

Transport Committee

Oral evidence: [Integrated rail plan](#), HC 974

Wednesday 9 March 2022

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[Watch the meeting](#)

Members present: Huw Merriman (Chair); Mr Ben Bradshaw; Simon Jupp; Chris Loder; Karl McCartney; Grahame Morris; Gavin Newlands; Greg Smith.

Questions 141–181

Witnesses

[II](#): Gareth Dennis, Lecturer in Railway Studies; Professor Jon Shaw, Deputy Chair, European Platform for Transport Sciences; Professor Iain Docherty, Dean, Institute for Advanced Studies; and Karen Heppenstall, Head of Rail, Midlands Connect.

Written evidence from witnesses:

- [Gareth Dennis](#)
- [Gareth Dennis](#)
- [Midlands Connect](#)

Examination of witnesses

Witnesses: Gareth Dennis, Professor Shaw, Professor Docherty and Karen Heppenstall.

Q141 **Chair:** We are back for our second evidence session. I will ask the witnesses to introduce themselves. We have one witness in the room and three on the screen. I will start with the room.

Gareth Dennis: My name is Gareth Dennis. I am a railway engineer and writer and lecturer in transport systems.

Q142 **Chair:** Tell us where you lecture.

Gareth Dennis: I lecture at the University of Birmingham's Centre for Railway Research and Education.

Q143 **Chair:** Excellent. Thank you, Gareth. I will go round the room on the screen as I see it. Perhaps we can start with Karen.

Karen Heppenstall: Good morning, and thank you, Chair. I am head of rail at Midlands Connect, which is the sub-national transport body for the whole of the midlands region.

Professor Shaw: Good morning, Chair. I am professor of transport geography at the university of Plymouth.

Professor Docherty: Good morning, Chair. I am professor of public policy and governance and the dean of the Institute for Advanced Studies at the University of Stirling. I have held a number of related professional external posts over the years, most recently as the external member on the board of the Strategic Transport Projects Review and for the Scottish Government, and now I am on the National Transport Authority of Ireland.

Q144 **Chair:** Thank you. We have a team of academics and rail strategists. This is an ideal opportunity for us to drill into whether the IRP can be delivered as a whole and what the impact will be on the network as a whole. Previously, we have heard from people who have regional ownership and bias—I do not mean that in an unkind way—so we are really keen to drill into this whole plan and whether it stacks up and can be delivered.

I will start with an opener and ask each of you to answer for not too long but just to set the scene. How far do you believe the integrated rail plan will contribute towards the Government's intentions to level up the midlands and the north? I will start with you, Gareth, as you introduced yourself first.

Gareth Dennis: I am very grateful for the opportunity to appear before the Committee. It is important for me to make clear that I am doing so wholly in a personal capacity as an engineer, writer and lecturer. My



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views do not necessarily represent or reflect those of my employers. I just wanted to make that clear at the start of the session.

Chair: That goes without saying for all of you. Do not hold back. It will not be on your university or—

Gareth Dennis: It is always good news for candidness when I open with those remarks.

My general reaction to the IRP is this. I am grateful to Mayor Street, who has actually made quite a lot of my necessary initial statements for me.

Just to reiterate, the main benefits of High Speed 2, and indeed of Northern Powerhouse Rail, were in released capacity not actually on those new lines. The main benefits are on the existing railway network. This is a point that is really important and is absolutely critical to grasp. It is in released capacity for more local services, more regional services and more freight.

It is also worth saying that the business case for those projects does not account for those benefits. The benefits are not included within the benefit-cost ratios of those projects.

There are all sorts of reasons for that, which I am sure we could unpick, such as transport appraisal guidelines for the DfT, the Green Book and so on and so forth. It is really crucial to understand that before looking at the integrated rail plan.

When you look at the integrated rail plan, it is a bit of a Jekyll and Hyde document because that released capacity benefit is not well understood by the integrated rail plan. There is a large amount of the document dedicated to journey times and connections between major centres. There is very little heed towards the impact on the existing network, particularly for intermediate stations and the smaller stations that, frankly, are the ones that connect people into the wider network and so are critical.

My reaction to the IRP was disappointment that that mistake had been made. It seemed like a lot of the lessons of lots of people making the point had not been learnt. If we go back to the earliest Network Rail documents in the late 2000s that talked about the need for new lines in the new lines programme, they were explicit that the benefits of new lines is in the capacity on new lines but crucially the released capacity on the existing network, as earlier described by Mayor Street.

It was mostly disappointment and frustration because, whilst it is excellent that the western side of HS2 is going forward—and we have heard about the benefits of that with released capacity through Birmingham New Street and onwards—those benefits do not disappear on the eastern side of the country. Arguably, HS2's eastern leg is its most critical section because of how fundamentally it transforms connectivity on that side of the country.



The west coast main line has long been the jewel in the crown of the rail network in the UK. It has excellent high-speed electric services already. There are obviously capacity challenges. There is no single neat high-speed line or intercity line that connects the west side of the country. If you look at a satellite map of the country at night, you can naturally see the urban sprawl of England, through the midlands and up to the north.

I think my general reaction to the IRP is disappointment that it focuses so squarely on journey times towards London at the expense of connectivity between, say, Birmingham, Yorkshire, the north-east and east-west. There are lots of missed opportunities. I think we will probably drill down into some of the specific details of those lost opportunities through this session.

Q145 **Chair:** I am going to resist the temptation to drill into some of the points you make because I will career all over everyone else's sections, but do not think I have not taken that on board. Let us ask the same question to the other witnesses on the screen.

Karen, what do you feel in terms of levelling up, not just for the midlands but for the north and indeed the country as a whole?

Karen Heppenstall: Thank you, Chair. To emphasise, your question was about levelling up, rather than our immediate reaction to the IRP. As Midlands Connect, we think about levelling up at several different scales. From a national scale in terms of levelling up, the IRP goes quite a long way towards levelling up the country. We have lots of evidence about transport expenditure over the last five to 10 years. It is very evident that both the midlands and the north are significantly below the national average in transport expenditure.

For example, the east midlands was at a 40% deficit compared to the national average of transport expenditure. I think this investment outlined in the IRP will at least go some of the way towards correcting that, although there is a lot more that can be done. Gareth referred specifically to the missed and lost opportunities that the IRP could have addressed but did not.

Another thing I will mention immediately is that, although the IRP is specifically intended to be about the midlands and the north, there are ways in which the IRP will touch other regions. Our neighbouring regions of England's economic heartland—Transport East and Western Gateway in particular—will also benefit from the investment in the IRP, so the levelling up goes beyond the midlands and the north from that perspective.

Specifically from a midlands perspective, we think about levelling up as much from a regional and local perspective as from a national perspective. We want to see our towns and cities joined closer together with improved connectivity, to take advantage of those agglomeration benefits. While we have had winners in the IRP—the journey times to



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Nottingham are obviously excellent from our perspective—there are also losers as well. Leicester and Coventry are two obvious ones. Leicester barely gets a mention within the IRP. Coventry has only a passing mention. Both of those are really big cities that would significantly benefit from the same agglomeration benefits for other cities within the IRP.

We have our own scheme to provide direct train services between Coventry and Leicester that we had hoped would have been mentioned in the IRP but was not. That has a very strong business case. As I say, there are lots of good things but lots of missed opportunities where levelling up could be even stronger than it currently is.

Q146 **Chair:** Jon, the same question to you in terms of how this plan contributes to levelling up the country.

Professor Shaw: Thank you, Chair. I would like to re-emphasise the other witnesses' welcome of the document. It is nice to see such big investment plans in times of cuts.

I would also emphasise the points that have been made in relation to the importance of capacity and where we might have some missed opportunities. Mayor Street very much made the point that the benefits would be combined with the midlands hub and HS2 in order to fully release that capacity. Obviously, there is a lot of work being done there. I draw the parallel that one of the benefits of the original plans of the Y-network plus HS3 and Transport for the North's plans for upgrading the Pennine routes and so on would have had a similar effect. So really making the most of that capacity and potential opportunity is lost there.

