

Rt Hon Heidi Alexander MP
Secretary of State for Transport

Great Minster House
33 Horseferry Road
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By Email: transportsecretary@dft.gov.uk

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Dear Secretary of State,

I am writing to you about the impact of simplifying the railway's operational specification on the cost, schedule, risk and benefits of the HS2 programme. Following your commission into this work earlier this year, HS2 Ltd has worked closely with officials for your Department and other delivery partners, to assess the impact of aligning the HS2 specification more closely to those currently in operation on other high-speed networks in Europe and High-Speed 1.

The initial findings are complete, with detail on the proposed package of changes included in the Annex to this letter.

In summary, the assessment of these changes is that there is a cost, risk and schedule benefit of aligning the HS2 operation to those running in Europe. This increases confidence in the delivery of the HS2 programme whilst maintaining ability to expand and operate additional services in future.

If these changes were to be enacted, making the decision now will be critical to support the current plans for developing the HS2 baseline and therefore, delaying decisions would put the current reset schedule at risk.

Yours sincerely,



Mark Wild

Chief Executive Officer
High Speed Two (HS2) Ltd

Annex

Change of HS2 railway specification and scope

Issue

1. HS2 Ltd has now concluded its initial assessment of opportunities for improving programme cost and schedule through a reduction in specification.

Remit and Guiding Principles

2. HS2 Ltd were commissioned to assess the money and time that could be saved from adopting an operating specification in line with High-Speed 1 (HS1) and European high-speed networks. This was referenced in the March 2026 Parliamentary Report.
3. Alongside the cost and schedule savings, there was also a need to consider the impact on delivering further high-speed services in future with more infrastructure and the extent to which the changes address current risks in the programme.

Summary position

4. HS2 Ltd's initial assessment is that by aligning with other high-speed railways in Europe and HS1, over the life of the programme, up to £2.5bn in cost and risk could be saved and the railway could be opened at least one year earlier compared to existing plans.
5. In the main, these savings would come from avoiding risks associated with certifying a railway at a speed and specification not operated anywhere in the world. Aligning with speeds already in operation in Europe significantly reduces the time and risk in the testing phase as both the technology and assurance is proven and well established.
6. In addition, these changes would allow HS2 Ltd to benchmark processes and performance against current operational systems in Europe. It would also ensure that there is a pool of expertise and experience that have delivered this high-speed specification that the HS2 programme can call upon as needed.

Proposed Changes

7. The assessment proposes the following package of changes:
 - a. **Reduce the maximum line speed from 360kph to 320 kph.** 360kph is faster than any current railway globally. 320kph represents a standard 'new build' maximum operating speed in Europe.
 - b. **Remove Automatic Train Operation (ATO)** – ATO would be a global first-of-a-kind train control and signalling system for a high-speed railway, introducing novelty that would require extensive proving. No other European railways are actively pursuing ATO for their high-speed lines and it is not needed to deliver the requirement of 10 trains per hour (tph).

- c. **Reduce the signalling system (ETCS) specification** – Without the requirement for ATO it is possible to adopt a proven ETCS version (v2.1) to align with other UK and European projects, including the live delivery programmes; Transpennine Route Upgrade and East Coast Digital Project.
8. These three elements of the current HS2 specification drive significant cost, time and risk into the HS2 programme. Given the advanced nature of the design and build of the civils programme between Birmingham and London HS2 programme it will continue to be built. The changes outlined here reflect the biggest opportunities to reduce complexity and improve confidence in delivering HS2. If these changes are not implemented, proving the railway operation at 360kph could take significant time and money and potentially result in a later decision to change the scope.

Cost and schedule impacts

9. While this work is not yet mature enough to estimate the exact scale of the savings the initial findings suggest that, over the life of the programme, implementing these scope changes could save up to £2.5bn (including risk) and open the railway at least a year earlier for both the initial operation between Old Oak Common and Birmingham Curzon Street and the end state with additional high-speed services to the Northwest and Scotland.
10. Changes in the operating costs from these changes has been assessed as broadly neutral. Increases in operating cost from additional staff to support the service without ATO and run at a slower speed are offset by the reduction in energy costs from trains using less energy at up to 320kph. Further work to fully assess and optimise the operating costs is planned.
11. As the key impact from these changes is a reduction in risk, primarily in the testing phase of the programme, these changes increase the confidence of delivering HS2 at the lowest reasonable cost as quickly as possible. This is achieved by removing novelty and complexity associated with the use of first-of-a-kind technology.

Future Proofing

12. These proposals have considered the impact on the potential path to support further services. Beyond HS2's current committed operational requirement of 10 tph, the Sponsor's Requirements includes future proofing to 16 tph, subject to infrastructure and system upgrades.
13. HS2 Ltd have assessed that an additional system to support drivers (e.g. ATO or another Driver Advisory System) may be required for a frequency beyond 12 tph. The work required for future upgrades is not possible to forecast precisely, but it is our advice that the scope changes proposed do not preclude the path to 16tph for future administrations.
14. The potential expansion of services beyond HS2 Phase One would require additional infrastructure to be built irrespective of these proposed scope changes. If changes are enacted, future expansion will need to consider any technology migration required to deliver the outputs of the new schemes.

15. The changes may preclude uplift to operating at higher speeds in future given the potential disruption to railway operations required to upgrade to 360kph.

Benefits impact and Value for money

16. HS2's network scope has changed significantly since Notice to Proceed in 2020. While speed reduction has been considered previously, the network is now smaller with fewer services, which means that the existing technical specification is increasingly misaligned with what is actually being built, and the degree of benefit from 360kph and ATO is reduced.
17. Benefits analysis indicates that there are positive impacts based on the accelerated Delivery into Service (DiS) dates and reduced project Capex. There are negative impacts associated with the increased journey time, in both revenue and wider economic benefits. Your Department's value for money assessment against the upper range has assessed these scope changes as an "economically efficient cost saving", meaning that the cost savings against the broad transport budget outweigh the reduction in benefits, increasing public value. When assessed against lower end of the range, the benefits losses outweigh cost savings but overall remain financially positive (with loss of revenue not exceeding reduction in costs).

Timing and Next Steps

18. It is important to note that implementing a change in railway scope when a programme is in-flight carries risk. However, if these changes were to be implemented, doing so now will allow the current design work underway, and the baseline process for the reset, take these changes into account.
19. Further waves of work are planned to investigate further opportunities to deliver further savings in time and money from further simplification and optimisation of the programme. Further decisions on this may be required in due course.