

## **FRIENDS OF THE EARTH RESPONSE TO THE DFT HS2 CONSULTATION**

Friends of the Earth England, Wales and Northern Ireland is part of the world's most extensive environmental campaigning network with almost one million supporters across 5 continents.

We have a network of 200 autonomous local groups, many of whom will be making their own responses to the HS2 consultation.

We are signed up to the 'Right Lines Charter' alliance of environmental NGOs <http://www.cpre.org.uk/resources/transport/item/download/531>

Below is the Friends of the Earth (FOE) response to the DfT Consultation on HS2.

### **1. Strategy and Context**

**We support increases in rail capacity to enable modal shift from air and road to reduce carbon emissions. However, HS2 can only help if it is part of a wider policy and funding framework that ensures more urgent priorities that will cut more carbon more quickly and have wide societal benefits are adequately supported**

We welcome the Government's commitment to improve rail services and make rail the mode of choice for long journeys. The proposed commitment to expansion of the rail network represents a refreshing change of strategic direction. If this represents a fundamental shift in *favour* of 'strategic Rail' as against 'strategic road' (and also 'strategic aviation') then FOE strongly supports this.

However the current High Speed Rail plan will do little to cut carbon emissions – which is also a Government priority. One of the Secretary of State's two stated priorities on accepting his appointment in May 2010 was to cut carbon emissions from transport. It is critical that HS2 is set within an overall transport carbon reduction strategy that will deliver the GHG savings to enable our carbon budgets to be met. This means HS2 needs to be an agent of modal shift from more carbon intensive modes – air and road. To achieve this, the right companion policies, both incentives and disincentives, must be in place so that rail is price competitive compared to road or air and is well integrated with other public transport. The grid must also be de-carbonised by 2030 and there must be a strategy to make released 'classic network' rail capacity achieve further modal shift for freight and passengers.

With opening scheduled for 2026, HS2 cannot play a part in carbon reduction for the first 3 carbon budgets, and only a minor role, if any, in the 4<sup>th</sup> (2023-2027). For the next fifteen years or more, carbon reduction from transport will need to come entirely from other policies. It is also possible that emissions reduction ambition will have to be increased for 2 reasons:

- 1) The Committee on Climate Change has recommended tightening the first 3 carbon budgets – increasing the 2020 target from 34% cut (from 1990 levels) to

42%<sup>1</sup> and the Government has recently confirmed that it is committed to doing this when the EU moves to a tougher 2020 target<sup>2</sup>.

2) The bio-fuels emission reduction assumptions are unsound. These account for at least a third of planned carbon reductions from transport in carbon budgets 2 and 3<sup>3</sup> but recent evidence<sup>4</sup> on indirect land-use change (ILUC) undermines the carbon reductions assumed for bio-fuels. We understand a cross Government study on bio energy, which will consider ILUC, will report back in autumn 2011.

So, the Government needs to urgently revise its transport carbon reduction strategy and expenditure prioritisation framework to ensure any commitment to fund HS2 does not mean a reduction in funding for more urgent carbon reduction initiatives. In the short term these will need to focus on travel behaviour change. This is because additional savings (over and above those already assumed) cannot, realistically be relied upon from the EU Car CO2 standards. EU car standards are the other main source of transport emissions reductions in budgets 2 and 3.

The table below illustrates some short-medium term transport carbon reduction policy options, none of which have fully committed funding. It compares their impact relative to the first stage of HS2. In some cases the impacts of the policies will overlap.

<b>INTERVENTION</b>	<b>CARBON REDUCTION POTENTIAL (Mt CO2 per annum)</b>	<b>COST</b>	<b>NOTES</b>
Building London-Birmingham section of HS2	'Broadly carbon neutral'  (from 2026)	£17bn	HS2 figures
FOR ILLUSTRATION  Annual Savings assumed from EU Car standards in Carbon Budgets 2 & 3	Maximum of 7.7	n/a	DECC Low Carbon Transition Plan  <a href="http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf">http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf</a>
FOR ILLUSTRATION	Maximum of 5.2	n/a	DECC Low Carbon Transition Plan  <a href="http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf">http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf</a>

<sup>1</sup> DECC announcement 17/5/11: "Government will continue to argue that EU moves to a 30% 2020 target" this implies 42% reduction from UK [http://www.decc.gov.uk/en/content/cms/news/cb\\_oms/cb\\_oms.aspx](http://www.decc.gov.uk/en/content/cms/news/cb_oms/cb_oms.aspx)

