

Transport Carbon Reduction Delivery Plan



Transport Carbon Reduction Delivery Plan

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Foreword

Good progress has been made in the past year in moving the UK towards a low carbon future. In April 2009 we set the world's first national carbon budgets, committing the UK to ambitious carbon reductions across the economy. This was followed by *The UK Low-Carbon Transition Plan*¹, which for the first time set out a detailed strategy for reducing UK greenhouse gas emissions in every sector of the economy. And the Copenhagen conference in December 2009 built momentum towards a more ambitious global effort to avoid dangerous climate change.

Domestic transport represents 21% of UK greenhouse gas emissions (24% of UK domestic CO₂ emissions)², and Government, working with our delivery partners, is doing its part to reduce them. Alongside *The UK Low Carbon Transition Plan* we published our transport carbon reduction strategy *Low Carbon Transport: A Greener Future*³. This demonstrated that as a result of our actions, domestic transport emissions are forecast to be around 14% lower by 2020 compared to 2008.

Since publication of the strategy we have made further advances towards the eventual decarbonisation of transport. We announced a major programme of rail electrification. The European Commission, supported by the UK Government, published a draft regulation on emissions from new vans. We established the cross-government Office for Low Emission Vehicles (OLEV), tasked with promoting low carbon cars and vans. We also introduced measures to incentivise more fuel-efficient bus operations. In the logistics sector, we set up a working group to bring forward clear carbon measurement

¹ *UK Low-Carbon Transition Plan, National Strategy for Climate and Energy*, Department for Climate and Energy, July 2009, available at:

http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx

² Table 3.8, Transport Statistics Great Britain

<http://www.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/tsgbchapter3energyenvi2009.xls>

³ *Low Carbon Transport: A Greener Future, A Carbon Reduction Strategy for Transport*, Department for Transport, July 2009, Cm 7682, available at: <http://www.dft.gov.uk/pgr/sustainable/carbonreduction/low-carbon.pdf>

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for the freight transport supply chain and have published a consultation on increasing levels of uptake of eco-driving training across HGV drivers. And more than 250 organisations have signed up to the new Cycle to Work Guarantee.

The *Transport Carbon Reduction Delivery Plan* fulfils the commitment we made in our strategy to detail the implementation of our carbon reduction policies. It sets out who will deliver our policies and how they will be delivered, and provides for detailed monitoring to ensure that we remain on track to meet our UK carbon budgets. Together with its companion document, *Climate Change Adaptation Plan for Transport 2010 - 2012* which details our plans to ensure our transport system remains resilient to the potential effects of climate change – this document demonstrates a coherent and detailed action plan to tackle climate change in the transport sector.

A handwritten signature in black ink, appearing to read 'Sadiq Khan', with a large, stylized initial 'S'.

Sadiq Khan

Minster of State for Transport

Executive summary

The Climate Change Act 2008⁴ created for the first time a legal requirement for at least a 34% reduction in UK greenhouse gas emissions by 2020, and at least an 80% reduction by 2050, from a 1990 baseline. To drive progress towards this target, the Act introduced five-year “carbon budgets”, which define the emissions pathway to the 2050 target by limiting the total



greenhouse gas emissions allowed in each five year period, beginning in 2008. The first three carbon budgets were set alongside Budget 2009, and require (compared to the same 1990 baseline):

- In the first carbon budget period, 2008-2012, a 22% reduction
- In the second carbon budget period, 2013-2018, a 28% reduction
- In the third carbon budget period, 2018-2022, a 34% reduction

The *UK Low Carbon Transition Plan*, published in July 2009, set out a pilot system of departmental carbon budgets, designed to ensure clarity over the allocation of responsibility across Government for meeting our UK carbon budget for the first 5 year carbon budget period. DfT has been allocated responsibility for a 76% share of transport emissions over 2008-2012. Reflecting the wide range of influences on transport's emissions beyond DfT's policies, responsibility for the remainder is divided between several other Government departments to represent the impact of other sectors of the economy in generating transport emissions. DfT also has a relatively small share of emissions in the workplaces and jobs sector, the agriculture, forestry and land management sector; and the waste sector, representing the impact of our policies in these sectors. The carbon reduction framework is described in more detail in *Climate Change: Taking Action*⁵.

The *UK Low Carbon Transition Plan* also presented the key policies which will enable the UK to meet its first three carbon budgets i.e. covering the whole period from 2008 to 2022. Our transport carbon reduction strategy *Low Carbon Transport: A Greener Future*, published at the same time, detailed our actions to reduce transport carbon emissions against three themes:

⁴ Climate Change Act 2008, Chapter 27, available at: http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1, as amended by the Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 (SI 2009 No.1258).

⁵ <http://www.decc.gov.uk/en/default.aspx?n1=3&n2=53&n3=77&n4=1241&preview=true>

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- Supporting a shift to new technologies and cleaner fuels
- Promoting lower carbon choices
- Using market mechanisms to encourage a shift to lower carbon transport

The measures set out in *Low Carbon Transport: A Greener Future*, mean that we project to save around 85 million tonnes of CO₂ over the third carbon budget period from 2018-2022, in addition to existing policies.

In The *UK Low Carbon Transition Plan*, we made a commitment to publish an implementation plan setting out milestones and monitoring mechanisms for delivering carbon reductions. The *Transport Carbon Reduction Delivery Plan* fulfils that commitment for the transport sector.

The plan sets out:

- How we will measure progress towards reducing greenhouse gases in the transport sector
- How we are implementing our transport carbon reduction plans, focusing in particular on the actions in *Low Carbon Transport: A Greener Future*
- The contribution of other Government Departments to reducing transport emissions
- What DfT is doing to contribute to emissions reductions in the sectors for which it has a share of emissions, namely waste, workplaces and jobs and agriculture, forestry and land management
- How DfT is reducing emissions from its own estate and operations and how progress is measured

Roles and Responsibilities

The delivery of carbon reductions in the transport sector is governed through three main processes:

- Strategic oversight by DfT's Senior Responsible Owner and Carbon Reduction Delivery Group;
- Day-to-day coordination by DfT's Carbon Reduction Programme Manager and Programme Office; and Interdepartmental coordination through the transport sector interdepartmental working group.
- The UK carbon reduction effort is coordinated by the Department for Energy and Climate Change, overseen by the Climate Change and Energy National Programme Board, and the Climate Change and Energy Delivery And Strategy High-level (DASH) Board.

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- Transport carbon reduction policy is delivered through a range of partners, including DfT's agencies and NDPBs, contracted bodies, other government departments, the devolved administrations, international organisations and other delivery partners such as industry and local/regional government.

Measuring progress

This plan provides a framework to ensure that our transport carbon reduction policies are delivered and that they are effective in reducing transport greenhouse gas emissions. It does this through:

- High-level indicators which measure progress across the transport sector
- Policy specific indicators and milestones which measure progress in individual policy areas
- Contextual data which allow us to build a broader understanding of how other factors are changing, and how they are influencing transport emissions

The Transport Sector pyramid, on page 29, illustrates the framework of information that will allow us to measure and monitor transport emissions and the progress of our policies in delivering transport emissions reductions. The accompanying table in Annex A lists the indicators and key milestones for the drivers and policies in the pyramid, and chapters 3-9 describe our policies in detail.

We will regularly review progress against the indicators and milestones in this plan. We will publish an update annually, setting out key trends and progress against our policies.

The most recent data shows that UK domestic transport greenhouse gas emissions were 131.9 MtCO₂e in 2008, which is 3% lower than in 2007, and the largest reduction in transport emissions since 1990. This was chiefly the result of reductions in road transport emissions, which were down 4% compared with 2007. These numbers represent encouraging movement in the right direction, and we will be analysing them in detail to understand what underlies the change.

Cars and vans



Cars currently represent 55% of domestic transport greenhouse gas emissions, with vans accounting for a further 12%⁶, a number which is growing as this sector expands.

We are working with the EU to promote ambitious but achievable regulation of carbon emissions in this sector through the implementation of the new car CO₂ regulation, which provides a solid framework for ongoing efficiency improvements. We are supporting the development of a similar regulation for vans, a draft version of which was published in October 2009. The substantial emissions reductions from these policies will be supplemented by a number of complementary technological measures that are being phased in (these include measures which will reduce the prevalence of high-Global Warming Potential Fluorinated gases (high-GWP F-gases), which account for DfT's share of emissions from the workplaces and jobs sector).

The above measures are supported by our programme of investment in low-carbon vehicle technologies, which are aimed at putting the UK at the forefront of ultra-low carbon vehicle development demonstration manufacture and use. On 25 February 2010 we announced that Milton Keynes, the North East, and London will be offered Plugged-In Places funding for electric vehicle charging infrastructure, and we launched the Plug-In Car Grant scheme, which will provide both private consumers and fleet managers with subsidy of 25% of the price of an eligible car, up to a maximum value of £5,000.

In addition to technological measures, our programme of consumer information helps consumers to choose greener vehicles and greener behaviours; and the Energy Saving Trust's green fleet reviews help fleet managers to maximise their efficiency. We have also provided support for eco-driving through a range of channels, and will continue to explore how to broaden the availability of eco-driving to the wider public.

⁶ Table 3.8, *Transport Statistics Great Britain*

<http://www.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/tsgbchapter3energyenvi2009.xls>

Finally transport taxes, while principally revenue-raising instruments can support environmental objectives where appropriate. Fuel duty and VED both provide incentives for greater fuel efficiency on public roads.

Biofuels

The use of sustainable biofuel forms a major component of our transport carbon reduction plans, and makes a key contribution to meeting our commitments under three key pieces of legislation:

- The Renewable Transport Fuel Obligation (RTFO) is a UK requirement⁷, for a fixed percentage of transport fuel to come from renewable sources;
- The EU Renewable Energy Directive (RED)⁸, requiring that 10% of transport fuel energy comes from renewable sources by 2020; and
- The EU Fuel Quality Directive (FQD)⁹, requiring that greenhouse gas emissions from transport fuels are reduced by 6% by 2020, and that biofuels meet certain sustainability criteria if they are to be counted towards targets.

The RTFO is administered through the Renewable Fuels Agency (RFA). The agency published its first report on progress against the RTFO in February 2010, showing that 2.7% of UK road transport fuel came from biofuel in 2008/09, ahead of the RTFO target. We are currently taking steps to ensure that biofuels are sourced sustainably through the carbon and sustainability reporting included in the RTFO.

While overall offering carbon savings, production of biofuel can generate greenhouse gas emissions in the agricultural industry. This accounts for DfT's 2% share of emissions in the Agriculture Forestry and Land Management (AFLM) sector.

Member States are required under the RED to set out their estimated trajectories and measures required for meeting the 2020 targets in a National Action Plan (NAP) for renewable energy. The deadline for submitting NAPs to the European Commission is 30 June 2010.

Sustainable Travel

Sustainable travel initiatives are aimed at encouraging transport users to change their behaviours and minimise carbon emissions by choosing the greener modes of transport, car sharing and similar. They focus in particular

⁷ The Renewable Transport Fuel Obligations Order 2007 No. 3072, as amended by The Renewable Transport Fuel Obligations (Amendment) Order 2009

⁸ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJEU L 140/16 of 5.6.2009)

⁹ Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (OJEU L 140/88 of 5.6.2009)

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on the promotion of “active” travel modes (cycling and walking) and sharing skills and delivering with our regional and local partners.

Our Sustainable Travel Towns programme has pioneered an approach that includes a combination of travel planning, improved information and marketing, as well as organising and providing new travel services. In February 2010 we published the evaluation of the programme. Across the three towns there has been a reported average 9% reduction in car trips between 2005 and 2009, which compares well with estimated trends elsewhere in the country.

On 2 March 2010 we announced plans for a new Urban Challenge Fund¹⁰ to support packages of measures designed to deliver a range of economic, health and environmental improvements in urban areas, including reduced levels of carbon emissions. Sustainable travel measures will be a key component of the packages supported by the new Fund and, as part of a wider range of interventions; we expect even greater benefits than those already achieved through the Sustainable Travel Towns initiative.

On 22 February 2010 we launched the *Active Travel Strategy*¹¹ with Department of Health aimed at getting more people cycling and walking more often and more safely. The strategy highlights the contribution that walking and cycling can make to improving health and tackling obesity, improving accessibility and tackling congestion, and reducing carbon emissions and improving the local environment.

Travel planning is an important way to encourage use of sustainable low carbon travel choices. It can include the use of a range of tools such as the promotion of walking and cycling, marketing, car clubs, and car sharing. Government is working with Business in the Community to promote travel planning for businesses and public sector bodies, and is also specifically promoting travel planning for schools, rail stations and the tourism industry.

The vast majority of the road network consists of local roads and action by local and regional partners is critical to the achievement of Government’s climate change objectives. Regional and local partners can maximise delivery and ensure that low carbon transport



initiatives are implemented in a way which is right for local areas. CLG are currently trialling new local carbon frameworks with nine local authorities to promote new and more effective ways of reducing emissions. We continue to

¹⁰ <http://www.dft.gov.uk/pgr/regional/localauthorities/funding/fundingstreams/urbanchallengefund/>

¹¹ <http://www.dft.gov.uk/pgr/sustainable/cycling/activetravelstrategy/>

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proactively encourage our regional and local partners to include carbon reduction as a key consideration through the delivery of their transport services, including through Local Transport Plans. We also continue to support and encourage local and regional partners by spreading skills and best practice and incentivising delivery.

New developments, including the Government's plans for new home building, are likely to have implications for transport emissions. Under the Local Democracy, Economic Development and Construction Act 2009¹², which comes into force from 1 April 2010, each region, other than London, is to have single regional strategy which will include carbon reduction and climate change adaptation policies. Planning Policy Statement 1, 'Planning for a low-carbon future in a changing climate,' which CLG are currently consulting on, sets out the importance of regional and local planning bodies taking account of reducing transport emissions when siting and designing new developments. DfT and CLG already promote good practice guidelines on delivering travel planning through the planning system¹³, including measures to help design facilities that reduce the need to travel, and building sustainable transport into new developments¹⁴. We also intend to go further by undertaking joint research with CLG reviewing the role of transport planning policy in delivering sustainable transport outcomes.

Buses

Buses accounted for 4% of domestic transport emissions in 2008¹⁵. We aim for buses to play a larger role in our transport system, so we need to ensure that overall efficiency is improved.

We are reforming the Bus Service Operators Grant (BSOG) to increase the incentive for bus operators to be fuel efficient. In December 2009 we announced that in the long term BSOG would be replaced with an incentive per passenger. We anticipate this scheme will be fully rolled out by 2020. As an interim step we have broken the link between BSOG rates and fuel duty rates, added incentives for the use of low-carbon buses starting from April 2009, and added incentives for fuel efficiency starting from April 2010.

We aim to move, over time, to a greater penetration of low-carbon buses, as with other road vehicles. To overcome high costs, we are providing substantial funding over 2009-10 and 2010-11 to invest in low carbon bus technology. As part of the budget on 24 March we announced increases to

¹² Available at: http://www.opsi.gov.uk/acts/acts2009/ukpga_20090020_en_1

¹³ *Good Practice Guidelines: Delivering travel plans through the planning system* available at: <http://www.dft.gov.uk/pgr/sustainable/travelplans/tpp/>

¹⁴ *Building Sustainable Transport into New Developments: A Menu of Options for Growth Points and Eco-towns*, available at: <http://www.dft.gov.uk/pgr/sustainable/sustainabletransnew.pdf>

¹⁵ Table 3.8, *Transport Statistics Great Britain*

<http://www.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/tsgbchapter3energyenvi2009.xls>

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this funding which now totals £40m over the period, leading to the delivery of approximately 450 new low carbon buses over the next two years and a saving of over ten thousand tonnes of CO₂ a year.

We are supporting eco-driving for bus drivers by promoting the results of our £1m Safe and Fuel Efficient Driving (SAFED) for Bus and Coach demonstration project. In an earlier pilot, SAFED drivers achieved an average 12% fuel saving and a 60% saving in safety-related faults. In addition, we have published a consultation¹⁶ on freight eco-driving which includes an option for regulatory change – making eco-driving training a mandatory part of the Driver CPC – which would also apply to bus drivers.

Rail

Diesel trains emitted 2.4 MtCO₂ in 2008, 1.8% of domestic transport emissions. Power generation for electrified rail is estimated to produce a further 1.5 MtCO₂ from the energy sector. While rail performs well from a carbon efficiency perspective compared with other modes, we are working to improve that still further. The rail industry has set up a working group to explore the case for setting environmental targets to focus industry attention on reducing carbon emissions and other environmental impacts.

We are supporting a range of industry initiatives to improve the energy efficiency of the rail network, including through the roll-out of regenerative braking, trialling of biofuels and energy meters, examining the potential for onboard and trackside energy storage and research on advisory systems to improve the efficiency of train driving. The Department is also playing an active role in ensuring that new trains are more efficient than those they replace, including through forthcoming rolling stock procurements such as Thameslink.

We will electrify the Great Western Mainline route from London via Bristol to Swansea, and the lines between Liverpool to Manchester, Preston and Liverpool, Manchester and Blackpool. These electrification schemes are expected to deliver a net reduction in carbon emissions of 0.14 Mt CO₂ per year in addition to improving reliability and value for money.

On 11th March we published High Speed Rail, which responded to work carried out by HS2 Ltd to develop a detailed proposal for a high speed rail line from London to the West Midlands as well as to assess the options for a wider network. In High Speed Rail we proposed to take forward, subject to public consultation, a core British high speed rail network running from London to Manchester and Leeds via Birmingham, with high speed trains running on to Glasgow and Edinburgh on existing infrastructure. As part of its assessment of the business case for a London to Birmingham line, HS2 Ltd assessed the potential carbon impacts of such a line, and estimated that they would range from -25MtCO₂ (a saving) to +26.6MtCO₂ (an increase), over a 60-year

¹⁶ <http://www.dft.gov.uk/consultations/open/2010-11/consultation.pdf>

period. The most pessimistic forecast would therefore be equivalent to less than a 1 per cent increase in transport carbon emissions. A wider network could offer more significant carbon savings due to its greater potential to generate modal shift. The proposed network would offer major benefits to travellers, including faster journeys and reduced overcrowding, as well as wider economic benefits generated through greater connectivity. The Government plans to consult on the proposals set out in High Speed Rail in Autumn 2010.

Freight

De-carbonising freight and logistics is a key part of our longer term strategy but the nature of the sector makes it particularly challenging. Emissions from freight movements stem primarily from the road sector with HGVs representing 18% of total domestic transport greenhouse gas emissions.

Initial discussions with freight and logistics operators and customers have demonstrated a need for a consistent carbon measurement and reporting method for the logistics transport supply chain, and the Department launched an industry-led steering group aiming to develop such a method in July 2009. The group has made considerable progress in working towards addressing key issues, including how to allocate carbon emissions between customers who are sharing loads. A further work programme has been set for 2010.

In July 2009 we published the results of a review¹⁷, conducted by Ricardo on behalf of the Department, of the CO₂ savings that could be achieved by using a number of lower carbon HGV technologies. We are working with partners to prioritise which technologies have the potential to generate significant fuel and therefore carbon savings across the full range of road freight operations, including a focus on small and medium-sized road freight operations. The outputs of this work will be used to identify how we might best encourage operators to make use of and invest in these technologies.

As part of the budget on 24 March we announced that, subject to the outputs of a feasibility study, £3.5m has been allocated to the Department to fund a Low Carbon Truck demonstration project. The project aims to demonstrate the potential fuel and CO₂ savings which can be achieved through use of lower carbon heavy good vehicles (HGVs) such as hybrids.

Our preliminary analysis showed the freight industry would save up to £300m in fuel costs a year by 2022, and 3 million tonnes in CO₂ over a five year carbon budgetary period, through a 90% uptake in eco-driving courses. We have published a consultation¹⁸ on three options for achieving this: no change on the current approach (eco-driving training continues to be undertaken on a voluntary basis); a non-regulatory approach aiming to increase the promotion

¹⁷ *Review of low carbon technologies for heavy goods vehicles*, available at: <http://www.dft.gov.uk/pgr/freight/lowcarbontechnologies/>

¹⁸ <http://www.decc.gov.uk/en/default.aspx?n1=3&n2=53&n3=77&n4=1241&preview=true>

of the benefits of eco-driving training (through increased marketing or improved best practice guidance); and regulatory change – making eco-driving training a mandatory part of the Driver CPC.

The Department also supports carbon reduction through freight mode shift from road to rail and water, the more carbon efficient modes for freight transport. In 2009-10 this is expected to save some 46,000 tonnes of CO₂. In addition, our Freight Best Practice programme provides advice to the freight industry on how to reduce fuel consumption and so carbon emissions. We are extending the programme to include advice to the rail and water freight industries, and we launched a new Van Best Practice Programme in the autumn 2009.

