. The low carbon measures in FTA Heriot-Watt University's Fleet Decarbonisation Tool, which were used to structure the Logistics Carbon Interventions Survey, will be the basis for this work (see page 8).

As LCRS members record and report their emissions for the scheme, the Roadmap will take forward the reduction element of the LCRS. The work will also prepare the scheme for the development of a further collective carbon reduction target beyond 2015.

The progress of the LCRS Roadmap will be reported in future Logistics Carbon Review reports.



Case study • Reduce carbon intensity of fuels

UPS has adopted electric vehicles to utilise a less carbon-intensive fuel

UPS sees electric vehicles (EVs) as having a significant role to play in carbon-friendly urban distribution. It has run 27 Modec vehicles for several years and recently developed its own prototype urban package car. The lightweight vehicles offer a large package area with walk-through driver access, and are recycled in partnership with EFA-S from end-of-life diesel vehicles, lowering the carbon intensity of the production process. Conversion from a used diesel vehicle also makes the whole life costs comparable to a new diesel vehicle.

The vehicles' gross weight is 7.5 tonnes with a payload of 3.5 tonnes, and 10 will shortly be introduced into the UK on routes below 100kms, well within the EVs' range. UPS will write the vehicles down over 9 years and, as it is a proprietary body design, then recycle the material, side-stepping the issue of residual values.

UPS is also pioneering an electrically-assisted tricycle, the Cargo Cruiser, which increases the payload the courier can manage to 0.3 tonnes, making these operations more efficient. The trikes are particularly well suited to pedestrianised areas.

Although carbon savings on hgv trunking routes will always be numerically more significant because hgv's are more fuel-intensive, the EVs have a crucial role to play in clean air initiatives, noise reduction and low-carbon urban deliveries.

What UPS has saved

- The UPS EVs offer a 40% well-to-wheel saving in the UK compared to a similar diesel vehicle; with battery construction included this reduces to approximately a 25% saving. EVs also offer zero tail-pipe emissions, ideal for city centres

To achieve more, UPS needs

- Vehicle manufacturers to start producing cost-effective OEM electric vehicles

"The EV concept will be very successful in urban distribution. It fits really well and there are lots of wins associated with it."

Peter Harris
Director of Sustainability for Europe,
the Middle-East and Africa, UPS



"Most carbon reduction is about efficiency – and with each tractor costing £50,000 a year for fuel, efficiency means saving money."

Justin Laney
General Manager Central Transport
John Lewis Partnership



Case study • Improve fuel efficiency

John Lewis Partnership optimises fuel efficiency

The John Lewis Partnership fleet, which includes 2,700 vehicles ranging from vans to 44-tonne artics, pioneered double-deck trailers. Its carbon reduction focus is now on aerodynamic improvements to its vehicles, as well as reducing mileage and alternative fuels.

The company has designed its vehicles to reduce drag, with rounded corners, side skirts on the tractor and trailer; a lower trailer height of 4m (the industry standard is 4.2m); and a lighter gross weight of 31 tonnes, as opposed to a standard 38 tonnes. Lighter weight and lower drag allows a smaller engine and the vehicle only needs four axles, which burns less fuel, without compromising the 17 tonne payload.

John Lewis believes that further reductions in drag are possible. It is working with Cambridge University to investigate 'boat-tailing' the rear end of trailers, tapering the sides and roof inwards; smoothing air flow under the trailer; and close matching of the tractor aerodynamics to the trailer.

The aim of this work is to get the best gain, without compromising operational efficiency. This research includes combining the optimum angle of tapering for boat-tailing with maximising load capacity and examining whether air flow should pass unimpeded beneath the vehicle. This all complements the company's use of double-deckers. Typically, two double-deck trailers can replace three standard trailers, saving 22% on fuel and carbon. Double-deckers are not a universal solution, but are used where load volumes and practical considerations justify it.

What John Lewis Partnership has saved

- Double-deckers 2012–13 – Road miles saved: 7 million, CO₂ saved: 2,800 tonnes
- Aerodynamics – CO₂ saved: 1,400 tonnes

To achieve more, John Lewis Partnership needs

- To build trial vehicles incorporating the results from the Cambridge University study, and measure the real-life savings
- Government support for extensions at the front and rear of trailers for aerodynamic add-ons. There is also scope for using more moulded composites in trailer manufacture, to reduce weight and to allow aerodynamically optimal trailer shapes
- To build on current trials of gas dual fuel trucks

5 LCRS scheme members 2012–2013





Sainsbury's

KUEHNE+NAGEL



Stuart Lyons (Haulage) Ltd



WOLSELEY

P&O
Ferrymasters
A Dubai World Company
www.poferrymasters.com

South Tyneside Council



Warburton's
Family Bakers



SQUADRON
MEDICAL
LOGISTIC CARE FOR HEALTH



UK Power Networks



Suckling Transport



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ROAD SERVICES

M
MORRISONS

VEOLIA
ENVIRONMENTAL SERVICES



TESCO



Yusen Logistics

Wincanton

wiltonTRANSPORT



Peacock
Express
Distribution Ltd

TURNERS
(SOHAM) LTD



PORTX PRESS

WJ
ROAD MARKINGS LTD

YEARSLEY
LOGISTICS

BOC Gases Ltd, Global Service Group Ltd, KTransport Services (Midlands) Ltd, Matalan Retail Ltd, Müller Wiseman Dairies and Superdrug Stores plc are also members of the scheme

6

LCRS data results 2005–2011

The LCRS aggregates fuel usage and business activity data from members to establish a carbon footprint for the scheme to demonstrate the efforts of industry to reduce carbon and contribute to national greenhouse gas reduction targets.

This chapter covers the progress that the LCRS is making in reducing carbon dioxide equivalent (CO₂e) emissions, focusing on both absolute and relative levels of emissions between 2005 and 2011. The number of commercial vehicle operators providing scheme data continues to build over time as the LCRS grows in membership.

Overall findings

- Average tonnes of carbon dioxide equivalent (CO₂e) in 2011 shows a reduction of 2.8 per cent since 2010
- Projecting the reduction in emissions since 2010 shows that the scheme is on track to meet its reduction target in 2013, two years earlier than anticipated
- Finding a common normaliser to measure carbon intensity across the sector remains elusive and work on this is an urgent priority for 2013

Trends in emissions

Total CO₂e emissions among scheme members

Results

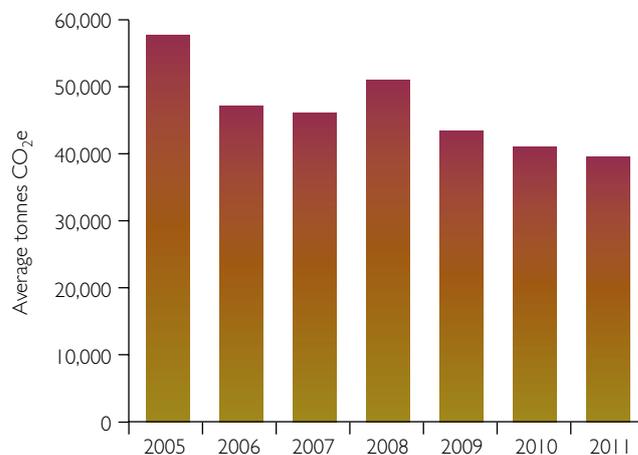
Figure 6.1 shows that average tonnes of carbon dioxide equivalent (CO₂e) per LCRS member has reduced by 2.8 per cent between 2010 and 2011. However, when comparing average CO₂e tonnes in 2011 against 2005 and 2007, there were reductions of 30.5 per cent and 12.4 per cent respectively. Between 2007 and 2008, there was a rise in CO₂e of 9.4 per cent but litres of diesel had increased by 26.4 per cent during this period. The addition of data for 2008 from many large freight companies joining the scheme inevitably increased the amount of diesel used by the LCRS membership. However, since 2005 when data began to be captured, the overall trend in carbon emissions is downwards.

