

ICE submission to Spending Review and Autumn Budget 2021

September 2021

Overview

The Government has committed to increasing investment in infrastructure, with the updated infrastructure pipeline setting out £650 billion of public and private infrastructure investment over the next ten years, including £200 billion up to 2024/25. The investment plan outlined in the pipeline aligns closely with the priorities and vision for UK infrastructure development set out in the National Infrastructure Strategy.

Well planned infrastructure will have a vital role to play in addressing SR21 and Autumn Budget priorities:

- **Ensuring strong and innovative public services:** Strategic infrastructure planning is essential to delivering high-quality, liveable communities. In addition, when infrastructure is viewed as a system supporting the wider social, environmental and economic system, new outcomes can be targeted such as improving health and wellbeing through investment in active travel infrastructure.
- **Levelling-up across the UK:** Infrastructure system investment can support levelling-up and, by extension, other key national objectives. However, targeting this investment most effectively will require a clear strategy for levelling-up, with defined outcomes and metrics, and a stronger role for subnational actors to plan and deliver ambitious innovative place-based infrastructure interventions.
- **Leading the transition to Net-Zero:** Achieving the net-zero target will require an unprecedented transformation of infrastructure systems – transport and energy alone account for around 60% of the UK's CO₂ emissions. Infrastructure has a vital role in enabling net-zero. However, there remains a gap between ambition and realistic policies to achieve the target by 2050, with choices and trade-offs in key sectors yet to be addressed. Resourcing for climate resilience is also increasingly urgent as the effects of climate change become more apparent.
- **Delivering growth and an ambitious infrastructure and innovation revolution:** Infrastructure investment has a key role in creating jobs and unlocking economic growth. However, optimising this potential at a time of unprecedented complexity will require continuously improving the strategic framework for identifying, prioritising and planning for infrastructure system interventions, alongside the consistent application of the tools to improve infrastructure delivery, reducing overspend and delays.

Within that context, SR21, the Autumn Budget, and expected linked announcements can play an essential role in setting the proper framework for future infrastructure investment decisions, particularly at the subnational level, while also ensuring the deliverability of the £650 billion investment pipeline.

ICE makes the following recommendations for SR21:

1. Update the objectives for the National Infrastructure Commission (NIC) to include net-zero and the Sustainable Development Goals (SDGs)

The strategic infrastructure planning and prioritisation framework that has been put in place over recent years, centred on independent and impartial advice from the NIC, has strengthened the identifying, prioritising and planning for infrastructure system interventions in the UK. However, we should continue to learn from the past to ensure the framework we use going forward is the very best it can be and that the development of the UK's infrastructure system delivers on levelling-up, infrastructure decarbonisation, and adapting to new models of behaviour post-pandemic.

In our recent report on evolving the UK's strategic infrastructure planning system, ICE made the following recommendations relevant to SR21:¹

- The objectives for the NIC, set out in the framework document, should be updated to include net-zero and the SDGs.
- The NIC's fiscal remit should remain and continue to be set by the government, with this being used as the central band for NIC recommendations.
- The publication of a national infrastructure strategy at least once every five years should be enshrined in legislation.
- Future national infrastructure strategies should be published either as, or with, national policy statements for infrastructure, and existing statements should be updated.
- Capability in infrastructure planning and prioritisation should continue to be built at the subnational level by evolving subnational transport bodies to become subnational infrastructure bodies, tasked with creating regional infrastructure strategies backed up by spatial strategies.

The Government should embed long-term demand drivers into decision making on levelling-up to build back better from the pandemic with low-carbon, resource-efficient and resilient infrastructure. High-performing infrastructure is a central pillar of any world-class economy, and investing in infrastructure improves productivity, collective wellbeing, social inclusivity, healthy lifestyle choices, and safety, security and resilience.

Following the pandemic, there will be many competing demands for infrastructure investment. Greater weight should be given to achieving long-term challenges and opportunities such as the SDGs and the Paris Climate Agreement, and therefore the NIC's objectives should be updated to reflect this.

