Climate Change

THIS BRIEFING COVERS

The need for action; transport's contribution to climate change; legislation and targets; the Stern Review; attitudes; behavioural change; cycling and CO_2; attitudes and awareness; the value of investing in behavioural change; national and local government policy, responsibilities and commitment.

HEADLINE MESSAGES

- Climate change threatens the future of our way of life and economy, as well as our health and the natural environment that cyclists treasure. There is little doubt amongst informed scientists that greenhouse emissions from human activity are already contributing to an increase in extreme weather events and loss of life around the world, and that dangerously high levels of CO_2 concentrations are already being reached. To delay tackling climate change will be far more costly than acting now.
- Cycling provided highly efficient transport before carbon-intensive travel became widespread, and it is part of the solution for a low-carbon future. It is one of the simplest lifestyle choices that individuals can make to reduce their carbon footprint. It also has huge benefits for their health, their finances and their neighbourhoods.
- Government bodies and businesses should act to reduce greenhouse gas emissions from transport by encouraging cycling as a zero-carbon option and by reducing the need to travel.

KEY FACTS

- It is generally accepted that climate change risks becoming critical if the world fails to limit temperature rises to 2°C over the pre-industrial average (although lower figures have been suggested).
- At the United Nations climate change conference in Paris 2015 ('COP21'), 195 nations agreed to keep global temperature rise well below 2°C this century, and to drive efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
- The *Climate Change Act 2008* commits the UK to reducing greenhouse gas (GHG) emissions by at least 80% in 2050 (based on 1990 levels).
- In 2015, the transport sector emitted 24% of the UK's GHG emissions, and 29% of its CO_2. Road transport (as opposed to air, rail etc.) accounted for 93% of CO_2, most of this coming from passenger cars (62%).
- A dramatic, worldwide increase in cycling – from a current c.6% of all urban passenger miles to 11% in 2030 and 14% in 2050 – could cut CO_2 emissions from urban passenger transport by about 7% by 2030, and nearly 11% in 2050.
- If people in England became as likely to cycle as people in the Netherlands, there would be around two million fewer car driving commuters. Consequently, English authorities could reduce CO_2 outputs by over 1,500 tonnes a year on average.

Cycling UK VIEW

- The imperative to halt and reverse the growth of greenhouse emissions should be the central aim of wider transport, planning and economic policies, locally, regionally and nationally.
- Cycling should be promoted as a zero-carbon transport option that can deliver worthwhile carbon savings, together with many other benefits, at very low cost.
- National and local policy frameworks should aim to reduce the need to travel and promote cycling and other low-carbon alternatives to the car. This should also be a central objective for all relevant development agencies and local authorities.
- Transport projects and development proposals that are predicted (or are likely) to increase greenhouse gas emissions should be rejected, and low-carbon alternatives developed instead.
- The Government should oblige local authorities to make their contribution towards meeting the targets set by the *Climate Change Act* and progress should be reported and monitored effectively. Voluntary action alone is not sufficient.

For Cycling UK's views on air quality and pollution, see:
www.cyclinguk.org/campaigning/views-and-briefings/air-quality

BACKGROUND INFORMATION

Cycling UK view: The imperative to halt and reverse the growth of greenhouse emissions should be the central aim of wider transport, planning and economic policies, locally and nationally.

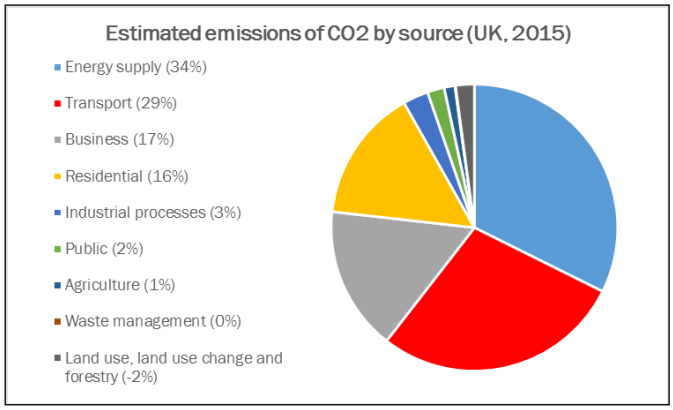
1. Climate change: the need for action; legislation; and economics