Sample

In 2005, 22 members were able to provide fuel data. This grew to 41 in 2007, 50 by 2008, 60 by 2010 and 61 by 2011. The increasing number of companies submitting data enables a more robust dataset.

Figure 6.1 Average tonnes CO₂e by year (per LCRS member)

LCRS members have reduced fuel usage and improved fuel efficiency through decarbonisation methods



Findings

The results reflect the efforts of LCRS members to reduce fuel usage and improve fuel efficiency through decarbonisation measures. Over the last three years, members have been increasingly able to quantify their fuel usage for submission to the LCRS. This is likely to be due to pressure to account even further for operating costs during a difficult economic period. During 2011, domestic road freight activity failed to grow significantly whilst diesel prices reached an all-time high by the end of that year. Additionally, the carbon agenda is gaining increasing traction within Government, amongst shareholders and the public, making businesses more aware of the need to collect data for carbon reporting.

Emissions by fuel type

Results

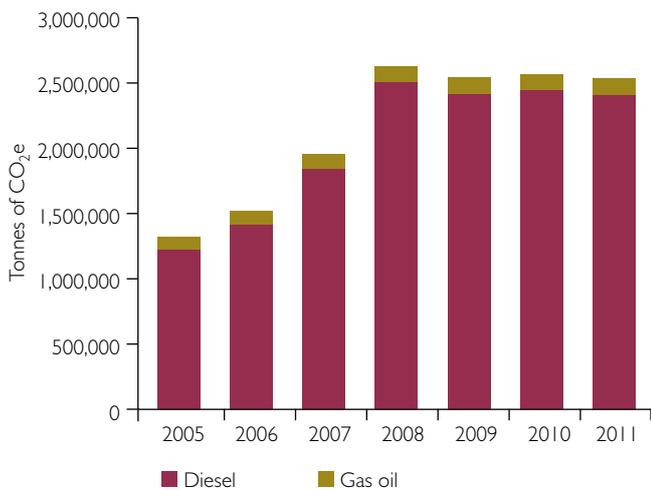
Figure 6.2 shows the tonnes of CO₂e emitted by fuel type from 2005 to 2011. Diesel is the predominant fuel owing to its overall efficiency, reliability and availability followed by gas oil (red diesel). There was a 1.2 per cent reduction in aggregated total tonnes of CO₂e between 2010 and 2011.

Sample

The sample is the same as total CO₂e emissions among scheme members as members report the quantity and type of fuel used by their commercial vehicle fleets.

Figure 6.2 Emissions by fuel type 2005–2011

Emissions are dominated by diesel usage



Findings

Aggregated emissions by fuel type began to grow from 2005 reaching a peak in 2008 and have now begun to reduce. The peak in emissions marks the beginning of the recession and the starting point to increased emphasis on the need to address climate change. Petrol is used in much smaller quantities and the use of other conventional fuels is sporadic within commercial vehicle fleets accounted for by the LCRS.

Alternative fuels

Results

The uptake of alternative fuels within the LCRS remains relatively small, reflecting the situation in the industry overall, as shown in figure 6.3. Biodiesel remains the dominant alternative fuel but fewer companies were reported to be using more biodiesel in 2011 than in 2010 and the overall increase in tonnes of biodiesel was only 11 per cent. The reported use of biomethane is shown for the first time within the scheme. Electricity is recorded for one company which has a fleet of electric vehicles. Use of pure plant oil has been discontinued due to sustainability concerns.

Sample

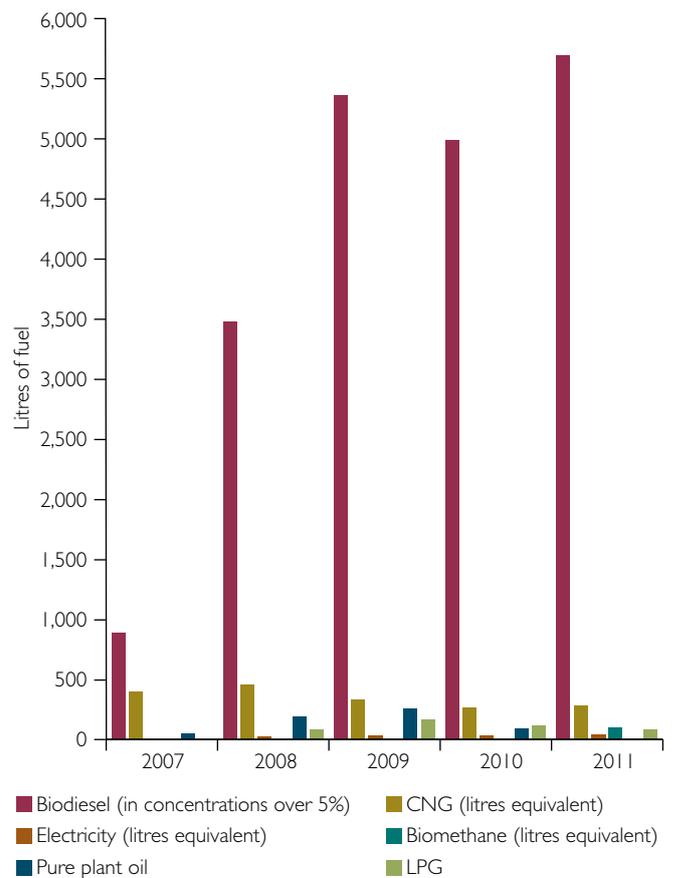
The sample is the same as total CO₂e emissions among scheme members.

Findings

Owing to factors such as costs of refuelling infrastructure, limited availability of public refuelling sites, high upfront costs and uncertainly over payback periods, biomethane and natural gas use within industry is small. This technology

Figure 6.3 Uptake of alternative fuels 2007–2011

Use of alternative fuels remains relatively low



is currently reserved for urban delivery and municipal utility vehicles due to the limited range of these vehicles and significant battery costs. The abolition of the 20 pence per litre fuel duty discount for biodiesel in 2011 and for used cooking oil in 2012 is expected to limit further progress in the future.

Normalised CO₂e emissions

The scheme seeks to report carbon reduction changes over time by presenting emissions in units of activity, rather than just absolute amounts. This reflects the fact that business activity (which dictates demand for transport) of the LCRS membership changes over time.

Normaliser 1: Emissions per vehicle kilometre

Results

Vehicle kilometres is the strongest normaliser within the scheme owing to its close correlation with fuel usage. The average level of CO₂e per vehicle kilometre has improved slightly over time and has remained stable since 2009.