2. Ensure the Net Zero Review future-proofs funding for net-zero infrastructure

With the policy for all new cars and vans to be effectively zero emission by 2030, new revenue models will be needed to replace funding lost as more vehicles become exempt from fuel duty and Vehicle Excise Duty (VED).² A 'Pay As You Go' (PAYG) model for the Strategic Road Network (SRN) could future-proof revenue from vehicles. ICE recommends that the following principles should be adhered to in developing a future PAYG model:

- Any PAYG model that is deployed should consider a range of measures, including vehicle weight, emissions, noise, overall efficiency and intensity of use.
- Any PAYG model should not raise more than is collected from existing VED and fuel duty revenues, and care should be taken to avoid creating additional financial pressures for people from lower socio-economic groups.
- Government should consider a road ownership model for the SRN where government or private companies collect revenue, manage data and maintain roads on a concession basis.

¹ ICE (2021) [Evolving the UK Strategic Infrastructure Planning System Post-National Infrastructure Strategy](#)

² ICE (2019) [Pay As You Go – Achieving Sustainable Roads Funding in England](#)

- In view of the existing simplicity of collecting VED and fuel duty revenues, collection methods underpinning any PAYG model should be transparent, simple to understand and protect the privacy of all users.

For the most part, however, the funding and financing mechanisms required to support infrastructure's transition to net-zero already exist. The key will be adapting and iterating existing mechanisms so they can be deployed where appropriate and are tailored to net-zero outcomes.

Contracts for Difference and the Regulated Asset Base model should continue to be used, where appropriate, to unlock the market for net-zero technologies identified by the Committee on Climate Change.³ These mechanisms could also be considered for the deployment of carbon capture and storage technologies, hydrogen infrastructure and other renewable energy sources, such as tidal lagoons.

This is why ICE recommends the Net Zero Review outlines the Government's plans to future-proof the funding of infrastructure as we transition to a net-zero economy, and in particular begins the debate in the public realm about the future of roads funding.

3. Use the SDGs as a starting point for future funding for levelling-up

Levelling-up has the potential to be vitally important in the context of meeting long-term national objectives and demand for infrastructure services. However, we first need a clear definition of what levelling-up is, the societal outcomes being sought and the metrics for measuring success. Absent this framework, the investment directed towards levelling-up could be wasted, as could the opportunity to support the delivery of other national objectives such as net-zero.

The SDGs have been described as the closest thing to a global strategy for sustainability. Many SDGs link to subnational development, while research has shown that 72% of the SDGs are linked to networked infrastructure investment, including job creation, the ability for infrastructure to generate economic activity, protecting the environment, and the manifold benefits to society that infrastructure can bring through safe, reliable, affordable and accessible systems.⁴

Using the SDGs as a basis for levelling-up investment would help ensure it is directed to projects that are vital for reducing regional economic inequalities and other linked objectives, such as net-zero.

A forthcoming ICE paper will outline priority areas where levelling-up through infrastructure investment should be targeted to make real progress in sustainable development.

4. Publish a comprehensive Net Zero Strategy which takes decisions on the policy trade-offs needed to maximise the use of infrastructure as part of the transition

Achieving net-zero by 2050 will require an unprecedented transformation of infrastructure systems and the built environment. However, there is a gap between the UK's ambitious target and realistic policy to achieve it,⁵ with key policy choices still to be answered, including decisions on the future energy mix, pathways to decarbonising transport and heat, and options for reducing emissions from harder-to-abate sectors.

For example, transport accounts for the largest proportion of the UK's emissions. The transition to zero-carbon vehicles and modal shift to active travel and public transport is critical if the country is to deliver net zero. The CCC has identified the need to invest in walking and cycling infrastructure to support this and improve digital infrastructure to reduce the need to travel for work where possible – behaviours that the Covid-19 pandemic has sped up. The CCC also forecasts that 46

³ ICE (2021) [ICE Submission to the Interim Net Zero Review](#)

⁴ ICE (2020) [ICE Strategy Sessions: How Can Infrastructure Help Achieve the UN Sustainable Development Goals?](#)

⁵ Climate Change Committee (2021) [Progress Report to Parliament](#)

million electric vehicles will need to be on UK roads by 2050. This in itself will require significant levels of new charging infrastructure.⁶

The UK also faces a climate adaptation deficit.⁷ Despite the effects of climate change becoming more evident, with the potential for cascade failure across interdependent infrastructure systems, the CCC has warned that climate resilience remains ‘a second-order issue’, under-resourced despite the UK having the capacity to respond effectively.

