

## **Submission to the National Infrastructure Commission's (NIC) Rail Needs Assessment for the Midlands and the North Call for Evidence from High Speed Rail Group**

### **Introduction**

1. The following is a response to the National Infrastructure Commission's call for evidence on the Rail Needs Assessment for the Midlands and the North. It highlights the role of high speed rail in providing increased capacity, connectivity and carbon benefits and levelling up the country, which will be essential to the Government's Integrated Rail Plan. It is submitted by High Speed Rail Group (HSRG).
2. We are happy to provide any further information that may be required. Indeed, given the expertise of our [21] members we would be very happy to play a deeper role in working with the NIC, including further discussing and testing ideas and emerging conclusions.

### **About High Speed Rail Group (HSRG)**

3. Representing companies with experience and an interest in high speed rail, the High Speed Rail Group (HSRG) is committed to supporting the successful delivery of a world-class high speed rail network in Britain. Our members have helped deliver major infrastructure projects in the UK and around the world, including creating entirely new high speed networks through to maintaining and improving the UK's existing rail network. This gives us a unique insight into both the shortcomings in the current network, and the transformative capacity, connectivity and carbon benefits that high speed rail can bring. A full list of our membership can be found at [www.rail-leaders.com](http://www.rail-leaders.com).

### **Overview**

4. The decision to proceed with HS2 earlier this year, followed by the issuing of Notice to Proceed in April, has demonstrated the Government's commitment to high speed rail (HSR) and its substantial benefits. This has been very much welcomed by HSRG members. As a group, we believe that in order for the transformative nature of HSR to be fully realised, we must look to create a truly national HSR network over the course of the coming decades. This will mean not only looking at routes including Northern Powerhouse Rail and Midlands Engine Rail, but how we translate benefits of HSR all the way to Scotland. Beyond this, we believe we should also look at how Wales and other regions of England can be brought into this new national network.
5. By national HSR network we mean a core network of dedicated high speed lines integrated with upgraded, electrified and digitally signalled lines, reaching all regions and major cities. Electrification is needed to enable trains to run off the core, with digital signalling to minimise risks of disruption, particularly to the highest frequency sections of the core. Higher speeds are needed to help design out domestic mainland aviation and for rail to be competitive not just from city centre to city centre but also trips to/from suburbs involving interchange to local public transport.

6. Whilst acknowledging that HS2 Phases 1 and 2a are outside the scope of this Inquiry, before going any further it is important to stress the importance of these elements of the new high speed network for the Midlands, which is part of this Inquiry. Research from Midlands Connect has shown that HS2 will free up enough space on the existing railway network to improve rail services at 35 stations across the West Midlands region, introducing faster and more frequent services, reducing crowding and introducing new services between destinations that do not currently have a direct rail link. Of the 35 West Midlands locations that could benefit from HS2's released capacity, only two will be served directly by HS2 trains.
7. A Government-led public works programme of investment in HSR infrastructure through construction of HS2 Phases 1 and 2a will be essential to the UK economy as we look to recover from the difficult period during which COVID-19 has been at its height, supporting resilience and growth in the national economy. But it should also be noted that the current crisis will unlikely impact the main projects that are to be examined as part of High Speed North, which are to be delivered in the 2030s and 2040s. These should be progressed irrespective of the COVID-19 pandemic, and indeed accelerated given the economic benefits of such stimulus spending and public appetite for a greener recovery.
8. One issue the NIC should consider is the timeline of the respective phases of HS2 delivery, with a view to continuity of spending. Broadly speaking, Phase 1 and 2a will be built in the 2020s. The industry is concerned that there is a risk that with COVID-19 and fiscal concerns, projects such as Phase 2b/NPR/MRE will be delayed and create a gap in the development of the national rail system. Having a forward programme rather than a one-off project makes a huge difference to the supply chain in terms of its ability to invest and innovate to ensure we get absolutely best value for money from capital outlays.
9. In addition, HSR will play a key role in environmental recovery as we head towards net zero. As the transport sector undertakes an irreversible shift towards net zero emission mobility, a high capacity fully electrified railway such as HS2 – and future railways like NPR – will be vital to making this happen. Longer journeys are the hardest to decarbonise, which is why we need to make rail the longer distance travel mode of choice. Only HS2 can deliver the capacity and journey times savings to shift many more people and more freight out of cars, HGVs and planes by the 2030s, without causing a decade of disruption to our existing train services. HS2, combined with other schemes, will provide the rail capacity needed to significantly shift travel away from polluting road and air alternatives.
10. In time, this new HSR network, fully integrated into an enhanced national rail network, should connect all the regions, major cities, and countries of the UK to help bring the country back together. More than this, the country is in a unique position to establish itself as a world leader in any number of industries that rely on HSR and other major infrastructure projects for their success. Besides engineering and manufacturing, a national HSR network will make the UK a first port of call for expertise in civil engineering, architecture, archaeology, design, and low carbon construction.

