

# ROAD TO ZERO

A LOGISTICS MAGAZINE SUPPLEMENT

## VIEW FROM GOVERNMENT

★ *DfT delivers a progress update*

## SUSTAINABLE SOLUTIONS

★ *Interview with Professor David Cebon*

## SIX QUICK WINS

★ *How to reduce emissions in a diesel fleet*

# One. Year. On.

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# ROAD TO ZERO

magazine  
**Logistics**

A Logistics Magazine supplement | Autumn 2019



**David Wells**

Chief Executive, FTA

## Welcome

When the government published its Road to Zero strategy last year, it outlined how it will support the transition to zero emission transport to 2050 and beyond. Billed as paving the way for the biggest technology revolution to hit UK roads since the invention of the combustion engine, the report was certainly bold in its ambition.

Since publication, the bar has been raised higher still – the UK is now the first major developed nation to commit to achieving net zero emissions by 2050.

In this supplement the Department for Transport outlines the government's view one year on (see page 6). But we thought it important to include a wide range of views on decarbonisation, not just from government, but from industry and academia too.

Transport now accounts for more than a quarter of the UK's greenhouse gas emissions. However, non-road transport also makes a significant contribution to emissions and on page 24 we explore how the rail, aviation and shipping industries can play their part.

For today's operations, we also look at quick wins for operators (page 28), how FTA can help operators decarbonise their fleet (page 10) and the specific challenges regarding urban deliveries (page 31).

We must all play our part in supporting the government to help it achieve its ambitions to decarbonise the industry. As we transition to a low carbon economy, this supplement forms a valuable digest of the current thinking on the challenges and opportunities that lie ahead.

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### **BRIDGESTONE**



**Andy Mathias**

*Marketing  
Communications  
Manager, Bridgestone  
North Europe Region*

The Logistics Emissions Reduction Scheme continues to be one of Bridgestone's most significant partnerships, as the company keeps working to reduce carbon emissions in the logistics sector.

As the world's largest tyre and rubber company, we are continuing to work towards greener solutions, reducing emissions and offering compelling fuel-efficient products to our customers as a result.

In the past, attitudes towards fuel saving tyres have been somewhat indifferent among some commercial fleets, but we believe that such perceptions might soon be a thing of the past, thanks to the good work at LERS, not to mention our own ECOPIA range, which has been boosted with the new Ecopia H002.

The H002 enables long-haul fleets to reduce their total cost of ownership through best-in-class fuel efficiency – with no compromise on mileage.

At 30% of all expenses, fuel is by far the biggest operating cost for long-haul fleets. And not just that, the industry today is also faced with increasingly challenging EU CO<sub>2</sub> emission regulations and the recurrent concerns for road safety especially in bad weather conditions. The latest generation of Ecopia tyres has been designed to answer these everyday challenges.

The new Ecopia H002 achieves best in class fuel efficiency through an EU label A-A-A grade combination in steer, drive, trailer. By using new Ecopia tyres on steer, drive and trailer axles, an average long-haul fleet would be able to make more than a €200,000 saving per year on fuel costs and reduce its CO<sub>2</sub> emissions by 546 tonnes per year.

### **Mobil Delvac 1™**



**John Griffin**

*Sector Specialist  
Commercial Vehicle  
Lubricants Europe West,  
ExxonMobil Fuels &  
Lubricants*

#### **INTRODUCTION**

ExxonMobil is proud to be supporting FTA's Logistics Emissions Reduction Scheme (LERS) initiative, in its effort to promote carbon emissions reduction within the logistics industry.

#### **MOBIL DELVAC™**

Since its introduction in 1925, ExxonMobil's brand Mobil Delvac has been providing long engine life and high performance protection for truck engines and drivelines throughout the world in all conditions. Throughout its history, Mobil Delvac has set the benchmark for lubrication excellence. Its commitment to research and technological development, as well as global availability, have made Mobil Delvac one of the world's most widely used brands of heavy-duty engine oil today.

#### **WHY MOBIL DELVAC™?**

The reason Mobil Delvac is chosen by some of the world's leading Original Equipment Manufacturers (OEMs) and Commercial Vehicle Owner Operators is quite simple – its proven record and leading-edge technology. Our comprehensive range is led by Mobil Delvac 1™ LE 5W-30, a fully synthetic, excellent performance, low-ash diesel engine oil that helps extend both engine and emission system life, while providing long drain intervals and fuel economy potential in modern diesel engines.

#### **CONCLUDE**

As a LERS logistics industry sponsor, ExxonMobil looks forward to working alongside the logistics industry, as oil can play an important part in fuel economy and reducing carbon emissions.



# Driving a cleaner future with LNG and BioLNG

Make the switch from diesel and reduce your fleet's CO<sub>2</sub> emissions by up to 95%, fuel costs by up to 40% and engine noise by up to 50%.

Take your free LNG assessment  
today at [BOConline.co.uk/lng](http://BOConline.co.uk/lng)



# Road to Zero – one year on



**Duncan Price**

*Divisional Manager,  
Freight, Operator  
Licensing and  
Roadworthiness,  
Department for Transport*

In June, government took the decision to become the first major economy to commit to net zero carbon emissions by 2050. Passed into UK law later in June, the net zero commitment is an ambitious target, for which the transport sector, particularly road transport, will need to lead the way.

That is why the Road to Zero strategy, now one year old, is so important. As a cornerstone of the UK's Future of Mobility Grand Challenge, the Road to Zero is driving forward the government's modern Industrial Strategy, making transport cleaner while taking advantage of the associated social and economic benefits of new technologies.

Our goal of ensuring at least 50%, and as many as 70%, of new car sales are ultra-low emission by 2030, and ending the sale of new conventional petrol and diesel cars and vans by 2040, is one of the most ambitious in the world. Government's £1.5 billion investment by 2020 is already enabling a vast expansion of green infrastructure across the country, reducing emissions from the vehicles already on the UK's roads and driving the uptake of zero emission cars, vans and trucks.

This past year government has made some great achievements. We have now seen the installation of over 20,000 publicly accessible charge points, with more than 5,200 rapid chargepoint connectors, making our rapid network larger than both Norway and the Netherlands combined.

**In the past year we have seen the environment rise to the top of the media, political and public agenda, with concerns regarding climate change and air quality a clear national priority.**

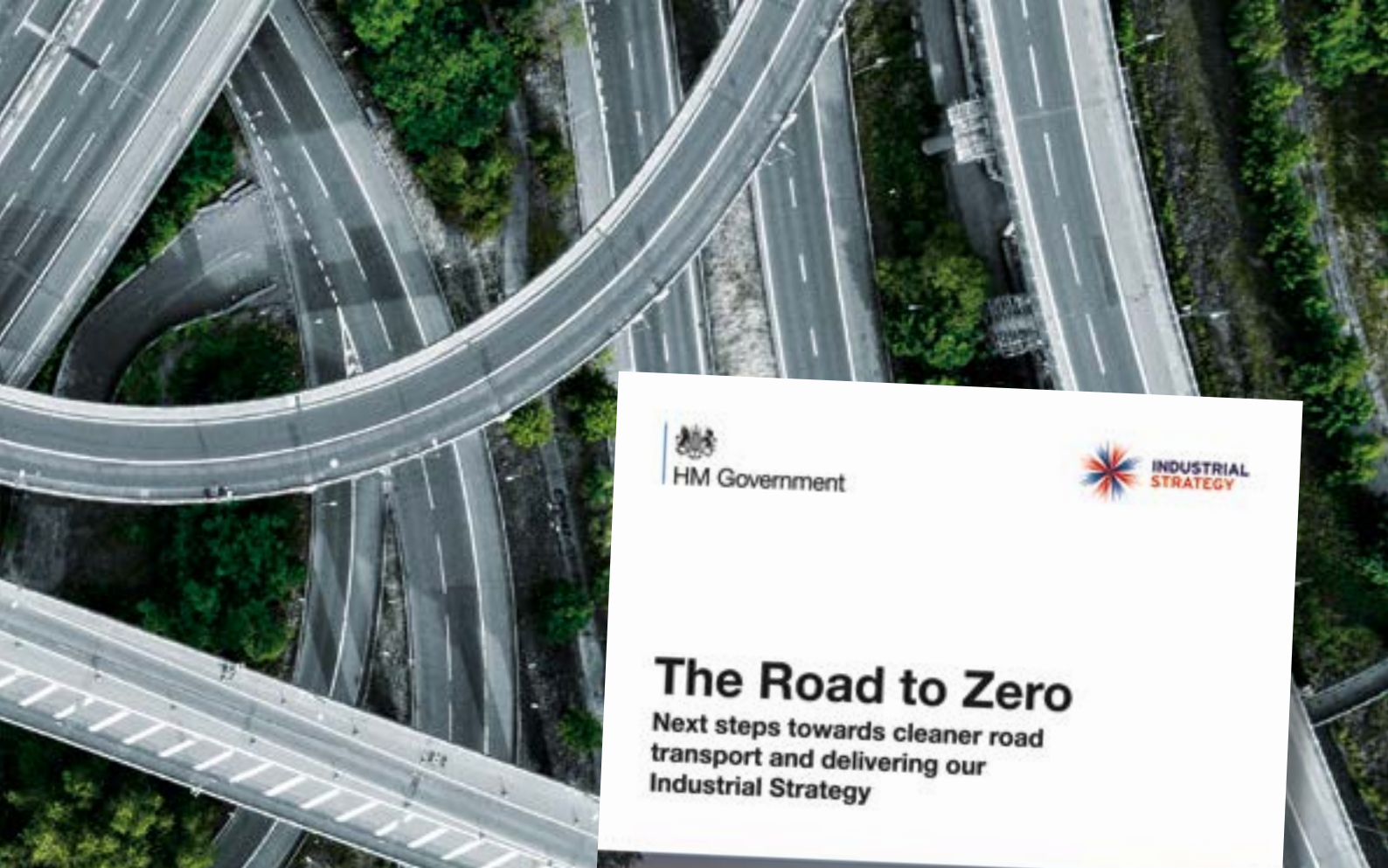
The plug-in car grant has supported the purchase of 200,000 ultra-low emission vehicles to date and the government's focus on supporting the cleanest, zero emission models is working. The latest industry figures show that registrations of battery electric vehicles increased over 60% this year compared to the same period in 2018. We have recently reduced Vehicle Excise Duty for electric taxis and introduced the first zero-emission heavy goods vehicles into the plug-in van grant, making it easier than ever for individual owners and businesses to switch to electric.

