

Submission to the Airports Commission



Greengauge 21
February 2013

1. Introduction

Greengauge 21 is a not for profit company established to promote the debate and interest in high-speed rail for Britain in 2006. It is supported by a Public Interest Group and by an Industry Leaders Group; broadly these cover the public and private sectors respectively.

It is not completely clear whether this submission falls under the 'medium term' or the 'long term' category as defined by the Davies Commission,¹ so we hope that submission at this early stage will be helpful. It provides both evidence and proposals on the issue of rail accessibility to the South East's airports.

Our proposal is for an integrated approach that treats the questions of high-speed rail, airport accessibility and airport development together, with active consideration of environmental and other wider impacts.

The evidence we provide is in summary form here, but is drawn from reports which have been published and are available in full on the Greengauge 21 website.

The planned HS2 connection to Heathrow is on hold pending the Davies Commission findings. We wish to draw to the Commission's attention:

1. The value and wider role of high-speed rail connections at Heathrow; and
2. The plans drawn up under the guidance of Greengauge 21's Public Interest Group for a national HSR network which also serves Stansted, as well as the airports of Birmingham, Manchester and Edinburgh.

Our submission is that the inter-relationship between high-speed rail and airport infrastructure (in particular, additional runway capacity) is extremely important and need to be considered together in an integrated manner. This echoes the conclusion in relation to conventional rail reached by the Strategic Rail Authority and BAA plc which set out the rail developments needed to support airport planned airport development in an Appendix to the 2003 Aviation White Paper.

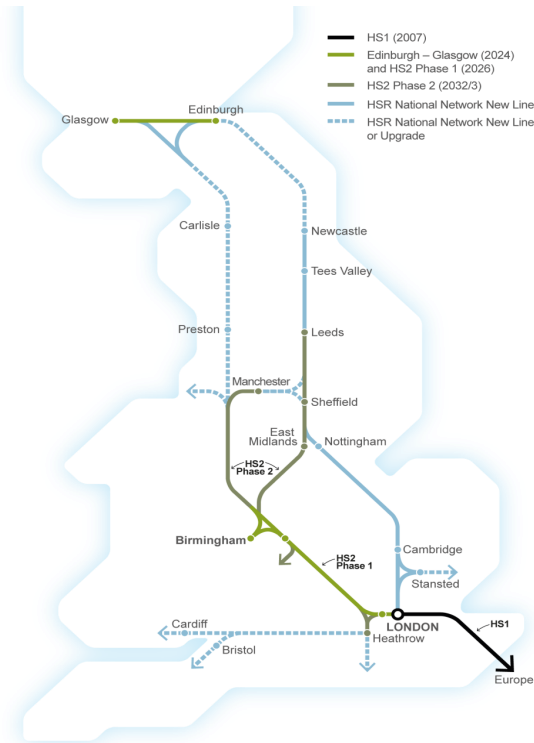
The proposal is shown in summary form overleaf.

¹ Airports Commission Guidance Document 01: Submitting evidence and proposals to the Airports Commission

Integrating Airport development with a national High-Speed Rail Network

High Speed 2

High Speed 2 has been designed with a connection to serve Heathrow that provides national connectivity to the airport hub and serves as a key part of a joined-up national high-speed network.



A national HSR network

The national network shown here was developed and published by Greengauge 21 in September 2009 as *Fast Forward* (and subsequently updated to show HS2).

Airports, along with city centres, are the locations most suitable for HSR stations.

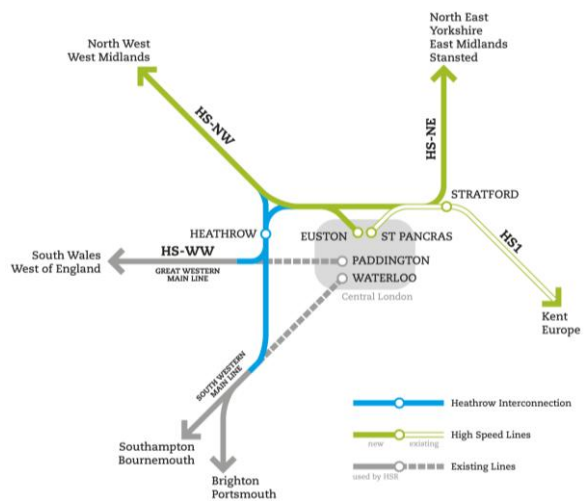
The national network provides for a second eastern high-speed line that would serve Stansted Airport.

