Friends of the Earth

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Answer to the consultation on High Speed 2

28 July 2011

Question 1 - Do you agree that there is a strong case for enhancing the capacity and performance of Britain's inter-city rail network to support economic growth over the coming decades?

Cheap energy throughout the 20th century has lead mankind into a race towards the fastest modes of transport. This was greatly accelerated with the development of low-cost airlines over the last decades. The era of cheap energy coming to an end, along with the prospect of carbon rationing and/or trading becoming unavoidable, it is highly questionable to assume that long distance travel will keep on growing.

Either constrained by the energy market, national carbon targets or by international agreements on greenhouse gas emissions, economies would become more local than global. There is a large level of uncertainty over the future price of energy but there seems to be no place for doubt in the Government's argumentation.

For the reasons outlined above, we believe long distance travel will decrease in the UK from 2020 onwards. Nevertheless, long distance *rail* travel could very well carry on growing because of car and air passengers changing mode of transport. We are not too concerned by the risk of having low ridership on the proposed new line, regardless of its speed, for the reasons that the global energy and climate crisis will force people out of their cars and planes.

We are mostly concerned by the Government's approach which sounds like a "**predict and provide**" policy. According to the University of Nottingham[1], this policy applied to roads was "the earliest, and perhaps most destructive road transport policy in the UK, whereby traffic levels were forecast, and capacity provided to meet this forecast." Such an approach has proven very expensive and incredibly successful at generating traffic. Whilst we acknowledge that rail travel has a rather low carbon footprint, we oppose the "predict and provide" approach and call for a **national strategy preventing further growth in long distance travel**.

[1]http://www.nottingham.ac.uk/transportissues/glossary.html#predict and provide

The reason why long distance travel must not carry on growing is related to the issue of climate change. If high speed rail emits 50g CO2 per kilometre and if trains run at a maximum speed of 400kph, the traveller's footprint would be of up to **20 kg CO2 per hour**. This is four days worth of carbon budget[2] burnt in only one hour and by doing nothing else but travelling. When making this point we are also highlighting the deep flaws associated with the consideration of emission rates *per kilometres*. Emission rates per kilometre assume that people have a set "distance-budget" and chose a mode of transport according to their destination. The success of low cost aviation has illustrated that people have a set "time-budget" instead, e.g. a weekend. Considering someone having a *very* carbon intensive diet, cycling can have a carbon footprint[3] of 50g CO2/km, i.e. similar to the one of high speed rail. However, it is obvious that a weekend spent cycling around the countryside will have less of an impact than a high speed rail city-break from London to Edinburgh. The scale of the difference is precisely the ratio of speeds: high speed rail is 20 kg CO2 per hour whilst cycling is 1 kg CO2 per hour at worst. This illustrates the need to think of emission rates *per hour* instead of *per kilometre*.

If the government's goal is to develop an infrastructure capable of supporting the national economy and reducing the emission of greenhouse gases, then we believe HS2 is far less appropriate than the investment into local transport schemes.

It is convenient for the Government to take the French TGV as an inspiring example. We think it is time for the Government to look *a little deeper* at transport policies carried out beyond the Channel. France has invested[4] around 7 billion euros over the last decade (2000-2009) into new tramways and bus rapid transit thanks to the repeated support of the central government. The rate of investment is accelerating with the next tranche of 7 billion euros to be spent by 2015. This means 300 kilometres of tramway lines in each tranche. If Britain cannot be left behind in terms of high speed rail, can Britain ignore the field of local public transport? When cheap energy comes to an end, what is worst for the economy: the rising cost of long-distance travel or the rising cost of everyday commute?

Our answer is that there is a case for enhancing the capacity and performance of Britain's inter-city rail network, but this case is weak in comparison with the investment in local sustainable transport solutions. It would not be acceptable to allocate billions of pounds into inter-city transport schemes used by higher income individuals while cutting funding for local public transport. We would like to request that the Department for Transport spends twice as much on local transport than on high speed rail in the next decades.

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[2]assuming an allowance of 2000kg CO2 per person per year

[3]Camden council / Travelfootprint.org / Clear Zone Partnership [spreadsheet]

[4]TCSP Certu database (link)

Question 2 - Do you agree that a national high speed rail network from London to Birmingham, Leeds and Manchester (the Y network) would provide the best value for money solution (best balance of costs and benefits) for enhancing rail capacity and performance?