Figure 6.4 Average kg of CO₂e per vehicle km 2005–2011

There is a strong correlation between vehicle kilometres and fuel usage

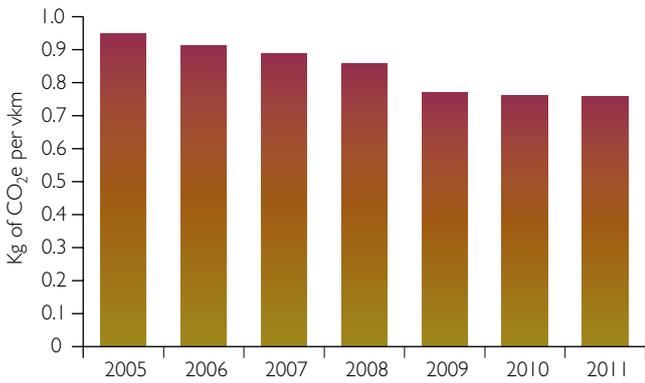


Figure 6.4 shows that between 2009 and 2010, there was a small reduction of 1 per cent in average CO₂e kg per vehicle kilometre and a slight further reduction of nearly 0.3 per cent in 2011. When comparing levels of CO₂e kg per vehicle kilometre in 2005 and 2007, there were reductions of 20 per cent and 16.8 per cent respectively.

Figure 6.5 shows that despite CO₂e kg per vehicle kilometres remaining stable, in 2010 average vehicle kilometres travelled within the LCRS rose by 7 per cent compared to 2009, yet overall average CO₂e kg emissions reduced. In 2011 both datasets revealed a decrease. Again, the results indicate that LCRS members are focusing on actions to improve the fuel efficiency of their vehicles.

Sample

The sample size for vehicle kilometres has grown from 19 in 2005, 30 in 2008, 40 in 2009 and 49 in 2011 as members achieve better visibility in capturing vehicle kilometres through telematics.

Findings

Average CO₂e kg per vehicle kilometre has continued to decline since 2005. However, the results indicate that there were early wins in reducing vehicle kilometres compared to fuel usage, and that more recently LCRS members are maximising operational decarbonisation measures such as consolidating loads and routeing and scheduling.

LCRS members are making better progress in reducing emissions when compared to industry as a whole as shown in figure 6.6. Companies participating in the LCRS are likely to be more engaged in improving fuel efficiency and reducing carbon within their fleet operations. Scheme membership is also skewed towards heavier goods vehicles (with a higher fuel consumption per kilometre) unlike the general UK vehicle parc shown in table 6.1.

Figure 6.5 Average vehicle kilometre and average kg CO₂e 2005–2011

Members are focusing on actions to improve fuel efficiency

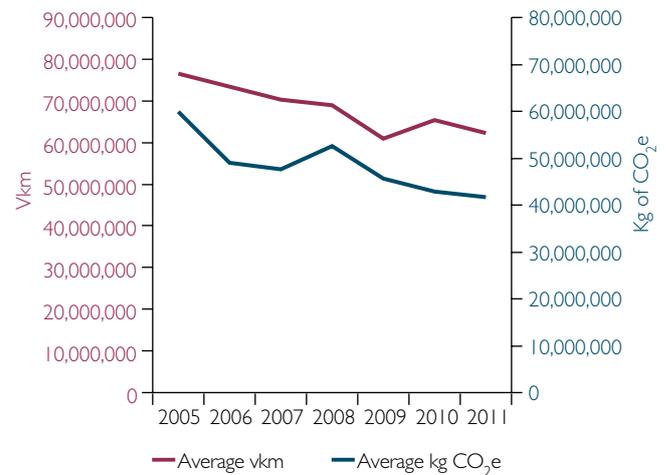
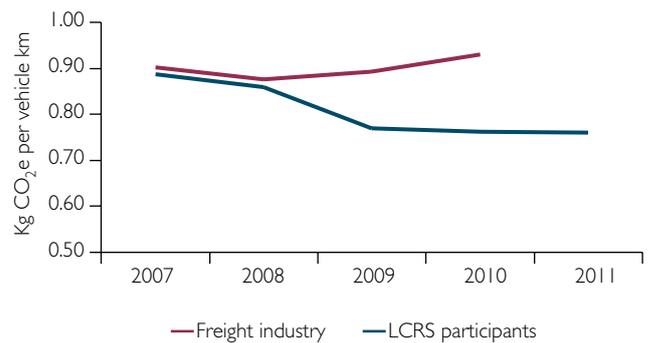


Figure 6.6 Kg of CO₂e per vehicle km for freight industry vs LCRS members 2007–2011

Members are making better progress in reducing emissions



Sources: DfT National Traffic Survey, Road Freight Statistics 2010, Transport Statistics Great Britain

Table 6.1 Commercial vehicle fleet profile of LCRS members compared to UK freight industry

Vehicle type	2010	2011	Percentage split by vehicle category for GB 2010
Light cvs <3.5t/ fleet vans	31%	26%	70%
Rigid 3.5–7.5t	6%	9%	10%
Rigid 7.5–17t	10%	12%	6%
Rigid 17–25t	10%	9%	4%
Rigid over 25t	7%	6%	2%
Artic up to 33t	6%	5%	1%
Artic over 33t	30%	33%	7%

Source DfT Vehicle Licensing Statistics 2012

Normaliser 2: Emissions per £ turnover

Results

The average kg of CO₂e per £ of turnover was 0.302 in 2005, reducing by 23.8 per cent in 2011 to 0.230 as shown in figure 6.7. However, the greatest reduction took place between 2005 and 2006 with a drop of 16.2 per cent. Turnover increased on average by 3.5 per cent in 2011 for scheme members compared to 2010 and there was a slight reduction in emissions per £ turnover of 0.83 per cent in 2011 against 2010. Again as for vehicle kilometres, there is little change in the average kg of CO₂e per £ since the start of the recession.

Sample

The number of turnover submissions from LCRS members has steadily increased from 15 in 2005, to 34 in 2008 and up to 48 in 2011.

Findings

Turnover remains a normaliser that can present general trends in the reduction of emissions over a broad range of organisations who will carry a wide variety of goods and where commercial vehicles undertake activities other than the movement of freight, for example acting as types of mobile plant, or as a place to keep tools. Any freight company that joins the scheme will be able to provide turnover as a normaliser, unlike specific freight normalisers such as tonnes lifted, volume carried and tonne kilometres which vary from business to business.

Due to the diverse range of companies participating in the LCRS, the basis of turnover datasets submitted will vary

widely, making assessment of emission reduction progress more difficult. For instance, the scheme accommodates a wide range of businesses and organisations from major 3PLs and retailers to local authorities and small hauliers. Overall external trends have indicated that road freight activity levels remained weak during 2011, impacting on business profits.

Normaliser 3: Emissions per FTE

Results

Figure 6.8 shows that CO₂e emissions relative to numbers of full time equivalent employees (FTE) rose steadily between 2005 and 2007 and then began to decline from 2008 onwards. Overall between 2005 and 2011, there was a 21 per cent reduction in CO₂e emissions per FTE. Between 2011 and 2010, there was a rise of 6 per cent in average kg of CO₂e per FTE.

