

Cancellation of major projects:

Perspectives on rethinking the approach to major projects — inspired from HS2 Phase 2 lessons

Perspectives



About this report

HS2's Phase 2 cancellation in October 2023 provides a snapshot of wider issues facing major projects and an opportunity to rethink the UK's approach to them.

In January 2024 the Major Projects Association convened a group of senior executives representing a range of viewpoints to consider lessons from cancelled projects, the extent of the impacts on the decision to cancel and what makes projects vulnerable to being cancelled, citing five examples from HS2 Phase 2. They explored a number of opportunities and related ideas for how future projects can reduce the risk of being cancelled or minimise the scale of the impacts should they be cancelled – four of which are included in this 'perspectives' report. Ultimately, the goal is to enhance project delivery capabilities and outcomes, and control long-term costs.

The issues and challenges that led to the cancellation of HS2 Phase 2 and its consequences have been used to inspire a wider discussion about project cancellation – the contents of this 'perspectives' report is not meant to provide a narrative on HS2. Such detail is comprehensively provided by the National Audit Office (NAO) in their report *HS2: update following cancellation of Phase 2*, July 2024.

Why understanding project cancellation matters

HS2 is not the first major project to suffer from descope or cancellation. There are numerous examples from the Black Arrow rocket programme in the 1960s, to the Channel Tunnel in the 1970s, the Crossrail project in the late 1980s, the Advanced Passenger Train in the 1990s, and numerous tram projects in the noughties. Further afield, the Victorian State Government in 2023 cancelled its plans to host the 2026 Commonwealth Games. We must also bear in mind that, as we saw following both the Channel Tunnel cancellation in 1975 and the Crossrail project's Parliamentary rejection in 1991, many projects do eventually restart, albeit with revised scope, funding models or delivery approaches.

Whether eventually restarted or cancelled for good, such projects are a drag on public finances and the economy. The impacts of cancelling or descope projects are significant, ranging from the missed/delayed benefits, additional costs to abort the project, the rework of other projects that were dependent on it, to the 'opportunity cost' of what could have been done instead.

For example, the NAO in their report *High Speed Two: Euston*, March 2023, noted that HS2's accounts revealed that the cost of pausing and rethinking the Euston development was **£106m** in unused designs and that **£592m** was spent on land and property along the Phase 2 route which may no longer be needed. To put this in context, this money could have funded two new hospitals.

Cancelled projects add fuel to the debate on whether the UK can deliver major projects, or indeed can any nation, given the findings in *'How Big Things Get Done'* by Flyvbjerg and Gadner, that 99.5% of major projects worldwide are over budget, over time and fail to deliver their expected benefits. How can we set up and deliver major projects so that they are less prone to descope or cancellation, or if they are cancelled/descope then the consequences are less severe? Firstly, we need to understand the impacts of cancellation and what makes projects vulnerable to cancellation.

The impacts of cancelling projects

The cancellation of part or all of a major project can have numerous direct and indirect impacts as well as wider ripple effects, such as:

- **Abortive costs** – for example the increased communication and engagement costs to deal with land already acquired or due to be acquired that is no longer needed, or the cost of early termination of in-flight contracts.
- **Missed, reduced or delayed benefits** – for example the capacity issue and challenge of maintaining/enhancing the existing West Coast Mainline remains unresolved.
- **Rework to other related projects** – for example the **National Infrastructure Strategy** (2020), the **second National Infrastructure Assessment** (2023), the **Integrated Rail Plan** (2022) and particularly **Northern Powerhouse Rail** all included the assumption of a transport spine between London, Birmingham and Manchester based on HS2 to connect to. Additionally the carbon savings from HS2, particularly from taking freight off the roads, are baked into the **UK's 2050 net zero commitments** and will now need to be found elsewhere.
- **Opportunity cost of what could have been done instead** – both in terms of the money spent and the leadership time allocated (and in the case of HS2, **the legislative time**).

- **Community and workforce impacts** – a primary objective of the HS2 project is to stimulate regional economic growth and in turn improve life chances of those in the regions it serves. These improved life chances are now less possible. Many people changed jobs and relocated because of the long-term security a major project provides.
- **Confidence in major projects** – **according to the National Infrastructure Commission** (NIC), over the next decade the UK needs to spend £70–£80bn a year on infrastructure, around 75% of which is likely to be privately funded. Long-term projects such as HS2 should increase investor appetite due to the stability they ought to provide. The uncertainty caused by start-stop, start-pause or start-change decisions reduces investor appetite, contractor/supplier appetite, investment in skills/equipment and the ability to recruit/retain talent. This has a financial impact through an increased cost of borrowing and increased cost of services/goods from reduced competition.

