Rt Hon the Lord Forsyth of Drumlean
Chairman of the Economic Affairs Committee
House Of Lords
London
SW1A 0PW

7 March 2019

Dear Lord Forsyth

Thank you for your letter dated 26 February 2019 and the opportunity to take part in the follow-up inquiry on the economic case for High Speed Two (HS2).

It has been four years since the Committee reported on its original inquiry. HS2 is no longer thought of as a standalone engineering project but, increasingly, as both an integral part of the nation's future transport network and one of the key elements in redressing the unbalanced nature of our national economy.

HS2 is expected to generate around £92 billion in benefits to the UK economy, helping Britain compete on the global stage by increasing economic growth, productivity and tourism and supporting hundreds of thousands of jobs. This transformative programme will connect over 25 towns and cities from Scotland to the South East, serving nearly half of the UK population. The extra capacity created will make moving between our major population centres easier, increase space on the existing lines for more local journeys, and take traffic off our motorways in the form of freight and travellers, with over 100 towns and cities expected to benefit from improved capacity.

The existing plans from local authorities and partners show almost 500,000 jobs and nearly 90,000 new homes resulting from the improved connectivity these services will provide across the country.

The legislation for Phase One gained Royal Assent in February 2017 following three years of Parliamentary scrutiny. Since that time we have issued Main Works Civils Contracts worth £6.6bn, conducted the largest ever series of ground Investigation, ecological, and heritage surveys in this country, confirmed our construction partners for our London Stations, and confirmed our shortlist of bidders for the £2.75 billion rolling stock contract for our initial fleet of 54 state of the art trains.

1 See Annex A, for further detail
Over 7,000 jobs, including over 250 apprentices, are already being supported by HS2. At the peak of construction we anticipate 30,000 men and women working to deliver HS2 across the country. Over 2,000 business have won contracts for work on HS2, around 70% of which are SMEs, and 99% of which are British based companies.

There is a huge amount of work underway on Phase One including land clearance, habitat creation, tree planting, demolitions, road improvement works, utility diversions, compound creation and line upgrades.

Further north, the Phase 2a (West Midlands to Crewe) hybrid Bill is currently in Select Committee having passed its Second Reading in the House of Commons on 30 January 2018 with a majority of 25:1.

The scheme design for Phase 2b (Crewe to Manchester and West Midlands to Leeds) is continuing to be developed and refined to support Northern Powerhouse Rail (NPR) and the possibility of future Midlands Engine Rail implementation. We expect to submit the hybrid Bill for this final phase of HS2 in 2020.

In your letter to me you set out 13 questions about the HS2 programme. I have taken these in turn below.

1. How much of the £55.7 billion budget for the HS2 project has been spent to date and how is this spend broken down?

Spending Review 2015 established a long term funding envelope for delivery of HS2 of £55.7bn (2015 prices). This £55.7bn figure includes all three phases of the project: Phase One Birmingham to London; Phase 2a Birmingham to Crewe, and; Phase 2b West Midlands to Leeds and Crewe to Manchester. This includes rolling stock.

HS2 Ltd publishes its in-year spend and cumulative project spend annually as part of the Annual Report and Accounts process. We also report spend to date, along with forecast projections as part of our management information to the Department for Transport via its monthly Client Board meeting.

Spend to date is £4.3bn. This is broken down as follows:

- £1.3 billion spent on indirect costs, including:
  - Technical designs and safety standards
  - IT systems
  - Design of Phase One and Phase Two routes
  - HS2 Ltd workforce, HR, legal, and facilities costs
  - Consultation, communication and public engagement activities
• £1.8 billion spent on Land and Property
• £300 million spent on the Hybrid Bill development and delivery
• £144 million spent on Enabling Works
• £106 million spent on Main Works
• £72 million spent on Utilities
• £65 million spent on Ground Investigation works
• £165 million spent on Network activity
• £60 million spent on other work on behalf of the DfT (Category 2 work)
• £275 million spent on VAT provisions

2. Has the cost of land and property purchases been higher than expected?

Acquiring land and property on the scale required for Phase One is a complex process. The NAO conducted a review of Phase One land and property in summer 2018 and identified that our programme of acquisitions was on track and forecasting to be within budget. As at 31 January, the land and property programme continues to be on track and within budget for Phase One. The NAO work identified that we were tracking £308m below our total budget.