The Heathrow Opportunity

HSR services to Heathrow Airport should connect to the south and west over existing rail lines.

The approach follows that used by SNCF with TGV at Paris CDG Airport, and by DB at Frankfurt.

The connectivity is especially important for the wider south east, the south west and south Wales.



2. Impact of high-speed rail on Heathrow

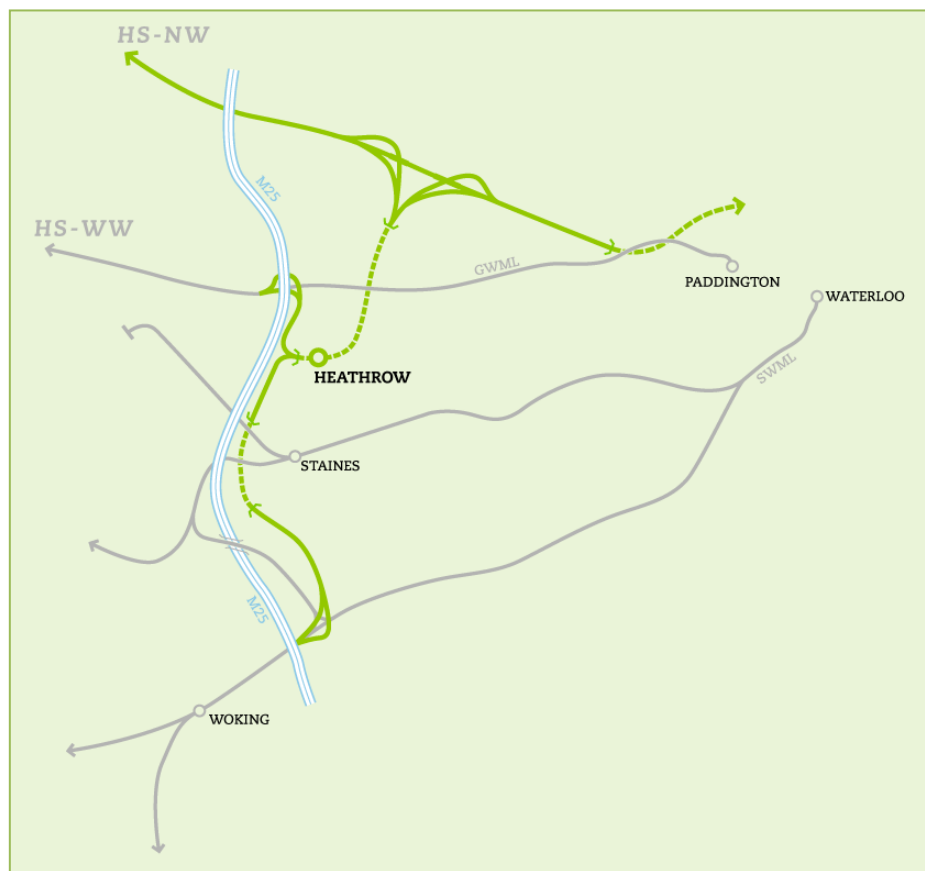
An early study by Greengauge 21 showed the scale of aviation demand at Heathrow that could be attracted to HSR services if direct links were provided to the airport.² It was estimated that 19% of the then current demand for air travel at the airport, amounting to 12.8mppa could be presented with a realistic option of travel by high-speed rail instead.

Overall, it might be expected that perhaps 10% of Heathrow's demand (on the basis of 2004 CAA data) would switch to high-speed rail if the necessary direct links were provided.

