

# HS2: The kindest cut of all

Andrew Gilligan





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## About the Author

**Andrew Gilligan** was a policy adviser on transport and infrastructure to the Prime Minister from 2019 to 2022 and also advised Rt Hon Boris Johnson MP as Mayor of London (2013-16). Previously he was a senior correspondent of The Sunday Times and had also served as head of the Capital City Foundation at Policy Exchange.

### A note on sources

This document draws only on information in the public domain. No privileged information from my time in government has been used.

### A note on prices

Most Government statements on HS2's costs express them in 2019 prices and some in 2015 prices. There has been significant inflation over the years since. Policy Exchange therefore expresses the potential savings from its recommendations in September 2022 prices, converted using the Bank of England CPI inflation calculator. This calculation is still likely to understate the savings, since construction industry inflation, at up to 18 per cent in 2022 alone, is much higher than general inflation. Some other figures in the text, typically those sourced to published government statements, are in 2019 prices. Where this is the case, it is noted and a conversion to September 2022 prices has also been made.

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## Short Summary

- By cancelling all sections of HS2 where main construction has not yet started, we can save around £3bn a year by 2027/8, and £44bn or more in total.
- HS2 now costs more to build than the value of the benefits it will deliver. The official benefit cost ratio (BCR) shows that for every £1 spent on the scheme, the country gets back benefits worth only 90p. Shortening the scheme improves its value for money.
- Including “wider economic impacts,” the BCR rises to 1.1. But even this is suspect, since it uses an artificially low construction cost and assumes that all HS2’s operating and renewal costs will be covered from fare income.
- The BCR calculations also use figures from before covid, since when the scheme’s costs have risen and its benefits have fallen.
- Almost half of HS2’s benefits go to London and the South East, meaning that HS2’s effect on levelling-up will be little better than neutral. Its claim that it will create 500,000 new jobs is an absurd exaggeration.
- Public support for HS2 is low everywhere, and even lower in the regions it supposedly benefits. The outcry at last year’s shortening of the eastern leg was entirely confined to regional elites; it left ordinary voters unmoved. Northern leaders back the scheme in principle, but vehemently oppose the specific plans for Manchester.
- Rising costs and cuts to public spending mean that if HS2 continues as currently planned, it will eat much of the rest of the public transport budget, sucking billions of pounds out of the services which most people use, need and want.

## Executive Summary

In this week's Budget, the government reportedly plans to achieve £54bn per year of fiscal tightening - £33bn from spending cuts, £21bn from tax increases - by 2027/28.<sup>1</sup> Few of the choices are palatable. Many are awful. But at least one would actually be popular. Scaling back HS2 could alone deliver almost a tenth of the spending cuts required, £3bn per year by 2027/28<sup>2</sup>, significantly more (up to £7bn per year) in later years and perhaps £44bn or more in total.

HS2 is not an instant way to avoid all cuts. Much of the spending in the next few years is on parts of the scheme that are too late to cancel. But meaningful sums can still be saved in this Parliament, and very significant sums indeed from the middle of this decade, well within the window for fiscal tightening planned by the Chancellor. In the short to medium term, scaling back HS2 can mitigate cuts to other areas. In the medium term, it will create significant headroom for investment in better transport projects - projects which deliver more benefits, to more places, more quickly. In ConservativeHome's words, "robbing the white elephant to pay the Red Wall."

This report recommends cancelling all sections of the scheme on which main construction work has not yet started - just under half of its total length - leaving only a line between Old Oak Common in London and the West Midlands, including the city centre terminus in Birmingham and a branch to Handsacre, near Lichfield, where trains for points further north would rejoin the West Coast Main Line. Many of the benefits of HS2, such as they are, would still be delivered by such a scheme, and the benefit-cost ratio is better than for the full project.

As we show, public support for HS2 is low everywhere, and even lower in the regions it supposedly benefits. The outcry at last year's shortening of the eastern leg was entirely confined to regional elites in the big cities; it left ordinary voters quite unmoved. Leaders of the smaller towns and cities which voted Tory in 2019 supported the cuts to HS2. Though big-city Northern leaders back the scheme in principle, they vehemently oppose the specific plans for Manchester, and would far rather have better trans-Pennine links.

More importantly, however, cancellation is not merely expedient. It is right. HS2 is Britain's greatest infrastructure mistake in half a century. Even at the official price, even before the spending crisis, and even before Covid, it was and is a misdirection of resources of unprecedented size. As Ben Houchen, the Tees Valley mayor, said last year: "If I was given one per cent of the HS2 budget I would be able to revolutionise [my area's]

1. [Link](#)

2. In 2027/28 prices.



public transport on a scale we couldn't possibly imagine today.”<sup>3</sup>

In the year to April 2022, the government spent almost as much on HS2 (£5.6bn)<sup>4</sup> as it spent on the country's entire national and local road networks (£5.8bn).<sup>5</sup> Later, as HS2 moves to peak build, it will be significantly more. Over the three years 2022/3 to 2024/5 inclusive, rail will take 69 per cent of all central government spending on transport,<sup>6</sup> though it accounts for only 2 per cent of passenger trips by volume, 9 per cent by distance (these are pre-covid figures, which will be less now), and 9 per cent of freight tonne/km.<sup>7</sup>

The government will spend four times more on HS2 this year than on local public transport, though 87 per cent of journeys are local.<sup>8</sup> Even before the new Budget cuts, the gap is planned grow further, to perhaps 6 times, next year. HS2 spending will increase and local public transport spending will be cut by around a third to help pay for it, from around £1.5bn to around £950m a year.<sup>9</sup> (HS2 can help improve some local transport services, but only a relatively small number, only indirectly and often in the wrong places.)

