

Executive Summary

We have carried out a review of the HS2 decision making process (the “HS2 process”) and our conclusions and recommendations can be found in sections 5 and 6.

Good process is important. If the government makes decisions in a disciplined and transparent way the public will in general support them and money will be find its way to the best projects. The HS2 decision-making process has not been disciplined and transparent.

A long-term strategy for railways was laid out in *Delivering A Sustainable Railway* (DfT July 2007) building on the recommendations of *The Eddington Transport Study* (2006). Within 3 years all three political parties (for their own different reasons) had committed to a policy (“high speed rail now”) which did not fit in with the strategy.

Even if proceeding with HS2 now did fit in with the 2007 strategy, the business plan is flawed. There are weaknesses in the way benefits to travellers have been valued, the high level of uncertainty involved with the project over 60 years has not been acknowledged, and the credibility of the 2011 Consultation Document has been compromised by apparent conflicts of interest.

We recommend that:

- the current HS2 process and documentation is set aside
- a cross-party enquiry is set up to look at ways in which UK Government decision-making processes might be improved
- the 2006-7 strategy documents are updated
- HS2 takes its place in the full list of options to be appraised

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1. The strategic objectives claimed for HS2 don't fit well with the 2006-7 strategic framework

The “robust process” yardstick we have used to help us assess the “HS2 process” begins with a strategic review. The most recent UK transport strategic review is *The Eddington Transport Study* (2006)¹ and this (together with *Delivering A Sustainable Railway* (DfT July 2007)²) was cited as the “policy context” for *High Speed Rail* (DfT 2010)³.

Eddington identified the strategic goals for UK transport. *Delivering A Sustainable Railway* (DfT July 2007)⁴ had goals “consistent with the recommendations of the recent Eddington Transport Study” and laid out long-term strategies for achieving them.

(See the Appendix for more detail on Eddington’s analysis of the priorities for UK transport)

These documents are not referred to in the *High Speed Rail: Investing in Britain’s Future - Consultation* (DfT 2011)⁵ (The 2011 HS2 Consultation Document). The document that is referred to as policy context is the *National Infrastructure Plan* (HM Treasury 2010)⁶. This is a general statement of investment aims for infrastructure and is not a rail strategy. The transport section of the report is 3 pages long, of which 7 lines refer to high speed rail (listing the benefits it would bring).

The 2011 HS2 Consultation Document sets out a number of objectives/benefits of the scheme:

1. Transformation of the UK’s economic geography by bringing cities closer together
2. Reducing the North South divide
3. Achieving a low carbon economy
4. Reducing journey times
5. Addressing the lack of rail capacity

Some of these objectives/benefits do not fit well with Eddington’s analysis. Eddington did not see high speed rail as an effective measure for tackling climate change, he did not think that the UK’s economic geography needed to be reshaped (by faster journey times) and he was dubious that it would help tackle the North South divide. Although Eddington recognised that reducing journey times increased business efficiency he did not see it as a strategic objective.

Eddington’s conclusion was that the main problems to be addressed were road congestion and overcrowding on the railways:

¹ The Eddington Transport Study (HM Treasury 2006)

² Delivering A Sustainable Railway (DfT July 2007)

³ High Speed Rail (DfT 2010) Paras 1.18 – 1.20

⁴ Delivering A Sustainable Railway (DfT July 2007)

⁵ High Speed Rail: Investing in Britain’s Future - Consultation (DfT 2011)

<http://highspeedrail.dft.gov.uk/library/documents>

⁶ National Infrastructure Plan (HM Treasury 2010) Para 4.24 p29

<http://www.hm-treasury.gov.uk/d/nationalinfrastructureplan251010.pdf>

“The most significant long-term problems for UK inter-urban travel that policy needs to tackle are the rising levels of road congestion and overcrowding on the rail network, particularly where inter-urban and commuting journeys compete to use the same networks.”⁷

2. The analysis of the capacity problem and the right strategy for dealing with it don't fit well with the DfT analysis in 2007

Delivering A Sustainable Railway (DfT July 2007) stated that planned incremental measures (eg longer trains, tackling “pinch points”, and signalling upgrades) if implemented “...would be sufficient to meet growth on all routes until about 2030. But long-term demand forecasts are uncertain. There is a need to ensure that feasible options exist which could meet a faster growth demand. At present, the balance of advantage would appear to favour new services running at conventional speeds and operating on an existing disused alignment between London and Birmingham. But this is not a decision that need, or should, be taken now.”⁸