## IT'S NOT JUST ABOUT ROADS

But there is still much more to be done. As other sectors in the UK have reduced their greenhouse gas emissions over recent times, transport accounts for an increasingly large share. Government, along with its industry partners, has recognised the need to increase our ambition and step up the pace of progress. That is why our plans to reduce carbon emissions from transport go wider than just roads to include other modes. In rail we have set an ambition to remove all diesel-only trains from the rail network by 2040. In addition, our recently published Aviation 2050 Green Paper and Maritime 2050 plan are examples of how we have been working with industry partners to deliver our carbon reduction ambitions.

We know that emissions from aviation and shipping require a global solution, and it is vital that we find answers which deliver international emissions reductions. Both sectors have a crucial role to play in reaching net zero emissions globally. This is why the UK is taking a leading approach on a global level. The UK played a





key leadership role at the UN aviation and maritime agencies to successfully negotiate and secure the first ever sector-based global climate change deals for both aviation and maritime. We also achieved an international agreement of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) in 2016, the first worldwide scheme to address greenhouse gas emissions in any single sector.

## HEAVY GOODS VEHICLES

Road to Zero recognises that heavy goods vehicles will continue to be the lifeblood of the UK economy for the foreseeable future; transporting goods to consumers, ensuring that businesses can keep products on shelves and keeping the economy running. However, we all know that HGVs are also a major source of pollution – accounting for 18% of greenhouse gas emissions and 10% of nitrogen oxide (NOx) emissions from all road transport in 2017.

A key priority of government efforts to reduce this figure is the voluntary, industry-supported commitment to reduce HGV greenhouse gas emissions by 15% by 2025, from 2015 levels. To meet this target, we are working with the industry to promote best practice and effective practical actions that operators can take to reduce their greenhouse gas emissions and improve efficiency. Indeed, a number of schemes and activities are already under way such as the ten-year trial of longer semi-trailers. We have also implemented an EU Commission decision to allow Category B (car) driving licence holders to operate alternatively-fuelled vehicles up to 4.25 (rather than 3.5) tonnes, which should help address payload penalty issues and encourage uptake of cleaner vans.



We recognise that there are challenges for the road freight sector and HGVs in particular. There is no single solution that will suit all sizes and types of freight operator. This is why it is so vital for operators to make use of every opportunity to make their operations as efficient and effective as possible, delivering real benefits to both their business and the wider environment and economy. One of the main barriers to the uptake of these actions is having the information and support readily available to operators. Schemes such as FTA's Logistics Emissions Reduction Scheme (LERS) are essential here, supporting operators to record, report and reduce their carbon emissions. Indeed, we will be using LERS and other similar schemes to provide bottom up reporting of emissions

to support us in monitoring progress towards our 15% emission reduction target. We recommend this scheme to all operators looking to improve their fuel efficiency.

To facilitate this, we will be working in the coming months with the Energy Saving Trust to develop, improve and promote its existing Freight Portal. We will make it more relevant to small- and medium-sized operators and focus on the practical actions that they can take to achieve significant emission reductions and realise the commercial benefits that come through improved fuel and logistical efficiency. We would encourage all freight businesses to visit the Freight Portal in the coming weeks and months and look out for changes and improvements to the information that is already there. The portal can be accessed at: <https://thefreightportal.org/>.

As many of you will also know, the National Infrastructure Commission published its study into the Future of Freight in April 2019. The study highlighted that action is needed to enable the UK's freight networks to meet growing demands for fast deliveries while also reducing its impact on congestion and the environment. It set out a range of recommendations that government is currently considering and we will be working with FTA and its members to develop our response in the months ahead.

We recognise that times are challenging for freight operators. We also know that the industry – led by bodies such as FTA – is working hard to reduce its carbon footprint. We are confident that by working with dynamic, innovative partners in our sector, we will be able to ensure that transport plays its part in achieving the UK's net zero target by 2050. We look forward to working with you all as government continues to lead the world in cutting emissions while maintaining growth in our economy. ■

★ *More from [fta.co.uk/roadtozero](https://fta.co.uk/roadtozero)*



**“Schemes such as FTA’s Logistics Emissions Reduction Scheme (LERS) are essential here, supporting operators to record, report and reduce their carbon emissions. Indeed, we will be using LERS and other similar schemes to [...] support us in monitoring progress towards our 15% emission reduction target. We recommend this scheme to all operators looking to improve their fuel efficiency.”**





# Bridgestone inflating portfolio of CO<sub>2</sub> friendly products and services

**Bridgestone is investing in its growing portfolio of premium commercial tyres and digital mobility solutions to helping fleets overcome the challenges they are facing. Its tyres are engineered to lower the total cost of ownership while offering the highest levels of safety, efficiency and comfort as a result.**

Population growth, urbanisation and the rise of e-commerce are placing huge demands on the transportation of people and goods; climate change and regulatory pressures are making reduced CO<sub>2</sub> emissions a priority.

To help its fleet customers succeed in this time of change, Bridgestone is also transforming itself. Over the past few years, the company has invested heavily in its digital capabilities and pioneered a range of digital solutions and applications, such as FleetPulse, to support fleets with data-based insights, convenience and maximum efficiency.

FleetPulse is Bridgestone's three-in-one digital solution that gives fleet managers real-time insights into the health of their vehicles, to reduce maintenance costs, increase time on the road and simplify fleet operations. FleetPulse also comes with tyre-pressure monitoring system hardware embedded in the vehicle, ensuring that tyre pressure is optimised and therefore helping fleets to avoid unwanted tyre costs and CO<sub>2</sub> emissions.



In terms of product innovation, a hat-trick of new commercial tyres has also been unveiled to the market, with lower CO<sub>2</sub> emissions at the heart of their design.

## ECOPIA H002

The new Ecopia H002 achieves best in class fuel efficiency through an EU label A-A-A grade combination in steer, drive and trailer. By using new Ecopia tyres on steer, drive, trailer axles, an average long haul fleet would be able to make more than a €200,000 saving per year on fuel costs and reduce their CO<sub>2</sub> emissions by 546 tonnes per year.

## DURAVIS R002

Developed and tested in partnership with 17 fleets across 13 countries and a wide variety of operation conditions, the latest generation of Bridgestone Duravis tyres have been designed to meet these requirements in order to best serve fleet customers.

The Duravis R002 offers a boosted wear life that is up to 45% improved on its predecessor<sup>1</sup> and a cost per kilometre that is reduced by 15% versus predecessor (average steer, drive and trailer).<sup>1</sup> And for savings not only in terms of cost, but also CO<sub>2</sub> output, the new Duravis provides optimised fuel efficiency, with a B-C-B combination in steer, drive and trailer.<sup>3</sup>

## COACH-AP 001

Bridgestone's new generation of coach tyres, the COACH-AP 001 applies a newly developed low rolling resistance pattern that results in an excellent EU label B grade in fuel efficiency to help reduce CO<sub>2</sub> emissions and total cost of ownership for fleet operations.

Like with CO<sub>2</sub> emissions, EU institutions are placing pressure on the automotive industry to reduce the noise produced by vehicles, following a regulation introduced in 2014. But, for coach fleets specifically, noise reduction is an even greater priority as it improves the comfort of passengers. The COACH-AP 001 was engineered with noise reduction in mind, achieving an excellent pass-by noise score of just 69 decibels.

★ [More from \*bridgestone.co.uk/truck-and-bus\*](https://www.bridgestone.co.uk/truck-and-bus)

<sup>1</sup> Based on current wear performance internal test results vs predecessors R-Steer001, R-Drive001 and R168. Sizes 315/80R22.5 for steer and drive and 385/65R22.5 for trailer.

<sup>3</sup> EU Label in sizes 315/80R22.5 steer & drive and 385/65R22.5 in trailer.

# FTA – helping the industry reduce emissions



**Reducing environmental impact is a priority for our members. It is also a priority for various campaign groups, some of whom put forward simplistic and unnecessarily disruptive proposals. FTA's role is to help create the situation where members can progressively reduce and then eliminate emissions, whilst ensuring unhelpful regulations, restrictions and taxes are avoided.**



**Rebecca Kite**

*Environment Policy  
Manager, FTA*

## DIFFICULT TO DECARBONISE

Despite surface transport being one of the most difficult sectors to decarbonise owing to the mobile nature of its operation, it will be no exception to the need to eliminate greenhouse gas (GHG) pollutants by 2050. In the UK we face an immediate target of a 15% HGV GHG reduction by 2025 against 2015 levels. Rail faces decarbonisation requirements as well. Following improved data on the health impacts of other emissions like NOx and Particulate Matter (PM) there is additional pressure to improve local air quality.

## PLAYING OUR PART

The logistics industry acknowledges that harmful emissions need to reduce significantly, and we are ready to play our part in finding the solution. Industry has already had massive success in improving local air quality through the implementation of Euro VI diesel trucks. However, we recognise that there is still more that can be done to increase the efficiency of our diesel fleet.

