Bridgestone cannot understate the importance of its on-going partnership with the Logistics Carbon Reduction Scheme, which plays a huge part in the brand’s plans to reduce carbon emissions (CO₂) in the logistics sector.

As the world’s largest tyre manufacturer, we are constantly striving to find ways to measure and reduce emissions and offer compelling fuel efficient products to our customers as a result.

Our ever-evolving ECOPIA range is an example of this and represents our most ecological and economical range of truck tyres ever produced. Bridgestone’s innovative Tyre Pressure Monitoring System (TPMS) have a similarly positive impact on CO₂ emissions, too.

From internal studies we can see that fleets have on average up to 25 per cent of tyres running with pressure at least 10 per cent below recommended levels and up to five per cent with pressure at least 20 per cent below.

With this ‘average’ pressure condition, fleet fuel consumption would be 0.6 per cent higher than if all tyres were running at recommended pressure levels.

We take our mission statement of ‘serving society with superior quality’ seriously, with a range of products that not only satisfy the needs of the customer, but the environment as a whole.

As the LCRS’s industry partner, we are working closely with industry to highlight the role that tyre selection and management can play in improving fuel efficiency and reducing carbon emissions.

John McNaught  
Managing Director  
Bridgestone Europe – North Region
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**PART ONE • Logistics Carbon Review**

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**PART TWO • Fourth Annual Report of the LCRS**

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The Logistics Carbon Reduction Scheme (LCRS), 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 greenhouse gas reporting framework

**What is its current size?**
In April 2014 the scheme had 97 members, accounting for 69,480 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 such as rail and water
Dear Colleague

I am delighted to introduce the Logistics Carbon Review 2014 which incorporates the Fourth Annual Report of the Logistics Carbon Reduction Scheme. The LCRS has never been so important as freight remains in the spotlight in the climate change challenge.

The scheme is demonstrating its practicality and effectiveness in helping fleet operators to record, report and reduce carbon emissions. As the UK Government introduces Energy Audits for non-SMEs this year, the scheme will help those members affected to respond to the new requirements. Meanwhile, the scheme is an excellent way of introducing smaller hauliers to carbon reduction and I recommend that more join up.

Having provided robust evidence to Government in 2012 on the LCRS, our attention turns to developing how we report our improving carbon efficiency. Reporting an annual carbon footprint for such a diverse range of companies within the LCRS is challenging. Working with the Centre for Sustainable Road Freight, FTA wishes to develop a Single Logistics Activity Measure to allow us to better judge the scheme’s carbon efficiency. Nevertheless, it should not be underestimated what has already been achieved by the LCRS. We remain the only UK based logistics carbon reporting scheme and have prevented Government from regulating the sector on carbon emissions.

LCRS members are making the most of operational actions to reduce carbon emissions but more enduring decarbonisation measures with more upfront investment and risk will be needed to make further reductions. Many LCRS members are trialing or utilising gas and biomethane to reduce emissions. Important insights and business case data from the LCRS was fed into the Department for Transport’s Low Emission HGV Task Force’s 2014 report on recommendations for the use of methane and biomethane in HGVs. The LCRS will continue to promote the use of gas to reduce the sector’s emissions.

I was delighted with the inaugural LCRS Awards 2013 which showcase the individual actions of LCRS members to reduce carbon emissions. This report features the winning case studies and I look forward to the next set of Awards.

I would like to take this opportunity to thank our LCRS Industry Partner, Bridgestone for continuing to support the LCRS for a second year. Its involvement highlights the important role that tyre selection and management can play in supporting businesses’ efforts to make improvements in vehicle fuel efficiency.

Finally, the Logistics Carbon Working Group, attended by many LCRS members continues to provide essential guidance and direction for the scheme as a whole. I would like to take this opportunity to voice my thanks and appreciation to the group, without which the LCRS would not be moving forward so successfully.

Ian Veitch
FTA President
LCRS progress and objectives

LCRS is the only voluntary carbon emissions reduction scheme in the 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
Carbon emission results
In 2012, the scheme delivered a reduction of 3.4 per cent in average kg of carbon dioxide equivalent (CO2e) per vehicle kilometre travelled compared to 2011 (figure 1.1). Members are collectively committed to reducing the carbon intensity of their freight operations by 8 per cent by 2015: analysis of 2012 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 15).