The report goes on to say “...rail demand cannot be predicted with any confidence over a 20-year time horizon”⁹ and it later explains some of the reasons for this, concluding that “It is therefore necessary to have a flexible inter-urban rail strategy that can be adapted if long-term demand actually grows significantly faster or more slowly than currently forecast.”¹⁰

The report said this about high speed rail:

“... it would not be prudent to commit now to ‘all-or-nothing’ projects, such as network-wide electrification or a high-speed line, for which the longer-term benefits are currently uncertain and which could delay tackling the current strategic priorities such as capacity.”¹¹

The 2011 HS2 Consultation Document summarised the capacity issues in this way:

“In the longer-term, however, the scope to increase capacity on the main routes out of London will be increasingly constrained and eventually exhausted, with Network Rail recently concluding that by 2024 “the West Coast Main Line, particularly at the southern end of the route, is effectively full and subsequent additional capacity could only be provided by exceptionally expensive infrastructure solutions.”¹²

The strategy proposed in the 2011 Consultation Document is to start the procurement process for the London-Birmingham leg of HS2 immediately.

In conclusion the analysis of the capacity problem and the right strategy for dealing with it in the 2011 Consultation Document (DfT 2011) differs from that in *Delivering A Sustainable Railway* (DfT July 2007).

⁷ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006) Para 1.132 Available at <http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/>

⁸ Delivering A Sustainable Railway (DfT July 2007)Para 6. Summary

⁹ Delivering A Sustainable Railway (DfT July 2007)Para 6.7

¹⁰ Delivering A Sustainable Railway (DfT July 2007)Para 6.10

¹¹ Delivering A Sustainable Railway (DfT July 2007) Page 9

¹² High Speed Rail: Investing in Britain’s Future - Consultation (DfT 2011) Page 11

3. Timeline – What happened between 2007 and 2011?

October 2007 - Towards A Sustainable Transport System (DfT)

Delivering A Sustainable Railway (DfT July 2007) was followed soon after by another DfT strategy paper (*Towards A Sustainable Transport System* (DfT October 2007)¹³). In a short analysis of capacity issues in the London-Birmingham-Manchester corridor it gave a different analysis of the problem to be addressed and the right strategy for dealing with it. It stated that even if the incremental measures envisaged in the July document were implemented “...if current demand growth continues, very substantial additional capacity will once again be needed by 2024.”¹⁴

The October paper goes on to say that a broad range of options needs to be generated. These options might include “widening of motorways, active traffic management, road-pricing, or the construction of new rail capacity either through a conventional (c. 125 mph) or a high-speed (c. 200 mph) line.”¹⁵

September 2008 - The Conservatives adopt high speed rail as a policy

At their conference in September 2008, the Conservative Party announced that if elected, they would scrap plans for Heathrow Runway 3 and invest in high speed rail instead¹⁶. They claimed a wide range of benefits that high speed trains would bring. Some of these claims are not supported by the analysis in Eddington or the 2007 DfT reports¹⁷.

January 2009 – 2010 The Labour Government follows suit

In January 2009 the Government set up a study group (HS2 Ltd) to look at the case for high speed rail. The DfT produced a report on high speed trains in March 2010.¹⁸ It concluded that, subject to consultation, the London - Birmingham route for HS2 should go ahead. The report refers to the 2006-7 strategy documents but is not consistent with them (eg it claims increasing connectivity (ie reducing journey times) as a strategic objective¹⁹).

2010 Election – All 3 parties commit to high speed rail

In their manifestos for the 2010 General Election the Conservative Party promised to “begin work immediately”²⁰ on the HS2 Y-network and Labour committed to high speed rail. The Liberal Democrats (whose manifesto was less clearly committed but still supportive) and the Conservatives signed the Coalition Agreement (which included a commitment to move forward with high speed rail).²¹

¹³ Towards A Sustainable Transport System (DfT October 2007)

¹⁴ Towards A Sustainable Transport System (DfT October 2007) P66

¹⁵ Towards A Sustainable Transport System (DfT October 2007) P66

¹⁶ <http://www.epolitix.com/latestnews/article-detail/newsarticle/theresa-villiers-speech-in-full/>

¹⁷ eg “And, of course, high speed rail delivers for the environment as well. The latest generation of high speed trains emit 50 times less carbon than cars and 70 times less than flying.”

¹⁸ High Speed Rail (DfT 2010)

¹⁹ High Speed Rail (DfT 2010) Para 1.20

²⁰ Conservative Manifesto 2010 P23

http://media.conservatives.s3.amazonaws.com/manifesto/cpmanifesto2010_lowres.pdf

²¹ Freedom Fairness Responsibility (HM Government 2010) Para 30

In conclusion:

The analysis of the capacity problem laid down in July 2007 had changed by October 2007. The right strategy for dealing with the problem also changed quickly. High speed rail was not on the agenda in July 2007 but from the moment that the Conservative Party decided to back high speed rail in 2008 there seems to have been an inexorable process towards all three political parties committing to the policy.