Work carried out by Greengauge 21 and submitted to the Mawhinney Review of 2010³ showed that the relationship between high-speed rail and Heathrow needed to be considered in a broader context than the question of air to rail mode diversion. In particular, it showed that Heathrow is a unique location in the wider south east, with high levels of accessibility by all modes – and with plans to improve accessibility by rail even further. In particular, western rail access, linking Heathrow directly westwards to the Great Western Main Line (GWML), is now a committed scheme. This forms a critical connection in the national HSR network, since an upgrade to the GWML – which is being electrified – could allow through operation of HSR services from HS2 and HS1 to the south west and Wales. In any event, it will mean that cities such as Bristol and Cardiff would join the national HSR network.

A proposal was developed by Greengauge 21 that showed how the connections at Heathrow to HS2 and to the wider rail network could be made.

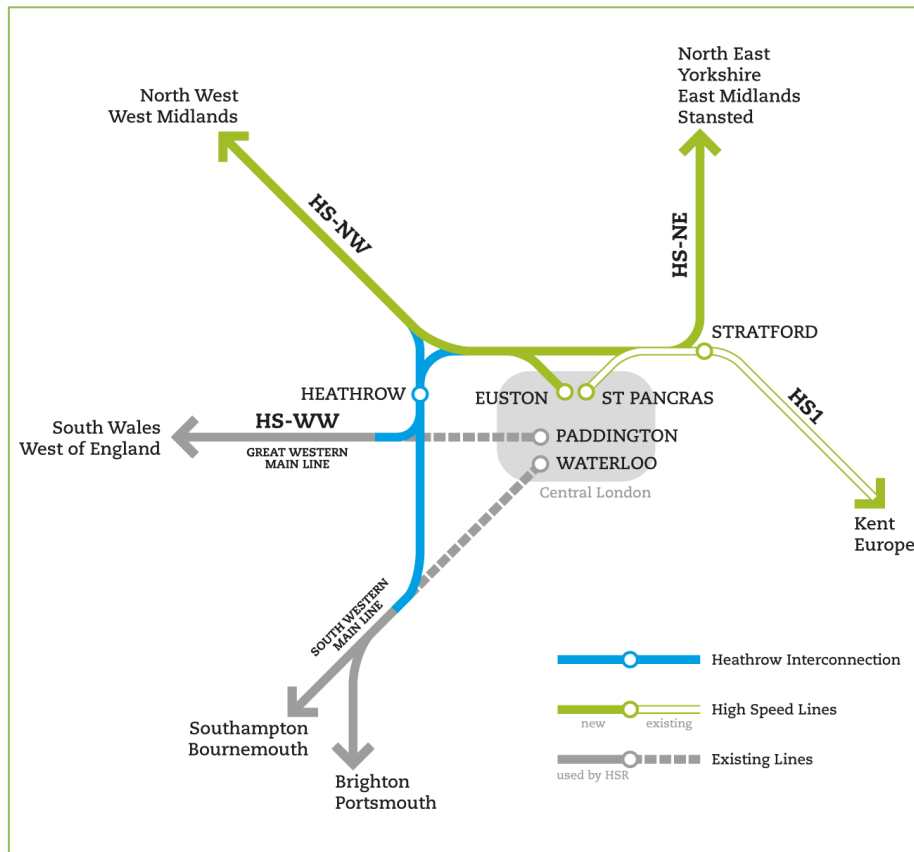
Figure 1 – HSR Interconnection network at Heathrow



² Greengauge 21, *Impact of High Speed Rail on Heathrow Airport*, March 2006

³ Greengauge 21, *The Heathrow Opportunity*, February 2010.

Figure 2 – Heathrow and the HSR network



Subsequent work by HS2 Ltd, published in January 2013, has identified how the connections to Heathrow could be created.⁴ The Heathrow connections link both northwards on to HS2 so that direct services can run from Heathrow to Birmingham, Manchester, Leeds and Scotland; and eastwards to London and to the planned HS2 – HS1 connection, so that services could operate directly from Heathrow to Paris, Brussels, Amsterdam and Frankfurt.

The HS2 Ltd plans, however, stop at Heathrow, and no work has yet been undertaken into the idea of southwards extension as shown on the outline plans above. Yet this onward connection is essential, because:

- In making Heathrow a through station, it can accommodate trains operating over routes such as Southampton – Heathrow – Manchester and Gatwick – Heathrow – Leeds – Newcastle.
- As a consequence, the viability of HSR services to/from the airport will be much greater than has been assessed so far by HS2 Ltd.
- We judge that the non-aviation demand that would be generated by through HSR services at Heathrow would be substantial and would have much greater benefits from diversion from car travel than will be achieved by HSR services between central London and the Midlands and the North.