Increasing membership of the scheme
LCRS membership continued to grow, from 78 members in December 2013 to 97 members at the end of April 2014. These companies accounted for 69,480 commercial vehicles (heavy goods vehicles and vans), a substantial proportion of the UK liveried fleet.

Contributing to the Department for Transport’s Low Emission HGV Task Force
Through the LCRS, FTA has contributed to DfT’s Low Emission HGV Task Force on opportunities to increase the utilisation of gas and biomethane in the freight sector. A range of LCRS members submitted key business case evidence on the operation of gas-powered fuel vehicles which contributed to the Task Force’s publication in March 2014 on the use of methane and biomethane in HGVs. The recommendations echo FTA’s Gas Manifesto. LCRS members and FTA were also instrumental in influencing the Chancellor’s decision at the 2013 Autumn Statement to secure the fuel duty differential between the main rate of fuel duty and the rate for road fuel gases, such as liquefied natural gas and compressed natural gas, until 2024. This is expected to encourage operators to invest in gas, though challenges of refuelling infrastructure provision still remain.

Promoting effective low carbon solutions for logistics
FTA is a consortium member of the Centre for Sustainable Road Freight (CiSRF). The Centre is a collaboration between Cambridge and Heriot-Watt Universities and organisations in the freight and logistics sector. The
focus of the Centre is to achieve deep reductions in carbon emissions from the road freight sector by combining highly-focused vehicle engineering with systematic improvements to freight distribution. A number of LCRS members are part of the consortium. FTA is involved in projects including a roadmap for the logistics sector to establish the reductions required to contribute to national greenhouse gas reduction targets.

Protecting national carbon reduction schemes at a European level

The European Commission is reviewing the potential for the introduction of a carbon methodology for freight across Europe. LCRS has submitted key evidence, highlighting the breadth and scale of its membership and its progress to date to the Commission. FTA supports the development of consistent carbon reporting principles across Europe but wishes to ensure that any policy options agreed at a European level do not hinder progress in countries that already have voluntary schemes.

Scheme objectives 2014

Increase the number of companies in the scheme

Growing the number of members in the scheme and extending the range of businesses involved remains a key target. This will increase the influence of the scheme in making the case for voluntary measurement and reporting instead of regulatory and punitive fiscal action.

Continue to make the scheme more attractive to smaller haulage companies

This is important to expand industry involvement in recording, reporting and reducing carbon emissions and include ‘Scope 3’ emissions (indirect carbon emissions), to take account of companies that use sub-contractors for distribution.

Development of more effective normalisers

Finding a common normaliser for scheme reporting remains elusive. FTA is currently working with the CfSRF to establish a single logistics activity normaliser to take account of the broad range of companies that join the scheme.

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

The second LCRS Awards to celebrate the efforts of green leaders in the freight industry will be presented in May 2014.

Promote adoption of alternative fuels

Through continued engagement with the DfT Low Emission HGV Task Force and initiatives such as the manifesto for a gas refuelling network, FTA and LCRS will continue to provide industry leadership on the promotion of the adoption of alternative fuels.

Support the trials of longer semi-trailers

LCRS continues to support the ongoing trial of longer semi-trailers to allow companies to demonstrate the carbon emissions reduction benefits of using high volume transport units.

<table>
<thead>
<tr>
<th>TABLE 1.1 • LCRS milestones 2009–2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>December 2009</strong></td>
</tr>
<tr>
<td>March 2011</td>
</tr>
<tr>
<td>April 2011</td>
</tr>
<tr>
<td>December 2011</td>
</tr>
<tr>
<td>January 2012</td>
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<tr>
<td>November 2012</td>
</tr>
<tr>
<td>April 2013</td>
</tr>
<tr>
<td>May 2013</td>
</tr>
<tr>
<td>April 2014</td>
</tr>
<tr>
<td><strong>LCRS has 97 members operating 69,480 commercial vehicles</strong></td>
</tr>
</tbody>
</table>
In 2013, the inaugural LCRS Awards, designed to showcase the individual actions of LCRS members to reduce carbon emissions, were presented to the winners. Case studies from the winners highlight the breadth of decarbonisation measures being undertaken by industry to improve carbon efficiency.

**AWARD • Carbon reduction through fuel efficiency**

**Turners Soham Ltd**

Turners (Soham) Ltd demonstrated carbon reduction through fuel efficiency with its implementation of a unique telematics system, enabling the analysis of driver performance data, as well as by developing route-based analysis and improvement tools.

