



Department
for Transport

Freight Projects and Policy Update

Low Carbon Vehicle Event, 10th September 2015

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Presentation outline

- ▶ Update on 5th Carbon Budget
- ▶ Overview of recent amendments to the General Circulation Directive
- ▶ Update on DfT's Longer Semi-Trailer Trial
- ▶ Emerging findings from DfT's Emissions Testing project
- ▶ Key next steps for freight policy and research



5th Carbon Budget: Background

- ▶ Climate Change Act 2008 established a framework to develop an economically credible emissions reduction path in the UK.
- ▶ **Three pillars:**

Ambitious climate change targets for 2050	Binding carbon budgets	Clear accountability framework
The Act commits the UK to reducing greenhouse gases by 80% by 2050 (compared to base year levels).	The Act requires that Government caps emissions over successive 5-year periods set 12 years in advance.	The Act established an independent Committee on Climate Change to provide advice and scrutiny.

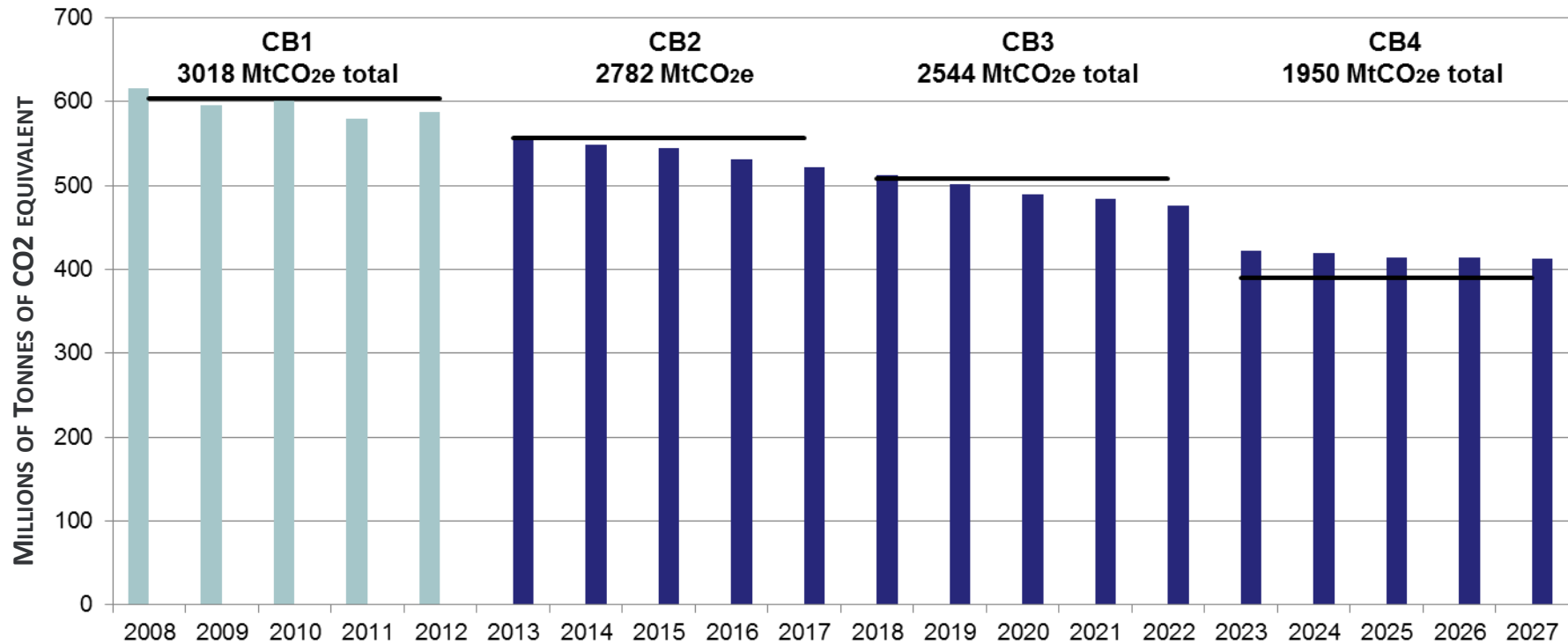


Carbon Budgets: How are we doing so far?

