

PRESS RELEASE
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HS2

Report shows seriously misleading figures from Government body.

£34.7bn of taxpayers' money at stake

According to a highly critical Report prepared by Wendover HS2, HS2 Ltd, the Government-owned company charged with justifying the proposed new high-speed railway from London Euston to Birmingham, has seriously misled Ministers, Parliament and the public by:

- **Underestimating construction and renewal costs**

HS2 Ltd states that the construction and renewal costs would amount to £17.85bn. *The real cash cost would be 40% higher at £24.55bn, and could be as high as £34.7bn if Treasury guidelines were used.*

- **Substantially overestimating passenger demand forecasts**

By claiming non-HS2 passengers as HS2 passengers, 'new demand' forecasts are substantially over-estimated by up to 92%

- **Inflating non-cash indirect benefits**

Estimates of non-cash indirect benefits *are inflated by at least 45%.*

- **Failing to clarify Regional economic imbalance**

HS2 Ltd fails to make clear *that 84.7% of HS2's economic benefits would go to London, the South-East and Birmingham. Rather than benefitting, Scotland would see its economy shrink by £220m.*

- **Using contradictory air travel predictions**

HS2 Ltd claims that HS2 would save 90 flights per day *yet the proposal states that only 1000 people per day would use HS2 to access Heathrow*

- **Ignoring the immense environmental damage**

HS2 would increase total annual UK transport emissions by at least 0.5%; *HS2 could not therefore be carbon neutral as is claimed*

"HS2 is economically unsound" says Cllr Marion Clayton, Chairman of Wendover HS2, "it is based on multiplying an unknown by an uncertainty for 75 years. We are expressing our concerns in a letter to the Secretary of State for Transport".

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20th September 2010

Notes to Editors:

The letter to the Secretary of State for Transport is appended with supporting information. The Report which can be seen at www.wendover-hs2.org.uk raises serious issues about the financial viability of High Speed 2. It analyses in depth many aspects of both the costs and the benefits put forward by HS2 Ltd, the government-owned company, which promotes this project.

The costs are shown to have been seriously underestimated; the benefits considerably inflated, and the environmental issues ignored. The conclusions are backed up by facts derived from HS2 Ltd's own figures.

The Report has been prepared by the Wendover HS2 Business Group with support and input from a panel of financial, legal and business management experts.

About Wendover HS2

Wendover HS2 consists of County and District Councillors, committee members of The Wendover Society and local volunteers. It represents the vast majority of the 10,000 population of Wendover and its neighbouring villages including Halton and Dunsmore, much of which is within the Chilterns Area of Outstanding Natural Beauty.

The HS2 route favoured by the last government in its Command Paper, Route 3, would go directly through Wendover, narrowly avoiding the historic High Street. Wendover would be the worst affected of all Chiltern communities. Nonetheless, the concerns expressed in our letter to the Secretary of State for Transport are relevant to all UK taxpayers and to all the communities along the proposed HS2 route corridors.

A note on the manipulation of benefits and costs:

In the documents, two types of numbers are used: real money and Present Value. Present Value (PV), a standard technique, used in the Benefit Cost Ratio calculation, is a mathematical manipulation of the real cash that might be received and spent in different years to 2085. Taxpayers pay in real cash and Consultants and Contractors get paid in real cash. Often the PV figure is used in media comment and by MPs. PV is always much lower than the cash costs. However, by allowing uncertain, intangible benefit estimates to grow in real terms whilst more realistic costs are kept level, intangible benefits are assessed much more favourably and appear much larger.

11 Pound Street,
Wendover,
Bucks HP22 6EJ

22nd September 2010

The Rt Hon Philip Hammond MP
Secretary of State for Transport
Department for Transport
Great Minster House
76 Marsham Street
London SW1P 4DR

Dear Secretary of State,

High Speed Rail 2

Wendover HS2 has prepared a detailed Report on the business case justification for HS2. The Report is based upon the actual HS2 Ltd figures, both those which were published in HS2 Ltd's public report, and those obtained from in-depth examination of the detailed underlying financial and demand models.

Analysis of the Report has led us to the regrettable conclusion that HS2 Ltd has seriously misled and misinformed Ministers, Parliament and the Public.

HS2 Ltd has made six key statements, each of which is at best economical with the truth and at worst misleading. The evidence for our conclusions is contained in the attached supporting information.