Aviation & Shipping

In 2008, domestic aviation emissions represented around 1.7% and domestic shipping around 4.1% of greenhouse gas emissions from domestic transport. When international aviation and shipping are included, domestic and international aviation emissions allocated to the UK¹⁹ represented 21% and domestic and international shipping emissions 7% of all greenhouse gas emissions from UK transport in 2008.



Given the international nature of the aviation and shipping industries, the Government believes that reducing emissions in these sectors can best be achieved through international cooperation. We continue to argue for a sectoral approach in international forums such as the United Nations Framework Convention on Climate Change (UNFCCC), International Maritime Organization (IMO) and International Civil Aviation Organization (ICAO). Progress in these international forums to date has

been slow, so we continue to explore other options, notably those proposed at EU level, such as including shipping emissions in the EU Emissions Trading System (EU ETS). It has already been agreed that CO₂ emissions from aviation will be brought into the EU ETS in 2012.

In January 2009 we set a target to reduce emissions from UK aviation²⁰ below 2005 levels by 2050. The Committee on Climate Change (CCC) provided

¹⁹ Although international aviation and shipping emissions are not currently part of the UK's carbon budgets under the Climate Change Act, "UK" emissions from international aviation and shipping are reported to the United Nations Framework Convention on Climate Change (UNFCCC) as memo items based on bunker fuel sales, consistent with IPCC guidance.

²⁰ In the absence of an internationally agreed emissions allocation methodology for international aviation and shipping emissions, "UK Aviation" is defined as all domestic flights and all international flights departing from the UK.

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advice on the prospects for achieving that target in December 2009²¹, and we are now taking forward a programme of work to develop costed policy options for delivering the 2050 target and will set out our plans in due course.

We are working to achieve agreement in the Marine Environment Protection Committee (MEPC) of the IMO on technical and operational measures to reduce CO₂ emissions from shipping. The two main tools under discussion are the Energy Efficiency Design Index (EEDI) and the Energy Efficiency Operational Indicator (EEOI), which are currently being trialled. It is hoped that the trials will prove successful and final versions will be agreed in 2010.

Emissions from defence transportation are included in the transport sector, and military aviation and shipping make up 2% of transport greenhouse gas emissions. Policies to reduce defence operational emissions, including transport emissions, are set out in the MOD's plan *Defence in a Changing Climate*²².

Government Estate and Operations

The Department for Transport's estate targets currently cover in excess of 1,000 sites ranging from city office blocks to Coastguard equipment stores. We are working to achieve the current Sustainable Operations on the Government Estate (SOGE) targets which finish at the end of the 2010-11 financial year and cover the carbon dioxide emissions from offices and road vehicles.

Over the next year we plan to implement major improvements to DfT's main central office, as well as at DVLA Swansea. This will be supported by a wider programme of heating, lighting, energy management and energy efficiency work. Our plans for reduction of our vehicle emissions focus on improving the efficiency of hire cars used by the department, supported by guidance aimed at limiting the use of private cars for DfT business travel.

We are currently developing plans across the Department to manage the energy and vehicle emissions reductions required to achieve future carbon budgets. Those plans include exploring estate rationalisation options, improved ICT infrastructure, feasibility of on-site renewable energy generation, increased automated metering, improvements to the efficiency of DfT fleet vehicles, and a review of business travel policy and communications campaigns to keep the need for sustainable performance in focus.

²¹ Committee on Climate Change (December 2009), *Meeting the UK Aviation target - options for reducing emissions to 2050*, available at <http://www.theccc.org.uk/reports/aviation-report>.

²² *Defence in a Changing Climate*, <http://www.mod.uk/NR/rdonlyres/44EC5708-7C49-4E69-AD50-1F516DFE47A7/0/DefenceinaChangingClimateDSACReport.pdf>

1. Roles and Responsibilities

- 1.1** This chapter sets out how DfT, as the lead department for the transport sector, will manage and coordinate carbon reduction in the sector. It describes the key governance structures in DfT and central government more widely. It also lists our key delivery partners for carbon reduction, and our relationship to them.

Governance

- 1.2** Governance structures for the DfT carbon reduction programme are set out on page 19. This section covers governance in relation to transport carbon reduction; governance in relation to DfT's operations and estate emissions is covered in the chapter on Government Estate and Emissions.
- 1.3** The Department for Transport's aim is transport that works for everyone. This means a transport system that balances the needs of the economy, environment and society. One of the Department's five key strategic objectives is "To reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of avoiding dangerous climate change".
- 1.4** Within DfT, the Environment and International Director is the Senior Responsible Owner (SRO) for the carbon reduction programme. He is assisted in this role by the Carbon Reduction Delivery Group (CRDG) which is composed of key Directors with a stake in the programme. The CRDG is the key body for overseeing the carbon reduction effort in the transport sector, as well as addressing the wider impacts and interactions of policy in this area. Where necessary, the CRDG may escalate issues to the DfT strategy sub-committee or the DfT Board.
- 1.5** Responsibility for day-to-day coordination of the programme rests with the Carbon Reduction Programme Manager. He is assisted in this role by the Programme Office, part of the Department's Environment Policy unit. Working-level leads for each of the policies covered in the programme report to the Programme Manager who in turn reports to the CRDG. The carbon reduction programme is linked to a number of other programmes within the department, the key ones of which are shown on page 19.

1.6 Inter-departmental working is handled through five main forums:

- At ministerial level, the Environment and Energy sub-committee of the Ministerial Committee on Economic Development (ED(EE)), and its official-level counterpart (ED(EE)(O))
- The programme SRO sits on the Climate Change and Energy National Programme Board (CCE NPB); and
- The programme is represented on the Climate Change and Energy Delivery And Strategy High-level (DASH) Board by DfT's Director General for International Networks and Environment.
- The Transport Sector inter-departmental Working Group, chaired by the Programme Manager, coordinates work in the transport sector specifically;
- The Programme Manager also sits on the inter-departmental Carbon Budgets Working Group coordinating carbon reduction work across sectors.

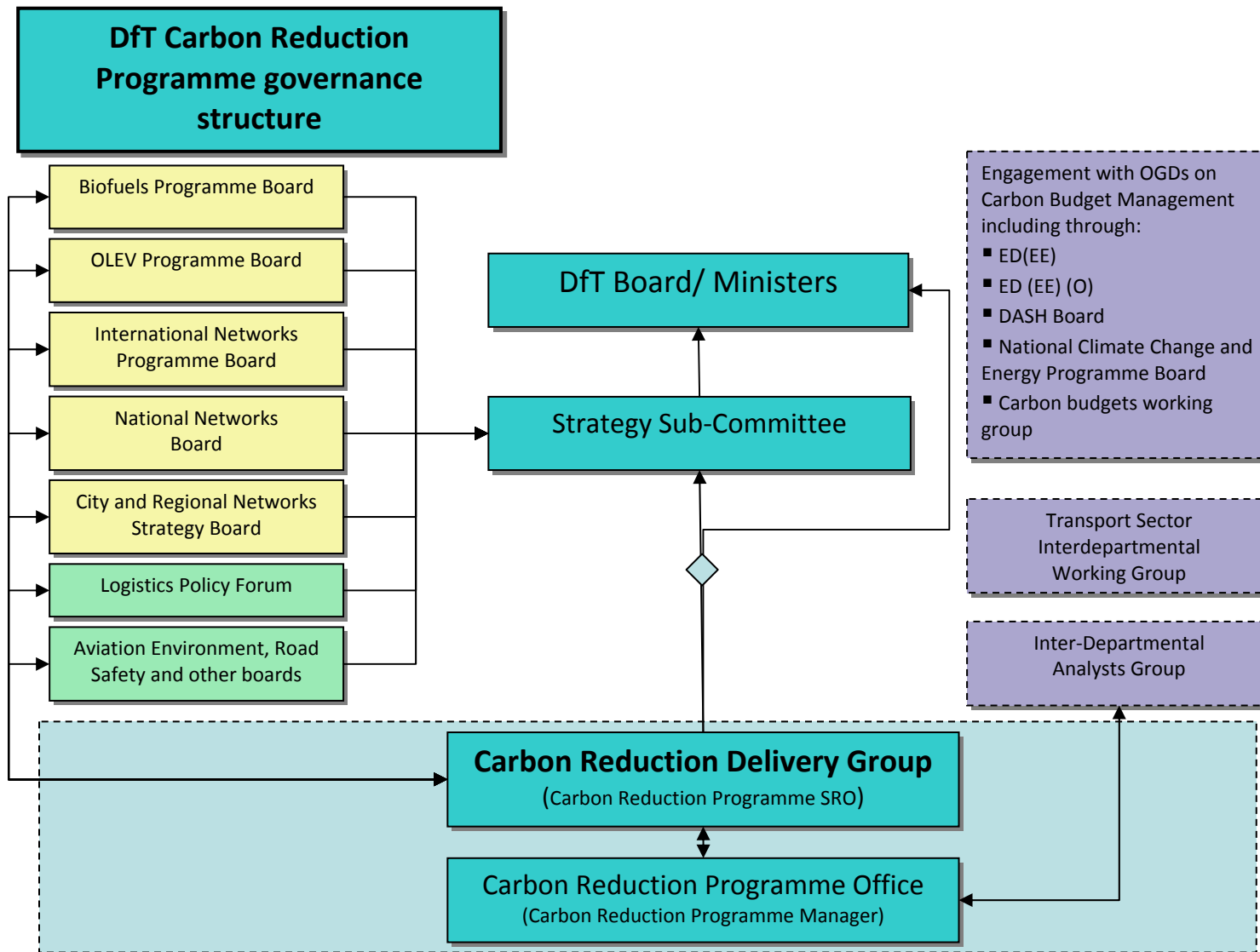
Reporting and performance management

1.7 As mentioned above, the programme reports internally to the CRDG. Performance reports against the indicators and milestones in this plan will be submitted to the CRDG, and it will initiate any necessary corrective action.

1.8 The programme also reports to the DfT Board. Its activities are included in the DfT annual report and autumn performance report to Parliament. The programme provides high-level performance reports to the the Climate Change and Energy National Programme Board and DASH Board and thence to the Treasury, monitoring Public Service Agreement 27²³ on climate change, and to Prime Minister's Delivery Unit.

²³ Full details of the Government's Public Service Agreements are available at: http://www.hm-treasury.gov.uk/pbr_csr07_psaindex.htm

Transport Carbon Reduction Delivery Plan



Delivery partners

The diagram on page 23 shows DfT's main delivery partners.

DfT Agencies/Offices/NDPBs

- 1.9** The Department for Transport has a number of executive agencies, offices and NDPBs. The key ones for carbon reduction delivery are:
- The Office for Low Emission Vehicles (OLEV), responsible for delivering our low emission vehicle programme
 - The Renewable Fuels Agency, responsible for monitoring performance against the Renewable Transport Fuels Obligation
 - The Driver Vehicle and Licensing Agency, responsible for administering Vehicle Excise Duty and collecting data on carbon efficiency
 - The Driving Standards Agency (DSA), responsible for driving standards, including for driver trainers. DSA have produced eco-driving training material and included an eco-driving assessment in the practical test, and are developing further proposals on eco-driving

Contracted Bodies

- 1.10** A number of key carbon reduction policies are delivered through contracted bodies, including:
- Biofuel research overseen by the Carbon Trust
 - Our Cycling programme overseen by Cycling England
 - Our fleet best practice and consumer advice programmes overseen by the Energy Saving Trust
 - A range of key technological research overseen by the Technology Strategy Board
 - The car efficiency labels for new and used cars, overseen by the Low Carbon Vehicle Partnership

Other Government Departments

- 1.11** Most of the policies in this plan are led by the Department for Transport. However, as part of The *UK Low Carbon Transition Plan* a number of other Government departments were given shared responsibility for transport sector emissions. This was in recognition of the impact that their policies can have on individual sectors of the economy that generate transport demand. In turn, the demand generated by these sectors drives transport carbon emissions. The transport carbon allocations for the first carbon budget period, 2008-12, are set out below.

Transport Carbon Reduction Delivery Plan

Table 1.1: Share of transport emissions by department

Department	Share	
	Percent	MtCO ₂ e
DfT	76	493
BIS	9	58
CLG	4	26
DCMS	4	26
MOD	3	19
DECC	1	6
DCSF	1	6
DH	1	6
DEFRA	1	6
	100	648 ²⁴

1.12 This plan sets out indicators and milestones to reflect these allocations. Where an indicator or milestone relates to another Government department, this will be noted in the text.

1.13 In addition, DfT has a share of the responsibility for emissions in some sectors that are led by other departments. These are set out below.

Table 1.2: DfT's shares of other sectors

Sector	Share	
	Percent	MtCO ₂ e
Waste	1	1
Workplaces and jobs (industrial process)	6	5
Agriculture, Forestry and Land Management	2	5

1.14 Finally, as described in detail in Chapter 5 on sustainable travel, regional and local government have a key role to play in delivering transport carbon reduction.

Devolved Administrations

1.15 Successfully reducing the UK's greenhouse gas emissions requires all countries in the UK to work together to ensure that the right policies are in place. The *UK Low Carbon Transition Plan* assigned responsibility for delivering the UK carbon budget to Whitehall Departments. The Devolved Administrations have their own climate change targets, and the reductions that they achieve will contribute to the overall UK budget. The DfT will work with the Devolved Administrations to ensure that there is a coherent, joined-up approach to achieving these targets. The Devolved Administrations' plans are summarised in Chapter 11 on pages 79-82 below.

²⁴ Note that the numbers do not add up to the total due to rounding.

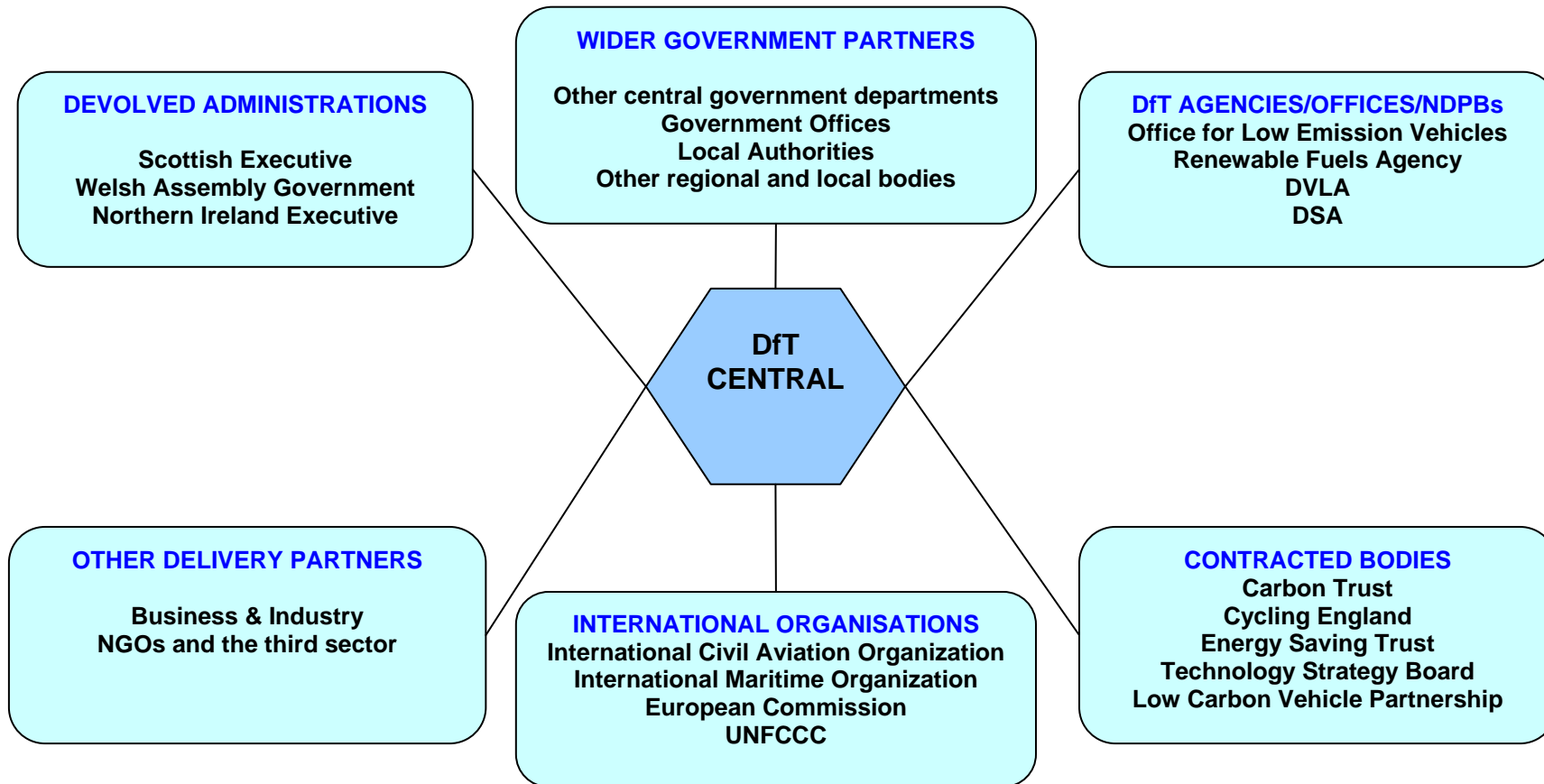
International Organisations

1.16 Many greenhouse gas reduction policies are best delivered at a national or local level, but there are many others which require international coordination. This is especially so for the aviation and shipping sectors, where the international nature of the industry is such that the most effective policies are international in nature. Some of the key international bodies are set out on page 23 and discussed in more detail in the chapter 9.

Other Delivery Partners

1.17 A range of industry bodies, service providers, NGOs and third sector organisations are delivering carbon savings through their activities. These are described throughout this plan.

DELIVERY PARTNERS



2. Transport Sector Overview

2.1 This chapter sets out the framework for carbon reduction in the UK, and how transport fits into that framework, including a high-level overview of the key carbon reduction policies in the sector. It explains how we will manage the performance of our transport carbon reduction policies, and provides a summary of recent progress.

The Carbon reduction framework

2.2 As outlined in Chapter 1, the Climate Change Act 2008²⁵ has created a legal requirement for at least a 34% reduction in UK greenhouse gas emissions by 2020, and at least an 80% reduction by 2050 from a 1990 baseline. This is supported by a system of UK carbon budgets²⁶ imposing the requirement that total UK carbon emissions would be reduced from the same baseline across five-yearly carbon budget periods:

- a 22% reduction over the first carbon budget period, 2008-2012;
- a 28% reduction over the second carbon budget period, 2013-2018; and
- a 34% reduction over the third carbon budget period, 2018-2022.

2.3 The *UK Low Carbon Transition Plan*²⁷, published in July 2009, set out a pilot system of departmental carbon budgets, designed to ensure clarity over the allocation of responsibility across Government for meeting our UK carbon budget for the first 5-year carbon budget period. DfT has been allocated responsibility for a 76% share of total transport sector emissions over 2008-2012. Reflecting the wide range of influence on transport's emissions beyond DfT's policies, responsibility for the remainder of transport's emissions is divided between several other Government departments.

2.4 DfT also has a relatively minor share of emissions in the Workplaces and Jobs sector, the Agriculture, Forestry and Land Management sector; and the Waste sector, representing the impact of our policies in these sectors.

²⁵ Climate Change Act 2008, Chapter 27, available at: http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1, as amended by The Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 (SI 2009/1258)

²⁶ Under The Carbon Budgets Order 2009 (SI 2009/1259)

²⁷ *UK Low Carbon Transition Plan*, Department of Energy and Climate Change, July 2009, available at: http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx

2.5 The carbon reduction framework is described in more detail in *Climate Change: Taking Action*²⁸.

Key transport carbon reduction policies

2.6 The *UK Low Carbon Transition Plan*, published in July 2009, set out the policies which will enable the UK to meet its carbon budgets. Our transport carbon reduction strategy *Low Carbon Transport: A Greener Future*, published at the same time, detailed our actions to reduce transport carbon emissions against three themes:

- Supporting a shift to new technologies and cleaner fuels
- Promoting lower carbon choices
- Using market mechanisms to encourage a shift to lower carbon transport

2.7 The measures set out in the strategy mean that we project to save a further 17.7 million tonnes of CO₂ in 2020 in addition to 15 million tonnes of CO₂ estimated benefit from our existing policies, leading to savings of around 85 million tonnes of CO₂ over the third carbon budget period, from 2018-2022²⁹. The key policies delivering these reductions are:

- The EU New Car CO₂ Regulation, which establishes a clear framework for industry to develop lower-emitting cars through increasing efficiency targets to 2020
- The draft EU New Van CO₂ Regulation, which is under negotiation at present and proposes a similar framework for vans, which are the fastest growing sector of vehicle usage
- A range of complementary measures such as gear shift indicators, low rolling-resistance tyres, tyre pressure monitoring systems, low viscosity lubricants and more efficient air-conditioning systems which will further reduce emissions from cars
- Increasing use of sustainable biofuels across the transport sector, as required by the Renewable Transport Fuel Obligation and Renewable Energy Directive
- A major programme of rail electrification
- £40m funding for low carbon buses and eco-training for bus drivers
- Increased use of lower-carbon HGV technologies (e.g. low rolling resistance tyres)

²⁸ <http://www.decc.gov.uk/en/default.aspx?n1=3&n2=53&n3=77&n4=1241&preview=true>

²⁹ *Impact Assessment of the Carbon Reduction Strategy for Transport, Low Carbon Transport: A Greener Future*, July 2009, available at: <http://www.dft.gov.uk/pgr/sustainable/carbonreduction/ia.pdf>

2.8 In addition to the above policies, there are a wide range of important measures for which the carbon savings are less certain, or which are early in their development, but which are, nevertheless, key parts of our strategy. These are:

- Support for ultra-low carbon vehicles, including a major research programme, funding for electric vehicle infrastructure, and consumer incentives to encourage early uptake.
- Reform of Bus Subsidy to increase the incentive for fuel efficient operations
- Work to develop effective measurement of freight carbon emissions, enabling further policies to be developed in this area
- Increasing the uptake of eco-training for HGV drivers
- Work to reduce carbon emissions in the aviation and shipping sectors, especially through international negotiation
- Promoting sustainable travel through our Sustainable Travel Town Demonstrations, and support for cycling and walking
- Providing support and tools for regional and local partners in reducing carbon emissions
- Where appropriate, the use of fiscal measures to incentivise environmentally-friendly behaviour

2.9 The above is by no means exhaustive, and the full range of our transport carbon reduction policies is set out in detail in chapters 3-9.

