

Debate Pack

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Decarbonising Transport

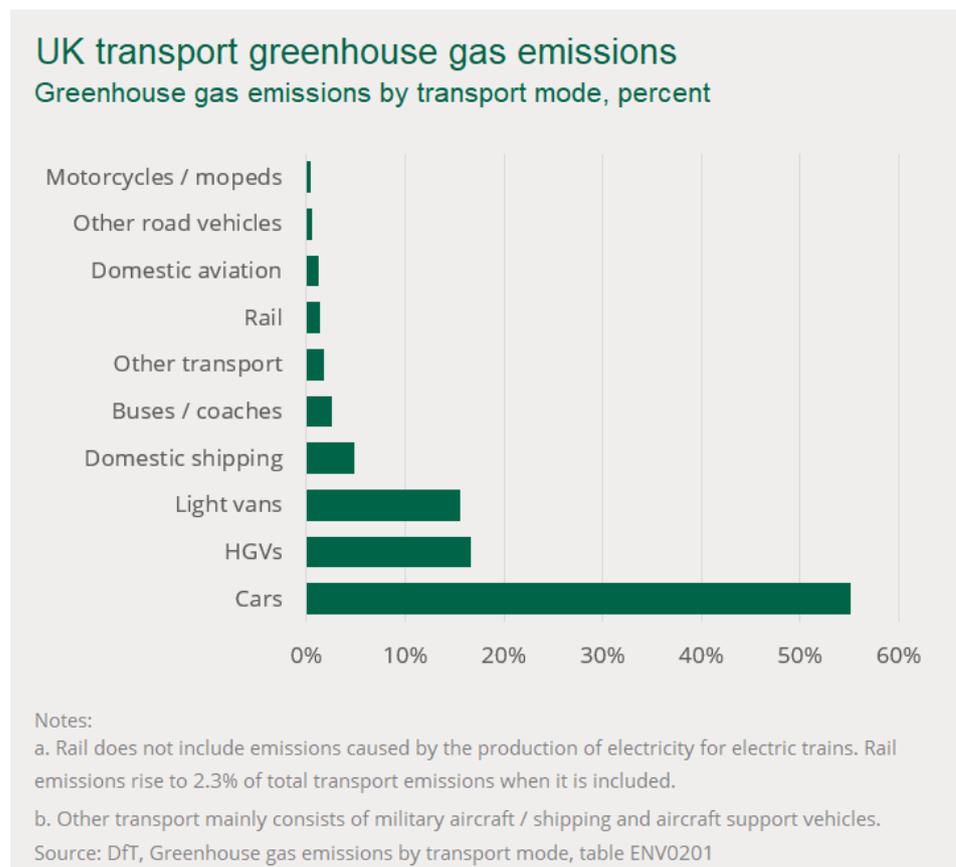
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1 Background

There will be a Westminster Hall debate on the Transport Decarbonisation Plan on Wednesday 16th June 2021. This briefing contains background information, parliamentary and press material, as well as suggested further reading which Members may find useful when preparing for this debate.

1.1 Transport emissions

As of 2019, transport was the largest-emitting sector of the UK economy at 122 mega tonnes carbon dioxide equivalent (MtCO₂e), accounting for 27% of total UK greenhouse gas (GHG) emissions ¹. The chart below shows the contributions to transport GHG emissions by vehicle type, demonstrating how cars represented the greatest proportion of emissions within the transport sector in 2019 (55%) ².



¹ DfBEIS, [Final UK greenhouse gas emissions national statistics: 1990 to 2019, Table 1.2](#), 25 March 2021.

² DfT, [Table ENV0201 Greenhouse gas emissions by transport mode: United Kingdom, 1990-2018, Energy and environment: data tables](#), 17 December 2020.

Emissions from transport have fallen overall since 1990, but increased slightly in recent years (up to 2020, with effects of the pandemic). The overall fall has been smaller than in other sectors and hence transport's share of total emissions has increased.

The Government's projections show transport's emissions falling gradually, at a slower rate than overall emissions, up to 2035.

1.2 Net zero target

On 12 June 2019, the Government laid the draft [Climate Change Act 2008 \(2050 Target Amendment\) Order 2019](#) to amend the *Climate Change Act 2008* by introducing a target for at least a 100% reduction of greenhouse gas emissions (compared to 1990 levels) in the UK by 2050. This is otherwise known as a net zero target because some emissions can remain if they are offset by removal from the atmosphere and/or by trading in carbon units. The [Order](#) came into force on 27 June 2019.