Sample

The number of FTE submissions for the scheme has begun to increase from 14 returns in 2005, rising to 28 in 2007, 39 in 2009 and 46 in 2011.

Findings

It should be noted that the number of FTEs for the scheme overall has reduced during this time by 13 per cent which results in the emission increase. This shows companies are reluctant to recruit extra staff in the current economic climate. Again FTE has a low correlation to transport carbon emissions and a larger sample of returns is required to show more consistent results. The basis of the FTE datasets provided by members also varies widely between organisations.

Figure 6.7 Average kg of CO₂e per £ (turnover) 2005–2011

There has been little change in the average kg of CO₂e per £ since the start of the recession

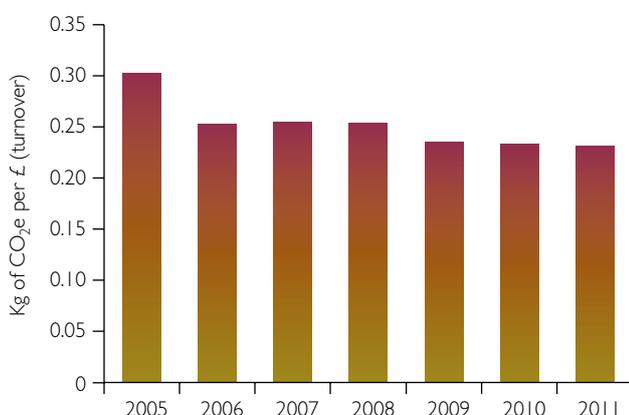


Figure 6.8 Average kg of CO₂e per FTE 2005–2011

FTE shows the least correlation to transport carbon emissions

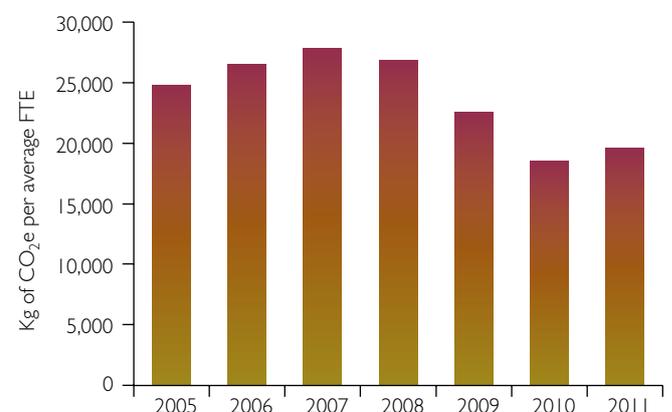
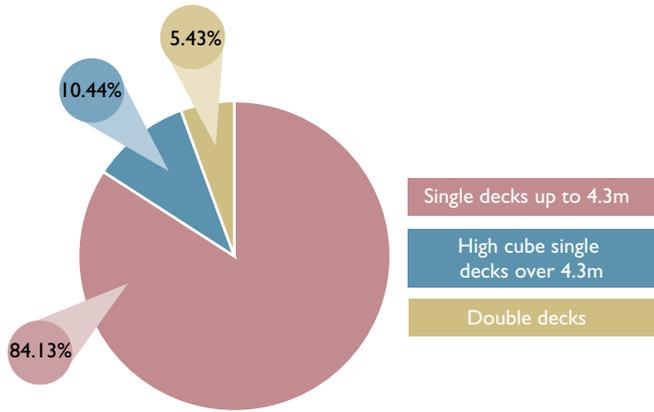


Figure 6.9 Percentage split of trailers registered in LCRS 2011



Fleet profile

The commercial vehicle fleet of LCRS members includes hgvs and vans only, as shown in table 6.1. Over 68 per cent of the fleet are hgvs with 31 per cent vans. Total commercial fleet in 2011, recorded by data submissions, was 46,408, down from 50,473 in 2010 – a reduction of eight per cent. This reflects the increasing consolidation of freight deliveries and slowing business activity as a result of the recession.

Vehicle and trailer heights

The extent to which LCRS members are utilising double deck trailers and high cube single decks over 4.3m is captured for 2011 for the first time as shown in figure 6.9. Double deck and high cube trailers are particularly suitable for inter-depot trunking operations of retailers, parcel and pallet network operators, and manufacturers of high volume, low density production to reduce mileage and carbon emissions. Just over 10 per cent of trailers represented by the scheme are high cube with five per cent double deck, reflecting the operations mentioned above.

Sector coverage

The LCRS has been developed to enable any type of vehicle operator to participate in. To date, the majority of members are from 3PLs, parcels and hauliers and retail, manufacturing and processing sectors as shown in figure 6.10. Utilities, waste, the construction sectors, local authorities are also represented.

Vehicle sizes

Over a third of members currently have more than 500 vehicles within their fleet, with 18 per cent operating between 250 and 499 vehicles. Twenty-four per cent of members run vehicle fleets of 100 or less and just 1 per cent operate 10 vehicles or less as shown in figure 6.11.

Figure 6.10 Sectors represented by LCRS members 2011

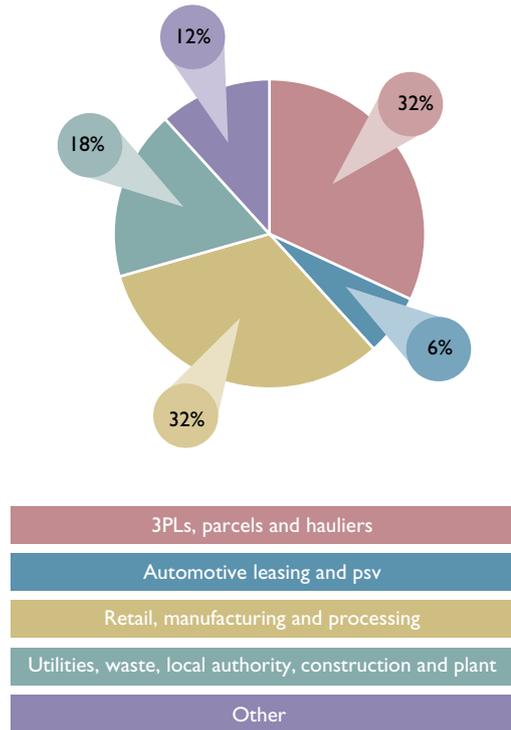
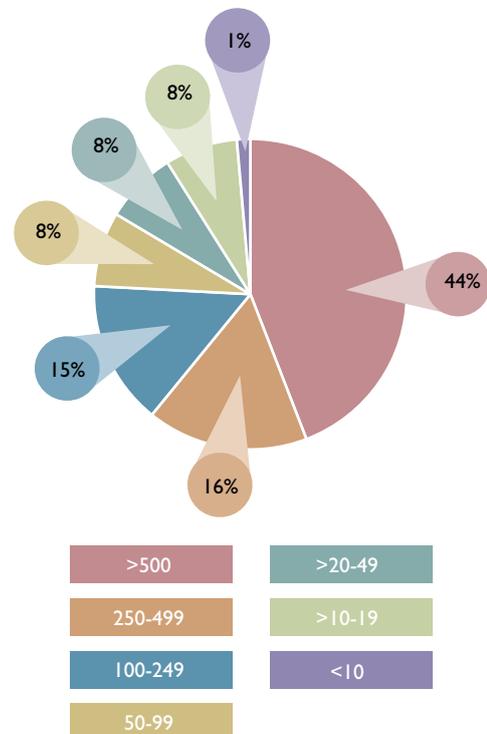