The above list is not exhaustive, and neither are the factors unique to the cancellation of HS2 Phase 2. They illustrate the scale of potential impacts and therefore the need to make projects less vulnerable to cancellation, and that the assessment and decision-making to stop, pause or change a project should be done with the same level of diligence applied to start them in the first place.

Risk of cancellation – what makes projects vulnerable?

The outline plans for what would eventually become the HS2 project were first suggested in 2002 by the Strategic Rail Authority as a solution to West Coast Mainline capacity problems. Throughout its development, the project has benefited from sustained cross-party political support while also encountering much critical challenge including many serious political and technical objections at both national and local level. An exploration of these challenges and how they eventually led to the cancellation of Phase 2 provides, in retrospect, fertile ground for learning about major projects delivery.

Members highlighted five notable issues that made HS2 Phase 2 vulnerable to cancellation, issues which could affect other projects and would benefit from alternative approaches or increased awareness. These are:

1. It was vulnerable from escalating costs in the context of a Government facing fiscal squeeze.
2. The strategic and economic goals (and consequently the project narrative) were misaligned.
3. It is inherently difficult for a 'start-up' client to develop organisational capability as it is needed; the 'start-up' approach limits the ability to build on past experiences.
4. Schedule compression, caused by a delayed start, increased commercial complexity and project risk.
5. It was vulnerable to asymmetric powers to start and stop the project in the context of fluctuating political support.

HS2 was vulnerable from escalating costs in the context of a Government facing fiscal squeeze.

HS2's cost forecasts escalated against its baseline estimate. Its estimated costs were benchmarked to Q3 2019 and budgets from the Department for Transport (DfT) were to increase to cover the inflation cost. Covid-19 restrictions and inflation related to Brexit and the Ukraine war resulted in a budget increase from £44.6bn (including contingency) to **£49bn–£57bn¹**. However the impact of such high inflation and other issues noted above resulted in HS2 being under pressure to reduce costs when already in contract. In addition, environmental and social impact mitigations led to an estimated £1.2bn increase against an original £245m provision, and engineering and land acquisition costs escalation resulted in a £10bn increase.

Inflation has affected nearly all projects – a review of the Infrastructure and Projects Authority's (IPA's) 2023 **National Infrastructure and Construction Pipeline** report shows a like-for-like portfolio increase of £50bn–£125bn when compared to 2021. In percentage terms that is between 8% to 20% just for inflation, putting the HS2 forecast cost increase (of 11% to 29%) above the portfolio average, but by no means an outlier.

Irrespective of why the costs escalated it is still a very large amount, and when added to existing commitments it would have taken up the whole of the discretionary capital for the DfT for a generation. Any project that has cost escalation with such a significant impact on a Department's budget will be challenged on affordability grounds alone, regardless of whether it may offer value for money. On the back of cost/schedule overruns on Crossrail, the delivery confidence in major projects generally fell and HS2 Phase 2 became politically 'too easy to cancel'.

The strategic and economic goals (and consequently the project narrative) were misaligned.

The project's foundational goals to increase rail network capacity and stimulate regional economic growth were overshadowed by an economic focus on reducing travel times, which is the basis of the DfT's **Transport Analysis Guidance** (TAG). This misalignment led to prioritising speed and frequency in project specifications, driven by traditional cost-benefit analyses that value time savings for travellers, particularly business travellers.

The emphasis on time savings became a dominant narrative, overshadowing the strategic goals of capacity enhancement and economic development. This speed narrative made the project susceptible to criticism for its high costs relative to the perceived benefits of reduced travel times. The speed narrative also made it difficult to address environmental concerns of the project's extensive footprint even though the project makes a significant contribution to the UK's 2050 net zero commitment – as carbon reduction was not a driver in the strategic business case.

It is inherently difficult for a 'start-up' client to develop organisational capability as it is needed; the model of 'start-up' client organisations limits the ability to build on past experiences.

HS2 Ltd was formed as a so-called 'start-up' client. It was incorporated in 2009 as a Non-Departmental Public Body and the delegated project owner formed specifically to deliver this project. The DfT was the Project Sponsor and home to the Senior Responsible Owner (SRO). The model mirrored that for the Crossrail project where Crossrail Ltd was the client, and for the Thames Tideway Tunnel project where Bazalgette Tunnel Ltd was the client – both similarly incorporated as a start-up organisation specifically for those projects.