This legislation broadly puts into effect a May 2019 recommendation from the Committee on Climate Change (CCC) (the independent statutory body set up to monitor and advise on progress towards the UK's emission targets). However, it diverges from the recommendation that the target be achieved by domestic action only by retaining the ability to use international carbon credits. The new target was announced by then Prime Minister Theresa May in a [Downing Street Press release](#) in June 2019 and was widely welcomed by the CCC and other stakeholders including industry and environmental groups.

If met, this target would effectively mean that the UK will end its contribution to global emissions by 2050. Before this amendment, the UK had a long-term emissions reduction target of reducing greenhouse gas emissions by 80% by 2050, compared to 1990 levels, set by the [Climate Change Act 2008](#).

1.3 Transport decarbonisation plan

The Government announced its plan to publish a comprehensive Transport Decarbonisation Plan in 2020 in its formal response to [the 2019 progress report from the Committee on Climate Change](#).³ This plan is expected to set out how the Government intends to reduce emissions from the transport sector in order to meet the 2050 net zero target.

³ HM Government, [Leading on Clean Growth The Government Response to the Committee on Climate Change's 2019 Progress Report to Parliament – Reducing UK emissions](#), October 2019

In advance of this, the ‘Setting the Challenge’ [report](#) outlines the view of the Government on the current position of transport emissions, including highlighting current policies and strategies in place to decarbonise the transport sector.

Developing the policies to decarbonise all road vehicles, from motorcycles to HGVs, is one of the key strategic priorities of the report. It also highlights the role of public transport, as well as decarbonisation of the rail and aviation industries. Further, it discusses current policies and future plans for decarbonisation of the freight sector, including road, rail, and maritime-based transport.

When ‘Setting the Challenge’, the Government acknowledge that:

“...we do not currently know the optimal path for delivering a decarbonised transport network. We, therefore, intend to work with business, academics, researchers and innovators, environmental NGOs and the wider public over 2020 to design the package of decarbonisation policies...”⁴.

1.4

Road

Road transport is a significant source of greenhouse gas emissions. It is therefore in line to be significantly affected by the adoption of the [net zero target by 2050](#).

The key policies for reducing emissions from the road transport sector are the [Government’s Road to Zero strategy](#) and its commitment to end the sale of petrol and diesel cars and vans by 2030, and hybrids by 2035.

The Library Brief, [Electric Vehicles and Infrastructure](#) provides an overview of the current policies and challenges to increasing the uptake of Electric Vehicles (EVs).

1.5

Rail

Rail transport has comparatively low emissions for both passenger and freight transport. Increased rail travel could therefore offer one route to cutting emissions across the transport sector to meet the 2050 net zero target.

⁴ DfT, [Decarbonising Transport: Setting the Challenge](#), 26 March 2020.

In February 2018 the then rail Minister Jo Johnson said that he would “would like to see us take all diesel-only trains off the track by 2040”.⁵ Since then the industry has been focussed on reducing emissions and put forward its [proposals for decarbonisation in a July 2019 report](#) by the industry-wide Rail Decarbonisation Taskforce (RDTF).⁶

The RDTF concluded that the removal of diesel-only passenger trains from the national rail network by 2040 is achievable and that rail can actively contribute to the Government’s net zero carbon by 2050 target. There are two main ways of doing this:

- electrifying more of the rail network; and
- developing the two technologies that are likely to be sufficiently mature to make a significant decarbonisation impact by 2040: hydrogen and battery power

A rolling plan of electrification was put forward by the Rail Industry Association (RIA) in a March 2019 report.⁷ This concluded that electrification should be seen as the first choice in a hierarchy of options for decarbonising the rail network by 2040.

HGVs account for around 16% of total transport emissions but make up just 5% of vehicle miles.⁸ Rail freight emissions are lower. Thus, there could be significant GHG emissions reduction potential from a modal shift of freight transport from road to rail. A [DfT-commissioned report by Arup](#) estimates the potential to save over 4.6 million tonnes of CO₂ equivalent.⁹ These findings were reflected in both the DfT’s [Freight Carbon Review 2017](#) and its [Rail Freight strategy 2016](#).

There are however questions around how much freight can be shifted from road to rail. Specifically, over rail network capacity constraints.

1.6 Aviation and shipping

For the UK, aviation contributed 1.2% of the transport sector’s emissions in 2017; 1.7 million tonnes of CO₂ equivalent. This is because, under international rules, only domestic flights count towards a country’s emissions.