HS2's supporters will describe scaling it back as an act of national self-harm, a surrender of transformational ambition. That would only be true if it was really transformational. But it is not. For all that ConHome and others call it a white elephant or a vanity project, it isn't quite that either. It is not worthless, or without benefit. It could have been worth doing at, say, a quarter or a third of the price - the original sum advertised. But it is not worth the colossal sums now required - as even the government, very quietly, admits.

Unnoticed until now, the latest business case, published in June 2022, gives HS2 a central benefit-cost ratio (BCR) of 0.9.<sup>10</sup> In other words, it will cost more to build than the value of the benefits it delivers. For every £1 it spends on the scheme, the country gets back benefits worth only 90p. Including “wider economic impacts,” HS2's BCR rises to 1.1, still extremely low. But even this is a significant overstatement. The BCR calculation assumes that HS2 will cover its operating and renewals costs entirely through fares, though no other railway in Britain does both and most, especially now, do neither. The construction cost which the BCR uses is below even the official price, let alone the real one.

HS2 describes itself as “the UK's flagship transport levelling-up project.”<sup>11</sup> Again little noticed in its official economic case, however, is a table showing that almost half (43%) of its benefits go to London and the South-East<sup>12</sup>, meaning its effect in narrowing regional inequality will be little better than neutral. This calculation was done before the shortening of the leg to Yorkshire. HS2's claim that it will “creat[e] 500,000 extra jobs”<sup>13</sup> is, as we show, an absurd exaggeration.

HS2 claims that it will encourage modal shift from cars and air and be “net zero carbon from 2035,”<sup>14</sup> only five years after opening. In fact, its own assessment says that “over the construction and the first 60 years of operation of HS2, it is likely that carbon savings...will be less than the carbon emissions.”<sup>15</sup> Only 4 per cent of HS2 passengers would previously

3. [Link](#)

4. [Link](#). The sum stated is £5.4bn in 2019 prices, equalling £5.6bn in 2021 prices.

5. Public Expenditure Statistical Analyses 2022, table 6.4, page 94, see [link](#)

6. [ibid](#)

7. [Link](#)

8. £5.7bn in 2019 prices this year, equivalent to £6.5bn in 2022 prices, see [link](#). £1.5bn on local public transport this year, see PESA statistics, table 6.4, p94, op.cit

9. PESA statistics, op.cit. Local public transport spending is due to fall from around £1.5bn per year to around £950m, with further cuts likely.

10. [Link](#), page 22. The BCR analysis in this is for phases 1, 2a and 2b West. It does not include the remaining section of the Eastern leg which does not yet have a price.

11. [Link](#)

12. [Link](#), page 75.

13. [Link](#)

14. [Link](#)

15. [Link](#), page 27

have travelled by car and only 1 per cent would have flown, while 26 per cent will be new journeys.<sup>16</sup> At this rate, it will be well into the 22nd century, not 2035, before Phase 1 of the scheme has covered the 6.5 metric tonnes<sup>17</sup> of carbon equivalent created in its construction.<sup>18</sup> Per pound spent, almost literally any other public transport project imaginable could achieve greater modal shift and CO2 reduction than HS2; that it takes vast sums away from such projects is another of its environmental harms.

And all this is based on the published costs and calculations of benefits, which have not changed for three years or more. In that time, the true position has become worse. Covid has further undermined HS2's already weak strategic rationale: to free space on existing lines for more local and commuter services. This is no longer necessary. Since the pandemic, significant and probably permanent changes in working patterns have seen rail commuting plateau at around 70% of pre-covid levels. Business travel, HS2's core direct market, is also down. Planned journey times on the new line have quietly increased, reducing the value of time saved, integral to the business case.

As the benefits of HS2 have fallen, its costs have risen further. The Financial Times recently reported that an internal review by its deputy chair, Jon Thompson, finds that Phase 1 of the project, from London to the West Midlands, will run "many billions" further over budget, is "very unlikely" to meet its £40.3bn target cost and has only a 50% chance of meeting its upper envelope of £44.6bn (at 2019 prices), including contingency.<sup>19</sup> HS2's costs will rise very significantly above even this when 2022 inflation, now at 18 per cent<sup>20</sup> in the construction sector, is added. HS2 Ltd's management has drifted. The organisation has been without a chair for the last 15 months.

The combination of rising costs and cuts to public spending means that if HS2 continues as currently planned, it will eat much of the rest of the public transport budget, causing terrible harm to the transport network, sucking billions of pounds out of the services that most people actually use, need and want, and which could do far more for economic growth, reducing CO2 and cutting road congestion. There will certainly be little or no money for the smaller, humbler new projects that really could level up transport in Britain.

The prospect of HS2 being delivered to the specification and cost currently claimed is essentially nil. The only question is how much more money we waste and how much more damage we cause before we all realise this. It is already impossible fully to correct the error; £30bn (in 2019 prices) has already been spent or committed on Phase 1, which is too far advanced to cancel. But it is not too late greatly to limit the damage. It is untrue, as some have said, that there is no fat in the public sector. There is HS2.

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16. [Link](#), page 83

17. [Link](#)

18. [Link](#)

19. [Link](#)

20. [Link](#)

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# HS2 - The Scheme

## HS2 is being built in four phases.

**Phase 1** (official target cost £40.3bn, official total cost envelope including contingency £44.6bn at 2019 prices; £46.3bn and £51.2bn respectively at 2022 prices) will run from London Euston to Birmingham and Handsacre, near Lichfield, where HS2 trains from London to Manchester, Liverpool and Scotland will join the existing West Coast Main Line (WCML). The target opening date is 2030 for a limited service from Old Oak Common to Birmingham only, though this may be delayed. The Euston section may open in 2033, when trains to other destinations will start. However, there is no clear plan yet for the HS2 station at Euston.