The company can now identify alternative driver routes as well as compare and evaluate fuel usage over alternative routes whilst also monitoring the carbon savings that can be made. The company uses a simulation/scenario model to generate the most fuel efficient routes for trips. Additionally, Turners undertakes extensive route specific driver coaching to improve drivers’ performance and identify areas for improvement.

Turners wanted to exceed the environmental and fuel efficiency standards achievable with a normal telematics system and take it to the next level by using a specifically commissioned unique system. To do this they worked with tracking and telematics service provider Isotrak and the Dutch-based specialist in CANbus and vehicle signalling, Squarell Technology.

Having implemented the new systems and tools, savings were made when it came to costs, fuel and carbon. The fuel route efficiency methodology has been recognised as the key initiative in the company’s fuel program. Having implemented the new systems, drivers are now volunteering alternative routes and requesting guidance and advice for improving reduction in fuel emissions.

The LCRS judges felt that Turners (Soham) Ltd had gone the extra mile in getting the most value out of its telematics system to improve fuel efficiency and reduce carbon emissions. The judges were impressed with the level of engagement across the company in this initiative – from the Managing Director to the drivers.

**AWARD • Carbon reduction through innovative fleet management**

**Arla Foods UK**

Arla Foods is the UK’s largest dairy company by ‘milk pool’ and turnover and demonstrated carbon reduction through innovative fleet management by developing the dairy industry’s only combination trailer. The vehicle is half milk tanker and half refrigerated container, used for the transportation of raw milk and finished dairy products simultaneously.

Arla’s trailer was developed due to there being occasions when the company was sending out a vehicle with finished dairy product only to shortly afterwards send a second vehicle out to collect milk. The new trailer virtually eliminates any empty running.

The company has a target to reduce CO₂ emissions by 34 per cent by 2020 – with logistics responsible for delivering a third of this reduction.

After a successful trial of the combination vehicle, the company has placed an order for a further 20 combination vehicles, which will take the total projected fuel saving per annum to 1.2 million litres. This translates to an overall carbon reduction per annum of 3,100 tonnes.

Each vehicle will reduce Arla’s fuel consumption by 60,000 litres per annum. The fuel saving translates into a carbon saving of 155 tonnes per annum.

With the addition of the newly-developed vehicle, Arla is now able to maximise the efficiency of its entire supply chain from the cow to the consumer.

One of the LCRS judges remarked that Arla Foods was ‘blazing the trail’ for other companies that utilise specialist vehicles, which can limit opportunities to reduce fuel. Judges were impressed that the original idea for the combination trailer had been suggested by an employee and that the business had supported the onward development and eventual launch.
Howard Tenens Associates Ltd

Howard Tenens demonstrated carbon reduction through the use of alternative low carbon fuels and technologies by steadily introducing dual fuel vehicles into the fleet since 2009 as part of its strategy to cut carbon emissions.

At the end of 2013 the dual fuel fleet expanded considerably to 57 vehicles assisted by grant funding from the Department for Transport (DfT) and Technology Strategy Board (TSB). This means that 88 per cent of its fleet over 18 tonnes are dual fuel, making it one of the largest dual fuel fleets in the UK. It operates a mix of DAF and Mercedes vehicles.

The environmental benefits of operating dual fuel vehicles are considerable. A dual fuel vehicle operating on compressed natural gas (CNG) saves up to 15 per cent CO2 compared to an equivalent diesel vehicle, and up to 60 per cent if operating on biomethane. Introducing dual fuel vehicles into the fleet has been instrumental in driving down the company’s carbon footprint. In 2011-12 the company saved just under 1,000 tonnes of CO2 due to its dual fuel fleet, equivalent to an 8 per cent reduction in overall fleet emissions.

The company began trials of CNG in 2009 and since then has worked closely with various conversion companies to develop the best methods for incorporating gas tanks to its vehicles. The original trial vehicles had gas containers on both the tractor unit and the trailer. This created some operational constraints, and later vehicles were designed so that all gas could be stored on the tractor unit, giving ranges of between 750 and 900km on dual fuel operation.

Howard Tenens has also installed refuelling stations at four depots – Boston (Lincs), Aveley (Essex), Andover (Hampshire) and Swindon (Wiltshire). All stations are open to third parties with prior agreement. All sites have grid connected CNG stations apart from Andover which is a liquefied compressed natural gas (LCNG) biomethane station which dispenses the fuel as a compressed gas. Howard Tenens aims to maximise its use of biomethane in the future as it is a much more sustainable fuel and can deliver greater carbon savings.