Figure 6.11 Vehicle fleet sizes represented by LCRS members 2011



Notes

- 1 Table 7.2 on page 22 shows a detailed breakdown of scheme data for 2005 to 2011.
- 2 All data provided by scheme members is treated as confidential and the reporting process therefore presents aggregated results.
- 3 Since the scheme came into operation in January 2010, companies have continued to join. Their data is added to current figures and therefore annual reports of emissions will incorporate data from new members between 2005 to 2011.
- 4 The LCRS continues to grow in size and members are at different stages in the data submission process which leads to a variance in total commercial vehicles currently represented by the scheme and commercial vehicles represented in 2005–2011 data results.
- 5 When the scheme began, members were asked to provide annual emissions data going back to 2005. As the scheme has progressed, datasets for back years are not as complete as for recent years. However, the more complete datasets reflect the priority of carbon reduction within businesses.
- 6 The flexibility of the scheme enables members to submit fuel data and at least one normaliser as a minimum. The averaging of data per number of companies able to submit data for each year and category ensures that progress can be tracked effectively.
- 7 The scheme continues to grow, resulting in newer members of the scheme being unable to submit data in time for this annual report, therefore a complete dataset is not provided for all members of the scheme. However, this data will be captured in next year's report.
- 8 Absolute emissions align with Government's practice of reporting actual emissions at a national level. Relative emissions reflect the change in emissions in line with business activity in accordance with Government's recommendations to use intensity ratios to monitor emissions progress.
- 9 Litres of diesel, petrol, CNG, LNG, LPG, electricity for vehicles, biofuels over national blends are collected by the LCRS.
- 10 Vehicle fleet numbers are collected. Where possible, company cars are disaggregated from the fuel usage data provided by members.
- 11 Vehicle km, turnover and FTE are collected as normalisers to show reductions in carbon emissions being achieved through unit of activity. The normalisers are considered appropriate to be used in business reporting in Defra/DECC's guidance on how to measure and report your greenhouse gas emissions.
- 12 The normalisers can also be reported by all scheme members, irrespective of the nature of their business operation. Commercial vehicles can be used in applications which go well beyond the movement of freight, for example acting as types of mobile plant, or as a place to keep tools. In such organisations, tonnes or cube-based operational normalisers would not be relevant.
- 13 All members of the scheme are subject to an initial start-up review as part of the LCRS's audit trail.
- 14 The LCRS applies Defra/DECC direct emission CO₂e conversion factors to the data in accordance with Government's recommendations.
- 15 Direct emissions from biofuels is set to zero as the same amount of carbon is absorbed in the growth of the feedstock from which the biofuel is produced.
- 16 A full scheme methodology is available at www.fta.co.uk/lcrs

7

Carbon reduction target

A founding objective for the LCRS was to set a voluntary carbon reduction target for scheme members for the first time. The role of the target is to demonstrate to Government the logistics industry's commitment to reduce carbon emissions and its contribution to national targets. It also provides a focus on future decarbonisation measures and demonstrates measures for wider adoption by the sector. In addition, the target allows LCRS members to demonstrate to shareholders, contractors and customers their commitment to reducing carbon emissions.

LCRS members were surveyed about how their companies' carbon emissions would change between 2010 and 2015, based on the five Logistics Efficiency Indicators.

Logistics Efficiency Indicators	
• Fuel efficiency	
• Payload maximisation	
• Empty running	
• Carbon intensity of fuels	
• Modal split	

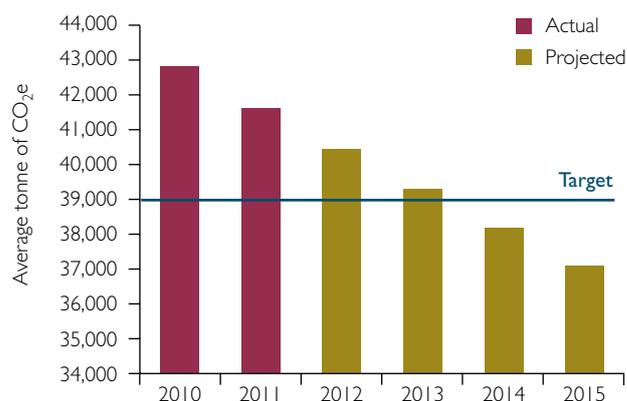
FTA also surveyed the wider industry on the likely level of carbon reduction from freight transport, giving a wider base of contributions for the target setting process. Analysis conducted by Heriot-Watt University revealed an anticipated eight per cent reduction in the carbon intensity of freight operations by 2015 compared to 2010.

The target's time frame was set for five years to reflect business planning horizons as the Government continues to map out opportunities for carbon reduction across the

economy. Projecting the reduction in emissions from 2010 to 2011 reveals that the scheme is on track to meet its reduction target in 2013, two years earlier than anticipated as shown in figure 7.1.

Figure 7.1 Progress to scheme reduction target in 2015 using 2010 baseline

Scheme is on track to meet its reduction target in 2013, two years earlier than anticipated



A relative target was set rather than an absolute cut in emissions to take into account business growth as the economy recovers from recession. However, the results show that significant reductions will be made at an absolute level by 2015 if progress continues in pace with 2010 and 2011 carbon emission results (table 7.1).

Table 7.1 Progress to scheme reduction target in 2015 using 2010 baseline

	2010	2011	2012	2013	2014	2015
Average tonne CO ₂ e	42,821.48	41,614.51	40,441.39	39,301.35	38,193.45	37,116.77
Per cent reduction		-2.82%	-5.56%	-8.22%	-10.81%	-13.32%

Table 7.2 LCRS in numbers

	2005	2006	2007	2008	2009	2010	2011
Average tonnes CO ₂ e per member	59,873	48,922	47,529	52,466	45,486	42,821	41,615
Aggregated total tonnes of CO ₂ e	1,317,216	1,516,582	1,948,696	2,623,314	2,547,225	2,569,289	2,538,485
Average kg of CO ₂ e per vehicle km	0.950	0.912	0.887	0.859	0.769	0.761	0.759
Average kg of CO ₂ e per turnover	0.302	0.253	0.254	0.254	0.235	0.232	0.230
Average kg of CO ₂ e per FTE	24,837	26,565	27,867	26,842	22,574	18,528	19,646

Case study • Increasing freight moved by lower carbon modes

Tesco has worked steadily to move goods from road to rail. Its Daventry rail-enabled distribution centre is central to its success

In 2011 Tesco opened its Daventry national grocery depot with an integral railhead, allowing the retailer to move more goods from road to rail, cut stem mileage, and load and unload goods directly from the distribution centre to trains. Tesco currently runs 5 dedicated rail services, including trains from Daventry via Moss End to Inverness; to Thurrock; to Wentoo in Wales; and from Grangemouth to Aberdeen.