## MULTIMODAL MATTERS

FTA is the only business group in the UK that is multimodal, representing members from road, rail and water industries, and our vision is to optimise all modes of transport to ensure UK logistics is operating as efficiently as possible.

Transporting goods by rail and water has the potential to reduce HGV road miles significantly, with every freight train able to carry the same amount as up to 60 HGVs, a coastal ship even more. Further work needs to be done to increase the availability of rail and water freight to enable the industry to increase the use of these modes. FTA lobbies on behalf of all its members to maximise the potential for rail and water freight in the UK.

## SUSTAINABLE SOLUTIONS

For road freight, FTA is a founding member of the Centre for Sustainable Road Freight, a collaboration between Cambridge and Heriot-Watt Universities and organisations in the freight and logistics sector. Its purpose is to research engineering and organisational solutions to make road freight economically, socially and environmentally sustainable. FTA regularly supports the Centre and is currently involved in a project to help produce its findings in a more accessible and available format.

FTA is also a member of the Low Carbon Vehicle Partnership (LowCVP), a public-private partnership dedicated to accelerating a sustainable shift to low carbon vehicles. Through LowCVP we engage with around 200 industries, all with a stake in the future of low carbon vehicles.

## ENGAGING WITH GOVERNMENT

As well as assisting industry, a central part of FTA's work is lobbying government. We do this through participation in departmental meetings and working groups, lobbying with ministers and MPs, influencing other stakeholders and making public comment to help shape the environment around our industry. FTA successfully lobbied the government to agree to create a definition of an Ultra-Low Emission Truck (ULET). Once we have this, FTA

### JOIN LERS!

★ For more on  
joining LERS or  
FTA's Environment  
Working Group,  
contact Rebecca  
Kite at  
[rkite@fta.co.uk](mailto:rkite@fta.co.uk)





will be pressing for various fiscal and regulatory supporting measures. We also had success in lobbying the government to allow electric vans to weigh up to 4.25 tonnes, to avoid payload loss. Other flexibilities on weights and dimensions remain a priority. Work on supporting rail freight infrastructure has resulted in increased funding in recent years, but the fight goes on to continue to deliver what is really needed to make the most of rail, as well as water.

## LOGISTICS EMISSIONS REDUCTION SCHEME

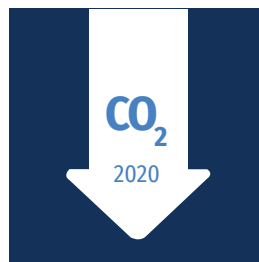
Finally, FTA is the home of the Logistics Emissions Reduction Scheme (LERS), an industry-led, voluntary scheme which focuses on recording, reporting and reducing emissions from freight operations. The scheme is sponsored by industry partners Bridgestone and ExxonMobil and currently represents 135 members, accounting for more than 88,000 commercial vehicles, representing a broad range of sectors and fleet sizes.

LERS aggregates fuel usage and vehicle kilometres travelled data to establish a carbon footprint for the scheme and is benchmarked against the whole of industry. Between 2010 and 2015, members of the scheme achieved an impressive 7% reduction in their CO<sub>2</sub> emissions, and the most recent 2017 data illustrated that members achieved an impressive 4% reduction in their emissions, when compared to 2016. When benchmarked against the industry as a whole, members' emissions are close to 13% lower per vehicle kilometre. Members of the scheme continue year on year to significantly outperform the wider industry, which is struggling to reduce carbon emissions at all.

LERS is governed by FTA's Environment Working Group, which comprises of operators and logistics customers who have an interest in leading the debate and acting to reduce emissions from freight activity. ■



**135**  
members



**5%**  
carbon reduction by 2020  
compared to 2015



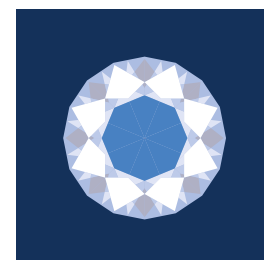
**88,108**  
commercial vehicles  
(64,207 HGVs, 23,821 vans)



Collectively tracks carbon  
reduction progress



Environment  
Working Group helps  
develop the scheme



LERS Awards recognise  
best practice



# The search for sustainable solutions

**Logistics Magazine Editor Matt Harrington spoke with Professor David Cebon, Director of the Centre for Sustainable Road Freight (SRF).**



**Matt Harrington**  
Editor

## THE SEARCH FOR SUSTAINABLE SOLUTIONS

David Cebon is a man who is refreshingly modest about his achievements. Despite being one of the foremost authorities in his field of sustainable logistics, he admits to being “embarrassed” to admit that he has clocked up more than 30 years’ experience working with HGVs, seeing it more a sign of “getting old” than accumulated expertise. “I’ve worked on heavy vehicles since my PhD, which was in the early 80s,” he said, “so I’ve had a career in heavy vehicles.”

Cebon explains how SRF originally came about: “I have a friend and colleague Alan McKinnon, who is a guru in green logistics. About seven or eight years ago, we met and came up with the idea of a research centre which focused entirely on decarbonising the road freight system.”

## TWO HEADS, ONE MIND

The pair soon realised that the key to success lay in integrating both the engineering and logistics research. “You can reduce fuel consumption by logistics interventions, like the fill and not coming home empty, and through engineering interventions, such as aerodynamics or high-capacity vehicles. But you can only get the really deep benefits by considering both at the same time.”

For example, if you introduce an electric urban delivery vehicle to your fleet, that is a good way to reduce carbon emissions, but it also has logistical implications. “Often you can’t simply substitute one vehicle with another, it’s quite likely that you will need to change the operation

significantly to capture the fact that you won’t have as good a range as you used to have.”

Cebon maintains that the engineering and logistics factors are inextricably intertwined: “If you just look at technology or you just look at logistics you can’t get to the bottom of it all. But by putting the two together we can get the maximum available benefits in terms of reducing fuel consumption, carbon emissions and cost.”



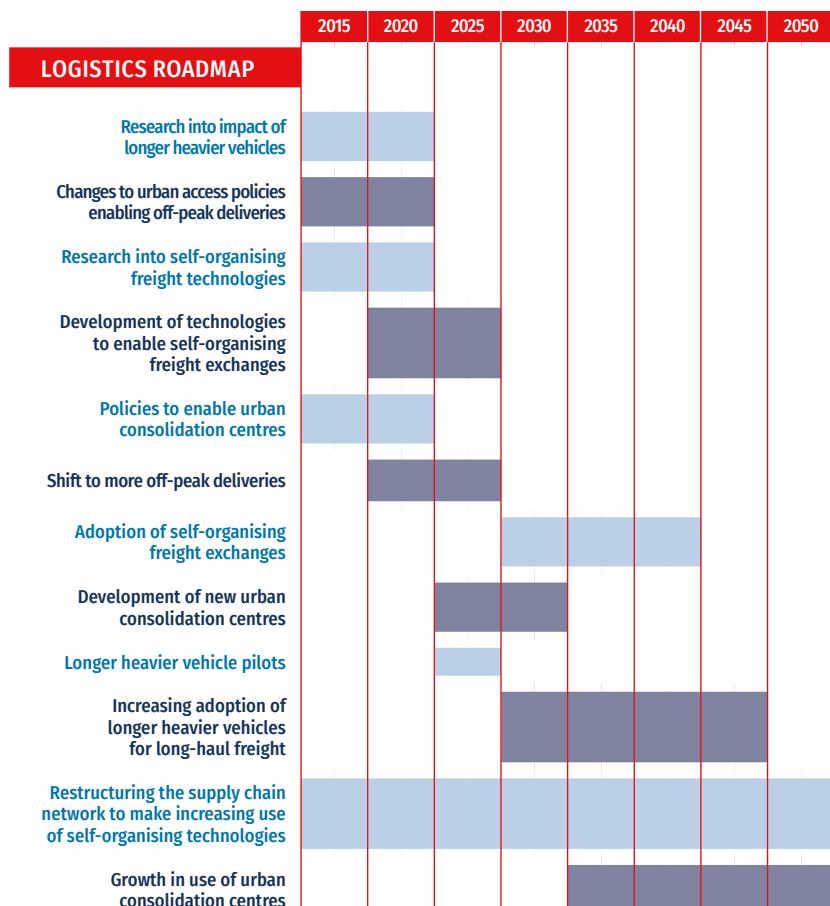
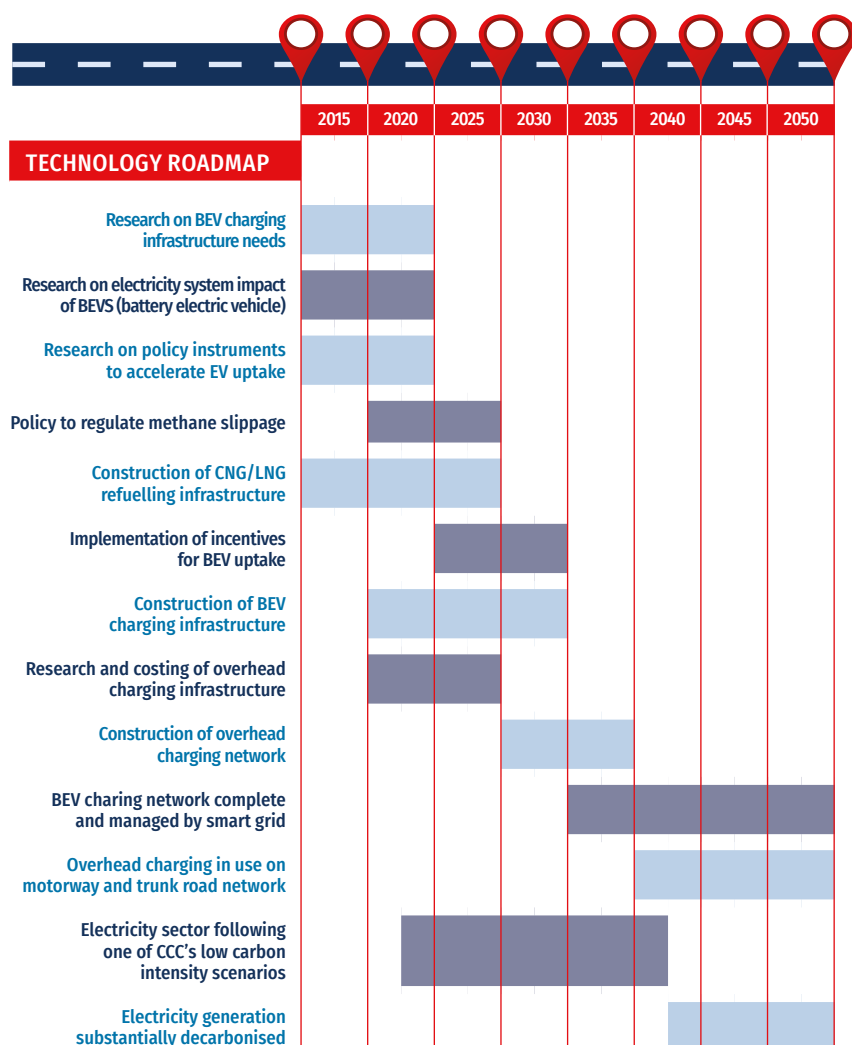
## DAVID CEBON

