

# HS2 – what went wrong? Learning lessons for infrastructure policymaking and the profession

## ICE Presidential Roundtable summary

December 2023

### Background

Following the October 2023 cancellation of the Birmingham to Manchester leg of HS2, the ICE convened a roundtable of infrastructure and transport experts, chaired by ICE President Anusha Shah, to discuss what lessons both the profession and governments can learn from the cancellation.

HS2 has dominated UK headlines, but governments globally are finding that rising costs and delays are making it impossible to follow through on the original project vision.

The Australian Federal Government [cut 50 projects](#) in November 2023 as part of a major infrastructure review. The [coalition government elected in New Zealand](#) in 2023 looks set to do the same.

The cancellation of HS2's northern leg is a symptom of the wider market capacity issues that are stymying infrastructure pipelines everywhere. But its problems also run far deeper.

HS2 was first proposed in 2009 and greenlit over 10 years ago. Since then, it has attracted controversy and seen countless reviews, cost overruns, delays, downgrades, and cancellations. Questions have emerged which bring with them the opportunity to learn lessons for future infrastructure policy and decision-making.

These include developing and articulating the strategic need; the role of politically driven decisions on infrastructure projects; design choices such as line speed; why private financing options were not used; risk appetite, incentives and innovation; and the lack of integration with the wider infrastructure system.

The policy, procurement, and delivery landscape in the UK has also changed enormously since HS2 was agreed. This includes the creation of the National Infrastructure Commission and its five-yearly National Infrastructure Assessments; the evolution of the Infrastructure and Projects Authority; the development of the Construction Playbook, which sets out better approaches for public sector procurement, and more.

Would these have been enough to make HS2 a success?

The project's legacy is a concrete illustration of the importance of long-term infrastructure planning. The ICE will start 2024 with a deep dive programme on HS2 to uncover answers and seek insight on these questions and more. Please get in touch with [policy@ice.org.uk](mailto:policy@ice.org.uk) to find out more information.

### *A short history of HS2*

HS2 was originally planned as a Y-shaped network with a line running from London to Birmingham, where it would split, with a Western Leg running to Crewe and Manchester and an Eastern Leg to Sheffield and Leeds. In 2012, HS2 was given the green light with a [cost estimate of £32.7 billion](#). It was to begin running services in 2026, with full operation of the line by 2033.

In 2019, amid concerns about the rising cost of the project, [now projected to be as high as £78.4 billion in 2015 prices](#), the UK Government asked former HS2 chairman Douglas Oakervee to conduct a review assessing whether and how to proceed with HS2.

The [Oakervee Review](#) concluded that, on balance, HS2 should continue. However, it recommended that a further rail plan for the North and Midlands be developed to ensure HS2 was properly integrated with other transport strategies, such as Northern Powerhouse Rail and Midlands Engine.

This [Integrated Rail Plan](#) was published in 2021 with revised plans for HS2, most notably a much-reduced Eastern Leg and a revised completion date of the early to mid-2040s.

In March 2023, [the Government delayed](#) the Birmingham to Crewe section by a further two years and paused work at the London Euston terminus.

Following further cost pressures, the UK Prime Minister [confirmed in October 2023](#) that the Birmingham to Manchester leg of HS2 would be cancelled. HS2 Phase 1 from London to Handsacre, Staffordshire, where the line will connect with the existing West Coast Main Line, will continue, though the completion of the line to Euston is now contingent on private funding.

### **There is a growing need for additional rail capacity in the UK – but was HS2 the answer?**

The ICE has previously outlined that there is a clear need for additional capacity on key rail corridors across Britain to help rebalance the economy and deliver net zero.

What has been contested is whether this capacity should be met through new, faster routes or whether alternatives could be delivered more cheaply while offering similar benefits.

Attendees questioned whether HS2 was a solution that was looking for a problem, as alternative options to address pinch points on the rail network were not provided at the time. The conversation from the outset was one focused on transport, not on outcomes, and the prevailing attitude was that ‘all roads lead to London’, rather than one centred on improving connectivity between cities elsewhere. It is clear now that progress on devolution has changed the national conversation.

However, others felt HS2 was a necessary project to address the acute capacity issues on Britain’s rail network and deliver wider outcomes, albeit the ‘least worst’ solution.

The debate considered how HS2 was first thought of in isolation from the rest of the railway network. It took a number of reviews before it was thought of more fully as part of a wider system, feeding into business cases for projects promoted by subnational transport bodies.

### **Were HS2’s outcomes clear from the start?**

The discussion explored whether the government, industry and public were ever clear on the outcomes from HS2. While the narrative surrounding HS2 was initially pushed as providing journey time savings from London to major cities in the

North and Midlands, messaging quickly became unclear – was it about speed, capacity, economic rebalancing, emissions savings?