2.10 It is worth noting that the majority of the measures expected to lead to the most significant emissions savings – for instance vehicle CO₂ standards, advanced biofuels, rail electrification – will not have the bulk of their impacts until the second and third carbon budget periods or later.

Measuring progress

2.11 This plan provides a framework to ensure that these policies are delivered and that they are effective in reducing transport carbon emission. It does this through:

- High-level indicators which measure progress across the transport sector
- Policy specific indicators and milestones which measure progress in individual policy areas
- Contextual data which allow us to build a broader understanding of how other factors are changing, and how they are influencing transport emissions

2.12 The Transport Sector pyramid, on page 29, illustrates the framework of information that will allow us to measure and monitor transport emissions and the progress of our policies in delivering emissions reductions. The accompanying table in Annex A provides indicators and key milestones for the drivers and policies in the pyramid.

Transport Carbon Reduction Delivery Plan

- 2.13** At the top of the pyramid (tiers 1-2) are transport greenhouse gas emissions in total, and by transport mode. Since we are ultimately aiming for total greenhouse gas emissions to reduce, it will be important for overall transport emissions to decrease. However, we may expect relative mode shares of transport emissions to change with some potentially increasing, for example if we saw significant modal shift to lower carbon modes. It is a reduction in the level of overall transport emissions that is important.
- 2.14** Tier 3 of the pyramid shows some of the factors which drive transport greenhouse gas emissions. The behaviour of transport users (such as distance travelled and on which modes), the efficiency of transport technology (emissions per unit of travel) and the type of fuel used to power transport together generate carbon emissions in each mode of transport, together combine to produce the transport greenhouse gas emission total. It is not possible to list all relevant factors under Tier 3 as we are constrained in our selection of indicators by the data currently available to the Department. It is also important to note that we would not expect all of these factors to make an equal contribution to greenhouse gas reduction. Indeed, transport is vital for economic growth and personal mobility, and our plans assume significant growth in transport activity. Our policies aim to encourage smarter travel choices and reduce the carbon emissions resulting from travel activity.
- 2.15** The bottom half of the pyramid (tier 4 in the table) shows the policies which impact on emissions from each transport mode. It also shows the cross-cutting sustainable travel policies which are aimed at supporting and encouraging transport users to make lower-carbon travel choices.
- 2.16** Finally there are a number of contextual factors which impact on travel behaviour and transport emissions, which Government doesn't necessarily influence directly and/or which sit outside the transport sector. These can often help to explain broader trends in transport emissions and the wider economy and to highlight the key risks and opportunities around our carbon reduction policies. The table in Annex A includes measures for these factors; however, they are not indicators because we do not seek to influence them through transport policy. For instance, while high GDP might increase the level of travel activity and could in some circumstances increase emissions, we would not seek to use this as a lever for reducing emissions. Our aim is to help deliver economic growth, while at the same time reducing carbon emissions.
- 2.17** Consistent with the advice of the Committee on Climate Change (CCC), international aviation and shipping are not included in our carbon budgets and emissions reductions targets for the time being, due to the lack of a globally agreed methodology to allocate responsibility for these journeys to individual countries. Nevertheless, we have a number of major policies in place to reduce greenhouse gas emissions from aviation, as detailed in chapter 9. The Government will make proposals to Parliament on the case for bringing aviation

Transport Carbon Reduction Delivery Plan

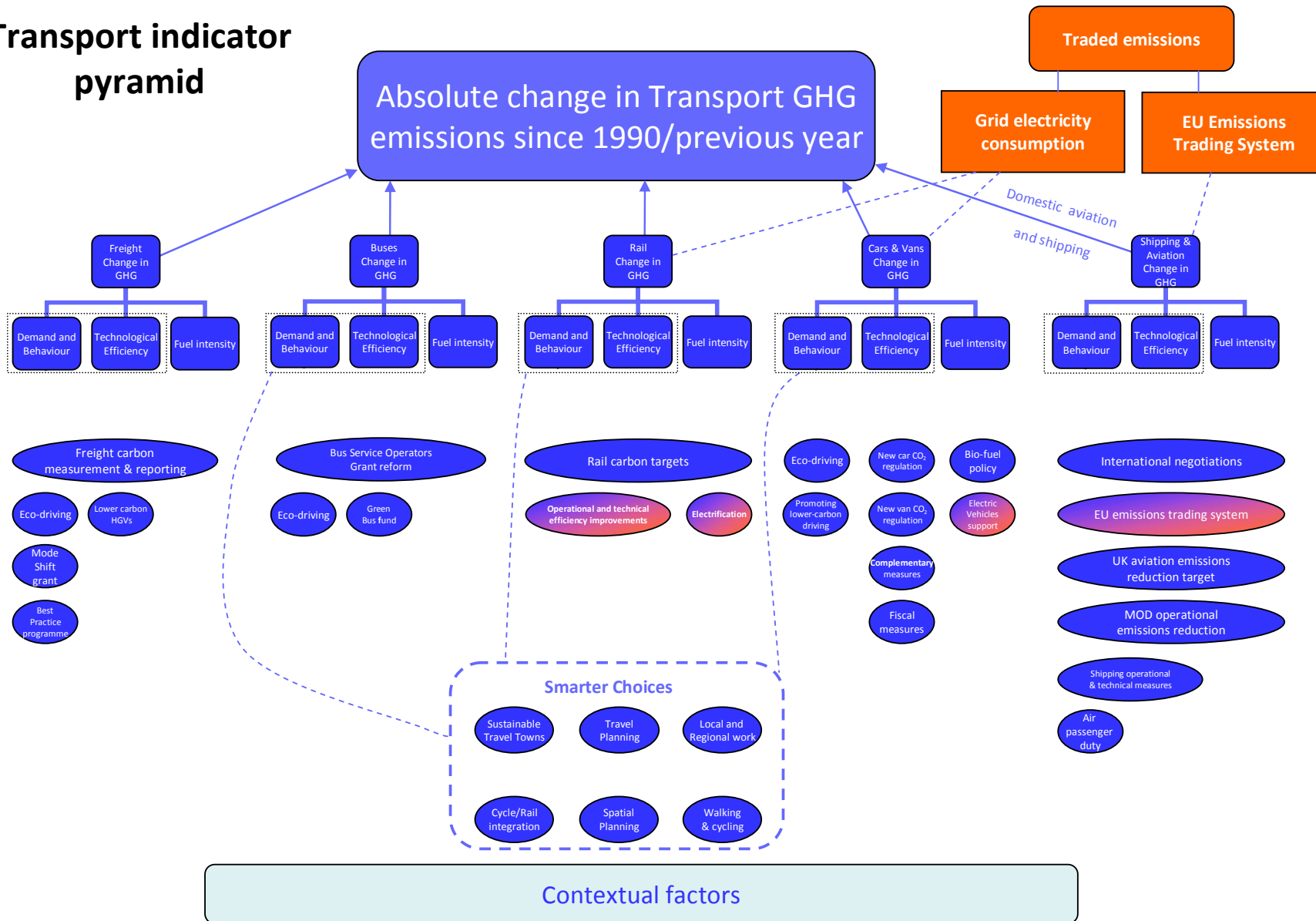
emissions fully within the UK's carbon budgeting framework by the end of 2012, taking account of progress towards a global agreement.

- 2.18** It is important to note that the different policy areas can have complementary and overlapping effects. This means that the lower-level indicators combined do not add up to total transport emissions. It also means that there may be some “double counting”, especially since multiple policies may have an effect on an indicator with no easy way to separate their individual impacts.
- 2.19** As noted previously, DfT is accountable for a 76% share of transport sector emissions over the first carbon budget period. The remaining 24% is divided between several other government departments. Reflecting this, some of the indicators and milestones set out in the indicator table are owned by other departments; these have been chosen to measure progress in delivering cross-government policies, but also to measure the influence of other sectors of the economy on transport demand (which in turn drives transport emissions).
- 2.20** Although DfT does not have a share of traded sector emissions (i.e. those that are covered by the EU Emissions Trading System, such as electricity generation, cement etc), domestic and international aviation will become part of the EU Emissions Trading System from 2012. Further, electrified rail and road transport contribute to emissions in that sector, and as the transport sector becomes increasingly electrified this is likely to increase. A number of our policies will contribute to reducing emissions in the traded sector through improving the efficiency of the relevant vehicles. This is reflected in the indicator pyramid.
- 2.21** The full detail of our indicators, and the key policy milestones, are set out in Annex A.

Reporting on this plan

- 2.22** We will regularly review progress against the indicators and milestones in this plan. We will publish an update annually, setting out key trends and progress against our policies.

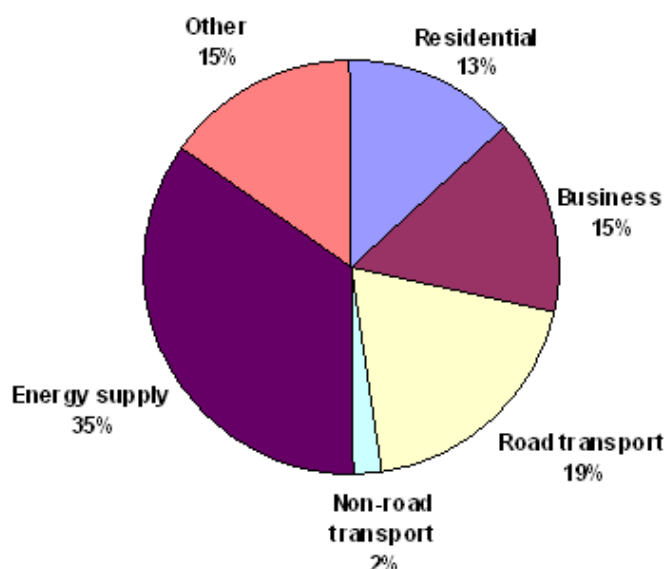
Transport indicator pyramid



The transport sector: recent progress

- 2.23** This section describes recent trends in transport carbon emissions, and progress in implementing carbon reduction policies in the transport sector since the strategy was published.
- 2.24** The most recent emissions data is for 2008, and since our carbon reduction strategy was published in July 2009, it is not yet possible to comment on how effective our policies have been in reducing carbon emissions. However, 2008 is the first year of the current 5-year carbon budget period, and it is important that we remain aware of overall emissions trends so we can identify risks and opportunities to our emissions reduction plans.
- 2.25** UK domestic transport greenhouse gas emissions were 131.9 MtCO₂e in 2008, which is 3% lower than in 2007, and the largest reduction in transport emissions since 1990. This was chiefly the result of reductions in road transport emissions, which were down 4% compared with 2007. As shown in figure 1, transport's share of overall UK domestic greenhouse gas emissions was 21%, which is unchanged compared with 2007. These numbers represent an encouraging change in the right direction, and we will be analysing them in detail to understand what underlies the change. The UK carbon budgets require GHG emission levels substantially below 1990 levels. For the year 2008, UK GHG emissions were 19% below 1990 levels, but domestic transport's emissions remain 6% above 1990 levels, highlighting the importance of reducing emissions in future.

Figure 1 – 2008 UK domestic greenhouse gas emissions by sector

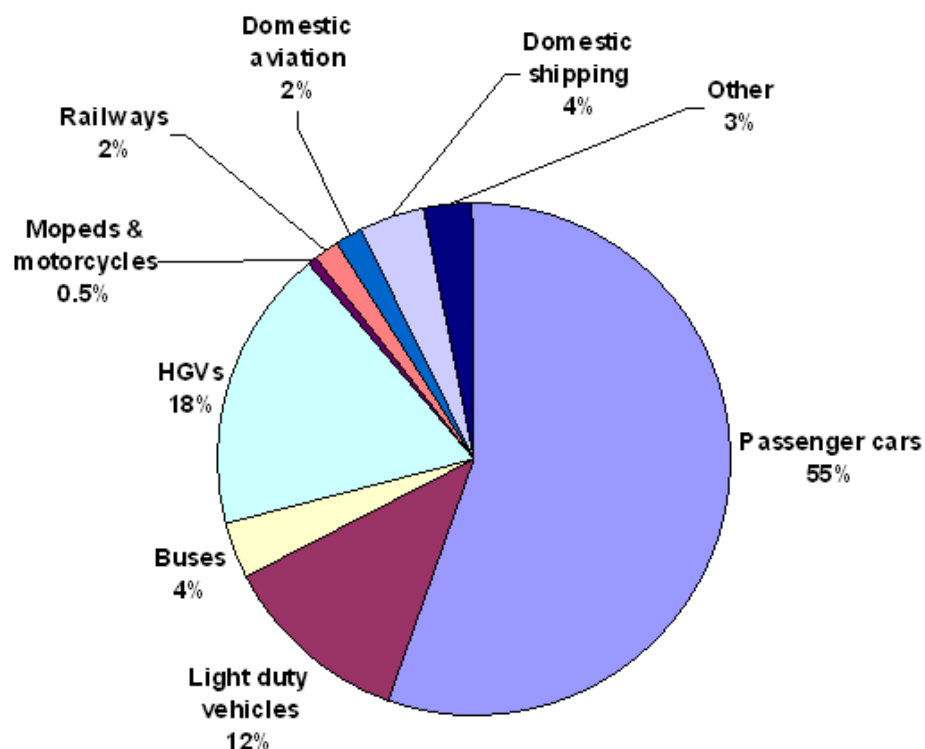


Total GHG emissions in 2008 = 627.6 Mt CO₂e

'Other' includes: Non-road transport; Public; Agriculture; Industrial process; Waste; Land use change.

Source: National Atmospheric Emissions Inventory

Figure 2 – 2008 UK domestic transport greenhouse gas emissions



Total GHG emissions from domestic transport in 2008 = 131.9 Mt CO₂e
 'Other' includes: LPG emissions; Road vehicle engines; Aircraft support vehicles; Railways - stationary combustion; Military Aircraft and shipping.
 Source: National Atmospheric Emissions Inventory

2.26 Figure 2 shows emissions by mode. The shares are very similar to those for 2007. Cars remain the single largest emitter, with HGVs also significant contributors; however, it is notable that these modes have shown the most progress since the baseline year; both are currently around their 1990 level of emissions. Other modes have smaller shares. Aviation and vans in particular, and to a lesser extent shipping, buses and rail have shown substantial growth in their emissions since 1990, though their share of transport emissions remains relatively small.

Cars & Vans

2.27 In our carbon reduction strategy, we detailed measures to promote low carbon vehicles through supporting technological research, incentivising early market uptake and funding recharging infrastructure. Since then the cross-government Office for Low Emissions Vehicles (OLEV) has been formed to administer these measures. In December 2009 we launched trials of ultra-low carbon cars in various locations around the UK, and earlier this year we launched the procurement of over 150 low carbon and electric vans in public sector organisations. Further, we announced on 25 February 2010 the full details of our

Plug-In Car Grant for low carbon cars, together with the results of the first round of the Plugged In Places competition.

- 2.28** In October 2009 the European Commission published a draft regulation on new van CO₂ emissions. The regulation is aimed at establishing a framework of targets to increase the efficiency of new vans, similar to an existing regulation of cars. We expect that the final regulation will be agreed by the end of 2010.
- 2.29** November 2009 saw the launch of a new TV and radio campaign, forming part of the cross-government ACT ON CO₂ climate change communication strategy. The campaign aims to inform consumers about climate change issues in a way that is relevant to an individual; to communicate that car travel is the single biggest source of transport CO₂; and, as a call to action, encourage drivers to drive 5 miles less a week. Research has shown that this is seen as a realistic, achievable step that people could take without changing their lifestyle. The theoretical CO₂ saving if every UK licence holder reduced their driving by 5 miles a week is estimated at around 2.5 million tonnes of CO₂.
- 2.30** Consumers need access to the information that will allow them to make green choices. In 2009 we worked with the Low Carbon Vehicle Partnership, the Society of Motor Manufacturers and Traders and the Vehicle Certification Agency to support their development of a colour-coded label to be displayed on used cars in dealerships. The label was introduced in November 2009. It includes data on the used car's CO₂ emissions and fuel economy so that purchasers can make an informed choice. The used car label follows the successful model of the existing colour-coded label for new cars introduced in 2005, which is now used in over 90% of dealerships.
- 2.31** In September 2009 fuel duty increased by 2p per litre. A further increase is due in April 2010, together with changes to VED will further incentivise consumers to choose best-in-class vehicles, especially for new vehicles. While VED and fuel duty are primarily revenue-raising measures, they are also helpful tools for incentivising green consumer choices.

Biofuels

- 2.32** In January 2010 the Renewable Fuels Agency submitted its first report³⁰ on the biofuel targets set in the Renewable Transport Fuel Obligation (RTFO). It showed that 2.7% of UK road transport fuel supplied was biofuel, exceeding the 2.5% target set for the first year. It also found that biofuels supplied in the UK achieved an average greenhouse gas saving of 46% compared with fossil fuels.

³⁰ *Year One of the RTFO*: Renewable Fuels Agency report on the Renewable Transport Fuel Obligation 2008/09, available at: <http://www.renewablefuelsagency.gov.uk/yearone/>

2.33 The 2010 Budget announced funding for a project to demonstrate the potential to use biomethane as a road transport fuel, and encourage greater uptake in the future. Subject to a feasibility study commissioned by the Department for Transport, the project will make available £3.5 million to fund biomethane trials for trucks and heavy goods vehicles in several areas across the UK.

Sustainable Travel

2.34 In February 2010 we published the evaluation of the “Sustainable Travel Town” demonstration projects³¹. Across the three towns - Darlington, Peterborough and Worcester – there has been a reported 7% to 9% reduction in car trips, a 26% to 30% increase in cycling trips and a 10% to 13% increase in walking trips between 2005 and 2009. This compares well with estimated trends elsewhere in the country.

2.35 On 2 March 2010 we announced plans for a new Urban Challenge Fund to support packages of measures designed to deliver a range of economic, health and environmental improvements in urban areas, including reduced levels of carbon emissions. Sustainable travel measures will be a key component of the packages supported by the new Fund and, as part of a wider range of interventions; we expect even greater benefits than those already achieved through the Sustainable Travel Towns initiative.

2.36 On 22 February 2010 we launched the *Active Travel Strategy*³² with Department of Health aimed at getting more people cycling and walking more often and more safely. The strategy highlights the contribution that walking and cycling can make to improving health and tackling obesity, improving accessibility and tackling congestion, and reducing carbon emissions and improving the local environment.

2.37 In October 2009 we formed the regional carbon liaison group, a regular liaison group with regional and local partners to act as a Sounding Board for DfT advice and guidance on carbon reduction and climate change adaptation. Membership includes Government Offices, Regional Development Agencies, Regional Assemblies and other bodies representing some Local Authorities. In November 2009 we published guidance³³ aimed at helping Local Authorities to reduce transport carbon emissions in the third round of Local Transport Plans. We also published a bite-sized version of the best practice guidance in February 2010.

³¹ Summary report available at :

<http://www.dft.gov.uk/pgr/sustainable/smarterchoices/smarterchoiceprogrammes/>

³² <http://www.dft.gov.uk/pgr/sustainable/cycling/activetravelstrategy/>

³³ *Delivering sustainable, low carbon, travel: An essential guide for Local Authorities*, available at <http://www.dft.gov.uk/pgr/sustainable/guidelocalauth/>

Buses

2.38 From 1 April 2010, increases in Bus Service Operators Grant (BSOG) will be tied to a minimum 6% increase in fuel efficiency, and in December 2009 we announced that in the longer term, BSOG will be replaced with a per passenger incentive, removing entirely any link with fuel used and incentivising bus operators to maximise occupancy. At the same time, we announced the winners of the green bus fund competition, and the first new green buses, which can emit at least 30% less greenhouse gas than comparable diesel buses, are expected to come into service from Summer 2010.