## Consultation question responses

11. The remainder of this submission will respond to the consultation questions in turn.

### What potential investments should be in scope of the Commission's assessment of the rail needs of the Midlands and the North?

12. We believe that the Commission's assessment should be as broad as possible in order to take the fullest view of the transformative opportunities from investing in a new midlands and northern rail network, and build a comprehensive plan. This assessment should consider, but not be limited to:

- HS2 Phase 2b
- The Northern Powerhouse Rail plans published by Transport for the North
- The Midlands Rail Engine proposals
- The delivery of Network Rail's enhancement plans, particularly in respect of the Trans Pennine route
- The development of City Region networks
- The roll out of digital rail and the opportunities therein
- Effective integration with other transport modes including multi modal hubs and feeder modes
- A focus on improving rail freight capacity and use as well as improving passenger transport

13. Beyond the narrow rail needs of the Midlands and the North, it will be necessary to consider a number of other areas. It is important to learn from previous HSR projects and consider as early as possible the needs and opportunities of other infrastructure sectors within the scope of this work. In particular, decarbonisation will require a stronger, different grid. Transport electrification will require additional grid capacity and, potentially, storage. In Switzerland for instance new rail tunnels include stronger, resilient power connections. This also potentially offers the benefit of reducing visual impact of the grid in sensitive landscapes in the North.

14. The context of such investments needs to be strategic, viewed as part of a 30 year programme perspective which dovetails with the construction of HSR. Whilst the perspective needs to be long, there also needs to be a strategy to deliver incremental improvements regularly through this period. This is important for rail users, city regeneration strategies and economic development; and will also help maintain public and political support through what will be a long-term programme.

### Which set of rail investments do you believe would, together:

#### a. best unlock capacity within the Midlands and the North?

15. As illustrated in the response to the previous question, there are numerous investments required to generate a step change in rail capacity and use in the Midlands and North and to complement HSR. At this stage it is difficult to list all investments in order of priority

within the investment bullets we have listed and there is potential to carry out further work on which investments would best unlock capacity. Such investments could include to date relatively neglected areas, such as city centre station capacity. However, given the severe limitations of the existing rail infrastructure there are a very significant number of investments required.

Within the set of investments you identified, which individual investment(s) should be the highest priority?