A Professor of Mechanical Engineering at Cambridge University, Cebon is also the Director of the Centre for Sustainable Road Freight (SRF), a collaboration between Cambridge, Heriot-Watt and Westminster Universities, along with other organisations in the logistics industry.

## MAPPING THE ROAD AHEAD

★ [More from csrf.ac.uk](https://www.csrf.ac.uk)





## FUELLING CHANGE

SRF is currently looking at alternative powertrains as well as measures to ensure that vehicles are as efficient as possible. Cebon said, "In that future world where we all have electric vehicles (EVs) they will also need to use the minimum amount of energy. EVs have limited ranges so they've got to have the best possible aerodynamics and tyres, the lightest weight and minimum rolling resistance."

## ELECTRIC AVENUE

In terms of which alternative to diesel is the most viable fuel of the future, Cebon backs electric trucks, particularly for the UK and EU market. "I think the technology available for long-haul electrification has improved and is proving itself to be robust, reliable and attractive. And that's particularly true for delivering electricity to vehicles on the move, rather than relying on battery solutions."

Cebon believes that having so-called "electric roads" where energy is delivered to trucks via an overhead catenary cable is both viable and achievable.

## FROM AERODYNAMICS TO AUTONOMY

SRF has an ongoing project on aerodynamics and has done some interesting work on under-body flows with its industry partners. "There are more than 100 vehicles on the road that have aerodynamic modifications to our design," Cebon said.

Cebon also believes that autonomous features like lane assist and adaptive cruise control have a small part to play, along with eco-driving systems: "They can get you maybe eight or nine per cent benefit in fuel consumption. There's definitely room for cruise control with overlaid eco concepts and various manufacturers have developed commercial systems."

## EMISSIONS TARGET IN THE BALANCE

It is now more than a year since the government published its Road to Zero report, which included a short-term target of reducing emissions from HGVs by 15%. The target will judge tailpipe emissions in 2025 against a 2015 baseline.

Whether the industry will be able to hit this target is currently in the balance, Cebon believes, and depends on whether the target is for a 15% efficiency gain or for 15% less carbon. "The second one is much more difficult," he said, "because the amount of freight on the roads is increasing, so to achieve a 15% carbon reduction while transporting an increased amount of freight requires a much bigger efficiency improvement."

## TARGET TOUGHER FOR INNOVATORS

Many companies have already taken significant steps towards reducing their emissions in the short term. Cebon believes that the companies which have implemented driver training, telematics, aerodynamics, low-rolling resistance tyres, lightweight vehicles and biofuels have already gone a long way and may find it difficult to get much further.

The other group of companies includes those that have not yet implemented many of the fuel efficiency improvements. Cebon said, "Those companies have probably got

the best chance of achieving their 15% because they can still implement all of the options.”

## SMALLER OPERATORS, BIGGER CHALLENGES

The third group is the large number of owner operators, whose behaviour will be difficult to change owing to the industry’s notoriously low margins. “Those operators are concerned about survival,” Cebon said, “about making money, about having drivers available, about being compliant with the law, about safety and costs and they’re not really focused on their fuel consumption.

“They’re a large proportion of the UK fleet, so the really big question is: how do you get all of those small operators to improve their fuel consumption? That is pretty difficult and we’ve got some work going on looking at those challenges but there’s no silver bullet in this area.”

## EARLY ADOPTERS GAIN COMPETITIVE ADVANTAGE

The bigger companies which have already implemented these efficiencies have not only become exemplars for the industry, Cebon argues they have become more competitive too.

“Those companies only implement measures which have a reasonable payback period,” he said. “The ironic thing is that it makes them more fuel efficient and competitive. The smaller operators which don’t quite have the resources to make these decisions, they’re at a disadvantage because their fuel costs are going to be higher. It’s difficult for them, so working out how to help them make the decisions they need to make is an interesting problem.”

## ROAD MAP TO 2050

SRF has devised a road map to 2050, which looks at the set of interventions that needs to happen to achieve

80% fewer emissions in 30 years’ time. Electrification is seen as the key to achieving such dramatic carbon savings: “Broadly what the roadmap says is if you electrify urban delivery vehicles and make all of the other viable efficiency improvements, you can get to about 50% reduction in CO<sub>2</sub> emissions, if you work hard at it. It is only by electrification of the long-haul vehicles that 80% reduction becomes feasible.”

## FANTASY FIGURE

Since the publication of the government’s Road to Zero report, the bar has been raised even higher. The target to reduce the UK’s greenhouse gas emissions by 80% by 2050 has been changed to ‘net zero’, which Cebon considers “a bit of a fantasy.”

“Whatever you build takes energy,” he said. “Whatever you do you’re going to take embodied energy to build vehicles and so on. There’s going to be carbon in the electricity supply system for years to come. Even if it’s reduced to zero by 2050, all the vehicles that were built in the period before that will have embodied carbon in them, embodied energy, so net zero is very difficult... but it is a useful aspiration to have.”

## CLIMATE CHANGE AGENDA

Despite the complications of achieving net zero by 2050, Cebon has been amazed and encouraged by how fast climate change has risen to the top of the agenda over the past year or two. “I’ve thought for a long time that climate change isn’t painful enough for politicians,” he said. “It’s not immediate enough and it’s not painful enough for them to take the strong action that is needed. But what’s changing is the public response, particularly from young people. It’s very encouraging because it’s making governments listen and I think that’s a great thing.” ■

★ *More from [csr.ac.uk](https://www.csr.ac.uk)*





# How to enhance efficiency with high performance engine oils

**Running a commercial vehicle fleet is a constant challenge. Competition continues to ramp up, margins are being squeezed and regulations are increasingly complex.**

In this tough environment, energy efficiency may not be at the top of an operator's list of priorities. But making it a business imperative could make a real difference.

## OPPORTUNITIES TO SAVE

There are a number of areas across a fleet where efficiencies can be found – from simple changes to back-office processes to investments in the latest on-the-road technology. However, to achieve the best possible results fleet owners should take a holistic approach.

"It's essential for operators to take an all-inclusive look at their fleets, rather than just focus on the headline topics," said Claes-Peter Lindner, Field Marketing Advisor at Exxon-Mobil. "For example, it's very easy to overlook the benefits that can be obtained from high-performance engine oils."

## CUTTING FUEL COSTS

Tests have shown that a change from conventional engine oil to a high performance, low viscosity heavy-duty synthetic diesel engine oil in commercial vehicles provides the potential for improved fuel economy on the road. Mobil Delvac 1™ LE 5W-30, for example, has been shown to deliver an average 1.8% fuel economy gain for highway driving conditions<sup>1</sup>.

Compared to conventional oils, low viscosity, fully synthetic oils also offer better protection against wear and deposit formation, which can cause costly maintenance bills.

Moreover, whether a fleet is operating in the summer heat or moving supplies during the depths of winter, synthetic lubricants provide excellent protection.

## DRIVING EFFICIENCY SIDE-BY-SIDE

"When you consider all of these reasons, it's clear that switching a fleet from conventional oils to an advanced low viscosity fully synthetic engine oil can ultimately help improve the bottom line," said Claes-Peter. "But it's not



**John Griffin**

*Sector Specialist  
Commercial Vehicle  
Lubricants Europe West,  
ExxonMobil Fuels &  
Lubricants*

just about engine performance. We work side-by-side with fleet operators and equipment builders to develop bespoke, bumper-to-bumper lubrication solutions that deliver beyond expectations."

Selecting the most appropriate lubricant is not always straightforward, so fleet operators should always work with a trusted lubricant supplier and take note of the vehicle manufacturer's guidance.

★ **More from [mobil.com/en/mobil-delvac](http://mobil.com/en/mobil-delvac)**

<sup>1</sup>A fuel economy evaluation was conducted using two Volvo FM440 Euro V trucks, loaded to 75% payload (about 70,550 lbs). Testing was conducted on track at the Millbrook Proving Ground, Ltd. in the United Kingdom. Statistically significant fuel economy benefits were observed in the Volvo trucks, when comparing Mobil Delvac 1 LE 5W-30 to a conventional 15W-40 engine oil, with an average fuel economy gain of 1.8 percent for highway driving conditions. Fuel economy improvements are dependent on vehicle/equipment type, outside temperature, driving conditions and your current fluid viscosities.