Rail

2.39 In July 2009 we announced a major £1.1bn rail electrification programme. The Great Western Main Line between London and Swansea will be electrified by 2017, and the line between Liverpool and Manchester will be electrified by 2013. In addition in December 2009 we announced a £200m programme of rail electrification in the North West. This will allow electric trains to operate between Preston and Liverpool, Manchester and Blackpool. The work will be completed in stages by 2016. When complete, these schemes will save around 0.2 MtCO₂ annually in addition to improving reliability, air quality and value for money. In many cases passengers will also benefit from reduced journey times.

Freight

2.40 In July 2009 we established a working group with the aim of developing a consistent carbon measurement and reporting method and standard for the logistics transport supply chain, and set out a detailed work programme for the working group in Autumn 2009. As part of the budget on 24th March we announced that, subject to the outputs of a feasibility study, £3.5m has been allocated to fund a Low Carbon Truck demonstration project. The project will demonstrate lower carbon heavy good vehicles (HGVs) such as hybrids. These vehicles have the potential for significant CO₂ and fuel savings, yet currently have limited take-up because these benefits are not widely known or demonstrated.

2.41 We have recently published the results of a study assessing how long the benefits of the Safe and Fuel Efficient Driving (SAFED) course for HGV drivers persist after taking the course, and a consultation on proposals for achieving a 90% uptake of eco-driving amongst HGV drivers (and potentially bus drivers if the Government's preferred option, to make eco-driving a mandatory part of the Driver Certificate of Professional Competence, is selected).

International Context including Aviation and Shipping

2.42 The Copenhagen conference in December 2009 built momentum towards a more ambitious global effort to avoid dangerous climate change. The Copenhagen Accord – agreed by many developed and developing countries – represents an important step forward. The Accord recognised the importance of limiting global temperature increases to no more than 2 degrees Celsius. A wide range of countries – including EU, US, China, Brazil, India, Indonesia, Japan and South Africa – have come out in support of global action and with specific commitments and actions to tackle emissions. The UNFCCC has so far received submissions from countries that together account for over three quarters of global emissions. The commitments put forward in the Accord are promising and provide a crucial first step to the peaking of emissions by around 2020 or before, and keeping temperature rises to 2 degrees C. But this will depend on commitments being implemented to their maximum potential. The UK is working hard to ensure that all countries show ambition in taking forward their commitments under the Accord and in pressing for a comprehensive, legally binding agreement to reduce global carbon emissions, including those from aviation and shipping.

3. Cars and Vans

3.1 Cars currently represent 55% of domestic transport greenhouse gas emissions³⁴. We are working with the EU to promote ambitious but achievable regulation of carbon emissions in this sector. We will back this up with support for low-carbon technologies, from funding research to providing consumer incentives. We will help consumers to choose greener vehicles through better information, and promote the wider take-up of eco-driving.



3.2 We are also working with the EU to develop regulation of van emissions, which currently represent 12% of domestic transport greenhouse gas emissions³⁴. It is worth noting that 26% of van kilometres are for freight purposes³⁵, and some of the actions listed under chapter 8 on freight are aimed at reducing van emissions.

Table 3.1: Cars and Vans headline indicators

Indicator Name	Desired trend	Explanation
Cars & Vans GHG emissions 1990-2008	Reduce overall transport emissions	Cars & van GHG emissions contribute to overall transport GHGs
Absolute change in Cars & Vans GHG emissions since 1990	Reduce overall transport emissions	This indicates overall progress in reducing car & van GHGs since 1990
Cars by VED tax bands (g CO ₂ /km emissions)	Increase in the share of cars in lower tax bands	Improvements in the efficiency of the car fleet will be reflected in the VED tax bands

New Car CO₂ Regulation

3.3 The EU's New Car CO₂ Regulation³⁶, which the UK Government strongly supported, establishes a clear, long-term framework for action

³⁴ Table 3.8, *Transport Statistics Great Britain*
<http://www.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/tsgbchapter3energyenvi2009.xls>

³⁵ *Van Activity Baseline Survey* (2008 data)

³⁶ Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles (published Official Journal L 140 of 5.6.2009)

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by industry to develop more fuel-efficient vehicles. The Regulation will ensure compliance through a financial penalty system, backed up by a rigorous monitoring process.

Table 3.2: New car CO₂ indicator

Indicator Name	Desired trend	Explanation
Average new car gCO ₂ /km emissions	In line with EU regulation (downwards)	The average efficiency of new cars, which the regulation is aimed at reducing.

Table 3.3: New car CO₂ milestones

Milestone	Date	Explanation
Regulation passed	1 Apr 2009	UK-supported EU regulation passed
1st compulsory data returns under new system	Annual from 1 Feb 2011	Data is passed to the Commission in annual reports
2012 target	1 Jan 2012	Manufacturers must start meeting targets so that a majority of their vehicles meet the EU average target for new cars of 130g CO ₂ /km
2015 target	1 Jan 2015	Target for 100% of sales is an EU fleet average of 130g CO ₂ /km
2020 target	1 Jan 2020	Target of 95g CO ₂ /km EU average

Complementary measures

3.4 Overall car CO₂ emissions will also be reduced by the rollout of complementary technological improvements. These are as follows:

- Low rolling resistance tyres, tyre pressure monitoring systems will be phased in³⁷ through the type approval process. This has the potential to reduce fuel consumption by 20% by 2020.
- Gear shift indicators (GSIs) will also be phased in¹.
- Tyre labels will be required³⁸ indicating their performance level for several elements including rolling resistance. This will help inform consumer choice and thereby encourage lowering of rolling resistance (and hence g/km CO₂ emissions) over time.
- Low Viscosity Lubricants (LVLs) could reduce emissions by 2.5%. LVLs are likely to be used by 25% of the car fleet by 2020.
- Fluorinated gases (F gases) with a high global warming potential (GWP) will be phased out³⁹ in mobile air-conditioning systems (MAC)⁴⁰. (This policy accounts for DfT's 6% share of emissions in the workplaces and jobs sector.)

³⁷ As required by Regulation (EC) No 661/2009 of the European Parliament and of the Council of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefore. (OJEU L 200, 31.7.2009)

³⁸ As required by Regulation (EC) No 1222/2009 of the European Parliament and of the Council of 25 November 2009 on the labelling of tyres with respect to fuel efficiency and other essential parameters. (OJEU, L 342/4, of 22.12.2009).

³⁹ As required by Directive 2006/40/EC of the European Parliament and of the Council of 17 May 2006 relating to emissions from air-conditioning systems in cars and small vans and amending Council Directive 70/156/EEC (OJEU L 161 of 14.6.2006)

⁴⁰ This policy measure, on which DfT leads, is reflected in the fact that DfT has a 6% share of the industrial process sector carbon budget.

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- In addition, the Commission intends to regulate the efficiency of air-conditioning (i.e. the amount of energy used for a given amount of cooling effect). A proposal is expected later in 2010.

Table 3.4: Complementary measures milestones

Milestone	Date	Explanation
Low rolling resistance tyres, tyre pressure monitoring systems, GSIs		
Commission adopts measures	31 Dec 2010	These will lay down the technical specifications to be met by the type approval
Pressure monitoring and GSI	1 Nov 2012	Tyre pressure monitoring systems & gear shift indicators to be fitted for type approval
Completion of coverage	1 Nov 2014 -1 Nov 2020	Phase-in of new types of tyres and new types of vehicle to meet set rolling resistance values
Tyre labels		
Implementation	1 Nov 2012	Date of direct application in all Member States
Review	1 Nov 2017	The Commission reviews the effectiveness of this Regulation
Air conditioning (F-gases)		
Leakage limits	Jun 2009	Ban on all systems above certain leak limits
Ban in new vehicle types	1 Jan 2011	No new vehicle type may be approved or retrofitted or refilled with a high-GWP F-gas based MAC
Ban in new vehicles, and on retrofitting and refilling.	1 Jan 2017	Ban on new vehicles with a high-GWP F-gas based MAC. No new vehicles may be retrofitted with such a system or refilled with a high-GWP F gas.

Support for low-carbon vehicles

3.5 The Government has allocated over £400 million to deliver programmes intended to place the UK at the global forefront of ultra-low carbon vehicle development, demonstration, manufacture and use. This includes:

- £145m for research, development and demonstration projects from the Low Carbon Vehicles Innovation Platform. This is a major programme managed by the Technology Strategy Board. It includes £25m for ultra-low carbon vehicles demonstration projects, which will see more than 340 electric-drive vehicles trialled in several UK regions.
- £20m for the Low Carbon Vehicle Public Procurement Programme to help public sector bodies to trial and demonstrate new low carbon vehicle options within their car and van fleets. This programme is supporting the demonstration of over 150 low carbon and all-electric vans in public sector locations across the UK.
- £230m for a programme to support the early adoption of ultra-low carbon cars. Ministers announced the launch of the Plug-In Car Grant in February 2010. This is a scheme that will provide both private consumers and fleet managers with subsidy of 25% of the price of an eligible car, up to a maximum value of £5,000 per car.

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- Up to £30m Plugged-In Places funding to support the trialling and deployment of electric vehicle charging infrastructure in key strategic regions. The Plugged-In Places scheme will work in tandem with the Plug-In Car Grant, delivering matched funding to support consortia of cities, companies and other organisations as they deploy the infrastructure needed for electric vehicle use. Milton Keynes, London and the North East will be offered grants as part of the first wave of Plugged-In Places funding. A second competition for Plugged-In Places funding will be held later in the year.
- 3.6** Smaller projects will be eligible for support through DfT's Alternative Fuels Infrastructure Grant Programme (AFIGP), which supports electric, hydrogen and natural gas vehicle infrastructure projects. Information gathered from PIP and AFIGP will support any future nationwide electric vehicle infrastructure rollout.
- 3.7** The new Office for Low Emission Vehicles (OLEV), which represents a joint undertaking between DfT, BIS and DECC, is responsible for these programmes and has the aim of accelerating the uptake and delivery of ultra-low carbon vehicles (such as plug-in hybrid and electric vehicles) in the UK, whilst helping UK industry to capitalise on the opportunities that a shift to low-carbon represents.
- 3.8** Aside from impacting on the overall CO₂ emissions produced by new cars (see paragraph 3.3) the key indicator of progress for this programme as shown in the table below.

Table 3.5: Low-carbon vehicles indicator

Indicator Name	Desired trend	Explanation
Number of electric vehicles and ultra-low carbon cars (licensed with DVLA)	Upwards	Our policy is aimed at increasing the number of EVs on UK roads.

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3.9 The milestones for the programme are set out in the table below.

Table 3.6: Low-carbon vehicles milestones

Milestone	Date	Explanation
Low Carbon Vehicles Innovation Platform		
Ultra Low Carbon Car demonstrations	Dec 2009 onwards	340 electric drive cars being trialled in various locations around the UK.
R,D&D programmes	Summer 2010	Announcement of winners of latest TSB R&D competition focussed on the development of supply networks for low and ultra low carbon vehicles in the UK.
Low Carbon Vehicle Public Procurement Programme		
Low Carbon Vehicle Public Procurement Programme	Feb 2010 onwards	More than 150 low carbon and electric vans being demonstrated in public sector organisations and local authorities around the UK.
Plug-In Car Grant		
Further details of incentive scheme published	25 Feb 2010	Information on how the scheme will work, the level of subsidy, criteria for cars to be eligible and when it will come into effect made available.
Scheme open to the public	From Jan 2011	The start of the scheme will be timed to coincide with a range of eligible vehicles reaching the UK market
End of scheme	31 Mar 2014	The scheme will run until 31 March 2014, or until the available funding for financial year 2013/14 has been distributed, whichever is earlier.
Plugged-In Places		
Plugged-In Places launch	Nov 2009	
First round successful bids announced	25 Feb 2010	2010-11 funding for the first round of Plugged -In Places has been confirmed. Subsequent years will be provisional, pending the scale of second round bids.
Second round successful bids announced	Nov 2010	Funding for 2011-12 and 2012-13 will be confirmed for all cities.
Alternative Fuels Infrastructure Grant Programme		
2009/10 AFIGP successful bids announced	Nov 2009	£500k funding was available for alternative fuels infrastructure in 2009/10
2010/11 AFIGP successful bids announced	Feb 2010	The fund for 2010/11 was increased to £1.5m as part of the Budget on 24 March 2010

Greening the Government Fleet

3.10 To ensure that government leads by example, we have set a target for cars procured by central government departments and their agencies to average no more than 130g CO₂/km in 2010/11.

Table 3.7: Government new car CO₂ indicator

Indicator Name	Desired trend	Explanation
Government new car g CO ₂ /km emissions	In line with target (downwards)	The target will ensure that government leads by example

New Van CO₂ Regulation

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3.11 In October 2009 the European Commission published a draft Regulation⁴¹ on new van CO₂ emissions, along similar lines to existing regulation on cars (see paragraph 3.3. There is a good chance that there will be a final regulation by the end of 2010. The proposal aims for a target for average CO₂ emissions from new vans to be reduced to 175g CO₂/km phased in from 2014 to 2016 and would provisionally restrict average new van CO₂ to 135g CO₂/km by 2020.

Table 3.8: New van CO₂ indicator

Indicator Name	Desired trend	Explanation
Future Indicator: Average new van gCO ₂ /km emissions	In line with EU regulation (downwards)	A new van CO ₂ regulation would be aimed at reducing new van emissions. This data is currently unavailable, but it will be used as an indicator in future.

Fleet Advice

3.12 Car and van fleets play an essential role in supporting the UK economy and helping businesses to remain mobile, but they also have a major role to play in tackling climate change. Fleet buyers account for a significant percentage of new car sales each year (56% of new registrations in 2006 were from the fleet market), and these vehicles will then flow down into the used car market.

3.13 We provide funding to the Energy Saving Trust to help organisations introduce and implement green fleet policies. EST conduct free Green Fleet Reviews for fleets of over 50 vehicles, as well as providing advice to smaller fleets. The reviews look at fleet management and fuel data, and provide advice and support to help fleet managers reduce fuel use and emissions from their operations.

Table 3.10: Fleet advice milestones

Milestone	Date	Explanation
Completion of the Energy Saving Trust's Fleet Advice Programme 2009-10	31 Mar 2010	EST aim to provide Green Fleet Reviews to 140 organisations in England in 2009-10, covering over 77,000 vehicles. They also aim to provide advice to 2,205 organisations with small fleets (under 50 vehicles).
Energy Saving Trust's Transport Programme 2010-11 agreed	Mar 2010	

Promoting lower carbon driving

3.14 The Government provides information and advice to consumers in a number of ways including ACT ON CO₂ - a cross-government campaign aimed at providing information to the public and encouraging behavioural and attitudinal change amongst consumers. The ACT ON CO₂ transport element focuses on the use of the passenger car. The campaign for 2009-10 has included TV and radio ads, press activity

⁴¹ Proposal for a Regulation of the European Parliament and of the Council Setting emission performance standards for new light commercial vehicles as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles (COM(2009)593)

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and a website with online tools for potential car buyers. The website provides useful tips and advice on how car drivers can use their cars more efficiently to reduce fuel consumption and so reduce CO₂ emissions (such as pumping up tyres, driving at efficient speeds, etc).

- 3.15** Other consumer advice includes the LowCVP fuel economy label for cars, advice for van buyers on the Business Link website⁴², and the Energy Saving Trust's (EST) network of fourteen regional consumer advice centres in England.

Table 3.9: Promoting lower carbon driving milestones

Milestone	Date	Explanation
Act on CO ₂ - "5 miles less" Campaign	Nov 2009 Mar 2010	TV and radio ads and press activity focusing on driving 5 miles less a week, as part of a wider government campaign. The first TV ad was launched on 7 November 2009 with a second one in January 2010.
Campaign Final report evaluation	Mar 2010	The "5 miles less" campaign is being evaluated through pre- and post-research tracking to measure impact in terms of awareness, attitudes and claimed willingness to change behaviour. In addition, the wider campaign is subject to regular evaluation and analysis and monthly reports of website activity
Online van database launched	Jun 2009	With the VCA and Society of Motor Manufacturers and Traders, this website helps buyers compare the CO ₂ emissions and fuel consumption of new vans. Since the launch the website has had over 16,000 visits.
Car fuel economy label launched	2005	The label is provided by LowCVP. It helps to raise awareness about car CO ₂ emissions and fuel efficiency. The new car label is displayed in over 90% of dealerships and 54% of car buyers are aware of it.
Used car label	Nov 2009	

Eco driving

- 3.16** We also want to ensure that motorists have the information they need to use their vehicles more efficiently. Eco-driving (also known as 'eco-safe' or 'smarter' driving) techniques can help drivers to reduce fuel consumption, costs and emissions of both CO₂ and local air pollutants.
- 3.17** The driving theory test includes an eco-driving element, and we introduced feedback on eco-driving as part of the practical driving test in 2008 to ensure that new drivers know from the outset how to drive in a way that will reduce CO₂ emissions, and be economical and safe.
- 3.18** We are also working with the EST to promote eco-driving techniques to existing drivers through their Smarter Driving Programme and network of advice centres. EST Smarter Driving lessons are organised through employers, with the cost partly subsidised by DfT. These are on the road lessons which demonstrate to drivers how a few simple changes in driving style can reduce fuel consumption by an average of around 15% on the day.

⁴² www.businesslink.gov.uk/

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- 3.19** EST has also rolled out driving simulators across their network of advice centres to help demonstrate smarter driving techniques to the wider public. The advice centres help to support the smarter driving tips that we promote through the ACT ON CO₂ website. Drivers can cut CO₂ emissions by around 8% (equivalent to an annual fuel saving of up to one month per year), by following eight simple driving tips.
- 3.20** In addition, DSA has commenced a review of Pass Plus, a post-test scheme completed by around 90,000 newly qualified drivers each year. The review seeks to modernise the current syllabus, with a particular emphasis on driver behaviour, including eco driving. The inclusion of eco driving is intended to develop the new driver's awareness and planning skills alongside fuel saving benefits. We aim to launch a trial of the new scheme by March 2011.
- 3.21** We are continuing to explore how to broaden the availability of eco-driving to the wider public.

Table 3.11: Eco-driving indicator

Indicator Name	Desired trend	Explanation
Number of drivers trained in smarter driving by the EST Future indicator: number of drivers eco-trained	Upwards	This indicator measures the number of drivers trained through the EST Smarter Driving Programme. This might in future be broadened to include courses by other providers, if the data is available and the courses can be shown to meet agreed standards.

Fiscal measures

- 3.22** Transport taxes are revenue-raising instruments, whose principal purpose is to support the public finances and raise funds for public services. However, revenue-raising taxes can support environmental objectives where appropriate.
- 3.23** Fuel duty provides incentives for greater fuel-efficiency on the roads, in line with Government environmental objectives. Vehicle Excise Duty was put on a CO₂ emissions basis in 2001. Since then, the system has been gradually reformed, to increase incentives for the purchase and manufacture of lower-carbon cars.
- 3.24** Further details of taxation in the context of carbon reduction can be found in *HM Treasury's Carbon Reduction Plan*.

4. Biofuels

4.1 The use of sustainable biofuel forms a major component of our transport carbon reduction plans, and makes a key contribution to



meeting our commitments under three key pieces of legislation. The Renewable Transport Fuel Obligation (RTFO) is a UK requirement⁴³, currently for a fixed percentage of transport fuel to come from renewable sources. We are currently taking steps to ensure that biofuels are sourced sustainably through the carbon and sustainability reporting included in the RTFO. Further targets are set out in two European Directives: the Renewable Energy Directive⁴⁴ (RED), requiring that 10% of transport fuel energy comes from renewable sources by 2020, and the Fuel Quality Directive⁴⁵ (FQD), requiring that greenhouse gas emissions from transport fuels are reduced by 6% by 2020.

The FQD also requires that biofuels meet certain sustainability criteria if they are to be counted towards targets. These include requirements on minimum GHG emissions savings, land use change, biodiversity and food security.