The LCRS judges felt that the utilisation of CNG within the Howard Tenens’ fleet was completely ingrained within the business. They were impressed by the significant engineering and development work that the company had undertaken to make CNG a viable fuel for their fleet, as well as plans for the future with biomethane.

UPS received the carbon reduction through use of low carbon transport modes award, following its successful trial of barges on the River Thames for the London 2012 Olympic and Paralympic Games. The barges were an innovative form of transportation for UPS and involved lengthy, co-ordinated negotiations between barge operators, port authorities and other stakeholders, months before the Games began.

A total of 38 shipping containers containing furniture were transported from Tilbury to the Athletes’ Village. The returning empty containers were towed as part of a longer combination that was travelling the same route.

The use of barges presented challenges. For example, time windows are much tighter for river operations than for road, and lead times need to be longer. Nevertheless, the trial was successful and valuable data was gathered from the exercise.

Beyond this, UPS’s involvement in the London 2012 Games gave the company a chance to implement a range of sustainability initiatives, many of which are still in place post-Games. UPS made use of walkers and delivery bicycles during the Olympics to cope with increased traffic volume in the capital. It also introduced 10 dual-fuel biomethane/diesel large tractor units, two pure electric small delivery vehicles for local delivery in and around the Olympic Village, and three hybrid diesel electric fuso canters into its London 2012 fleet. These vehicles continue to be used within UPS’s UK fleet.

The LCRS judges believed that this was a great case study which highlighted both the opportunities and the challenges arising from the use of freight barges, and were impressed with the level of detail and stakeholder engagement undertaken by UPS to make the barge trials successful.
PART ONE  Logistics Carbon Review

LCRS scheme members 2013–2014
Global Service Group Ltd, Hermes Parcelnet Ltd, Keltbray, K Transport Services (Midlands) Ltd, Matalan Retail Ltd, Superdrug Stores plc and The Clancy Group are also members of the scheme.
Climate change policy

The UK Climate Change Act binds the Government to achieve greenhouse gas (ghg) emissions reductions of at least 80 per cent by 2050 against 1990 levels. The European Commission has also pledged to reduce emissions by 40 per cent by 2030.

Official figures show that 21 per cent of UK greenhouse gas emissions are from transport\(^1\), this is around the same level as in 1990. Of these emissions, hgv\(^s\) account for about 30 per cent (figure 4.1) and logistics is under continued pressure to improve efficiency and reduce emissions.

\(^1\) 2012 UK greenhouse gas emission statistics, Department for Energy and Climate Change

Although there are currently no specific targets at a UK level for individual sectors, Government’s Carbon Plan 2011 sets out the progress by sectors to reduce emissions by the mid 2020s. The Plan acknowledges the work of the LCRS.

Government’s Freight Carbon Review

In 2013, the Department for Transport (DfT) assessed the progress the freight industry is making as a whole 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’s review 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. In March 2014, the Task Force published recommendations to increase the use of biomethane in HGVs. The Task Force is also looking to develop an independent test and accreditation scheme to help operators review technologies and the likely fuel savings.
Mandatory greenhouse gas reporting obligations

From October 2013, UK quoted companies are now obliged to report their ghg emissions. Companies must report Scope 1 (direct) and Scope 2 (electricity) emissions as part of their annual reports. Scope 3 (indirect) emissions such as sub-contractor transport are not required, however there is an increasing drive for companies to report this data. Government will assess the impact of mandatory ghg reporting in 2016 with a view to broadening the scope to large companies.

Energy Audits

Under the EU Energy Efficiency Directive, all non-SMEs must conduct energy audits covering transport, buildings and industrial operations every four years, with the first taking place by 5 December 2015. UK Government is currently putting in place the Energy Savings Opportunity Scheme (ESOS) to respond to the directive obligations. Many LCRS members will come under scope of the requirements which focus on reducing energy consumption rather than carbon, though decarbonisation actions will reduce both. There is a danger of financial burden and duplication in meeting requirements from Brussels when the UK has endeavoured to introduce separate carbon regulations. Many large companies will find they are required to participate in the UK Carbon Reduction Commitment, UK mandatory greenhouse gas reporting guidelines and the Energy Audits. FTA has called for Government to align schemes where possible and enable companies to comply with the least administrative and financial cost. The LCRS will help members collate the fuel data required for the audits.