# Cooking on gas



**Matt Harrington**  
Editor

Vehicles from the well-known department store chain John Lewis & Partners and its sister company Waitrose & Partners are a common sight on Britain's roads. Its fleet totals 3,500 vans, trailers and HGVs, which along with 1,500 cars, are managed by a Central Transport function based at Waitrose & Partners' head office in Bracknell, Berkshire.

## THE DASH FOR GAS

In recent years the company has led the way in trying to drive down emissions in its fleet, with the introduction of gas-powered HGVs. It already has 60 gas tractors and a further 23 on order. By the end of 2021 it expects to have 200 more.

The company is not content to rest on its laurels, however, and is keen to push further in its pursuit of a low-emission fleet. "We have made a public commitment that all of our 600 heavy duty trucks will be powered 100% by biomethane by 2028," said Justin Laney, General Manager of the Partnership's Central Transport team.

The company is looking beyond the engine powering the truck too. The Partnership has 13 tractors with additional alternators fitted that power the fridge unit on trailers. Its aim is to roll that system out to all its tractors. This, combined with electrical connection points at its distribution centres, dispenses with the need for the very inefficient, dirty and noisy diesel fridge engine.

**This John Lewis Partnership is currently on a journey to transition its entire fleet of HGVs to biofuel.**

## A CO-OWNED BUSINESS

The John Lewis Partnership is famous for its unusual ownership structure. Its two core businesses – John Lewis & Partners and Waitrose & Partners – are run entirely for the benefit of its 83,000 employees or 'Partners', who each receive a share of the yearly profits.

With no imperative to deliver a return to external shareholders, the Partnership's constitution, informed by the views of its employees (known as Partners) through its council structure, helps guide and shape the company's wider activities.

Laney explains: "Our company constitution requires that we always 'do the right thing' and minimise our impact on the environment, making a positive contribution where we can. Therefore, we needed a low carbon alternative to diesel."

## AN ALTERNATIVE TO DIESEL

While electric vehicles have already proved themselves suitable for urban deliveries at the lighter end of the fleet, Laney is conscious that for heavy vehicles other alternatives would need to be found until the technology catches up. "We knew for heavy trucks that would have to be a biofuel for the foreseeable future," he said, "and worked with Imperial College's biofuels department back in 2011 to determine the most sustainable biofuel alternative to diesel. This work selected biomethane from waste as the best choice."

Working in conjunction with FTA, the John Lewis Partnership lobbied the Department for Transport and HM Treasury to secure the business case, specifically to freeze the

## PROGRESSIVE PARTNERSHIP

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[johnlewispartnership.co.uk](http://johnlewispartnership.co.uk)



difference in fuel duty between diesel and methane and to recognise biomethane in reporting.

## TRUCKS THAT GO THE DISTANCE

Working with third parties has also been crucial to decarbonise its fleet. The company worked hard with two OEMs (original equipment manufacturers) – Scania and Iveco – to achieve a 500-mile range, meaning the trucks can achieve the same work as their diesel equivalents. The initial Scania's were bought without gas tanks before a third-party company approved and fitted large carbon fibre gas tanks to achieve the required range.

Sourcing the fuel and testing the vehicle also required working in partnership with a range of third parties. CNG Fuels built a gas filling station at Leyland to service its fleet. Laney explains: "We initiated and were the first customer of the initial 500-mile range versions of Scania's and Iveco's gas tractors, now a factory option. For testing and research we worked with the Centre for Sustainable Road Freight and the Low Carbon Vehicle Partnership, while for the alternator drive to power the fridge units we worked with Frigoblock UK Ltd, a commercial refrigerator supplier."

## GENERATING POSITIVE PUBLICITY

The John Lewis Partnership's transition to a gas-powered fleet has delivered a welcome side benefit for the company by generating considerable press coverage and publicity. Laney said, "We have received a lot of coverage for the vehicles, including in the national press and an item on the BBC's The One Show. This was supported with wide coverage in the trade press, a number of conference presentations, several truck demonstrations and showings at events such as the Commercial Vehicle Show."

## LESS CARBON, MORE BENEFITS

Laney considers his team's biggest achievement has been to develop a truck and trailer combination that can do the same work as its diesel equivalent, whilst delivering an 83% carbon reduction. This combination is well suited both to long-distance operations, thanks to its considerable carbon saving, and to urban operations, owing to its low noise and clean exhaust.

The business case is also attractive, with the vehicles costing around £20,000 more to purchase than the diesel equivalent but saving that amount in the first year of operation. Plus, in recognition that they halve noise levels, both tractor and electric drive trailers have been awarded the 'Quietmark'. The new trucks are popular with the drivers too. Not only do they get the 'feelgood factor' from driving a low-emission truck, they have also reported feeling less tired at the end of a duty owing to the lower noise and smoother running, plus they like not smelling of diesel after refuelling!

## THE FUTURE'S ELECTRIC

Following its success with its gas-powered fleet, the Partnership's ambitions for the future are high – making a public commitment to achieving a zero emission fleet by 2045. "Currently, we can only achieve zero emissions by

## QUANTIFYING CARBON SAVINGS

The consultancy Element Energy carried out a 'well to wheel' assessment of the Leyland gas filling station used in conjunction with the company's vehicles. It determined an 83% carbon reduction versus diesel. The biomethane used comes 100% from waste material, mainly by-products of food processing.

moving to 100 per cent renewable electricity," Laney said, "We have started with the smallest vans, but see gas heavy duty trucks with alternator driver fridges being the answer for 20 to 25 years but transitioning to overhead catenary electrical power by that time."

In recognition of its achievements, the John Lewis Partnership received the LERS (Logistics Emissions Reduction Scheme) Excellence in Innovation Award, sponsored by ExxonMobil, at the FTA Multimodal Awards 2019. ■



### JUSTIN LANEY, CENG FIMECHE

A mechanical engineering graduate, Justin Laney has more than 30 years' experience in fleet management, including 20 years working as a Fleet Manager for UPS, before joining the John Lewis Partnership in 2010. Here he is currently General Manager – Fleet, overseeing a fleet of 3,500 commercial vehicles and 1,500 cars.

A Chartered Engineer and Fellow of the Institution of Mechanical Engineers, Laney is also a Director of the Low Carbon Vehicle Partnership and a member of FTA's Logistics Emissions Reduction Scheme Steering Group.



# Switching to LNG – it's easier than you think

**If you're running your fleet on diesel, it could be time for a rethink**

Fuel costs remain high and the Government is expecting a 15% cut in your CO<sub>2</sub> emissions by 2025. But perhaps making the switch from diesel feels like too big a step to take?

In reality, finding a game-changing fuel alternative is a lot less disruptive than you might think and doesn't require a radical overhaul of your business.

Many fleet operators are already benefitting by converting to Liquefied Natural Gas (LNG). It's helping them to cut CO<sub>2</sub> emissions by up to 20% and to reduce fuel costs by up to 40% compared to diesel. Also, LNG vehicles are up to 50% quieter to run which benefits both drivers and the general public. A wide range of 6x2 and 4x2 LNG vehicles are readily available from leading manufacturers Iveco, Volvo and Scania.

First, we create a profile of your fleet, including driving patterns and its size, to quantify potential LNG benefits. We then develop a bespoke implementation plan for your company covering a range of back to base and on the road refuelling options.



**Chris Hampton**

LNG and BioLNG Product  
Manager, BOC

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We offer the opportunity for you to trial the benefits of LNG by supplying an LNG trial refueller unit for you to use at your site. You'll see the savings and how your drivers can safely handle LNG in day-to-day operations.

Once you've tested LNG for yourself, we can support you with switching more of your vehicles to LNG and establishing an efficient refuelling structure.

Throughout we provide full training and you benefit from the support provided by our nationwide network of specialist engineers.

Partnering with BOC keeps you at the forefront of future developments in alternative fuels. We have already rolled out BioLNG, the next generation of Liquid Natural Gas – offering up to 95% CO<sub>2</sub> savings and a totally renewable energy source.

Still considering whether LNG is right for your business? Visit [boconline.co.uk/lng](http://boconline.co.uk/lng) to take our short assessment and receive a report with the insights you need to make an informed decision.





Leading UK  
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# Fuelling change

Since the 1950s, diesel has been the only choice for commercial vehicle (CV) operators. It was the “one size fits all” with good fuel consumption, longevity, and simple, available refuelling. What are the alternatives?



**Martin Flach**

*Automotive Consultant*

## ELECTRIC

For CVs, it is still very early days, there are a few small car-derived products on the market and in the large van segment, products are available from LDV, Iveco, Renault and soon Mercedes, VW/MAN and Ford (with DHL Deutsche Post company Street Scooter).

New starters such as the London Electric Vehicle Company, Charge and Arrival are coming to market soon.

The Fuso E Canter is also available in the light to medium 7.5t sector.

Range limitations mean that these vehicles will be destined for urban operations.

Purchase costs are still high, typically between three and five times the cost of the equivalent diesel although plug-in van grants may be available. Fuel will cost less, and maintenance will be cheaper, but the only real way to get to a return on your investment is to operate the vehicle in the London Congestion Charge zone.

Moving up the weight range, most OEMs (original equipment manufacturers) are developing products for the rigid market – range and payload will rule out artic work at this stage.

There are several companies such as Tevva, EMOS, Electra and E force retrofitting either used vehicles or new “gliders” from the OEM. This approach can be useful in extending the life of Euro V vehicles that would have to pay to enter

Clean Air Zones such as the London Ultra Low Emission Zone from April 2019.