Specifically related to levelling up, it is the fact that some cities will now clearly benefit more than others. Birmingham, Manchester and London are big winners. Leeds and Bradford are much less so. That suggests to me that there will be uneven geographic implications in terms of levelling up. We might be baking that unevenness further into the economy and the future if we are not careful.

I welcome the document, but I do agree with the other witnesses that there are missed opportunities. It particularly represents something that we are not so good at in this country, which is planning strategically across the whole of the railway network and across the whole of the transport network for a long period of time. I think we do run the risk of potentially baking in some inequalities into the future.

Professor Docherty: Again, there are substantial areas of agreement between what I am about to say and my fellow witnesses. I know we do not want to spend too much time today looking back, but it is important to say at the outset that we have come a long way from the original conceptualisation of what high-speed rail in Great Britain might look like. It was a very segregated new system with as few interfaces to the classic network as possible, precisely to release capacity on the existing network.



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That is particularly important for this reason. We know from research that major transport schemes are much better at moving the economy around than in growing it. I am sure, when we come to drill down further, we will talk about the impacts of agglomeration and whether they still hold with the lessons of Covid, for example. I do not think it is surprising to see Mayor Street, for example, being so positive about the outcome of the IRP because Birmingham is clearly a big winner from the plans that we have ended up with. As Jon has just said, that is not the case in some other places.

It is fairly clear from the evidence that you heard earlier this morning and from your own visits to Yorkshire that the stakeholders in that region of the country feel quite aggrieved. It is fair to say that their competitive position will be much diminished in comparison with some other centres that have done better out of the plan.

There are winners and losers. I also think that we need to maintain our understanding that any of these kinds of investments are almost literally two-way streets. Levelling up is quite a difficult concept to define at the best of times. I am sure Members will be aware of the debate which the White Paper itself has elicited on whether the scale of investment and the policy interventions will do what is wished for.

We need to be very careful in particular about London and the prospect that Old Oak Common could, in fact, become as much of an additional centre of growth as any of the provincial cities. There is that issue that you might wish to think about.

To be more positive, though, I would also like to make sure that we have a focus on the impact of the IRP on HS2 and decarbonisation. It is not strictly speaking on the same topic literally as the economy question that you just asked me, but I do not think there is a realistic pathway to decarbonising transport in the UK without very much greater rail capacity. New lines are an important part of that.

One thing to link the decarbonisation agenda with levelling up, Chair, is that I do wonder about some of the choices that have been made, particularly in the north of England, and whether they would be the same ones if the first phase of HS2 had not been so expensive because of its specification and its route.

Q147 Chair: Thank you. It is right that I put the opening question to all four of you. I might just ask two of you to come back on the next points I had. Iain, you mentioned the difficulty in defining levelling up. We had an inquiry on transport infrastructure and deliverability. Within that we could not find a definition of levelling up. Therefore, our concern was, what will the milestones be and how do you measure it if you cannot even define it?

We also talked about the big challenges in delivering some of these big projects like HS2 and Crossrail to time and budget. With regard to the



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IRP, what challenges do you see with regard to delivering it on time and budget? Does it feel realistic? I will come back to Gareth, who is in the room, because he is nodding at me. That suggests that he would be willing to answer that. I will then come to one other witness, and then I have another question for the other two.

Gareth Dennis: I will very briefly talk specifically about a way we could define levelling up, and then I will come back to the challenges and the implementation.

For me, the way to look at how you might define levelling up is to look at what the rail network outside the M25 looks like. A good way to do this is to look at similar sorts of towns and the way they are connected to local hubs. This connects to the way that delivery works as well, so it is relevant.

Picking a few examples, let us take Shenfield in Essex, up at the end of Crossrail. It is 20 miles from London and has a population of around 10,000 people. It has a peak of 10 trains an hour into London, which provides a system capacity of 15,000 passengers per hour. That is a pretty reasonable-sized rail provision.

If we go to Marsden, which has recently been made famous by the fact that it is going to be at the end of one of the tunnels of the IRP, it has two trains an hour into the nearest centre, which is Manchester. That provides a capacity of 568 passengers per direction. Outward in west Yorkshire it is a similar story. There is a population of 7,600 with 568 passengers per direction on two trains an hour. The worst—and this is one of the key challenges with the IRP plonking long-distance trains into Derby station—is that it obliterates the chance to enhance regional and local services. Belper in Derbyshire is eight miles from Derby. It has a population of 20,000 people and it only has two trains an hour, but because the trains are so short that capacity is 296 passengers per hour per direction.

For clarity, when we talk about levelling up, is it right that a town that is half the distance and twice the size of Shenfield from its nearest major centre has 2% of the rail capacity? That is what levelling up is about. That is decades of underinvestment. That, for me, is a good way to define that.

Coming specifically to challenges in implementing the IRP, because of the IRP's reliance, particularly for the eastern leg and the Northern Powerhouse Rail replacement, it is worth looking back at similar projects. We have a perfect example in the west coast route modernisation. That was a major scheme that followed a very similar logic to the IRP, with lots of promises of improved journey times. It is worth exploring what that looked like.

In 1998 the cost of west coast route modernisation was £2.4 billion in 2002 prices. By 2002 the price had gone up to £9.6 billion, so there was



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a fourfold increase in the capital expenditure for that scheme. It was also delayed by so many years. It took about double the time to deliver. Given that that was based on very similar promises, with a reliance on digital signalling technology to improve capacity, achieving an increase in capacity would be at the expense of local stations—indeed, local stations were closed to deliver what west coast route modernisation did. There are lots of parallels.

If we then imagine that the quoted cost for the upgrades to the east coast main line and the midland main line from the IRP are between £5.8 billion and £7.2 billion, and if we imagine that that has the same level of slippage with a fourfold increase in cost, you are looking at £28.8 billion. That is not dissimilar to the eastern leg cost of £32 billion.

You might say that that might slip as well, but if you look at High Speed 1, the cost of that slipped by about 20%. That was only a marginal increase. There is a potential that we will be spending as much to deliver the upgrades on the existing network as we will to just build the initial project.

If you talk about disruption to the existing network, that is a good proxy. I am an engineer, so I have the advantage of both a top-down and a bottom-up, literally nuts and bolts view of the railway. Andrew Haines, the CEO of Network Rail, released a letter. I think it was leaked in 2019. I am sorry, Andrew, for referring to your leaked letter. He pointed out that it will take 29 years of disruptive interventions on the east coast main line to deliver only a fraction of what HS2 east would have. It is worth us exploring those challenges in deliverability. It is a serious challenge to deliver this level of complex intervention. It is also worth stating that this will provide less. The result of this work will be less regional and less local capacity than there is now. It is absolutely worth reiterating that. There will be less capacity on those lines for local stations than there is now as a result of what the IRP proposes.

Q148 Chair: You are looking at the past as a sort of basis to say that you cannot really deliver this to time or cost.

Gareth Dennis: Obviously, as an engineer we get better at things. We learn lessons, or do we? But it is worth us paying attention to major schemes and at least attempting to learn from the mistakes that were made in the past.

Q149 Chair: Thank you. Karen, you have your hand up. I will then come to Jon and Iain with the other question I have.

Karen Heppenstall: Thank you, Chair. The other particular point I would like to raise is the importance of working with the supply chain in the delivery of the IRP. We have done some research recently that demonstrates that there is significant constraint within the supply chain's ability to deliver rail infrastructure projects—in fact all transport infrastructure projects over the next five, 10 or 20 years.



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The first key aspect that we have to address as a whole industry is how we attract a stronger supply chain base. How do we attract graduates and apprentices into the supply chain and make rail attractive for them to be able to work? Part of that is making sure that there is a clear pipeline. The IRP definitely provides that.

The other aspect of it is bringing the supply chain on the journey with us and involving them at an early enough stage to make sure that they can help to address some of the cost and time risks that Gareth has highlighted. The supply chain is excellent at doing that. I was with them a week ago talking about the IRP specifically. They are full of enthusiasm to get involved at the earliest possible stage and to help with the cost challenge that we are facing in the delivery of the IRP.