4.2 The RTFO is administered by the Renewable Fuels Agency, who published their first *Annual Report to Parliament* in January 2010. This report contained detailed, verified statistics on the sustainability performance of biofuels supplied in the UK in the first obligation year of the RTFO, including comparative data on the performance of individual

⁴³ The Renewable Transport Fuel Obligations Order 2007 No. 3072, as amended by The Renewable Transport Fuel Obligations (Amendment) Order 2009

⁴⁴ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJEU L 140/16 of 5.6.2009)

⁴⁵ Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (OJEU L 140/88 of 5.6.2009)

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companies. The report showed that biofuels supplied for road transport use in the UK are performing well against three of the government's four targets:

- Volume of supply – approx. 2.7% against a 2.5% target
- Greenhouse gas savings – 46% against a 40% target (This standard does not currently take into account indirect effects).
- Data capture – 64% against a 50% target
- Biofuels meeting an environmental sustainability standard – 20% against a target of 30%

4.3 While overall offering carbon savings, production of biofuel can generate greenhouse gas emissions in the agricultural industry. This accounts for DfT's 2% share of emissions in the agriculture forestry and land management (AFLM) sector. In addition, the conversion of waste into biomethane reduces emissions from waste, in recognition of which DfT has a 1% of emissions in the waste sector. Biomethane is seen as an excellent example of a sustainable biofuel as it can be produced from waste deposits that would otherwise be sent to landfill, meaning it reduces methane emissions from landfill and improves resource efficiency. In general, in line with the waste hierarchy⁴⁶, biodegradable waste that cannot be prevented, re-used or recycled should be used to generate electricity, heat or biofuels.

4.4 Member States are required under the RED to set out their estimated trajectories and measures required for meeting the 2020 targets in a National Action Plan (NAP) for renewable energy. The European Commission have provided Member States with a template for the NAP, and the deadline for submission is 30 June 2010

Table 4.1: Biofuels indicators

Indicator Name	Desired trend	Explanation
% by volume of road transport fuel from biofuels	Increase in % by volume of road transport fuel from biofuels	The RTFO aims to increase the volume of biofuel supplied in the UK
% by volume of road transport fuel from biomethane	Increase in % by volume of road transport fuel from biomethane	As well as being a particularly low-carbon biofuel, the use of biomethane from waste reduces GHG emissions in the waste sector.

4.5 The renewable energy targets under the RTFO and RED are key milestones for biofuel use, shown in the following table. Current RTFO targets were set out in the RTFO (Amendment) Order 2009.

⁴⁶ For details of the waste hierarchy, please see the Defra Climate Change Plan.

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Table 4.2: RTFO targets

% renewable energy in transport fuel	Legislation	Date
3.25%	RTFO	Apr 2010
3.5%	RTFO	Apr 2011
4%	RTFO	Apr 2012
4.5%	RTFO	Apr 2013
5%	RTFO	Apr 2014
10%	RED	2020*

* This is a target set out under the RED. Exact trajectories are yet to be confirmed.

4.6 Other key milestones are shown in the table below.

Table 4.3: Other biofuels milestones

Milestone	Date	Explanation
National Action Plan submitted to EC	Jun 2010	High-level document setting out how we will meet our renewable energy targets.
GHG emissions savings from biofuel to be at least 35%	1 Apr 2013	Minimum energy efficiency requirement required by the RED
GHG emissions savings from biofuel to be at least 50%	1 Jan 2017	Minimum energy efficiency requirement required by the RED
GHG emissions savings from biofuel to be at least 60%	1 Jan 2018	Minimum energy efficiency requirement required by the RED

5. Sustainable Travel

- 5.1** This chapter covers a range of initiatives aimed at encouraging transport users to change their behaviours and minimise carbon emissions by choosing the greener modes of transport, car sharing and similar. It focuses in particular on the promotion of “active” travel modes (cycling and walking) and sharing skills and delivering with our regional and local partners.
- 5.2** These initiatives can also carry substantial benefits in other areas, such as health and congestion. These benefits are not addressed here, but are often key reasons for implementing a “sustainable travel” initiative.
- 5.3** Sustainable travel policies decrease carbon emissions by moving journeys from car to public transport, cycling or walking. However, it is hard to determine precisely how many car journeys these initiatives save. For example, it is difficult to tell whether a new journey on foot or by cycle has replaced a car journey or is an additional journey that would not otherwise have happened. We are currently gathering better data on the level of CO₂ reduction that these policies offer, and we will continue to research this.
- 5.4** The Sustainable Travel Towns initiative has shown that relatively inexpensive solutions can deliver real change. Sustainable travel measures should be an integral part of the transport tool kit for urban areas and the packages to be supported by the recently announced Urban Challenge Fund.
- 5.5** Local authorities have a key role to play in the delivery of most “sustainable travel” initiatives, especially in the third Local Transport Plan round. They can choose and implement initiatives that are right for their areas, tailoring these to be consistent with wider strategies. Central government provides substantial funding support to local authorities, and has provided specific funding for a number of these initiatives with the objective of providing and disseminating a clear evidence base to demonstrate their value. Some of these are described below.
- 5.6** National-level data enables us to monitor the prevalence of sustainable travel initiatives and the overall take-up of cycling and walking modes at national level, and this chapter sets out the indicators we propose. For individual initiatives at local level, evaluation of the results is normally a key milestone.

- 5.7** DCSF, DH, BIS and DCMS have shares of emissions in the transport sector in recognition of the impact the schools, health, business and leisure/tourism sectors have on personal travel emissions. Specific policies are set out in this chapter which are aimed at reducing transport emissions generated by these sectors. DfT will work with these departments to ensure that the emissions from travel in these sectors are minimised.
- 5.8** There is no single key indicator for this policy area, because the objective of sustainable travel is to move journeys to low-carbon modes. Measuring success therefore involves comparing progress across indicators for all transport modes.

Sustainable travel towns

- 5.9** All local authorities are encouraged to promote cycling, walking and sustainable travel and bring forward initiatives in the third round of Local Transport Plans, but there have also been some specific initiatives with promising benefits. Over five years from 2004 to 2009, for example, DfT funded three Sustainable Travel Towns – Darlington, Peterborough and Worcester. The programme included a combination of travel planning, improved information, marketing of options, organising services to address local needs, and providing new services focused on particular places (such as workplaces or developments). This approach can also cover reducing the need to travel at all, including tele-working and tele-conferencing, as well as simply siting services close to where people live.



- 5.10** We published an evaluation⁴⁷ of the three sustainable towns on 22 February 2010. This showed that car use fell by an average of 9% across the three towns, walking increased by 10-13%, cycling by 26-30%, and bus trips by 10-22%.

⁴⁷ Summary report available at : <http://www.dft.gov.uk/pgr/sustainable/smarterchoices/smarterchoiceprogrammes/>

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5.11 The detailed implementation plans for each of these projects is set out in their individual project plans. Here we set out the milestones for the programme as a whole.

Table 5.1: Sustainable travel towns milestones

Milestone	Date	Explanation
Evaluation of the three STTs published	22 Feb 2010	
Dissemination of the STT evaluation results	By late 2010	Full outputs from the evaluation will be shared with local authorities, other Government departments and stakeholders.

Urban Challenge Fund

5.12 We recently announced plans for a new Urban Challenge Fund to support packages of measures designed to deliver a range of economic, health and environmental improvements in urban areas, including reduced levels of carbon emissions. Sustainable travel measures will be a key component of the packages supported by the new Fund and, as part of a wider range of interventions; we expect even greater benefits than those already achieved through the Sustainable Travel Towns initiative. We published a discussion paper on 2 March, and subject to the response will publish further plans for the funding process in due course.

Table 5.2: Urban challenge fund milestones

Milestone	Date	Explanation
Urban Challenge Fund discussion paper published	2 Mar 2010	The discussion paper announced the creation of the Urban Challenge Fund and invited comments on the principles and process.
Responses to discussion paper due	4 Jun 2010	

Cycling and walking

5.13 Walking or cycling are a simple, low-cost and effective way for many people to build more physical activity into their lifestyles and reduce car use. Yet we have some of the lowest rates of walking and cycling in Europe, and the car remains the preferred mode of travel for many trips that could be walked or cycled. This means we are missing a major opportunity to improve our health, and reduce congestion and emissions.

5.14 The evidence we have published from our sustainable travel and cycling towns demonstrates the impacts that investing in simple, targeted and low cost measures can have in encouraging people to walk and cycle more. The evidence is that relatively small scale investment in promoting active travel can deliver very high value for money, supporting a range of health, social inclusion, economic and environmental objectives.

5.15 For this reason in January 2008 we increased Cycling England’s budget to £140m over three years. We have now published, with Department of Health, our *Active Travel Strategy* to get more people walking and cycling more often and more safely. It builds on our existing programme of investment in Active Travel and sets an ambition for cycling to see:

- Local authorities introduce 20mph zones and limits into more residential streets (and other streets where there are many pedestrians and cyclists), making streets safer and more attractive for cycling and walking.
- Access to Bikeability cycle training for every child who wants it, creating a generation of new, safe cyclists.
- Every major public sector employer signed up to provide high quality facilities and support for cyclists through the Cycle to Work Guarantee.
- Cycle parking at or within easy reach of every public building.
- Sufficient secure bike parking at every rail station.

Table 5.3: Cycling and walking indicators

Indicator Name	Desired trend	Explanation
Distance per person per mode for all modes	Move to walking and cycling	Cycling and walking policy aims to increase the distance walked and cycled per person.
No. of child training cycling courses delivered up to level 2 of the National Standard	Upwards	This is chiefly delivered through “Bikeability”, promoted by the DfT and Cycling England, which provides National Standard training and quality assurance. We intend to make the training available to 500,000 additional children by 2012.

Table 5.4: Cycling and walking milestones

Milestone	Date	Explanation
Results from the first 6 Cycling Demonstration Towns (CDTs)	Nov 2009	We are investing £50m, match-funded by local authorities, in 18 Cycling Demonstration Towns (CDTs). Results from the first 6 CDTs show a 27% increase in cycling trips. We have disseminated the results to LAs via DfT’s Sustainable Low Carbon Travel Guidance and will conduct and disseminate comprehensive evaluation of the remainder.
Evaluation of the remaining Cycling Towns and City	2009-12	
National Cycle and Active Travel Plan	22 Feb 2010	Joint DfT and Dept of Health plan

Cycle-rail integration

5.16 Following a recommendation in the 2007 Rail White paper *Delivering a Sustainable Railway*⁴⁸ the Cycle Rail Integration Task Force (CRIT) was established with the aim of improving facilities for cycling to and from stations.



5.17 We have committed £14m for improved cycle facilities which includes:

- £4m cycle challenge fund to improve cycling across 4 train operator networks, which was launched by the CRIT
- £5m for 10 cycle hubs which combine safe and secure cycle parking with retail and repair facilities
- £5m for additional cycle parking at stations and safe access routes to the stations

5.18 This is, in addition to our programme of Station Travel Plans (STP), dedicated to improving access to stations by more sustainable modes. 31 stations are taking part in a pilot scheme to test the STP concept by encouraging people to access the station through the most environmentally friendly mode.

5.19 The Door-to-door Journeys Working Group published the *Door-to-door by public transport*⁴⁹ guide in June 2009 aimed primarily at improving integration between rail and bus. However, it also addresses issues of station accessibility in general including targets for improving customer information and integrated ticketing, and better management of station access modes.

Table 5.5: Journey to rail stations indicator

Indicator Name	Desired trend	Explanation
Journeys to rail station by mode	Increase in access by cycle and bus	Our policies aim to increase cycle-rail integration, and also improve accessibility by bus.

⁴⁸ 'Delivering a Sustainable Railway', Department for Transport, July 2007, Cm 7176, available at: <http://www.dft.gov.uk/about/strategy/whitepapers/whitepapercm7176/>

⁴⁹ *Door-to-door by public transport. Improving integration between National Rail and other public transport services in Britain.* June 2009, available at: http://www.cpt-uk.org/_uploads/attachment/690.pdf

Table 5.6: Cycle-rail integration milestones

Milestone	Date	Explanation
Station travel plans	2008-11	31 stations taking part in pilot scheme led by ATOC. Aim is to increase number of passengers accessing the station by more sustainable means
Station travel plans evaluation	Early 2012	
Bus-rail integration	2009-11	Delivering actions in the Door-to-door by public transport guide such as staff awareness of onward travel modes, information posters and bus/rail timetable co-ordination
Cycle challenge fund	2009-11	4 train operators (Virgin Trains, Southwest Trains, Northern Rail and Merseyrail) have received additional funding to improve cycle facilities across their networks
Cycle hubs	Completed by 2012	£5m for 10 cycle hubs, the first to open at Leeds in May 2010.
Cycle parking at stations	Completed by 2014	DfT and Network Rail have funded £3m for additional cycle parking spaces at stations and £2m for improved cycle access.

Travel Planning

- 5.20** Travel planning is an important tool for businesses, new developments and public sector organisations such as hospitals and schools to encourage staff and visitors to make sustainable low carbon travel choices to, from and during work. It can include the use of a range of tools such as the promotion of walking and cycling, marketing, car clubs, and car sharing to encourage staff to make more sustainable low carbon travel choices to, from and during work.
- 5.21** DfT currently fund the National Business Travel Network (NBTN), in partnership with Business in the Community, to support businesses who use travel planning and through that we aim to encourage greater measurement of their carbon footprint from travel. We are developing carbon measurement guidance and an accompanying software tool to support businesses. From this, we can look to support the 400 NBTN members, Business in the Community, public sector bodies and business in general to baseline and then monitor carbon reductions using a consistent methodology for the first time.
- 5.22** Together with DCSF, the Department is providing £140 million joint funding from 2003 to 2010 to support the Travelling to School project which aims to have in place a travel plan for every school (including independent schools) by 2010, in order to reduce car use and allow many more children to take regular exercise. Nearly 81% of schools now have an approved school travel plan. Data collected via the School Census indicates that over the past two years the proportion of children travelling to school by car has fallen by just over 1 percentage point.
- 5.23** DCMS published *Sustainable Tourism in England: a framework for action*⁵⁰ in March 2009. It is an advisory framework aimed at all

⁵⁰ *Sustainable Tourism in England: a framework for action* available at: http://www.culture.gov.uk/reference_library/publications/6003.aspx/

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stakeholders within the tourism industry and contains 6 key challenges that we expect them to take up in order to make the industry more sustainable. These include addressing the impact of tourism transport. We will be monitoring the impact of the framework on an annual basis with a full review in conjunction with stakeholders in 2012.

Table 5.7: School travel indicator

Indicator Name	Desired trend	Explanation
Distance from home to school for all users of same travel mode, per travel mode, per 100 pupils	Move to low-carbon modes	School travel planning policy aims to increase the use of sustainable modes to travel to school.

Table 5.8: Travel planning milestones

Milestone	Date	Explanation
National Business Travel Network		
Business travel tools & guidance	Apr 2010	Publish guidance and tool for carbon measurement of business-related travel
Travelling to School Project		
Travelling to School Project	2003-2010	The project aims for every school to have a travel plan by April 2010
Sustainable Tourism In England: a framework for action		
Sustainable Tourism In England published	Mar 2009	
Full review	2012	

Working with local and regional partners

5.24 The vast majority of the road network consists of local roads. Action by local and regional partners is critical to the achievement of Government's climate change objectives. Regional and local partners can maximise delivery and ensure that low carbon transport measures are implemented across the country in a way that is right for their areas.

5.25 The priority that local government gives to reducing CO₂ emissions is reflected in the majority of Local Area Agreements that now include improvement targets on reducing CO₂ emissions (National Indicator 185: CO₂ reductions from Local Authority operations; or NI 186: per capita CO₂ emissions per area). Measurement against NI 186 requires local authorities to calculate their CO₂ emissions from energy and fuel use, including from some transport services. Assessment against these indicators is made by the Audit Commission as part of their Comprehensive Area Assessment. In addition, nine local authorities have also recently agreed to trial local carbon frameworks under proposals recently announced by the Secretary of State for Communities and Local Government.⁵¹ Councils are expected to put together a prospectus setting out how they would develop and deliver a local carbon framework, to be negotiated and agreed with Government.

⁵¹ <http://www.communities.gov.uk/news/corporate/1449033>

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5.26 We continue to proactively encourage our regional and local partners to include carbon reduction as a key consideration in their delivery of transport services. For example we held a series of regional Local Transport Plan workshops emphasising the importance of tackling climate change through local transport delivery. We also continue to support and encourage local and regional partners by spreading skills and best practice and incentivising delivery, which our latest research with regional and local partners on climate change also seeks to further address.

Table 5.9: Regional and local milestones

Milestone	Date	Explanation
Publication of bite-sized sustainable low carbon travel best practice guidance	Feb 2010	Summarises full guidance published last November on how to include sustainable low carbon transport initiatives in the third round of Local Transport Plans.
Completion of research on local and regional carbon reduction	Apr 2010	This research will analyse how far local and regional partners are reducing carbon emissions and whether more tools are needed support assessment of local carbon emissions. It is sponsored by the regional carbon liaison group set up in October 2009 to co-ordinate and promote research on local and regional climate change policy.
Publication of carbon signposting guidance	Summer 2010	Signposts where to find carbon appraisal guidance for smaller projects
New Local Transport Plans in place	Apr 2011	Plans will show how local areas are bringing forward lower carbon options in local areas, as emphasised in LTP guidance (July 2009).

Spatial Planning

5.27 The role of spatial planning in bringing forward new development and the Government's plans for new home building are likely to have implications for transport emissions. National planning policies and guidance on planning and transport set out demanding policy requirements aimed at reducing the need to travel, cutting carbon emissions, and encouraging a shift to more sustainable transport modes.

5.28 Under the Local Democracy, Economic Development and Construction Act 2009⁵², which comes into force from 1 April 2010, each region, other than London, is to have single regional strategy covering sustainable economic growth, development and land use. These regional strategies are to include carbon reduction and climate change adaptation policies.

5.29 We have worked closely with CLG to ensure that the draft supplement to Planning Policy Statement 1, '*Planning for a low-carbon future in a changing climate*,' sets out the need for regional and local planning

⁵² Local Democracy, Economic Development and Construction Act 2009, available at http://www.opsi.gov.uk/acts/acts2009/ukpga_20090020_en_1

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bodies to take account of limiting transport emissions when siting and designing new developments.⁵³

5.30 In April 2009, we issued good practice guidelines jointly with CLG on delivering travel planning through the planning system⁵⁴, including measures to help design facilities that reduce the need to travel. We have also issued guidance on building sustainable transport into new developments⁵⁵.

5.31 It is also important that the planning system facilitates the delivery of electric and plug-in hybrid vehicle charging infrastructure and other lower carbon technologies, such as refuelling infrastructure. CLG have consulted on permitting the installation of infrastructure for charging points within both public and private car parking areas. We are continuing to work closely with them and through our own initiatives set out in this delivery plan to encourage low carbon vehicles and fuels as modes of choice.

5.32 CLG has a share of emissions in the transport sector in recognition of the impact that policy and decisions on spatial planning have on transport emissions. DfT will work closely with CLG to develop planning-transport carbon indicators to measure and monitor the impact of these decisions on transport emissions. The process will start this month with a research project to review the role of existing transport planning policies on delivering sustainable transport outcomes, including the Transport Assessments⁵⁶ that accompany planning applications.

Table 5.10: Spatial planning milestones

Milestone	Date	Explanation
CLG and DfT research to review the role of transport planning policies in delivering sustainable transport outcomes	Summer 2010	To create a robust evidence base identifying the impact of transport planning decisions on carbon emissions
Indicators to monitor and measure the effectiveness of transport planning policies on carbon emissions	Dec 2010	As above

⁵³ Consultation draft available at

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/1499780.pdf>

⁵⁴ <http://www.dft.gov.uk/pgr/sustainable/travelplans/tpp/goodpractice-summary.pdf>

⁵⁵ <http://www.dft.gov.uk/pgr/sustainable/sustainabletransnew.pdf>

⁵⁶ <http://www.dft.gov.uk/pgr/regional/transportassessments/guidanceonta>

6. Buses

- 6.1** Our aim is for public transport, including lower carbon buses, to play a larger role in our transport system. Buses accounted for 4% of domestic transport emissions in 2008.⁵⁷ Our policies encourage improvements in fuel efficiency, as well as supporting the rollout of low carbon buses and eco-training for bus drivers. As bus transport is a devolved matter, the policies in this chapter apply to England only.

Table 6.1: Headline bus indicators

Indicator Name	Desired trend	Explanation
Bus GHG emissions 1990-2008	Reduce overall transport emissions	Bus GHG emissions contribute to overall transport GHGs.
Absolute change in Bus GHG emissions since 1990	Reduce overall transport emissions	This indicates overall progress in reducing bus GHGs since 1990

BSOG reform

- 6.2** The Bus Service Operators Grant (BSOG) is the funding mechanism which supports bus operators. We are reforming BSOG to increase the incentive for bus operators to be fuel efficient. In December 2009 we announced that in the long term BSOG would be replaced with an incentive per passenger. This will require approval by the European Commission for reasons of state aid, and will depend on the roll-out of ITSO smart ticketing technology to function. We therefore envisage the old system will continue to run for operators without smartcard equipment, with the scheme fully rolled out by 2020.