Policies that work with business

Fuel represents around 40 per cent of a freight company’s operating costs, providing a huge financial incentive to improve fuel efficiency through measures such as driver training, accurate routing and scheduling and utilisation of alternative fuels and low emission technologies. With so much being achieved by industry already, it is now getting increasingly difficult for further emissions to be cut substantially without significant upfront cost. Effective Government policy should provide incentives to stimulate the reduction of ghg emissions from logistics through promotion of initiatives that positively impact on the scheme’s five Logistics Efficiency Indicators.

1 Fuel efficiency

Government can create a greater level of certainty to encourage businesses to invest in new technologies by reducing the cost of fuel duty. At the Autumn Statement 2013, FTA welcomed a freeze on fuel duty but is calling for a 3p per litre cut.

TABLE 1.2 • The influence of Europe

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectif CO₂ (France)</td>
<td>Members commit to a charter of voluntary carbon reduction commitments and report to authorities</td>
</tr>
<tr>
<td>Green Freight Europe</td>
<td>Provides a platform for measuring and reporting of carbon emissions Promotes collaboration between carriers and shippers Establishes a certification system</td>
</tr>
<tr>
<td>Lean &amp; Green</td>
<td>Members are required to commit to a 20 per reduction in carbon emissions over a five-year period Comprehensive carbon emission data is required to be submitted to an independent auditor with a detailed dossier of how the company will meet the reduction target (principally Netherlands but also across Europe)</td>
</tr>
</tbody>
</table>
Measures to encourage take-up of low carbon vehicles, particularly in urban areas, would benefit the UK in terms of a fall in carbon emissions, as well as local air quality improvements. Government should embrace this relationship between carbon reduction and better air quality. In particular, proposals for the Ultra Low Emission Zone in central London must consider incentives for freight vehicles that can operate on alternative fuels such as gas and biomethane.

2 Payload maximisation

Use of double-deck and high-cube trailers enable substantial savings in carbon emissions, whilst longer semi-trailer trials, which last until 2022, are also expected to generate measurable reductions in carbon emissions.

In late 2013, the European Commission was proposing amendments to legislation on weights and dimensions. The revisions proposed will allow for new aerodynamic devices which will improve fuel consumption plus allow use of tanks and equipment for gas without impacting on payload.

3 Empty running

The Centre for Sustainable Road Freight reported in January 2014 that the proportion of empty kilometres run has increased by around three per cent over the last 13 years. There is an increasing call for operators to join forces to find efficient and innovative solutions to transporting goods, but the issue of competition remains a key barrier. Official DfT statistics also indicate that empty running rates are continuing to rise. Government needs to better understand the statistics to assess empty running more accurately.

4 Carbon intensity of fuels

Hgv emissions can be reduced through use of fuels with a lower carbon footprint. Government recently committed to a 10-year fuel duty differential on natural gas and biomethane to encourage operators to invest in dual fuel and dedicated gas vehicles. However, 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 routes.

The case for infrastructure was also made by FTA in January 2014 in response to the Office for Low Emission Vehicles’ call for evidence on how a new funding commitment (for the period of 2015-2020) of £500 million should be spent. FTA is also keen to incentivise the supply of biomethane for freight transport. Currently, Government policies, such as the Renewable Heat Incentive, provide a much greater incentive for biomethane producers to inject into the grid for electricity and heating, rather than being further upgraded for use as a transport fuel. It is therefore vital that Government recognises the value of biomethane and offers producers incentives to ensure that the freight transport sector will have a sufficient supply.

5 Modal switch

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. DfT is currently consulting with industry as the UK’s state aid permissions for its mode shift grant regimes run out in 2015. Continued spending on rail infrastructure needs to be maintained to encourage companies to invest in using rail. Changes to the rail freight track access charges regime are of concern to end customers and operators; as is the question of whether freight capacity will be supported in HS2. FTA is also 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 have the effect of reducing the sulphur content of fuel to 0.1 per cent. There is concern in the shipping industry 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 Government policy would allow link roads from ports to the motorway network to be treated as part of the Strategic Road Network.
To demonstrate the logistics industry’s contribution to reducing national carbon emissions, the LCRS aggregates fuel usage and business activity data from members to establish a carbon footprint for the scheme.

This chapter covers the progress that the LCRS is making to reduce carbon dioxide equivalent (CO₂e) emissions, focusing on relative levels of emissions between 2005 and 2012. The number of commercial vehicle operators providing scheme data continues to build over time as the LCRS grows in membership.