For Phases 2a and 2b, the schemes are not yet approved by Parliament, so the comparison is different in that HS2 Ltd does not have powers for compulsory purchase. There are however discretionary schemes to support residents who have an urgent need to sell their homes, and statutory blight schemes are in place. However, acquisitions for both of those schemes are in line with the funding envelopes agreed with Government at this stage of the project.

3. Sir Terry Morgan told the Committee that “nobody knows” what the final cost of HS2 will be. Do you agree with Sir Terry and how confident are you that the project will be delivered within the present £55.7 billion budget?

As stated above, the budget of £55.7 billion was set and agreed at Spending Review 2015. Our challenge and focus as a delivery body is to deliver HS2 within that budget.

It is important to keep in mind that HS2 is the largest and most complex infrastructure project undertaken in modern British history. We are working closely with our supply chain to reduce cost pressures, while also working to the scope that was agreed by Government.

We are challenging the supply chain to innovate, to work collaboratively and to draw on the experience of some of the world’s leading infrastructure companies working with us.
4. What cost saving could be achieved by designing HS2 to run at a maximum speed of a conventional high speed railway, say 300 kilometres an hour?

HS2 Ltd was remitted, as part of the Development Agreement with the Department for Transport, to explore the optimal trade-off between journey time, maximum speed, and demand for the railway’s services. Part of this work reviewed operating speeds down to 300km/h. This work concluded that the net present value of the Capital expenditure for the project would be reduced by £600m, with greater savings being in the longer term operational costs (£1.25bn) largely due to reduction in energy costs.

However, the reduction in operating speed led to a greater reduction in revenue and benefits of £6billion and hence a deterioration in the Benefit Cost Ratio (BCR) for the project.

HS2 Ltd also reviewed building the Phase One consulted route at 200km/h (the same speed that Pendolinos travel at on the West Coast Main Line currently). The cost would be 9% lower than the cost of the route designed for 360km/h, but the increase in journey time would reduce passenger usage by 19%, leading to a reduction in benefits of 33% and revenue by 24%.

As a result, HS2 Ltd recommended to the Department that the optimum maximum operating speed remained at 360km/h as the practical limit of deliverable technology at the time, noting that with future improvements in technology there is likely to be a case for higher speed.

5. What is the current estimate for the cost for

   a) The redevelopment of Euston;

   b) The construction of the new railway between Old Oak Common and Euston Station?

HS2 Ltd has recently announced the Construction Partner Contract for Euston station which has a value of £1.65bn\(^2\). This contract includes the provision of enabling works for Over Site Development above the HS2 station. The design and construction of the civils work required for the Euston tunnels and approaches is £0.6-0.9bn\(^3\). We are not able to provide more granular details of other costs due to commercial sensitivity, but these are associated with acquiring land and property to enable the development of Euston station.


The HS2 scheme is supporting the phased redevelopment of the Euston area. The Government appointed Lendlease Europe Holdings Ltd as the Master Development Partner (MDP) in March 2018\(^4\). Masterplanning is under way in consultation with stakeholders, including the London Borough of Camden and Network Rail, to help achieve the redevelopment potential and regeneration of the Euston area. The site is expected to deliver over 1,700 new homes and 19,000 jobs. The costs of the scheme are expected to be offset by taxpayer receipts once the railway is operational and the Euston Area Masterplan is complete.

6. **When is the redevelopment of Euston Station expected to be completed, and how confident are you that the station will be ready in time for the expected opening of Phase 1 in 2026?**

Work on the HS2 station and redevelopment of Euston is already underway and our intention is to run initial Phase One services from London to Birmingham from 2026. Lendlease as the MDP is committed to the site for a period of 25 years which can be extended up to 40 years. The first phase of the Masterplan for the Euston area will be enabled by HS2 Ltd with delivery of the latter phases dependent on Government confirming further investment in the current Network Rail conventional rail station. HS2 Ltd will be working with the recently appointed Construction Partner to continue to deliver the scheme in a cost effective way to meet the opening dates and the release of the site to Lendlease for ongoing development.

