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# High Speed Rail 2: An overview



## Summary

- 1 Background
- 2 Reviews and reports on HS2
- 3 Costs and economic benefits of HS2
- 4 Climate, environmental and community impacts
- 5 Scrutiny of HS2

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# Contents

<b>1</b>	<b>Background</b>	<b>7</b>
1.1	About HS2	7
1.2	What progress has been made?	7
	Phase One: London to West Midlands	8
	Phase 2a: West Midlands to Crewe	8
	Phase 2b	8
1.3	Why build HS2?	9
	Capacity, connectivity, and productivity	10
1.4	How does HS2 affect other parts of the UK?	12
	Scotland	12
	Wales	13
<b>2</b>	<b>Reviews and reports on HS2</b>	<b>15</b>
2.1	Oakervee Review	15
2.2	Integrated Rail Plan	15
	National Infrastructure Commission report	16
	Integrated Rail Plan for the North and the Midlands	17
<b>3</b>	<b>Costs and economic benefits of HS2</b>	<b>21</b>
3.1	Cost estimates of HS2	21
3.2	Why did the costs of HS2 increase?	22
3.3	Will costs increase further?	23
3.4	Economic benefits of HS2	24
3.5	National Audit Office (NAO)	25
3.6	How will Covid-19 affect HS2?	26
<b>4</b>	<b>Climate, environmental and community impacts</b>	<b>28</b>

<b>4.1</b>	<b>Cleaner and greener travel?</b>	<b>28</b>
<b>4.2</b>	<b>Managing the environmental impacts</b>	<b>29</b>
	Ancient Woodland	30
	How will HS2 impact ancient woodland sites?	31
<b>4.3</b>	<b>Implications for property, land and business owners near HS2 route</b>	<b>32</b>
<b>5</b>	<b>Scrutiny of HS2</b>	<b>34</b>
<b>5.1</b>	<b>Parliamentary scrutiny</b>	<b>34</b>
	Hybrid Bills	34
	Six-monthly reports to Parliament	35

## Summary

HS2 is an ambitious project to build a high-speed rail line across England to connect some of the country's largest cities. The project was officially given the [go-ahead by the Prime Minister in February 2020](#), following the [Oakervee Review](#).

It is being delivered in three phases: Phase One, Phase 2a and Phase 2b. Parliamentary approval for Phase One and Phase 2a have already been given through the [High Speed Rail \(London to West Midlands\) Act 2017](#) (Phase One) and the [High Speed Rail \(West Midlands to Crewe\) Act 2021](#) (Phase 2a). However, there has been some uncertainty over the final phase (Phase 2b) of the project, which consists of an Eastern leg and a Western leg.

The Government published its [Integrated Rail Plan for the North and the Midlands](#) (IRP) on 18 November 2021. The IRP outlines the Government's plans for delivering and sequencing rail investments in both regions, including Phase 2b of HS2, Northern Powerhouse Rail (NPR) and other regional rail investments. The Government has decided not to proceed with its previous plan to build a new high-speed line from Birmingham to Leeds. This Eastern leg will now run to from the West Midlands to the East Midlands, ending at East Midlands Parkway. However, the Government has committed to look at the [best way of bringing HS2 trains to Leeds](#).

Phase 2b, therefore, currently consists of an [Eastern leg](#) (from the West Midlands to East Midlands Parkway) and a [Western leg](#) (from Crewe to Manchester). A hybrid bill for the Western leg, the [High-Speed Rail \(Crewe to Manchester\) Bill](#), was introduced to Parliament on 24 January 2022. On 24 April 2022, the House agreed a motion to suspend proceedings and carry the Bill over to the current session. The Bill was re-introduced on 11 May 2022. Second reading is scheduled for Monday 20 June 2022.

This briefing provides an overview of the project's progress and some of the key issues and arguments for and against HS2.

### Why build HS2?

The case to have a high-speed railway running through the centre of Britain was first formally made by the [Labour Government in 2010](#). At the heart of the strategic case for HS2 is the desire to address **capacity constraints** on the north-south rail links in England. Proponents of the project also say it will improve transport times, create jobs and help the country's economy. The Government also sees this investment in HS2 – and wider transport investment – as an opportunity to drive growth in [regional economies and create opportunities for regeneration](#).

## How much will HS2 cost?

The Government will directly fund HS2. In 2013, HS2 was estimated to [cost £37.5bn](#) (in 2009 prices). The forecast costs have grown since, which has led some to question whether HS2 provides value for money. In 2020, the cost estimates for completing all three phases of HS2 network was increased from [£72bn to £98bn](#) (in 2019 prices). However, these cost estimates included the previously planned route to Leeds. The HS2 Minister's [latest six-monthly progress report to Parliament](#) sets out the estimated costs for each phase:

- Phase One from London to Birmingham is currently estimated to cost between £35-45bn (in 2019 prices)
- Phase 2a is estimated to cost between £5-7bn (in 2019 prices).
- The western leg of Phase 2b from Crewe to Manchester is estimated to cost between £15bn to £22bn (in 2019 prices).

Following its decision to build the eastern leg to the East Midlands instead of Leeds, the [Integrated Rail Plan](#) confirmed the Government expects this new line, together with upgrades to the Midland Main Line and East Coast Main Line, to cost a total £12.8billion (in 2019 prices). The entirety of Phase 2b was previously estimated to cost between [£32bn-46bn](#) (in 2019 prices).

## What is the environmental impact of HS2?

Advocates for HS2 say the line will provide a cleaner and greener way to travel, but critics argue the carbon savings would be minimal and that there are less environmentally damaging, cheaper alternatives. Further, critics of HS2 have raised concerns over potential damage that construction of the line will cause to ancient woodlands.

## What are the community impacts?

In some areas, houses may have to be demolished to make way for the construction of HS2. The Government has been buying properties from people in areas which are affected. There are a number of schemes available to compensate people who own homes, property and land affected by HS2. The schemes available are based on how close land or property is to the line, and how the property is being affected.

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# 1 Background

## 1.1 About HS2

HS2 is an ambitious project to build a high-speed rail line across England to connect some of the country's largest cities.

HS2 was supported by the Labour Government after 2009 and has had the support of the Conservatives in government since May 2010. The [Prime Minister Boris Johnson recommitted his Government to the project](#) in February 2020,<sup>1</sup> following a [review carried out by Douglas Oakervee](#), the former chairman of High Speed Two Ltd (HS2) and Crossrail.<sup>2</sup> When complete, the railway will be the country's second high-speed line, the first being High Speed 1, which connects London to the Channel Tunnel.<sup>3</sup>

Construction of the new railway is split into three phases:

- **Phase 1** from London Euston to Birmingham Curzon Street, with intermediate stations in West London (at old Oak Common) and at Birmingham Airport;
- **Phase 2a** from the West Midlands to Crewe; and
- **Phase 2b**, which is comprised of an Eastern leg (HS2 East) from the West Midlands to the East Midlands and a Western leg from Crewe to Manchester, with an intermediate station at Manchester Airport.

## 1.2 What progress has been made?

HS2 was due to begin operations in 2026 and be completed in 2033. These timescales have shifted significantly. Phase One is currently scheduled to complete between 2029 and 2033, Phase 2a (from Birmingham to Crewe) between 2030 and 2034 and the western leg from Crewe to Manchester between 2035 and 2041.<sup>4</sup> The [technical annex](#) to the Integrated Rail Plan suggested that the Eastern leg of Phase 2b will open in 2040.<sup>5</sup>

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<sup>1</sup> [PM statement on transport infrastructure: 11 February 2020](#), DfT, 11 February 2020

<sup>2</sup> DfT, [The Oakervee Review](#), February 2020

<sup>3</sup> HS1 Ltd, [About us](#) [accessed on 17 December 2021]

<sup>4</sup> Department for Transport and HS2 Ltd, [HS2 6-monthly report to Parliament: March 2022](#), 16 March 2022

<sup>5</sup> DfT, [Integrated Rail Plan for the North and Midlands: Technical Annex](#), January 2022, p24

## Phase One: London to West Midlands

Phase One will comprise of 140 miles of dedicated high-speed railway, four new stations (at Euston; Old Oak Common in northwest London; Interchange station east of Birmingham; and Curzon Street in Birmingham) and 32 miles of tunnels.

Phase One of the route is under construction. Construction of Phase One of the route was authorised through the [High Speed Rail \(London to West Midlands\) Act 2017](#). The Government published the High Speed Rail (London - West Midlands) Bill in November 2013. It was carried over into the 2015 Parliament. It completed all its Parliamentary stages and received Royal Assent on 23 February 2017. As the Act progressed through Parliament, the Promoter of the Bill (in this case the Secretary of State for Transport) made a number of commitments, called undertakings and assurances. You can [view all the Phase One hybrid bill documents](#) on the Gov.uk website, and read more about the 2017 Act and how it progressed through Parliament in the Commons Library briefing, [High Speed 2 \(HS2\) Phase 1](#).