Overall findings

- Average kg of CO₂e per vehicle kilometre in 2012 has reduced by 3.4 per cent compared to 2011
- Projecting the reduction in emissions since 2010 shows that the scheme is on track to meet its reduction target in 2014, one year earlier than anticipated
- Work is underway to find a common normaliser to measure carbon intensity across all operators of commercial vehicles

Scheme membership

The commercial vehicle fleets of LCRS members include HGVs and vans as shown in table 5.1. HGVs (commercial vehicles above 3.5t) represent nearly three-quarters of the scheme vehicles, however vans are also an important part of the commercial vehicle profile.

Sector coverage

The LCRS attracts a wide range of vehicle operators. In 2012 the majority of members were from 3PLs, parcels and hauliers and retail, manufacturing and processing sectors as shown in figure 5.1.

Fleet sizes

Over 20 per cent of members currently have more than 1,000 vehicles within their fleet, with a further 19 per cent operating between 499 and 1,000 vehicles as shown in figure 5.2. The LCRS is therefore capturing the carbon efficiency of a significant number of companies that operate the largest fleets in the UK, often 3PLs and retailers. However, over a quarter of members operate less than 100 vehicles, including four per cent of operators with less than 10 vehicles highlighting that the scheme is also applicable to small fleets.

Vehicle and trailer heights

The extent to which LCRS members are utilising double-deck trailers and high-cube single decks over 4.3m in height has been captured by the scheme since 2011, as shown in figure 5.3. 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. The use of double-decks between 2011 and 2012 has remained static, however the use of high-cube vehicles has doubled.

Alternative fuels

The uptake of alternative fuels within the LCRS remains relatively small reflecting the situation in the industry overall. Biodiesel (mainly used

### Table 5.1 • Commercial vehicle fleet profile of LCRS members compared to UK freight industry

<table>
<thead>
<tr>
<th>Vehicle type</th>
<th>LCRS 2011</th>
<th>LCRS 2012</th>
<th>Industry 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artic up to 33t</td>
<td>4%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Artic over 33t</td>
<td>29%</td>
<td>35%</td>
<td>8%</td>
</tr>
<tr>
<td>Rigid 3.5 - 7.5 t</td>
<td>13%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Rigid 7.5 - 17t</td>
<td>10%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Rigid 17 - 25t</td>
<td>7%</td>
<td>9%</td>
<td>4%</td>
</tr>
<tr>
<td>Rigid over 25t</td>
<td>10%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Light CVs &lt;3.5t/fleet vans</td>
<td>27%</td>
<td>26%</td>
<td>70%</td>
</tr>
</tbody>
</table>
cooking oil) remains the dominant alternative fuel, although it has been utilised by only five large fleets since 2007. Biodiesel use increased by 14 per cent between 2011 and 2012. However, the abolition of the 20 pence per litre fuel duty discount for biodiesel in 2011 and for used cooking oil in 2012 is limiting further use of this alternative fuel.

The use of both compressed natural gas (CNG) and liquefied natural gas (LNG) in dual fuel vehicles is growing within the LCRS. Additionally, biomethane to replace natural gas has increased by 12 per cent between 2011 and 2012, reflecting the desire to utilise more sustainable fuels. Owing to factors such as the cost of refuelling infrastructure, limited availability of public refuelling sites, high upfront costs and uncertainty over payback periods, biomethane and natural gas use within industry is small.

Electricity use is also recorded but there has been a reduction in use due to one company dehiring their fleet of electric vehicles. The technology remains reserved for urban delivery due to the limited range of these vehicles and significant battery costs.

Trends in emissions

Emissions per vehicle kilometre

Results

Vehicle kilometres is the strongest normaliser within the scheme owing to its close correlation with fuel usage (see figure 5.5). The average level of CO₂e per vehicle kilometre is improving over time. There is a steady decline in emissions since 2010 and the average kg of CO₂e per vehicle kilometre reduced by 3.4 per cent in 2012 compared to 2011. When comparing levels of average kg of CO₂e per vehicle kilometre in 2005, the reduction was 15 per cent. The improvement in carbon efficiency between 2008 and 2009 is partly due to the change in Government approved conversion factors which the LCRS applies to data (3.7 per cent drop in the conversion factor). The conversion factors changed due to the increase in biofuels being blended into conventional diesel and petrol due to the Renewable Transport Fuel Obligation. Overall results show that LCRS members are focusing on actions to improve the fuel efficiency of their vehicles and to minimise vehicle kilometres.