While creating some autonomy from the government sponsor, these start-up clients increase complexity as they require the establishment of corporate capability as well as project capability – which also needs to grow and evolve as the project progresses. For example, after the early phase of preparing for and securing Royal Assent for the hybrid bill the client team then needed to transition from project development to project execution. The ramp-up was significant going from circa 500 'developer' employees in 2015 to circa 1250 'delivery' employees by 2020.

The governance arrangements did include a concept of progressive authority whereby HS2 Ltd had to demonstrate specific capability, independently assessed, in order to gain additional powers and to progress to the next stage of work. This arrangement was generally viewed as useful and worth repeating. However, a model that each successive major project is delivered by a 'start-up' without established capabilities nor corporate memory of previous successes/failures exposes major projects to be forever chasing a horizon over which lies the capability they need.

Schedule compression, caused by a delayed start, increased commercial complexity and project risk.

Royal Assent for the HS2 Phase 1 hybrid bill was received some 23 months late in February 2017, against an original milestone of March 2015, yet the opening date – originally set in 2010 – remained 2026. Compressing the project timeline by 23 months resulted in the initial plans and budgets being based on limited data as HS2 did not have the legal powers to acquire the land along the trace, and hence to carry out detailed site investigations on ground conditions. There is also a context of the **Oakervee review** and the post-Covid appetite for '**shovel-ready projects**' for HS2 Ltd to get going in 2020. These had knock-on effects of tender prices being higher than estimated as the client had to select a commercial model to address the uncertainty and the contractors priced in assumptions and risk.

HS2 Ltd, DfT and HM Treasury (HMT) continued to work to a fixed completion date (which is in effect a point estimate), whereas they reached an agreement to stop using a point estimate for the forecast cost but instead use a range forecast. Such a fixation on unrealistic timescales is cited as one of the key cause of delays and cost escalation for the Crossrail project – a conclusion borne out by **Independent Project Analysis** (IPA Global) findings that project execution can rarely be compressed and certainly not for megaprojects.

It was vulnerable to asymmetric powers to start and stop the project in the context of fluctuating political support.

The HS2 project received cross-party support from both houses through five successive governments from the initial proposal in the Brown Government in 2008 through to the Phase 1 'Notice to Proceed' by the Johnson Government in 2020.

In total, just over **1,300 hours of legislative time** have been spent on four HS2-related bills over nine sessions in the last decade, three of which gained Royal Assent. For context this is about 10% of parliamentary time over that period. As well as requiring hundreds of hours of parliamentary time, the HS2 legislative process has involved dozens of MPs and the testimony of hundreds of petitioners, HS2 staff and lawyers. It also consumed the time and resources of statutory bodies and local authorities along the route, as well as the compulsory purchase of land.

In contrast, the decision to abandon it has been the decision of the Prime Minister alone in consultation with a small number of Ministers and advisers, and no formal parliamentary proceeding was required. The subsequent **Treasury Select Committee review of HS2** revealed that neither the NIC, the Infrastructure and Projects Authority, HS2 Ltd or Network Rail were consulted on the cancellation of Phase 2 or the composition of the Network North plan to reassign the £36bn earmarked for HS2 Phase 2. Given the scale of the cost overruns and the impact on DfT's budget, had it gone back to Parliament they may well have come to the same decision to cancel Phase 2, albeit with the benefit of additional scrutiny perhaps in a way that better minimised the impacts noted earlier.

The cancellation of Phase 2 could be regarded as a failure of political process and governance as much as it is a failure of project set-up and delivery, prompting consideration of better models for the 'politics of projects' – the feature of the Association's **2024 Prestige Lecture from Professor Ben Ansell** – where he compared the UK's planning and consenting approach with China, France, Norway and Japan in the context of democratic structures.

How can we get better at (not cancelling) projects?

Clearly, the best way for major projects not to be cancelled is for them to be shaped, initiated and delivered well. This report, inspired by notes from the Association's dinner discussion, makes the assumption that the 'how to shape, initiate and deliver projects well' is already covered by existing guidance from HMT, the IPA, the Major Projects Association, the APM, the NAO and the

Institution of Civil Engineers among others. To avoid repetition, we only highlight ideas raised for what else could be done or what could be done differently so that such 'know how' is better applied.

Opportunity 1: Further improve the approach to investment appraisal and its influence on the project narrative and specification.

Idea: Update Green Book and related investment appraisal methodologies to better enable the wider benefits to be recognised over a longer timeframe and to better align each of the five cases.