<sup>2</sup>

<http://www.decc.gov.uk/assets/decc/What%20we%20do/A%20low%20carbon%20UK/Carbon%20budgets/1703-chris-huhne-lord-turner-4thcarbonbudget.pdf>

<sup>3</sup> P.137 DECC – Low Carbon Transition Plan:

[http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1\\_20090724153238\\_e\\_@@\\_lowcarbontransitionplan.pdf](http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf)

<sup>4</sup> 'Driving to Destruction' [http://www.transportenvironment.org/Publications/prep\\_hand\\_out/lid/612](http://www.transportenvironment.org/Publications/prep_hand_out/lid/612)

Annual Savings assumed from 'Low Carbon fuels' in Carbon Budgets 2 & 3			<a href="http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf">http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf</a>
UK wide roll out of Smarter Travel Choices as piloted in DfT sustainable travel towns pilots (2009)	2.9 from 2020 when roll out complete. Significant savings achievable in carbon budgets 2 and 3	£200m per year over 10 years.  £2bn total	Carbon saving figure from CCC. <a href="http://downloads.theccc.org.uk/0610/pr_meeting_carbon_budgets_chapter4_progress_cutting_surface_transport_emissions.pdf">http://downloads.theccc.org.uk/0610/pr_meeting_carbon_budgets_chapter4_progress_cutting_surface_transport_emissions.pdf</a>  Cost from 'A Low Carbon Transport Policy for the UK'  <a href="http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf">http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf</a>
National Road Pricing	1.1 to 7.7 from 2020?	Not known but would pay for its own running costs and provide significant income	Various estimates from IPPR, CCC, Halcrow and Tyndall  <a href="http://www.ippr.org.uk/publicationsandreports/publication.asp?id=304">http://www.ippr.org.uk/publicationsandreports/publication.asp?id=304</a>  <a href="http://www.theccc.org.uk/sectors/surface-transport/behaviour-change">http://www.theccc.org.uk/sectors/surface-transport/behaviour-change</a>  <a href="http://www.vibat.org/vibat_uk/reports.shtml">http://www.vibat.org/vibat_uk/reports.shtml</a>  <a href="http://www.tyndall.ac.uk/sites/default/files/it1_7.pdf">http://www.tyndall.ac.uk/sites/default/files/it1_7.pdf</a>  The Coalition has said this policy won't be considered in this Parliament, however a replacement Government income source for diminishing fuel tax will be required in the medium term as Electric Vehicles gradually penetrate the market
Electrification of Reading to Penzance double track main line (illustrative)	0.8	Approx £400m	London-Reading-Cardiff already planned, but no plans to electrify Reading-Exeter-Plymouth-Penzance  Based on DECC figure for 750km of single track electrification from Low Carbon Transition <a href="http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf">http://www.decc.gov.uk/assets/decc/White%20Papers/UK%20Low%20Carbon%20Transition%20Plan%20WP09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf</a>
Eco driving lessons for	0.3 by 2020	£240m	Source = CCC <a href="http://downloads.theccc.org.uk/0610/p">http://downloads.theccc.org.uk/0610/p</a>

3.9million car drivers			<a href="#">r_meeting_carbon_budgets_chapter4_progress_cutting_surface_transport_emissions.pdf</a>
Eco driving lessons for 90% of HGV drivers	2.9 within 5 years	Not known	Source = DfT <a href="http://www.r-e-a.net/document-library/thirdparty/low-carbon-transition-documents/090715%20-%20DfT%20-%20Low%20Carbon%20Transport%20A%20Greener%20Future.pdf">http://www.r-e-a.net/document-library/thirdparty/low-carbon-transition-documents/090715%20-%20DfT%20-%20Low%20Carbon%20Transport%20A%20Greener%20Future.pdf</a>
Enforcement of existing 70mph speed limit	1.4 to 2.1	Not known	Source = CCC <a href="http://www.theccc.org.uk/sectors/surface-transport/behaviour-change">http://www.theccc.org.uk/sectors/surface-transport/behaviour-change</a> and ECMT (ITF) <a href="http://internationaltransportforum.org/pub/pdf/07CuttingCO2.pdf">http://internationaltransportforum.org/pub/pdf/07CuttingCO2.pdf</a>
Reduce speed limit to 60mph	7.0	Not known	Source = UKERC <a href="http://www.eci.ox.ac.uk/research/energy/downloads/qh2-limitingspeed.pdf">http://www.eci.ox.ac.uk/research/energy/downloads/qh2-limitingspeed.pdf</a>
Measures to increase average vehicle occupancy from 1.7 to 2.0	Up to 9.0	Not known	Source = UEA, Would require a package of measures including strong promotion of car sharing schemes, company travel plans and complementary policies <a href="http://proxycarbon.cmp.uea.ac.uk/downloads/Liftshare%20case%20study.pdf">http://proxycarbon.cmp.uea.ac.uk/downloads/Liftshare%20case%20study.pdf</a>