The Daventry railhead can schedule 8 trains daily. Tesco ships high volumes of goods from the distribution centre to the regions, allowing it to fill the 34 wagon capacity. It also controls its primary in-bound logistics, so can direct supplier volume onto return trains. Trains must be filled both ways to be commercially viable. Tesco plans 2 additional rail services in 2013.

Tesco also uses 848 fixed deck double-deck trailers to optimise operational and carbon efficiency. Its F-Plan carbon reduction strategy includes: fuller cages and pallets; fewer trucks and containers; fewer miles; and fuel economy. Double-deckers take 75 cages rather than 45.

Overall these interventions have cut Tesco's CO₂ output per case by 51% between 2007 and 2012. Tesco now delivers 34 cases for every litre of fuel as opposed to 17 cases in 2007.

What Tesco has saved:

- Five rail services, March 2012 to March 2013 – Road miles saved: 14.6 million, CO₂ saved: 15,167 tonnes
- Double-deckers, March 2012 to March 2013 – Road miles saved: 18 million, CO₂ saved: 21,800 tonnes

To achieve more, Tesco needs

- More transparency of the actual fuel/ energy consumption of rail services from rail providers
- A rail operator portal giving visibility of rail capacity for potential users, comparable to freight exchange sites

“We don't do greenwash. Interventions must be environmentally and commercially sound.”

Joe Carthy
Environmental Manager
Tesco Distribution Group



“Despite being over three times the cost of a conventional trailer, the savings they yield means they will pay back in three years.”

Gordon Irvine
Group Fleet Director
Arla Foods UK



Case study • Reducing empty running

Arla Foods UK has almost eliminated empty running with a unique trailer-tanker combination for fresh milk deliveries

Arla Foods routinely sends refrigerated trailers full of processed milk to supermarkets at night and, in the early mornings, its tankers collect raw milk from farms. This means a substantial amount of empty running. It has solved the problem with a unique trailer-tanker combination, created in partnership with Crossland Tankers and Gray and Adams.

The new vehicle leaves the dairy at night with its top half loaded to its maximum 44-tonne weight with fresh, processed milk. Once this has been delivered, the vehicle then proceeds to neighbouring farms to fill its bottom half, also to its weight capacity, with raw milk. Hence, the single vehicle completes almost as much work as two separate vehicles, and virtually eliminates empty running entirely. Although there is a payload penalty, this is more than off-set by the substantial fuel and operational savings the vehicle creates.

Stability was a major engineering concern, as the vehicle leaves at night with the top half fully laden. The vehicle weight has therefore been concentrated in the bottom.

After an extensive trial Arla has ordered 20 more vehicles, each costs over three times the price of a conventional trailer, but delivers a financial payback. The company has a commitment to reduce CO₂ by 25% against a 2005 baseline regardless of growth. This vehicle is the result of four years' work to create the step change necessary to make that happen.

What Arla has saved

- Each tanker-trailer combination will save 155 tonnes of CO₂ per year. Compared to 2 conventional vehicles on the same routes, once deployed, this will equate to 3,225 tonnes per annum

To achieve more, Arla needs

- Effective collaboration between vehicle suppliers and bodybuilders
- Collaboration between customers and transport suppliers to ensure necessary optimisation of, and stability in, the supply chain

8 Logistics Carbon Interventions Survey 2012

The results relate to 33 returns from LCRS members. Respondents to the survey were asked whether they planned to institute or had already put in place any of over 30 carbon saving interventions related to operational and vehicle design, since 2011.

Logistics Efficiency Indicator 1: Fuel efficiency

The focus of effort is on achieving efficiency through operational measures

The percentage of respondents implementing automated manual transmission and reducing engine idling were both 73 per cent, accounting for 11,926 and 12,857 hgvs (heavy goods vehicles in excess of 3.5 tonnes) respectively (see figure 8.1).

Measures implemented to improve fuel efficiency were also ranked by the number of hgvs affected by the implementation of the measure. The most popular measure was more

frequent tyre inflation (21,607 hgvs) followed by periodic maintenance and inspection (19,107 hgvs). Driver training initiatives, which are relatively easy to implement, are more widespread than costlier changes to vehicle specifications (see below, 'Driver training'). Table 8.1 shows the number of respondents implementing measures related to hgvs.

Figure 8.1 Top 10 fuel efficiency interventions

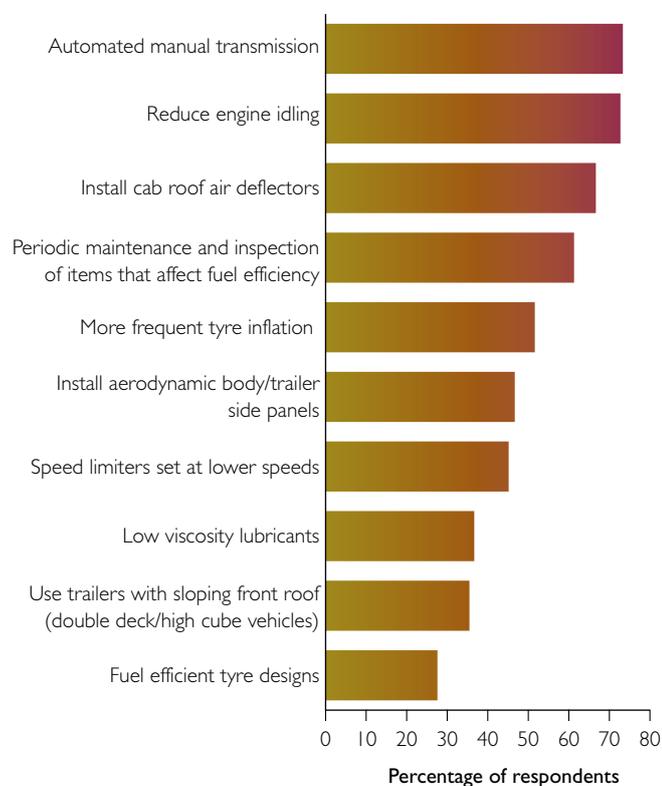


Table 8.1 Decarbonisation measures

Measure		Per cent of respondents implementing measure since 2011	No of hgvs involved
Vehicle transmission	Automated manual transmission	73%	11,926
	Reduce engine idling	73%	12,857
Vehicle body	Install cab roof air deflectors	67%	11,158
	Install aerodynamic body/trailer side panels	47%	6,357
	Use trailers with sloping front roof (double deck/high cube vehicles)	35%	1,054
	Reduce drag by lowering vehicle height	20%	2,322
	Use teardrop trailers	13%	504
Vehicle maintenance	Periodic maintenance and inspection of items that affect fuel efficiency	61%	19,107
	More frequent tyre inflation	52%	21,607
	Low viscosity lubricants	37%	6,680
	Automatic tyre pressure adjustment	4%	208
	Vehicle speed	Speed limiters set at lower speeds	45%
Vehicle and tyre selection	Fuel efficient tyre designs	28%	3,868
	Regular use of engine mapping to match vehicle specification to application	10%	2,210

Driver training

Seventy three per cent of respondents regularly monitor the fuel performance of their drivers, accounting for 32,475 hgv drivers and 7,179 van drivers, respectively.

Sixty six per cent have an eco-driver scheme in place, covering 32,388 hgv and 4,833 van drivers. For 2013, respondents expect to put 12,921 hgv and 4,462 van drivers through driver training.