In terms of *capacity*, there are enhancement programmes already in place on the main lines. They make use of existing corridors and stations, which would be cheaper than building a new line. Only in the unlikely situation of a very fast growing economy would these improvements become insufficient.

In terms of *performance*, we think that offering travellers the opportunity to make use of their time on board could revolutionise rail travel without the need for high speed rail. This could be the provision of broadband connections and cellular networks in a more spacious and comfortable environment. This could also be the provision of sleeper trains for long distance travel. The travellers' willingness to pay for such services could offset the dis-benefit of a relatively lower speed.

Environmental **costs** (landscape impact, habitat severance, carbon footprint) and financial costs (construction and operation, hence also ticket prices) are highly elastic to the **speed** specifications of the line. The Department for Transport should elaborate a scenario where trains would have a lower maximum speed.

Our stand point is that the **benefits** of the line will not be very elastic with regards to the **speed** of trains. In 2030, energy is likely to be so expensive that most travellers would prefer slower, more affordable trains. Paragraph 2.82 in the consultation document refers to the competition between modes of transport. There will not be much of a competition by 2030 if energy prices go up threefold. Domestic flight passengers will drop regardless of the speed of trains because of their cost and of possible carbon rationing policies. In addition, because of the proximity of cities in the UK, the real speed of trains will be much less than the maximum speed. While we acknowledge that speed matters in the competition between modes, we are convinced that the line doesn't need to be designed for a speed of 250mph.

Our answer is there are other ways of enhancing capacity and performance. What HS2 would do is duplicate links on the rail network, which would make it more resilient. Resilience is an important aspect considering the growing reliance on the country on rail for the transport of people and goods. Can resilience be achieved at a lower cost? Probably yes, for instance by building a conventional line for half the cost...

Question 3 - Do you agree with the Government's proposals for the phased roll-out of a national high speed rail network, and for links to Heathrow Airport and the High Speed 1 line to the Channel Tunnel?

With the cost of fuels going up and possible carbon rationing policies, it is important to be prepared to live without much air travel. To this extent, keeping Scotland connected to the rest of the UK and to Western Europe by train is a good thing. However, considering the need to reach carbon savings targets and to respect future international agreements on climate change, the Department for Transport should not view the connexion with Heathrow Airport as a priority. We understand there is a considerable pressure from the general public to spend holidays under the sun, and would like to point out that Spanish beaches will be only about 7 hours away from London by train by 2020.

A connexion with High Speed 1 appears useful to us because it will bring us one step closer to an integrated European rail network for the transport of people and goods. However, the government should consult on a national transport policy in the first place

Question 4 - Do you agree with the principles and specification used by HS2 Ltd to underpin its proposals for new high speed rail lines and the route selection process HS2 Ltd undertook?

We would like to re-iterate our concern that a 250mph speed is inappropriate considering a range of associated costs:
- to the traveller (high speed rail is particularly exclusive)
- to the taxpayer (whose money could be more wisely spent on local transport schemes)
- to the landscape and residents
- to the climate (because energy use is a quadratic function of the speed and we're still a long way from de-carbonised electricity)
- to the population by putting an added pressure on energy prices

Question 5 - Do you agree that the Government's proposed route, including the approach proposed for mitigating its impacts, is the best option for a new high speed rail line between London and the West Midlands?

In terms of impacts mitigation, more should be done in the London Borough of Camden in compensation for the demolition of dwellings and especially social housing. The proposed upgrade of Euston Station will mostly benefit train and tube passengers, in effect people in the higher range of incomes, not necessarily living in Camden.

We would like to propose an additional mitigation strategy, which also guarantee to Londoners that a national high speed rail network would not constrain TfL into the funding of an additional tube line. Our proposal is that Euston becomes the central London hub for a new generation of surface transport: trolley buses and tramway lines with a high level of service.

At present, buses around Euston are stuck in traffic and leave a generous 1 metre horizontal gap when stopping. This is the reason why thousands of HS2 passengers are expected to use Euston Underground Station during the morning peak. Why thinking “business as usual” when there is no money to fund additional tube lines? A modern and accessible surface network of public transport would dramatically reduce this number without any capacity problem: a tramway could pick 20,000 passengers per hour from Euston. This would also relieve some of the pressure on tube lines by shifting *existing* passengers from the hot depth of the Capital back to the surface. This would also be a re-allocation of the streets in favour of a clean, silent, safe and affordable mode of transport: a great improvement for residents of the polluted Euston area.

electric trolleybus at Lyon Part-Dieu station

As an illustration of this principle, the Lyon Part-Dieu high speed rail station copes with 50 million train passengers per year, comparable to Euston after the connexion with HS2, by dispersing passengers on two tramway lines, two “high level of service” trolley bus lines, some conventional buses and cycle hire and just a single underground line. The main consultation document (*High Speed Rail: Investing in Britain’s Future*) acknowledges the benefits brought to Lyon by the high speed rail connection with Paris but more attention should be focused on the French city’s provision of fast, reliable, comfortable and accessible forms of surface public transport.