If the High Speed Line goes ahead it must be part of an overall strategy to rapidly cut carbon emissions from transport and must be embedded within both a long-term national transport policy which gives certainty to this new direction, and a comprehensive expenditure programmes through to 2030, organised around carbon reduction and also contributing to overall sustainability. Policies must be put in place so the line attracts people from cars and planes rather than generating new travel. In the short term the Government's priority must be to develop a new strategy to cut emissions from shorter journeys which are the majority and responsible for most carbon emissions from transport. Lower carbon cars should help significantly in the long term but the Government must urgently develop an action plan for the next 10 years to reduce the need to travel and to encourage people to walk, cycle, car share or use public transport instead of their cars.

- HS2 will require around £17bn (£32bn for Y-network) direct capital investment (some of which may later be recouped), it is understood that funding will commence at £2bn per year after Crossrail is completed in 2015. It is vital that expenditure on HS2 does not compromise spending on other important transport priorities – particularly those which will deliver the urgent carbon reductions needed from transport well before HS2 opens. In Western Europe/OECD economies, capital investment in inland transport averages around 0.8% GDP per annum<sup>5</sup>; for the UK

<sup>5</sup> *Transport investment and economic development* - David Bannister and Joseph Berechman 2000 page 4

this would imply a figure of around £11.5 billion<sup>6</sup>, in fact the current, actual UK figure is around £7.7bn<sup>7</sup> - the UK does not invest as much in transport as other countries. A (non exhaustive) list of urgent transport policy and investment priorities will include, in our view, investment like that identified in the table below:

TRANSPORT PROJECT	COST	NOTES	SOURCES
Ultra Light Rail / Tram schemes in 12 cities	£2bn	Several major UK cities are without tram, metro or light rail systems. Including: Leeds, Bristol, Liverpool, Portsmouth (all cancelled by last Government) Trams are a clean , low carbon alternative to car travel and have proven successful in achieving modal shift from the car where they have been introduced	'A Low Carbon Transport Policy for the UK' <a href="http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf">http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf</a>
National roll out of Smarter Travel Choices (STC)	£200m per year over 10 years	As consistently recommended by the CCC. The recently implemented Local Sustainable Transport Fund will provide some support for these schemes but only outside London. Recent research for FOE and Sustrans (about to be published) showed that current investment levels by Local Councils are just a fraction of those seen in the Sustainable Travel Towns pilot schemes. Smarter Travel Choices are popular, cut congestion, offer excellent value for money, help tackle obesity and enhance access to jobs and services	'A Low Carbon Transport Policy for the UK' <a href="http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf">http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf</a> FOE briefing with more information on STCs: <a href="http://www.foe.co.uk/resource/briefings/tp_stc_briefing.pdf">http://www.foe.co.uk/resource/briefings/tp_stc_briefing.pdf</a> FOE/Sustrans research to be published Aug 2011
Rail Electrification	£500-£650m per km	Only a third of the UK network is electrified (about 5000km). Most countries in Europe have a greater proportion of electrified lines, including, for example: Slovenia, Bosnia Hertzgovena and Macedonia. Some minor routes may not be suitable / cost effective for electrification but there are no	Sources: DfT electrification paper: <a href="http://collections.europarchive.org/tna/20100408232230/http://www.dft.gov.uk/pgr/rail/pi/rail-electrification.pdf">http://collections.europarchive.org/tna/20100408232230/http://www.dft.gov.uk/pgr/rail/pi/rail-electrification.pdf</a> Network Rail electrification paper: <a href="http://www.networkrail.co.uk/browse%20documents/rus%20documents/route%20utilisation%20strategies/network/working%20group%204%20-%20electrification%20strategy/network_rus_electrification.pdf">http://www.networkrail.co.uk/browse%20documents/rus%20documents/route%20utilisation%20strategies/network/working%20group%204%20-%20electrification%20strategy/network_rus_electrification.pdf</a>

<sup>6</sup> UK GDP 2010 \$2.29trillion = £1.44trillion (\$1.60 exchange rate).  
[http://en.wikipedia.org/wiki/Economy\\_of\\_the\\_United\\_Kingdom](http://en.wikipedia.org/wiki/Economy_of_the_United_Kingdom)