**Phase 2a** (official cost envelope including contingency £5.2-7.2bn at 2019 prices; £6bn- £8.3bn at 2022 prices; no target cost yet) will run from Handsacre to Crewe, where HS2 trains to Manchester, Liverpool and Scotland will join the WCML. Legislation to build this phase has received royal assent. Main construction contracts are due to be awarded in summer 2023 and earthworks start in spring 2024. It is likely to open in the mid to late 2030s.

**Phase 2b** (official cost envelope including contingency £13-19bn; £14.9bn- 21.8bn in 2022 prices; no target cost yet) will run from Crewe to Manchester. Legislation to build this phase is going through Parliament. A 13-mile spur off this section back to the WCML at Golborne, near Wigan, has been removed. It is likely to open in the early to mid 2040s.

**HS2 East** (estimated cost £10bn; £11.5bn in 2022 prices; no official cost yet) will run from the West Midlands to East Midlands Parkway, near Nottingham, where HS2 trains will join an electrified Midland Main Line to reach Nottingham, Derby and Sheffield. Legislation to build it has not yet been introduced. It is likely to open in the mid to late 2040s.

## How much could be saved?

HS2 is not the instant way to avoid austerity that some have claimed. The savings potential is vast, but is spread over more than 20 years. Much of the cost due to be incurred in the next few years cannot be saved, because it is on Phase 1, the part of the scheme that is mostly too late to cancel. But there are increasing sums being spent on the later phases - which are cancellable - from this year. These start to become really sizeable towards the end of the five year period covered by the Budget, and dominant in the 5-15 year timeframe.

We propose the following savings:

### Cancelling the section of Phase 1 between Euston and Old Oak Common

**Net saving: estimated £4-5bn (2022 prices).**

HS2 is planned to have two stations in London: a terminus at Euston and another stop, served by all trains, at Old Oak Common, 2.6 miles west of Paddington on the Great Western Main Line.

The Euston- Old Oak section, apart from the station and immediate vicinity of Euston, is entirely underground. Main construction has not started, though land at Euston has been cleared and preparatory work such as piling has been done. A new HS2 Euston station is planned to be built on this cleared land, next to the existing station, which will remain in use for conventional services. This section is now supposed to open at least three years later than the rest of Phase 1, in about 2033.

In practice even this must be in doubt because HS2 Ltd has not yet come up with a buildable design for its new station at Euston at anything approaching the budget available. A recommendation in the Oakervee review that HS2 Ltd be stripped of responsibility for the project was not acted on. After more than ten years of work and several changes of plan, the latest public design is still only at concept (artists' impressions) stage. As the government announced last month, "significant elements of the design work [for Euston]... can no longer be used" and an "updated station design" will be "developed over the coming months."<sup>21</sup>

There is another problem. HS2 Ltd, Transport for London and the Mayor of London, Sadiq Khan, have all stated that bringing full HS2 services

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21. [Link](#)

to Euston will impose unworkable congestion on the station's already overcrowded Underground service unless Crossrail 2, a new north-south version of the Elizabeth Line, is built.<sup>22</sup> Khan has predicted that, without it, "thousands of passengers arriving at Euston on HS2 phase 2 could lose time saved on their journeys as they will have to queue to board onward [Tube] trains."<sup>23</sup> Needless to say, there is no money for Crossrail 2.

If it were not used for the HS2 station, the cleared site at Euston, around 60 acres, offers a development and growth opportunity of unique scale in central London, deliverable more quickly, more cheaply and far more easily than if a station has to be built there. The commerciality of the site for development is currently impeded by the high cost of rafting over the HS2 station. An estimated £1bn (based on central London property values)<sup>24</sup> could be recouped by selling back this land and this has been incorporated in the net savings estimate above. There are some savings to TfL from not redeveloping the Underground station; where costs for this project have not already been incurred, they have also been included in the net savings total.

Overall net savings are lower than the total cost of this section because of preparatory works already paid for and because some aspects of Old Oak Common station would have to be redesigned if it were to be a permanent terminus. Old Oak is planned to have six platforms, for instance, rather than Euston's planned ten. However a ten-platform terminus is no longer necessary given the reduction of HS2's Eastern leg in last year's Integrated Rail Plan and the further reduction in services proposed in this paper.

The political risk of cancelling this section is that we are accused of reducing HS2's usefulness and advantage over existing services by not bringing it into central London. However, Old Oak Common will be on the Elizabeth Line, five minutes from Paddington, nine minutes from Bond Street, and 15 minutes from Liverpool Street. HS2 Ltd describes it as "the best connected new station ever built in the UK."

Even if HS2 trains do end up going to Euston, it will be the same or quicker for passengers to reach most of the West End and City by changing at Old Oak Common than by staying on to Euston and changing to the Tube, especially given the likely Tube overcrowding. Old Oak will, admittedly, be less convenient than Euston for passengers seeking to continue their journeys by taxi, car or foot, or going to the Eurostar terminal.

22. [Link](#)

23. [Link](#)

24. [Link](#). The average 2022 value of commercial land in Camden, the borough where Euston sits, is £13.81m per acre, equating to £830m for 60 acres; we conservatively estimate that Euston, a central London site with good transport links, will be worth more than the borough average.

Sample journey times from Birmingham Curzon Street (HS2 city centre station) to

	Via Oak Common	Via Euston
Tottenham Court Road	64 min	64min
Liverpool Street	70 min	71min
Canary Wharf	77 min	82min

**Could the rest of Phase 1 be cancelled too?**

Main construction works on the rest of Phase 1 began in September 2020. As of October 2022, £29.9bn (2019 prices) had been spent or contracted on it.<sup>25</sup> On a crude calculation, stopping work immediately and cancelling the scheme could therefore still save £10-14 billion (£11.5- 16bn in 2022 prices)- possibly in practice more, since Phase 1 is “very unlikely” to meet its target cost and only has a 50 per cent chance of meeting its cost envelope, according to a leaked report by HS2’s deputy chair.