4. There are other significant weaknesses in the HS2 process

The generation of options

High Speed Rail: Investing in Britain’s Future - Consultation (DfT 2011) does not demonstrate that a robust approach has been taken to the generation of options. The options that have been evaluated are options to HS2 rather than optional ways of tackling the problem (a lack of rail capacity)²². In other words, the process started with a solution (HS2) and looked at alternatives to it rather than starting with a clearly defined problem and generating all the possible ways of tackling it.

The valuation of “time savings” in the Appraisal

Good process demands the proper weighting of criteria so that projects are selected on how best they achieve their strategic objectives. Time savings which (according to Eddington’s analysis) are not a strategic objective make up 40% of the £17.9bn²³ traveller’s benefits claimed for the HS2 London to Birmingham route whereas the benefits of reduced crowding and road decongestion (which Eddington identified as strategic objectives) make up only 25% of the figure. The breakdown of the £38bn of traveller’s benefits (into time savings, reduced crowding etc) claimed for the Y network (London to Manchester and Leeds) is not given.

Delivering A Sustainable Railway (DfT 2007) says this:

“Reduced journey time will often be an incidental benefit of measures to increase capacity, but prioritising on them in this rail strategy would divert resources from the real priority of improving capacity and reliability.”²⁴

http://www.cabinetoffice.gov.uk/sites/default/files/resources/coalition_programme_for_government.pdf

²² This point is demonstrated by the changes over time in the brief given to Atkins (the consultants who were asked to appraise scenarios A, B and C). Atkins were first asked to consider road and rail improvement alternatives to the High Speed Rail proposition between London and the West Midlands. The DfT then started to work on a “Y” network for HS2 from London to Manchester and Leeds and began to develop alternative rail packages to this scheme aimed at delivering long distance capacity and reduced journey times. Atkins were then asked to appraise these scenarios (A, B and C). This process started with a solution (HS2 London - West Midlands) and alternatives to it were generated. The solution then changed (to a “Y” network) and alternatives to that were generated. (See: Strategic Alternatives to the Proposed ‘Y’ Network (Atkins February 2011) Para 1.1) Available at <http://highspeedrail.dft.gov.uk/library/documents>

²³ Economic Case Table 4 P41

<http://highspeedrail.dft.gov.uk/sites/highspeedrail.dft.gov.uk/files/hs2-economic-case.pdf>

²⁴ Delivering A Sustainable Railway (DfT July 2007) Para 6.13

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The 2011 HS2 Consultation Document²⁵ accepts the argument that new technology has led to some time on trains being productive but the figure for time savings benefits has not been reduced²⁶. This is on the grounds that the figure for reduced crowding benefits would increase correspondingly and balance it out. This “swings and roundabouts” approach is not a robust way of dealing with an issue involving such large figures. Furthermore it does not take into account the fact that the “swings and roundabouts” argument does not hold for options that offer smaller time savings benefits relative to reduced crowding benefits. If the appraisal model was altered in the way discussed in the report, the benefit cost ratio of any scheme that delivers more capacity but no time savings would double.

The treatment of uncertainty in the Appraisal

The uncertainties involved with predicting the benefit:cost ratio (BCR) of HS2 over a 60 year period are very large. For example, HS2 would in effect be made up of two “businesses” (the high speed network itself and the changes to the “classic” network). Calculating the operating costs and revenues of these two “businesses” over such a long period with any degree of certainty is not possible. Other relevant factors that are difficult to predict over such a time period are GDP growth forecasts (which underpin passenger demand assumptions) and the impact of technology changes, energy prices and climate change policy.

Despite these uncertainties the benefit:cost ratio (BCR) given for the Y-network is 2.6. This gives a misleading sense of certainty. It would have been better to have given a range of BCRs rather than just a single figure. The uncertainty of a project (particularly such a large one) is very material to a decision-maker.

The Appraisal doesn't include all the foreseeable costs

The Appraisal of HS2 does not take into account many costs to society that may be material. Important items that have been left out include:

- (i) environmental and social impacts of the scheme (eg carbon costs, loss of landscape amenity, damage to communities, noise, distributional impacts)
- (ii) disruption costs during the 15 year construction phase
- (iii) impacts on areas whose train services might deteriorate

Presentation of the information

The Consultation Document does not let the facts speak for themselves. It reads more like a marketing document and contains phrases like “the fast track to prosperity”, “standing room only”, “a once-in-a-generation opportunity”, “and a massive £44 billion of benefits”, “Britain cannot afford to be left behind” and “high speed rail is crucial to Britain's future success”.