Table 6.2: BSOG reform milestones

Milestone	Date	Explanation
Fuel-BSOG rate link broken	Dec 2008	Direct link between BSOG rates and fuel duty rates broken, increasing the incentive for fuel-efficiency
Improve BSOG for low carbon buses	Apr 2009	BSOG payments enhanced by 6p per kilometre for all low carbon buses
Decision on radical BSOG reform	Dec 2009	Decision announced that, in the longer term, BSOG will be replaced with an incentive per passenger
Link BSOG rates to fuel efficiency	Apr 2010	Increase in BSOG tied to minimum 6% increase in fuel efficiency
EU State aid clearance	Dec 2013	Per-passenger bus subsidy will require approval by the European Commission for reasons of State aid.
BSOG replaced by an incentive per passenger	Dec 2020	A per passenger subsidy will incentivise efficient, low-carbon operations.

⁵⁷ Table 3.8, *Transport Statistics Great Britain*, available at <http://www.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/tsgbchapter3energyenvi2009.xls>

Green Bus Fund

6.3 We aim to move, over time, to a greater penetration of low-carbon buses, as with other road vehicles. To overcome high costs, we have allocated £30m to bus operators and local authorities over 2009-10 and 2010-11 to invest in low carbon bus technology. This will lead to the delivery of



approximately 350 new low carbon buses over the next two years and a saving of up to ten thousand tonnes of CO₂ a year. In addition, as part of the budget on 24 March we announced that, subject to State aid clearance, we intend to run a second round of the Green Bus Fund competition in 2010 to allocate a further £10m in 2010-11. This could deliver a further 100 to 150 new low carbon buses.

Table 6.3: Low carbon buses indicator

Indicator Name	Desired trend	Explanation
Future Indicator: Number of low carbon buses	Upwards	The green bus fund aims to increase the number of low-carbon buses; this is further encouraged through BSOG

Table 6.4: Green bus fund milestones

Milestone	Date	Explanation
Bus fund bid winners announced	Dec 2009	
First buses in service	Summer 2010	Buses are expected to come into service between Summer 2010 and March 2012
Second competition held	Summer/Autumn 2010	A second round will be held, subject to State aid clearance, to allocate further fund in 2010-11
All grant paid out	Mar 2011	Grant is due to be paid between February 2010 and March 2011.
Evaluation of performance	Mar 2013	We will publish regular performance data on the buses throughout the first three years of their operation and will publish a full evaluation in March 2013

Eco-safe training for bus drivers

- 6.4** Since 2008, eco driving has been included as part of the Driver Certificate of Professional Competence (CPC) initial qualification, with further training available as part of the Driver CPC periodic training. In 2009-10 we are spending £1m on a Safe and Fuel Efficient Driving (SAFED) for Bus and Coach demonstration project. In an earlier pilot, SAFED drivers achieved an average 12% fuel saving and a 60% saving in safety-related faults.
- 6.5** The demonstration project is training up to 200 trainers and 1,500 of the industry's drivers in SAFED driving techniques. It will produce 25 industry-wide case studies which will show the benefits of SAFED to those not directly involved in the project.
- 6.6** In addition, we have published a consultation⁵⁸ Increasing the uptake of eco-driving training for drivers of Large Goods Vehicles and Passenger Carrying Vehicles which includes an option for regulatory change: making eco-driving training a mandatory part of the Driver CPC. The Driver CPC applies to both Large Goods Vehicle drivers and to Passenger Carrying vehicles and the consultation therefore also considers the possibility and implications of making eco-driver training a mandatory part of the CPC for both categories of driver.

Table 6.5: Bus eco-driving indicator

Indicator Name	Desired trend	Explanation
Number of bus drivers SAFED trained Future indicator: No. bus drivers eco-trained	Upwards	We currently measure the number of drivers who are SAFED trained. In due course, we will move to an indicator which reflects uptake of eco-training across providers.

Table 6.6: Bus eco-driving milestones

Milestone	Date	Explanation
Eco-driving included in new drivers CPC	Sep 2008	Eco driving is included as part of the Driver CPC initial qualification
Consultation on increasing the uptake of eco-driving training	8 Mar 2010	The consultation includes an option to make eco-driving a mandatory part of the Driver CPC, which would also apply to bus drivers.
SAFED demonstration project completed	31 Mar 2010	200 trainers and 1,500 drivers will have been trained in SAFED techniques.
Evaluation of SAFED demonstration project published	Apr 2010	A series of case studies reflecting the experience of participants will be published to encourage others to undertake SAFED training

⁵⁸ Increasing the Uptake of Eco-driving Training for Drivers of Large Goods Vehicles and Passenger Carrying Vehicles: Consultation Document, 8 Mar 2010, available at <http://www.dft.gov.uk/consultations/open/2010-11/consultation.pdf>

7. Rail

- 7.1** In general terms rail performs well from a carbon efficiency perspective compared with other modes, in particular on busier routes with high passenger and freight loadings. Diesel trains emitted 2.4 MtCO₂ in 2008, which is 1.8% of domestic transport emissions⁵⁹. Power generation for electrified rail is estimated to produce a further 1.5 MtCO₂ from the energy sector.
- 7.2** Currently around 33% of the rail network is electrified. These lines serve many of the busiest parts of the network and consequently carry a greater density of traffic than most non-electrified lines. Around 61% of passenger journeys (as measured by distance) are made on electric trains, though this figure is set to increase to 68% following completion of the electrification schemes announced in July and December 2009.
- 7.3** Whilst emissions from electric trains are not included in the department's carbon budget as they fall within the EU Emissions Trading Scheme, the department is working closely with the rail industry to improve the efficiency of electric trains.

Table 7.1: Headline rail indicators

Indicator Name	Desired trend	Explanation
Rail GHG emissions 1990-2008	Reduce overall transport emissions	Rail GHG emissions contribute to overall transport GHGs.
Absolute change in Rail GHG emissions since 1990	Reduce overall transport emissions	This indicates overall progress in reducing rail GHGs since 1990

Rail carbon targets

- 7.4** In the 2007 Rail White Paper *Delivering a Sustainable Railway*⁶⁰, the Government set out its intention to set an environmental target for the rail industry in the next High Level Output Specification covering the period 2014-19. The rail industry has set up a working group to explore the case for setting environmental targets to focus industry attention on reducing carbon emissions and other environmental impacts.

⁵⁹ Table 3.8, *Transport Statistics Great Britain*, available at <http://www.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/tsgbchapter3energyenvi2009.xls>

⁶⁰ 'Delivering a Sustainable Railway', Department for Transport, July 2007, Cm 7176, available at: <http://www.dft.gov.uk/about/strategy/whitepapers/whitepapercm7176/>

Table 7.2: Rail carbon targets milestones

Milestone	Date	Explanation
"Planning Ahead" long term planning framework and options for 2014-19	mid-2010	The rail industry will set out its initial views on investment priorities and environmental strategies for 2014-19
Publication of Initial Strategic Business Plan	mid-2011	Industry proposals for investment in 2014-19

Operational and technical efficiency improvements

7.5 We are supporting a range of industry initiatives to improve the energy efficiency of the rail network. These include delivering regenerative braking on electric trains, trialling of biofuels and examining the potential for onboard and trackside energy storage. We are working with the industry to trial and fit energy meters to diesel and electric trains to provide operators with better information on their energy consumption and the benefits of energy saving measures such as eco-driving techniques. Research is also underway to investigate the benefits of advisory systems that inform train drivers whether they can slow down or coast to save energy whilst still keeping to time.



7.6 The Department is playing an active role in ensuring that new trains are more efficient than those they replace including through major rolling stock procurement programmes such as Thameslink. In addition, the new Super Express trains that could, depending on the outcome of Sir Andrew Foster's review of the Intercity Express Programme, begin operation on the East Coast Main Line from 2014, would be lighter than current trains, despite being longer and use less energy per seat-km. The current intention would be that some of the trains would operate as "bi-modes" having the ability to run on either diesel or electric power. This would ensure that the trains could make use of electrification where it's available reducing operational costs and carbon emissions on many routes.

- 7.7** The rail industry's Technical Strategy Advisory Group has developed a technology route map identifying possible solutions for dramatically improving the energy performance of the railway over the longer term. As a result, the Department is now working with the rail industry on various research topics including reducing the cost of rail electrification and improving how train movements are regulated across the network to reduce unnecessary stopping and starting.

Table 7.3: Rail technology indicators

Indicator Name	Desired trend	Explanation
Future Indicator: % of electric trains with an energy meter	Upwards	Fitting meters to electric trains helps operators gain the full benefit of energy efficiency measures
% of electric trains using regenerative braking	Upwards	Regenerative braking recovers energy that would otherwise be lost as heat when electric trains brake. Can deliver savings of up to 20%. Significant progress already made on overhead 25kV network so attention is now on 750V DC third rail network.

Table 7.4: Rail technology milestones

Milestone	Date	Explanation
Rail carbon footprinting research	mid-2010	The rail industry has commissioned research to understand better rail's wider carbon impacts including rolling stock and infrastructure maintenance and renewal.
ThamesLink new trains	2013 - 2016	The specification for this procurement requires a 15% improvement in diesel train efficiency. The specification also includes a number of energy efficiency features.
Super express trains come into service on East Coast Main Line	2014-15	Super Express trains coming into service over this period (pending the outcome of the Foster review)..

Electrification

- 7.8** In July 2009 we announced a major £1.1bn programme of electrification, covering the Great Western Mainline route from London via Bristol to Swansea to be completed by the end of 2017 and the Liverpool to Manchester line to be completed by the end of 2013.
- 7.9** We then announced in December 2009 a £200m programme of rail electrification in the North West. This will allow electric trains to operate between Preston and Liverpool, Manchester and Blackpool. The work will be completed in stages by the end of 2016.
- 7.10** The electrification schemes are expected to deliver a net reduction in carbon emissions of 0.14 Mt CO₂ per year in addition to improving reliability and value for money. This net reduction is comprised of a reduction in diesel emissions of 0.25 Mt CO₂ and an increase in emissions from the power generating sector of 0.11 Mt CO₂.

Table 7.5: Electrification indicators

Indicator Name	Desired trend	Explanation
% of passenger km travelled on electric trains	Upwards	Our electrification programme will mean more journeys are taken on electrified rail, and more of rail's energy comes from electricity
Rail CO ₂ split by diesel and electric ⁶¹	Overall CO ₂ to go down, particularly in diesel CO ₂	

Table 7.6: Electrification milestones

Milestone	Date	Explanation
Liverpool-Manchester	Dec 2013	Electrification of the Liverpool-Manchester line
Manchester - Preston, Liverpool - Preston, and Blackpool North and Preston	Dec 2016	Further electrification in the north west of England
London-Bristol	Dec 2016	Electrification of the Great Western Mainline from London to Bristol
Bristol-Swansea	Dec 2017	Electrification of the Great Western Mainline from Bristol to Swansea

High Speed Rail

7.11 On 11 March 2010 we published *High Speed Rail*, a command paper setting out our strategy for transforming the connectivity and capacity of our inter-urban transport system through a new UK high speed rail network. The command paper also formed our response to the work carried out by HS2 Ltd to develop a detailed proposal for a high speed line from London to the West Midlands, as well as to assess the options for a wider network. In *High Speed Rail*, we proposed, subject to public consultation, to take forward a 'Y'-shaped network of around 335 miles of track running from London to Manchester and Leeds via Birmingham, with high speed trains running on to Glasgow and Edinburgh on existing infrastructure.

7.12 As part of its work to assess the business case for a high speed line from London to the West Midlands, HS2 Ltd assessed the potential carbon impacts of such a line. It estimated that these impacts would fall in the range -25MtCO₂ (a saving) to +26.6MtCO₂ (an increase), over a 60-year period. To put this in context, the worst-case scenario would be equivalent to less than a 1% increase in transport carbon emissions. A key way that high speed rail could help reduce carbon emissions is through modal shift from road and air, and we will work to ensure that the maximum benefit is extracted in this way. A more extensive network, as proposed in *High Speed Rail*, may offer the potential for greater modal shift although further work is required to assess this in detail.

⁶¹ These indicators are based on ORR data, which covers emissions from both diesel and electric trains. The methodology for this data is different from the tier 2 indicator of rail GHG emissions, which is taken from the NAEI. We are working with ORR and AEA to understand the differences in methodology between the two sources and to explore how they can be best reconciled in the future.

- 7.13** A new high speed rail network would offer major benefits to travellers, including faster journeys and reduced overcrowding, as well as wider economic benefits generated through greater connectivity.
- 7.14** The Government plans to consult on the proposals set out in High Speed Rail in Autumn 2010. Thereafter further technical work and consultation would be required ahead of the seeking of powers through a Hybrid Bill. Subject to the results of public consultation and to Parliamentary approval, it is expected that services could be operational from around 2026.

8. Freight

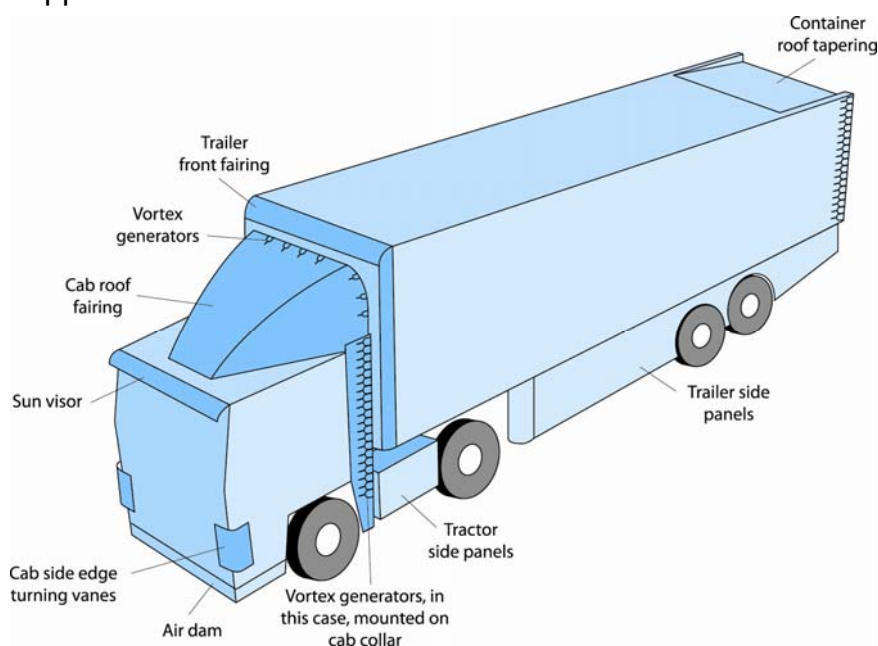
- 8.1** De-carbonising freight and logistics is a key part of our longer term strategy but the nature of the sector makes it particularly challenging.
- 8.2** Emissions from freight movements stem primarily from the road sector with HGVs representing 18% of total domestic transport greenhouse gas emissions. Focussing our policies on reducing emissions from road freight is therefore important. The Department already supports the freight mode shift from road to rail and water, the more carbon efficient modes for freight transport. In 2009-10 this is expected to save some 170,000 tonnes of CO₂. Alongside this, the £200m committed to the Strategic Freight Network and over £150 million of funding towards the provision of infrastructure enhancement for freight through the Productivity Transport Innovation Fund represent the most significant funding for rail freight for many years.
- 8.3** But 68% of all road freight movements (measured by tonnes lifted) are within the same region and so are unlikely to have a viable mode shift option. Road transport will therefore continue to play an important role in the transport of goods. By encouraging the uptake of lower carbon technologies, increasing the uptake of eco-driving training for HGVs and providing best practice guidance the department aims to reduce road freight emissions, working hand-in-hand with industry to achieve this goal.
- 8.4** Initial discussions with freight and logistics operators and customers have demonstrated a need for a consistent carbon measurement and reporting method for the logistics transport supply chain, and the Department launched an industry-led steering group aiming to develop such a method in July 2009. The group has made considerable progress in working towards addressing key issues, including how to allocate carbon emissions between customers who are sharing loads
- 8.5** DECC, DEFRA and BIS have a share of responsibility for emissions in the transport sector in recognition of the impact the energy sector, the farming and food sectors and the manufacturing sector have on freight emissions. DfT are working with these departments to ensure that the emissions from freight in these sectors are minimised.

Table 8.1: Headline freight indicators

Indicator Name	Desired trend	Explanation
Freight GHG emissions 1990-2008	Reduce overall transport emissions	Freight GHG emissions contribute to overall transport GHGs.
Absolute change in Freight GHG emissions since 1990	Reduce overall transport emissions	This indicates overall progress in reducing freight GHGs since 1990

Lower Carbon HGVs

8.6 In July 2009 we published the results of a review⁶², conducted by Ricardo on behalf of the Department, of the CO₂ savings that could be achieved by using a number of lower carbon HGV technologies such as aerodynamic technologies. Typical examples of aerodynamic features are shown in the diagram below. This has placed us in a good position to identify those technologies that have the greatest carbon saving potential for HGV movements and to consider how to increase the uptake of these technologies across the freight and logistics sector – through provision of best practice guidance, regulation or funding to support investment.



8.7 As a first step towards achieving this, we are working with the Low Carbon Vehicle Partnership and representatives from the vehicle manufacturing industry and major freight trade associations to prioritise which technologies have the potential to generate significant fuel and therefore carbon savings across the full range of road freight operations, including a focus on small and medium-sized road freight operations. The outputs of this work will be used to identify how we might best encourage large, medium and small operators to make use of and invest in these technologies.

⁶² Review of low carbon technologies for heavy goods vehicles, available at: <http://www.dft.gov.uk/pgr/freight/lowcarbontechnologies/>

8.8 As part of the budget on 24 March 2010 we announced that, subject to the outputs of a feasibility study, £3.5m has been allocated to the Department to fund a Low Carbon Truck demonstration project. The project aims to demonstrate the potential fuel and CO₂ savings which can be achieved through use of lower carbon heavy good vehicles (HGVs) such as hybrids. These vehicles have the potential for significant carbon savings and fuel savings, yet currently have limited take-up because these benefits over a range of freight operations are not widely known or demonstrated.

8.9 In addition we are looking at the potential benefits and impacts of increasing the length of articulated HGVs by up to 2.05m.

Table 8.2: Lower carbon HGVs milestones

Milestone	Date	Explanation
Low-carbon HGVs		
'Review of low carbon technologies for heavy goods vehicles' published	Jul 2009	The report identified those technologies with significant carbon saving potential.
Research – prioritisation of lower carbon HGV technologies	Spring 2011	The research focuses on which lower carbon technologies have the potential to reduce fuel and therefore carbon emissions across the full range of road freight operations
Framework for encouraging greater uptake in place	Autumn 2011	We aim to develop a framework to encourage operators to make use of and invest in low-carbon technologies. Potential options include provision of best practice guidance, regulation or funding to support investment.
Low Carbon truck demonstration project - feasibility study complete	May 2010	The results of the feasibility study will be used to determine whether to conduct a green truck demonstration project, with £3.5m funding available for the project.
Longer semi-trailer research		
Longer semi trailers assessment	Spring 2010	Report on benefits and impacts of increasing semi-trailer length by 2.05m
Potential semi-trailer consultation	Autumn 2010	We will consult on new regulations if the evidence shows significant CO ₂ benefits and acceptable safety implications.

Eco-driving

8.10 Our preliminary analysis showed that a 90% uptake in eco-driving training courses could save the industry up to £300m in fuel costs a year by 2022, and 3 million tonnes in CO₂ over a five year carbon budgetary period. These are significant savings. We are therefore committed to exploring how to achieve that 90% uptake and we have published a consultation⁶³ on three options for doing so:

- No change on the current approach (eco-driving training continues to be undertaken on a voluntary basis);

⁶³ <http://www.dft.gov.uk/consultations/open/2010-11/consultation.pdf>

- A non-regulatory approach aiming to increase the promotion of the benefits of eco-driving training (through increased marketing or improved best practice guidance);
- regulatory change – making eco-driving training a mandatory part of the Driver CPC.

These options have been put together following informal discussions with key stakeholder organisations.

Table 8.3: Freight eco-driving indicator

Indicator Name	Desired trend	Explanation
Number of drivers that have received SAFED HGV eco-driving training. Future indicator: Will cover the broader 'eco-driving' training indicator	Upwards	At present, we measure the number of drivers that have received SAFED HGV eco-training. In future we will develop an indicator that covers eco-training from other providers.

Table 8.4: Freight eco-driving milestones

Milestone	Date	Explanation
Consultation on increasing the uptake of eco-driving training	Mar 2010	The consultation sets out three potential options for achieving a 90% uptake of eco-driving training amongst HGV drivers.
Preferred option in place	Autumn 2011	

Consistent carbon measurement and reporting across the logistics transport supply chain

8.11 In July 2009 we launched a working group with the aim of developing a consistent sector-specific carbon measurement and reporting method and standard for the freight transport supply chain, building on existing guidance including the Government's published Guidance⁶⁴. The membership of the group includes freight trade associations from across the road, rail and water sectors, as well as advisory members such as the Carbon Trust. This will be a standard for industry, developed by industry, and one which we anticipate will form the basis of any future reward structure – such as a voluntary recognition scheme – which industry, or potentially Government, could develop.