Neither international aviation or shipping emissions are explicitly included in the UK’s ‘net-zero’ legislation. In September 2019, the Chair of the CCC wrote to the Secretary of State for Transport recommending that international

⁵ DfT, [Speech: Let’s raise our ambitions for a cleaner, greener railway](#), Feb 2018

⁶ Rail Industry Decarbonisation Task Force, [Final Report to the Rail Minister](#), July 2019

⁷ Rail Industry Association, [RIA Electrification Cost Challenge Report](#), March 2019

⁸ DfT, [Road Traffic Estimates: Great Britain 2018](#), May 2019

⁹ Arup, [Future potential for modal shift in the UK rail freight market](#), September 2016, p. 85

aviation and shipping emissions be included explicitly in the UK's net zero target.¹⁰

Estimated emissions from international aviation from the UK were 35.0 million tonnes of CO₂ equivalent in 2017. This was 20 times greater than for domestic flights.

In total, international shipping (816 million of tonnes of CO₂ equivalent in 2012¹¹) and aviation (895 million tonnes of CO₂ equivalent in 2018¹²) are responsible for around 4-5% of annual global CO₂ emissions. Without policies or new technologies to reduce emissions, these sectors are forecast to be responsible for an even larger share of total emissions in the future.

Currently, both international and UK Government initiatives targeting emissions reduction, from the aviation sector, are focused on carbon offsetting and market-based initiatives (such as CORSIA and emissions trading schemes).

In the shipping sector, in April 2018, the International Maritime Organization [adopted an “initial strategy” on the reduction of greenhouse gas emissions](#) from ships.¹³ This initial strategy set a target of reducing GHG emissions by at least 50% by 2050 with a strong emphasis by many countries on reducing this to 100% by 2050 wherever possible.

For more information on decarbonising the aviation sector, please see the Commons Library briefing, [Aviation, decarbonisation and climate change](#).

1.7

Promoting active travel

Replacing travel that would otherwise involve private cars with active means of travel – walking and cycling – should reduce overall transport emissions as well.

Currently, the UK has low cycling and walking rates, particularly when compared with its European neighbours. A [2013 report for European Commission](#) showed the UK ranked 11th (out of 28) for rates of daily walking and 24th for daily cycling.¹⁴ [Department for Transport \(DfT\) data](#) show two out of every three personal trips are within five miles, which the government considers “an achievable distance to cycle for most people, with many

¹⁰ [Committee on Climate Change \(2019\)](#). Net-zero and the approach to international aviation and shipping emissions: Letter from Lord Deben to Grant Shapps.

¹¹ IMO, [Third IMO Greenhouse Gas Study 2014](#), p1

¹² Jocelyn Timperley, [Corsia: The UN's plan to 'offset' growth in aviation emissions after 2020](#), CarbonBrief, 4 Feb 2019

¹³ IMO, [UN body adopts climate change strategy for shipping](#), 13 Apr 2018

¹⁴ European Commission, [Attitudes of Europeans towards urban mobility](#), Dec 2013

shorter journeys also suitable for walking.”¹⁵ This would suggest that there is considerable scope to increase the number of people choosing active means of travel.

Cost and simplicity are major factors that can influence individual choices for particular journeys. Finding ways that allow people to incorporate active travel into the wider transport network, as a first mile/last mile solution could play a role in helping to get more people active and hence reduce emissions. However, many towns and cities presently are simply not set up for active travel. Docked and dockless bike hire schemes may be one of the ways to promote this first/last mile active travel. Further, there are new micromobility devices (such as e-scooters, e-bikes) that could also contribute to first/last mile travel. The DfT launched e-scooter trials in several towns and cities since 2020 and is monitoring the results with a view to future regulation.

For more information on active travel, please see the Commons Library Brief, [Active Travel: Trends, Policy and Funding](#), which provides information on the policies and funding for cycling and walking.

