

- HIGH SPEED 2 (HS2) IS NOT PART OF A LOW CARBON OR SUSTAINABLE TRANSPORT POLICY.
- HS2 LTD'S OWN ANALYSIS SHOWS LOW NUMBERS OF PASSENGERS WOULD SHIFT FROM CAR AND AIR TO USING THE NEW RAIL LINE.
- HS2 WOULD GENERATE SIGNIFICANT NUMBERS OF NEW JOURNEYS, ALL OF WHICH WOULD EMIT MORE CARBON THAN THE EXISTING RAIL NETWORK.



THE CASE AGAINST HS2: A BAD DEAL FOR CARBON REDUCTION

The Climate Change Act 2008 means that net UK carbon emissions for the year 2050 should be at least 80 per cent lower than in 1990. To achieve this legally binding requirement, the UK needs to transform how it produces and consumes energy.

From the start, HS2 has been presented as an important part of efforts to reduce transport-related emissions. It is supposed to encourage passengers to give up more carbon intensive forms of transport.

When the then Secretary of State for Transport announced the Government's decision to proceed with HS2 in January 2012, she claimed that "HS2 will be an important part of transport's low-carbon future".

This claim doesn't stack up. HS2 will not reduce the UK's carbon emissions.

HS2 Ltd's projections (*see table*) show that just 11% of passengers will transfer from more carbon intensive modes of transport. It is for this reason that even HS2 claim the scheme would be carbon neutral rather than reducing.

By 2037 (when the full 'Y-shaped' network between London and Leeds/Manchester is due to be open), HS2 Ltd's own forecast, provided in January 2012, shows that nearly a quarter of trips will be new journeys, something which is deeply unsustainable.

In addition, HS2 Ltd's plans rely on millions of journeys transferring from existing "classic rail", which uses much less fuel and carbon, to high-speed trains.

Passengers using HS2, 2037 (forecast)	
Switch from classic rail	65%
New trips	24%
Shift from air	3%
Shift from car	8%
Total	100%

Source HS2 Ltd

Speed (km/h)	Journey time to cover 100km	Energy to travel 100km at constant speed (kWh)	
		TGV-R	AGV-11
200	30	825	731
250	24	1,190	1,052
300	20	1,625	1,436
350	17	2,131	1,883
400	15	2,708	2,392

The energy used on a rail journey can be calculated as the drag multiplied by the distance travelled. Drag increases at the square of the speed.

The proposed 400km/h trains need 50 per cent more energy than the existing Eurostar London-Paris trains – pushing up both electricity and carbon consumption by around 100 per cent.

Compared to 200km/h, running trains at 300km/h uses 1.96 times as much energy and at 400km/h 3.2 times as much.

The table above, produced by pro-high-speed rail pressure group Greengauge 21, demonstrates this.

On car use, HS2 Ltd has ignored short and long-term factors, which undermine its claims of carbon reduction. HS2 Ltd plans edge-of-town parkway type stations for several locations, including Birmingham Airport. Such stations are heavily dependent on car use and encourage development in adjacent rural areas. In addition, HS2 Ltd has underestimated carbon emissions by not using the more carbon intensive day time emission figures which are appropriate to high speed rail (instead it uses annual average emissions figures).

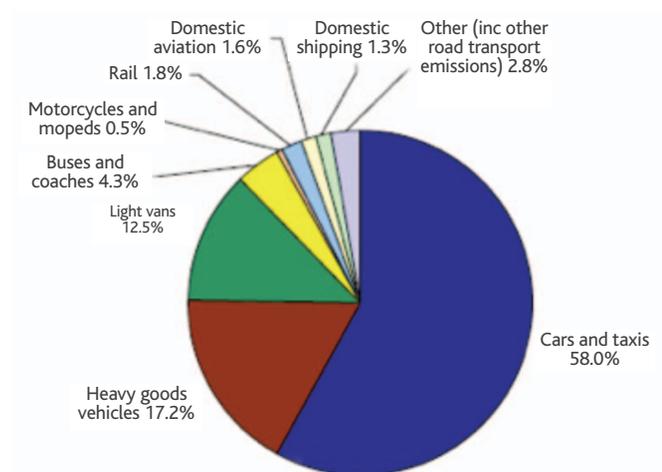
HS2's carbon impacts extend further than the operation of the new line. HS2 Ltd's forecast for emissions from construction and use of materials is unconvincingly low.

Over the longer-term, HS2 Ltd has also ignored the findings of the Climate Change Committee, which envisages that, by 2030, 60 per cent of new vehicles will be electric or plug-in hybrids. These cars will typically be charged overnight, when energy demand and carbon intensity is low. This changes the relative "greenness" of commuting by road and rail.

With this increasing proportion of zero-carbon road transport, it will be difficult to make an environmental case for transferring passengers from road to rail.

Similarly, if the shift from air stopped some domestic flights, the released short-haul slots would be reused for more profitable (and more carbon-emitting) medium and long-haul flights.

Even if HS2 was run with sunshine, replaced every single flight from Scotland to London, and flight slots were not re-used, the overall effect on transport carbon would still be minimal. Why? Because the current emissions from aviation are an extremely small proportion of overall emissions from the transport sector, as the chart (below) demonstrates. Even if the UK was able to eliminate its entire domestic aviation activities (not something anyone claims for HS2), it would result in a mere 1.6% per cent decrease in carbon emissions.



UK domestic transport greenhouse gas emissions, 2009
Source: Department for Transport

HS2 Action Alliance believes the evidence shows

- that HS2 will not be carbon reducing
- HS2 has paid little regard to anticipated changes to emission patterns
- the funds earmarked for HS2 could be better used to create a truly decarbonised and sustainable infrastructure for the UK

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STOP HS2 No business case. No environmental case. No money to pay for it.

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