Figure 8.2 Method of driver selection for eco-driver training

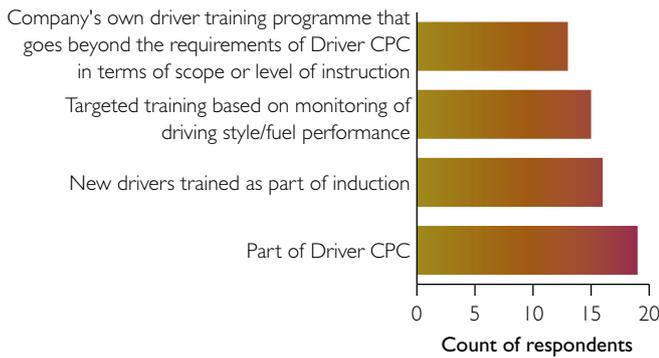


Figure 8.2 shows the varying approaches taken by respondents in selecting drivers for eco-driver training, according to different business needs. For many, eco-driver training is a standard tool, whether as part of their Driver CPC training or the company's own induction process. This training is then reinforced should issues be identified with individual drivers. However, a third of respondents indicated that it also formed part of an in-company driver training programme which went beyond the requirements of the Driver CPC.

Logistics Efficiency Indicator 2: Payload maximisation

Companies are maximising their use of existing vehicle capacity with some investment in longer and higher cube trailers

Respondents' efforts in improving vehicle lading have concentrated on improving vehicle fill of existing equipment with 72 per cent of participants having introduced additional measures to achieve this since 2011 (see figure 8.3).

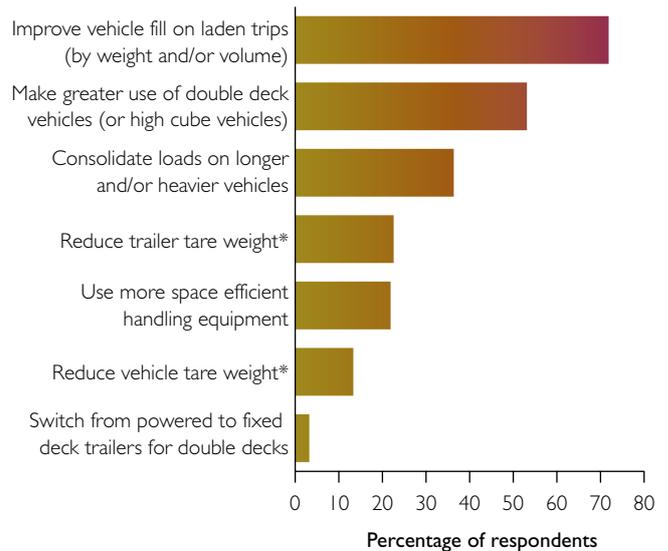
Just over half of survey participants have introduced additional double-deck trailers onto their fleet since 2011, this increase is explained by the number who reported that they expected to trial vehicles in last year's survey. Around 36 per cent of survey respondents consolidate loads on longer and or heavier vehicles.

Logistics Efficiency Indicator 3: Empty running

Telematics is used to optimise vehicle utilisation and core fleets are being deployed more effectively

Sixty four per cent of respondents reported that they have reduced empty running since 2011. The net reduction, once those participants who have reported an increase in empty running and no change is taken into account, is a reduction of approximately 3.3 per cent, only just slightly lower than

Figure 8.3 Measures to improve vehicle loading



*Trailer/vehicle tare weight = unladen weight plus weight of fuel and equipment

last year (3.5 per cent)¹. In 2011, just under half (47.8 per cent) made no change, whereas in 2012 fewer made no change (33.3 per cent) but more made a reduction of up to 5 per cent (see figure 8.4).

Respondents report that more efficient deployment of their core fleet on existing flows is the most effective way to reduce empty running (scoring 4.04 out of a possible 5), followed by collaboration with suppliers (scoring 3.93 out of 5) (see figure 8.5).

The greatest opportunity for improving vehicle productivity is the use of on-board telematics to optimise vehicle scheduling by having real-time visibility of vehicle activity. As shown in figure 8.6, nearly half of participants currently use vehicle telematics.

Logistics Efficiency Indicator 4: Carbon intensity of fuels

A step change in alternative fuel usage requires investment in strategic infrastructure

The percentage of respondents implementing carbon reduction measures was highest for use of dual fuel vehicles at 19 per cent, followed by increased use of electric vehicles (17 per cent). It should be noted that these responses only account for 196 and 8 vehicles respectively (see figure 8.7, page 27).

¹ These percentages reflect the net balance of responses (as described) not actual percentage of members who responded in each category