## Phase 2a: West Midlands to Crewe

The [High Speed Rail \(West Midlands to Crewe\) Act 2021](#) authorised the route and construction for Phase 2a from the West Midlands to Crewe. The Act received Royal Assent in February 2021. You can [view the Phase 2a hybrid bill documents on GOV.UK](#) and find out more details about its progress through Parliament in the Commons Library briefing, [High Speed 2 \(HS2\) Phase 2a](#).

## Phase 2b

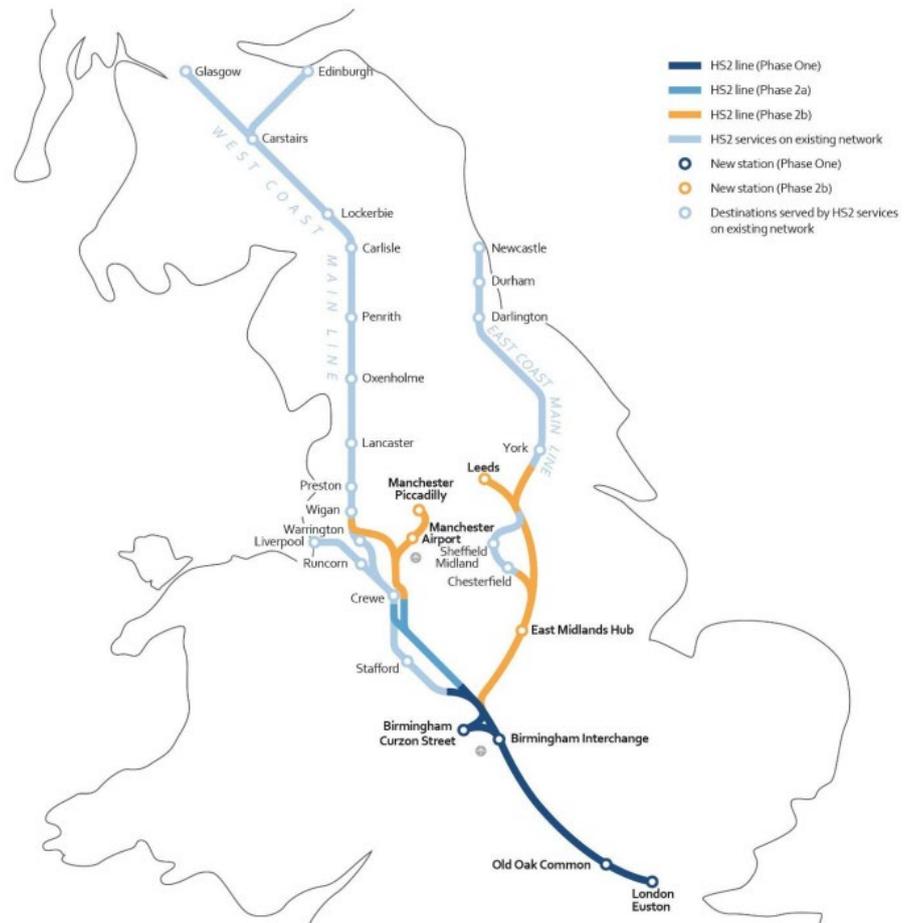
The Phase 2b of the route has been split into an Eastern and Western leg. The Eastern leg, now known as HS2 East, will run from the West Midlands to East Midlands Parkway, whilst the Western leg will run from Crewe to Manchester. The Eastern leg was previously planned to run from the West Midlands to Leeds. A map of the previous Y-shaped route is set out below.

The [2021 Queen's Speech](#) included proposals for a High-Speed Rail (Crewe – Manchester) Bill to authorise the Western leg, but did not include proposals for legislation to authorise the Eastern leg. The [High-Speed Rail \(Crewe to Manchester\) Bill](#), a hybrid bill, was introduced to Parliament on 24 January 2022.<sup>6</sup> You can [view the documents on the Crewe to Manchester leg on GOV.UK](#) and find out more details about its progress through Parliament in the Commons Library briefing, [High Speed Rail \(Crewe to Manchester\) Bill](#).<sup>7</sup>

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<sup>6</sup> [High Speed Rail \(Crewe - Manchester\)](#) [HC], Bill 1 of 2021-22

<sup>7</sup> HS2 Ltd, [HS2 Phase 2b: Crewe to Manchester and the West Midlands to Leeds](#) [accessed on 7 June 2022].



Source: Department for Transport, [High Speed Two Phase Two Strategic Case](#), 2017

## 1.3

### Why build HS2?

The case to have a high-speed railway running through the centre of Britain was first formally made in the Labour Government’s [High Speed Rail White Paper](#) in 2010.<sup>8</sup> The Coalition Government later published [The Strategic Case for HS2](#) in October 2013, which provides a detailed explanation of why the Government has decided to pursue this scheme, as compared with the alternatives available.<sup>9</sup> The Conservative Government, in 2017, published [HS2 Phase Two Strategic Case](#) on its rationale for pursuing the scheme beyond the West Midlands.<sup>10</sup> Then, in August 2019, the Government announced it had commissioned Douglas Oakervee, the former Chair of HS2 Ltd, to conduct an independent review of HS2, supported by a panel of experts. This followed the Prime Minister’s wish to review “whether and how to proceed with HS2” before

<sup>8</sup> DfT, [High Speed Rail](#), March 2010

<sup>9</sup> DfT, HS2 Ltd, [The strategic case for HS2](#), October 2013

<sup>10</sup> DfT, HS2 Ltd, [HS2 Phase Two strategic case](#), July 2017

the official Notice to Proceed with the construction of Phase One was granted.<sup>11</sup>

These documents and reviews were all carried out before Covid-19. Since then, the Department has been working to understand the long-term implications the pandemic may have for HS2 (see Section 3.6).

## Capacity, connectivity, and productivity

At the heart of the strategic case for HS2 is the desire to address **capacity constraints** on the north-south rail links in England. Rail capacity is dependent on two things:

- train capacity (how many people each train can carry); and
- route capacity (how many trains there are).

The Government, in its 2013 strategic case, said that the existing capacity constraints were reflected in the limited train paths available on the West Coast Main Line, despite upgrades to the line that were completed in 2008. Further, it said that routes into major cities would be particularly capacity constrained in the future without future enhancements.

The Government also believed that there were **connectivity issues** across the country, which relates to the volume and length of time for journeys between cities. The Government said that it wanted to deliver “more frequent, more reliable and faster journeys between our major economic centres.”<sup>12</sup>

Beyond the immediate transport concerns, **the gap in productivity and economic growth between London and the South-East** was recognised in the strategic case. This links in with the Johnson Government’s ambitions to ‘level up the country’; the [Government’s National Infrastructure Strategy](#) cites backing HS2 to “deliver essential North-South connectivity” as an example of how it is using infrastructure to unite and level up the UK.<sup>13</sup> The importance of HS2 for the Government’s Levelling-Up agenda was restated in its [Levelling-Up White Paper](#).<sup>14</sup>

The main rail option considered alongside building new capacity was incremental improvements to the existing network. The Government concluded that its objectives around capacity, connectivity and productivity would not be met satisfactorily through the alternatives.<sup>15</sup> As HS2 Ltd notes, “Building HS2 frees up a massive amount of space on the existing railway by placing long distance services on their own pair of tracks. Once HS2 is operating, services can run much closer together, meaning there can be more rush hour trains, helping to relieve overcrowding.”<sup>16</sup> Ultimately, the choice

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<sup>11</sup> DfT, [Oakervee Review](#), February 2020, page 121

<sup>12</sup> DfT, HS2 Ltd, [The strategic case for HS2](#), October 2013, p81

<sup>13</sup> HM Treasury, [National Infrastructure Strategy](#), Nov 2020, p. 26

<sup>14</sup> HM Government, [Levelling-Up: Levelling-Up the United Kingdom](#), February 2022

<sup>15</sup> DfT, HS2 Ltd, [The strategic case for HS2](#), October 2013, p19

<sup>16</sup> HS2 Ltd, [Capacity – helping reduce overcrowding](#), [accessed 24 Aug 2021]

was then between a conventional railway and a new high-speed line. In justifying a high-speed line, the Government in 2013 said that:

A new high speed line would cost 9% more than a conventional railway and, in certain respects, would have higher environmental costs, but the difference in price and the relatively higher environmental impact is more than outweighed by the economic benefits to be gained from radically reducing journey times and improving connectivity between our main cities. Given the scale of the investment, therefore, and in terms of the future wellbeing of the country as a whole, a high speed line would be preferable to a conventional one.<sup>17</sup>