<sup>7</sup> Page 11 HMT CSR document DfT Capital allocation. [http://cdn.hm-treasury.gov.uk/sr2010\\_complereport.pdf](http://cdn.hm-treasury.gov.uk/sr2010_complereport.pdf)

		<p>firm plans even for main lines like completion of Waterloo-Exeter or St Pancras-Sheffield.</p> <p>Electrification reduces carbon emissions (further in future as grid decarbonised) reduces running costs and increases reliability</p>	
Cycling England Plan to triple cycle use in 5 years	£500m	Includes cycle networks, cycle parking, cycle training. More than half of all car journeys are less than 5 miles, many could be cycled. This would reduce congestion, improve local air quality enhance access to jobs and services for the quarter of UK households without access to a car. In Copenhagen a third of commuter journeys are by cycle, a third by public transport and just a third by car, this was achieved by sustained investment in cycle facilities over several years.	<p>'A Low Carbon Transport Policy for the UK'</p> <p><a href="http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf">http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf</a></p>
Electric Car Charging points	£5k per 'slow' charging point (£1-2K volume) £50-£100k for fast charging point. Up to £230m before 2015	<p>Electric cars are likely to play a significant role in reducing carbon from transport in the medium /long term. However the grid will need to be decarbonised and significant investment in infrastructure and purchase incentives will be needed to make this happen.</p> <p>£230million for on street charging points outside homes and public places to support 240million electric cars in possible pilot project up to 2015</p>	<p>Element Energy for CCC</p> <p><a href="http://downloads.theccc.org.uk/Element_Energy_-_EV_infrastructure_report_for_CCC_2009_final.pdf">http://downloads.theccc.org.uk/Element_Energy_-_EV_infrastructure_report_for_CCC_2009_final.pdf</a></p> <p>CCC</p> <p><a href="http://downloads.theccc.org.uk/docs/21667%20CCC%20Report%20Chapter%206%20to%20the%20end.pdf">http://downloads.theccc.org.uk/docs/21667%20CCC%20Report%20Chapter%206%20to%20the%20end.pdf</a></p>
Increased bus services and fare reductions in PTE areas	£415m per year (2008 prices)	From research produced before recent bus support cuts. Estimated to increase bus passenger numbers by 30% in PTE areas:	<p>'A Low Carbon Transport Policy for the UK'</p> <p><a href="http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf">http://www.bettertransport.org.uk/system/files/A_low_carbon_transport_policy_for_the+UK.pdf</a></p>
40 new rail stations to serve 1 million people	£0.5bn	Towns not currently served by rail	<p>ATOC</p> <p><a href="http://www.atoc.org/media-centre/previous-press-releases/rail-report-makes-case-for-considering-new-community-links-100063">http://www.atoc.org/media-centre/previous-press-releases/rail-report-makes-case-for-considering-new-community-links-100063</a></p>

If HS2 goes ahead the Government must show how it will also fund these (and other) urgent transport investment priorities which will contribute to carbon reduction and have numerous other societal benefits.

It should be noted that 57% of car journeys are less than 5 miles and 64% of carbon emissions from cars comes from journeys of under 25 miles (90% from under 100 miles)<sup>8</sup>. Funding for policies and infrastructure investment that reduces carbon from these shorter journeys which are responsible for the bulk of transport emissions must not be sacrificed in order to fund HS2.

So, the relative priority of HS2 must be considered within the wider context of a national transport policy through to 2030, with its associated expenditure programmes, which is what the Government must provide. It is not possible to assess the priority of HS2 expenditure in isolation.

## **2. The case for High Speed Rail**

The government case is that HS2 is the best response to a 'long term capacity challenge' *p.34*. It predicts that there will be a progressively increasing shortfall in both WCML and ECML capacity in the 2020s and then beyond (1.46-52). However other commentators have pointed to evidence that travel demand may have peaked and that it is not linked to any growth in GDP<sup>9</sup>. In this uncertain context, FOE believes any new rail line should primarily be designed to achieve modal shift from less sustainable modes and set within a policy context designed to achieve this. Public policy should also seek to reduce the need to travel – for example, in the context of long distance travel this implies support for technology to replace business travel like video conferencing. There is also the question of whether any new capacity be provided via a new high-speed network or alternatively by upgrading the existing infrastructure?

There is a strong argument that incremental upgrades such as those identified in 'Rail Package 2' or 'Scenario B' provide a lower risk, lower cost alternative to committing substantial capital investment to a brand new line.