Q150 Chair: Thank you. Jon and Iain, this question is slightly related, so you get an opportunity to get a bite first. It is the biggest challenge that Network Rail as an organisation will face when delivering the IRP. They are also involved in the setting up of Great British Railways and may end up being the body long term that is Great British Railways. How can they deliver all this to budget and time?

Professor Shaw: It is a good question. Uncertainty is obviously something that is writ large around the industry at the moment. We wait to see what the developments in terms of GBR will do. That will certainly test their institutional capacity.

Reflecting on what Gareth said a minute ago, one of the key things which strikes me from the past is the importance of sustained and consistent political support in order for the industry to get into a place where it can rely on that support to be able to deliver for the future. We have a litany of stop-start approaches within the industry. There is any number of lists of schemes that will be familiar to your Members, depending on their constituencies, where the Government have said that they were going to do something and then they decided that it has got a bit too expensive, so they pull the plug and we go back to a reset position. That does not help the point about the supply chain either.

It will be very important to make sure that as Network Rail is gearing itself up to deliver across the industry, both in leadership and in engineering terms, there is consistency of support at Government level. That is important both to be able to plan to get the supply chain on board and also for value-for-money considerations. As I have hinted there, it tends to make Ministers panic and pull the plug, which sets everything back because it brings massive disruption, supply chain uncertainty and so on. Those are the points that I would bring into the debate there.

Q151 Chair: Thank you, Jon. Iain, the same point to you.

Professor Docherty: Thanks, Chair. I would associate myself with many of those comments, first of all, about the underlying cost base of the industry still being very significantly higher than might be expected given



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what is achieved in other comparable European systems. I am sure that Members of the Committee will be aware of the long history of our conversation about how much it costs to do civil engineering in the UK. The issue in the McNulty report on rail costs, which is now some years old, is still very much alive.

On stop-start, some of the lines that we are talking about here—particularly the midland main line—would be much further along the road to electrification if we had not cancelled them as a result of cost overruns on other schemes in recent years. These are very real issues.

One thing I would say about the core risk as I see it in the plan is that, despite all the phraseology about the core portfolio and it being flexible and having an adaptive approach to projects beyond that core portfolio, and the work that the National Infrastructure Commission has done on trying to think about planning in a sensitive and more coherent pipeline over the long term, there are still some real uncertainties about exactly what the long-term future will be for core routes that will interplay with those that are in the IRP.

The best example is, what is the east coast main line going to be for in this world? What will the balance be between long-distance services to Yorkshire and to Leeds if there is no eastern leg to the north-east and Scotland? How does that interplay with services closer to London? There are some sections and statements in the plan about work that will need to be done on project refinement and business cases for incremental improvements, but these are very significant uncertainties and risks, and open up all the kinds of possibilities for cost overrun that Gareth spoke about particularly when he reminded us all about the west coast main line modernisation project about 15 years ago.

On Network Rail, I know that Andrew Haines is acutely aware of the last few years and how that has turned out in terms of that organisation's performance in delivering schemes to budget. I think they are making substantial progress. Up here in Scotland, for example, we have been able to get the cost of electrification per route kilometre down to something like £2 million now, which is £1 million less than in England. That is a substantial difference. That is being worked at very hard by Network Rail here to understand local conditions and to begin to make real on Andrew's promise to devolve more operational control to those elements of Network Rail that really understand the situation on the ground.

Your question was also asking whether there is scope to achieve substantial cost savings or at least to make sure that we do not overrun. I think there is, but the risk remains, as Gareth pointed out at the beginning of this section, that trying to upgrade a fully operational mainline railway is always riskier than essentially building something new on a clean site. That risk needs to be taken fully into account.

Q152 **Chair:** Thank you. Moving on from the actual cost and timescales, I



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wanted to ask about the proposed journey times set out in the IRP. As we have heard, there has been a lot of focus on journey times in the document, but, as Gavin Newlands mentioned in the previous session, when we have spoken to witnesses they have talked more about the importance of capacity, reliability and durability, as Gavin put it, and the regeneration benefits.

Do you believe that those journey times are deliverable? Are there any in particular that stick out to you in terms of, "I just can't see how that will happen"? Again, Gareth has his hand up in the room so I will start with him on that one and pick one more.

Gareth Dennis: I will keep this brief. Let us talk about Bradford as an example. I think Bradford gets forgotten in all of this despite, if you like, almost being the heart of the north. It certainly would have been if NPR had been delivered as originally proposed.

The suggestion is that the IRP will achieve 12-minute journey times from Leeds to Bradford. That is a key component in justifying the cut of the new line through that city. It is Britain's youngest city, by the way, and it is the sixth largest.

Looking at the actual specifics of that, what that means is quite a substantial need to increase average speeds on that line. It is a line that is limited to about 60 mph by physical constraints. It is not just by signalling but literally by the curvature of the railway, and by the fact that there are two railway stations sat between Leeds and Bradford. You have Bramley and New Pudsey stations.

At the moment, the best journey time you can achieve on that line without stopping is about 17 minutes. To shave those two minutes—and it may be a useful point to highlight because it is relevant to the east coast and midland main lines as well—those savings do not necessarily come from increasing the top speed. They do not come from going from 60 to 75. They are going to come from incredibly expensive work to increase the speeds at the low-speed approaches into Bradford or into Leeds.

Just to give you, hopefully, a useful idea of scale, one mile at 15 mph takes four minutes. One mile at 40 mph takes one and a half minutes. So, for one mile increasing the speed from 15 to 40 mph would give you a two-and-a-half-minute saving. At the other end of the spectrum, 20 miles at 100 mph takes 12 minutes; 20 miles at 125 mph takes nine and a half minutes, which is only a two-and-a-half-minute saving. You would have to have a 20-mile upgrade for the upper end of the speeds compared to a one-mile saving at the lower end. This is relevant particularly somewhere like Leeds, where you have quite a long approach. I am sure that you have all travelled by train to Leeds. It is quite a long approach. You sit weaving along and it is all quite slow. There is no easy way to fix that because it is an incredibly complicated series of junctions overlaid on top of each other, leading to all sorts of



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chaos, particularly for me in my day job trying to unpick that stuff. That is very challenging.

In the case of Bradford, it will be very difficult to reach those journey time savings without substantial remodelling. Leeds-Bradford is a bit more straightforward; the interchange approaches are at least reasonably straightforward. But Leeds is an incredibly complicated railway area and tens of millions have already been spent unpicking that.

It is then worth looking at the east coast main line. The suggestion that the increase in speed to 140 mph will provide the journey time benefits is not accurate. There is a very short number of miles. There are very few miles where you can actually increase the speeds from 125 to 140. As I have hopefully highlighted with my example of minutes earlier, those do not offer very good journey time benefits. It is all about the very expensive unpicking of those junctions.

From a journey time perspective, where the new lines are not being proposed, there is no evidence that the IRP will achieve those journey times. I have to say as an engineer that I am sceptical of the ability to deliver those journey times without substantially more work than is being proposed by the IRP.

Q153 Chair: You have touched on Bradford. We went from Leeds to Bradford. We had a brilliant presentation, not just from the local authority team but also by the businesses there. They talked about the vibrancy. As you say, it is the youngest city in terms of age.

One of the points in the IRP was that the new station would be too far out of town, but we walked the site and it did not feel as if our limbs were in difficulty. Has Bradford just been misunderstood?

Gareth Dennis: Bradford should be particularly smarting after the IRP. It is a city about the same size as Leipzig in Germany. The German Government have fairly recently opened a new through station in Leipzig for quite a lot of money. The Government in Germany have said, "Do you know what? Leipzig is a city that deserves investing in because there is a huge amount of opportunity there." It is very difficult to come away from the IRP's proposals without thinking that the Government just does not think that Bradford deserves that investment. For the people in Bradford, and in West Yorkshire generally, that is pretty disappointing. I think they are justified in being pretty angry about that.