In addition, and in theory, some of the £29.9bn already spent or committed could be recouped - £3.7bn of it was for land and property, some of which could be sold back, possibly even sometimes at a profit. However, because construction is well under way and a significant workforce has been mobilised, the costs of closedown, remediation and removing traces of the scheme would probably more than balance any receipts from selling back land and property, and may well also eat into the overall savings from cancelling it. With regret, therefore, it is too late to cancel the rest of Phase 1.

### Halting the redevelopment of Euston conventional station concourse

**Net saving: estimated £1.7bn in total (2022 prices), likely to be an underestimate.**

At Euston, separately from the HS2 budget, the Government is currently also planning to redevelop the 1960s conventional station. As it says, HS2 Ltd and Network Rail “are working together to develop a cost-effective design that provides integration between the HS2 station and the redevelopment of the Network Rail station and delivers value for money.”<sup>26</sup> The existing ground-level concourse would be demolished and replaced with a new sub-surface concourse, joined to that of the new HS2 station next door. The existing platforms and trainshed would remain, though Network Rail is also seeking an additional £1.5-2bn of public money to replace these.

On pre-covid traffic Euston was overcrowded at certain times but on

26. *ibid*

25. [Link](#)

DfT's modelling of post-covid rail volumes it will not be overcrowded by 2033, when HS2 is due to open. Once HS2 opens, whether or not it comes to Euston, it will take away some of the long-distance traffic that currently uses the conventional station. Redevelopment of Euston would also impose further significant inconvenience to passengers at the same time as their West Coast Main Line service is disrupted by the construction of HS2.

### Cancelling Phase 2a (West Midlands- Crewe)

**Net saving: estimated £5-7bn in total (2022 prices), likely to be an underestimate.**

This section saves up to 13 minutes on journey times north of the West Midlands (such as from London to Manchester and Liverpool) on top of the savings delivered by Phase 1. The government gives the total price as £5.2- £7.2bn in 2019 prices, equivalent to £6bn- £8.3bn in 2022 prices.<sup>27</sup> Legislation to build it has passed through parliament. Main civils contracts are due to be awarded next year and work is due to begin in 2024. Around £800m to date (in 2019 prices; £920m in 2022 prices) has already been spent<sup>28</sup>, of which about £250m is land and property, much of which can be recouped.

If this section was cancelled, HS2 trains could (as is already planned for the first five to 10 years of HS2 operations) run from London to Liverpool, Manchester and Scotland via the HS2 Phase 1 line, joining the existing West Coast Main Line (WCML) at Handsacre, near Lichfield. This would still save just under 30 minutes on current journey times, with a London-Manchester journey of about 1 hour 40 minutes, and relieve pressure on the southern end of the WCML.

### Cancelling Phase 2b (Crewe- Manchester)

**Net saving: estimated £14-21bn in total (2022 prices), likely to be an underestimate. The saving will be about half these figures if Northern Powerhouse Rail is proceeded with.**

This section takes high-speed track into central Manchester. The bill to build it is in Parliament, with Royal Assent expected next year or in 2024; the Golborne spur, a 13-mile link back to the West Coast Main Line near Wigan, has already been removed. The Government claims that this has reduced the total cost of this phase to £13-19bn (2019 prices; £15-22bn in 2022 prices)<sup>29</sup> which seems low given that much of it will run through densely built-up areas of Manchester and there will be a new station next to the existing one at Manchester Piccadilly. Around £600m (2019 prices; £690m in 2022 prices) has already been spent<sup>30</sup>, mostly land and property which can be recouped.

This section is the worst value for money of all. The updated strategic outline business case published in June this year, after the removal of the

27. <https://www.gov.uk/government/speeches/high-speed-two-6-monthly-report-to-parliament-october-2022>

28. *ibid*

29. *ibid*

30. *ibid*

Golborne spur, shows that (even at the official price) it costs double the value of the benefits it delivers, with a central benefit-cost ratio of 0.5.<sup>31</sup> In other words, it brings only 50p worth of benefits for every £1 spent. With wider economic impacts, “mainly attributed to agglomeration,” the BCR rises to 0.7. But this figure must be doubtful; agglomeration benefits from a scheme to link cities 80 miles apart will be low.

This section is also a good example of how to spend a lot of money and still leave almost everyone unhappy. Even local leaders who support HS2 in principle, such as the leader of Manchester City Council, Bev Craig, and the Greater Manchester mayor Andy Burnham, strongly object to the plans in practice, demanding that the HS2 line and station in central Manchester be underground to avoid swallowing up 500,000 square metres of prime central development land, years of severance to the city’s tram system, road rerouting, disruption to the city centre and an unsightly mile-long concrete viaduct cutting through the inner city.

One local Labour MP, Graham Stringer, has said the plans will “economically sterilise” parts of inner Manchester.<sup>32</sup> There is also concern that municipal leaders are required to find hundreds of millions of pounds from their own budgets for utilities diversions in central Manchester and to fund the HS2 stop at Manchester Airport. (This will actually be about a mile from the airport, on the other side of a motorway; HS2 passengers will need a shuttle bus to reach the terminal.) “There can be no guarantees that we will support [the Phase 2b] bill, or ask Greater Manchester MPs or indeed the Labour frontbench to support this bill, if there is no change,” said Burnham.<sup>33</sup>

HS2’s current plan is indeed flawed, but it is - if not cheap - then several billion pounds cheaper than Burnham’s preferred choice. In the current climate, there is no prospect at all of more money being found to meet Craig and Burnham’s demands - it will be viaducts and a surface station, or nothing.