'For too long the debate has been on tangible evidence when it comes to the wider economic benefits of the project. But there is definitive proof – new figures show that £10bn will be added to the West Midlands' economy over the next ten years. HS2 is spreading prosperity across the West Midlands – from the creation of jobs, apprenticeships, economic investment and a wider legacy.'

Diane Perry, Chair of the High Speed Rail Group

The misalignment of the Strategic case (i.e. economic growth through connectivity and capacity) and the Economic Case (i.e. journey time savings) for the HS2 project and in particular the economic appraisal in DfT's TAG methodology is documented earlier in this report.

A report by the NAO, February 2024, **Delivering value from government investment in major projects** looked at six historical projects completed over the past 25 years. Their analysis showed that the potential value from a project can go beyond the value that was originally intended and in some instances from sources that were not expected at the outset. They also concluded that it can take time and additional investment to realise value from major projects.

HMT's **Green Book guidance** for Business Case development land appraisal has been reviewed and updated since the HS2 project developed its Business Case to allow wider benefits to be incorporated. Whilst there is general consensus that the Green Book has improved, some feel that it is still too limiting on the timescales to account for benefits, the attribution of benefits and the balance between each of the cases.

Opportunity 2: Design project partitioning/phasing to minimise the impact of descopeing or cancellation.

Idea: The strategies to partition major projects into smaller parts/phases for financing or management reasons must ensure that the individual parts/phases deliver value on their own even if remaining parts/phases do not go ahead. Projects should have in-built schedule relief or firebreaks to prevent schedule compression and optional 'off ramps' built into their timeline.

HS2 was approved in stages through four individual hybrid bills, yet the Business Case makes most sense for the route as a whole in terms of value for money.

Had a different partitioning and phasing strategy been used, such as constructing the Manchester to Birmingham, or Crewe to Birmingham leg first, the project could still have delivered more value for money even if later phases did not go ahead, whether that be for reasons of affordability or in preference for higher priority initiatives in times of a fiscal squeeze. In addition it would allow for procurement, consent and design lessons to be captured and streamlining of the delivery model for subsequent stages.

Opportunity 3: A new delivery agency to address capability development issues of the start-up project owner.

Idea: A national infrastructure delivery agency with a remit pre-approval to help shape the project and post-approval to mobilise the project (either as project owner or to assist the project owner) should be established if feasible.

Many countries have some kind of infrastructure delivery agency. These include the US Army Corps of Engineers, Rijkswaterstaat in the Netherlands, and the French Directions d'Equipeement. While these three are all over 200 years old, Denmark provides a newer example: Sund & Bælt Holding A/S. This was founded in 1991 as a wholly-owned government company to develop and operate Denmark's national and international road/rail links, and it is presently the Danish project owner for the Fehmarn Link to Germany under construction. It borrows from the private sector and recycles operational toll income to support the shaping and delivery of new major projects within its remit.

A national Infrastructure Delivery Agency should be considered to complement the strategic role of the National Infrastructure Commission and the Infrastructure and Projects Authority and

provide an ongoing owner capability for shaping and delivering UK major projects that remedies the issues experienced with start-up project owners. Such an agency could:

1. Support early phase shaping of major projects to ensure that project delivery considerations are taken into account from the very start prior to the depositing of a hybrid bill or application for development consent.
2. Support the establishment of pop-up project owners such as HS2 Ltd to enable more rapid mobilisation and maturation of project owner capabilities as well as cross-department learning.
3. Provide a consistent commercial counterpart for delivery partners whilst project owners are maturing (particularly as they move from the shaping to the delivery phases).
4. Clarify the role of the IPA as focused on project governance by sponsoring government departments and support for SRO within government.
5. Collect, hold and analyse project outturn data to enable the improvement of early phase estimating for major projects based on rigorous benchmarking.

This ongoing role of the Agency remedies the start-up issue. It would enable the Agency to develop best practices for the required technical, project, commercial capabilities for mobilising major projects, and thereby enhancing career development in the sector.

Opportunity 4: Address the asymmetry in the legislative process, improve political engagement and increase investor confidence through longer-term plans.

Idea: Parliament should vote on a long-term national infrastructure strategy, developed by the National Infrastructure Commission with a 30 to 100-year view, which is put into law on a parliamentary or quinquennial basis.

'Whatever inquiries follow about the future of HS2 and about how the project came to be mired in such difficulties, some consideration needs to be given to the role of the legislative process and to the reforms that may be necessary to ensure that the HS2 debacle is not repeated.'