a. The threat

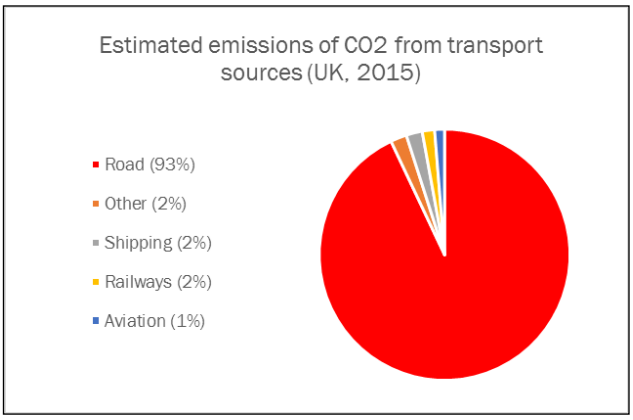
- The 5th assessment report from the Intergovernmental Panel on Climate Change (IPCC, 2014), written by experts in the field, found that: *"Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems."* [1]
- In 2009, The Global Humanitarian Forum estimated that climate change had already accounted for over 300,000 world deaths p.a.; and that more than 300 million were seriously affected.[2]
- Action on climate change is one of the UN's 17 'Goals to Transform our World'. It says: *"Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow."*[3]
- Limiting temperature rises to 2°C, the level at which it is generally thought that climate change will become critical for the world, means that atmospheric concentrations of CO_2 must not exceed 450 parts per million (ppm) at most. [4] Some argue for an even lower figure.[5]
- By the end of 2016, the global annual mean for CO_2 was estimated to be around 403 ppm (subject to change), higher than any year since 1959, when the measurement was first made.
- CO_2 in the atmosphere grew by 2.9 ppm in 2016, about the same as the record rise in 2015.[6]
- The EU's total greenhouse emissions increased in 2015 for the first time since 2010. One of the main reasons was higher emissions from increasing road transport.[7]
- Lord Stern's reviews (see below) of the economics of climate change show that taking action immediately is much less costly than delaying it. [8]

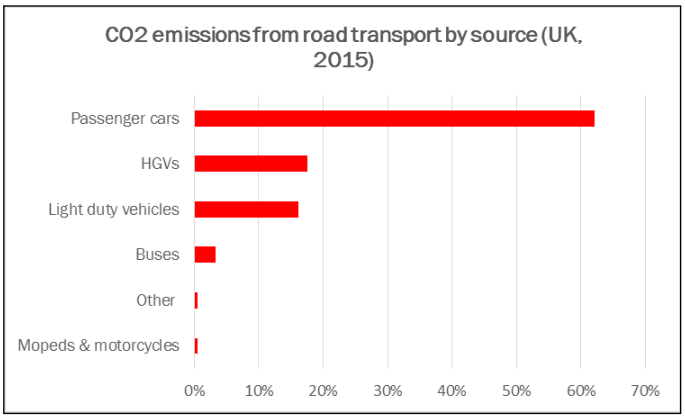
b. Transport's contribution to climate change in the UK

- Overall in 2015, the transport sector emitted 24% of the UK's greenhouse gases (GHG); and 29% of the UK's CO_2:[9]



- By 2015, CO_2 emissions from road transport had dropped by only 0.4% since 1990, whereas emissions from the energy supply and business sector fell by 44% and 39% respectively.[10]
- In 2015, road transport was responsible for by far the most CO_2 emitted by the transport sector as a whole, and most of this (62%) came from passenger cars:[11]





c. UK legislation and targets

The *Climate Change Act 2008* raised the Government's target for reducing greenhouse gas emissions from 60% to 80% by 2050, based on 1990 levels.[12] This, and the target to reduce CO_2 emissions by at least 26% by 2020, is legally binding and relates to the whole of the UK.

The Act also set up a Committee on Climate Change, which works towards achieving five-yearly carbon budgets that restrict the amount of GHG the UK can legally emit in a five-year period. These budgets require the UK to reduce carbon emissions below 1990 levels by: • 25% (2008-12) • 31% (2013-17) • 37% by 2020 (2018-22); • 51% by 2025 (2023-27) • 57% by 2030 (2028-32). [13]

Scotland's own *Climate Change Act* (2009) introduced a statutory target to reduce Scotland's greenhouse gas emissions by 80% by 2050. It also includes an interim 42% reduction target for 2020, with the power for this to be varied based on expert advice.[14]

The *Climate Change Strategy for Wales* sets a target to reduce GHG emissions in Wales by 3% every year and achieve at least a 40% reduction by 2020 compared to figures from 1990.[15] Tackling climate change is also a major theme of the *Well-being of Future Generation (Wales) Act 2015* and the *Environment (Wales) Act 2016*.