Q154 Chair: I am going to come to the witnesses on the screen, but it is helpful to throw all these questions in and you can decide which ones you want to come in on. On the Leeds-Bradford example, when we visited, there had been a lot of focus on the new station at Bradford, but it became apparent to us that the Leeds station was running at 105% capacity. It is the third biggest station of difficulty as to the impacts of reliability on the rest of the network. I cannot quite remember the number of trains through Leeds that are late and the percentage, but I



will come back to that. Anyway, it seems very substantial.

The concern that some had was that you cannot actually deliver the HS2 trains because there isn't the capacity, as I mentioned, if they do come in, and because this new line is on part-existing it just will not fit in. Again, I was wondering if the stations actually have the capacity to be able to handle the IRP. I will come back to you, Karen.

Gareth Dennis: I will be very brief. I am conscious that other witnesses have not spoken for a little while. Very briefly, Leeds is very constrained. You essentially cannot fit any more platforms through that east-west access of the current station, and they are already pretty squeezed in. The challenge you have is that long-distance services, particularly the ones coming up from London, park and use those platforms. They sit there while they are being cleaned and swapped round for tens of minutes, clogging up valuable platform space that could otherwise be used by suburban and local services.

The shape of the new platforms—the "T", if you like—the connection, the new line and the new corridor being built are absolutely critical. You take those long-distance services, plonk them on new platforms and free up the platforms that are just sat, clogged up, doing nothing for more useful regional services that actually benefit. It is not just the NPR ones but services headed up towards Ilkley and potentially then towards Bradford as well.

Q155 **Chair:** Our amazing second clerk has come up with the information that I could not get hold of, which is that 50% of trains are late coming through Leeds. Thank you for bailing me out.

Let me just ask the other witnesses about the focus on train times and whether, in fact, they are deliverable. Karen, first of all.

Karen Heppenstall: I will pick up predominantly on two things that Mayor Street raised as part of his evidence session earlier that specifically relate to this point.

First of all, in terms of journey times, I am not going to comment upon the robustness of journey times because I think Gareth has given you a really good answer to that. What I would like to pick up in particular is the Birmingham to Leeds journey time stated in the IRP and reflecting that back to what had been promised under the full HS2 Y network. Birmingham to Leeds was the single most transformative journey time under the full HS2 Y network. It was a journey time of 49 minutes from 118 minutes today. The IRP has pared that back to a very inadequate 89 minutes via the HS2 link to Manchester and NPR across to Leeds. Mayor Street specifically raised it as a point. I think it is something that is a significant weakness in the IRP compared to what had been promised under the previous Y network. Actually, that journey time between Birmingham and Leeds is transformational, not just for the west midlands or east midlands but for the whole of that corridor all the way up to Leeds.



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For me, it re-emphasises the absolutely critical importance of continuing to look at what we can do on that HS2 link between the east midlands and Leeds. We know that the Mott work has identified that that journey time could be round about 60 minutes on at least two of the alternative routes, including the east coast main line route that Gareth referred to earlier. I think the Committee must not forget that that is a critical link and something that is definitely a weakness in the IRP.

Secondly, on the capacity of stations, again Mayor Street raised it very well earlier. The capacity in New Street station and the centre of Birmingham on a wider perspective is actually worse than Leeds. I think it is the second worst station in the country, whereas Leeds is only the third worst station in the country. We do know how constrained this is and how midlands rail hub, delivered in its entirety, would solve that problem. It is not just the west chord that was stated in the IRP, but also delivering the east chord, allowing that capacity to be released and put back into Moor Street, would really help with some of those station capacity issues in the centre of Birmingham.

I will leave it there and let some of the other witnesses come in.

Q156 **Chair:** Thanks, Karen. I believe you are right from recollection. Birmingham is the first; Clapham Junction is the second; and then Leeds. That is going from memory of the evidence we had back in Leeds.

Professor Shaw: I will be very quick, Chair. I will just pick up on those two points about journey time and capacity to back up everything that has been said by the other witnesses so far.

For me, the key issue about journey time if these are delivered is the relative difference between them. That really picks up on Karen's point. The whole point about having HS2 and then Northern Powerhouse Rail as one functioning system and network is that it helps to create a single, functioning economic area that joins the cities together. By singling out Leeds and Bradford, the IRP makes the relative reduction in journey times much starker between Manchester and Birmingham, Birmingham and London, Birmingham and Manchester and so on. It takes a lot longer to get from Birmingham to Leeds, or it will do, and from London to Leeds. The key point for me is that relative difference that is apparent.

On capacity, I would add something on Manchester Piccadilly. Mayor Burnham last time gave evidence that he thinks that from day one the terminus station at Piccadilly will be more or less full under the IRP's proposals. It is again worth reflecting on what other countries are doing. Gareth mentioned Leipzig there. In the IRP, it also mentions Stuttgart as one of the other cities that has one of these terminus stations. Again, the German Government have decided that that is not what they want and are building a brand-new, large underground station to take the intercity trains through. We are doing things which other countries are leaving behind.



Q157 **Chair:** Interesting; thank you. And, Iain, finally.

Professor Docherty: I will build on a few points that Jon made there. Yes, of course, journey times are important, but they are only one aspect of the package. Reliability is increasingly important. Again, members of the Committee will know about the impacts of low reliability on the railway after the timetable change in the north the other year and the difficulties that that caused so many people.

To come back to the point that Jon has raised about the relative performance of different parts of the network as envisaged, I think this is really important. What we might end up with here is a genuinely world-class, almost fully segregated, high-speed railway running between London and Manchester via Birmingham. That will be a very reliable railway as well because it will be absolutely contemporary technology. That will be very different from other parts of the network. We call them classic lines for a reason, with all the issues that that brings. It is not just about the relative journey time or relative distance from London, or relative distance from Birmingham, for example, between the different provincial cities. That core west coast trunk route between the three largest city regions will become far better in quality and reliability as well as journey times than the other routes. That must have an effect on reorganising where firms want to locate across the economy.

The second thing I would say, when I read the 12-minute journey time comment in the plan about Leeds to Bradford, is that it is perhaps unkind, but my initial reaction was, "So what?" City-centre-to-city-centre trips like that are quite a small proportion of what the network as a whole is there to do. If we are going to make West Yorkshire more competitive, it is about people being able to live in any part of that region and able to get a job in any other part of it. The city centre connection is only one link. If somebody lives in the west of Bradford and is not able to access a job at the university in the college sector in Leeds, for example, because the local connections are not as good, a few minutes' saving on that city-to-city journey time is going to make almost no difference to them and more generally to the economy. It is about catchment and the density of movement that is possible inside the region.

The final thing I would like to say is that we need to bring those two things together. Another aspect here which reinforces the winners and losers issue is that, if we have this highly reliable, high-speed trunk route between London, Birmingham and Manchester—Birmingham and Manchester because they have the best local and regional rail connections, partly because HS2 will have taken those long-distance services off those networks—they will have yet another advantage that the other cities will not. They will have much better local and regional accessibility to that high-speed chord than Leeds or Bradford would do.

I think that the potential here to move economic activity around rather than growing it is really quite considerable.



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Chair: Thank you very much. That is enough from me. We might want to reverse the witness order as well because I am conscious of where I have gone. Over to Gavin Newlands.

Q158 **Gavin Newlands:** Thank you very much, Chair. I will start with Jon and Karen for this question. We have touched on some of these issues already, but what is your assessment of the likely effect of the cancellation of the HS2 phase on future economic growth, both in the midlands and in the north? I suspect there may be two slightly different answers. I will go to you first, Jon.

Professor Shaw: Thank you very much indeed for the question. Iain has broadly touched on that already in his previous answer. There are going to be winners and losers, and the extent to which places will win and lose will in part depend on their legacy infrastructure and in part on the new infrastructure that is coming.