Hansard Society 2023

The context of balancing the Strategic Case vs Economic Case calls for a long-term strategic vision or policy for infrastructure such as in Japan (80-year timescale), France and Spain.

Such long-term thinking ensures we do not have unnecessary gaps in the delivery pipeline for work which ought to be continuous – for example in the UK we have had a 35-year gap between new build of nuclear power stations, a 40-year gap in new reservoirs and a 20-year gap in high-speed rail. The lack of continuous work means that the next new project becomes a first for a generation and therefore brings the risks and costs associated with ‘first of a kind’ project.

A range of ideas was offered to help address the asymmetry issue of the legislative process, provide the long-term stability needed to improve confidence and improve engagement between politicians and deliverers, including:

1. The National Infrastructure Commission becomes a statutory body, answerable to parliament rather than to ministers. The NIC should continue to be required to prepare a National Infrastructure Assessment every five years, taking a 30-year view of the UK’s infrastructure needs, but also a longer-term 100-year view as well, as other countries do.

Government should be obliged by law to respond with a five-yearly national infrastructure strategy.

The strategy would be approved by parliament via legislation and set out the projects required, as well as related funding arrangements and delivery programmes. The national infrastructure strategy would then be reflected in revised national policy statements, to perform the role of guiding decision-making on planning and consenting for the individual projects within the strategy. While it would not be impossible to change a project, it would be harder to alter summarily in response to shorter-term political drivers. The government of the day would be in the driving seat with each five-yearly strategy, but it would be held to deliver the strategy unless good reasons arise subsequently which would require a change to the strategy approved by parliament.

2. Decisions to stop, pause or materially change approved projects should be subject to the equivalent level of governance (assurance and approvals) that were used to approve them. The assurance reports should include impact assessments on abortive costs, cost-benefit implications for dependent/related projects and any reduced/missed benefits that departments may still need to address by other means, e.g. carbon targets.

3. With a record number of new MPs after the recent general election there is an opportunity for a step change in the relationship between politicians, SROs and the executives of major project organisations. The IPA (or the Industry and Parliament Trust) should provide an induction/briefing scheme on major projects for MPs, ministers (including shadow ministers) and metro mayors. This should focus on issues such as the danger of asking for point estimates for time and costs.

Postscript – what next?

Much has changed since the discussions that generated ideas in this ‘perspectives’ report, including:

- The UK held a general election resulting in a new government based on a **manifesto** featuring plans for major projects and policies/ approaches for the financing, consenting and delivery of major projects.
- The previous Government indicated that the Euston leg of HS2 may need to revert to being publicly financed rather than privately financed (as set out in the **Network North command paper** detailing the cancellation of Phase 2). Subsequently, the new Labour Government has signalled there are some difficult choices for the up and coming budget and have already cancelled a number of transport projects such as the A303 Stonehenge tunnel. Whether the Euston leg gets built and how it is financed remains unresolved.
- The **Metro Mayors for Birmingham and Manchester** are developing alternative proposals for Crewe to Manchester and the connectivity for Northern Powerhouse Rail.
- The Labour Government has proposed merging the National Infrastructure Commission and the Infrastructure and Projects Authority to create the **National Infrastructure and Service Transformation Authority** (NISTA).
- The **King’s Speech** included a number of bills relating to major projects and some of the issues/ideas in this report, notably:
 - » Planning & Infrastructure Bill
 - » Great British Energy Bill
 - » High Speed Rail (Crewe to Manchester) Bill
 - » National Wealth Fund Bill
 - » Crown Estate Bill
 - » English Devolution Bill
- In July 2024 the NAO published their report on **the cancellation of Phase2** and the implications for the remainder of the project. The report refers to £2.17bn of abortive costs relating to the scaling back of the railway, including remediation and wind-down costs, and ensuring that work could be stopped safely.

These changes provide a timely opportunity for issues and ideas raised by members to support the Government's plan for national renewal and the Chancellor's mission for growth – getting **'Britain building again'**.

The Major Projects Association, through our role as a convenor bringing government, industry, advisers and investors together, will continue to seek ways to improve the initiation, delivery and beneficial outcomes of major projects. The ideas in this report will be further developed through our studies, seminars, member network, professional development and outreach programme.

Annex – Roundtable discussion

The roundtable discussion held in January 2024 upon which this report is based considered the following:

- History: how did we get here, and could we have done anything differently?
- Present: what are the implications for current projects and our national infrastructure pipeline?
- Future: how can we get better at (not) cancelling projects?

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