Also, at the United Nations Climate Change conference in Paris 2015 ('COP21'), Britain was one of the 195 nations who agreed to keep a global temperature rise this century well below 2°C, and to drive efforts to limit the temperature increase further, i.e. to 1.5°C above pre-industrial levels.[16] In 2016, the EU unveiled national targets for its 28 members to cut GHG emissions by 2030 to ensure that the bloc meets the UN's goals. Britain's targets (given because the country was likely to be a EU member for at least two years longer), is to reduce GHG by 37% over 2005 levels. (The targets, however, have been condemned as inadequate).[17]

The goal for the EU as a whole is to reduce greenhouse gas emissions from transport (excl. international shipping) by 2050 to a level that is 60 % below that of 1990.[18]

d. The Stern Review: the economics of climate change

Sir Nicholas (now Lord) Stern's landmark report on the economics of climate change in 2007[19] spelt out the economic as well as the environmental case for tackling climate change. At the time, Stern argued that it would cost 1% of world GDP to avoid reaching dangerous concentrations of atmospheric greenhouse gases, but in 2008 revised this to 2%.[20] By contrast, he concluded that failure to make this investment could cost between 5% and 20% of world GDP.

Nonetheless, Stern claimed that GHG reductions from transport would be more costly and politically difficult to achieve than savings in other sectors. This conclusion was based largely on the modeling of technological solutions (e.g. more energy-efficient cars). Overall, the Department for Transport has reflected this line of thinking ever since, despite stated commitments to sustainable travel.[21] Cycling UK and other groups, however, believe that this approach seriously underestimates the potential for active travel choices to deliver substantial and cost-effective carbon reductions (see section 3 below).

For more on the value of cycling to the economy, and on sustainable transport and 'growth', see Cycling UK's briefing at: www.cyclinguk.org/campaigning/views-and-briefings/cycling-and-economy

2. Travel behaviour and low-carbon transport

Cycling UK view:

- Cycling should be promoted as a zero-carbon transport option that can deliver worthwhile carbon savings, together with many other benefits, at very low cost.
- For longer distance journeys – including international travel in Europe – the combination of cycle travel with public transport should be facilitated.

a. Cycling and CO_2 targets

- A 2015 report concluded that a world with a dramatic increase in cycling – from a current 6% or so of all urban passenger miles to 11% in 2030 and 14% in 2050 – could cut CO_2 emissions from urban passenger transport by about 7% by 2030, and nearly 11% in 2050.[22]
- A study from the European Cyclists' Federation (ECF), calculated that if EU citizens were to cycle as much as the Danes in 2000 (an average of 2.6km a day), it would help the EU meet more than a quarter of the targeted emission reductions for the transport sector.[23]
- If the amount of mileage cycled in Britain were doubled by decreasing car use, this would reduce CO_2 emissions by 0.6 million tonnes per year.[24]
- The Propensity to Cycle Tool project, funded by the DfT, suggests that if people in England became as likely to cycle as people in the Netherlands (the 'Go Dutch' scenario, which calculates that there would be two million fewer car driving commuters), English authorities could reduce CO_2 outputs by over 1,500 tonnes a year on average.[25]

- Cycling UK calculates that the average person making a typical daily commute of four miles each way would save half a tonne of CO_2 per year by switching from driving to cycling. This equates to c.6% of their personal carbon footprint. [26]
- Combining cycling with rail for longer journeys helps realise the reduced carbon offered by travelling by train.[27]

b. Attitudes and awareness

Surveys show that a high proportion of people are aware of and concerned about climate change, but many are still not prepared to change their travel behaviour to reduce their carbon footprint:

- A YouGov poll of 1,650 adults conducted in May 2017, found that a substantial majority of Britons believe Britain should both remain in the Paris Climate Change agreement, and retain the Climate Change Act (66% and 69% respectively).[28]
- Following the winter flooding in 2013/14, around two thirds (68%) of a nationally representative sample of people in Britain said they were 'fairly' or 'very concerned' about climate change.[29]
- The *British Social Attitudes* survey found that in 2015:[30]
  - 39% of respondents agreed that: *"Many of the journeys of less than 2 miles that I now make by car I could just as easily cycle, if I had a bike";*
  - 56% agreed that: *"For the sake of the environment everyone should reduce how much they use their cars";*
  - However, while 36% agreed that they would be personally willing to decrease the amount they travel by car to help reduce their impact on climate change, 42% said they were not;
  - 19% agreed that: *"For the sake of the environment, car users should pay higher taxes"*. 51% disagreed.