Taken together with the western rail access scheme that now features in the rail industry plans for 2014-29 (with implementation, perhaps, in 2020), the effect would be to create a surface transportation hub at Heathrow. Heathrow could have, by the late 2020s, direct fast rail connectivity to all of the English core cities, all of the English regions, as well as to south and north

⁴ *The Heathrow spur: description of HS2 Ltd's recommended route and station option*, January 2013.

Wales and to Scotland. In effect it would mean that Heathrow airport could be a global hub for the whole country and not just London, with two significant outcomes:

- The accessibility of Heathrow from much of Britain would be dramatically improved because a range of regular cross-Heathrow HSR services can be provided viably; and
- Access to the high-speed rail network would be provided for passengers across the wider south east and south west without needing to travel via London.

While it is the case that short-haul flights at Heathrow have been cut back since the initial work was carried out by Greengauge 21 in 2006, and domestic air travel demand has fallen, there are some new services now starting, including Virgin Atlantic's first short haul feeder flights planned for later this year, which will replace some of the previously withdrawn flights. And in any event, as Greengauge 21's work on carbon impacts has noted, account has also to be taken of the impact of providing HSR at British hub airports on short haul feeder flights to competing European airports, such as Schiphol in any full analysis of both demand and carbon impacts.⁵

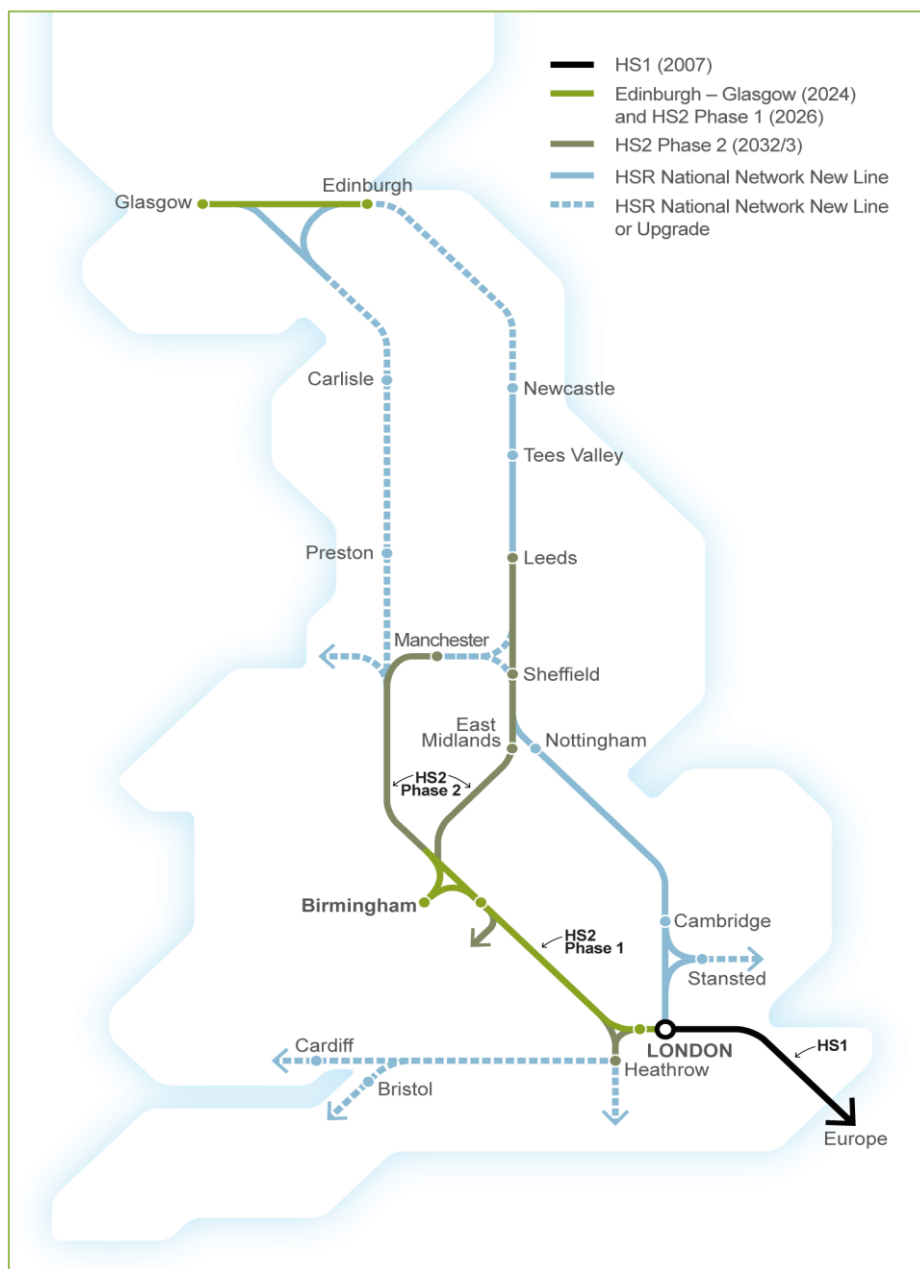
⁵ Greengauge 21, *The carbon impacts of High Speed 2*, September 2012