Important pieces of information are missing from the Consultation Document. There are no comparative benefit cost ratios for other Government projects and there is no information about

²⁵ Economic Case Paras 7.3.1-7.3.7

²⁶ Economic Case Paras 7.3.1-7.3.7

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how much of the UK’s capital budget for the railways the HS2 will use up. The reader is not given a proper context for making a decision.

The Consultation Document claims that since the UK’s competitors are developing high speed rail networks, the UK should do so as well²⁷. These claims are not accompanied by the relevant information that HS2 is likely to be more expensive than other high speed rail projects in Europe. HS1 (the high speed link from London to the Channel tunnel) was the subject of a comparative international study²⁸ of the costs of building 6 high speed lines in Europe. This found that (not taking into account the higher unit costs of building infrastructure in the UK) HS1 was between 2 and 5 times as expensive as the comparators. Unit construction costs in the UK are substantially higher than they are on the continent²⁹. HS2 would have many of the same features that made HS1 comparatively expensive (eg a high proportion of track in tunnels and large costs for rebuilding stations).

Independence and challenge

It is good process that everyone involved in putting together a consultation document should be independent. We have found instances where this appears not to be the case. Network Rail has contributed information for the 2011 Consultation Document even though it appears on a list of organisations funding the work of a pro-high speed train lobby group³⁰. Evidence from Northern Way³¹ is referred to in two relevant DfT documents³² but they provided funding for the same lobby group³³ and a report commissioned by the same lobby group was cited as evidence in the 2011 Consultation Document³⁴.

There seems to have been a lack of objective challenge. For example a newspaper article in the press³⁵ drew attention to a graph³⁶ in the 2010 Command Paper that implies that carbon emissions from conventional intercity trains are three times as high as those from very high speed trains (rather than being substantially lower as the laws of physics dictate). Despite the flaws in the graph being so publicly pointed out, it was reproduced in the 2011 Consultation Document³⁷. DfT know

²⁷ eg Executive Summary on p7 “France and Spain, amongst other countries, are all pressing ahead with ambitious plans. Britain cannot afford to be left behind. “

²⁸ Comparison of High Speed Lines’ CAPEX (www.hs2.org.uk/assets/x/56773)

²⁹ “The HS2 study found that civil engineering costs in the UK were typically up to double those in Europe”.

Rail Value For Money Study. Interim Submission to Secretary of State – September 2010. Para 4.2.5

<http://www2.dft.gov.uk/pgr/rail/strategyfinance/valueformoney/interim/pdf/interimreport.pdf>

³⁰ <http://www.greengauge21.net/public-interest-group/>

³² Towards A Sustainable Transport System (DfT October 2007) Para 2.79, High Speed Rail 2010 Para 3.17 and High Speed Rail (DfT 2010) Para 3.17

³² Towards A Sustainable Transport System (DfT October 2007) Para 2.79, High Speed Rail 2010 Para 3.17 and High Speed Rail (DfT 2010) Para 3.17

³³ <http://www.greengauge21.net/public-interest-group/>

³⁴ HS2 Consultation Document (DfT2011) Appendix 2 Greenhouse Gas Emissions Para 3.1.3.

<http://highspeedrail.dft.gov.uk/sites/highspeedrail.dft.gov.uk/files/hs2-aos-appendix02.pdf>

³⁵ Monbiot, G <http://www.guardian.co.uk/commentisfree/2010/may/17/high-speed-rail-policy-carbon-emissions>

³⁵ High Speed Rail (DfT 2010) Figure 2.2

³⁷ HS2 Consultation Document (DfT2011) Figure 1.2

that trains use more energy as they go faster. *Delivering A Sustainable Railway* (DfT 2007) states that “Increasing the maximum speed of a train from 200 km/h to 350 km/h means a 90 per cent increase in energy consumption.”³⁸

5. Conclusions

The 2006-7 analysis was that:

- the priority was dealing with overcrowding on the rail network (particularly where inter-urban and commuting journeys compete to use the same networks)
- incremental measures (eg longer trains, signalling upgrades and new services on re-opened routes) “...would be sufficient to meet growth on all routes until about 2030”³⁹
- “....rail demand cannot be predicted with any confidence over a 20-year time horizon.”⁴⁰
- “It is therefore necessary to have a flexible inter-urban rail strategy that can be adapted if long-term demand actually grows significantly faster or more slowly than currently forecast.”⁴¹
- “... it would not be prudent to commit now to ‘all-or-nothing’ projects, such as network-wide electrification or a high-speed line, for which the longer-term benefits are currently uncertain and which could delay tackling the current strategic priorities such as capacity.”⁴²

Within 3 years the three largest political parties had committed to a policy (high speed rail now) that did not fit with the 2006-7 analysis.