From an economic growth point of view, the Government believed that there was a strong link between transport investment and economic growth and that this sort of investment could help “growth in the regional economies” and “create opportunities for regeneration.”<sup>18</sup>

The Government’s full business case for HS2 Phase One, completed in 2020, presents the strategic goals of HS2. These are to:

- be a catalyst for sustained and balanced economic growth across the UK
- add capacity and connectivity as part of a 21st century integrated transport system
- deliver value to the UK taxpayer and rail passenger
- set new standards in customer experience
- create opportunities for skills and employment
- design, build and operate a railway which improves industry standards for health, safety and security
- create an environmentally sustainable solution and be a good neighbour to local communities

In this business case, the Government concludes that overall HS2 represents value for the taxpayer. It says:

The Strategic Case provides compelling evidence that HS2 offers the only viable long-term solution to overcrowding on the rail network transport and will be a major contributor to the objective of levelling up the economy. The Economic Case demonstrates that HS2 offers value for the taxpayer under all but the most extreme scenarios. The business case also recognises that the economic case does not fully quantify all the benefits set out in the strategic case such as the transformative benefits from changes in business location decisions.<sup>19</sup>

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<sup>17</sup> DfT, HS2 Ltd, *The strategic case for HS2*, October 2013, p21

<sup>18</sup> DfT, HS2 Ltd, *The strategic case for HS2*, October 2013, p10

<sup>19</sup> DfT, *Full Business Case High Speed 2 Phase One*, April 2020, p.9

## 1.4

## How does HS2 affect other parts of the UK?

HS2 has various implications for the devolved administrations even though most of the infrastructure is being built in England. For example, while most of the construction will take place in England, the legislation used to authorise HS2 applies across the UK. The same is true for the legislation used to authorise other major transport infrastructure, such as Crossrail and the Channel Tunnel.<sup>20</sup> Scotland and Northern Ireland also receive funding as a result of the UK Government's expenditure on HS2 through the Barnett Formula.<sup>21</sup>

### Scotland

HS2 services are due to run to Scotland, although they will use existing tracks for some of the journey. High-speed services on HS2 would leave the high-speed line and connect to the West Coast Main Line to continue to Scotland.

The UK and Scottish Government have a shared ambition to reduce journey times between London and Scotland to 3 hours.<sup>22</sup> Reducing train journeys down to 3 hours is designed to encourage more people to use the train rather than fly. Evidence suggests that when journey times by rail and by air are the same, rail tends to dominate the market. However, rail's market share drops when train journeys become significantly slower.<sup>23</sup> For example, a study by the OECD found that "once the journey time by rail exceeds the journey time by air by 1 to 2 hours, the market share drops to about 50% and decreases rapidly thereafter."<sup>24</sup> Estimates from HS2 Ltd and Network Rail suggest a three-hour journey time between London and Scotland would increase rail's share of this market from 29% in 2019 to around 75%.<sup>25</sup> HS2 services go some way to achieving this by reducing journey times from 4 hours and 30 minutes to 3 hour and 50 minutes.<sup>26</sup> However, when HS2 services leave the high-speed line they will be constrained by the limited capacity on the West Coast Main Line.<sup>27</sup>

<sup>20</sup> Explanatory Notes to the [High-Speed Rail \(Crewe to Manchester\) Bill](#), para 12.

<sup>21</sup> The devolved administrations in Scotland, Wales and Northern Ireland receive grants from the UK Government, which fund much of their spending. The Barnett formula determines how the largest of these grants – the block grants – change from one year to the next. The formula aims to give each country the same pounds-per-person change in funding as the change in funding for comparable government services in England. However, the formula only applies to areas where responsibility has been devolved.

<sup>22</sup> DfT and HS2 Ltd, [Three-hour Scotland to London rail journeys on track](#), 21 March 2016

<sup>23</sup> International Transport Forum, [High Speed Rail Performance in France: From Appraisal Methodologies to Ex-post Evaluation](#), December 2013, page 15

<sup>24</sup> International Transport Forum, [High Speed Rail Performance in France: From Appraisal Methodologies to Ex-post Evaluation](#), December 2013, page 15

<sup>25</sup> Department for Transport, [Union Connectivity Review: final report](#), November 2021, page 40

<sup>26</sup> Department for Transport, [Union Connectivity Review: final report](#), November 2021

<sup>27</sup> Department for Transport, [Union Connectivity Review: final report](#), November 2021

The current design of the Crewe to Manchester leg of HS2 includes a spur from Golborne in Cheshire to the West Coast Main Line close to Wigan. However, the Government is considering alternatives, after signalling its intention to remove the Golborne Spur from the High Speed Rail (Crewe to Manchester) Bill.<sup>28</sup> The final report of the Union Connectivity Review<sup>29</sup>, led by Sir Peter Henty CBE, the Chair of Network Rail, recommended the Government review alternative connections between HS2 and the WCML. This is because “emerging evidence” suggested an alternative connection, such as one south of Preston, could improve journeys by 2-3 minutes and offer greater benefits than the Golborne Link.<sup>30</sup>

Responsibility for rail infrastructure has been devolved to Scotland. Some of the proposed HS2 works have triggered the Sewel Convention, whereby the UK Government seeks the devolved administration’s consent to before legislating on a devolved matter.<sup>31</sup> This is this case with the High Speed Rail (Crewe to Manchester) Bill, which, if enacted, would authorise the construction of a new depot in Scotland.<sup>32</sup> More information is available in the Library’s briefing paper on the [High Speed Rail \(Crewe to Manchester\) Bill](#).

## Wales

The Government has suggested that HS2 will improve connectivity to Wales, even though HS2 services will not stop there. As part of the Crewe to Manchester leg, the Government is planning to introduce a junction north of Crewe (the Crewe Northern Connection) between HS2 and the West Coast Main Line, which is due to reduce journey times to North Wales.<sup>33</sup> The Government has also suggested work on the Midlands Rail Hub – a collection of proposed regional rail improvements designed to maximise the benefits of HS2 – could improve connectivity to South Wales by improving links with HS2 services at Birmingham Curzon Street.<sup>34</sup> However, Professor Mark Barry from Cardiff University informed the Welsh Affairs Committee that the DfT’s business case for HS2 shows that the project will result in a disbenefit to Wales.<sup>35</sup>

Unlike Scotland and Northern Ireland, Wales doesn’t receive Barnett consequential directly from spending on HS2 because national rail infrastructure in England and Wales is reserved to the UK Government and for this reason HM Treasury has assessed HS2 as a ‘national project’ which

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<sup>28</sup> DfT and HS2 Ltd, [Government takes action to ensure Scotland receives best possible HS2 service](#), 6 June 2022

<sup>29</sup> The review was asked to make recommendations about how best to improve connectivity between UK nations.

<sup>30</sup> Department for Transport, [Union Connectivity Review: final report](#), November 2021, page 41

<sup>31</sup> Responsibility for rail infrastructure is devolved to Scotland. See UK Parliament, [Sewel Convention](#) [accessed on 14 June 2022]

<sup>32</sup> Explanatory Notes to the [High-Speed Rail \(Crewe to Manchester\) Bill](#), para 12; Explanatory Notes to the [High-Speed Rail \(Crewe to Manchester\) Bill](#), para 1

<sup>33</sup> PQ [89677](#) [Railways: Wales] answered on 13 December 2021

<sup>34</sup> PQ [89677](#) [Railways: Wales] answered on 13 December 2021

<sup>35</sup> Welsh Affairs Committee, [Railway Infrastructure in Wales](#), July 2021 HC 438, para 99

benefits both countries.<sup>36</sup> This can be seen in the 0% comparability shown in the Statement of Funding Policy, which sets out how the Barnett formula works.<sup>37</sup> Though the Welsh Government does not receive Barnett consequentialia directly from spending on HS2 it does receive them indirectly from increases in the DfT's budget that stem from spending on HS2. This amounted to £755 million between 2015-2019.<sup>38</sup> The Welsh Affairs Committee in July 2021 recommended:

HS2 should be reclassified as an England only project. Using the Barnett formula, Wales' funding settlement should be recalculated to apply an additional allocation based on the funding for HS2 in England. This would help to ensure that Welsh rail passengers receive the same advantage from investment in HS2 as those in Scotland and Northern Ireland.<sup>39</sup>

The Government's official response stated HS2's classification as an England and Wales project is consistent with other UK Government reserved responsibilities. The Government added that it invests in rail infrastructure in Wales and that the Welsh Government has received a "significant uplift in its Barnett-based funding due to UK Government spending on HS2."<sup>40</sup>

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<sup>36</sup> National Audit Office, [Investigation into devolved funding](#), March 2019 HC 1990 figure 7

<sup>37</sup> HM Treasury, [Statement of funding policy: funding the Scottish Government, Welsh Government and Northern Ireland Executive](#), October 2021, page 62

<sup>38</sup> Welsh Affairs Committee, [Railway Infrastructure in Wales](#), July 2021 HC 438, para 102

<sup>39</sup> Welsh Affairs Committee, [Railway Infrastructure in Wales](#), July 2021 HC 438, para 106

<sup>40</sup> Welsh Affairs Committee, [Railway infrastructure in Wales: Government response to the Committee's First Report of Session 2021-22](#), HC 715, September 2022, recommendation 15

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## 2 Reviews and reports on HS2

### 2.1 Oakervee Review

One of Boris Johnson's first acts as Prime Minister was to ask Douglas Oakervee, former chairman of High Speed Two Ltd (HS2) and Crossrail, to conduct a quick review of HS2. The [review was launched in August 2019](#) and reported in February 2020.