¹⁵ DfT, [Cycling and Walking Investment Strategy](#), April 2017, para 1.16

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Press releases

[Leaders call for acceleration of Government's decarbonisation plans](#)

The Business Desk

11 June 2021

[Decarbonising UK transport: Finding innovative and practical financial solutions together](#)

Business Green

12 May 2021

[Decarbonising transport key to delivering on net-zero target](#)

Institute of Civil Engineers

29 April 2021

[The DfT's decarbonisation plan will be worth the wait if it tackles these four priorities](#)

TransportXtra

16 April 2021

[A year on: is the government keeping its promise to radically shift the way we travel?](#)

Inside Track

17 March 2021

[Decarbonising transport with technology and innovation](#)

WSP

2 November 2020

[Delivering an ambitious Transport Decarbonisation Plan](#)

Green Alliance

Undated (2020)

[Government's transport decarbonisation plan must include aviation, aef argues](#)

AEF

21 July 2020

[DfT sets out steps to a transport decarbonisation plan](#)

Railway Gazette

1 April 2020

3 Parliamentary material

3.1 Parliamentary Questions

Transport: Carbon Emissions

10 June 2021 | 8704

Asked by Tanmanjeet Singh Desai

To ask the Secretary of State for Transport, what steps he is taking to tackle carbon emissions from transport in the South East.

Answering member: Rachel Maclean |Department for Transport
Our Transport Decarbonisation Plan, due to be published shortly, will set out a holistic and cross-modal approach to decarbonising the entire transport system, including in the South East. We recognise that different decarbonisation solutions will be required and will work best in different places across the UK, which is why place-based solutions is one of the six strategic priorities for the plan.

Public Transport: Carbon Emissions

24 May 2021 | 6478

Asked by: Kate Griffiths MP

To ask the Secretary of State for Transport, what steps he is taking to ensure that local authorities are adequately supported with decarbonising public transport networks.

Answering member: Rachel Maclean MP |Department for Transport

The Government has allocated £25m in 2021/22 to support local authorities with the skills and people needed to implement the National Bus Strategy. We have already given an initial £100k to each Local Transport Authority, with more capacity funding to be allocated soon. We are also developing a Bus Centre of Excellence to serve as a repository of information and guidance for local authorities and bus operators, helping to build capabilities into the future.

Our Transport Decarbonisation Plan, due to be published shortly, will include further commitments to drive the decarbonisation agenda at the local level.

Carbon Capture and Storage and Hydrogen: Scotland

24 May 2021 | 6496

Asked by: Richard Thomson MP

To ask the Secretary of State for Business, Energy and Industrial Strategy, what steps his Department is taking to help ensure that industry in Scotland has access to (a) carbon capture and storage and (b) hydrogen production

infrastructure required to meet Scottish and UK decarbonisation targets by 2045 and 2050.

Answering member: Rt Hon Anne-Marie Trevelyan MP |Department for Business, Energy and Industrial Strategy

Last month, Government accepted the Committee on Climate Change's Carbon Budget 6 recommendation; this is a significant step in the UK's global climate leadership and CCUS and hydrogen will be critical to meeting these important commitments.

In May this year, the Department for Business, Energy and Industrial Strategy set out the details of the Carbon Capture, Usage and Storage (CCUS) Cluster Sequencing Process. Through this process, government will look to identify at least two CCUS clusters whose readiness suggests they are most naturally suited to deployment in the mid-2020s, as part of our efforts to identify and support a logical sequence of deployment for CCUS projects in the UK. Projects within the clusters will have the first opportunity to be considered to receive any necessary support under the government's CCUS Programme including access to the £1bn CCS Infrastructure Fund, business models for Transport & Storage, power, industrial carbon capture and low carbon hydrogen. Further details on the revenue mechanisms to bring through private sector investment via these business models will be set out later this year.

We will continue to engage with each of the devolved administrations to develop our approach the delivery of CCUS across the UK. In order to facilitate this work, we continue to be open to any CCUS projects across the UK identifying themselves to us.

The UK has expertise and assets to support both electrolytic (green) and Carbon Capture Utilisation and Storage (CCUS) enabled (blue) hydrogen production. Our twin track approach will drive cost effective supply volumes in the 2020s in line with our 2030 ambition, whilst scaling up green hydrogen. This ambition will be supported by a range of measures, including a UK wide £240 million Net Zero Hydrogen Fund, and our hydrogen business model. We will be consulting shortly on these measures, alongside the publication of the Hydrogen Strategy. We are working closely with the Devolved Administrations, including the Scottish Government, to help realise the economic and decarbonisation benefits that a UK hydrogen economy will bring.

We have also supported the development and deployment of projects within Scotland's industrial cluster that will deliver low carbon technologies and enabling infrastructure. Through the Industrial Decarbonisation Challenge, Scotland's Net Zero Infrastructure Programme (SNZI) received £31.3m in March this year from the Industrial Strategy Challenge Fund.