In 2016, car traffic in Great Britain grew by 2% from 2015 to 252.6 billion vehicle miles. This is the highest annual car traffic estimate ever. (DfT. *Road Traffic Estimates: Great Britain 2016.* www.gov.uk/government/collections/road-traffic-statistics)

c. The value of investing in behavioural change

- The DfT-commissioned 'VIBAT' report (*Visioning & Backcasting for UK Transport Policy*) examined the possibility of reducing transport CO_2 emissions by 60% by 2030. It developed two images of the future:
  - **Image 1** considered the target's achievability with minimum changes in travel behaviour (i.e. car traffic still grows, so the emphasis is on technological solutions);
  - **Image 2** gave behavioural change a central role, expecting a *minimum* of a 10% reduction in car mileage in 2030 compared with 2000.[31]

  VIBAT concluded that Image 1 could not achieve the target in the timescale envisaged, whereas Image 2 could manage it in full.
- Research commissioned by the Scottish Government on options for mitigating the climate impacts of transport has estimated that, over the period 2010-2030, 'travel plans' (a term used in the report to cover the whole range of behavioural change measures) can be expected to cost around £10 per tonne of carbon abated, representing exceptional value for money in terms of CO_2 reduction (not to mention the wider health and other benefits).

  Cycle infrastructure was more expensive, but also reasonable, at c£170 per tonne abated. In contrast, high-speed rail and many other forms of public transport investment cost more than £3,000 per tonne abated. [32]

- Workplace travel plans (i.e. a package of measures designed to reduce the amount of car journeys a workplace generates) are estimated to reduce car trips by 10-30%; school travel plans reduce car travel by 8-15%; and targeted marketing by 7-15% in urban areas.[33]
- All the 'smarter choice' measures considered in *Soft Measures – Hard Facts*, an evidence review produced by a partnership of public health, economic and transport organisations (including the Dept of Health and Highways Agency) achieved genuine carbon reductions from 5 kgs to 1500 kgs per person per year. [34]

For more on smarter choices, see Cycling UK's briefing at:
www.cyclinguk.org/campaigning/views-and-briefings/smarter-choices

3. National & local government policy, responsibilities and commitment

Cycling UK view:

- National and local policy frameworks should aim to reduce the need to travel and promote cycling and other low-carbon alternatives to the car. This should also be a central objective for all relevant development agencies and local authorities.
- Transport projects and development proposals that are predicted (or are likely) to increase greenhouse gas emissions should be rejected, and low-carbon alternatives developed instead.
- The Government should oblige local authorities to make their contribution towards meeting the targets set by the *Climate Change Act* and progress should be reported and monitored effectively. Voluntary action alone is not sufficient.

a. National government

Both the Government[35] and the NHS[36] have acknowledged the threat of climate change. However, the Government's current approach to addressing it has been subject to serious criticism from not only from environmental campaigners (e.g. Friends of the Earth[37]), but also from the Committee on Climate Change.[38] The direction of transport policy is of particular concern.

- **Transport policy: car travel v cycling and walking**

As noted above (section 2), there is growing recognition that encouraging people to cycle and walk instead of travelling by car can help reduce CO_2 emissions. Yet, the Government's policies on transport and its emphasis on economic growth are still perpetuating the attractiveness of, and dependence on, car travel.

Fuel duty: the Government has explicitly resisted using fuel duty as a mechanism for making car driving less attractive: not only is the duty frozen year after year, but the Treasury has also decided not to define it as an 'environmental tax' - a move that means the Government does not have to increase it to help meet its pledges to raise more money from environmental taxes in general. In 2012, the Government stated that it had chosen not to view fuel duty as a tax that is *"explicitly linked to the government's environmental objectives"* or has *"the encouragement of environmental behaviour change as [its] 'primary objective'."*[39]

The reluctance to increase taxes on fuel is symptomatic of the belief that motorists are 'beleaguered'. However, according to a 2012 report from the Institute for Public Policy Research *"there is no war on motorists' [...] motorists are not unfairly penalised and there are justifiable reasons for the planned increases on taxes on motoring."* [40]

'Technofixes': the Government is relying far more heavily on technological advances - especially electric cars - than on behavioural change to reduce greenhouse emissions from transport.