8.12 An initial review of available guidance demonstrated that the current advice does help industry to understand how to measure and report on carbon emissions for a range of freight activity, and is targeted at a number of levels within a business – board level, transport managers and supply chain directors. However, the group have identified three key areas for development:

⁶⁴ <http://www.defra.gov.uk/environment/business/reporting/pdf/ghg-guidance.pdf>

- How to allocate carbon emissions between customers sharing loads.
- How to report on carbon emissions across an industry where a variety of goods are transported according to different business requirements
- How to independently verify the data collected.

8.13 The group is leading specific pieces of research to address each area with the aim of using the findings, together with current advice, to develop consistent and comprehensive guidance for businesses across the supply chain to monitor and report against their carbon emissions and help them make lower carbon choices.

Table 8.5: Freight carbon measurement and reporting milestones

Milestone	Date	Explanation
Low carbon supply chain group established	Jul 2009	
Priority work areas agreed	Autumn 2009	The three priority work areas are: how to allocate carbon when customers are sharing loads development of a set of sector specific carbon measurement units appropriate to a complex industry how to independently verify data
Carbon monitoring and reporting guidance produced	Summer 2010	The guidance will cover monitoring and reporting of carbon emissions across the freight transport supply chain.

Sustainable distribution

- 8.14** Our sustainable distribution fund provides funding for two types of programme: our efficiency programmes (Freight Best Practice and Van Best Practice) and our mode shift programme.
- 8.15** The Freight Best Practice programme which provides advice to the freight industry on how to reduce fuel consumption and so carbon emissions. We are extending the programme to include advice to the rail and water freight industries. We also launched our new Van Best Practice Programme in the autumn 2009, which is extending these benefits to the rapidly growing van sector. We are currently conducting a study assessing what the maximum carbon savings generated by the Freight Best Practice programme might be and how best to deliver them.
- 8.16** Through our mode shift programme we are also providing targeted support to enable companies to transfer from road to rail or water where the economic benefits indicate it is justified.

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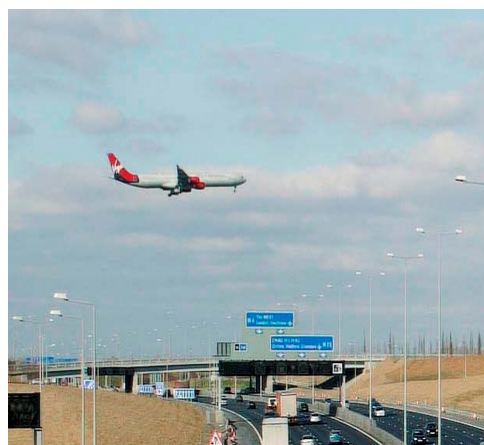
Table 8.6: Sustainable distribution milestones

Milestone	Date	Explanation
Van Best Practice programme launched	Nov 2009	The programme provides free guidance to the industry on how to improve the efficiency of their operations.
Study of carbon saving potential of Freight Best Practice published	Mar 2010	CO ₂ savings attributed to the programme will be published as part of this report.
Lessons learned from Freight Best Practice study incorporated into programme development	Spring 2011	
Mode shift funding impact published		The CO ₂ and lorry journey savings from the mode shift programme are published regularly on the Department's website

9. Aviation and Shipping

9.1 Emissions from domestic aviation and shipping activity are included within the UK's carbon budgets. In 2008, domestic aviation emissions represented around 1.7% and domestic shipping around 4.1% of greenhouse gas emissions from domestic transport⁶⁵. When international aviation and shipping are included, domestic and international aviation emissions allocated to the UK⁶⁶ represented 21% and domestic and international shipping emissions 7% of all greenhouse gas emissions from UK transport in 2008.

9.2 Aviation emissions arising from the combustion of aviation fuel include not only CO₂ but other gases and particles such as nitrogen oxide (NO_x), sulphur dioxide (SO₂) and particulates as well as water vapour which can lead to the formation of contrails and cirrus clouds at altitude. The latest scientific assessment as summarised in the 2009 report by the Committee on Climate Change⁶⁷ is that the total effect of aviation on the climate could be up to two times greater than the impact of its CO₂ emissions alone. The Government is supporting work to understand non-CO₂ impacts better, and leading UK scientists are contributing to ground breaking work in this area. In the long term we hope to develop flanking measures alongside emissions trading to address the full range of aviation's climate change impacts.



9.3 Although not part of our carbon budgets, tackling international aviation and shipping emissions is vitally important. These sectors operate across international borders and serve global markets – and consequently we consider that action is best taken at international level

⁶⁵ Table 3.8, *Transport Statistics Great Britain*, available at <http://www.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/tsgbchapter3energyenvi2009.xls>

⁶⁶ Although international aviation and shipping emissions are not currently part of the UK's carbon budgets under the Climate Change Act, "UK" emissions from international aviation and shipping are reported to the United Nations Framework Convention on Climate Change (UNFCCC) as memo items based on bunker fuel sales, consistent with IPCC guidance.

⁶⁷ Committee on Climate Change (December 2009), *Meeting the UK Aviation target - options for reducing emissions to 2050*, available at <http://www.theccc.org.uk/reports/aviation-report>

to address them. The measures we are taking in these sectors will impact on both domestic and international emissions.

- 9.4** This chapter sets out work to deliver technical and operational improvements to reduce both domestic and international greenhouse gas emissions from these modes, and the international negotiations where the approach to a global effort to tackle aviation and shipping emissions will be decided. In addition, it sets out our plans to reduce emissions from military aviation and shipping.

Table 9.1: Headline shipping and aviation indicators

Indicator Name	Desired trend	Explanation
Shipping & Aviation GHG emissions 1990-2008	Reduce overall transport emissions	Shipping & aviation GHG emissions contribute to overall transport GHGs.
Absolute change in Shipping & Aviation GHG emissions since 1990	Reduce overall transport emissions	This indicates overall progress in reducing shipping & aviation GHGs since 1990

International negotiations on aviation and shipping emissions

- 9.5** Given the international nature of the aviation and shipping industries, the Government believes that reducing emissions in these sectors can best be achieved through international cooperation. We pushed for aviation and shipping to be included in a global deal at Copenhagen in December 2009, and we will continue to argue for this in future negotiations of the United Nations Framework Convention on Climate Change (UNFCCC).

Table 9.2: International negotiation milestones

International Milestones	Date	Explanation
International Civil Aviation Organization (aviation)		
ICAO Committee on Aviation Environmental Protection (CAEP) 8	1-12 Feb 2010	Achieved agreement to advance work by CAEP9 to set a CO ₂ standard for new aircraft.
ICAO Assembly 2010	28 Sep – 8 Oct 2010	A draft Resolution on environmental issues will be submitted for agreement at the September 2010 Assembly. We will be pushing to define the global ambition on tackling international aviation emissions, to agree action to deliver a global deal and to consider the use of market based measures such as emissions trading.
International Maritime Organization (shipping)		
IMO Marine Environmental Protection Committee (MEPC) 60	Mar 2010	The UK has submitted a proposal for a global emissions trading system for international shipping to the IMO for the MEPC meeting in March 2010.
IMO MEPC 61	Oct 2010	The IMO's Marine Environment Protection Committee should indicate which of the proposed market-based measures it prefers.
United Nations Framework Convention on Climate Change (general climate change)		
UNFCCC Climate Conference (COP 16) 2010	Dec 2010	We will continue to push for aviation and shipping emissions to be included in a global deal.

- 9.6** We are also working with international bodies, including the International Maritime Organization (IMO) and International Civil Aviation Organization (ICAO) to advance this objective, as well as wider environmental objectives such as the promotion of environmental standards for aircraft and ships.

Aviation and shipping in the EU Emissions Trading System

- 9.7** Until a truly global solution can be found, or should progress within ICAO and IMO prove too slow, we will continue to look at other options, notably those proposed at EU level, such as including shipping emissions in the EU Emissions Trading System (EU ETS). It has already been agreed that aviation will be brought into the EU ETS in 2012. In the event that a global target cannot be agreed, we would encourage other national and regional regulators to follow the EU's example so that we achieve a linked network of targets and trading systems.

Table 9.3: EU Emissions Trading System milestones

International Milestones	Date	Explanation
EU ETS collection of aviation data	1 Jan 2010	Aviation operators in the EU ETS must begin to collect CO ₂ data and compile annual reports from 1 January 2010.
EU review shipping's inclusion in the EU ETS	End 2011	If insufficient progress is made on a global agreement on shipping, the EU will consider addressing international shipping emissions through a European measure
EU ETS starts for aviation operators	1 Jan 2012	The first year for which CO ₂ allowances will need to be surrendered is 2012.

Aviation

UK aviation emissions reduction target

- 9.8** In January 2009 we set a target to reduce emissions from UK aviation⁶⁸ below 2005 levels by 2050. The Committee on Climate Change (CCC) provided advice on the prospects for achieving that target in December 2009⁶⁹, and we are now taking forward a programme of work to develop costed policy options for delivering the 2050 target and will set out our plans in due course.

⁶⁸ In the absence of an internationally agreed emissions allocation methodology for international aviation and shipping emissions, "UK Aviation" is defined as all domestic flights and all international flights departing from the UK.

⁶⁹ Committee on Climate Change (December 2009), *Meeting the UK Aviation target - options for reducing emissions to 2050*, available at <http://www.theccc.org.uk/reports/aviation-report>.

Table 9.4: UK aviation emissions target milestones

Milestones Regarding UK 2050 Aviation Target	Date	Explanation
CCC delivered advice to Government on achievement of 2050 target	8 Dec, 2009	The Secretary of State requested advice from the CCC on the prospects for achieving the 2050 aviation CO ₂ target.
Develop proposals for achieving the 2050 target		The CCC did not look in detail at policy options and did not provide an estimate of the cost of different options. We will undertake further analysis on biofuels, fuel efficiency trends, and the marginal abatement costs of a range of policy levers to inform our strategy.
Set out our plans for meeting the 2050 target		Once our analysis of policy options is developed, we will set out our plans for how to achieve the 2050 target.

Air Passenger Duty

- 9.9** Transport taxes are revenue-raising instruments, whose principal purpose is to support the public finances and raise funds for public services. However, revenue-raising taxes can support environmental objectives where appropriate.
- 9.10** Air passenger duty was reformed from 1 November 2009, increasing the number of distance bands from two to four, to ensure those flying further pay more. The reform and announced rate increases in November 2009 and 2010 will help lead to savings of 0.6 million tonnes of carbon dioxide per year by 2011-12, compared to the previous two-banded APD structure.
- 9.11** Further details of taxation in the context of carbon reduction can be found in *HM Treasury's Carbon Reduction Plan*.

Shipping

Technical and operational measures

- 9.12** We are working to achieve agreement in the Marine Environment Protection Committee (MEPC) of the IMO on technical and operational measures to reduce CO₂ emissions from shipping. The two main tools under discussion are the Energy Efficiency Design Index (EEDI) and the Energy Efficiency Operational Indicator (EEOI). These would set standard methods for assessing the energy efficiency of ship designs (the EEDI) and the operation of ships (the EEOI). In July 2009 the MEPC agreed to circulate interim guidelines for further trial and testing of these tools. There are some technical challenges presented by certain ship types and these will be considered during the trials of the tools. It is hoped that the trials will prove successful and final versions will be agreed in 2010.

Table 9.5: Shipping technical and operational measures milestones

Milestone	Date	Explanation
IMO MEPC 60	Mar 2010	The IMO's MEPC is expected to refine the current formulas for the EEDI and EEOI
IMO MEPC 61	Oct 2010	The MEPC will consider the results of ongoing trials of the two indexes with a view to approval of the final versions.

Transport emissions from Defence

- 9.13** The Ministry of Defence (MOD) have a 3% share of transport sector emissions, to account for its control over military fuel for ships, aircraft, vehicles (excluding business travel) and generators in the UK and overseas. Policies to reduce operational emissions, including transport emissions, are set out in *Defence in a Changing Climate*⁷⁰.
- 9.14** Sustainable procurement of equipment, including vehicles, is a key part of MOD's plans to reduce operational emissions. The MOD Sustainable Procurement Strategy⁷¹ sets this out in detail.
- 9.15** Due to the lengthy procurement cycles associated with Defence equipment, there is limited opportunity for short-term reductions in military transport emissions. Furthermore, operational capability will always be paramount, which could at any time result in peaks in emissions. However, reducing fuel use means reducing the risks, costs and logistical challenges of delivering fuel to the front line, and reducing the energy vulnerability of remote sites. In 2020 and beyond we need to ensure that new platforms are sustainable, minimise GHG emissions and that they can be adapted to future climate change.

Table 9.6: Military aviation and shipping CO₂ emissions indicator

Indicator Name	Desired trend	Explanation
Military aircraft & shipping & ground fuel (CO ₂ emissions)	Downwards	MOD policies aim to reduce operational energy use, including from military aircraft, shipping and ground diesel

Table 9.7: Military transport milestones

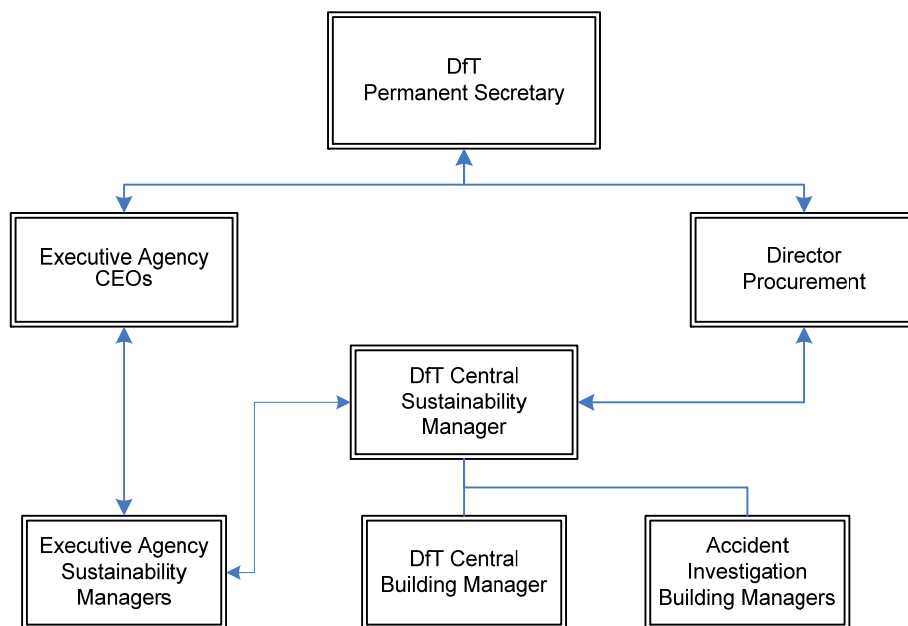
Milestone	Date	Explanation
Operational Energy Roadmap published	Mar 2011	The Roadmap will set out long-term plans for operational energy reduction. We will work to identify opportunities to reduce emissions from our equipment and suppliers. The nature of the way that Armed Forces are deployed means that identifying a suitable baseline against which to set emissions reduction targets is challenging, and in some cases may take some time.
Baseline equipment emissions	Mar 2011	
Set equipment emissions target	2012	
Baseline key supplier emissions	Mar 2013	
Set supplier emissions target	2014	

⁷⁰ *Defence in a Changing Climate* <http://www.mod.uk/NR/rdonlyres/44EC5708-7C49-4E69-AD50-1F516DFE47A7/0/DefenceinaChangingClimateDSACReport.pdf>

⁷¹ MOD Sustainable Procurement Strategy, available at <http://www.mod.uk/DefenceInternet/MicroSite/DES/OurPublications/Procurement/ModSustainableProcurementStrategy.htm>

10. DfT estate emissions

- 10.1** The Department for Transport's Sustainable Operations on the Government Estate (SOGE) targets currently cover the central Department (including 3 Accident Investigation Branches) plus 7 executive agencies (Driving Standards Agency, Driver & Vehicle Licensing Agency, Government Car & Despatch Agency, Highways Agency, Maritime & Coastguard Agency, Vehicle Certification Agency and Vehicle & Operator Services Agency).
- 10.2** The departmental estate constitutes in excess of 1,000 sites ranging from city office blocks to Coastguard equipment stores. The building stock includes offices, motorway maintenance depots, vehicle inspection centres, storage hangers, lighthouses and driving test centres.
- 10.3** The governance structure within DfT for the reporting and management of emissions data is currently as shown in the diagram below.



- 10.4** This structure is currently under review as the introduction of the Carbon Reduction Commitment Energy Efficiency Scheme has raised the role of finance in the sustainability arena. The review outcome is expected early in the new financial year (2010-11) and the governance structure chart will be updated in accordance with the review findings.



10.5 This plan is based on the current scope of the SOGE targets and the department's current carbon budget, which includes the office estate, and owned administrative transport emissions. As the details of the new SOGE framework are built into the carbon budget allocation from Carbon Budget period 2 (2013) onwards, we will work across our estate and wider departmental family to ensure that we monitor and report against, and then meet the broader and more challenging targets. These reductions in public sector carbon emissions will also deliver financial savings, contributing to Government's aim of releasing £300M in energy bill savings by 2012/13 through greater energy efficiency. The *Transport Carbon Reduction Delivery Plan* is expected to be reviewed and updated in the next 18 months in order to present the department's new share of the public sector Carbon Budget, and the revised set of measures being planned to secure both carbon and financial savings.

10.6 The DfT estate is also subject to public sector estates carbon budgets set out in The *UK Low Carbon Transition Plan*. These are shown in the table below. It is expected that these will be updated when the new framework described above is published.

Table 10.1: DfT's public sector carbon budget targets

		Carbon budget period		
		2008-12	2013-17	2018-22
CO ₂ emissions (t)	5-year total	160,000	140,000	130,000
	Annual avg	32,000	28,000	26,000

10.7 Our full plans to improve the environmental performance of our estate are set out in our *Sustainable Development Action Plan*⁷².

⁷²Department for Transport's *Sustainable Development Action Plan* available at: <http://www.dft.gov.uk/about/howthedftworks/sda/>

Table 10.2: DfT's estate and operations indicators

Indicator Name	Desired trend	Explanation
Energy consumed (MwH)	Downwards	Total energy consumed by DfT office estate
Energy carbon (tCO ₂)	Downwards	Total amount of carbon (tCO ₂) emitted by DfT from office energy consumption
Mileage	Downwards	Total administrative road miles driven by DfT staff
Transport carbon (tCO ₂)	Downwards	Total amount of carbon (tCO ₂) emitted by DfT from administrative road mileage

DfT Estate

10.8 Progress so far in meeting our estate emissions target is set out in the table below.

Table 10.3: DfT estate emissions target

	Baseline 2002/03	Latest 2008/09	Target 2010/11
Energy carbon (tCO ₂)	24,253	22,395	21,221

10.9 Over the next 12 months we plan to implement improvements to Great Minster House, the main DfT central building, as well as the instalment of a new Combined Heat and Power plant, and rationalisation of the estate, at DVLA Swansea. This will be supported by a wider programme of heating, lighting, energy management and energy efficiency work.

Table 10.4: DfT estate emissions milestones

Milestone	Date	Explanation
Great Minster House air conditioning	Nov 2009 – Mar 2011	Improvements to Control Systems and Air Handling units. Will reduce electricity consumption by 350 MwH.
Great Minster House boiler	Apr 2009 – Oct 2009	Replacement of boiler system with more efficient boilers. Will reduce gas consumption by 150 MwH.
Carbon management programme	Oct 2009 – Mar 2011	Heating, lighting and energy management projects across the wider Department will reduce energy consumption by 500 MwH
Estate Rationalisation	Nov 2008- Mar 2010	Rationalisation of the DVLA Swansea estate reducing the overall number of buildings. This will save 1,775 MwH of energy.
Energy efficiency	Oct 2009 – Mar 2011	A series of campaigns covering the wider Department targeted at behavioural change and coupled with automation, will reduce energy consumption by 150 MwH.
2nd CHP plant at DVLA	May 2008 – May 2010	Combined Heat and Power plant to be installed at DVLA Swansea. Will save 900 tCO ₂ .

DfT vehicles

10.10 Progress so far in meeting our vehicle emissions target is set out in the table below.

Table 10.5: DfT vehicle emissions target

Indicator name	Baseline 2002/03	Latest 2008/09	Target 2010/11
Transport carbon (tCO ₂)	11,395	11,029	9,686

10.11 Our plans for reduction of our vehicle emissions focus on the phased improvement of the efficiency of hire cars used by the department. This is supported by the introduction of guidance aimed at limiting the use of private cars for DfT business travel.

10.12 DfT submits data on its own fleet, hired vehicles and staff owned vehicles as part of its annual SOGE return. In the absence of detailed information on all of the vehicles in question, a generic emissions factor has been applied to a large proportion of the mileage undertaken which may mean that the actual emissions are lower than those reported.