16. A full appraisal of the respective business cases is required in order to prioritise the respective investments. In doing this, we would urge the NIC and Government to consider the need for the delivery of incremental improvements leading up to the ultimate vision. As discussed previously in this submission, as well as being important for rail users, city regeneration strategies and economic development; such an approach will also help maintain public and political support through what will be a long-term programme.
17. On the specific question of the delivery of Phase 2b of HS2, we would entirely support the idea of splitting what is a very large project into a number of sub-sections and phases. Doing so can accelerate delivery and potentially also accelerate approvals, particularly if some or all of it could be done under a Development Consent Order rather than hybrid bill process. In addition, it could assist with the pipeline continuity issue raised in paragraph 7 above. We would view the delivery of what is presently known as Phase 2b, alongside a number of immediately associated improvements, to be the leading priority.
18. We would add that the legal (not to mention moral) obligation for decarbonisation over the next generation to 2050 means all investments must support delivery of this objective and be assessed as such. Indeed, if they do not, they risk becoming stranded assets. Rapid reductions of emissions are required annually and this in turn will in the 2020s require air and road demand management policies and incremental rail schemes. The challenge is these will accelerate existing trends of rail growth so that more transformative schemes, such as the later phases of HS2, will be required to open in the 2030s. In other words, key short- and longer-term priorities will need to be delivered concurrently. The prioritisation of these schemes needs to deliver this.

What supporting policies need to be in place to deliver the benefits of the investments you identified? If there are any dependencies with other investments/policies, how confident are you that these supporting policies will be put in place?

19. As always, the key is for clear long-term decision-making which then moves through into implementation as quickly as possible. The decision-making is inherently political and democratic at the outset, but once decisions are made a faster path to implementation should be created.
20. A further key issue will be empowered leadership, particularly at City Region level, taking into account both the powers to implement policies and the availability of funding to do so. Without further meaningful devolution of powers and access to finance, it is unlikely that there will be the ability to deliver the investments needed to improve local and regional connectivity.
21. To realise the transformative potential of HSR, joint working between transport and development sectors at national and local scales will be required, whether to ensure a seamless traveller experience or high quality places. The prolonged uncertainty about the delivery of HS2

Phase 1 and the adversarial process of petitioning in hybrid bills (compared to the alternative of Development Consent Orders) damaged the creation of these relationships and wider partnerships. Learning from this, it is therefore imperative to commit quickly to all of Phase 2 and to consider ways to consent it through less adversarial processes.

What impact would the investments you identified have on greenhouse gas emissions? In particular, how would they affect the UK's ability to meet its domestic and international targets, including the Paris Agreement and net-zero? In answering this question, it would be helpful if you could consider the expected decarbonisation of road transport, as set out in the Commission's National Infrastructure Assessment and Freight Study.

22. As set out in HSRG's 2019 report *HS2 – towards a zero carbon future* and now confirmed in the DfT's Transport Decarbonisation Plan consultation, "fundamental change" is needed to the way people and freight move around. Asking how much incremental change individual projects - or (still) emerging technologies like hydrogen can deliver - will simply fail to deliver the challenging emissions reduction trajectory that is urgently required.
23. Reducing aviation emissions is the greatest challenge. Although domestic flights have reduced in 2020, they could still come back if they are not designed out through transformative rail upgrades, inspired by the success of HS1 between London and Paris. Where rail can offer higher speeds, quality and capacity (so able to offer cheaper fares), there can be a shift in journey patterns not simply of mode on the same corridor.
24. Tackling freight emissions is critical too and, particularly for longer distance movements, cannot rely on speculative technologies such as hydrogen and road electrification. A much larger role for rail freight, integrated with urban consolidation centres, is essential and this in turn requires HSR to take fast trains off existing lines to free up freight capacity.
25. Although some thought that Electric Vehicles would simply solve carbon emissions from cars, it is now clear this is not the case and modal shift is essential. This is even before considering the wider challenges of securing enough rare earth metals for 30 million Evs or the land take of car-based development patterns, meaning less space for bioenergy crops, issues discussed further in our report.

In addition to greenhouse gas emissions, what are the potential environmental effects (positive and negative) of the investments you identified?