New rail capacity is needed in order to provide a greener alternative to flying or driving. However, High Speeds mean more emissions until the grid is fully de-carbonised. We would like the Government to consider other options like a dedicated freight line or a conventional speed new line.

There are questions about how robust the assumptions and methodology are – for example, on passenger forecasts, modal shifts, fare levels, scheme costs, economic assumptions (eg about the value of time) and the impact of lost revenue on the 'classic' network?

The business case makes questionable assumptions that the cost of flying continues to fall, petrol prices remain broadly stable (£1.25 at 2009 prices in 2030)<sup>10</sup> and road user charging is not introduced. It is difficult to envisage that oil prices will not

---

<sup>8</sup> DfT – Low Carbon Transport (2009)

<http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/sustainable/carbonreduction/>

<sup>9</sup> Various studies including UCL reported in FT: <http://www.ft.com/cms/s/0/de6c9b48-6ddc-11df-b5c9-00144feabdc0.html#axzz1MgyM3Mfl> and IEA reported in 'Wired' <http://www.wired.co.uk/news/archive/2011-01/05/traffic-peak>

<sup>10</sup> DECC Oil retail price assumptions, used by DfT:

<http://decc.gov.uk/publications/basket.aspx?filetype=4&filepath=Statistics%2FProjections%2F69-annex-f--fossil-fuel-and-retail-price-assumptions.xlsx&minwidth=true>

increase significantly in the next 20 years and that some sort of alternative Government income stream from electric cars to replace fuel duty will not have been introduced.

Using more realistic assumptions could significantly boost the business and environmental case for HS2, the Government must model a far wider range of sensitivity tests.

The recent Oxera research<sup>11</sup> highlighted how possible agglomeration benefits from HS2 will arise mainly from making best use of released capacity on the 'classic network'. It is essential therefore, that the Government provides proposals for the released capacity which will maximise these and the potential modal shift benefits.

### **3. How to deliver the proposed network**

If the line goes ahead we believe the proposed 'Y network' is the right choice, it is important that the line links with High Speed 1 and the Channel Tunnel in order to provide through trains to continental destinations – a greener alternative to flying. But much more must be done to offer easy to book through ticketing in order to provide an attractive alternative to short haul air travel.

It is important that the line serves city centre stations rather than 'parkway' style stations in order to minimise urban sprawl and maximise integration with other public transport. Birmingham Curzon Street must not be axed in any future cost cutting exercise. Through trains to destinations off the high speed line (i.e Nottingham and Derby) should be favoured over creation of a 'catch all' East Midlands parkway station. We also have serious concerns about the proposed 'Birmingham Interchange' station, a separate station to the current 'Birmingham International' on the West Coast main line. This will create urban sprawl and is a wasted opportunity to create a direct interchange with other public transport at Birmingham International.

It is vital that a strategy is produced to make best use of released capacity on the classic network to provide more regional, commuting and freight services

We do not emphasise the policy priority accorded to the Heathrow link, and table 7.1 demonstrates the insignificant volume of traffic this would cater for. It is difficult to justify in cost benefit terms.

### **4. The specification of the line**

We are not convinced that all options like upgrading existing lines were fully considered or put to public consultation. The option of incremental upgrades to existing main lines like 'rail package 2' or 'scenario B' were not offered as alternatives, neither was a dedicated freight line. These alternatives would also provide substantial extra capacity which is one of the main justifications for the HS2 proposal.

### **5. The route of the line**

If the line goes ahead its impact on the landscape and biodiversity must be minimised. SSSIs must be avoided and routes alongside motorways considered. We support the proposed approach to linking with HS1, although 3 trains per hour is a capacity limitation.

---

<sup>11</sup> Oxera: review of the Government's case for High Speed Rail, June 2011

## **6. Sustainability appraisal**

This did not fully examine the policy options available to enable High Speed Rail to replace car and plane journeys. If High Speed Rail goes ahead it must be within a package of policies that encourage people to switch from road and air.

This might include:

- Road user charging
- Increased aviation taxes i.e fuel tax on domestic flights
- A policy of retiring any released airport slots to prevent increases in aviation emissions and make airport operation more resilient to disruption
- High quality, integrated transport connecting with HS2 stations

A fundamental pre condition for any proposal to build new electrified rail infrastructure is that the grid must be largely if not totally de-carbonised when it opens.

## **7. Blight and compensation**

Impacts on communities must be minimised and where they are unavoidable people must be adequately compensated

Yours Sincerely

Richard Dyer  
Friends of the Earth  
[Richard.Dyer@foe.co.uk](mailto:Richard.Dyer@foe.co.uk)

July 28<sup>th</sup> 2011