Greenhouse Gas Emissions

24 May 2021 | 6385

Asked by: Helen Hayes MP

To ask the Secretary of State for Business, Energy and Industrial Strategy, what progress his Department has made on publishing a strategy on net zero.

Answering member: Rt Hon Anne-Marie Trevelyan MP |Department for Business, Energy and Industrial Strategy

Leading up to COP26 - in addition to ambitious plans across key sectors of the economy, including an Energy White Paper, Transport Decarbonisation Plan and Heat and Buildings Strategy - we will publish a comprehensive Net Zero Strategy. This will set out the Government's vision for transitioning to a net zero economy, making the most of new growth and employment opportunities across the UK, and outline our path to hit our 2050 target.

Transport: Carbon Emissions

24 May 2021 | 6308

Asked by: Mike Kane MP

To ask the Secretary of State for Transport, whether he plans to publish the Transport Decarbonisation Plan before the summer 2021 Parliamentary recess.

Answering member: Rachel Maclean MP |Department for Transport

Our Transport Decarbonisation Plan will set an ambitious pathway to end UK transport's carbon emissions by 2050 at the latest and we intend to publish it shortly.

Roads: Carbon Emissions

17 May 2021 | HL295

Asked by: Lord Newby

To ask Her Majesty's Government what plans they have to amend their road transport infrastructure policy to require that they take account of (1) the UK's commitments under the Paris Agreement, and (2) the commitment to net-zero carbon emissions by 2050.

Answering member: Baroness Vere of Norbiton |Department for Transport

The Government is satisfied that plans for road infrastructure are consistent with Net Zero and the UK's commitments under the Paris Agreement, matters which we keep under consideration. The upcoming Transport Decarbonisation Plan will set out a credible and ambitious pathway to deliver transport's contribution to carbon budgets and meeting net zero by 2050.

3.2

Parliamentary Debates

[Transport Decarbonisation Strategy](#)

19 May 2021 | Lords Chamber

4 Further reading

Library Briefings (2020-2021)

[*Climate change: an overview*](#), 27 May 2021

[*Aviation, decarbonisation and climate change*](#), 12 February 2021

[*Electric vehicles and infrastructure*](#), 4 December 2020

[*Work of the Jet Zero Council*](#), 7 October 2020

[*Net zero targets and decarbonising transport*](#), Library Debate Pack, 31 January 2020

Parliament (2020-2021)

[*From 11% to 100% zero emission cars in 14 years: Government lacks plan for “huge challenge” of social and economic transition*](#), House of Commons Public Accounts Select Committee, 19 May 2021

[*Differing approaches to reaching Net Zero: pathways and timing*](#), Parliamentary Office of Science and Technology, 29 April 2021

[*Trains fit for the future?*](#) House of Commons Transport Select Committee, 23 March 2021

[*Zero emission vehicles and road pricing*](#), House of Commons Transport Select Committee, 2021

[Parliamentary material on transport decarbonisation 2020-2021](#) (database search)

UK Government (2020-2021)

[*Green motoring milestone with half-a-million ultra low emission vehicles now on UK roads*](#), DfT, 5 May 2021

[*UK enshrines new target in law to slash emissions by 78% by 2035*](#), DBEIS, 10 April 2021

[Multi-million pound scheme for zero-emission buses across England launched](#), DfT, 30 March 2021

[Outcome and response to the ending the sale of new petrol, diesel and hybrid cars and vans](#), DfT, 10 March 2021

[Ending the sale of new diesel buses](#), DfT, 15 March 2021

[On the road to a sustainable future: Net Zero Transport Board paves the way for a green recovery](#), DfT, 9 July 2020

[Creating the transport decarbonisation plan](#), DfT, March 2020

Other Publications (2020-2021)

[Decarbonising Transport](#), Transport Research Laboratory, December 2020

Websites

[Aviation Environment Federation](#)

[Climate Change Committee](#)

[International Chamber of Shipping](#) – environment publications

[International Council on Clean Transportation](#)

[International Energy Agency – Transport](#)

[International Maritime Organization](#)

[International Transport Forum](#)

[Network Rail – Delivering a sustainable railway](#)

[Office for Zero Emission Vehicles](#)

[Policy connect](#) – transport sector briefings

[Sustainable Aviation](#) – industry group

[Transport & Environment](#) – briefings by transport mode

[Transport for Quality of Life](#) – briefings on climate change

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