The UK has met the first carbon budget.

Projections indicate we are on track to meet the second and third budgets.

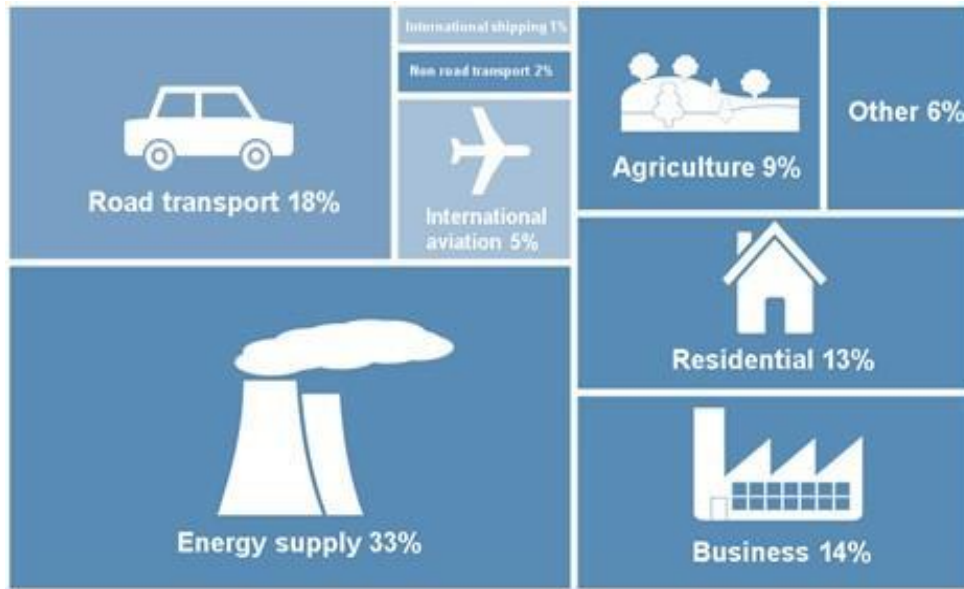
There is currently an expected shortfall over the fourth budget.