Figure 5.6 shows that average vehicle kilometres travelled within the scheme have reduced by over 20 per cent between 2005 and 2012. The results show that LCRS members are focusing on actions to improve the fuel efficiency of their vehicles and to minimise vehicle kilometres. The graph shows that average CO₂e per LCRS member rose between 2005 and 2008, however many large freight companies began submitting data in 2008 inevitably increasing the amount of diesel used by the LCRS membership. Overall, the trend in average CO₂e per LCRS is declining from 2008 to 2012 but again the data is subject to fluctuations as members join the scheme. Other causes of the fluctuation could include a decline in journeys owing to the economic downturn, an improving average fuel efficiency performance across the fleets and the progressive introduction of longer semi-trailers under the Department for Transport’s trial that commenced in 2011.

Sample

The sample size for vehicle kilometres has grown from 20 in 2005, 32 in 2008, 45 in 2009, 60 in 2010 and 66 in 2012 as the scheme grows.
and members achieve better visibility in capturing vehicle kilometres through telematics.

Findings
Average CO₂e kg per vehicle kilometre has continued to decline since 2005. The results indicate that there were early wins in reducing vehicle kilometres and fuel, and that more recently LCRS members are maximising operational decarbonisation measures such as consolidated loads and routeing and scheduling. It is noted, however, that the results do not indicate the extent to which the scheme membership is improving the level of goods carried per vehicle kilometre (see The challenge of collective carbon reporting on page 18).

LCRS members are making better progress in reducing emissions when compared to industry as a whole as shown in figure 5.7. 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 5.1.

Emission per £ turnover
Results
The average kg of CO₂e per £ of turnover was 0.283 in 2005, reducing by 24 per cent in 2012 to 0.217 as shown in figure 5.8. In 2012, the average kg of CO₂e per £ of turnover was 0.219, a 0.9 per cent reduction compared to 2011.

Sample
The number of turnover submissions from LCRS members has steadily increased from 16 in 2005, to 37 in 2008 and up to 50 in 2012.

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 are used for purposes 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 kilometre which vary from business to business.

Due to the diverse range of companies participating in the LCRS, the basis of turnover datasets submitted varies widely making assessment of emission reduction progress more difficult.

Emission per FTE

Results

Figure 5.9 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 2012, there was a 22 per cent reduction in CO₂e emissions per FTE. Between 2012 and 2011, there was a decline of 12 per cent in average kg of CO₂e per FTE.

Sample

The number of FTE submissions for the scheme has begun to increase from 15 returns in 2005, rising to 31 in 2007 and 50 in 2012.

Findings

FTE has a low correlation to transport carbon emissions, but generally the trend indicates an improvement in carbon efficiency. Due to the scheme attracting businesses with varying levels of FTE this causes fluctuations in the data.

The challenge of collective carbon reporting for logistics

LCRS members have one thing in common – they all operate commercial vehicles (hgv’s and/or vans), but historically the nature of the scheme has enabled a wide range of companies representing different sectors to participate. The carbon footprint of the scheme includes data from large 3PLs and retailers to small hauliers and local authorities. The flexibility of the scheme means that more businesses can join and add to the general data pool as the years pass. This makes reporting an annual carbon footprint challenging as the data submitted by such a broad range of companies makes it difficult to show enduring carbon reductions as the data pool changes over time. Nevertheless, as the only UK-based logistics carbon reporting scheme, the LCRS has made much progress in being able to evidence downward trends in carbon emissions for industry and to show that, in the main, there is an improvement in fuel efficiency as can be seen in these data results. This is a huge achievement and that has encouraged Government to refrain from regulating the sector on carbon emissions.

When the scheme first began, it was important to establish three normalisers that every company would have in common – vehicle kilometres, turnover and FTE. Vehicle kilometres has the strongest correlation to fuel and is the most useful normaliser but it is accepted that this may not reliably indicate whether LCRS members are moving goods more efficiently as other factors may be influential. Meanwhile, the turnover and FTE normalisers are useful indicators of carbon efficiency but are not directly linked to the movement of freight.