The Review specifically recommended that the Government:

- establish a further study to be completed by summer 2020 to develop an integrated railway plan embracing Phase 2b alongside an integrated railway investment programme for the Midlands and the North of England. The economic appraisal of this integrated rail plan and investment programme should be assessed in addition to individual projects and phases of schemes. Any further study needs to look at how to quickly bring forward rail improvements for the Midlands and the North of England – before HS2 Ltd's view of opening Phase 2b as currently designed in 2035-40 (conclusion 11 in section 6 and conclusion 55 in section 11)
- await the outcome of this study and pause the preparation of materials for the Phase 2b Bill as currently designed (conclusion 12 in section 6)<sup>41</sup>

### 2.2 Integrated Rail Plan

Following the publication of the Oakervee review in February 2020, the [Government announced its intention to draw up an Integrated Rail Plan for the North and the Midlands](#)<sup>42</sup> that would look at:

- how best to integrate HS2 Phase 2b and wider transport plans in the North and Midlands;

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<sup>41</sup> DfT, [Oakervee Review](#), Feb 2020

<sup>42</sup> DfT, [High speed north: an integrated rail plan for the north and Midlands - terms of reference](#), 21 Feb2020

- how to deliver benefits from investments more quickly;
- improving efficiency and reducing costs, drawing on Phase One lessons learnt work; and
- approaches to sponsorship and delivery, and how to take account of the views of local leaders.<sup>43</sup>

The Government originally suggested that the plan would be published by the end of 2020.<sup>44</sup>

## National Infrastructure Commission report

The Government asked the National Infrastructure Commission (NIC) to carry out an assessment of rail needs in the Midlands and the North of England to inform the development of its Integrated Rail Plan (IRP). The NIC published an [interim report](#) in July 2020,<sup>45</sup> before [finally reporting](#) on 15 December 2020.<sup>46</sup> The final report presented the Government with “a menu of options for a programme of rail investments in the Midlands and the North using three different illustrative budget options.”<sup>47</sup>

The NIC calculated that the total capital costs of rail investments proposed in these regions could cost up to £185 billion (in 2019-20 prices) between 2020 and 2045.<sup>48 49</sup> Even a 50 per cent increase in rail spending within these regions (from a baseline of £86 billion to £129 billion in 2019/20 prices) would not be enough to cover the cost of all these improvements, according to the NIC.<sup>50</sup> The NIC concluded that prioritising regional links “appears to have the highest potential economic benefits overall for cities in the Midlands and the North.”<sup>51</sup> However, the NIC said “this does not rule out the further development of options such as the HS2 Phase 2b’s eastern leg that also have strategic value.”<sup>52</sup>

The NIC recommended that the Government adopt an adaptive approach by committing “to a core pipeline of stable, affordable investments, as part of a wider economic strategy for levelling up.”<sup>53</sup> The NIC stressed that investing in rail is a strategic bet, which rests on certain assumptions, such as whether

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<sup>43</sup> DfT, [High speed north: an integrated rail plan for the north and Midlands - terms of reference](#), 21 Feb 2020

<sup>44</sup> DfT, [High speed north: an integrated rail plan for the north and Midlands - terms of reference](#), 21 Feb 2020

<sup>45</sup> NIC, [Rail needs assessment for the Midlands and the North: interim report](#), July 2020

<sup>46</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020

<sup>47</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020, p8

<sup>48</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020, p13

<sup>49</sup> The included major projects such as HS2, Northern Powerhouse Rail, the TransPennine Route Upgrade and the Midlands Rail Engine as well as other investments such as electrification and digital signalling.

<sup>50</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020

<sup>51</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020, p59

<sup>52</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020, p59

<sup>53</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020, p9

the economy remains centred around city regions post-Covid.<sup>54</sup> An adaptive approach, they suggested, would help reduce the risks of such a strategic bet in part because further decisions, in addition to the core pipeline, could be made at later date “when costs and benefits are more certain.”<sup>55</sup>

The NIC’s report prompted concerns from policymakers and rail experts in the Midlands and North who feared that Phase 2b, especially the eastern leg to Leeds, could be scrapped. Advocates for the eastern leg argued that it is central to the country’s levelling up agenda. South Yorkshire’s Mayor, Dan Jarvis, responded to the NIC’s report stating that it “presents a short-sighted and deeply flawed set of options which risk undermining any contribution HS2 could make towards levelling up.”<sup>56</sup> Further, the Mayor said:

There were arguments for and against HS2 as a whole, but it would be an absolute travesty for it to go ahead while leaving out one of the most deprived regions in the country, which has long had a deeply unfair gap in transport investment compared to other areas.<sup>57</sup>

## Integrated Rail Plan for the North and the Midlands

The [Integrated Rail Plan for the North and the Midlands](#) (IRP) was published on 18 November 2021.<sup>58</sup> It outlines the Government’s plans for delivering and sequencing rail investments in both regions, including Phase 2b of HS2, Northern Powerhouse Rail (NPR) and other regional rail investments. As part of the IRP, the Government plans to:

- build High Speed 2 (HS2) from Crewe to Manchester, with new stations at Manchester Airport and Manchester Piccadilly (the Western leg).
- build HS2 from the West Midlands to East Midlands Parkway, now known as HS2 East (Eastern leg).
- build a new high-speed line between Warrington, Manchester and Yorkshire, as part of Northern Powerhouse Rail.
- upgrade and/or electrify three existing mainlines – the TransPennine Main Line, the Midland Main Line and the East Coast Main Line.
- start work on the new West Yorkshire Mass Transit System.
- introduce contactless ticketing across commuter services in the Midlands and the North.<sup>59</sup>

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<sup>54</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020, p11

<sup>55</sup> NIC, [Rail needs assessment for the Midlands and the North: final report](#), December 2020, p11

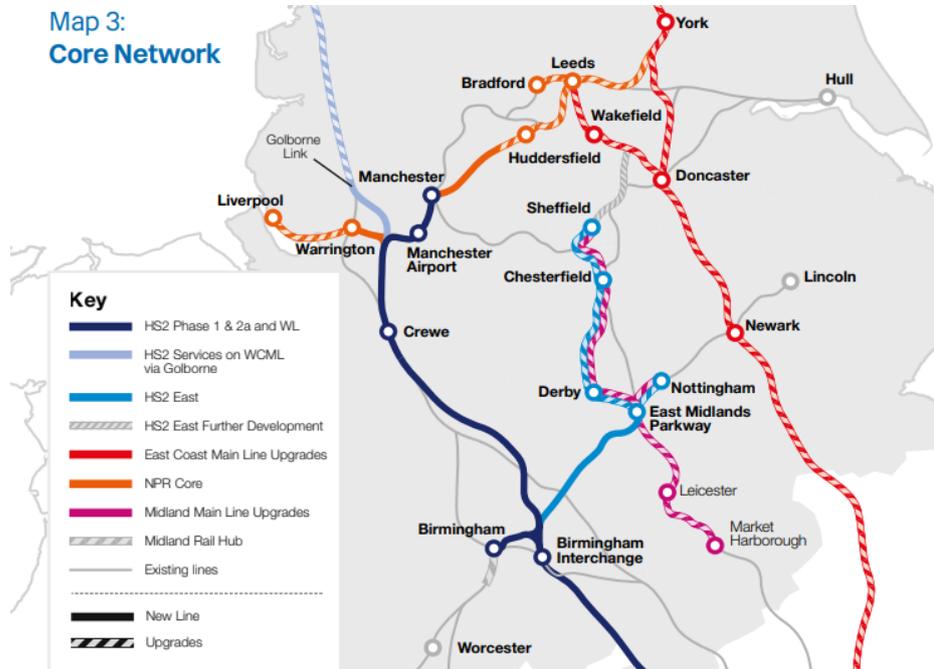
<sup>56</sup> Sheffield city region Mayor, [Mayor responds to the national infrastructure commission report](#), Dec 2020

<sup>57</sup> Sheffield city region Mayor, [Mayor responds to the national infrastructure commission report](#), Dec 2020

<sup>58</sup> DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021

<sup>59</sup> DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021

The total package of rail improvements in the IRP is estimated to cost £96 billion (in 2019 prices), which the Government [described](#) as the “biggest ever government investment in Britain’s rail network.”<sup>60</sup> Below is a map which illustrates the package of rail investments proposed within the IRP.