## HYBRID (PARALLEL)

Parallel hybrids are those where either the internal combustion engine or the electric motor drives the axle directly.

In Euro V vehicles, Mercedes, DAF, Iveco, Volvo and MAN all offered hybrid products. Reports showed good fuel consumption savings of about 25% in the urban operations but the payback periods were too long.

The Fuso Canter Hybrid technology is somewhat less expensive, hence the product remains available today.

Hybrids will come into their own with the introduction of zero emission zones in cities. Vehicles will then drive between cities with the internal combustion engine and then switch automatically to pure electric

by GPS geomapping at the entry to the zero-emission zone. The economics then are the additional cost of the vehicle against the cost of transshipping to a full electric vehicle.

## SERIES HYBRIDS/PLUG-IN HYBRID/RANGE-EXTENDED ELECTRIC

Unlike parallel hybrids, the internal combustion engine is not connected to the wheels by any mechanical means. It purely drives a generator to produce electrical energy and the wheels are driven by electric motors.

The benefit of this is the flexibility to find the ideal compromise between battery capacity, engine size, payload, cost performance, pure electric range and overall range etc.

## ALTERNATIVE ADVICE

★ More from martin.  
[flach@btinternet.com](mailto:flach@btinternet.com)



Series hybrids have been used extensively in bus applications. Plug-in hybrids are well known with vehicles such as the Mitsubishi Outlander but not so far in commercial vehicles.

Tevva has successfully converted several vehicles for UPS (mainly Euro V Mercedes Vario models) to range-extended electrics.

## HYDROGEN

On the face of it, hydrogen sounds like the ideal alternative. It can be used in a fuel cell and the emissions from the vehicle are water.

Toyota, Honda and Hyundai all have fuel cell cars available. Current costs are high, both for purchase and for operation but will certainly come down as we move to a more hydrogen-based economy.

Iveco-FPT showed a hydrogen fuel cell concept artic at IAA Hannover in 2018. Hydrogen has a very low-energy density and needs a lot of space to store the fuel. On a 4x2 artic, with both sides of the chassis filled with tanks, the range was only about 200km. Just imagine the challenge for a 6x2 artic.

There are currently a few buses running in the UK on hydrogen. These back-to-base vehicles with plenty of space for fuel tanks on the roof have no issue with range.

Hydrogen has been the fuel of the future for many years and it seems still many years away from mass production. The most likely use of hydrogen could be as a zero-emission range extender for an electric vehicle.

## NATURAL GAS CNG AND LNG

Gas-fuelled spark ignition engines have been around since the birth of the internal combustion engine. Indeed, Nikolaus Otto (the German engineer who developed the forerunner to the modern internal combustion engine) used town gas as the fuel for his early developments.

Euro VI has brought spark ignition offerings from Scania and Iveco – initially at 330–340hp but more recently at 400–460hp.

Volvo has also recently launched an engine featuring HPDI (high pressure direct injection) technology. This is a compression ignition cycle using only a small amount of diesel as a liquid spark plug.

Whilst the spark ignition engines are available with either Compressed Natural Gas (CNG) or Liquid Natural Gas (LNG), the Volvo HPDI is only available for LNG.

For vehicles on operations where range is not an issue, CNG is good but for most artic operations, LNG will be more usually the choice.

As the fuel is identical in composition, the emissions will be the same with either fuel, the difference being only the storage system.

With 6x2s now available from Volvo and Iveco and the economics looking good for long distance, now seems to be the time for gas vehicles to take a significant slice of the market.

## MARTIN FLACH

An electrical and electronic engineering graduate, Flach has held a number of positions within the commercial vehicle industry. His career began with Ford Motor Company (Truck Division). Following the merger of Iveco and Ford (Truck Division) he joined Iveco Ford Truck in 1986 and remained with Iveco after the formation of Iveco Ltd in 2003.

After over 40 years in the commercial vehicle business, Flach has recently retired from his role in Iveco as Alternative Fuels Director with responsibility for the light, medium and heavy product ranges.

Flach is now working as a consultant to like-minded companies in the alternative fuels sector.

Biomethane will reduce the CO<sub>2</sub> emissions from vehicles (on a well to wheel basis) by 80% and more. NOx and particulates are usually better than diesel vehicles as well.

Natural gas vehicles are a “here and now” technology that may well be replaced in the long term with other emerging zero emission technologies. But for now they are the only real game in town for long-distance operations.

## GTL AND HVO

Gas to Liquid (GTL) and Hydrogenated Vegetable Oil (HVO) are second generation alternative diesels. Some OEMs have approved and certified engines to use these.

GTL can be made from natural gas or biomethane. Availability in the UK is limited, and higher costs are an issue at present, but fleets which have trialled them report good results.

The challenge that any alternative diesel will have is the public perception that this is still a diesel vehicle. With the current demonisation of diesel, this could prove to be an impossible task. ■



# Case study

## BOC and The Malcolm Group

### Reducing CO<sub>2</sub> emissions with LNG

**As CEO of the Malcolm Group, Andrew Malcolm has a clear vision of its future:**

**“We are prepared to lead by example by finding cleaner, greener alternative fuels to diesel, improving environmental performance for ourselves and our key customers.”**

★ Visit [boconline.co.uk/lng](http://boconline.co.uk/lng) to take BOC's LNG assessment or contact BOC's Clean Fuels team at [cleanfuels@boc.com](mailto:cleanfuels@boc.com)

To make this happen Malcolm Logistics, a division of the Malcolm Group, has partnered with BOC to trial a fuel switch to Liquefied Natural Gas (LNG).

BOC has installed an LNG refuelling station at Malcolm Logistics' Newhouse depot so its LNG vehicles can benefit from the 20% cut in CO<sub>2</sub> emissions.

They have also provided staff training to ensure a smooth transition. Stevie Devine, Driver Trainer at Malcolm Logistics, said: “My experience of the LNG trucks has been very good so far, it really isn't as hard as we thought it was going to be.”

Malcolm Logistics and BOC are committed to transforming the Group's impact on the environment. Fleet Engineer Gavin Summers is looking forward to the future of alternative fuels. “The Group is looking to drive down its carbon footprint by reducing CO<sub>2</sub> emissions through the introduction of natural gas vehicles to its large transport fleet.”

The next step on this alternative fuel journey will be the introduction of BioLNG which cuts CO<sub>2</sub> by 95% and is a totally renewable energy source. Once again the Malcolm Group is leading by example.





# INNOVATION TECHNOLOGY IN TRANSPORT

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Visit the ITT Hub 2020 event website [www.itthub.co.uk](http://www.itthub.co.uk) and our newly launched content channel [www.itthub.net](http://www.itthub.net) to see how you can be part of something rather different.

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# Moving goods by other modes

**Getting to zero carbon emissions by 2050 will be a team effort: all transport modes as well as businesses across the supply chain will need to play their part. This report sketches the prospects for decarbonisation across rail, air and sea transport, including some of the political, regulatory and economic challenges that need to be addressed.**

## RAIL

Of the three modes considered in this piece, rail has the clearest path to decarbonisation. In short, Britain's railways can be decarbonised if the government chooses to do so and makes funds available for the infrastructure. There is a practical means to achieve it, through electrification of the rail network, combined with electricity generation through renewable sources. Rail electrification is, technically speaking, absolutely feasible; in fact the UK has been lagging behind European railways on this for years. The challenges are around cost: recent electrification schemes have been cancelled due to cost overruns.

Recently the Railway Industry Association has strongly challenged the high costs historically paid to electrify UK rail networks, arguing in a 2019 report that rail electrification can be delivered at between a third and a half of the cost of some past projects, providing the government commits to a rolling programme of work. Further work by RIA and FTA members shows that the rail freight sector



**Alex Veitch**

*Head of Multimodal Policy, FTA*

could be two-thirds electrified by 2033 if the government carries out an 'infill' approach, electrifying strategic parts of the network in a staged way.

These issues have been given renewed energy recently with the Rail Minister's 2040 decarbonisation challenge, and Network Rail has launched a major initiative to reassess routes to decarbonisation including a review of the costs of doing so. For rail freight operators, a clear long-term electrification strategy is crucial so that commercial decisions on locomotive replacement can be made. Currently many freight rail diesel locomotives are approximately half way through their life cycle and so now would be an ideal time to kick off a refreshed electrification strategy.

## AIR

Aviation is arguably the most technically challenging mode to decarbonise, given the unique operating environment faced by the sector – very high altitudes, extreme cold temperatures and safety-critical operations, which make experiments with new types of propulsion and fuels challenging to say the least. The pressure is on though, as aviation is the fastest-growing source of greenhouse gas emissions (GHGs).

Political and regulatory action is complex too, because as a global industry, aviation emissions are regulated by UN agency ICAO (International Civil Aviation Organization) rather than through the Paris agreement on climate change, which means governments representing 193 countries meeting to agree specific climate policies for aviation. Measures taken by nations are limited owing to commitments to international agreements ruling out national fuel taxes, and protectionism for national operators masquerading as concerns over environmental measures. Currently, global aviation accounts for an estimated 2% of global greenhouse gas emissions and 15% of transport-related CO<sub>2</sub>. Moreover, aircraft have long lifecycles, with fleet replacement typically taking around 20 years.

So what technology could be introduced to decarbonise the sector? The UK has recently consulted industry on the future of aviation and envisages that hybrid or all-electric



the rail freight sector could be  
two-thirds electrified by **2033**



Global aviation accounts for...



**2%** of global greenhouse gas emissions



**15%** of transport-related CO<sub>2</sub>

planes will be in use by 2050. This follows a successful cross-channel flight by the Rolls-Royce and Airbus 'E-Fan' concept plane. There are many other electric flight demonstrator projects underway, however these are focused on small planes, whereas the bigger aircraft are where the technology is required.

