

ICE submission to the interim Net Zero Review

January 2021

Overview

ICE welcomes the opportunity to respond to the interim Net Zero Review. Our submission is structured around existing ICE policy recommendations in the areas of a plan for transitioning infrastructure to net zero, adapting financing and funding models, evolving the regulation of economic infrastructure and introducing a 'pay as you go' system for the Strategic Road Network.

The transition of the UK's infrastructure to net zero is expected to create new industries and green-economy jobs. This could make a significant contribution to regional development and the rejuvenation of disadvantaged areas of the UK, providing new infrastructure and local employment.¹ The opportunities and benefits associated with the transition must be fairly distributed throughout the UK. Equally, it will be important to mitigate adverse effects by supporting sectors and regions affected by the transition.²

The Committee on Climate Change (CCC) has calculated that the costs of reaching net zero are cheaper than previously thought – less than 1% of GDP over the next 30 years.³ Set against the costs, there will be significant benefits, including avoided costs – such as those required to adapt to more extreme weather conditions. The CCC identifies three main benefits likely to follow from a net-zero target: avoided climate damages, economic opportunities, and health and environmental impacts (such as improved air quality).⁴

A plan for net-zero infrastructure

From an infrastructure perspective, a coherent plan for how the infrastructure sector can contribute to reaching net-zero emissions by 2050 is required, which should be underpinned by the most appropriate procurement frameworks and the right levels of investment.⁵ As the interim Net Zero Review outlines, there remain policy choices and trade-offs that government must make on a number of fronts, not least in relation to decarbonising power, heat, and transport, alongside reaching the harder to abate industries.

- **ICE recommends that a Net Zero Infrastructure Plan for transitioning the UK's economic infrastructure networks to a net-zero footing should be delivered.**

This Net Zero Infrastructure Plan should set the overarching framework and policies for transitioning infrastructure to net zero. It should provide clear direction to other levels of government and to industry, including subsidies and incentives required to support the transition to net zero. Investors and industry seek clear and stable direction from government and a simple, investable set of rules and incentives to enable them to act and innovate for net zero.

¹ Local Government Association (2020) [Local Green Jobs – Accelerating a Sustainable Economic Recovery](#)

² ICE (2020) [State of the Nation 2020: Infrastructure and the 2050 Net-Zero Target](#)

³ The Committee on Climate Change (2020) [Sixth Carbon Budget](#)

⁴ The Committee on Climate Change (2019) [Reducing UK Emissions – 2019 Progress Report to Parliament](#)

⁵ ICE (2020) [State of the Nation 2020: Infrastructure and the 2050 Net-Zero Target](#)

The development of the plan requires an integrated systems approach and broad consultation across all levels of government and with experts across industry and academia. The plan should recognise that legislation, regulations and policy need to act as an interdependent system, rather than as a set of independent and at times conflicting components.

We recognise that BEIS plans to launch a net-zero strategy prior to COP26, including sector-by-sector strategies setting out pathways to decarbonisation by 2050. For infrastructure, this strategy should incorporate the requirements for infrastructure as set out above.

Adapting funding and financing mechanisms for net zero

The financial sector has a vital role to play in delivering increased or redirected capital in support of net-zero-aligned objectives.⁶ Financing offers an opportunity to spread the costs and risks across multiple parties and longer timeframes.

For the most part, 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. In many instances, this work is already underway within government, including a review of the Regulated Asset Base model⁷ and amendments to Contracts for Difference.⁸ These mechanisms could also be considered for the deployment of carbon capture and storage technologies, hydrogen infrastructure and other sources of renewable energy, such as tidal lagoons.

ICE has also recommended that energy storage and other emerging technologies receive enhanced government support, drawing on the successful impact of Contracts for Difference on the renewable energy market.⁹

- **ICE recommends that 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.**

The recent confirmation that a UK infrastructure bank will be set up is a welcome development. ICE has consistently advocated for a bank of this nature to be created since 2017. A UK infrastructure bank should manage and reduce risk in infrastructure projects and leverage private finance.¹⁰ It should invest in projects that demonstrate good value (i.e. socio-economic, environmental or regional development benefit) beyond commercial considerations.

This approach helps to crowd-in private investment in projects with risk profiles incompatible with private markets, such as risky early-stage projects or unproven emerging technologies.¹¹ Ultimately, a UK infrastructure bank should overcome market failure and facilitate the movement of capital at scale towards net-zero-aligned projects that cannot currently be financed by the market.¹²

- **ICE recommends that the UK infrastructure bank should have an explicit sustainability mandate, which should prioritise net-zero-aligned projects.**

⁶ BEIS (2019) [Green Finance Strategy](#)

⁷ BEIS (2019) [RAB Model for Nuclear](#)

⁸ BEIS (2020) [Contracts for Difference for Low Carbon Electricity Generation](#)

⁹ ICE (2020) [State of the Nation 2020: Infrastructure and the 2050 Net-Zero Target](#)

¹⁰ Allan, J., et al. (2020) [A Net-Zero Emissions Economic Recovery from COVID-19](#), Oxford Smith School of Enterprise and the Environment | Working Paper No. 20-01

¹¹ ICE (2019) [Response to Infrastructure Finance Review](#)

¹² London School of Economics Growth Commission (2020) [Delivering Strong and Sustainable Growth in the UK](#)

Regulation and net zero

Almost half of the UK's infrastructure, chiefly water and energy, is financed and delivered by the private sector, and paid for by consumers, under the Regulated Asset Base (RAB) model.¹³

The model of regulation has generated significant investment and improved performance over the past decades. However, it is increasingly facing new challenges that it was not intended to address, not least in achieving the 2050 net-zero greenhouse gas emissions target.