Source: DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021

### Implications for the Eastern leg of Phase 2b

The Government intends to proceed with the Eastern leg, now called HS2 East, from Birmingham to East Midlands Parkway. While the IRP did not include a commitment to extend the eastern leg to Leeds, the Government has [said](#) it will “look at the most effective way to run HS2 trains to Leeds.”<sup>61</sup> The Government added:

This work will inform decisions about future-proofing to be reflected in the hybrid Bill design for the East Midlands high speed line (if necessary, during its passage) to minimise the risk of costly changes later; and on safeguarding of the current route.<sup>62</sup>

In April 2022, the HS2 Minister, Andrew Stephenson MP, informed the House that the Government intend to undertake an 18-month study to examine the most effective way to bring HS2 trains to Leeds and address capacity issues at Leeds station.<sup>63</sup> The terms of reference for the study have not yet been published.<sup>64</sup> Safeguarding Directions have been used to protect parts of the

<sup>60</sup> [Integrated Rail Plan: biggest ever public investment in Britain’s rail network will deliver faster, more frequent and more reliable journeys across North and Midlands](#), DfT, 18 November 2021

<sup>61</sup> DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021, para 3.47

<sup>62</sup> DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021, para 3.49

<sup>63</sup> PQ [150095](#) [High Speed 2 Line: Leeds] answered on 19 April 2022

<sup>64</sup> PQ [9839](#) [High Speed 2 Line] answered on 6 June 2022

previous Phase 2b route from future development. The Government, in the IRP, said it “does not intend to lift safeguarding on the previously proposed HS2 route at this time.”<sup>65</sup>

Local leaders in the North expressed their disappointment at the decisions within the IRP. Tracy Brabin, Mayor for West Yorkshire, described the announcement as a “betrayal of the Government’s levelling up promise” in part because “HS2 will stop short of Yorkshire” and the new high-speed line, being built as part of Northern Powerhouse Rail, will stop at Yorkshire’s border.<sup>66</sup> Dan Jarvis, the Mayor for South Yorkshire, described the IRP as a “package of broken promises.”<sup>67</sup> Louise Haigh, the Shadow Secretary of State for Transport, told the House that:

The economic case for delivering the original plans as promised could hardly be stronger. Both schemes [HS2 and Northern Powerhouse Rail] would have created more than 150,000 new jobs, connecting 13 million people in major towns and cities in our industrial heartlands. Without that eastern leg of HS2, the business case barely makes sense. In the middle of a climate emergency, when we know that we need to double rail capacity in order for the Government to meet their own net zero target, the decision makes even less sense. This was a once-in-a-generation chance to transform opportunity across the whole country, rebalance the economy and level up, but last month the Government tore their promises up.<sup>68</sup>

Before the IRP was published, a campaign group called HS2 East, established with a mission to make the case for the Eastern Leg of HS2, published several reports assessing the potential benefits to the various city regions along the eastern leg route. HS2 East, for example, suggested that “every year that the eastern leg is delayed costs the Leeds City Region £1.7 billion”.<sup>69</sup> In June 2020, Volterra Partners, consultants commissioned by HS2 East, estimated that the Eastern leg would contribute an additional £4.2bn to the economic output of Eastern leg regions (namely the North East, Yorkshire and Humber and the East Midlands), equivalent to a 1.5% increase in total economic output. The report also outlined that the existing transport network constrains the economic growth of these regions. The report estimated that by 2050 a loss of 5% of anticipated economic growth, as a result of constraints on transport investment in the Eastern leg regions, would mean “a total of 60,000 additional job opportunities and over £14bn in GVA each year would be lost.”<sup>70</sup>

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<sup>65</sup> DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021, para 3.49

<sup>66</sup> [Statement from the Mayor of West Yorkshire about the Integrated Rail Plan](#), West Yorkshire Combined Authority, 18 November 2021

<sup>67</sup> [A PACKAGE OF BROKEN PROMISES – MAYOR DAN JARVIS ON GOVERNMENT’S INTEGRATED RAIL PLAN](#), South Yorkshire Mayoral Combined Authority, 18 November 2021

<sup>68</sup> HC Debate 8 December 2021 [c530](#)

<sup>69</sup> HS2 East, [The case for HS2 East](#), September 2021

<sup>70</sup> Volterra, [The case for an integrated new rail network serving the Eastern Leg](#), June 2020

Before the Integrated Rail Plan was published in November 2021, questions were raised about whether this phase of the project could be delivered successfully. The Infrastructure Projects Authority's (IPA) [2020-21 annual report](#) gave Phase 2b of the project a red rating. The IPA's report explains that a red rating means the successful delivery of the project "appears to be unachievable".<sup>71</sup> This can be because various aspects of the project (e.g. the scope, schedule and budget) currently "do not appear to be manageable or resolvable."<sup>72</sup>

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<sup>71</sup> IPA, [Annual Report on Major Projects 2020-21](#), July 2021

<sup>72</sup> IPA, [Annual Report on Major Projects 2020-21](#), July 2021

## 3

# Costs and economic benefits of HS2

The Government will directly fund HS2. Since the scheme was first proposed, forecast costs have grown significantly. This has led some to question whether HS2 represents value for money.

In April 2021, the official business case for Phase One estimated that the benefit-cost ratio (BCR) for the previous full Y-shaped network connecting London, Birmingham, Manchester and Leeds represented ‘low-medium’ value for money at 1:5:1, whereas the BCR for Phase One alone, from London to Birmingham, was 1.2 (low value for money).<sup>73</sup> Earlier assessments placed a higher benefit-cost ratio on the project (see Section 3.4). The relatively low value return on investment from for HS2 led some question whether the project should go ahead.

## 3.1

### Cost estimates of HS2

The Government initially estimated that HS2 would cost £37.5bn in 2009 prices. A revised estimate in 2013 included £7.5bn for rolling stock (trains) that had not been included previously and an additional £5 billion costs for building the line.<sup>74</sup> The 2013 Spending Review established funding for the whole programme of £50.1 billion (2011 prices)<sup>75</sup>, which was uplifted by inflation in 2015 to set the available funding for the programme of £55.7 billion (2015 prices).

In 2020, the estimated cost for completing the full network was revised to a range of £72bn to £98bn (in 2019 prices). The table below presents the current cost estimates for the HS2 route, and cost ranges for the different phases. Phase One from London to Birmingham is estimated to cost between £35-45bn (in 2019 prices), Phase 2a is estimated to cost between £5-7bn (in 2019 prices) and the western leg of Phase 2b from Crewe to Manchester is estimated to cost between £15bn to £22bn (in 2019 prices).<sup>76</sup> The HS2 East Core Network, which includes the Eastern leg of HS2 from the West Midlands to the East Midlands as well as upgrades to the Midland Main Line and East Coast Main Line, is expected to cost £12.8billion (2019 prices).<sup>77</sup> Before the

<sup>73</sup> DfT, [Full Business Case High Speed 2 Phase One](#), April 2020, p.46

<sup>74</sup> HS2 Ltd, [Economic Case](#), Oct 2013

<sup>75</sup> HM Treasury, [Investing in Britain's Future](#), June 2013

<sup>76</sup> Department for Transport and HS2 Ltd, [HS2 6-monthly report to Parliament: March 2022](#), 16 March 2022

<sup>77</sup> DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021, p.31

Integrated Rail Plan was published, the Government estimated that Phase 2b would cost between £32bn-46bn (in 2019 prices).<sup>78</sup>

Table: HS2 cost estimates, 2022 (2019 prices)

Phase	Target cost	Total estimated cost range
Phase 1	£40.3bn	£35-45bn
Phase 2a	Not set yet	£5-7bn
Phase 2b	Not set yet	Western leg (Crewe to Manchester) £15-22bn HS2 East Core Network (including a new line from Birmingham to East Midlands Parkway and other upgrades) £12.8bn

**Source:** Department for Transport and HS2 Ltd, [HS2 6-monthly report to Parliament: March 2022](#), 16 March 2022 and DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021, p.31

## 3.2

### Why did the costs of HS2 increase?

HS2 has faced considerable cost and schedule pressure as the project has evolved. The [National Audit Office's report on the progress of HS2 in January 2020](#) provides an overview of why the costs of HS2 increased. The NAO concluded that HS2 Ltd, the Department and Government more widely underestimated the complexity of building HS2, which meant that optimistic estimates were used to set budgets and delivery dates.<sup>79</sup> The NAO's report explains that every element of the Phase One forecast cost estimate had increased between April 2017 and October 2019, with the exception of purchasing trains (rolling stock). The report presents a range of factors which resulted in these costs rising, including:

- **Scope changes:** the scope of HS2 has expanded. For example, during the passage of the hybrid bill to approve the first phase of the line, HS2 Ltd added a longer tunnel through the Chilterns. HS2 Ltd estimated that

<sup>78</sup> [HS2 6-monthly report to Parliament](#), Gov.uk, October 2021

<sup>79</sup> NAO, [High Speed Two: A progress update](#), HC 40, 24 Jan 2020, para 26

scope changes in response to Parliament accounted for £1bn of the increase between 2017 and 2019.