7. **Transport for London told the Committee in 2014 that Crossrail 2 would need to be in place before HS2 was completed, in order for Euston Station to be able to cope with passenger numbers. Is that an argument you recognise and agree with?**

We do not recognise that Euston will be too overcrowded to accommodate HS2 passengers without the provision of Crossrail 2.

As part of the environmental assessment and associated Transport Assessment to support the Hybrid Bill, HS2 Ltd considered the potential impacts on the London Underground routes through Euston and the wider London Underground network. This was fully reported in the Environmental Statements and Transport Assessments and considered during the passage of the Hybrid Bill. We are not familiar with any TfL analysis that has identifying particular issues that were not fully explored during the passage of the Hybrid Bill.

\(^4\) EUSTON STATION DEVELOPMENT OPPORTUNITY Memorandum of Information, April 2017  
Passenger interchange between HS2, conventional rail, and underground services will be improved through a new connection from Euston station to Euston Square and the introduction of new pedestrian routes. This will allow direct access from the High Speed platforms to Euston underground station and the Euston Square link. Importantly though, our design and plans for Euston do not preclude the future provision of Crossrail 2.

8. In terms of dealing with expected passenger numbers, would Old Oak Common be able to operate as the London terminus for HS2 Phase 2? If not, could the station design be amended so as to provide this capability, and how much would this cost?

HS2 Ltd assessed the implications for the business case of terminating high-speed rail services at Old Oak Common (OOC) compared to Euston high-speed station during the preparation of the Hybrid Bill. This work concluded that terminating at OOC would reduce the overall benefits of the scheme by 15% and reduce revenue by 10%.

In developing the strategic case for HS2, a selection process was undertaken which concluded that Euston was the appropriate London terminus because of transport connections to the existing bus, rail and London underground networks.

Permanently terminating all 18 trains per hour from Phase 2b services at OOC would require additional turnback facilities and/or platforms which would require additional land and therefore cost. The station is also currently sized for approximately one third of HS2 passengers to interchange there, meaning that the station would need to be resized at additional cost.

The demand forecasting undertaken by HS2 Ltd indicated that around two thirds of HS2 passengers would choose Euston station over OOC. Passengers travelling north-south will tend to seek onward journey opportunities from Euston station whereas those wishing to travel east-west will seek to interchange at OOC. OOC has onward connectivity to Crossrail and the Great Western Main Line, but it does not have the capacity to cope the additional demand from Phase 2b services permanently.

This analysis forecasts an increase of 8% in the total passengers at the Euston London Underground station once HS2 is operational. The case of OOC as a terminus for HS2 was reconsidered during the Phase One Select Committee process. HS2 Ltd has not assessed the cost of changes required to allow OOC to operate as London terminus, rather than Euston, since the work undertaken to support the Hybrid Bill development and Phase One Select Committee process.

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9. **What steps are being taken to integrate the construction of HS2 Phase 2b with the proposals for the Northern Powerhouse Rail Programme?**

The vision for fast, frequent rail connectivity between the northern cities, fully integrated with HS2, was set out in former HS2 Ltd Chairman Sir David Higgins’ 2014 report Rebalancing Britain.

In 2017, the Government announced their intention to amend the design for Phase 2b to support future Northern Powerhouse Rail (NPR) implementation. Transport for the North (TfN) has been working with northern partners, Department for Transport, HS2 Ltd and Network Rail to develop plans for NPR.

In order to maximise the huge potential of HS2, it is important to make sure that the project takes full account of the emerging vision for NPR. In September 2018 the Department for Transport announced that the deposit of the Phase 2b hybrid Bill would be pushed back a year to 2020 to allow for this.

There is close working at project and strategic level between HS2 Ltd and TfN to ensure that we make the most of opportunities for the projects to learn from each other and work in tandem.

HS2 Ltd is proposing, at the behest of DfT, to include powers to deliver ‘touchpoints’ on the HS2 network, which would facilitate the future delivery of Northern Powerhouse Rail. It is intended that these touchpoints would be delivered as part of the Phase 2b scheme.