1. HS2 Ltd states that the construction and renewal costs would amount to £17.85bn. *The real cash cost would be 40% higher at £24.55bn, and could be as high as £34.7bn if Treasury guidelines were used.*
2. By claiming non-HS2 passengers as HS2 passengers, *'new demand' forecasts are substantially over-estimated by up to 92%.*
3. Estimates of non-cash indirect benefits *are inflated by at least 45%.*
4. HS2 Ltd fails to make clear *that 84.7% of HS2's economic benefits would go to London, the South-East and Birmingham. Rather than benefitting, Scotland would see its economy shrink by £220m.*
5. HS2 Ltd claims that HS2 would save 90 flights per day *yet the proposal states that only 1000 people per day would use HS2 to access Heathrow*
6. HS2 would increase total annual UK transport emissions by at least 0.5%; *HS2 could not therefore be carbon neutral as is claimed*

With these distortions corrected, *the ratio of Benefits to Costs quickly falls below 2 and may be as low as 0.04.* The business case as presented is therefore unsound and the project worth substantially less than its construction costs. It repeats the financial modelling mistakes of HS1. HS2 would be significantly larger than HS1 being based on an arbitrary and extraordinarily high-cost route corridor. HS2 also has viable capacity alternatives.

The huge costs and low national benefits evidenced in HS2 Ltd's own data have led to a justification of the project by:

- selective financial modelling,
- overstated rail demand,
- inflated rail user benefits,
- using inconsistent air travel predictions, and
- ignoring the immense environmental damage.

Our analysis suggests that a consultancy and construction lobby group is promoting a nationally damaging project for its own interests whilst using taxpayer money. The right high-speed rail scheme may well have UK-wide benefits; this biased HS2 proposal would, however, create a distorted infrastructure, and by diverting money would damage key investment areas such as education, health and wider transport projects. As taxpayers have funded and therefore own HS2 Ltd, we expect full disclosure and a balanced view of the project to enable the Government and taxpayers to make a properly informed decision.

We would appreciate your specific comments on the points raised in this letter and its attachments, and in particular a detailed explanation of the reason for the inconsistencies we have identified.

Yours sincerely,

Cllr Marion Clayton.
Chairman,
Wendover HS2

c. c.

The Rt Hon David Cameron MP, Prime Minister

The Rt Hon George Osborne MP, Chancellor of the Exchequer

The Rt Hon David Lidington MP

The Rt Hon Danny Alexander MP

The Rt Hon John Bercow MP

The Rt Hon Cheryl Gillan MP

The Rt Hon Dominic Grieve MP

The Rt Hon Steve Baker MP

Attached:

Supporting Information

Additional information available:

The full report "Financial Analysis of HS2" is available on request with an accompanying Spreadsheet Model.

SUPPORTING INFORMATION

1. **HS2 Ltd states that the construction and renewal costs would amount to £17.85bn. The real cash cost would be 40% higher at £24.55bn, and could be as high as £34.7bn in cash.**

HS2 estimated the initial track construction cost in 2009 prices at £11.8 billion. It then used an optimism bias of 40% to obtain a cost estimate before tax of £16.5bn. This **40% level of bias assumes that a decision to proceed with a specific route has been taken by Parliament**. No line has been confirmed and therefore this is the wrong planning assumption. Using the Treasury guidelines a bias of 60% is appropriate, resulting in an estimate of £18.4bn, not £16.5bn.

The £16.5bn is then increased by 20.9% to reflect the indirect tax burden on the economy - which would be paid by the contractors. This figure of £19.9bn for track (no trains) is used for the Present Value calculation. If **the correct 60% optimism bias is used, the cost would be £22.8 bn**. This is pre-inflation.

Rolling stock is extra and due to the convoluted project design in two parts: HS2 dedicated trains and "classic compatible" stock.

- HS2 Ltd envisages 16 dedicated and 45 compatible train sets. The dedicated units are meant to be off the shelf. The price of £25m each is increased by optimism bias of 18%. This bias assumes that a confirmed train order has been placed. Since many details of these trains are unclear, this bias looks like special pleading. Applying a bias of 40% (although 60% is possible) gives £35m each before tax. Adding tax means each train costs £42 million before inflation.
- Classic compatible trains have not been designed and do not exist in Europe. The DfT record on commissioning complex new train designs is not good. HS2 Ltd assumes that each unit costs 50% more than a dedicated HS2 train. This is clearly a guess. This makes £37.5m each. It applies a bias of 40%, which assumes the design is approved. This is clearly too low and we suggest using 60% as in Treasury guidance. Each train therefore costs, possibly, £60m before tax. Adding tax makes the price of a compatible train £72.5m before inflation.