26. HS2 aims to be the most sustainable HSR project in the world. An important step towards this goal was made recently when Birmingham Interchange became the first station in the world to be awarded the BREEAM outstanding certification for its design. Nonetheless increasing rail capacity and connectivity will inevitably have some environmental disbenefits, such as noise, land take and severance, even for smaller rail projects.
27. These impacts should however be judged in relation to alternative modes: rail not only has lower environmental impacts, its impacts are also easier to mitigate. A double track railway can carry as many passengers as a ten lane motorway typically does: it is therefore more cost effective to provide green bridges, which will be shorter and in turn appealing for a wider range of species to use. Phase 1 of HS2 alone includes 16 green bridges, more than exist in all of the UK today. Rail noise is less disturbing than road or air noise at the same decibel level (and above

30mph, an EV is as noisy as a petrol car), while it is simpler to mitigate because noise barriers can be placed closer to the source than on a wide motorway. With Defra estimating the annual health costs of road noise to be £10bn in urban areas of England alone, these are important benefits.

28. With the right supportive planning policies in place, a national HSR network could be key in reducing the pressure on land for new development, enabling more space for bioenergy and restoring nature. HSRG is undertaking research in relation to wider environmental impacts of HSR and would be delighted to share its findings with the Commission later in the Summer.
29. 2020 is set to be the hottest year on record and, even if the international community manages to deliver sustained radical reductions in greenhouse gas emissions, temperatures will increase until 2050. Being almost 200 years old in places, the rail network is particularly at risk from extreme weather such as flooding, sea level rise and landslips. Sea level rise could affect sections of the West Coast Mainline where it passes by the coast and the East Coast Mainline through low lying areas such as around Selby. Flooding particularly affects railways downhill from upland areas, such as in Sheffield, while landslips are a risk in older cuttings across the network.
30. New high speed railways will be much more 'climate resilient' railways and indeed are likely to be the most climate-resilient mode of transport available. The Committee on Climate Change (CCC) highlights the need to plan strategically for at least a 2C rise and to analyse risks from 4C rise. HSR plays a key role in providing resilient connections, for instance as our carbon report highlighted, from 2013 to 2018, a total of just nine trains on HS1 were delayed due to severe weather and seasonal challenges like leaf fall. With more extreme weather ahead, HSR's benefits will be even more valuable but this uplift is currently not considered when appraising resilience benefits. Delivering HS2 in full and extending a national HSR network to Scotland will be essential for resilient travel in future.

Aside from those delivered by improved connectivity and greater capacity, what broader impacts on people's quality of life could the investments you identified have?

31. New rail networks are transformative – not just to economic life but to people's social and community experiences. One only needs to look at London, and other major cities with world class transport connectivity, to see how rail networks allow a whole way of life. This is not simply about improving connectivity, it is also about enabling density, such as the fifteen minute city plan for Paris or German concept of short trip towns, without the downside of domination by motor traffic. The landmark report *Living with beauty: report of the Building Better, Building Beautiful Commission* (MHCLG, 2020) concluded that "[e]very sector of the industry has told us, and our specialist working group and wider research has confirmed, that overly car-dominated places tend to be less attractive or popular places in which to spend time" (p102).
32. Amongst the enormous range of community and social benefits are the much greater life chances created by the social and networking advantages allowed, the "equality" of access to transport by removing the intrinsic benefit of car ownership, the air quality benefits from reduced car traffic, and the support for a range of sectors such as bars, restaurants, theatres and cinemas provided by making the entire population more mobile and enabling denser development and better quality public realm.

33. Moreover, the economic benefit of such transport systems makes the economy more prosperous as a whole, and that prosperity generates greater tax revenues allowing for increased public spending on priorities such as the NHS, social care, the education system and so forth.
34. Furthermore, with 90% of the population expected to live in urban areas by 2030, rail has an important role to play in providing access to nature, without the downsides of traffic jams in beauty spots. The Glover Review (Defra, 2019) made important recommendations for national landscapes to become leaders in sustainable tourism and to increase the ethnic diversity of visitors. Providing high capacity, HSR from major urban areas, linked into wider public transport networks will enable a greater range of people to get away from it all.

How would the costs and benefits of the investments you identified be distributed economically, socially and geographically?