HS2 Ltd is also sharing knowledge and expertise on an ongoing basis with partners to inform the development of the Northern Powerhouse Rail scheme, and ensure that we share the lessons learned from our extensive route development process.

HS2 Ltd and TfN are working together with DfT to understand how the NPR project could benefit from the work already being undertaken by HS2 Ltd to develop the UK’s skills and supply chain.

10. **To what extent are the Northern Powerhouse Rail Programme proposals dependent on the completion of HS2 Phase 2b?**

Future provisions for NPR are currently being designed as part of the Phase 2b network to be included in the hybrid Bill, which we expect to deposit in Parliament in 2020. £300m in funding was set aside by the Chancellor of the Exchequer in 2017 for future-proofing HS2 for NPR and Midlands Connect aspirations. These provisions would enable NPR services to join the HS2 main line at different locations.

HS2 Ltd is key to the delivery of the Northern Powerhouse Rail network, and will provide the backbone on which NPR ambitions can be realised.
HS2 Ltd, DfT and TfN have worked closely together to identify where there are opportunities for the HS2 network to support the outputs sought as part of the NPR programme. There are key NPR corridors that are dependent on infrastructure delivered by HS2 Ltd in order to operate, including:

- Manchester – Liverpool, where NPR services could use HS2 Ltd infrastructure, including the 13km Manchester tunnel, to serve HS2 Ltd stations at Manchester Airport and Manchester Piccadilly
- Sheffield – Leeds, where NPR services will could on HS2 infrastructure north of the Clayton Junction to serve Leeds HS2 station
- Sheffield – Manchester, where NPR services could benefit from investment by the HS2 programme on the Midland Main Line.

By using spare capacity on the northern parts of the HS2 network to enable future NPR services, we are maximising the benefits of the UK’s investment in the HS2 network.

11. How much would it cost to suspend work on HS2?

Since Royal Assent of the Phase One Act, Government has expected us to deliver the project - and to continue developing the legislation for Phase Two. As such, no analysis of this type of cost has been undertaken. There would be a number of significant considerations that would need to be taken into account, not least the implications for the UK taxpayer, jobs, the supply chain, communities and economic redevelopment planning across the country. These include, but are not limited to:

- Legal liability, action, or penalty costs from breach of contracts from the contracts already let by HS2 Ltd;
- Employment implications amongst HS2 Ltd’s own work force and those jobs supported in the supply chain, numbering over 7,000 jobs;
- Costs associated with HS2 offices, sites and security around sites for which HS2 is responsible;
- Impacts on supply chain businesses, both large and small, that have already factored in HS2 income in their future financial and recruitment planning;
- Loss of pipeline of labour demand and apprenticeships;
- The impact on communities from terminating works underway or partially completed such as demolitions, ecology works, archaeology works, site clearances at over 65 work sites from Euston to Curzon Street;
- Continuing and prolonged property blight for residents along the line of route;
- Undermining or withdrawal of local authority and private investment in housing and regeneration schemes around station cities in the West Midlands and the North.
There would also be long term issues for the impact on industry’s confidence, and appetite for risk, to deliver future UK infrastructure contracts. If work were to be restarted at a future point there would also be a significant start-up cost to find the skills and workforce required to construct HS2.
This is by no means a comprehensive list as a complex review would need to be conducted to understand the implications further and this is not something the Government has asked us to do.

12. Are there any practical reasons why work on HS2 Phase 2b could not be delayed until after the Northern Powerhouse Rail Programme has been completed?

The delivery period for the NPR programme is significantly longer than that of HS2, so HS2 needs to be delivered in advance so as not to further delay the realisation of its benefits. As set out in answer to question 9 and 10, the full delivery of NPR is dependent on the delivery of HS2 to enable services on some key corridors. Although some of these corridors are not dependent on HS2 Ltd (e.g. Leeds – Hull), the NPR programme could not be delivered in full without the delivery of HS2. As the National Infrastructure Commission confirmed in its 2019 Annual Monitoring Report ‘HS2 Ltd has a central role in the planning and delivery of NPR’6.
Phasing the delivery of NPR and HS2 also offers the opportunity to maximise the benefits to the supply chain of a long-term pipeline of infrastructure projects, so that we can make the most of home grown skills and capacity.