Question 6 - Do you wish to comment on the Appraisal of Sustainability of the Government’s proposed route between London and the West Midlands that has been published to inform this consultation?

The United Nations 2005 World Summit Outcome Document refers to the "interdependent and mutually reinforcing pillars" of sustainable development as economic development, social development, and environmental protection. Following on, sustainability should include the notions of social justice and inclusivity. We are negatively surprised to find out that the first

paragraph of the non-technical summary doesn't mention these notions explicitly. Considering that the price of high speed rail makes tickets unaffordable for lower-income households, this omission is symptomatic.

Paragraph 3.1.8 of the non-technical summary mentions the critical uncertainty regarding the carbon intensity of the electric mix on the grid. We believe that HS2 should contribute to improving the sustainability of electricity production by harvesting renewable energy along its route.

We are left doubtful by paragraph 3.1.19 of the non-technical summary which reads: "The proposed new railway would present a significant opportunity to reinforce and enhance biodiversity. It would provide a green corridor to be colonised by plants and animals, and could link with and form connections between existing habitats." A more articulated description of this approach would be very welcome.

Paragraph 6.1.1 of the non-technical summary refers to three alternative options, none of them investigating the benefits of a HS2 scenario with a more reasonable maximum speed of 200mph (High Speed Rail Strategic Alternatives Study: Strategic Alternatives to the Proposed 'Y' Network.) We also suspect that the consumer surplus focuses purely on journey times and would ignore such factors as journey time reliability (network resilience) service frequency and the fact that people are actually *not* losing their time when travelling by train.

Paragraph 8.3.1 of the non-technical summary underlines the highly uncertain carbon savings related to HS2 displacing air travellers because of the possible re-allocation of landing and take-off slots to new international flights. This is suggesting that, in order to reach internationally agreed targets, carbon emissions will ultimately be controlled by pricing and/or personal allowances. This will displace people from cars and planes into trains more efficiently than anything else. This is also the reason why we are questioning the assumption that trains should run at 250mph in order to trigger mode shift.

Paragraph 8.3.4 of the non-technical summary indicates that HS2 is likely to generate no carbon savings at all. This would reinforce our requirement to favour investment in local sustainable transport schemes (such as tramways and smarter travel) over high speed rail. Urban tramways are more efficient at cutting greenhouse gases emissions. Not only do they facilitate mode shift, they also reduce the space allocated to general traffic and "lock-in" the benefit of this shift.

Paragraph 5.1.1 of the AoS main report reads "It [the report called *High Speed Rail Strategic Alternatives Study: Strategic Alternatives to the proposed Y Network*] also describes the potential options that the Government has identified for enhancing rail capacity, including enhancements to existing infrastructure and both high speed and conventional new lines".
We claim that the options of a conventional line or of a 200mph line have not been examined by the Government.

Other comments

Before concluding, we would like to express our concern about the way this consultation is set up, presenting a London-Birmingham route which is far from a high-speed *network*. If high speed rail wasn't taken any further than Birmingham, there would be little point in investing in high speed rolling stock. We are also very critical regarding the absence of a national transport strategy planning for a low-carbon or zero-carbon Britain by 2030.

To summarise our answer, we have a negative opinion on the scheme until the following requirements are considered by the Department for Transport:

- investment in local transport schemes must not be jeopardised by high speed rail; we demand that the rate of investment in local sustainable transport must be twice the one in high speed rail;
- an alternative scenario with a 125mph or 200mph maximum speed must be considered, where more stress is put into providing comfort and services on board;
- the aspect of the line as a green corridor promoting biodiversity must be further documented and priced;
- the impact on London transport system must be mitigated by the funding of an accessible network of tramways, trolleybus, walking and cycling routes;
- the impact on the electric load must be mitigated by harvesting renewable energy along the line, to the amount which is required to run the trains.

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