3. National high-speed rail network

It is Government policy to create a 'truly national high-speed network'. The creation of HS2 (in two stages) is seen as an essential step in achieving this aim. However, Government has not yet developed a national HSR network plan, even in outline. But Greengauge 21 has, through a major planning study carried out in 2009, in which alternative network shapes were compared through a benefit:cost appraisal process.

The best value network was summarised in a report *Fast Forward*, developed on behalf of a widely drawn Public Interest Group and published in September 2009 (before the first plans from HS2 Ltd emerged).⁶ It is illustrated below, with the HS2 plans incorporated and current Scottish Government aspirations.

Figure 3 – A national HSR network



⁶ Greengauge 21, *Fast Forward*, September 2009

This national HSR network serves airports at Birmingham, Manchester, Edinburgh, Heathrow and Stansted. With suitable extensions, it could serve a Thames estuary airport.

The arrangements at Heathrow are described in section 2 above.

Stansted Airport could be served by a second north-south high-speed line that HS2 Ltd have acknowledged may well be needed in the future to provide the necessary capacity. To serve Stansted, a delta junction is shown on the plan, similar to the one shown for Heathrow, together with onward extensions (in this case, pointing eastwards toward Colchester/Ipswich). It would be possible through this network to provide Stansted with HSR services linking the north east and north west directly to the airport – and these could also operate onwards into East Anglia. The new lines at Stansted would have other advantages: they could provide long term capacity to relieve the London – Ipswich main line. No specific proposals for a second terminus in central London for the Stansted/eastern high-speed line were developed in the Fast Forward studies, although Stratford might be a candidate location. The eastern HSR line, including Stansted had a benefit:cost ratio of 2:1.⁷

In general, the Greengauge 21 research has shown that HSR stations should be located in city centres. Other edge-of-town locations may bring localised development opportunities, but tend to create significant new demands on the surface transportation networks. HSR stations located at airports represent the key exception to this general finding as in the main they already have well-developed local transport facilities. They also bring the potential to divert some air demand to HSR, including from short-haul European flights as well as from domestic flights.

⁷ *Ibid* p48

4. An integrated solution

We have shown that planning of airports and of the national high-speed rail network should progress hand in hand in order to secure the widest national benefits.

Provision of HSR at Heathrow – assuming the airport has a future – can offer, as HS2 Ltd has shown, a station fully integrated with the air passenger terminal at Terminal 5. The national network of HSR services would reduce the demand for short-haul flights and create better value from the runway slots used.

The network of airport HSR services would increase the overall value of the national HSR network and is pivotal to ensuring that the south and west of the country benefits from HSR, as well as the Midlands and the north.

The national HSR network allows for a second major airport in the South East to be equally well connected – and our work has assumed that location is Stansted, but clearly, other locations could be chosen. An airport on the Thames Estuary could be served by HSR at some additional cost with similar benefits (although with somewhat longer journey times) to the Stansted proposal.