This may help at least some of the North West leaders become more comfortable with cancellation. They are in any case much keener on improving east-west links, through the Northern Powerhouse Rail (NPR) scheme, than north-south ones.

Cancelling this section and phase 2a would also mean that several cities and large towns on the existing main line - Stafford, Stoke-on-Trent, Macclesfield, Wilmslow and Stockport - are no longer bypassed, and no longer lose some or all of their rail services to London. HS2’s explicit rationale is to remove long-distance services from the existing lines to allow more local and commuter trains. (Stafford, Stoke and Macclesfield are promised an HS2 service, but the latter two places do not appear in the “central case indicative train service specification” published by HS2, only in possible “options” to it.<sup>34</sup>)

About ten miles of Phase 2b, between Manchester and High Legh, near Altrincham, are also planned to be used for the Manchester-Liverpool leg of Northern Powerhouse Rail. The Integrated Rail Plan (IRP) retained this section of the NPR route. If NPR is to proceed as planned in the IRP, this

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31. [Link](#), page 22.

32. [Link](#)

33. [Link](#)

34. [Link](#)



part of the line will still need to be built and the net saving will be about half the figure given above.

### **Cancelling HS2 East (West Midlands- East Midlands)**

#### **Net saving: estimated £9bn total (2022 prices; estimate)**

HS2 East is the former Phase 2b eastern leg, which was originally meant to run from the West Midlands to Leeds. It was shortened in last year's Integrated Rail Plan to run only as far as East Midlands Parkway, near Nottingham, where HS2 trains would join an electrified Midland Main Line (MML) to reach Nottingham, Derby, Chesterfield and Sheffield. Legislation has not yet been brought forward for this and no official budget has been announced. A budget of £12.8bn (2019 prices; £14.7 in 2022 prices) for this scheme, the East Coast Main Line upgrade and the electrification of the northern part of the MML was stated in the Integrated Rail Plan.<sup>35</sup> Of this, we have estimated that £9bn (£10.3bn in 2022 prices) is for the HS2 elements.

The projected saving above also includes a sum of £100m which was earmarked for a study on how to get HS2 trains to Leeds. This would almost certainly have ended up concluding that they should continue up the Midland Main Line from Sheffield, reaching Leeds in about the same time as it could already be reached via an accelerated East Coast Main Line (another part of the IRP's plan.)

Cancellation of this relatively short and cheap section is the most finely-balanced of our recommendations. HS2 East's weaknesses - that it didn't serve any of the main East Midlands cities - were addressed in the Integrated Rail Plan and it does significantly shorten the journey time between London and Nottingham and between Birmingham and Nottingham.

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35. [Link](#), page 31

## HS2's Costs and Benefits

HS2 is often described as a vanity project or a white elephant. Neither is fair. It is not worthless. It does have benefits, and they are not small. But they are not big enough to justify the scheme's extraordinary cost.

Unnoticed until now, the latest business case, published in June 2022 after the removal of most of the Eastern leg and the Golborne spur, all but officially admits this. It gives HS2's central benefit-cost ratio (BCR) as 0.9.<sup>36</sup> (The calculation includes Phases 1, 2a and 2b to Manchester but excludes the remaining section of the Eastern leg from the West Midlands to the East Midlands, for which a price has not yet been set.)

In other words, HS2 will cost more to build than the value of the benefits it delivers. Every £1 of taxpayers' money spent will return only 90p worth of benefits. Most transport schemes need BCRs of 2 or above to be funded. Including "wider economic impacts," HS2's central BCR rises to 1.1, still extremely low.

The business case also assumes that HS2's day-to-day operations will be highly profitable, with income from fares covering not just its full operating costs but also the costs of rolling stock and infrastructure renewal, and with large amounts left over after that to repay some of the capital costs.

This seems very unlikely, and not just because HS2 (unlike most other high-speed lines) will still face competing parallel conventional services. Even before covid, few high-speed railways in the West were profitable, and none at all to the extent predicted for HS2. It seems almost certain, therefore, that as well as the construction costs taxpayers will also, at a minimum, have to pay for renewals, as they do on all UK railways at the moment. It is possible HS2 may not need a taxpayer operating subsidy, but it is more likely that it will, particularly at the beginning.

This is not the whole story, however. These BCRs have been calculated using a cost figure that appears exceptionally and artificially low, £45.7bn - for some reason given in 2015 prices, equivalent to £49.3bn in the 2019 prices which the Government usually uses. The latest published official cost of Phases 1, 2a and 2b to Manchester, in 2019 prices and after the removal of the Eastern leg and Golborne, is between £53bn and £71bn - in other words, between 7 and 44 per cent higher than the figure used in the BCR.

Allowing for all this, HS2's real benefit-cost ratio may be somewhere between 0.4 and 0.7 - even at the official price. But of course the official price is not going to be the last word. As the Financial Times recently reported, an internal review by HS2's deputy chair, Jon Thompson, finds that Phase 1 of the project, from London to the West Midlands, will run "many billions" further over budget, is "very unlikely" to meet its £40.3bn target cost (£46.3bn in 2022 prices) and has only a 50% chance of meeting its upper envelope of £44.6bn, including contingency

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36. [Link](#), page 22. The BCR analysis in this is for phases 1, 2a and 2b West. It does not include the remaining section of the Eastern leg which does not yet have a price.

(£51.2bn in 2022 prices). As the FT also reported, Thompson found that two of the four consortia constructing the line are “too large to effectively manage and control.”<sup>37</sup>

The tables below show how the scheme’s cost in real terms has roughly doubled over the last decade, bringing it from levels where it might have represented value for money to being poor value for money. There is no reason to suppose that the journey of ever-rising costs has ended.