- **Ground conditions:** as construction companies developed detailed designs, their estimates for the cost of building the line increased. The companies discovered that ground conditions were poorer than HS2 Ltd had expected, and that they would have to undertake more structural reinforcement before laying the tracks, for example. The cost of civil engineering for Phase One rose by £5bn between 2017 and 2019, accounting for almost half of the cost increase on this part of the line.
- **Optimism bias:** the Government was too optimistic about how cheaply and quickly it could build HS2.

See section 2 of the NAO's report for a breakdown of how these costs have increased.

### 3.3 Will costs increase further?

Lord Berkeley, deputy chair of the Oakervee review, distanced himself from the review's conclusions and issued a [dissenting report in January 2020](#). In his dissenting report, Lord Berkeley argued that the final costs of HS2 would rise again, this time up to £110bn (in 2015 prices).

Since the Oakervee Review, the Government has sought to gain greater control over the project and has pushed HS2 Ltd to strengthen its management and oversight of the programme. In the full business case for Phase One, the Government explained that together with HS2 Ltd they had agreed “a robust programme and sustainable funding framework” that seeks to address the issues that had resulted in increased forecast costs.<sup>80</sup> Indeed, following the Oakervee Review of HS2 in 2020, after which the Prime Minister confirmed his Government's continued support for the project, a new dedicated Ministerial role with responsibility for HS2 was created. Further, in confirming that it intended to proceed with HS2, the Government stressed the importance of a tighter grip on the delivery of the project and of the need for full transparency. There is now greater certainty around the costs of Phase One of HS2, as works have progressed and ground conditions have become clearer. Plans for Phase 2, however, are at an earlier stage of development. The National Audit Office in January 2020 described some of the challenges entailed with the previous design of Phase 2b. The NAO pointed out that:

Despite being larger in scale than Phases One and 2a combined, Phase 2b has less funding allocated to it than the sum of the other two phases. The route of Phase 2b passes through the city centres of Leeds and Manchester, includes major connections to the

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<sup>80</sup> DfT, [Full Business Case High Speed 2 Phase One](#), April 2020

conventional railway and will be built on challenging ground conditions.<sup>81</sup>

## 3.4 Economic benefits of HS2

There have been various economic and financial cases<sup>82</sup> made for HS2 following HM Treasury's Green Book business case model. In these economic, financial and strategic cases, the various benefits have been analysed, quantified and assessed. Earlier assessments of HS2's value for money were more favourable, as the estimated costs of the project were lower. For example, in 2011, the initial [economic case for HS2](#) calculated that the Benefit-Cost Ratio (BCR) for Phase One of the project would be 2:1, whereas the BCR for the previous full Y-shaped network was 2.6:1. In April 2020, the Department presented a central-case BCR for Phase One and the previous full "Y" network design to Leeds.<sup>83</sup> The BCR for Phase One equated to low value for money (1.2:1, including wider economic impacts), whereas the previous full Y-shaped design represented low-medium value for money (1.5:1, including wider economic impacts).<sup>84</sup>

Some strategic benefits of transport projects are not possible to include within a benefit-cost analysis because they cannot be monetised. Quantifiable and monetised benefits of HS2 include benefits for travellers, particularly through faster, more reliable and less crowded journeys, as well as wider economic impacts that can support the Government's levelling up agenda.<sup>85</sup> However, the Government also expects other non-monetised benefits to heritage and townscape. See the table below for a summary of the monetised and non-monetised impacts of HS2.

Monetised and non-monetised impacts of HS2			
<b>Initial BCR: Monetised impacts which are well established</b>	<b>Adjusted BCR: Monetised impacts where the evidence is developing</b>	<b>Monetised impacts not included in the BCR</b>	<b>Non-monetised, qualitative impacts</b>

<sup>81</sup> NAO, [High Speed Two: A progress update](#), HC 40, 24 Jan 2020

<sup>82</sup> The case to have a high-speed railway was first made in the Labour Government's [High Speed Rail White Paper](#) in 2010; The Coalition Government published [The Strategic Case for HS2](#) in October 2013; The Conservative Government published [HS2 Phase 2a Financial Case](#) in 2016 and the [HS2 Phase Two Strategic Case](#) in 2017; DfT published [HS2 Phase One full business case](#) in April 2020.

<sup>83</sup> DfT, [Full Business Case High Speed 2 Phase One](#), April 2020, p.46

<sup>84</sup> DfT, [Full Business Case High Speed 2 Phase One](#), April 2020, p.46

<sup>85</sup> DfT, [Full Business Case High Speed 2 Phase One](#), April 2020

Travel Time Savings (In-vehicle, walk and wait)	Wider Economic Impacts (WEIs): Agglomeration	Landscape	Townscape and Landscape Heritage
Crowding Noise	Labour supply impacts		Biodiversity
Carbon Impact	Imperfect competition		Water
Accidents			Environment
Infrastructure			Severance
Indirect Tax Revenue			Physical Activity
Reliability			Accessibility
Air Quality			Journey Quality
Access and Egress			Option Values
Operational Revenues			Security

**Source:** DfT, [Full Business Case High Speed 2 Phase One](#), April 2020

## 3.5

### National Audit Office (NAO)

The NAO has published several reports scrutinising costs and delivery of HS2:

- [NAO Progress report](#) (June 2021)
- [NAO progress update](#) (Jan 2020)
- [NAO Investigation into land and property acquisition for the Phase One](#) (Sept 2018)
- [Progress with preparations for HS2](#) (June 2016)
- [HS2: a review of early programme preparation](#) (May 2013)

## 3.6

## How will Covid-19 affect HS2?

The Covid-19 pandemic has implications both for the economic and strategic case for HS2 as well as for the construction of the project. The Williams-Shapps Plan for Rail, the Government's White Paper on rail reform, argued that the rise of homeworking, among other trends, means the rail sector faces "deep structural challenges in its key passenger markets."<sup>86</sup> However, despite this, the Government has suggested that the long-term nature of strategic rail investments, such as HS2, means uncertainty over future demand in the short-term "is likely to be less relevant than longer-term trends in rail demand."<sup>87</sup> They also suggest that HS2 may be less exposed to trends, such as changes to commuting patterns arising from the increase in homeworking, because HS2's market is "dominated by business and leisure travel", where there has been emerging evidence of a stronger recovery.<sup>88</sup>

According to the National Infrastructure Commission, "significant uncertainty still exists around the continuation of the behaviour changes observed during the Covid-19 pandemic and their effects on infrastructure demand."<sup>89</sup> The NIC has recommended that policymakers should adopt an adaptive approach to infrastructure investment (see Section 2.2) and use of range of possible scenarios to explore the implications different long-term shifts in behaviour arising from the Covid-19 pandemic could have for the country's infrastructure.<sup>90</sup> Within the latest Strategic Outline Business Case (SOBC) for the Western leg of Phase 2b, the Department used a range of possible scenarios to assess how long-term changes in rail demand post-Covid could affect the economic case for this phase of HS2. These range from a low-impact scenario whereby demand quickly recovers to pre-pandemic levels, albeit with a small permanent reduction, to a high-impact scenario, in which demand remains "significantly and permanently" below pre-Covid levels. In the case of the Western leg of Phase 2b, the SOBC explains:

The economic modelling indicates that, over a 60-year appraisal period, when accounting for wider dynamic economic impacts, the BCR is most likely to fall within a range of 1.0 to 1.5, indicating that benefits outweigh scheme costs, and provide long-term economic value for the taxpayer. Wider modelling scenarios, accounting for different economic and population growth projections, and COVID-19 impacts, indicate a range between 0.6-1.7, with a central BCR of 0.9.<sup>91</sup>

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<sup>86</sup> DfT, [Great British Railways: The Williams-Shapps Plan for Rail](#), May 2021

<sup>87</sup> DfT, [Integrated Rail Plan for the North and the Midlands](#), November 2021

<sup>88</sup> DfT, [HS2 Phase 2b Western Leg: Crewe to Manchester: An update on the Strategic Outline Business Case](#), January 2022

<sup>89</sup> National Infrastructure Commission, [Behaviour change and infrastructure beyond Covid-19](#), May 2021.