13. How is HS2 Ltd responding to new World Health Organisation recommended noise limits, which current plans for the route would exceed in several areas? Will HS2 remain within these recommended limits? Will this result in increased costs, or reduced speed?

In October 2018, the World Health Organisation (WHO) published an update to its Community Noise Guidelines 1999, which are now called the Environmental Noise Guidelines (ENG18). HS2 Ltd and its expert advisors have been sighted on, and involved with, the ENG18 working groups for several years. As part of HS2 Ltd’s commitment to monitor the outcome from research on health, a technical review of ENG18 has been carried out to assess its impact on the HS2 noise policy and assessment criteria for operational noise across the different phases of the HS2 programme (Phase One, Phase 2a and Phase 2).

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The review is published in paragraphs 4.2.2 to 4.2.6 of Volume 1 of the High Speed Rail (West Midlands - Crewe) Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement.

The review confirms that ENG18 does not lead to a requirement for any changes to the methodology with regard to sound, noise and vibration. As consequence, no increase cost in the mitigation measure or the need of reduce speed is forecast.

I trust these responses have been helpful to the Committee, and should you have any follow up questions I would be happy to provide further information.

I have copied this letter to Clive Maxwell - Director-General, High Speed and Major Rail Projects Group, and the HS2 Minister, Nusrat Ghani MP, who appeared before you in January.
I have also copied this letter to our recently appointed Chair, Allan Cook.

Yours Sincerely,

Mark Thurston
Chief Executive Officer
High Speed Two (HS2) Ltd

Cc.

- Clive Maxwell, Director-General, High Speed and Major Rail Projects Group, Department for Transport
- Nusrat Ghani MP, Parliamentary Under Secretary of State, Department for Transport
- Allan Cook, Chair - High Speed Two (HS2) Ltd

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Annex A: Projected jobs and homes

- The redevelopment of Euston as the HS2 London terminus has the potential to support up to 14,100 new jobs and 3,800 new homes with access to public spaces.

- The Old Oak Common and Park Royal Development Corporation in West London has ambitious plans to deliver 25,500 new homes, together with up to 65,000 new jobs.

- Birmingham is already reaping the benefits of HS2, with businesses including Deutsche Bank, Jacobs Engineering and the retail banking arm of HSBC choosing to make the city home. The West Midlands Combined Authority's HS2 Growth Strategy has the potential to add £14bn to the economy and create and support 100,000 jobs.

- At Birmingham Interchange station, a new business district is envisaged to deliver 16,000 jobs and 1,900 homes. This will form the core of the wider UK Central proposals for growth at key locations in the M42 corridor.

- At Birmingham's HS2 Curzon Street station, Enterprise Zone business rates income will help regenerate the area with plans for the creation of 36,000 jobs in the creative, digital, and professional services sectors and 4,000 new city centre homes.

- The East Midlands HS2 Strategic Board have published their emerging HS2 Growth Strategy which estimates that with strong local action the opportunities for trade, investment and jobs that HS2 brings are equivalent to 74,000 new jobs and an extra £4bn to the local economy.

- In Leeds, £500 million of investment has been attracted since the announcement of Phase Two of HS2, including Sky's technology hub, which opened in 2016. Over the next 30 years, Leeds South Bank redevelopment next to the HS2 station is expected to provide 40,000 jobs across the financial, professional, creative and digital sectors and 4,000 homes.

- In Manchester, redevelopment plans at Manchester Piccadilly include a mixed use neighbourhood with offices, homes and public spaces. Manchester estimates HS2 will support 40,000 new jobs and commercial development.

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<td>East Midlands</td>
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<td>Crewe</td>
<td>Crewe HS2 Hub Draft Masterplan Vision</td>
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<td>Greater Manchester HS2 Growth Strategy</td>
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<td>Other Stations Served by HS2*</td>
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<td>Darlington 2025 - A Modern Rail Hub for a Modern Economy</td>
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<td>The Lancashire Strategic Transport Prospectus</td>
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