Of course, it also depends very much on the way in which local, regional and national Government work together in the future. One thing that Mayor Street said earlier on that really struck me was how Birmingham has been able to plan for the arrival of HS2 with relative certainty for some years now—since 2015, I think he said. In Leeds, they were planning for the arrival of HS2 as well and were putting together all sorts of plans for the station and for the economic development of the city. These have been thrown into some disarray as a result. Again, we have another dynamic that gets introduced there. It is partly to do with legacy infrastructure, partly to do with new infrastructure, and partly to do with governmental relations. As Iain says, all of these things combined will have quite a significant impact on the extent to which companies decide to move and where they decide to move to.

I think other witnesses have covered most of the points there.

Q159 **Gavin Newlands:** Karen, do you have anything to add?

Karen Heppenstall: From the perspective of Midlands Connect, despite the headlines that we saw on the morning of the publication of the IRP, I do not think we necessarily view the IRP as having cancelled the eastern leg. In actual fact, the news that HS2 is going to East Midlands Parkway and then delivering direct HS2 services into Nottingham and Derby is a real positive for us. Mayor Street talked about that a little bit earlier.

Very similar to Jon, I think it is the impact of the change that we need to consider. I will raise two specific things. From the perspective of Midlands Connect perspective, obviously we had significant plans around Toton station, which was due to be the HS2 east midlands hub. Inevitably, we are going to need to change our plans around Toton, but I do not think it is a matter of screwing them up and starting again. It is a matter of scaling them differently to recognise that it is no longer an HS2 station, but that we should still get a conventional station on the network and how that can help to regenerate and redevelop the area around Toton and Chetwynd; and how having the hub at East Midlands Parkway can



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help the East Midlands airport, the freeport and Ratcliffe-on-Soar power station. The emphasis might change of how we do development in the east midlands in light of the changed position on where the HS2 east leg is going to go.

The second thing—and probably both Gareth and Jon have touched on this a little already—is that the HS2 line is no longer a segregated line that runs in its own isolated corridor all the way from Birmingham to the east midlands and up to Leeds. Instead, it has a lot more integration with the conventional network. The site of specific concern to us is the area around Trent Junctions and Nottingham station. We know these are already very heavily constrained parts of the conventional network, both in capacity and the space in which they can work.

What we really want is for DFT, Network Rail and HS2 Ltd to give proper thought to how the conventional services that need to run through those areas can work alongside the HS2 services. At the moment our concern is that the conventional services—the local services that everyone has already talked about—do not have space on that network. We need to make sure that they do in order to maximise the benefits of HS2 getting to the east midlands, if that makes sense.

Q160 Gavin Newlands: Thank you very much. I am conscious of the time. I have two more quick questions. I will come to Gareth and Iain, who started to touch on this as well. Will the cancellation of phase 2 be a decision that may create a long-term and even bigger imbalance between the west and the east?

Gareth Dennis: I will take that one first. I will be very quick, and then Iain can follow. Yes, absolutely, just to reinforce the points that Iain, Jon and Karen have made on that front—particularly Iain, talking about the agglomeration effects. Journey times, particularly to London, are focused on a lot in the IRP. It is entirely at the expense of thinking about the sorts of journeys that most people make, which are not between city centres but are often intercity centres or, indeed, between a place that is not in a city centre to another place that is not in a city centre.

If the IRP, in order to generate its journey time improvements, turns your one train an hour into one train every two hours, that means that essentially your effective journey time has increased by quite a large amount, even if the core-to-core journey time has reduced a lot. From my perspective, that drastically diminishes the benefits of what is being proposed.

Q161 Gavin Newlands: Thank you. Iain, before I come to you again I am conscious of the time and I have a number of other questions. You have touched on this. If you have anything further to add on this I would be grateful, but you also mentioned in your opening, and since, the issue of decarbonisation as it relates to the IRP. You have also mentioned Network Rail's efforts in Scotland on electrification and even other works, which is generally much more efficient than it is elsewhere. That is



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something I raised with the Rail Minister when I met him just yesterday.

You served on the Infrastructure Commission for Scotland. Obviously, we have had the STPR2 and what-not, which I know you have commented on. That was essentially underpinned by the Scottish Government's decarbonisation targets. Do you think the IRP sufficiently factored in decarbonisation in its final plans?

Professor Docherty: I do not think it did, actually. The reason that I say that is that, for me, one of the main elements that is missing in the plan is that it has almost nothing to say about rolling stock. It is a 20 to 25-year plan for infrastructure construction. Gareth, in particular, has already spoken about the interplay of the new-build routes, however many of them we end up with, and the electrification of the existing network. But you really have to have both of those if we are going to meet our real decarbonisation targets.

I read the document again in the run-up to this meeting. I was trying to think about the timescales for some of the individual schemes that were included in that document—and Leeds to York electrification is one that comes to mind. I am thinking, "Does that make sense given the existing train pattern and the need to decarbonise the existing services we have?" That led me to think, well, this has got almost nothing to say about rolling stock in trains. I think that is really problematic, to be honest. I would like to know more about the assumptions of all kinds of trains—conventional or electric, battery, overheads or hydrogen, and what the people who wrote the plan think will be running on this network at different stages during its life cycle.

Let us just take a step back. England is well known for not really having a national plan. In Scotland, for example, we follow the Irish example. We are now on to our fourth national planning framework, which has become more of a plan rather than a framework over time. It does begin to talk about particular places and what their economic role is in a wider system in a more explicit way. England really does not have that. To me, that is surprising per se, but it is extremely surprising given what we know about the territorial inequality within England and between the south-east and the north in the whole debate about levelling up.

We really are almost creating a national plan for England by default here, by focusing so much on this corridor between London and Manchester. That may be defensible if you are somebody who really does believe in agglomeration benefits. London, the west midlands and Greater Manchester are the three largest city regions in the UK. Conventional thinking about the lower productivity of the UK economy in comparison with some peers would say it is those second-tier city regions that underperform the most and where we need to improve performance fastest and to the greatest extent to boost the economy of the UK overall. That is fine, if you believe that. Building this railway in its current form, with completely segregated high speed, would be something you could do to try and generate that kind of growth, but that is almost a



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national plan for England by default. Before that becomes the case, we might wish to think about what that means for the other regions.

Gavin Newlands: The second half of your answer pretty much negated the need for my supplementary question, so thanks for that, Iain. Unless anybody else has anything desperate they want to say on decarbonisation, I will hand back to the Chair.

Chair: I am conscious that we are in the midst of another inquiry that impacts decarbonisation, so we are very focused on it. We move to construction times and capacity next. I will hand over to Simon Jupp.

Q162 **Simon Jupp:** Thank you, Chair, and good morning to the panel. Thank you very much for joining us this morning. The Government have stated that the IRP will double capacity between Leeds and Manchester and more than treble capacity between Birmingham and Nottingham.

When we are thinking about the impact of this, can these huge capacity increases really be achieved by improving existing Victorian rail infrastructure, which we have discussed previously, rather than building new lines? If I may, I am going to come to Iain first.

Professor Docherty: Thank you very much. The answer to that is somewhere in between, "It depends," and, "No." It depends on the quality of the existing infrastructure and clearly the station capacity, which I think we have already talked about with reference to Leeds and elsewhere.

In my opening remarks I said that we have come a long way from the original conceptualisation of what high-speed rail and GB were going to do. It was going to be a complementary system which was to be segregated, to be very high capacity and to be high speed. We have now moved from that kind of French or Spanish conceptualisation to more of the German idea, where we build individual stretches of high-speed line and they fit in much more to a national network. That is undoubtedly much more complex to deliver. The delivery risks are greater. We have spoken about that in terms of lessons from the west coast main line project, and we have talked about station capacity.

I think the answer is probably not in most of the corridors that we talk about. I do not know whether we will come on to some of the appraisal decisions or frameworks and the technical annexe of the report, but if you look at the heat map diagrams about the different outcomes of different levels of expenditure, they generally run from standard upgrades, electrification and some minor speed improvements in the top left corner to the fullest possible new-build option in the bottom right. The capacity then, if it is the classic upgrade schemes, is pretty low.