Overall actual costs

The Treasury appears to expect a budget bid without indirect tax added but with inflation. HS2 have supplied figures showing their cash-cost estimate including inflation but excluding tax of about £25 billion (track and trains but without renewals).

With correct optimism bias and adding indirect tax as in the benefit ratio calculation, we estimate **a potential final bill of £34.7 billion**. Taxpayers are entitled to know the explicit cash bill. These estimates do not include renewal of track, trains and stations.

Table 1: Revised cost of Stage One construction and Rolling stock (£ million)

	Base estimate £ million	Opt. Bias	Number (Units)	Public (ex tax)	Private (inc tax)	Inflation adjusted
Track	£11,795	60%	NA	£18,872	£22,816	£29,628
HS2	£25	40%	16	£560	£677	£876
Compatible	£38	60%	45	£2,700	£3,264	£4,222
Total				£22,132	£26,758	£34,725

2. **By claiming non-HS2 passengers as HS2 passengers, 'new demand' forecasts are substantially over-estimated by up to 92%.**

We note that HS2 Ltd's basic model grows GDP at a constant rate; this resumes no recessions. Yearly rail growth is assumed to be about 20% higher than GDP growth. Treasury rules state that one can only forecast increases in passengers for the first seven years of a project. This is as well since, if left unchecked, HS2 Ltd's method states that **by 2026, 2.44 million people a day use HS2**, and it still grows! This is an inherent error with long-term simplistic linear forecasting.

On the HS2 Ltd figures, in 2033, about 1.58 million passengers per day will use rail in the UK (excluding London commuter and local services; other forecasters project much lower numbers. HS2 is stated to increase use by 3.9% to 1.64 million and claim an 8.8% share.

On closer examination, detailed in our full report, HS2 Ltd is claiming, for example, 1,255 daily passengers who travel from Birmingham to Birmingham via Birmingham; if they ever exist, these are purely local travellers. HS2 Ltd also claims passengers on "classic compatible" trains that replace conventional trains but offer no time. HS2 Ltd further claims passengers who cannot possibly use HS2, like those travelling between Wales and London.

HS2 Ltd also appears to over-claim the Scottish-London air market. Only 1,000 passengers a day will use HS2 to access Heathrow (500 arrive, 500 leave) yet HS2 assumes it gains 10,633 domestic air travellers in Stage One.

We have re-analysed these figures using realistic and prudent assumptions, noting that as HS2 Ltd has refused detailed breakdowns, we are working on limited data. **We estimate that HS2 Ltd has over-claimed the number of new passengers generated by 92%.** In addition, the extent of modal shift from conventional rail to HS2 is probably over-exaggerated given that HS2 will have to use premium fares and that leisure passengers derive little benefit. We therefore estimate that HS2 could carry about 94,000 passengers per day compared to HS2 Ltd's estimated 145,391. Although this is about twice current West Coast line use (48,260 daily), **94,000 passengers per day is not enough to cover HS2 enormous costs.** HS2 Ltd must claim massive demand to get a) the fare income and b) the inflated intangible benefits claimed.

Table 2: Revised sources of 2033 passengers in HS2 journeys per day

Region to and from London	Mode shift from				Total
	Air	Road	New	Classic	
Scotland	640	42	1,423	3,029	5,134
North West	320	1,011	14,559	28,978	44,868
West Midlands	-	2,959	11,162	30,164	44,285
Total	960	4,012	27,144	62,170	94,287
% of Total	1%	4%	29%	66%	

3. Estimates of non-cash indirect benefits are inflated by at least 45%.

The benefits of HS2 are intangible, non-cash items. By this, we mean that although a number is attached, no one pays direct cash to get such a benefit. The Treasury treats these estimated intangible values as real cash.

The biggest benefit promised by HS2 is lack of crowding on the conventional rail network: both reduction of crowding and freed (under-utilised) capacity once passengers have migrated to HS2 (although if freed capacity is not used, this is doubly wasteful). Together, **“crowding” and “uncrowding” account for 74% of the business benefits and 63% of the leisure benefits.** HS2 has negligible road impacts, only cutting a few thousand vehicles per day on the M1 in 2033. Air traveller benefits are marginal and negative.