35. A large number of studies have demonstrated the effect HS2 and associated investments will have on regional economies in the Midlands and the North, which will benefit far more than those of London and the south east from HS2 – let alone from the other investments under consideration in this study.
36. Last year, HSRG published its report [Why Britain needs HS2](#) which demonstrated, to give one example, that the business connectivity improvements range from 19-23% in the city regions of the Midlands and North, compared to only a 9% improvement for London.
37. Our report, which assumed Phase 2b would be built in full, actually calculated that the greatest business connectivity benefits would accrue to the East Midlands region and the South Yorkshire region (each at 23%), even more so than the Greater Manchester (19%) and the West Midlands (21%). This highlights the absolutely vital priority we should attach to the delivery of the eastern leg of HS2, known as Phase 2b.

Which set of investments would best improve rail connectivity with Scotland? – If these are different to the investments you identified above, please explain why.

38. There is evidence of a sound economic case for pursuing HSR for Anglo-Scottish travel. It is the one travel market where there was (pre-Coronavirus) a high density of short-haul air travel. To help achieve the much more ambitious early carbon reduction targets that are going to need to be set soon for the transport sector, the Anglo-Scottish travel market represents a very significant opportunity.
39. Based on the emerging views of Transport Scotland and Network Rail, it is clear that a programme of line of route upgrades judiciously combined with new sections of high speed line to bypass slow and congested sections of route is what is needed. The requirement is driven by Government policies and commitments and supported by local authorities – to level up the economy; to provide capacity where it is evident that market demand will continue on an upward trend post-virus; and to reduce carbon emissions significantly.

40. In the coming weeks, we will publish a report setting out a provisional set of outputs and investments that a programme devised to meet these needs should bring. This includes an interim target London-Glasgow/Edinburgh rail journey time of 3h10. Part of the improvement over today's 4h20 rail timings will be derived from HS2 (Phases 1 and 2a, London-Crewe). The balance will come from the new investment programme. We shall send this report to you shortly, as a supplement to this evidence.
41. Particularly noting the environmental need to grow rail's modal share for Anglo-Scottish travel, we believe an ambitious and challenging timescale should be in place to deliver these Anglo-Scottish investments. That is, we should be targeting their delivery by 2030, broadly to match the Phase 1/2a delivery timescale. Later delivery would likely be too late to help contribute towards meeting the forward transport sector carbon reduction trajectory.

What would be the impact of the investments you identified on international connectivity across the Midlands and the North? Please consider the impact on both ports and airports.

42. A significant number of regional leaders have spoken of the significant international benefits from the transformation of the midlands and northern rail networks via HS2, NPR and Midlands Connect projects.
43. Both Birmingham and Manchester airports will be on the HS2 route, and both expect to see a significant increase in demand from both airlines and passengers as a result. In part, this will result of passengers living in the south east of England using those airports rather than the congested ones in London.
44. In addition, international freight traffic should benefit from released capacity on the West Coast mainline and we should be targeting modal shift away from polluting HGVs on the roads. Liverpool Combined Authority, for example, has identified significant freight opportunities for their city region, arising from the construction of HS2. Through the provision of Rail Customs Areas (RCAs) away from the border, rail freight could gain major competitive advantages once the transition period ends. Potential RCA locations in the Midlands and North should be considered alongside rail investments.
45. Finally, one outstanding and unresolved issue is the long-running question of the integration of HS1 and HS2. In a post-COVID world, where even airlines are expecting long-term reduced demand for their services, we need to re-examine this issue looking at both the opportunity for direct HSR services from cities like Manchester and Birmingham, to the main cities of northern Europe, or the much lower cost alternative of a much-improved linkage for passengers between the HS2 Euston station and the HS1 St Pancras International. Whilst this investment is clearly in London, the principal beneficiaries are in the Midlands and North, and therefore the NIC may wish to consider this within the scope of this inquiry.