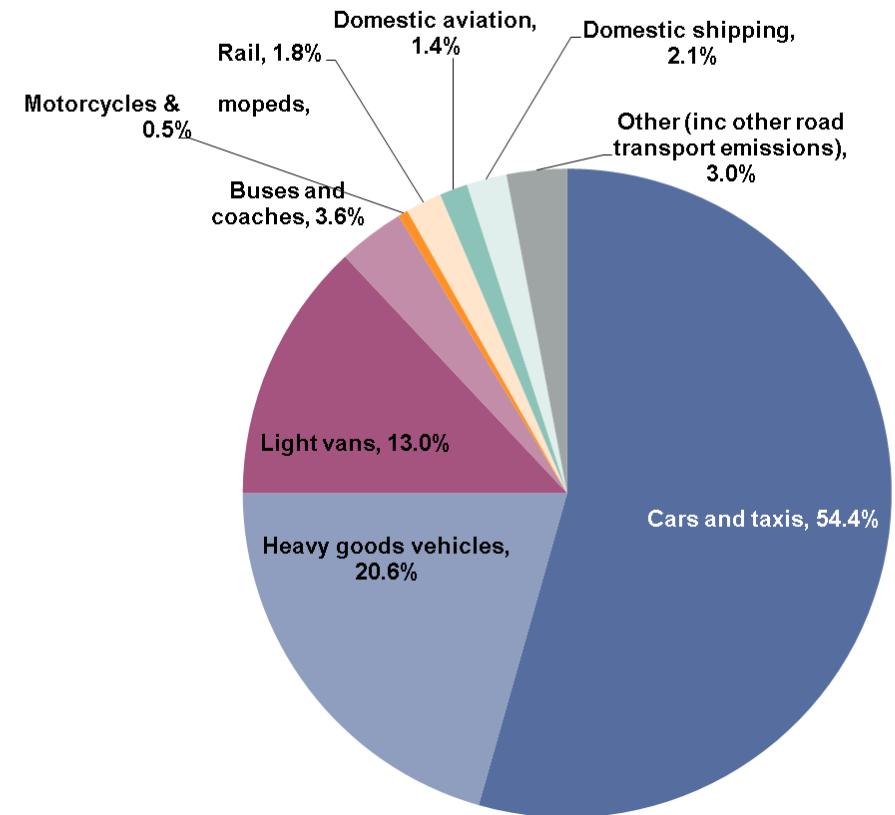


5th Carbon Budget: Relevance to freight

- ▶ Transport makes up around a quarter of UK carbon emissions, and reductions are likely to be needed in all modes.
- ▶ The chart illustrates how this breaks down across the different modes, with HGVs being the second largest contributor.



UK domestic transport greenhouse gas emissions, 2012





5th Carbon Budget: What happens next?

- ▶ The Government needs to set level of Carbon Budget 5 by June 2016. This will cover the period 2028-2032.
- ▶ Department for Energy and Climate Change (DECC) has commissioned relevant departments to produce analysis to inform the setting of Carbon Budget 5 - this includes Department for Transport.
- ▶ In addition, the Government will need to publish a Carbon Plan by December 2016 which sets out the likely policy interventions that will be used to meet the Carbon Budgets.
- ▶ DfT is considering a range of measures to reduce HGV emissions, including:
 - ▶ Alternative fuels and infrastructure
 - ▶ Aerodynamic kit
 - ▶ Modal shift
 - ▶ Operational efficiencies
- ▶ Our analysis will feed into DECC's wider 5th Carbon Budget work.
- ▶ We will seek industry input through the Low Emission HGV Task Force and would welcome engagement from interested parties.



Committee on Climate Change: 2015 Progress Report to Parliament



- ▶ The Committee on Climate Change (CCC) reports annually to Parliament on the UK's progress towards the 2050 target.
- ▶ The CCC's 2015 report was published in June.
- ▶ Highlighted opportunities for further improvements within the road freight sector.
- ▶ Key recommendation:
 - ▶ “Extend successful emissions-reduction schemes for freight operations: larger freight operators have pioneered schemes to reduce fuel costs and emissions that should be rolled out across industry, including small operators.” (Recommendation 17)
- ▶ We will consider how to take this forward in conjunction with our wider Carbon Budget 5 work.



Amendments to the General Circulation Directive

- ▶ Directive 96/53/EC lays down rules for certain vehicles circulating across the EU:
 - ▶ maximum authorised dimensions in national and international (cross-border) traffic.
 - ▶ maximum authorised weights in international traffic.
- ▶ Directive (EU) 2015/719 amends 96/53/EC. Aims to allow extra length for more aerodynamic, fuel-efficient and safer lorries, without loss of load space and to facilitate intermodal transport.
- ▶ Key provisions are:
 - ▶ Extra length allowances for (as yet unspecified) rear aerodynamics and improved aerodynamic and safer cab design.
 - ▶ Extra 15cm for vehicles or combinations engaged in transport of 45 foot containers or 45 foot swap bodies in intermodal (water, rail and road) operations.
 - ▶ Up to 1 extra tonne in weight for certain vehicles powered by alternative fuels (including electricity, hydrogen, natural gas and LPG) to account for heavier powertrains.
- ▶ New Directive must be transposed by 7 May 2017.
- ▶ Will require amendments to national type approval legislation. Consultation planned early next year.



Longer Semi-Trailer Trial: Background

- ▶ The trial involves longer semi-trailers (LSTs) of 14.6 metres and 15.65 metres in length (17.5 metres and 18.55 metres total vehicle lengths respectively). 15% extra capacity for 15.65m trailers.
- ▶ Trial started in January 2012 – allocation of 1800 longer semi-trailers.
- ▶ The trial is expected to save over 3,000 tonnes of CO₂ over 10 years. The overall benefits are estimated at £33 million over 10 years.