<sup>90</sup> National Infrastructure Commission, [Behaviour change and infrastructure beyond Covid-19](#), May 2021.

<sup>91</sup> DfT, [HS2 Phase 2b Western Leg: Crewe to Manchester: An update on the Strategic Outline Business Case](#), January 2022

The pandemic has impacted the delivery of the project. The Government's March 2021 six-monthly report to Parliament on HS2 progress, said costs had already increased as a result of the pandemic. HS2 Minister, Andrew Stephenson said "the cost of delivering Phase One up to December 2020 is between £0.3 billion and £0.4 billion, largely as a consequence of schedule prolongation from access delays and reduced productivity."<sup>92</sup> In his update to Parliament in October 2021, the HS2 Minister reported that the Covid-19 costs were estimated to be between £0.4 billion to £0.7 billion.<sup>93</sup> The HS2 Minister's latest update in March 2022 included the same estimate.<sup>94</sup> The Minister added that the:

department and HS2 Ltd are currently working to assess and mitigate the impact of global inflationary pressure on materials and labour supply on the programme where short-term increases are being seen. This is likely caused in part by the recovery of global construction demand following the COVID-19 pandemic.<sup>95</sup>

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<sup>92</sup> DfT, [HS2 6-monthly report to Parliament](#), Mar 2021

<sup>93</sup> DfT, [HS2 6-monthly report to Parliament](#), October 2021

<sup>94</sup> Department for Transport and HS2 Ltd, [HS2 6-monthly report to Parliament: March 2022](#), 16 March 2022

<sup>95</sup> Department for Transport and HS2 Ltd, [HS2 6-monthly report to Parliament: March 2022](#), 16 March 2022

## 4 Climate, environmental and community impacts

Advocates for HS2 say the line will provide a cleaner and greener way to travel, but critics argue the carbon savings would be minimal and that there are less environmentally damaging, cheaper alternatives. Further, critics of HS2 highlight the damage construction of the line will do to ancient woodlands. Another criticism levelled at HS2 is the effect it will have on people's homes.

### 4.1 Cleaner and greener travel?

As of 2019, transport was the largest-emitting sector of the UK economy at 122 mega tonnes carbon dioxide equivalent (MtCO<sub>2</sub>e), accounting for 27% of total UK greenhouse gas (GHG) emissions.<sup>96</sup> In order to meet the Government's net zero by 2050 emissions target<sup>97</sup>, emissions from transport must fall. Rail makes up a relatively small proportion of those emissions and offers scope to deliver further emissions reductions where people shift their mode of transport from more carbon intensive means of travel (such as driving or flying).

One of the Government's stated aims for HS2 is to reduce carbon emissions, by shifting passengers to rail travel from air and road. HS2 Ltd says [emissions reductions from the line are one of its main benefits](#), "HS2 will be the low carbon option for long distance travel, emitting 17 times less carbon than the equivalent domestic flight and 7 times less carbon than the equivalent car journey."

The [2019 Oakervee review](#) provides a good summary of the key points in this debate (paras 5.30-5.39), which are that:

- **Over the short to medium term** "construction of HS2 is forecast to add to carbon emissions". The report says emissions as a result of construction of the previous full HS2 network to Leeds were estimated at between 8m and 14m tonnes of CO<sub>2</sub>e (carbon dioxide equivalent), around 0.1% of current UK emissions on an annual basis. The review notes that HS2 may be less carbon intensive than other non-rail alternative

<sup>96</sup> DfBEIS, [Final UK greenhouse gas emissions national statistics: 1990 to 2019, Table 1.2](#), 25 March 2021.

<sup>97</sup> The net zero target was legislated for through the [Climate Change Act 2008 \(2050 Target Amendment\) Order 2019](#). You can read more about net zero in the Commons Library briefing, [Net Zero in the UK](#)

transport schemes which deliver similar transport outcomes (e.g. constructing new motorways, airport runways).

- **Over the longer term**, “HS2 could be promoted to encourage modal shift from both road and domestic aviation.” On modal shift the report says:
  - HS2 may encourage people to travel by rail instead of car, particularly for regional rail services in the North and Midlands and where capacity is relieved on the conventional network, but carbon savings will diminish as cars electrify.
  - If HS2 can release conventional rail capacity for freight paths – and freight operating companies make use of these paths – this could help reduce not only road congestion but the significant emissions from road haulage. Rail freight is around 76% less carbon intensive than an equivalent road freight journey.
  - HS2 may encourage people to travel by rail instead of flying.

The Oakervee review concluded that, “HS2 is likely to be close to carbon neutral, though it is not clear whether overall HS2 is positive or negative for greenhouse gas emissions.”<sup>98</sup> This is because in the short to medium term construction of HS2 will add carbon emissions, but once operational it could be used to encourage modal shift from both road and domestic aviation. Further, the review’s authors said it was important to consider the carbon impacts of HS2 against alternative ways of managing increased demand for travel that could be more carbon intensive.

## 4.2

### Managing the environmental impacts

There has been no route-wide environmental impact assessment for HS2. Rather, environmental statements have been produced to accompany the Hybrid Bills which grant authorisation for the relevant phases of the project. These statements have been amended as the Bills have progressed through parliament and present:

- the likely significant environmental effects along the route.
- measures that will be taken to manage, reduce and monitor these effects.

A consultation on the [phase 1 environmental statement](#) ran between 25 November 2013 and 27 February 2014. A [summary of issues raised by comments on the environmental statement](#) has been published on Parliament’s website.

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<sup>98</sup> DfT, [Oakervee Review](#), Feb 2020, para 5.31-34

A consultation on the [phase 2a environmental statement](#) ran from 17 July 2017 to 30 September 2017. Environmental statements have been published to assess amendments made to the Hybrid Bill for phase 2a. These are presented in the [Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement \(March 2018\)](#) and the [Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement \(February 2019\)](#).

A [draft environmental statement for phase 2b](#) was published in October 2018. HS2 Ltd consulted on these documents from 11 October 2018 to 21 December 2018. An [environmental statement for the Crewe to Manchester leg of Phase 2b](#) was published along the High Speed Rail (Crewe to Manchester) Bill in January 2022.<sup>99</sup>

[HS2 Ltd's updated Environmental Policy](#) communicates its high-level environmental objectives.<sup>100</sup> The policy sets out five objectives that seek to guide and manage HS2's potential environmental impacts:

- **Green corridor:** Create a green corridor for both nature and people, that will conserve and enhance habitats, seek to achieve no net loss in biodiversity while designing mitigation to integrate into the character of the landscape.
- **Climate change:** Build a network which is climate resilient for the long term, minimise the carbon footprint of HS2 and deliver low carbon, long distance journeys that are supported by low carbon energy.
- **Being a good neighbour:** Manage the impact of HS2 construction and operation on people and the environment including effects from air pollution, flooding and noise & vibration.
- **Historic environment:** Reduce harm to the historic environment and deliver a programme of heritage mitigation including knowledge creation through investigation, reporting, engagement and archiving.
- **Responsible consumption and production:** Promote circular economy principles, responsibly source and make efficient use of sustainable resources, reduce waste and maximise the proportion of material diverted from landfill.<sup>101</sup>

## Ancient Woodland

The impacts of HS2 on ancient woodland have regularly been raised in debates over the environmental impacts of the project.

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<sup>99</sup> HS2 Ltd, [HS2 Phase2b Crewe - Manchester Environmental Statement](#), January 2022

<sup>100</sup> HS2 Ltd, [Environmental Policy](#), June 2017 [last updated in January 2022]

<sup>101</sup> HS2 Ltd, [Environmental Policy](#), June 2017 [last updated in January 2022]

## 1 What is Ancient Woodland?

Ancient woodland is classified as any area of woodland that is known to have existed since 1600 in England and Wales or 1750 in Scotland. The [Woodland Trust](#), the UK's largest woodland conservation charity provides the following information on the topic:

Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. This is when maps started to be reasonably accurate so we can tell that these areas have had tree cover for hundreds of years. They are relatively undisturbed by human development. As a result, they are unique and complex communities of plants, fungi, insects and other microorganisms.