Significant challenges remain in terms of using lighter materials; the availability of lithium ion to produce batteries; and the need for surrounding infrastructure to accommodate the different take off requirements of e-aircraft. Aviation experts believe that a fundamental redesign of aircraft is likely to be required to achieve an electric future.

For these reasons, the agreement reached at ICAO combines a basket of measures to improve energy efficiency such as new-build engine standards and airspace modernisation improvements to prevent 'stacking' while aircraft wait to land, with a global carbon offset scheme to allow emissions from aviation to be compensated by projects that reduce emissions by an equivalent amount. The overall goal is zero carbon and so there is a wide array of research projects sponsored at national and international level to deliver workable alternative fuel options.

The risk for the aviation sector is that unless a technical solution can be found to enable the decarbonisation of operations, governments may eventually impose a limit on flights to stay within a carbon budget. The prize for the innovators that can deliver a solution will be enormous.

## SEA

Like aviation, shipping is a truly international part of the supply chain and national governments meet to agree global environmental regulations at a specialist United Nations agency, the IMO (International Maritime Organization). There is a wide array of technical and economic barriers to the adoption of low-carbon or zero-carbon fuels, bearing in mind the very challenging operational environment faced by shipping companies.

In the very long term, there is an agreed goal to move to a zero-carbon shipping system. An agreement was reached at the IMO to reduce total annual GHGs by at least half by 2050 and to pursue goals to phase them out entirely. It includes a 'pathway' that sets out shipping's route to GHG reduction that would deliver the sector's contribution to the overall Paris Climate Agreement goals.





Shipping accounts for...



up to  
**3%** of global emissions



up to  
**15%** of transport emissions

However, there will need to be very significant improvements in energy efficiency, and in the longer term, there will have to be uptake of zero-GHG alternative fuels to meet these goals. This is because global shipping is forecast to grow strongly in the current decades, especially unitised or containerised shipping.

Energy efficiency measures will have to keep pace with overall business growth to reduce or keep overall emissions static. There are a number of measures underway already to improve efficiency, driven by a combination of business need to keep fuel costs minimised, as well as environmental drivers. These include maximising load factors on the largest vessels; adopting so-called 'slow steaming' to manage burn-rates; and at the ship-design stage the adoption of the Energy Efficiency Design Index (EEDI) which drives up efficiency.

Alternative fuels pose challenges; there is already a move in some businesses towards LNG as an alternative shipping fuel. This has good air pollution benefits but comparable carbon performance to diesel, so is best understood as a transition fuel. There are various projects for electrified shipping, however these are arguably more likely to operate over shorter distances rather than moving the very largest ships over oceans for voyages of several weeks at a time.

Hydrogen fuel cell technology is technically feasible for ships, but ship builders, ship owners and operators would need to be convinced that this is a viable option to start

the long process of design and build. Ports worldwide would need to provide hydrogen made from renewable electricity to refuel ships. Biofuels could potentially be an option from a technical standpoint, although shipping is competing against all transport worldwide for a source of sustainable (ie environmentally positive) biofuels, so the proportion available is likely to be limited.

Faced with these long-term technical challenges and the need to agree regulatory measures as one of 172 members of the IMO, it would be understandable for national governments to take a back seat. However the UK government has taken a far more positive approach, recently launching its first Clean Maritime Strategy, which includes funding to support clean maritime innovation, a review of the potential for biofuels to play a greater role, a Maritime Emissions Regulation Advisory Service (MERAS), and a number of other zero-emission shipping ambitions plus the milestones that will need to be achieved to reach it. We applaud this approach by the UK and wish to see it replicated for other transport modes.

In conclusion, it's fair to say that, as with aviation, the jury is still out with regard to zero-carbon alternative fuel sources for shipping; but the prize is potentially huge for first-movers who identify an option that works environmentally and technically. It seems likely that shipping's contribution to GHG reduction for the next 20-30 years relies on incremental gains in fuel efficiency rather than radical moves to zero-carbon fuels. ■

## MULTIMODAL MATTERS

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# Fuel cost certainty in a volatile market

**With many factors causing uncertainty in the UK economy, reducing diesel and petrol costs and improving fleet efficiency are high on the corporate agenda. The FTA Fuel Card looks at how you can achieve these running cost reductions in 2019, amid unprecedented market volatility.**

So far in 2019, the price of fuel has been unpredictable, and this looks likely to continue through this period of change, making it hard for fleets to accurately budget running costs.

This is due to a number of global factors: the ongoing US-China trade dispute, tensions in the Persian Gulf between Iran and the US (and UK), and OPEC (Organization of the Petroleum Exporting Countries) wanting to reduce production to increase prices.

The October Brexit date is looming too, the outcome of which could affect exchange rates, significantly impacting on cost. Since the 2016 referendum, for example, the weakening of the pound against the US dollar has added 5p to a litre of fuel.

For fleets running commercial vehicles, the cost of fuel is one of a number of issues, and operating in a more environmentally-friendly way is one we see the benefit of too, especially in urban areas with the proliferation of clean air zones.

But the lack of alternatively-fuelled options, cost and infrastructure mean for the foreseeable future, petrol and diesel-engined vehicles are going to remain the primary choice for fleet operators.

The issue is how to reduce the cost of fuel. We understand the pressures of running a fleet and are perfectly placed to meet your needs.

We can offer tailor-made solutions that can save you money and significantly reduce administration too.

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Choosing the right card will offer benefits such as discounted fuel, HMRC-compliant invoicing which allows you to claim VAT back and save money, and 24/7 reporting tools to monitor your fleet.

### 2 MONITOR DRIVERS' FUEL SPEND

Fuel usage doesn't lie. Monitor drivers to find those paying too much or driving inefficiently. It will become apparent which are driving too fast, badly or not maintaining vehicles – all of which affect fuel costs.

### 3 BUY FUEL MORE EFFICIENTLY

Ensure the most time- and fuel-efficient routes are being taken, and where fuel is purchased or bunkered. Where do you need to access fuel and what controls do you have over drivers? Should you operate a payment solution that limits route deviation, or one that allows drivers to spend time searching out cheaper fuel? Finding the balance between cost and operational efficiency is key.

★ More from [fta.co.uk/fuelcard](https://fta.co.uk/fuelcard) or call 0845 266 5003





# 6 quick wins for reducing emissions in a diesel fleet

**Whilst industry awaits the arrival of the ultra-low emission trucks of the future, there are other measures which if utilised correctly, can increase the efficiency of diesel fleets today and significantly reduce fuel bills.**

The Department for Transport estimates that half the UK's HGV fleet is not making use of mainstream fuel efficiency measures.

The members of the Logistics Emissions Reduction Scheme (LERS), which FTA manages, achieve 13% lower fuel use than the industry average. For the most part this is not achieved through use of alternative fuels, but through the efficient use of diesel fleets.

Therefore, in a recent survey, scheme members were asked to provide information on the fuel efficiency measures they currently have in place with their diesel fleets, and to rank them in terms of return on investment. The results have created this list of six quick wins for reducing emissions in a diesel fleet, in order of success.



## 1 FUEL-EFFICIENT DRIVING TRAINING

Driving technique coupled with regular daily checks can have a significant effect on the performance of a vehicle.

The Safe and Fuel-Efficient Driving (SAFED) programme has demonstrated that even experienced drivers are able to achieve an average of a 5% reduction in fuel costs by altering their driving style, without reducing the average journey time. Other driver aids such as Ashwoods Lightfoot, an in-cab coaching tool which provides real time visual and audible feedback to the driver, delivers improvements of between 10 and 20%.

Fuel-efficient driver training remedies bad driving behaviours, including engine idling, unnecessary accelerating and harsh braking with more fuel-efficient techniques. Maintaining a constant speed to reduce the need for harsh braking and accelerating, changing gears earlier, reducing engine idling and limiting the use of air conditioning can all contribute to increased fuel efficiency. However good a driver feels they are, there are usually more things to learn.



**Rebecca Kite**

*Environment Policy Manager, FTA*

## JOINING LERS

★ For further information on getting involved in the Logistics Emissions Reduction Scheme please visit [lers.org.uk](http://lers.org.uk)



## 2 TELEMATICS AND DRIVER ANALYTICS

Telematics are in-cab systems used to monitor a wide range of information relating to an individual vehicle or an entire fleet. The IT system is able to track and monitor a journey and can provide data to enable a fleet operator to make strategic and daily management decisions and has the potential to deliver significant cost and carbon savings.

Telematics captures data on individual driving style, compliance with drivers' hours rules and fuel consumption and monitors both good and bad driving techniques. Operators can then reward drivers who are delivering an improvement and recommend remedial training for those that need some additional support. The use of this is important to ensure lasting benefits from driver training.



## 3 ROUTE OPTIMISATION

There are multiple route planning software solutions and digital maps of the road network available which can be used to optimise your fleet scheduling. Using the best route between destinations can minimise mileage and boost the efficiency of your vehicle fleet. With every kilometre saved through optimised routing and scheduling, you are reducing fuel costs whilst cutting emissions.



## 4 REDUCING EMPTY RUNNING

Empty running has a high economic cost due to the wastage of fuel and driving time and the added congestion caused. Obviously empty running will always be inescapable for some of the time, and unavoidable half the time for many types of movements (eg refuse collection, fuel deliveries). But in cases where loads are less specialised and

the vehicles more suited to multi use, or there are a number of company sites and numerous vehicles available, well thought out utilisation of the spare capacity of the fleet could result in less overall fuel consumption and therefore fewer emissions. This requires more work than some of the other options here, but even small achievements provide big commercial and emissions wins.