Over time, regulators have had to try to balance important factors, such as climate change, against a primary duty to protect the interests of consumers. This has led to difficulties when prioritising strategic investments for the long term which would impose costs on consumers in the short term. Given the increasingly complex long-term solutions that are necessary to tackle net zero and other challenges, the regulation of economic infrastructure needs to be more flexible.¹⁴

Great Britain's electricity system is expected to undergo a fundamental transformation over the coming decades in response to meeting net zero. In its advice to the Government on future carbon budgets, the CCC has emphasised the need to invest in a portfolio of low-carbon technologies and to increase the provision of flexibility services to enable the cost-effective integration of the new system.¹⁵

Only 5% of the current energy used for heating comes from low-carbon sources, while there may be as many as 46 million electric vehicles on the UK's roads by 2050, presenting significant demand-side challenges.¹⁶ The National Infrastructure Commission (NIC) estimates the energy sector will need to invest £20 billion per year between 2020 and 2050 – £9 billion more than current annual investment – to meet the 2050 net-zero target.¹⁷

There is no escaping the fact that the future investment needed to meet social, environmental and technological challenges will ultimately be funded by consumers. They need the confidence that their money is being spent on the right things in the right way, that they are not being taken advantage of, and that the benefits are being shared with them as well as with investors.

The regulators' duties vary considerably, with inconsistency on aspects such as resilience and security of supply. Crucially, none of the regulators have a direct duty to consider the Government's long-term policy commitment of achieving net zero.

It is vital for the Government to demonstrate leadership in this regard, both to address inconsistencies and provide clarity as to the direction of travel. We are mindful of the policy paper on regulatory reform announced in the National Infrastructure Strategy and look forward to engaging with the Treasury on its development in due course.

- **The Government should outline clear, long-term and strategic policy objectives that allow better alignment between regulatory, industry and policy activity. This would provide regulators, industry and consumers with greater clarity on long-term strategic priorities, providing the context for future price reviews and the investments required both within and outside price control periods.**

¹³ ICE (2018) [State of the Nation 2018: Infrastructure Investment](#)

¹⁴ ICE (2020) [Aligning Long-Term Government Policy and the Regulation of Utility Companies](#)

¹⁵ CCC (2019) [Net Zero: The UK's Contribution to Stopping Global Warming](#)

¹⁶ Ofgem (2020) [Decarbonisation Action Plan](#)

¹⁷ NIC (2019) [Strategic Investment and Public Confidence](#)

The ‘carbon fuel crunch’ – pay as you go roads

Government policy is for the sale of all new cars and vans to be effectively zero emission by 2030. An increasing number of vehicles exempt from fuel duty and a continuation of the fuel duty escalator freeze will mean that fuel duty will likely raise significantly less than it does at present by the end of the next decade.

VED revenues are also a concern given the exemptions and discounts that currently exist for electric and lower emission vehicles. As ultra-low and electric vehicles attract reduced duties, this implies a long-term future trend of decreased VED revenues, in the absence of government intervention, and is especially important considering that VED is hypothecated to fund Highways England’s second Road Investment Strategy, and will potentially do so for future Road Investment Strategies.

Due to these changes in how vehicles are fuelled, as engines continue to improve in efficiency and as traditional ownership models are stressed by technological developments and social change, taxation of roads will need to be future-proofed.

ICE has explored this issue, producing a policy paper that examines the practical, technological, social, political and regulatory challenges which exist to establishing a ‘pay as you go’ (PAYG) model for the Strategic Road Network (SRN).¹⁸ In doing so the paper does not put forward a preferred option. Rather, it outlines a range of high-level recommendations that must be delivered in order for any future PAYG model to be effectively and fairly administered:

- **ICE recommends that the following principles should be adhered to in developing a future PAYG model:**
 - a) **Any PAYG model that is deployed should consider a range of measures, including: vehicle weight, emissions, noise, overall efficiency and intensity of use.**
 - b) **Any PAYG model should not raise more than is collected from existing VED and fuel duty revenues, and care should be taken to avoid additional financial so as to not create any additional financial pressures for people from lower socio-economic groups.**
 - c) **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.**
 - d) **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.**
- **The Government must examine the tax revenue implications of electric and self-driving vehicles within the scope of any further consultation into new regulation or legislation for the UK’s self-driving future.**
- **A PAYG replacement for road-related taxes, which safeguards funding of road infrastructure, should be in place by 2030, before revenues from fuel duty decline significantly, or connected and autonomous vehicles become commonplace.**

¹⁸ ICE (2019) [Pay As You Go – Achieving Sustainable Roads Funding in England](#)

About ICE

Established in 1818 and with over 95,000 members worldwide, the Institution of Civil Engineers exists to deliver insights on infrastructure for societal benefit, using the professional engineering knowledge of our global membership.

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