This meant that when problems with the project were encountered, there was nothing to judge decisions against.

When outcomes are understood from the beginning, and are accounting for more than economic metrics, value can be extracted.

Without understanding the wider value of a project, policymakers will often narrow decisions down to a single lens – likely the benefit-cost ratio.

However, attendees considered that quantifying value early in the development of a major project is highly complex, and efforts were made early on in the process to set this out. It is unlikely that greater clarity on outcomes would have resulted in HS2's costs not ballooning.

The discussion also covered some of HS2's positive outcomes that were not necessarily foreseen. The project has trained and upskilled many engineers and other professionals, while pioneering a number of measures to reduce the environmental impact of large-scale infrastructure projects. There is now a responsibility on the profession to articulate these positive outcomes and apply them elsewhere.

### **Can politics ever be disconnected from infrastructure projects?**

Attendees discussed the tensions between how decision-makers run the country, and how they run major infrastructure programmes.

The [2006 Eddington Transport Study](#) recommended that the UK did not need a high-speed railway, yet politicians ended up agreeing to take forward HS2 only a few years later. It was suggested this was because the prevailing lesson from the West Coast Main Line upgrade was not to do 'open heart surgery' on a live railway.

Politicians are naturally ambitious, and ministers can often see large-scale transport projects as something that can leave a legacy and send a global signal. Sometimes this means that projects will proceed even if the benefit-cost ratio is on the lower side.

This political aspiration is valid and justified to an extent, but it needs to be backed up by long-term commitment – and this often means commitment across multiple ministers and governments. Political support for a major project only needs to fall once for it to run into trouble.

Globally, rising costs driven by inflation are making it difficult to follow through on the original project vision. However, attendees outlined how Hong Kong has had very high cost inflation, but has still followed through on committing to major infrastructure projects – some commitments have been repeated across policy addresses for two decades.

Over the series of ministers and officials involved in HS2, the project failed to hang onto corporate memory; reinvention was preferred over drawing on experience.

In being ambitious and wanting to deliver a project, policymakers can also create unintended consequences. Attendees outlined how politically driven decisions to meet HS2's initial deadlines resulted in costs rising substantially. The old adage that you can only have two of cost, speed and quality ran true.

### **Inefficiencies from inception**

The sheer scale of HS2 – both in its ambition and budget – raises questions about whether the UK ever had the managerial and organisation capabilities to deliver it in full.

Attendees discussed how megaprojects on this scale are on the verge of being too big to effectively scope and cost. Without benchmarks from prior projects, cost estimates can be wildly off-kilter and can become difficult to challenge due to the absence of comparators and contrary evidence.

The hybrid bill process meant that HS2 was agreed to be delivered on a geographic basis. This fragmentation across the whole system meant that the opportunity was lost to systemically optimise the project end to end, including a lack of standardisation.

This is most evident in the project's various bridges and viaducts having unique designs, which failed to embrace standardisation. In part this was due to overly rapid progress through earlier project stages, resulting in conceptual issues being addressed far too late in the process.

Attendees outlined that it would have resulted in much greater efficiency to have systematically designed the project first, and then have it be carved up geographically for delivery.

In addition, the huge budget for HS2 meant there was asymmetric risk capability in the supply chain. Smaller firms were simply unable to take on the downside risk due to the size of the project and the amount it costs. This meant there was limited incentive for innovation and collaboration.

The scale of HS2 also underlines the importance of embedding a culture of trust and transparency from the start. Attendees discussed whether there was appropriate clarity on roles and responsibilities. This is an issue on most major projects – if good challenge and collegial decision making is important for good engineering, how can this be realised in an environment with multiple stakeholders?

#### Questions to take away

- Can long-term projects ever succeed across short-term political cycles? Are the issues of politically driven decisions and stop-start funding too deeply ingrained – and if so, how can this be changed?
- Are governments globally facing similar challenges on projects of this scale? What are they doing to address them?
- Is the hybrid bill process fit-for-purpose for legislating for projects on HS2's scale, given that it leads to a rush from bill stage to project design? Are there alternative processes that can be used?
- What can be done proactively to foster a stronger culture of trust and collegial decision making on major projects?

#### Further reading:

ICE policy paper: [Reducing the gap between cost estimates and outturns for major infrastructure projects and programmes](#) (2019)

ICE blog: [Has Covid-19 changed the need for High Speed 2?](#) (2020)

ICE blog: [Is private finance the answer to HS2?](#) (2023)

ICE blog: [HS2 underlines 'all that's wrong' with UK transport policy](#) (2023)