Longer Semi-Trailer Trial: Latest Findings

Activity	2014 data	Feb 2015
Trial take-up: LSTs on road and submitting trial data (% of trial target of 1,800 trailers)	1,194 (66%)	1,323 (74%)
Operators with trailers on the road (based on data submitted for 2014 report)	114	123
Journey legs travelled by LSTs during trial	0.93m	1.18m
Vehicle km 'saved' by LST operations (lower bound - upper bound)	4.2 – 5.2m	
Journeys saved (estimates of equivalent 'standard trailer' journeys saved across whole trial period and all operators)	1 in 22 average saving across all operators 1 in 9 highest saving achieved by individual operators	



Longer Semi-Trailer Trial: Safety Performance

Safety incidents involving LSTs		
Collisions resulting in injury	Casualties	Collisions / Casualties on public highways or public access areas
7	7	Personal injury incidents involving an LST (2012-2014 – public highway or public place)

- ▶ To date, on a per kilometre basis, LSTs in the trial have been involved in around 60% fewer injury collisions and 70% fewer casualties, in comparison to the average for standard articulated HGVs.
- ▶ There have been no fatal LST incidents and no vulnerable road users injured.
- ▶ 2014 trial report available at: <https://www.gov.uk/government/publications/longer-semi-trailer-trial-evaluation-annual-report-2014>



Emissions Testing Project: Background & Objectives

- ▶ Gas-fuelled HGVs offer potential carbon dioxide (CO₂) savings compared to diesel vehicles, but the reduction in overall GHG emissions can be off-set, or even reversed, because of methane emissions (“methane slip”, i.e. unburned methane emitted from the tailpipe). Methane is a potent greenhouse gas.
- ▶ Engine efficiency losses can also erode some or all of the potential greenhouse gas savings.
- ▶ Data from the ongoing Low Carbon Truck Trials indicate that the **overall GHG benefits or dis-benefits of gas-powered vehicles reflect complex interactions between engine efficiency, methane slip levels and the renewable fraction of the methane**, but there is a lack of consistency and comparability in the test methods used to date.
- ▶ To improve the Department’s evidence base, this project’s initial primary purpose was thus to provide:
 - ▶ **A test protocol** that will allow both the accurate measurement of methane emissions from HGVs and the change in their CO₂ emissions relative to a comparator diesel only fuelled vehicle **so that changes in GHG emissions can be assessed for the methane fuelled vehicles relative to comparator diesel fuelled vehicles.**
- ▶ The project combined a desk-based literature review, pilot vehicle testing and a stakeholder workshop.



Emissions Testing Project: The recommended protocol

- ▶ The Ricardo-AEA report, with full details of the project, will be published later this month.
- ▶ Combining the pilot testing results, literature review and contributions gathered from industry stakeholders, the test protocol is likely to have the following key features:
 - ▶ Track testing is preferred to chassis dynamometer testing or testing on public roads;
 - ▶ Vehicles should normally be tested with payloads in the 50-60% range, though testing at other payloads should not be ruled out;
 - ▶ Drive/test cycles should reflect the real operation of the type of vehicles that will be tested, with an appropriate mix of urban, rural and motorway driving conditions;
 - ▶ Tailpipe emissions should be analysed using Portable Emissions Monitoring Systems (PEMS) equipment (and consistent with the PEMS specification in Regulation 582/2011/EC);
 - ▶ Total hydrocarbon emissions are a suitable proxy for methane in methane fuelled vehicles.



Freight Projects and Policy: Key Next Steps

- ▶ Phase 2 of the emissions testing project (further testing, using the protocol):
 - ▶ Focus on vehicles likely to be used commonly over the coming years (Euro VI)
 - ▶ Focus on the aftermarket dual fuel conversions because, unlike the OEM manufactured vehicles, these are unlikely to have been formally type approved and their GHG emissions are currently more uncertain.
 - ▶ OEM vehicles should still be tested to build an evidence base on overall GHG performance.
 - ▶ Use evidence gathered to identify future policy priorities, e.g. innovation needs.
- ▶ Completion of low carbon truck trial.
- ▶ OLEV funding for publicly accessible gas refuelling infrastructure.



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Thank you

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- ▶ **Longer Semi-Trailer Trial and General Circulation Directive**

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