In 2018, the LERS Leadership in Fuel Efficiency Award was presented to John Raymond Transport for its impressive and comprehensive transport management system which enables it to track its drivers in real time and links them with loads to optimise synergies and minimise empty running.



The Logistics Emissions Reduction Scheme (LERS) is a free to join industry initiative to record, report and reduce carbon emissions from freight transport. Logistics can be greener. Join over 130 other companies today and make a difference.

#### Scheme benefits:

- Free to join
- Demonstrate your green credentials
- Keeps you up to date
- Carries weight with Government

Visit [lers.org.uk](http://lers.org.uk) for more information.

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#### 5 TYRE MANAGEMENT PROCESSES

Correctly inflated tyres are vital to the safe operation of any vehicle, but tyre inflation has also been shown to be an important factor in fuel efficiency. A 20% drop in tyre pressure can increase fuel consumption by 2%. Regularly checking tyre pressures minimises the rolling resistance and will reduce the fuel consumption of a vehicle. Operating with low rolling resistance tyres will further increase fuel efficiency, as they require less fuel to propel the vehicle forward. Many leading manufacturers are encouraging operators to use lower resistance tyres to improve their fuel economy and reduce their environmental impact.



#### 6 AERODYNAMIC DEVICES

As HGVs tend to have large flat fronts and rear ends, they have a significant air drag profile which creates considerable air turbulence around the vehicle, creating more resistance and resulting in more fuel needed to power the vehicle forward. Aerodynamic technologies including boat tails, side skirts and body deflectors have been designed to reduce this drag, reducing the amount of fuel needed to power the vehicle. The most significant savings with aerodynamics can be achieved on vehicles travelling at constant speeds and so are naturally better suited to heavier vehicles on the longer trunking routes. Analysis of responses suggests the reason this was lower on the list was that for respondents using shorter journeys with a higher frequency of intermittent driving, results were less impressive. This is one option suited to particular types of movement. ■



# Future Van

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# Exploding urban myths

**Tackling air pollution is a government priority. Figures from Defra (Department for Environment, Food & Rural Affairs) show that just over a third of nitrogen oxide emissions in the UK come from road transport, so whilst road transport is not the only source of emissions, it is a major contributor.**



**Natalie Chapman**

Head of Urban Policy, FTA

The good news is that despite what you might read and hear, air quality is getting better, not worse – nitrogen oxide emissions are decreasing and have fallen by 72% since 1970 and 27% since 2010. But poor air quality continues to be a major public health issue and the government wants to reduce emissions of nitrogen oxides further (from the 2005 baseline) by 55% by 2020 and 73% by 2030. Alongside local air quality, there is a global challenge to tackle climate change by working towards zero net carbon emissions.

## REDUCING POLLUTANTS

The UK, along with other EU member states, has failed to meet air quality targets. To address this, the government's Clean Air Strategy sets out how the UK will meet international commitments to reduce emissions of five damaging air pollutants by 2020 and 2030: nitrogen oxides (NO<sub>x</sub>/NO<sub>2</sub>); particulate matter; sulphur dioxide; non-methane volatile organic compounds; and ammonia. Alongside these sits a targeted delivery programme on the UK's most immediate air quality challenge: tackling roadside NO<sub>x</sub>/NO<sub>2</sub> concentrations.

## URBAN ENGLAND

A number of English cities have been directed by government to develop local air quality plans including modelling the implementation of charging Clean Air Zones (CAZs). Whilst Defra has developed a framework for CAZs, it is up to individual cities to choose which classes of vehicles they wish to include, as well as the geographic extent of their zone. Of the first five cities which were required to model a CAZ, only Leeds and Birmingham have pursued their plans. Derby, Nottingham and Southampton have identified other ways to improve air quality – although Southampton's plans are yet to receive government approval. And this is an important point to note, because until plans are actually approved by government, we cannot be certain that they will not be required to pursue a CAZ. Coventry decided not to go ahead with a CAZ, but this was rejected by government and it is now required to go back to the drawing board and develop plans for class D charging zones to include all vehicles, including private cars.

## SCOTTISH STRATEGY

In Scotland, several cities are planning Low Emission Zones (LEZs). Glasgow's LEZ is already in place for buses and commercial vehicles will be included from the end of 2022. Edinburgh has recently consulted on plans for a city centre zone and more worryingly, a larger city-wide zone which will impact on commercial vehicles based in or travelling through the whole of the area within the city bypass. Unlike the English CAZs, the Scottish LEZs will not have a 'pay-to-pollute' provision as a means of compliance, they will be outright bans and any non-compliant vehicles will be issued with a Penalty Charge Notice.



## IMPACT ON BUSINESS

FTA's position on CAZs/LEZs is clear: we absolutely support the need to clean up the air we all breathe, but we believe there are better ways of improving air quality which will provide more benefits in the longer term. Euro VI/6 vehicles will enter the vehicle parc on their own accord as part of the natural fleet replacement cycle. All that a CAZ or LEZ does is speed this up. They particularly impact small businesses and operators of high value, low mileage, specialist vehicles. When businesses buy new vehicles, it is not just the purchase price they need to consider but how long they plan to run the vehicles for and what they will sell for when the business is finished with them. The introduction of CAZs means the timeframe in which many businesses had planned to sweat their assets has reduced and the residual values of their Euro V/5 vehicles have plummeted. Therefore, not only do businesses need to obtain financial resources for new vehicles sooner than they had planned, they have the additional blow

of losing the financial resale value of the vehicles they are replacing. Many businesses will also be locked into lease agreements that may run beyond the start of the CAZ which will be extremely expensive, if not impossible, to get out of. CAZs/LEZs are also not cheap for cities to implement – we believe that the money would be better invested in measures such as supporting businesses to switch to alternative fuels and retime deliveries.

## HEART OF THE CITY

But where a CAZ/LEZ is unavoidable for legal reasons, the approach must minimise the impacts on local businesses without negating the intended temporary air quality benefit.

So, FTA is campaigning for the zones to be as small as possible. They should be for city centre areas only. The bigger the zones, the more businesses likely to be caught up in them – not just for deliveries, but to get out of their yard, requiring a 100% compliant fleet. Where local businesses are impacted, we are asking for limited sunset clauses for operators based within (or who primarily operate within) the zone. And where there are ATFs (authorised testing facilities) based within zones – Leeds has two – we are calling for exempt routes for vehicles going to test.

## STAGGERED DEADLINES

Different vehicles had different introduction dates for Euro VI/6. For HGVs it was January 2014, cars were brought into scope in September 2015 and Euro 6 wasn't introduced for vans until September 2016. For example, the central London ULEZ (Ultra Low Emission Zone), which went live in April, effectively banned any vans little more than two and a half years old. Therefore, we are calling for vans to be excluded unless essential.

## GOVERNMENT SUPPORT

The government has set up a Clean Air Fund for cities to bid for support to help businesses and residents switch to Euro VI/6 or even alternatively-fuelled vehicles. Leeds has done this and has offered up to £16,000 grant funding for HGV replacements and Birmingham is investigating the support that it may offer, and we are encouraging other cities for follow suit. Whilst there are several accredited retrofit systems for buses to enable their emissions to meet the Euro VI standard, it must be noted that, apart from one system which can be used on some refuse collection vehicles, currently there is no accredited retrofit option for HGVs to bring Euro IV or V vehicles up to the Euro VI standard. Due to the technical requirements of Euro VI, if such an option were to be available for HGVs it would likely cost in the region of £15,000 to £20,000 per vehicle and, therefore, would only be potentially viable to operators of specialist high-value vehicles. For operators of 'standard' HGVs, any retrofit device which may be brought to market is unlikely to be cost effective and consequently will not be a compliance option for them. Therefore, for most operators, the only option is to replace the entire vehicle. The Clean Vehicle Retrofit Accreditation Scheme (CVRAS) is operated by the Energy Saving Trust (EST). There may be companies which claim they can provide a solution, but such devices must be approved by the EST.





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### CAPPING CHARGES

Where operators of non-compliant vehicles can pay a daily charge, we are campaigning for the level to be set at no more than £50 a day for HGVs – some are charging £100. The government is working on a single nationwide system for registering and charging of non-compliant vehicles entering the different zones. However, the delay in getting this system up and running has caused Leeds and Birmingham – whose zones were due to come into force in January 2020 – to announce that their schemes will be significantly delayed.

### COMBATING CONGESTION

FTA is also campaigning for better traffic management. Our urban centres are becoming more populated and this is putting huge pressure on the transport network as more people need to move around. More people also create greater demand for deliveries and servicing activity. As there is limited space in our towns and cities to build new roads, we need to think about how we can use existing infrastructure more intelligently. Congestion has a direct impact on fuel consumption and emissions. This is not a marginal thing, it has an exponential effect on the environment. According to a leading truck manufacturer, stopping

three times per mile and getting back up to 30mph each time triples emissions compared to just cruising at 30mph. Reviewing road layouts and traffic signals can significantly help reduce congestion, and reducing congestion also means the freight industry can do its job more efficiently, potentially reducing the number of vehicles it needs to deploy.

### ZERO TOLERANCE

Finally, some cities and metropolitan boroughs are investigating Zero Emission Zones (ZEZs). Our stance on this is clear – it is far too soon to be using the stick approach on new and emerging technologies. Instead the focus should be on encouraging and enabling businesses to invest in electric vans and alternatively-fuelled HGVs by supporting the developing of charging and refuelling infrastructure and increasing access to urban areas, particularly at night when there are lots of restrictions on deliveries.

The development of CAZs, LEZs, ULEZs and ZEZs is a constantly moving picture, so to support members, FTA has produced a CAZ briefing note which is updated monthly and published in the first e-news of every month. ■

### GREENING LOGISTICS

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