Table 10.6: DfT vehicle emissions milestones

Milestone	Date	Explanation
Grey fleet travel limit	Apr 2008 – Mar 2010	Introducing an advisory maximum limit on grey fleet (privately owned vehicles) travel of 100 miles per journey, will save 18 tCO ₂ p.a.
Reduced use of high-emission hire cars	Apr 2008 – Mar 2010	Reduce use of hire cars with tailpipe emissions > 160g CO ₂ /km by 10% per annum, will save 70 tCO ₂ p.a.
Increased use of low-emission hire cars	Apr 2008 – Mar 2010	Increasing the volume of hire cars with tailpipe emissions of < 150g CO ₂ /km by 10% per annum, will save 12 tCO ₂ p.a.
Improved Management Information	Jul 2008 – Mar 2010	Working with the hire car providers across the Department to improve car data (engine size, fuel type, tailpipe emissions) and improving the granularity of grey fleet data will save 100 tCO ₂ .

Future Plans

10.13 We are currently developing plans across the Department to manage the energy and vehicle emissions reductions required to achieve future carbon budgets. Those plans include exploring estate rationalisation options, improved Information and Communications Technology (ICT) infrastructure, feasibility of on-site renewable energy generation, increased automated metering, improvements to the efficiency of DfT fleet vehicles, a review of business travel policy and "hearts & minds" campaigns to keep the need for sustainable performance in focus. More specific plans covering the period of Carbon Budget 2 should be available from October 2010. The DfT strategy for Carbon Budget 3 will be developed into a more detailed document as we progress into and through Carbon Budget 2. The high level scope currently being developed will allow for flexibility to adapt to any political, technological or societal changes.

11. Devolved Administrations

Scotland

- 11.1** The Climate Change (Scotland) Act 2009⁷³ commits the Scottish Executive to reduce emissions by at least 42% by 2020, subject to expert advice from the UK Committee on Climate Change, and by at least 80% by 2050. Annual targets for the years 2010-22 must be set by 1 June 2010 and Scottish Ministers are required to set out proposals and policies for meeting these targets as soon as reasonably practicable thereafter.
- 11.2** Other notable features of the Act are that it requires Scotland's share of emissions from international aviation and international shipping to be included in the emissions reductions targets, and that it places a duty on Scottish public bodies to contribute to the achievement of emissions reductions targets and to statutory adaptation programmes.
- 11.3** *The Scottish Executive's Carbon Account for Transport*⁷⁴ supports the development and implementation of actions to reduce emissions in accordance with the targets in the Act. It helps explain which transport policies and projects are forecast to have the most significant influence on changes in emission levels. The Scottish Executive has continued to develop the format and content of the document and an updated version will be published in early 2010.
- 11.4** Although many of the policy drivers to reduce transport emissions lie with the EU and the UK Government, the Scottish Executive is investing in a range of measures. These include cycling and walking and Smart Measures, such as eco-driving, green fleet reviews and travel planning. In partnership with COSLA (the Convention of Scottish Local Authorities) the Scottish Executive supports Smarter Choices, Smarter Places demonstration projects in seven diverse communities, ranging in population size from 10,000 in the Orkney Islands to 37,000 in Dumfries. In addition, the Scottish Executive are putting significant investment into bus and rail services. More sustainable freight transport options are also being provided through our investment in freight grants and the Freight Best Practice programme. Scotland's Climate Change Challenge Fund is also supporting a range of community driven projects that include transport emission reductions.

⁷³ Climate Change (Scotland) Act 2009, available at:
http://www.opsi.gov.uk/legislation/scotland/acts2009/asp_20090012_en_1

⁷⁴ *Carbon Account for Transport* available at:
<http://www.scotland.gov.uk/Publications/2009/08/27143705/0>

- 11.5** The *Scottish Executive's Climate Change Delivery Plan*⁷⁵, published in June 2009, includes a transformational outcome of complete decarbonisation of road transport by 2030. Consequently, they published a consultation document on the development and take up of low carbon vehicles and their alternative fuels⁷⁶ in parallel with the Delivery Plan. The responses are currently being analysed.
- 11.6** The Scottish Executive also consulted on a cycling action plan for Scotland. The final action plan will be published in April 2010.
- 11.7** Finally, the Scottish Executive are analysing the potential of a range of further devolved policy measures identified in evidence-based research⁷⁷ to further reduce transport emissions. These include increased investment in rail stock and track to boost service frequency, quality and journey times, and bus quality contracts and statutory partnerships. The options additionally include widespread provision of eco-driving instruction to reduce emissions from existing vehicle technologies and travel planning advice so that the public can make more informed choices on sustainable travel options.

Wales

- 11.8** Under the *One Wales* agreement, the Welsh Assembly Government (WAG) is committed to achieve annual reductions of 3% in carbon equivalent emissions by 2011 in areas of devolved competence. The WAG is working to develop a climate change strategy which will deliver this commitment. In parallel, we are developing a National Transport Plan which sets out our proposals for developing the transport network as well as reducing its impact on the environment.
- 11.9** The WAG has recently undertaken a consultation on the National Transport Plan and will be publishing the final version in spring 2010. The Plan describes how the Assembly Government will deliver its vision of a modern and sustainable transport system. They are developing a balanced approach, so that transport plays its full part in tackling climate change, whilst ensuring that it continues to support economic development and social cohesion.
- 11.10** WAG transport measures which will help to tackle climate change are set out in the National Transport Plan and include:
- Sustainable Travel Towns: In 2009, Cardiff was announced as the first Sustainable Travel Town in Wales. The plans will deliver a wide range of infrastructure and service improvements which aim to cut congestion in the city and improve accessibility. Examples of the

⁷⁵ *Climate Change Delivery Plan: Meeting Scotland's Statutory Climate Change Targets* available at: <http://www.scotland.gov.uk/Resource/Doc/276273/0082934.pdf>

⁷⁶ *Consultation on Low Carbon Vehicles* available at <http://www.scotland.gov.uk/Publications/2009/06/25103442/0>

⁷⁷ *Mitigating Transport's Climate Change Impacts: Assessment of Policy Options*; Atkins, University of Aberdeen, August 2009. available at: <http://www.scotland.gov.uk/Publications/2009/08/26141950/0>

work being undertaken include new Park and Ride facilities, a free bike hire scheme, free city centre circular buses and enhanced walking and cycling facilities. The WAG is considering plans for a number of other towns in Wales, which could also benefit from investment in a range of sustainable transport measures. If successful, these could be rolled-out across Wales.

- Provision for walking and cycling: The WAG has published a separate *Walking and Cycling Action Plan*⁷⁸ which sets out a range of ambitious targets to increase the level of walking and cycling in Wales. They are committed to developing a larger number of traffic free walking and cycling routes, and to maintaining the successful Safe Routes in Communities programme to develop walking and cycling opportunities in our towns and cities.
- Increased rail investment: The WAG will continue to invest heavily in improvements to our railways. As well as new and enhanced rail services, they are working with Network Rail to improve stations and to make services more accessible by removing high steps between platforms and trains. The WAG are also investing in rolling stock to improve security, comfort and journey times.
- Increased investment in bus services: The WAG is investing in bus service provision, including the concessionary travel scheme for elderly and disabled people. They are also enhancing the regulatory framework for bus services and community transport, and will be working with local authorities to increase the take-up of bus Quality Partnerships and Quality Contracts, to enhance the quality, reliability, punctuality and safety of local bus service provision. They are also developing the TrawsCambria long-distance bus and coach network, which aims to fill the gaps in the rail network.
- Strategic park and ride sites: The WAG is committed to the creation of a series of strategic park and ride sites that will also act as multi-modal interchanges for public transport. This will help to reduce local congestion and pollution, providing affordable and quick access into our town and city centres.
- Tackling carbon emissions from the freight sector: The WAG is also working to reduce carbon emissions from the freight sector. They will be developing a freight consolidation centre on a pilot basis, to consolidate city centre deliveries. The WAG has put in place both a freight best practice programme and a van best practice programme, to disseminate good practice in the sector. They have also introduced a transport advice programme, aimed at reducing carbon emissions from car and van fleet operators.

⁷⁸ A *Walking and Cycling Action Plan for Wales 2009-2013* available at:
<http://wales.gov.uk/docs/desh/publications/090223walkingactionplanen.pdf>

11.11 For the longer-term, the WAG is working towards a fully decarbonised transport system. To achieve this, the WAG will need to continue to work closely with the UK Government and the European Commission, who control many of the regulatory and fiscal policy levers. This includes the new car and van CO₂ regulations (see chapter 3) and the Renewable Transport Fuel Obligation (see chapter 4). The WAG will continue to support development of low carbon transport technologies.

Northern Ireland

11.12 The Department for Regional Development in Northern Ireland is currently reviewing the Regional Development and Transportation Strategies, including the *Travelwise* Initiative. As an integral part of both reviews recognition is being given to the crucial impact climate change is having on the environment. As such, the direction for future planning and transportation will include consideration on how the impact of climate change can be successfully mitigated. Work has already commenced to develop more sustainable transport arrangements including the recent publication of a baseline on greenhouse gas emissions⁷⁹. The paper sets out the 1990 baseline and 2007 position on transport greenhouse gas emissions in the North and highlights some key trends impacting on transport emissions.

11.13 Alongside the review other measures which will help to reduce carbon emissions and achieve a more sustainable transport system include:

- A North-South Freight Forum which will consider how Freight in Ireland can become more competitive in a sustainable manner;
- An advisory Active Travel Forum, comprising members from a wide range of stakeholders in the public, private and community sectors. The Forum is expected to make a comprehensive study of current issues and best practice, and put forward recommendations to the Department for a high level strategy for active travel. The Department would anticipate that the Forum will also bring forward proposals for demonstration projects to optimise opportunities for participation in walking and cycling in Northern Ireland.
- A strategic review of Park and Ride provision, including reviewing the adequacy of current proposals for park and ride;
- Developing proposals which will offer the best possible prospect of maximising modal shift; and
- Proposals for the development of quality bus corridors linked to park and ride sites.

⁷⁹ *Reducing Greenhouse Gas Emissions from Road Transport: Baseline Report 1990-2007*, Department for Regional Development Transportation Policy Division January 2010, available at <http://applications.drdni.gov.uk/publications/document.asp?docid=17713>

Annex A: Indicator Tables

Transport Sector Indicator Pyramid Table				
TIER 1 Indicators: Overall sector GHG emissions				
Indicator Name	Desired trend	Source of data	Frequency of data	Owner
Transport GHG emissions 1990-2008	Downwards	NAEI/DECC	Annual	DfT
Absolute change in transport GHG emissions since 1990	Downwards	NAEI/DECC	Annual	DfT

TIER 2 Indicators: Disaggregated sector GHG emissions				
Indicator Name	Desired trend	Source of data	Frequency of data	Owner
GHG emissions 1990-2008 for: Freight Bus Rail Cars Vans Domestic Aviation Domestic Shipping International Aviation International Shipping	Reduce overall transport emissions	NAEI/DECC	Annual	DfT
Absolute change in GHG emissions since 1990 for: Freight Bus Rail Cars Vans Domestic Aviation Domestic Shipping International Aviation International Shipping		NAEI/DECC	Annual	DfT

TIER 3 Indicators: Main drivers of sector emissions				
Indicator Name	Desired trend	Source of data	Frequency of data	Owner
Freight: Total distance in vehicle km for HGVs and Rail	Move to low-carbon distribution	Road Freight Statistics, Network Rail	Annual	DfT
Freight: Tonne km for HGVs, Domestic Shipping and Rail	Move to low-carbon distribution	Road Freight Statistics, Shipping Statistics, Network Rail	Annual	DfT
Buses: Total distance (vehicle km)	To be considered alongside emissions efficiency data when available	Bus Statistics	Annual	DfT
Rail: Total distance (vehicle km)		Network Rail	Annual	DfT
Cars & Vans: Total distance (billion vehicle km)		National Road Traffic Survey	Annual	DfT
Sustainable Travel – Walking & Cycling: Distance (km) undertaken per person		National Travel Survey	Annual	DfT
Domestic Aviation: Number of flights leaving UK airports to UK destinations		CAA	Annual	DfT
International Aviation: Number of flights leaving UK airports to non-UK destinations		CAA	Annual	DfT
Future Indicator: Domestic Shipping: Passenger km		Shipping statistics	Annual	DfT

	Future Indicator: International Shipping: Passenger km		Shipping statistics	Annual	DfT
	Domestic shipping: Tonne km		Shipping statistics	Annual	DfT
	International shipping: Tonnes lifted at UK ports (International traffic)		Shipping statistics	Annual	DfT
	Cars by VED tax bands (g CO ₂ /km emissions)	Increase in the share of cars in lower tax bands	DVLA Licensed Vehicles Database	Annual	DfT
	% by volume of road transport fuel from biofuels	Increase in % by volume of road transport fuel from biofuels	Renewable Fuels Agency	Annual	DfT

TIER 4 : Policy milestones and policy indicators						
Name of policy / measure	Policy milestones	Indicator	Desired trend	Source of data	Frequency of data	Owner
CARS & VANS: New car CO ₂ regulation	EU average new car emissions 130 g CO ₂ /km by 2015; EU average new car emissions 95 g CO ₂ /km by 2020 See cars & vans chapter	Average new car g CO ₂ /km emissions	In line with EU regulation (downwards)	DVLA New Registrations Database	Annual	DfT
CARS & VANS: Complementary measures		N/A				
CARS & VANS: Support for low-carbon vehicles	Low carbon car incentive scheme 2011-2014	Number of electric vehicles ⁸⁰ and ultra-low carbon cars (licensed with DVLA)	Upwards	DVLA Licensed Vehicles Database	Annual	DfT
CARS & VANS: Greening the Government Fleet	Government car average emissions 130g CO ₂ by 2010/11	Government average new car g CO ₂ /km emissions	In line with target (downwards)	Office of Government Commerce	Expected to be annual	DfT
CARS & VANS: New van CO ₂ regulation		Future Indicator: Average new van g CO ₂ /km emissions	In line with EU regulation (downwards)		-	DfT
CARS & VANS: Promoting lower carbon driving	See cars & vans chapter	N/A		Energy Saving Trust (EST)	Annual	DfT
CARS & VANS: Eco-driving		Number of drivers trained in smarter driving by the EST	Upwards			
		Future indicator: number of drivers eco-trained				
CARS & VANS: Fiscal Measures	See HMT plan	N/A				
CARS & VANS: Bio-fuel policy	10% renewable energy in transport fuel by 2020	% by volume of road transport fuel from biomethane	Increase in % by volume of road transport fuel from biomethane	Renewable Fuels Agency	Annual	DfT

⁸⁰ Including cars, light goods vehicles, motorcycles/mopeds/scooters, buses & coaches, taxis.

Name of policy / measure	Policy milestones	Indicator	Desired trend	Source of data	Frequency of data	Owner
SUSTAINABLE TRAVEL: Sustainable Travel Towns	Sustainable Travel Town evaluation early 2010	N/A				
SUSTAINABLE TRAVEL: Urban Challenge Fund	Responses to discussion paper due June 2010	N/A	-	-	-	-
SUSTAINABLE TRAVEL: Walking & Cycling	See sustainable travel chapter	Distance per person per mode for all modes	Move to walking and cycling	National Travel Survey	Annual	DfT
		No. of child training cycling courses delivered up to level 2 of the National Standard	Upwards	Sustainable Travel Division	Annual	DfT
SUSTAINABLE TRAVEL: Cycle/Rail Integration	See sustainable travel chapter	Journeys to rail station by mode	Increase access by cycle and bus	National Travel Survey	Annual	DfT
SUSTAINABLE TRAVEL: Travel Planning	See sustainable travel chapter	Distance from home to school for all users of same travel mode, per travel mode, per 100 pupils	Move to low-carbon modes	DCSF School Census	Annual	DCSF/DfT/DH
SUSTAINABLE TRAVEL: Local & Regional work	See sustainable travel chapter	N/A				
SUSTAINABLE TRAVEL: Spatial Planning	Research to establish spatial planning indicator, Mar 2010	N/A				
BUS: Bus Service Operators Grant (BSOG) reform	BSOG replaced with per passenger incentive by 2020	N/A				
BUS: Green Bus Fund	First low carbon buses in service Summer 2010	Future Indicator: Number of low carbon buses	Upwards	BSOG	Annual	DfT
BUS: Eco-driving	Consultation with option for mandatory eco-driving in driver CPC March 2010	Number of bus drivers SAFED trained	Upwards	DSA from April 2010	Annual	DfT
		Future indicator: No. bus drivers eco-trained				

Name of policy / measure	Policy milestones	Indicator	Desired trend	Source of data	Frequency of data	Owner
RAIL: Rail carbon targets	Mid 2010 – publication of rail industry's initial views on investment priorities and environmental strategies for 2014-19 and longer term	N/A				
RAIL: Operational and technical efficiency improvements	Thameslink new trains introduced from 2013;	Future Indicator: % of electric trains with an energy meter ⁸¹	Upwards	Rail System team	Annual	DfT
	Super Express trains introduced from 2014	% of electric trains using regenerative braking ⁸¹	Upwards	Rail System team	Annual	DfT
RAIL: Electrification ⁸¹	Electrification in northwest of England 2013-16; Electrification of Great Western Mainline 2016-17	% of passenger km travelled on electric trains	Upwards	Rail Network Analysis and modelling team	Monthly	DfT
		Rail CO ₂ split by diesel and electric	Overall CO ₂ to go down, particularly in diesel CO ₂	ORR	Annual	DfT
FREIGHT: Lower carbon HGVs	Framework to encourage uptake of Lower Carbon HGVs in place Autumn 2011	N/A				
FREIGHT: Eco-driving	Consultation on increasing the uptake of eco-driving March 2010	Number of drivers that have received SAFED HGV eco-driving training.	Upwards	Currently AEA.	Annual	DfT
		Future indicator: Will cover the broader 'eco-driving' training indicator to be reported by the DSA				
FREIGHT: Carbon Measurement and reporting	Guidance produced Summer 2010	N/A				
FREIGHT: Sustainable distribution	Assessment of CO ₂ savings attributed to programme published March 2010	N/A				

⁸¹ Trade sector emissions

Name of policy / measure	Policy milestones	Indicator	Desired trend	Source of data	Frequency of data	Owner
AVIATION & SHIPPING: International Negotiations	ICAO, IMO, MEPC, UNFCCC meetings	N/A				
AVIATION & SHIPPING: MOD operational emissions reduction	Operational energy roadmap March 2011	Military aircraft & shipping & ground fuel (CO ₂ emissions)	Downwards	NAEI/MOD	Annual	MOD/DfT
AVIATION& SHIPPING: EU Emissions Trading System	EU review the inclusion of shipping in EU ETS end 2011; aviation in EU ETS from 2012	N/A				
AVIATION & SHIPPING: UK aviation emissions reduction target	Publish plan for meeting target	N/A				
AVIATION & SHIPPING: Air passenger duty	See HMT plan	N/A				
AVIATION & SHIPPING: Shipping operational and technical measures	IMO MEPC meetings	N/A				

CONTEXTUAL FACTOR INDICATORS

Indicator	Desired trend	Source of data	Frequency of data	Owner
Population		ONS	Annual	
Employment		ONS	Annual	
GDP		ONS	Quarterly	
Fuel Consumption		DECC	Annual	
Oil/Fuel prices		DECC	Quarterly	
No. of trips per person by mode		National Travel Survey	Annual	DfT
Trip length by distance bands by mode		National Travel Survey	Annual	DfT
Distance travelled per person by journey purposes and mode (Jointly owned with DH: medical travel; BIS: business travel/commute; DCMS: leisure/holiday travel)		National Travel Survey	Annual	DfT and DH/ BIS/ DCMS
Percentage of employed who are working from home		Labour Force Survey	Annual	CLG/DfT
Freight Tonne km by Commodity (Goods moved) (jointly owned with DECC: fuels Defra: Agricultural products etc BIS: Other commodities)		Road freight Statistics, Shipping Statistics, ORR	Annual	DfT and DECC / DEFRA / BIS
Total CO ₂ emissions from food transport		DEFRA Food Transport Indicators	Annual	DEFRA/ DfT

Other sectors indicators table						
Sector that policy milestones and indicators contribute to: Industrial process						
Name of policy / measure	Policy milestones	Indicator	Desired trend	Source of data	Frequency of data	Owner
Mobile Air Conditioning (MAC) policy	Ban on high GWP F gases in new MACs in cars from 2017	N/A				
Sector that policy milestones and indicators contribute to: Waste						
Name of policy / measure	Policy	Indicator	Desired trend	Source of data	Frequency of data	Owner
Sustainable biofuel policy	10% renewable energy in transport fuel by 2020	Volume of biomethane supplied	Upwards	Renewable Fuels Agency	Annual	DfT
Sector that policy milestones and indicators contribute to: Farming and land						
Name of policy / measure	Policy	Indicator	Desired trend	Source of data	Frequency of data	Owner
Sustainable biofuel policy		Biofuel from UK crop		Renewable Fuels Agency	Annual	DfT