The disciplined approach to decision making recommended in Eddington and *The Green Book* (HM Treasury 2003 updated 2011)⁴³ has not been used to identify and appraise all the options for providing more capacity in the long-term if it should be needed.

Even if proceeding with HS2 now did fit in with the strategy, the business plan is flawed. There are weaknesses in the way benefits to travellers have been valued and the high level of uncertainty about making predictions about such a complex and long-term project have not been acknowledged. The credibility of the 2011 Consultation Document has been compromised because some of the information has come from sources with apparent conflicts of interest.

³⁸ *Delivering A Sustainable Railway* (DfT July 2007) 6.14

³⁹ *Delivering A Sustainable Railway* (DfT July 2007) Para 6. Summary

⁴⁰ *Delivering A Sustainable Railway* (DfT July 2007) Para 6.7

⁴¹ *Delivering A Sustainable Railway* (DfT July 2007) Para 6.10

⁴² *Delivering A Sustainable Railway* (DfT July 2007) Page 9

⁴³ *The Green Book* (HM Treasury 2003 updated 2011) Paras 4.1, 5.3

6. Recommendations

We recommend that:

- the current HS2 process and documentation is set aside
- a cross-party enquiry is set up to look at ways in which UK Government decision-making processes might be improved
- the 2006-7 strategy documents are updated
- HS2 takes its place in the full list of options to be appraised

Appendix

More detail on the analysis of the priorities for UK transport in The Eddington Transport Study (HM Treasury 2006)

Sir Rod Eddington was asked to advise the Government:

“...on the long-term links between transport and the UK’s economic productivity, growth and stability, within the context of the Government’s commitment to sustainable development.”⁴⁴

Eddington identified three strategic economic priorities for transport:

“growing and congested urban areas and their catchments; the key inter-urban corridors; and the key international gateways.”⁴⁵

He found that the UK has good levels of connectivity (how well its urban areas are connected)

“The UK has good levels of connectivity – the national networks are in the right places, comparing well with European competitors.”⁴⁶

“Since the UK is a small place with a compact economic geography, a growing economy and increased personal mobility, it is not surprising that the UK’s problems are not ones of connectivity or distance, but are instead of competing demands and overload.”⁴⁷

He was not convinced that improved connectivity is always an effective tool for the regeneration of deprived areas:

“Often the result is a two-way process in which local businesses actually lose out, as more productive and competitive firms from other regions can access the area and compete for previously protected markets.”

⁴⁴ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006)Foreword.

⁴⁵ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006)Foreword.

⁴⁶ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006)Para 1.49

⁴⁷ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006)Para 1.77

“For example, areas of London which benefit from very good transport connectivity can also show very high signs of deprivation. Transport can only support growth if other vital conditions are right, and sometimes policies such as skills or fiscal incentives may be more appropriate in driving economic performance.....”⁴⁸

He did not see high speed trains (on a London-Scotland route) as an effective tool for reducing carbon emissions.⁴⁹

Although Eddington recognised that reducing journey times increased business efficiency⁵⁰ he did not see it as a strategic objective.

He found that road congestion and overcrowding on the railways were the key problems and these will get worse over time if not addressed:

“The most significant long-term problems for UK inter-urban travel that policy needs to tackle are the rising levels of road congestion and overcrowding on the rail network, particularly where inter-urban and commuting journeys compete to use the same networks. On the railways, it is important to note that this overcrowding and congestion is not a feature of all parts of the intercity network: indeed it is principally on the approaches to major urban areas, where significant commuter flows compete for line space with inter-urban flows, that congestion and overcrowding is found.”⁵¹

“Continued demands, driven by economic success, will mean congestion and reliability will deteriorate in the next 20 years unless action is taken.”⁵²

⁴⁸ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006) Para 1.32

⁴⁹ The Eddington Transport Study (HM Treasury 2006) Paras 4.181 and 4.182.

⁵⁰ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006) P15 Figure 2

⁵¹ The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006) Para 1.132

⁵² The Eddington Transport Study The case for action: Sir Rod Eddington’s advice to Government (HM Treasury 2006) Para 1.76