### Phase 1 (London-West Midlands)

Date	Event	Price Quoted	Equivalent in Sep 22 prices
Jan 2012	White paper	£16.3bn (2011 prices)	£21.6bn
Nov 2015	Spending Review	£27.1bn (2015 prices)	£33.4bn
Aug 2019	Chairman's Stocktake	£36-38bn (2015 prices)	£44.6-47bn
Apr 2020	Full business case	£40.3bn (2019 prices)	£46.3bn
Oct 2022	Thompson report	£44bn+ (2019 prices)	£50.5bn

### Phase 2a (West Midlands- Crewe)

Date	Event	Price Quoted	Equivalent in Sep 22 prices
Nov 2015	SOBC	£2.7bn (2015 prices)	£3.3bn
Aug 2019	Chairman's Stocktake	£3.6-4bn (2015 prices)	£4.4-5bn
Oct 2020	Ministerial update	£5.2-7.2bn (2019 prices)	£6-8.3bn

### Whole scheme

Date	Event	Price Quoted	Equivalent in Sep 22 prices
Oct 2013	Economic case	£35bn (2011 prices)	£46.4bn
Nov 2015	Spending Review	£55.7bn (2015 prices)	£68.9bn
Aug 2019	Chairman's Stocktake	£71.6-78bn (2015 prices)	£89-96bn
Apr 2020	Ministerial update	£72-98bn (2019 prices)	£83-112bn
Oct 2022	Ministerial update & IRP	£62-80bn (2019 prices)	£73-92bn

The reduction seen in Oct 2022 reflects the removal of the Golborne spur and most of the Eastern leg. The Oct 2022 figure includes an estimated cost of £9.1bn (2019 prices) for the remaining part of the Eastern leg and the study on HS2 trains to Leeds, derived from a figure of £12.8bn given in the Integrated Rail Plan for this and the Midland Main Line electrification north of Leicestershire.

37. [Link](#)

At the same time as the costs have risen, covid has changed the equation on benefits. HS2's main transport rationale, and a key part of the calculated transport benefits, was that it would free capacity on the existing main lines for more commuter services. This is no longer necessary. Commuter rail travel has plateaued at about 70% of pre-covid levels and seems increasingly unlikely ever to return to what it was before.

There is clear evidence that workers enjoy the time and money gained from not commuting; are reluctant to return full-time to the office; and in a tight labour market have the power to enforce their wishes. Eighty-four per cent of London workers want to work from home at least one day a week and almost three-quarters believe they will never spend five days a week in the office again, according to a survey by King's College London's Policy Institute.<sup>38</sup>

It is true that off-peak rail travel has recovered to pre-covid levels or beyond, driving overall usage near to pre-covid levels. But this remains well within the network's capacity because 100 per cent or even 150 per cent of previous off-peak demand, spread over many hours of the traffic day, is lower than 100 per cent of previous peak-hour demand, spread over a few hours.

DfT modelling suggests that even a "low impact" scenario from covid, a 5 per cent reduction in commuting and business travel from pre-covid levels and no reduction in leisure travel, cuts HS2's official benefit-cost ratio (including wider economic impacts) from 1.1 to 0.9.<sup>39</sup> A "medium impact" scenario - a 26 per cent drop in commuting and business travel and a 25 per cent fall in leisure travel - reduces it to 0.6.<sup>40</sup>

A large part of HS2's benefits in the business case are in travel time savings allowing more time for productive work (though this has always been controversial, since it is argued that people can work on trains.) But recently, also, the projected journey times on the line have quietly increased, meaning that travel time savings will be less. The claimed journey from Birmingham to London, for instance, has risen by 6 per cent, from 49 minutes<sup>41</sup> to 52.<sup>42</sup>

### Having started, should we finish the whole scheme?

It may be argued that it is not sensible to build only around half the scheme. But the Government's own figures show that building only part of HS2 delivers better value than building the full scheme as now proposed, with a benefit-cost ratio of 1 (1.3 with wider economic impacts) versus 0.9 (1.1 with wider economic impacts) for the full scheme.<sup>43</sup> Building only phases 1 and 2a would deliver a London-Manchester journey time of around 1 hour 27 minutes, 40 minutes faster than now and only 15-20 minutes slower than under the full scheme. Building only phase 1 would deliver a London-Manchester time of 1 hour 40 minutes, just under 30 minutes faster than now.

### Absurd exaggerations of benefits

Conscious that HS2 fails any evidence-based assessment, its supporters often take a more faith-based approach, asserting that it is simply too special to be judged by normal criteria. As Allan Cook, its most recent

38. [Link](#)

39. [Link](#), page 81

40. *ibid*

41. [Link](#)

42. [Link](#)

43. [Link](#), page 22

chairman, put it, “the existing cost/benefit model, which was designed for smaller scale schemes, has proved inadequate in capturing the full transformational effect of HS2.”<sup>44</sup>

It seems unlikely that any long-distance rail scheme can have truly “transformational effect,” since rail only accounts for about 2 per cent of all journeys by volume. Long-distance rail accounts for 8.5% of rail journeys, in other words about 0.17% of all journeys. It is difficult to see how improvements to some of these long-distance journeys will be “transformational” in the way claimed (there will also be effects on local services but these are limited.) Even if every seat on every HS2 train was filled every day, the number of journeys would still be a tiny fraction of those made by other means.