Over the last two years, there has been much discussion at FTA’s Logistics Carbon Working Group about developing an additional normaliser to report the carbon efficiency of moving goods. Freight traffic is traditionally measured and reported in units of tonne, kilometres, (te, km) being the product of weight of product lifted and the distance travelled. As the British economy has changed from one based on heavy manufacturing to a service economy, the relevance of a measure based on weight has diminished as lower density, higher volume consumer goods have replaced low value, high density primary and intermediate products. Different businesses that are part of the LCRS use a diverse range of units to quantify logistics such as pallets, cases, cages, tonnes, drops. This creates challenges to establishing a consistent measure for logistics activity and how the scheme tracks and delivers carbon efficiency in logistics. FTA is currently working with the Centre for Sustainable Road Freight to develop a Single Logistics Activity Measure (SLAM). The objective is to allow normalised data from different companies and different sectors to be compared and converted so as to help monitor progress in carbon emission reductions and allow reported outcomes to be aggregated across the economy. This is likely to require more data from members and it is a key priority to further improve the value and practicality LCRS data reported each year.
Carbon reduction target

A founding objective for the LCRS was to set a voluntary carbon reduction target for the logistics sector for the first time. The role of the target is to reassure Government of 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 on how their companies’ carbon emissions would change between 2010 and 2015, based on the five Logistics Efficiency Indicators.

Logistics Efficiency Indicators (LEIs)
- Fuel efficiency
- Payload maximisation
- Empty running
- Carbon intensity of fuels
- Modal split

There is a full description of the LEIs, on page 4.

FTA also surveyed its wider membership 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 in 2011 revealed an anticipated 8 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 2012, using revised datasets and average kg of CO₂e per vehicle km as a relative normaliser, reveals that the scheme is on track to meet its reduction target in 2014, one year earlier than anticipated as shown in figure 6.1. The aggregated total and normalised emissions from LCRS members are in table 6.2.

<table>
<thead>
<tr>
<th>Year</th>
<th>Average CO₂e per vehicle km</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>0.76</td>
<td>-0.92%</td>
</tr>
<tr>
<td>2011</td>
<td>0.75</td>
<td>-4.25%</td>
</tr>
<tr>
<td>2012</td>
<td>0.73</td>
<td>-6.31%</td>
</tr>
<tr>
<td>2013</td>
<td>0.71</td>
<td>-8.31%</td>
</tr>
<tr>
<td>2014</td>
<td>0.70</td>
<td>-10.28%</td>
</tr>
<tr>
<td>2015</td>
<td>0.68</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 6.1 • Progress to scheme reduction target in 2015 using 2010 baseline

The scheme is on track to meet its reduction target in 2014, a year earlier than planned.

<table>
<thead>
<tr>
<th>Year</th>
<th>Average tonnes CO₂e per member</th>
<th>Aggregated total tonnes of CO₂e</th>
<th>Average kg of CO₂e per vehicle km</th>
<th>Average kg of CO₂e per turnover</th>
<th>Average kg of CO₂e per FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>55,731</td>
<td>1,226,082</td>
<td>0.859</td>
<td>0.283</td>
<td>22,217</td>
</tr>
<tr>
<td>2006</td>
<td>44,200</td>
<td>1,502,809</td>
<td>0.861</td>
<td>0.235</td>
<td>23,442</td>
</tr>
<tr>
<td>2007</td>
<td>43,896</td>
<td>1,931,403</td>
<td>0.853</td>
<td>0.238</td>
<td>25,248</td>
</tr>
<tr>
<td>2008</td>
<td>49,075</td>
<td>2,600,977</td>
<td>0.825</td>
<td>0.240</td>
<td>24,876</td>
</tr>
<tr>
<td>2009</td>
<td>43,532</td>
<td>2,655,479</td>
<td>0.749</td>
<td>0.235</td>
<td>23,278</td>
</tr>
<tr>
<td>2010</td>
<td>39,395</td>
<td>2,915,195</td>
<td>0.761</td>
<td>0.220</td>
<td>19,171</td>
</tr>
<tr>
<td>2011</td>
<td>38,008</td>
<td>3,002,623</td>
<td>0.754</td>
<td>0.219</td>
<td>19,828</td>
</tr>
<tr>
<td>2012</td>
<td>40,950</td>
<td>3,112,171</td>
<td>0.728</td>
<td>0.217</td>
<td>17,432</td>
</tr>
<tr>
<td>% change in 2012 compared to 2011</td>
<td>7.74%</td>
<td>3.65%</td>
<td>-3.45%</td>
<td>-0.91%</td>
<td>-12.07%</td>
</tr>
</tbody>
</table>
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 fleet 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.
- 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 0871 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.

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