Just 2.5% of the UK land is covered in ancient woodland. That's 609,990 hectares.

The term ancient woodland includes both ancient semi-natural woodland and plantations on ancient woodland sites. A POST Note from 2014 on [Ancient Woodland](#) summarises the challenges of conserving the biodiversity and cultural heritage of these sites.

## How will HS2 impact ancient woodland sites?

HS2 Ltd has published a series of ancient woodland strategies which set out how different phases of the project will affect ancient woodlands along the route. On Phase One, 32 ancient woodlands are due to be subject to a “direct loss of habitat as a consequence of the scheme.”<sup>102</sup> The extent of the loss varies. For example, 19 of the 32 woodlands will lose less than one hectare, according to HS2 Ltd's analysis.<sup>103</sup> Out of these 19, 12 will lose around 0.5 hectares.<sup>104</sup> HS2 Ltd confirmed that almost 10 hectares of ancient woodland are due to be lost across 11 sites because of the Phase 2a works.<sup>105</sup> <sup>106</sup> Works on the Crewe to Manchester leg of Phase 2b are due to result in a loss of habitat at 17 areas of ancient woodland, including 16 in England and 1 in Scotland. Around 6 hectares of ancient woodland are due to be lost across England and Scotland due to the construction of this leg.<sup>107</sup>

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<sup>102</sup> HS2 Ltd, [Phase One: London-West Midlands Ancient Woodland Strategy](#), August 2017, para 1.1.8

<sup>103</sup> HS2 Ltd, [Phase One: London-West Midlands Ancient Woodland Strategy](#), August 2017, para 1.1.8

<sup>104</sup> HS2 Ltd, [Phase One: London-West Midlands Ancient Woodland Strategy](#), August 2017, para 1.1.8

<sup>105</sup> HS2 Ltd, [Phase 2a Ancient Woodland Strategy](#), March 2020, para 1.1.9

<sup>106</sup> HS2 Ltd, [Phase 2a Ancient Woodland Strategy](#), March 2020, para 1.1.11

<sup>107</sup> HS2 Ltd, [HS2 Phase 2b Crewe - Manchester Environmental Statement: non-technical summary](#), January 2022, page 145

The [Woodland Trust](#), the UK's largest woodland conservation charity has campaigned to protect ancient woodland that will be affected by the HS2 project. They have produced an interactive map on their website which shows [woods under threat from HS2](#). This contains details of the woodlands they believe are likely to be impacted directly or indirectly by the scheme.

## 4.3 Implications for property, land and business owners near HS2 route

The Government has been buying properties from people in areas which are affected by HS2. There are a number of schemes available to compensate property owners affected by HS2.

Each of the schemes available to homeowners are based on how close the property is to the line, and how the property is being affected. HS2 Ltd's Guide to Property Schemes provide a general overview of the schemes available in the areas affected by the line:

- [Phase One property scheme guide](#)
- [Phase 2a property scheme guide](#)
- [Phase 2b property scheme guide](#)

In the **safeguarded area and extended homeowner protection zone**, which is the area closest to the line, property owners within the safeguarded area may be able to serve a blight notice<sup>108</sup> asking the Government to buy their property before any compulsory purchase at its unblighted open market value through the [Express Purchase Scheme](#) and [Need to Sell Scheme](#). Safeguarding is an established part of the planning system. It is designed to protect land which has been earmarked for major infrastructure projects from conflicting developments.

The **Rural Support Zone** is the area outside the safeguarded area and typically up to 120 metres from the centre line of the HS2 railway in rural areas. Property owners have a choice of two discretionary schemes – [cash offer or voluntary purchase scheme](#). The cash offer is designed to help people who do not want to sell their home and would prefer to stay within their community. Under the voluntary purchase scheme, owner-occupiers can ask the Government to buy their property for its full unblighted open-market value.

The **homeowner payment zone** stretches from 120-300 metres from the centre line of the HS2 railway. In this zone, property owners may be eligible

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<sup>108</sup> Statutory blight, also known as blight notice, is where the potential acquisition of land by the acquiring authority to construct a development scheme has culminated in a fall in property value or rendering it unsaleable.

for compensation payments depending upon how close to the line they are through the [Homeowner payment scheme](#) or the need to sell scheme. This is a discretionary scheme that allows property owners ineligible for the statutory blight, express purchase or voluntary purchase schemes to ask the Government to buy their property if they have a ‘compelling’ (convincing) reason to sell.

HS2 Ltd has been criticised for the way it has communicated with property owners and in how it has reached compensation decisions. For example, the Parliamentary and Health Services Ombudsman (PHSO) found serious failings in HS2 Ltd.’s engagement with a community in Staffordshire in 2015.<sup>109</sup> These and other issues were highlighted in the Oakervee review.

The HS2 Residents’ Charter came into being on 16 January 2015. It is intended to “ensure that residents are treated in a fair, clear, competent and reasonable manner”. To date, the Residents’ Commissioner has published 16 reports, the most recent dated 16 November 2021.<sup>110</sup>

Following the Government’s decision to proceed with HS2 in February 2020, the newly appointed Minister initiated a review of the HS2 land and property acquisition programme. The Minister’s foreword to the review said:

we know there is more we can do to improve:

- the way we communicate with people
- how long it can take to settle compensation claims
- the support offered to businesses to relocate.<sup>111</sup>

This review made a number of recommendations HS2 is now implementing.

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<sup>109</sup> PHSO, [Report on an investigation into complaints about High Speed Two Limited](#), HC 620, 26 November 2015, p3

<sup>110</sup> HS2 Ltd, [HS2 Ltd’s Residents Commissioner](#) [accessed on 7 June 2022]

<sup>111</sup> DfT, [HS2 Land and Property Review: findings and proposals](#), Nov 2020

## 5 Scrutiny of HS2

### 5.1 Parliamentary scrutiny

#### Hybrid Bills

Parliamentary approval for the HS2 project has been sought through the Hybrid Bill process. Such Bills are quite rare and are generally used to secure powers to construct and operate major infrastructure projects of national importance.

Hybrid Bills are so called because they address both public and private matters. Most Government Bills are public Bills, as they propose legislation that affects everyone equally. Private Bills, on the other hand, change the law in a way that affects some individuals in a different way from others. A hybrid Bill does both. The House of Commons Library briefing, [Hybrid Bills: House of Commons Background Paper](#) has further information on the procedures followed in considering a hybrid Bill.

The hybrid Bills for HS2 not only grant the Government planning permission to build the HS2 network, but also give it powers to:

- operate and maintain HS2 and its associated works;
- compulsorily acquire interests in the land required;
- affect or change rights of way, including stopping up or diverting highways and waterways (permanently or temporarily);
- modify infrastructure belonging to other organisations (like utility companies);
- carry out work on listed buildings and demolish buildings in Conservation Areas; and
- carry out protective works to buildings and third-party infrastructure.

Construction of Phase One of the route was authorised through the [High Speed Rail \(London to West Midlands\) Act 2017](#). You can [view all the Phase One hybrid bill documents](#) on the Gov.uk website.

The [High Speed Rail \(West Midlands to Crewe\) Act 2021](#) authorised the route and construction for phase 2a from the West Midlands to Crewe. You can [view the Phase 2a hybrid bill documents](#).

The [2021 Queens Speech](#) included proposals for a High Speed Rail (Crewe – Manchester) Bill, but no mention of the Eastern leg from the West Midlands to Leeds. A hybrid bill for the Western leg, the [High-Speed Rail \(Crewe to](#)

[Manchester\) Bill](#), was introduced to Parliament on 24 January 2022. On 24 April 2022, the House agreed a motion to suspend proceedings and carry the Bill over to the current session. The Bill was re-introduced on 11 May 2022. Second reading is scheduled on Monday 20 June 2022.<sup>112</sup> You can [view the Phase 2b from Crewe to Manchester documents](#), as well as documents on the development of the eastern leg route, on GOV.UK.<sup>113</sup>

## Six-monthly reports to Parliament

The Minister for HS2 has committed to providing a six-monthly progress report to Parliament. The [latest six-monthly progress report was made on 16 March 2022](#).<sup>114</sup>

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<sup>112</sup> UK Parliament, [High Speed Rail \(Crewe - Manchester\) Bill](#) [accessed on 24 May 2022]

<sup>113</sup> HS2 Ltd, [HS2 Phase 2b: Crewe to Manchester and the West Midlands to Leeds](#) [accessed on 7 June 2022].

<sup>114</sup> Department for Transport and HS2 Ltd, [HS2 6-monthly report to Parliament: March 2022](#), 16 March 2022

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