In the transport section of its *Carbon Plan: Delivering our Low Carbon Future* (Dec 2011)[41], fuel efficiency, ultra low emission vehicles (ULEVs) etc. were the major focus. The Government's vision was for almost every car and van to be an ULEV by 2050, a commitment it reaffirmed in 2015.[42]

Sustainable travel received a much more reserved endorsement in the 2011 *Carbon Plan*: *"Over the fourth carbon budget, more people choosing to take public transport, walk or cycle could mean up to a 5% reduction in urban car trips. However, uncertainties around the impact of individual initiatives, and barriers such as convenience, safety and appropriateness to journey, may prevent the highest levels of abatement from being realised."* An update, in the form of an 'emissions reduction plan', was due by December 2016, but is still awaited. [43]

Transport scheme appraisal: as mentioned, cycling and walking schemes, and initiatives to encourage active travel, have much to offer in terms of tackling climate change. However, as campaigners have long argued, Transport Appraisal Guidance (TAG - the guidance that professionals follow when assessing the business case for transport schemes) fails to reflect its value in this and other areas.[44] Progress has been made in the latest revisions, but it still falls short.

- The DfT's current guidance on modelling smarter choices (TAG Unit A5.1) and on active travel modes (TAG Unit M5.2) are available at: www.gov.uk/guidance/transport-analysis-guidance-webtag#m5-advanced-modelling-techniques
- Transport appraisal in Scotland is covered by STAG (Scottish Transport Appraisal Guidance): www.transportscotland.gov.uk/stag;
- Transport appraisal in Wales is covered by WelTAG: http://gov.wales/topics/transport/planning-strategies/weltag/?lang=en

- **Planning policy**

Meanwhile, planning policy reforms for England have made it harder for the public to contest development plans or transport schemes on grounds of CO_2 emissions.[45] The national framework no longer specifically refers to reducing the need to travel, neither are local planning authorities specifically directed to reduce the use of the private car. They are instead required to *"support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport"* – but the definition of 'reasonable' is far from clear.

For more on planning, see Cycling UK's briefing at:
www.cyclinguk.org/campaigning/views-and-briefings/national-planning-policies

- **Monitoring the climate impacts of transport/planning decisions**

In order to assess how much individual or cumulative impact transport/planning decisions have on CO_2 emissions, robust monitoring is essential. However, the Government's 'localism' agenda (i.e. expecting more and more action at local level with less central intervention), has made it reluctant to impose strict monitoring requirements on local authorities. This makes it very difficult for the public to challenge either their own councils or national government over decisions and policies that are likely to have an impact on climate change, let alone hold them to account for them.

The UK Health Alliance on Climate Change, a coalition of Britain's major health institutions, wants to encourage better approaches to tackling climate change that protect and promote public health, whilst also reducing the burden on health services. It has published a number of recommendations in its report *A Breath of Fresh Air* (2016). Active travel, including cycling, is one of the measures it advocates. www.ukhealthalliance.org/

b. Local government

Although the *Climate Change (Scotland) Act 2009* imposes certain actions on all Scottish public bodies including local authorities (see below), there is no statutory framework for local carbon reduction in England, Wales or Northern Ireland. This means that tackling climate change largely depends on the much weaker mechanism of voluntary commitment, relying heavily on prevailing political will, available funding, NGO campaigning, community pressure and local prioritising. [46]

- **Statutory duties**

While the Government does publish annual data on local authority carbon emissions (previously tracked by National Indicator 186),[47] determining the impact of a local authority's transport and planning decisions from this alone is far from easy (see also p7 on monitoring climate impacts).

Wales retains some statutory national performance indicators for local authorities to monitor, but carbon reduction does not specifically feature amongst them.

Part 4 of the *Climate Change (Scotland) Act 2009* however, does require public bodies, including local authorities, in exercising their functions, to act: in the way best calculated to contribute to delivery of the Act's emissions reduction targets; in the way best calculated to deliver any statutory adaptation programme; and in a way that it considers most sustainable.