The only UK domestic high-speed rail service so far, HS1 from London to Kent, has not been transformational: by last year, 12 years after it began operations, only 2,364 of the predicted 15,000 new homes at the Ebbsfleet stop had been completed<sup>45</sup>, despite it being 17 minutes by high-speed train from the centre of the most important city in Europe. The only official evaluation, published six years after domestic HS1 services began, found that regeneration along the route “could not be considered significant to date”.<sup>46</sup>

But there has certainly been no shortage of claimed transformational effects: for the sake of space, we only deal with a few below.

### “Half a million new jobs”

Allan Cook’s predecessor as HS2 chairman, Terry Morgan, said in 2018 that it would create 500,000 new jobs<sup>47</sup>, adding that this was “just the beginning.”<sup>48</sup> The figure was repeated in Cook’s chairman’s stocktake the following year and the claim that it will “significantly improve connectivity... creating 500,000 extra jobs” is still made on HS2’s website.<sup>49</sup>

To put it kindly, this is a number with few visible means of support. The total, actually 451,000, was produced by HS2 Ltd adding up various claims made in the HS2 “growth strategies” published by local authorities and regional bodies along the line.<sup>50</sup> It includes, for instance, a claim that HS2 will create 37,000 new jobs in Crewe - a place where there are only 23,000 jobs at the moment.<sup>51</sup> Even the source document, a local council report, only states the figure as an “up to” and no evidence is given for how it was reached.<sup>52</sup>

The “500,000” figure also includes a claim by the West Midlands Combined Authority, since deleted from its website, that “the project will transform the West Midlands by creating more than 100,000 jobs, adding £14 billion to the local economy.”<sup>53</sup> Birmingham City Council previously predicted a much lower number, “nearly 13,000,” of new jobs in “Greater Birmingham.”<sup>54</sup> Centro, the then WM transport authority, predicted 22,000 new jobs in the West Midlands from HS2<sup>55</sup>, or 51,000 jobs with an additional £2bn package of local transport improvements.

44. [Link](#)

45. [Link](#), page 2

46. [Link](#)

47. [Link](#)

48. [Link](#)

49. [Link](#)

50. [Link](#)

51. HS2 Hub Draft Masterplan Vision, Cheshire East Council.

52. *ibid.*

53. [Link](#)

54. HS2 Strategic Case, page 97.

55. [Link](#)

The 100k number seems to derive from a claim, also unevidenced, by one of the Local Enterprise Partnerships that 104,000 jobs could be “created and safeguarded” by the scheme<sup>56</sup> - not the same thing at all, of course. As described below, parts of the West Midlands, including Coventry, will see their transport links made worse by HS2.

In Greater Manchester, HS2 is claimed to create 96,000 new jobs. But the council document it’s drawn from again gives no source for the figure and makes clear that it refers to jobs delivered by HS2 and Northern Powerhouse Rail.<sup>57</sup> As in the West Midlands, parts of GM, such as Stockport, will lose transport links under HS2. The East Midlands accounts for 74,000 of the new jobs, according to HS2. But the source document is far more indirect: “Our analysis suggests that by targeting some of our key sectors that can benefit from HS2 connectivity, in particular manufacturing, technology and high value services, we can boost employment growth from just below to above the projected UK trend - equivalent to an additional 74,000 jobs and almost £4 billion of GVA by 2043.”<sup>58</sup>

### “A trillion-pound jackpot”

Another source of absurdly exaggerated claims about HS2 is the Northern Powerhouse Partnership lobby group, which claimed in 2019 that HS2 and Northern Powerhouse Rail were “key to unlocking” a “£1008 billion prize” for the North’s economy.<sup>59</sup> This was then reported as a “one-trillion pound jackpot for the North if HS2 gets the go-ahead.”<sup>60</sup>

The (then three-year-old) source document for this figure, the Northern Powerhouse Independent Economic Review,<sup>61</sup> didn’t even mention HS2, except in an annexe. Instead it listed a series of other things needed to achieve the prize, including improvements in skills, innovation, and more inward investment. The review spoke a great deal about transport, but was clear that the improvements required were overwhelmingly to local and regional networks, not long-distance.

### “The only way of solving the North-South divide”

Will Roberts, director of the High Speed Rail Industry Leaders’ Group, told the Daily Telegraph in 2020 that “HS2 is the only option on the table for solving Britain’s North-South divide,”<sup>62</sup> a claim echoed by the HS2 lobbyist Jim Steer who called it “the only game in town that addresses the North-South imbalance.”<sup>63</sup> HS2 describes itself as “the UK’s flagship transport levelling-up project.”<sup>64</sup>

Buried in HS2’s official economic case, however, is a table showing that 43 per cent of its benefits go to London and the South-East<sup>65</sup>, meaning its effect in narrowing regional inequality will be little better than neutral. The regional breakdown of benefits is as follows:

56. [Link](#)

57. Greater Manchester HS2 and NPR Growth Strategy.

58. East Midlands HS2 Growth Strategy.

59. [Link](#)

60. [Link](#)

61. [Link](#)

62. 8 Jan 2020.

63. [Link](#)

64. [Link](#)

65. [Link](#), page 75.

London and South East	43%
North West	18%
West Midlands	12%
Yorkshire and the Humber	10%
Scotland	5%
East Midlands	4%
North East	4%
Wales, South West, East	3%

This calculation was done before the shortening of the leg to Yorkshire.

The claim that there is no other way of narrowing the North-South divide is puzzling. As many, including the Tees metro mayor Ben Houchen, have argued, what the North really lacks in transport compared to the South-East is not fast rail links to London - which it already has - but frequent, dense and high-quality local services allowing people to travel easily within the region itself. As Houchen and others have said, the money being spent on HS2 could do more good, to more people, more quickly, and in more places in need of levelling up if it was spent on larger numbers of smaller schemes to improve the services that people actually use. HS2 will improve some local services, but only indirectly.