This is why ICE recommends the publication of comprehensive net-zero strategy that takes into account adaptation as part of SR21 and Autumn Budget.

5. Start the journey towards sustainable post-Covid-19 public transport funding

An affordable, accessible public transport system is vital for achieving both net-zero and levelling-up, but operators and policy-makers need to think differently about service and revenue models, which are currently based on traditional peak commuter times.⁸ While there is a large degree of uncertainty as to the extent public transport use will bounce back post-pandemic, shifts in where and how people live and work are likely to drive lasting, structural change in travel patterns.

There is no one-size-fits-all approach to ensuring sustainable funding for public transport in the future, however there are certain principles that an effective transportation funding mechanism should be built on:

- The funding model requires a reasonable amount of stability and resilience.
- The funding model must be flexible enough to scale with demand for public transport in times when there is significant growth in demand.
- The funding model requires a diverse array of revenue sources.
- The funding model must be accepted by the public.

If government funding continues, it should support the transport sector’s ability to pursue a transition to a sustainable future. There are holistic solutions that can be used. For example, capital funding could come with conditions that stipulate transport authorities produce plans to reshape their networks with greater levels of active travel, shared and public transport. Future funding could then be linked to these plans.

If public transport is not effectively funded, there is a risk of causing a spiral of decline in which poor-quality services lead to lower passenger numbers and therefore lower revenues which, in turn, lead to further cuts. This situation must be avoided if there is any likelihood of achieving net-zero emissions by 2050 and the UN SDGs by 2030.

ICE recommends SR21 outlines the short and medium-term plans for funding public transport, with a view to a sustainable transition that considers transport holistically.

6. Learn from uncertainty in demand by boosting investment in the National Digital Twin programme to reinforce Transforming Infrastructure Performance 2030 (TIP) ambition

The TIP Roadmap to 2030 describes a vision for the future in which we collectively prioritise the societal outcomes we need and use modern digital approaches and technologies alongside improved delivery models to achieve them.

In the context of uncertain infrastructure demand, the digitalisation of the UK’s infrastructure networks already underway will be vital to improving the performance and resilience of our railways, roads and utilities by allowing a better

⁶ Climate Change Committee (2019) [Net Zero – The UK’s Contribution to Stopping Global Warming](#)

⁷ Climate Change Committee (2021) [Independent Assessment of UK Climate Risk](#)

⁸ ICE (2021) [How Much Do We Value Our Public Transport Systems?](#)

understanding of assets in use. It will enable the more effective collection, analysis and use of data to enhance infrastructure performance in different economic scenarios following the end of the pandemic.⁹

TIP 2030 recognises the role of Digital Twins in optimising the performance of infrastructure. The creation of digital twins should be mandated for all major projects and programmes.

7. Publish the Integrated Rail Plan

ICE has argued for improved connectivity and transport capacity in the Midlands and the North for many years. In our 2016 National Needs Assessment, we noted that the National Infrastructure Commission should identify priority routes for capacity improvements on the rail network, including HS2, rail links to Scotland, and Northern Powerhouse Rail.

An Integrated Rail Plan, alongside local leadership and decision-making from Midlands Connect and Transport for the North, is an effective way to deliver this ambition.

While connectivity and capacity are critical metrics, we would underscore the need to consider long-term social, economic and environmental requirements. Ensuring that the rail network can cope with future demand, and enable expansion as the population and economy grows, will ensure optimal whole-life value.

The development of an Integrated Rail Plan was first announced in February 2020. It must be published soon to avoid delays to the delivery of ongoing and planned projects, as well as to provide certainty to project promoters, investors, industry and the supply chain.

About ICE

Established in 1818 and with over 96,000 members worldwide, the Institution of Civil Engineers exists to deliver insights on infrastructure for societal benefit, using the professional engineering knowledge of our global chartered membership.

For more information, contact policy@ice.org.uk

⁹ ICE and the Infrastructure Client Group (2020) [Covid-19 and the New Normal for Infrastructure Systems – Next Steps](#)