As a standard hidden ploy, these disparate and unquantifiable benefits are inflated at 2% per year till 2085. This vastly increases their importance in the calculation. However, this inflation is allowed under Treasury rules. Nonetheless, it should be clear to taxpayers that they being inveigled into paying cash now for highly uncertain intangible benefits that mostly occur long after they are dead. Consultants and contractors, however, get immediate real cash.

We note that **capping intangible benefits in 2033 reduces their Present Value by 45%.** This is not standard, but does treat them the same as fares and passenger numbers. Without a cap, the intangible benefits inexorably rise until eventually they exceed the size of the current UK economy.

4. HS2 Ltd’s report fails to make it clear that 84.7% of HS2’s economic benefits would go to London, the South-East and Birmingham. Scotland would see its economy shrink by £220m

There is a myth that HS2 is good for regional development - but not if you are in Scotland, the North East, Yorkshire or Wales. **Most regions would see negligible benefits.** This is because these are based on increased conventional, local, rail capacity. In transport theory, this improves economic activity. Most businesses are highly reliant on roads and parking where HS2 has no effects and where its costs may curtail investment.

These benefits are not high value jobs being sucked out of London. Imperial College has calculated that **Regional-London agglomeration effects are c £8 million per year;** HS2 Ltd reports this figure but does not appear to utilise it. The total UK economic benefit of £85 million per year plus £3.5 million in extra employment: a 0.009% GDP increase in 2033. Table 3 shows HS2 Ltd’s regional estimates.

Table 3; Present Values of HS2 Wider Economic Impacts (£ Million)

Region	Present Values £ Million	%
East Midlands	£114	5.7%
East of England	£134	6.7%
London	£928	46.3%
North East	£22	1.1%
North West	£222	11.1%
Scotland	-£220	-11.0%
South East	£118	5.9%
South West	-£30	-1.5%
Wales	£5	0.2%
West Midlands	£653	32.6%
Yorkshire and The Humber	£60	3.0%
	£2,006	

These Present Values are only achieved by inflating the supposed benefits by c 1.7% per year for 60 years. This means that most of these, 93% in real cash terms, are supposed to happen after 2033. It seems a long time to wait. In reality, this is a way of padding the benefits in contrast to the costs.

A further category of benefit based on obscure economic theory is added by a casual short cut. Local business profits are supposed to rise by 10% due to HS2; the PV is £1.6 billion. These count 100% to offset the actual construction costs. Services benefit more than manufacturing.

5. **HS2 Ltd claims that HS2 would save 90 flights per day yet only 1000 people per day might use HS2 to access Heathrow**

HS2 Ltd. is inconsistent on Heathrow. The specific Heathrow model shows that **only 1000 Heathrow passengers might use HS2: half a train load each way daily** after 2033 (this is 500 people arriving, 500 people returning). The demand model, on a different basis, assumes 10,633 of whom 63% travel to or from Scotland. This seems a highly implausible modal shift and we use the specific Heathrow figures which equate to 2 return Glasgow flights per day and one Manchester return flight. Many interlining air passengers are transferring to long-haul flights and loose from HS2. In addition, budget airlines are highly competitive with HS2 Stage One in price and time.

6. **HS2 would increase total annual UK transport CO₂ emissions by at least 0.5%; HS2 cannot be carbon neutral as HS2 Ltd claims**

We base this on HS2 Ltd's own carbon figures. However, HS2 Ltd makes the assumption that high speed trains have identical carbon emissions to much slower conventional rolling stock. The Imperial College Traction Study calculated that a 3 minute HS2 time saving takes 23% more energy. HS2 Ltd did not account for construction and maintenance CO₂ emissions, these, by analogy with Germany, will add a further 20%.

HS2 Ltd claims to offset HS2's increase in CO₂ by saving air flights. Not only is any Stage One drop in domestic flights highly implausible but any airport slots freed from domestic flights by HS2 will be sold or reused for long-haul. The net effect on UK air transport CO₂ emissions will be zero or negative.

Other factors

HS2 Ltd omitted three Present Value items in its benefit calculation:

- It failed to include the possible **£15 billion of interest** on the debt need to fund construction;
- It ignored the **£858 million of operating company profits** calculated by us using Ernst & Young's recommendations; and
- It **does not estimate the environmental costs** as it says these are uncertain (although it is happy to forecast UK GDP up to 2085).

Technical Report and Spreadsheet

The full Wendover HS2 Report: *Financial Analysis of HS2* is available on request.

A separate spreadsheet to enable different BCR scenarios to be explored is also available.