In 2012, the Committee on Climate Change published a guide for local authorities explaining how to reduce emissions and manage climate risk. Cycling and walking both get a mention. www.theccc.org.uk/publication/how-local-authorities-can-reduce-emissions-and-manage-climate-risks/

- **Voluntary initiatives (examples)**
  - **Climate Local** is an initiative launched by the Local Government Association (LGA, England & Wales) in 2012, aiming to support councils *"both to reduce carbon emissions and to increase resilience to a changing climate."* [48] By April 2014, 96 local authorities had signed up. www.local.gov.uk/climate-local. (Climate Local succeeded the *Nottingham Declaration on Climate Change*, a similar scheme that started in 2000). [49]
  - **UK100** is a network of city and local leaders from across the UK committed to making the shift to clean energy by 2050. http://uk100.org/
  - Every local authority in Scotland has signed up to **Scotland's Climate Change Declaration**,[50] which was informed originally by the *Nottingham Declaration* (see above).
  - **Climate Northern Ireland**, established in March 2007, is an *"intersectoral network devoted to increasing understanding of climate change impacts and risks within Northern Ireland and promoting the adaptation actions necessary to address these."* The Steering Group is composed of organisations from across central and local government, the business community, academic community and the voluntary sector. [51]

Climate Outreach (formerly COIN), is a not-for-profit organisation whose mission it is to make sure that climate change and its impacts are understood, accepted an acted upon across the breadth of society, creating a truly sustainable future. It publishes a wide range of resources to help people communicate about climate change more effectively to different audiences, including sceptics. http://climateoutreach.org/

- **Local transport white paper & the Local Sustainable Transport Fund (England)**

In 2011, the Government's local transport white paper *Creating Growth, Cutting Carbon*[52] set out its vision for a sustainable local transport system that, it said *"supports the economy and reduces carbon emissions".* The main idea was to empower local authorities to tackle these issues themselves and to 'nudge' people towards greener transport choices, including cycling.

The white paper was accompanied by an invitation to local authorities in England (outside London) to bid for a share of a Local Sustainable Transport Fund (LSTF).The Fund proved very popular, with every single eligible local authority across England applying, either as a lead bidder, or as a partner authority to a large project.[53]

In the first tranche, the Government appeared to give greater weight to economic benefit, than to reducing carbon or improving health, but overall a number of bids for smarter choice/cycling schemes were approved. Unfortunately, the LSTF closed in 2015, but other opportunities for local authorities to bid for central funds to invest in walking and cycling do occur.

For more on national transport policy and cycling, see:
www.cyclinguk.org/campaigning/views-and-briefings/national-transport-policy-cycling
For more on local transport policy and cycling, see:
www.cyclinguk.org/campaigning/views-and-briefings/cycling-and-local-transport

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See http://assets.ghf-ge.org/downloads/humanimpactreport.pdf
[3] United Nations. *Goal 13: Take urgent action to combat climate change and its impacts*.
http://www.un.org/sustainabledevelopment/climate-change-2/
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[14] www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/climatechangeact . See also http://www.gov.scot/Topics/Environment/climatechange
[15] http://gov.wales/splash?orig=/topics/environmentcountryside/climatechange/emissions/climate-change-strategy-for-wales/ . See also http://gov.wales/topics/environmentcountryside/climatechange/?lang=en
[16] See news stories 12/12/2015 from: United Nations *Historic Paris Agreement on Climate Change* http://newsroom.unfccc.int/unfccc-newsroom/finale-cop21/ ; and DEFRA *World Agrees Historic Climate Change Deal* https://www.gov.uk/government/news/world-agrees-historic-global-climate-deal . On 1 June 2017, the United States President Donald Trump announced that the U.S. would cease all participation in the Paris Agreement. https://en.wikipedia.org/wiki/United_States_withdrawal_from_the_Paris_Agreement
[17] EURACTIV. *Richest countries take lion's share of emissions cuts under EU plan*. News, 20 July 2016. http://www.euractiv.com/section/transport/news/richest-countries-take-lion-share-of-emissions-cuts-under-eu-plan/
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[21] The DfT's response to the Stern report was a discussion document, *Towards a sustainable transport system: supporting economic growth in a low carbon world* (TaSTS, 2007). This identified the economy and the climate as two of five objectives for future transport policy and argued that there was no inevitable tension between them. However, TaSTS was followed by *Delivering a Sustainable Transport System (*DaSTS, 2008)[21] which drew on the Stern report's modeling to portray the climate objective as being difficult to achieve. It therefore downplayed its importance relative to the economic objective. The DfT's carbon reduction strategy for transport (*Low Carbon Transport: A Greener Future 2009* (https://www.gov.uk/government/publications/low-carbon-transport) further perpetuated the flaws in Stern's modelling. It nonetheless highlighted the value of promoting cycling and public transport, integrating transport modes (especially the cycle-rail combination) and sustainable land-use planning to reduce the climate impacts of transport.
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