High-speed rail serves a predominantly highly affluent demographic, with the richest 10% in France, for instance, making 28% of all journeys and taking nine times as many trips as the poorest decile. HS2 will run mainly to large metropolitan centres, accelerating the already noticeable disparities between regional hub cities like Manchester and Birmingham and the harder-pressed smaller places around them, such as Bolton, Oldham, Coventry, Wolverhampton and Walsall.

Direct harm may also be caused to about 20 smaller cities and large towns - most clear levelling-up candidates - which are on the existing main lines but which are bypassed or not served by HS2 and are likely to see their fast rail services to London slowed down and/or reduced. One of HS2's explicit purposes is to free space on the existing West Coast Main Line (WCML) by removing long-distance trains from it. Based on HS2's "central case indicative train service specification"<sup>66</sup> and a possible planned post-HS2 West Coast Main Line service<sup>67</sup> these include:

**Coventry and Rugby**, which pre-covid had three WCML fast trains an hour from London, taking less than an hour. Likely to see WCML service reduced to two fast trains, both taking longer than now. Neither place will be served by HS2.

**Stoke on Trent and Macclesfield**, which pre-covid had (and will have again from December) two WCML fast trains an hour from London and Manchester, taking 1 hr 25 min to Stoke and 1 hr 40 to Macclesfield. Likely to see WCML service reduced to one train per hour, possibly also travelling via Birmingham and/or Stafford and taking longer. Both towns

66. [Link](#), page 43

67. [Link](#), page 76

are promised an HS2 service, from London only, but it does not appear in the “central case indicative train service specification” published by HS2, only in possible “options” to it.<sup>68</sup> Even if a service is provided, it is unlikely to be as frequent or viable as the services they lose, since it will be a stand-alone service for those relatively smaller places rather than, as now, part of a wider service to the major traffic centre of Manchester.

**Wilmslow**, which currently has an hourly WCML fast service from London, likely to be removed altogether. HS2 will not serve Wilmslow.

**Stockport**, which pre-covid had three WCML fast trains from London each hour (and will have again from December). Likely to lose two of these three. HS2 will not serve Stockport.

**Lancaster, Oxenholme and Penrith**, serving a university city and the major tourist destination of the Lake District. Currently have one fast WCML train to London most hours plus a slower one some hours via Birmingham. The fast will be removed, leaving only a slower service via Birmingham. HS2 trains from London to Scotland will run through these stations non-stop so as to maintain journey times to Scotland (HS2 trains will be slower on this section of conventional track than the existing trains, because they won't tilt.) An HS2 service to Birmingham will be provided.

**Tamworth, Nuneaton, Lichfield, Stafford, Wellingborough, Kettering, Market Harborough, Leicester, Loughborough, Sandwell & Dudley, and Wolverhampton** are also likely to see their fast services to London reduced and/or slowed down.

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68. [Link](#), page 43



## Would cutting HS2 be politically damaging?

The likely consequence of cancelling any or all of Phase 2 will be accusations of betraying levelling up, as with last November's Integrated Rail Plan, when HS2's eastern leg to Yorkshire was shortened to run only to the East Midlands.

Some of the reaction to that was undeniably heartfelt. A rail investment package worth £96 billion was described by Steve Rotherham, the mayor of Liverpool city region, as "cheap and nasty;"<sup>69</sup> by Sir Keir Starmer, the Labour leader, as "crumbs from the table;"<sup>70</sup> and by one Yorkshire Post columnist as "the 21st century equivalent of the Beeching line closures in the 1960s."<sup>71</sup> The paper's editor, James Mitchinson, almost broke down on the page, writing that he "became emotional...I've taken this one so personally...I'm almost grieving for what I know the people living in our region have been denied."<sup>72</sup>

It soon became clear, however, that the emotions of the regional elite - big-city council leaders and journalists - were simply not shared by the people of Yorkshire. Polling done for an HS2 lobby group found that in South Yorkshire only 29 per cent opposed the scheme's cancellation, and 39 per cent in West Yorkshire.<sup>73</sup> Labour politicians representing places outside the metropolitan centres, such as Wakefield, Barnsley, Rotherham and Doncaster, declared themselves in support of the plan.

Public opinion in every part of the country is and always has been against HS2, by roughly two to one in those who express a preference - but the North has usually been slightly more against it than the UK as a whole (see YouGov data below). Public opinion in every region overwhelmingly favours investment in local over long distance transport, by roughly six to one - and again slightly more emphatically in the North than in the UK as a whole. Neither of these things changed after the IRP, and nor would they change if HS2's remaining northern sections were cancelled.

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69. [Link](#)

70. Yorkshire Post, 19.11.21.

71. [Link](#)

72. [Link](#)

73. Opinion for High Speed Rail Group, 27.1.22-1.2.22, as reported in Yorkshire Post, 17.2.22.

**YouGov polling on 29 November 2021, eleven days after the Integrated Rail Plan, found the following. \*Change is from the previous YouGov poll on 14 June.”<sup>74</sup>**

**Which would you most prefer govt to invest in?**

	North	Chg*	UK	Chg*
Local and commuter rail	30	+6	26	+3
Long distance rail	7	+1	6	+1
Buses	13	nc	13	+1
New roads	3	nc	5	+1
Widening/ upgrading roads	22	-1	21	-3
Cycling	5	-7	9	-2

**Support/ oppose HS2 (29.11)**

	North	Chg*	UK	Chg*
Strongly support	7	+1	8	+2
Tend to support	18	nc	19	nc
Total support	25	+1	27	+2
Neither support nor oppose	20	-5	26	+1
Tend to oppose	20	nc	17	-1
Strongly oppose	19	-3	18	-3
Net support	39	-3	35	-4
Don't know	16	+8	13	+2

<sup>74</sup>. [Link](#)



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