One other thing that I might offer, if you don't mind, is from my experience recently from Scotland where we have done this. We have had a really successful classic line upgrade project between Edinburgh and Glasgow with electrification. In the end we decided not to go for the



high-speed option. Instead of running very fast, end-to-end trains, that line was subtly reconfigured in a service pattern sense to be more about absolute capacity and more stops.

What I would say, though, was that we had to close the main tunnel approach to Glasgow for 20 weeks as part of that project. That really did hit rail patronage and use of the network much harder than most of us envisaged at the time. I would not underestimate the behaviour change and the difficulty of attracting people back to rail if you have had to close the existing service for some time. That is something that I do not think is fully factored into the upgrade plans in the IRP as it should be.

Q163 Simon Jupp: I want to avoid repetition because I feel that some of you may agree with that statement. Can anyone better that? Probably not, essentially. No; there we go. That says it all.

If you are focusing on some of the technical aspects of this, what are the challenges of simultaneously running fast and slow services on a two-track railway? It may seem quite a basic question, but it is one I would like to explore.

Gareth Dennis: Yes, absolutely—immense. As I always start when I describe this problem and I explain the point of these new lines, Britain's rail is a jack of all trades and a master of none. If you have a fast train, particularly if you are going to make it faster, you need to leave a big space in front of it to ensure that it does not catch up the train that is stopping. That means that we are making a dreadful use of that infrastructure. The highest capacity railway is one where all the trains do the same thing, travel at the same speed and accelerate in the same way.

While there are things we can do to tidy things up a little and to help that to be as smooth as possible, I do not envy the job of our railway planners who try and make this work, as indeed Mayor Street alluded to earlier. Things like electrification can help to smooth some of those acceleration differences. So long as it is a pure electric train, it is lighter, which helps with acceleration so trains can fill those gaps slightly better. Things like longer rolling stock provide a major benefit. I talked about the fact that capacity is in single digit percentages outside the M25 compared to within the M25. A lot of that is to do with rolling stock, but that rolling stock is often limited by infrastructure challenges. It is a case of diminishing returns on the existing network. It is very challenging to deliver those while also trying to run the service that people are continuing to try and use.

Q164 Simon Jupp: As I said, it seemed like an obvious question, but it is nice to hear a very succinct and honest answer in response. Does anyone else on the panel want to make any further points on that particularly complicated process and challenge? No.

In the technical annexe—I am not going to go through too much of the technical bumph that comes with that—we have read that the full-build



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scheme will deliver a 400% capacity increase. Bearing in mind some of the technical challenges we have heard about this morning and the other stuff that we have covered as well, is this actually realistic? I will go to Karen on this one.

Karen Heppenstall: Thank you, Simon. I have to be honest that I was a bit confused by this question because the way I read the quote it stated that the 400% uplift in capacity was not necessarily going to be forecast under any particular scenario. My response is about the accuracy of the demand forecasts and other examples of where, maybe, they have been inaccurate in the past.

The broad statement that a 400% increase in demand is unrealistic justifies the decision that has been made not to go ahead with the full new build. Having said that, there are a number of examples across the country, and I will talk about two specifics that I have worked on previously.

The first is the London Overground West London line, where platforms were extended very shortly after the stations were first built because they had significantly underestimated the demand that was going to go on to that line. A second and smaller example is in West Yorkshire with the Apperley Bridge new station. Again, the car park had to be extended within two years because of a significant underestimation of demand.

There will always be latent demand for rail travel. It is an attractive proposition. There is always latent demand that is underestimated at business-case stage. It is really important to get under the skin of the forecast demand uplift and understand where it comes from, whether it is realistic and whether there is the potential of achieving that. Therefore, if there is the potential of achieving that, do we need to invest the extra money in order to invest in the full new-build line?

Q165 **Simon Jupp:** It is a running theme throughout my questions and the answer is, "Probably not." Gareth is quite keen to come back on this one.

Gareth Dennis: I think this is possibly the most important question of all of them. I will keep it as brief as I possibly can, but there is a little bit to cover.

I was going to read that quote from page 6, which is, "The new full build scheme also delivers a capacity increase of over 400% in excess of actual future demand under any realistic scenario."

There are a lot of problems with that statement. First, this is just looking at long-distance capacity. As I said, the main benefits of HS2 are not about long-distance capacity; it is release capacity. At the risk of turning this into percentages soup, 400% of a 2% service increases it to an 8% service. That 400% is a wild assertion to make, frankly, in a technical annexe when it is, first, not looking at the existing network capacity on intermediate stations. Also, we cannot make statements about future



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demand without looking at all of transport. We cannot look at rail in isolation. We have to look at modal share across the different modes.

We have to look at the fact that the modal share of road transport in the UK at the moment is 89%. The modal share of rail is 9%. A 10% modal shift from road to rail would need rail to double its modal share. Those are the sorts of numbers we are talking about. The idea that you can say that a 400% capacity increase is unrealistic is very difficult to justify without having undertaken a modal share analysis.

Simon Jupp: Thank you, Gareth. In the interests of time, I will hand over to the Chair.

Q166 **Chair:** Jon had his hand up.

Professor Shaw: Thank you for the opportunity, Chair. I back up Gareth's point about the statement. It is difficult to discern what it actually refers to. In that context, I would like to link a couple of things together about extra capacity and the total modal share.

Iain mentioned a point earlier about decarbonisation. If we are not going to build substantial additional rail capacity in the context of the need for decarbonisation, then a reasonable question to ask is, "What is the alternative?" In any case, taking a step back a little, a broader conceptual point is, don't ever be scared of extra capacity that even looks as if it is more than you might need, for the simple reason that it builds in a quality margin to the operation of the infrastructure. That is to do with reliability; you can recover from delays and that kind of thing. Anybody who flies from Heathrow airport, pre-pandemic certainly, will be only too well aware of the need for a quality margin as you are sitting on the tarmac for 40 minutes before you can take off or you are circling around in very stormy conditions for 40 minutes before you can land. The reason is because we are at capacity and there is not that kind of quality margin there.

There is also very much a link to the costs and value for money. This morning we have heard how an upgrade of existing infrastructure can result in wildly escalating costs, which ultimately bring down the difference between what you would pay for brand-new infrastructure versus what you are paying for upgrading existing infrastructure, and the upgrade of existing infrastructure does not give you the benefits that the new infrastructure would. You are paying a lot more to get relatively less, and that is a key value-for-money question. I am sure we are going to come on to that later.

Chair: Simon, thank you. I know you have to depart as well, so thank you.

We have questions focused on the midlands rail hub for Karen. Grahame Morris will take us through this.

Q167 **Grahame Morris:** Thank you, Chair, and good morning, panel. I believe



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you may have heard the evidence from the west midlands Mayor, Andy Street, following the questions that the Committee put to him. You may recall that, when we were recently visiting Leeds and Bradford, we put similar questions to Tracy Brabin and some of the business and political leaders in West Yorkshire.

Karen, I want to specifically ask you about the level of consultation and engagement that you had with the Government during the development of the IRP.

Karen Heppenstall: The first thing is to talk a little about the role that Midlands Connect, as the national transport body for the midlands, has been given by DFT. First of all, it is worth noting that we are a voluntary and not a statutory partnership. The DFT has asked us to advise and gather evidence on strategic transport investment for both road and rail across the midlands.

We have done a lot of work and evidence gathering on our whole midlands engine rail programme and, in particular, our flagship project midlands rail hub. We share and discuss this evidence with DFT officers on a regular basis. I think it is fair to say that our DFT sponsor and our rail colleagues at DFT see us as trusted advisers. The conversations we have are in that light.

Throughout the development of the IRP, we submitted significant volumes of evidence. I had many conversations with the DFT about our evidence, about what we wanted to see in the IRP and about how progress was being made. I must make it clear that we did not know what the outcome of the IRP was going to be until it was published. We were happy with the level of engagement that we got and happy that we were able to give our evidence. Much of the evidence that we have given has been taken forward and appears within the IRP, for which we are extremely grateful.