Figure 8.4 Participants reporting a reduction or increase in empty running

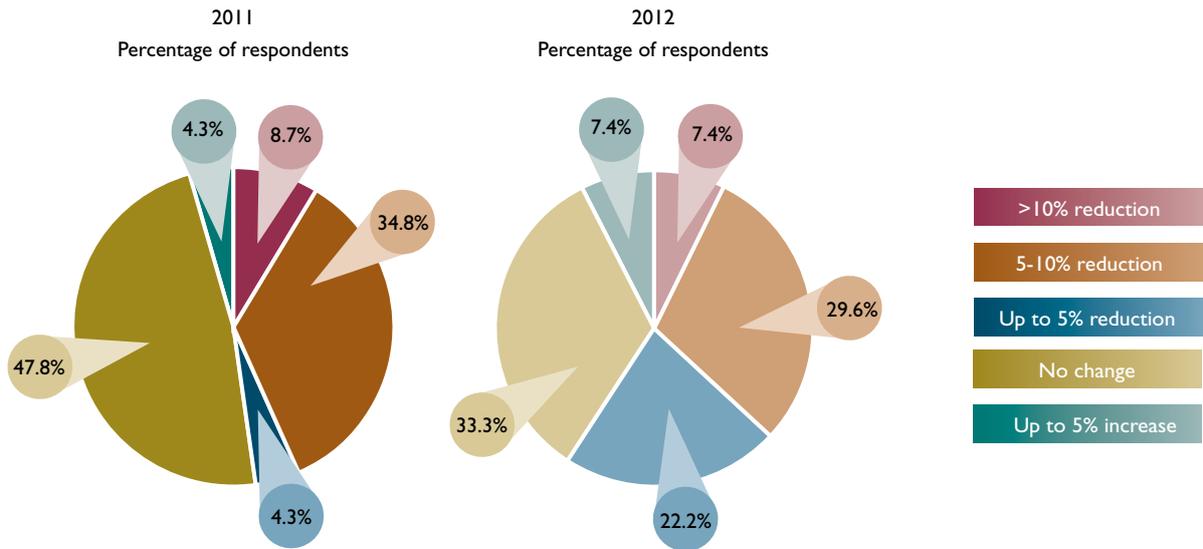


Figure 8.5 Measures to reduce empty running

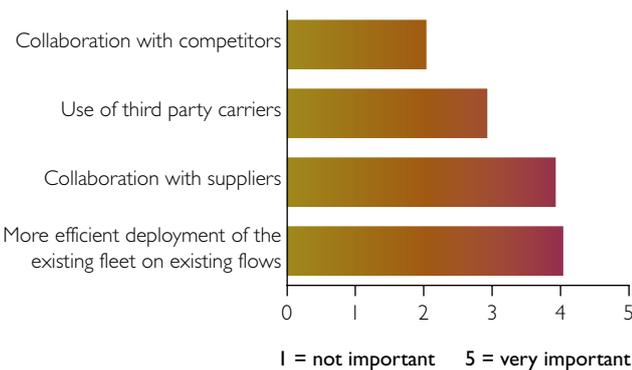
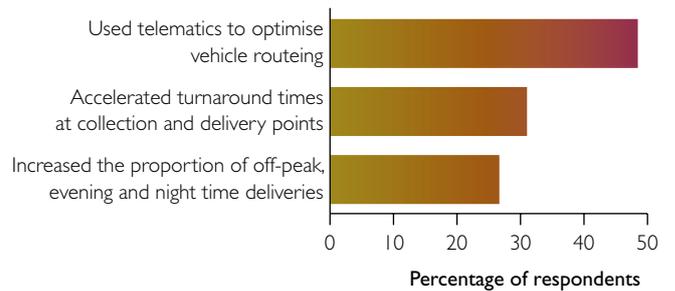


Figure 8.6 Implementation of measures to improve vehicle productivity



However, when carbon reduction is ranked by the number of hgvs affected by the implementation of the measure a clearer picture emerges. The most popular measure to reduce carbon (by number of hgvs involved) was the use of fuel additives (1,834 hgvs) followed by the increased use of biodiesel (1,540 hgvs).

Logistics Efficiency Indicator 5: Modal split

Non-road modes are kept under review, a small number of scheme members are significant users of rail

Despite the challenges in the economy and in the public policy environment, this is a good time to be developing use of alternative mode services. Not all traffics and flows

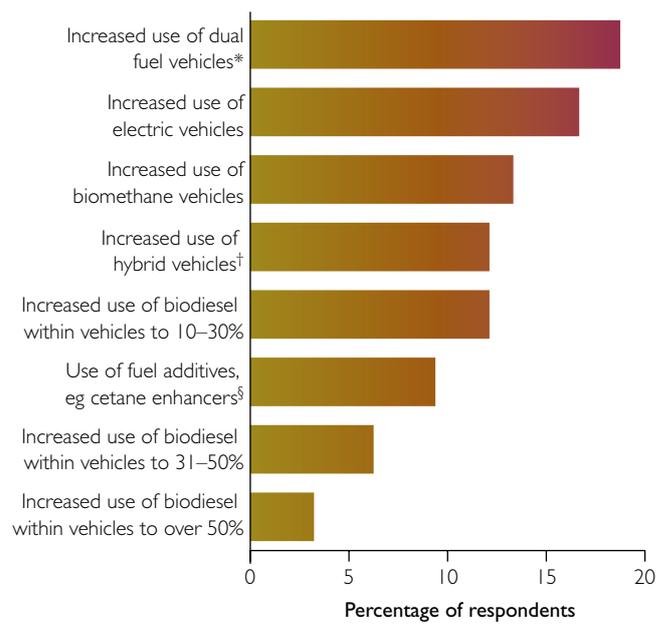
are suited to alternative modes but some that currently rely on road might be, and users that switch can benefit from improved supply chains as well as carbon savings.

Thirty six per cent of respondents to the 2012 Low Carbon Intervention Survey regularly review their use of non-road modes. Twelve respondents made use of rail freight, five of whom increased their levels of activity in this mode since 2011 (see figure 8.8). The net increase in rail freight activity, once those participants who have reported a reduction in use and no change are taken into account, is a rise of just over 2 per cent².

² These percentages reflect the net balance of responses (as described) not actual percentage of members who responded in each category

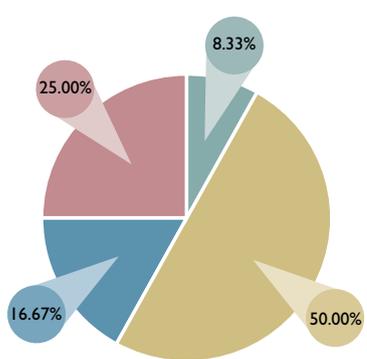
Half of the 10 respondents reported that there will be no change in their use of this mode in 2012. The net anticipated increase in rail freight activity in 2013, once those participants who have reported a reduction in use and no change is taken into account, will rise by approximately 1.25 per cent (see figure 8.9).

Figure 8.7 Measures to reduce carbon intensity



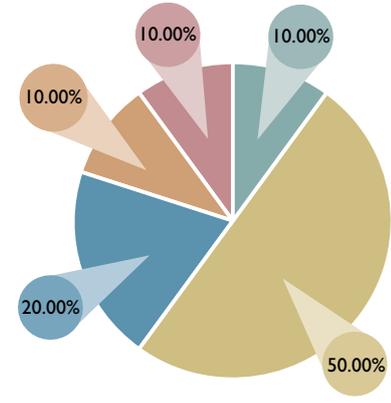
*Dual fuel – diesel engine with bolt-on gas system
 †Hybrid – diesel/petrol engine with electric power
 ‡Fuel additives change the molecular structure of the fuel. FTA policy is not to support the use of fuel additives and lubricants that have not been independently verified and trialled

Figure 8.8 Changes in use of rail freight since 2011 (12 respondents)



- Use fallen by over 10%
- No change
- Use increased up to 5%
- Use increased by over 10%

Figure 8.9 Anticipated use of rail freight for 2013 (12 respondents)



- Use will fall by over 10%
- No change
- Use will increase up to 5%
- Use will increase between 5–10%
- Use will increase by over 10%

Companies are welcome to join the Logistics Carbon Reduction Scheme (LCRS). The scheme is open to any operator with at least one commercial vehicle and is free to join. It provides a simple, business friendly, voluntary means for vehicle operators to record, report and reduce their carbon emissions. The scheme also allows the UK logistics sector to publicly report, for the first time, its contribution towards national targets to cut greenhouse gas emissions.

- It is a free to join, industry-led, influential scheme which makes it as easy as possible to record data linked to carbon emission reduction
- It demonstrates a company's green credentials to potential customers and highlights their long-term commitment to reducing carbon emissions, setting them apart from competitors
- It keeps you up to date with innovations and measures that reduce carbon emissions and makes business sense so that management effort can be focused on actions which yield the best rate of return
- It provides a methodology and target for carbon emissions recording and reporting which is robust and auditable and allows informal benchmarking of operations against industry average(s)
- It carries weight with Government, sector trade associations and buyers of logistics services
- It is confidential and company data will never be shared with others, except as part of industry aggregated reports

You can find out more information about the scheme in the following ways

- Visit www.fta.co.uk/lcrs to download an information pack
- Call 08717 11 22 22* to request an information pack
- Email carbon@fta.co.uk to request an information pack
- Write to Rachael Dillon, Climate Change Policy Manager, Freight Transport Association, St John's Road, Tunbridge Wells, Kent, TN4 9UZ to request an information pack

To join the scheme now

- Visit www.fta.co.uk/lcrs to download a Declaration of Intent. Complete and return as instructed at the bottom of the form
- Email carbon@fta.co.uk to request a Declaration of Intent

