



Research Briefing

Introducing a new project in partnership with the Bellona Foundation

Introduction

The UK Government has accepted the [Committee on Climate Change's advice on delivering a net zero carbon economy by 2050](#) (the Scottish Government by 2045), while the UK Industrial Strategy includes a ['Grand Challenge' to create the world's first net-zero carbon industrial cluster by 2040 and at least one low-carbon cluster by 2030](#). The challenge lies in the fact that the UK's regional industry clusters, generally centred around high value manufacturing, are key hubs of local economic activity and an important part of the UK economy that support important supply chains activity, including hundreds of thousands of jobs, that ripple out between and across regions. **Delivering on low and net zero-carbon ambitions must be done in a way that does not make the costs of 'doing business' in the UK uncompetitive or even prohibitive, and in a way that the citizens of the UK understand and support.**

Much research on industrial decarbonisation has focused on technological solutions. That is why we are partnering with the Bellona Foundation and the Children's Investment Fund Foundation to bring a new perspective to the challenge and investigate how our high-value industry clusters may evolve and continue to grow in a way that ensures their sustained contribution to the UK economy. This is necessary to meet a broader challenge: **ensuring the economy generates sufficient income to fund the net zero transition, and manage that transition in such a way that ensures the economic well-being of *all* people in our society, crucially without disproportionately imposing costs on those least able to pay.**

The questions we should be asking

The UK has committed to a net zero greenhouse gas emissions economy by 2050 (requiring Scotland to deliver net zero by 2045). This is not just about decarbonisation. Our economy must change and we must make it work for all citizens. Thus, the central question becomes one of **how can the UK invest in decarbonisation in a way that unlocks benefits and delivers prosperity?** How does the answer to this question vary depending on the approach to determining 'who pays'? Should we focus on finding solutions where taxpayers fund solutions, or solutions that ultimately involve levies on what we consume?

With an economic and societal lens on our net zero ambitions, we can focus on a new set of questions. For example, **is it possible for the UK to gain competitive advantage in delivering key elements of the net zero transition?** Are there any areas where we are currently losing out? Simply developing low carbon technology will not deliver prosperity in a net zero world. Rather, we need to be asking **whether opportunities exist to gain market share on a technological and/or competitive basis in developing and delivering**

low carbon opportunities? To what extent can we retrain and repurpose our existing infrastructure, skills base, industry and supply chain capacity?

There is also a need to focus on the question of **the extent to which, and over what timeframes, Government needs to be involved, and in what ways, in delivering net zero solutions?** Taxpayers ultimately fund all Government activity, and they, as citizens and consumers, will be required to radically change their lifestyles, including what they consume and at what price.

What does this project do?

Emissions-intensive industries are crucial to the political economy, industrial and cultural heritage of the UK. And yet, whilst a significant amount of research has focussed on the technological solutions needed to decarbonise our industry, there has been a negligible lack of investigation into the economic, policy and societal aspects of what UK industrial decarbonisation could look like and where the risks and opportunities lie. This project aims to address that gap, including an evaluation of the much-discussed technical solution of carbon capture and storage (CCS). We do so through a

lens of balancing the clear opportunities for the UK in repurposing our offshore and oil/gas supply chain capacity to deliver CO₂ transport and storage against the competitiveness concerns of potential industries, which may be required to capture CO₂.

Initial research questions

Q1. What is the underlying structure of the current value-chain associated with energy/emissions-intensive industries?

Q2. To what extent can we use existing UK regulations and fiscal instruments to incentivise the required shifts in what and how these industries, and their supply chains, produce and consume?

Q3. What would be the impacts across the wider UK economy of (government and/or private sector) action to support the investment and deployment of a solution like CCS in energy/emissions-intensive industries, and do these impacts vary depending on the business model and regulatory approach adopted?

Q4. Are the outcomes of addressing Q2-3 sufficiently adaptable to a range of changes in the UK political economy?

Methods

Our approach will involve developing simulation methods to model actions to reduce industry emissions, and to report potential outcomes across the wider economy in a way that meets two crucial requirements. Firstly, that the approach and outcomes are understandable to a broad stakeholder audience impacted by industrial decarbonisation actions. Secondly, that our results are consistent with acceptable standards of evidence used by key policy decision makers, particularly in a Treasury/finance ministry context (where any decisions regarding use of public resources must ultimately be made). This involves developing

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economy-wide scenario simulation frameworks (specifically input-output (IO) accounting and computable general equilibrium (CGE) simulation methods). Adopting this approach allows us to set up 'what if' questions, and simulate the ripple effects of a change in any one sector across all areas of the economy. We focus particular attention on how prices, incomes and employment across different markets and sectors may be impacted by actions to reduce emissions in energy-intensive industries, and, crucially who ultimately bears the costs. Scenarios are set in the context of different assumptions regarding conditions across the wider economy and policy landscape. We will develop outcomes to inform both the political economy narratives that underpin policy strategy development, and the 'social cost benefit' evaluation tools used in decision-making around specific policy prescriptions.

Expected impact

The intended outcome of this project is to effect a change in both the nature and focus of debate, and policy decision-making around industrial decarbonisation at national and international levels. In this initial stage, the focus of the research is on the UK, as the first G7 economy to adopt a net zero target for 2050. We will work in collaboration with our partners at Bellona to engage and collaborate with the UK policy and political communities with the aim of achieving early impact through the forthcoming [Net Zero Review](#) by HM Treasury. Through this process and beyond we will actively engage with colleagues at BEIS, the Committee on Climate Change, the devolved Scottish and Welsh Governments, and a wider industrial decarbonisation community that extends from the industries directly and indirectly involved, to workers and their representatives, and a wider civic community.