Q168 **Grahame Morris:** I understand that. Transport for the North also reported that they had significantly engaged with the Department for Transport. They are a statutory body that has been established. They had robust impact studies, economic benefit plans and so on for the proposals. I completely sympathise with their sense of disappointment, given all the effort that had gone in.

The Committee is very interested in your experience from your perspective in the west midlands, and you, Karen, and Mayor Street mentioned the benefits of the East Midlands Parkway and the Nottingham connection. In your opinion, will the IRP provide the midlands with the real connectivity it needs to support future economic growth?

Karen Heppenstall: To be clear, Grahame, Midlands Connect covers the whole midlands and not just the west midlands.

Grahame Morris: I apologise.



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Karen Heppenstall: Relating back to your question, the very simple answer to your question is, yes, broadly. The IPR provides the majority of what we need.

Q169 **Grahame Morris:** If there is one thing further that you could wish for in the IPR to improve connectivity for the whole of your region, what would that be?

Karen Heppenstall: Mayor Street talked about it quite a lot earlier. It would specifically be in reference to the midlands rail hub. The IRP states—I was going to say “very clearly” but I will retract that statement immediately—slightly ambiguously the emphasis of the midlands rail hub on the south-western corridor and the west chord in central Birmingham.

Midlands Connect continues to advocate delivery of all MRH outcomes, of which the most important one is improved east-west connectivity. While we get improved east-west connectivity through the HS2 line to East Midlands Parkway and Nottingham, the midlands rail hub outcomes specifically included improved frequencies and journey times between Birmingham and Leicester as well. We continue to have discussions with DFT about how we can continue to achieve those outcomes because they are extremely important, not just to Leicester but to the whole of the Midlands. Again, Andy Street specifically talked about the importance of that connectivity to Leicester, not just for the west midlands—for his area—but from a wide midlands perspective. Leicester is the real loser from the IPR, and we must find ways to continue to work on that and improve that connectivity to Leicester.

Grahame Morris: Thank you. Chair, I am going to hand back.

Chair: Indeed. As I have just indicated, we will try to finish this by 11.30, not least because Greg is concluding and we will need to complete by then. Let us go to rail freight next, and Ben Bradshaw.

Q170 **Mr Bradshaw:** Gareth, what are your views on the IRP and freight? Will it deliver?

Gareth Dennis: I am afraid I am going to answer again with “not away from the west coast main line.” Obviously, the west coast main line is a major corridor. There are major release capacity benefits on the west coast main line, but there is a lack of new line replacing or paralleling the east coast main line.

I will give you an example of a key pinch point, which is through Doncaster and northwards along the current Wakefield line into Leeds. The IRP will be relying on that line for its fast connections towards London. I have actually worked on the designs for this route, clearing it for container traffic. It is one of the main intermodal routes for container traffic heading into Leeds and up the east coast of the country. No diversion exists, so it has to rely on the same line that the fast trains go on and that the local Doncaster-Wakefield-Leeds services do. Without new paralleling infrastructure and with faster trains and a desire for



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improved journey times, you will be reducing rail freight capacity along that corridor.

It is also worth saying on the flip side that the opportunities that have been lost are that, if the east coast main line became a 125 mph stopping service that stopped at all stations, from a timetable planning perspective it is actually quite nice to fit a 60 or 75 mph container train, just cruising without stopping, among stopping faster services. That potential opportunity for a big ballooning in freight capacity has been lost.

Q171 Mr Bradshaw: So freight capacity is actually going to go down under this.

Gareth Dennis: Yes. It will be reduced on key corridors such as through Doncaster and up towards Leeds.

Q172 Mr Bradshaw: Because it is not possible to upgrade a two-track system.

Gareth Dennis: Absolutely. It is not possible to upgrade and improve a two-track system. That line is already electrified, so you are not getting any potential benefits that side. Signalling can only do so much. That line is already pretty well compressed as to how many trains go through, and there is a complex mix of local services, regional, long-distance and then freight services.

Q173 Mr Bradshaw: Has no consideration been given in this scheme to modal shift from road to rail?

Gareth Dennis: Looking through the technical annexe, it is quite clear that freight has taken a back seat in the analysis of the proposals. I think that is much for the worse for the plans overall. Again, when we talk about the fact that there is clearly a focus on journey times at the expense of everything else in the way these plans have been developed, freight takes a massive hit. That is absolutely critical, not just for decarbonisation but for road safety and clearing the roads for traffic that could be using the roads that we need to. As there is a shift towards EVs, we need to be making space for those as well. It is a real problem.

Q174 Mr Bradshaw: Forgive me, but how does that square with Government policy? Are the Government not supposed to be in favour of modal shift?

Gareth Dennis: Absolutely, yes. I would not want to prejudice the decisions that are being made at the DFT, or should I say the Treasury. Indeed, the analysis undertaken by Mott MacDonald to support the conclusions of the IRP made the explicit statement that the proposals as they currently stand will not allow the Government to achieve their own strategic objectives.

Q175 Mr Bradshaw: What are the other main pinch points apart from the Doncaster route that you just mentioned?

Gareth Dennis: Doncaster is a good example. Another is Werrington. I do not know if Members have actually gone to see Werrington. It has just



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done £250 million of work, which has relieved some capacity, but again it is still a pinch point. You still have conflicts of freight traffic crossing the path of high-speed services. Werrington is an example that would have been relieved. Welland viaduct is commonly known. Freight is mostly diverted away from there now.

There are key points where you have this intertwining. Our network is particularly messy. It is also worth saying—I am 30 seconds from the end of my answer; don't worry, everyone—that the whole of South and West Yorkshire is a right mess of a rail network. It was built for minerals and not for people. It is trying to thread a useful service through that. If you look at it on a map, it is like, "What on earth is that? How on earth does it connect people?" It is hopeless. Freight is intertwined with all that. Unpeeling freight and passenger services is really difficult in that area, hence the value of sending a new piece of infrastructure through that to almost cut through it and support releasing capacity on that network.

Q176 Mr Bradshaw: To the rest of you, given that we are short of time, unless you have anything crucial to add, please do not feel that you need to speak. Karen, you had your hand up.

Karen Heppenstall: Yes; thank you. I will not repeat anything that Gareth has said, but you asked about specific pinch points. I feel that it is my duty to flag up those that sit, from the passenger perspective, on the Birmingham to Leicester corridor that I referred to before that would have been fixed by the midlands rail hub being delivered in full.

From a freight perspective, the two key pinch points are just south of Leicester station and at Water Orton. They are both on the Felixstowe to west midlands and north strategic freight corridor, which is one of the most important freight corridors nationally. It is also one of the least invested in and most constrained freight corridors nationally. Lack of freight investment in that corridor will have a long-term impact on the ability for freight to mode shift to rail. It is a major concern to us.

Q177 Mr Bradshaw: Before handing back to the Chair, are you worried about this dodgy 400% figure that you quoted and the fact it does not include capacity on local services and so on? Are you worried that all the way through this document the Government are overstating or not being completely straight about the benefits in a way to try to sell it to the public?

Gareth Dennis: I rather mysteriously referred to the IRP as a bit of a Jekyll and Hyde document. It is maybe worth me just highlighting why I said that, otherwise people will call me up on it.

You have this instance where you have the document, and clearly you have the justification for the investment on the west coast main line providing HS2 running up from London to Birmingham and to Manchester, and then providing the higher speeds and better journey times to Glasgow. Those seem to not apply to the west of the country. It



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seems to me that the primary author of the document does not have an interest in or an understanding of the fundamentals of release capacity and the benefits that has for local passengers as well as for freight.

You have some seriously good stuff in that document that justifies the west side of the country, and then it seems like there is some sort of strange portal to the other side of the country on the east. There is a bit of a disparity there. There is a bit of a tug of war in the IRP between what has been written by perhaps the DFT and then what is being authored or co-authored by others, shall we say.

Q178 Mr Bradshaw: The Treasury.

Gareth Dennis: Yes, the Treasury and perhaps advisers on transport as well.

Chair: Chris, I know that you are itching to come in. I am going to bring Greg in on value for money.

Q179 Greg Smith: Thank you and good morning to the witnesses. We know from the past that HS2 as a project started with a £37 billion budget. We are currently sat on about £106 billion likely spend. There are some, who I think are probably accurate, who put it more likely at £165 billion to complete the elements of that project.

When we were in Leeds two weeks ago we heard from the chief executive of HS2 Ltd that the BCR that was low on phase 1 anyway—it was 1.2 or a little bit higher than that if the whole project had been done—has not even been done for the removal of the eastern leg. We do not know what the BCR is for HS2 without the eastern leg.

When we look at the IRP, we heard from Mayor Burnham and other witnesses. Just as a factual point, on page 18 the value-for-money analysis has not considered the reliability and train performance, environmental impacts, residual value of investments—and “investments” is a dodgy word given it is taxpayers’ spend and not a commercial investment—as well as the dynamic economy impacts, which will impact the location decision of households and businesses in response to the build.

How much confidence can we actually have that any of this is going to represent value for money to the taxpayer? This is entirely a taxpayer spend. No one is risking their own money on any of these projects. No one is actually making a commercial decision that these are things in demand and that are needed and will be used in the United Kingdom. How much confidence can we have that the Government really have overturned every stone and done the analysis on what value any of this is going to offer the British taxpayer?

Gareth Dennis: I will come in first, and briefly. I will flip the question and say, yes, I absolutely agree that the lack of analysis is a serious problem. I would first say that the benefit-cost ratio and cost-benefit analysis is an absolutely useless way to assess the value of major



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strategic infrastructure. I would also say that those BCRs—that 1.2 figure you mentioned—does not include HS2's main benefits. I absolutely agree that that analysis is completely shortcoming. It is hopeless in fact. If that analysis included the main benefits of lines like HS2, you would find that you would have a benefit-cost ratio, if you wished to use that number, that was substantially more favourable and would easily justify the infrastructure investment.

I remind everyone that in order to achieve Britain's own net zero carbon targets, even with an overall reduction in transport, rail capacity needs to increase by between 50% and 100% nationally. In some parts of the country, particularly looking at the east—I mentioned the 2% and 4% London figures—those numbers will be quite substantially higher. Infrastructure investment is absolutely crucial to achieve that modal shift. The value comes from investing in the initial envisaged network, as I think has been pointed out before by Allan Cook's stocktake, which I think happened in 2019. Forgive me if I have got that year wrong.

The benefit-cost ratio, if we wish to continue to use that figure, is far improved by delivering the Y network as it was initially envisaged. Yes, my response is that you do not look at how much money you have and decide how far you want to build a bridge over a river. You look at the bridge and then you decide what that bridge is going to look like, and ensure that it reaches the other bank. I think it is really important that we understand how little relevance the benefit-cost ratios that we have seen up to this point have in really understanding the value of this infrastructure. It is massive strategic network infrastructure. We have not begun to think about exploring the real value of that and what it means for new services to tens of thousands of communities and thousands of stations across the country that it would benefit—it is certainly hundreds—and tens of thousands and millions of people who would benefit from this infrastructure.

Q180 Greg Smith: I want to test you a little bit on one point. If tens or millions of people are going to benefit from these services, does it not alarm you a little bit, or what would be your take on it, that not a single private-sector firm is chomping at the bit to build these railways? Surely, if it is going to benefit that many people who are paying their 40, 50, 100 or 200 quid-a-ticket prices, these are long-term, good commercial investments for companies, but none of them want to touch it with a bargepole, including HS2. Why is there a disconnect here? Why is this being left to the taxpayer?

Gareth Dennis: First, it is just not possible for private organisations to deliver infrastructure to the magnitude of HS2 in the way that HS2 is planned as a single piece of infrastructure.

Secondly, I would point out the stop-start nature of interest from central Government on delivering major schemes, or even some of the smaller schemes—if you look at Bristol trying to reopen lines at Portishead, which is such a hokey-cokey of in again and out again, and we had lots of



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colleagues from the south-west earlier. Karen has touched on the fact that supply chain confidence is absolutely critical. I work within that supply chain and I see it first hand. Supply chain confidence in what is going to be delivered in this country is at an all-time low. Network Rail is having thousands of staff being made redundant, which is personally making my job very hard because I do not have people to look at my designs and deliver them. It is also making life very difficult for lots of maintenance, assurance staff and planners. At the point where we need to be desperately expanding rail capacity, we are attempting to shrink it.

My response would be that with that lack of supply-chain confidence it is no wonder that there is no private interest whatsoever in getting involved in major infrastructure, given how much the Government might decide just on a whim to cancel large sections of it.

Q181 Greg Smith: Thank you for that. Do any of the other witnesses want to come in?

Professor Docherty: I would almost argue that it is worse than that, actually. My view on this is that what you see in the technical annexe in particular is a classic example of the limitations of transport modelling. Essentially, we have a forecast-based model which looks at a remarkably small number of variables and tries to tell us what the world will look like in decades' time. Of course, you will be well aware that there is a 100-year appraisal period spoken about in the document. It is even longer than the classic 60-year period. The level of uncertainty for that kind of timescale is massive.

Why I think it is even worse than that is because we have to think about the non-rail or even non-transport examples of changes that we might realistically see over that period which will completely upend these forecasts. The best example, I am sure, is: what structure of taxation for all transport modes are we going to have when we decarbonise the car fleet? How are we going to charge for road use? Then any of those decisions about road pricing, whatever we end up having, will immediately have a far bigger, direct impact on demand for the use of the services that would run over this envisaged network than any of the tweaks of any of the variables that are in the model. To me, it is a classic example of false precision in transport planning.

Earlier in the conversation we talked about taking a scenarios approach. As Gareth has just said, where do we expect the country to be in 2050 in terms of its decarbonisation commitments in particular? How can we get to a modal share that makes net zero actually achievable, which will require less road traffic even if it is all decarbonised and with a rail network taking at least double the level of overall mobility that it does today? If you start from those kinds of planning assumptions, then the requirement becomes, "How much of this network can we build at a sufficiently low-unit cost to achieve the outcomes we need?", which are either decarbonisation or a mixture of that and the socioeconomic factors in the major situations that we have spoken about. That gives a very



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different structural approach to what value for money actually is. I think it is an entirely legitimate question to ask.

As my colleague has already mentioned, what would the transport network and accessibility look like in 2050 if we did not do this and we still had to achieve, and we will still have to achieve, net zero? The answer is very, very difficult.

I would make one final point. This may be slightly controversial, particularly in your own area. The first phase of HS2 cost a lot of money because lots of it is in tunnel to get out of London and to avoid damage to the natural environment of the Chilterns. That is a set of decisions that have been made for entirely legitimate and democratic reasons. It is quite easy to challenge those on a value-for-money basis. There are a couple of occasions in the document where it says that particular projects—one that comes to mind from memory is the expansion of Lime Street station in Liverpool, which may well be necessary for longer rolling stock—should be funded by the city region. That leaves me to say, well, why is value for money regarded differently in different parts of the country? Why are some elements of this plan the responsibility of central Government and some not?

At the macro level we need to be very careful about what models tell us and do not tell us. At the more local impacts level, I think we do have to think about fairness here and some of the commitments we have given in the early stages of HS2 and what they might suggest for later stages of the plan.

Greg Smith: Thank you. We will not get into a discussion about tunnelling, but that is all under the Chesham and Amersham area where the late, great Cheryl Gillan managed to get that tunnelled. All that comes through my constituency is overground destruction, but we will not get into that.

Do any of the other witnesses want to offer anything on the value-for-money point? Okay, thank you very much. Mindful of time, I will hand back to the Chair.

Chair: Thank you ever so much, Gareth, Karen, Jon and Iain. It was a fascinating 90 minutes. You have given us some really good academic engineering and transport specialist evidence. I am very grateful indeed. On behalf of the Committee, I wish you a good rest of your day. Thank you.