



A BLUEPRINT FOR A GREEN FUTURE

Executive Summary

Cambridge Zero Policy Forum

Report on a green recovery from COVID-19
2020

CAMBRIDGE
ZERO₂

Executive Summary

The COVID-19 pandemic has already wreaked an immense toll on lives, livelihoods, and on the global economy. The UK can emerge stronger and more resilient, but to do so we must also face head-on the triple challenge of responding to the threats posed by growing social inequality, the destruction of nature, and climate change. Inequalities *can* be addressed to create a fairer and more just society; nature *can* be valued and supported so we leave it in an improved and resilient state for future generations; and the threat of climate change *can* be limited by rapid reductions in greenhouse gas emissions – indeed, the UK has committed as a nation to reach net-zero emissions over the next few decades. We can make this a story of hope and of opportunity, and one of shaping a future that is, simply, better – for everyone. However, to realise these aspirations we need a coherent and effective plan based on our best evidence and knowledge. To this end, we offer a blueprint for a green future.

With economic activity limited to contain the coronavirus, the global economy faces unprecedented challenges in the coming months and years, including the risk of a protracted depression. Pulling the world out of recession and generating sustainable, inclusive, and resilient growth requires a vision that restores confidence, a comprehensive policy response that delivers investment at scale, and a plan of action from a local to an international level. This must include investment in knowledge capital and innovation, in social and institutional capital to deliver effective government, and in natural capital, not least as COVID-19 has reminded the world of the urgent need to strengthen the quality and resilience of natural assets. Such investment in green stimulus measures has been shown to lead to strong fiscal multipliers with substantially enhanced returns on the investment. Action to address the nexus of threats associated with social inequality, destruction of nature, and climate change can, by definition, result in a nexus of opportunities resulting in benefits across these systems.

This multidisciplinary report outlines complementary investments, policy commitments, institutional frameworks, and systems thinking that will provide security, strengthen the UK's place in the world, and support collaborative global efforts to transition to a green future.

Chapter 1: Creating the Conditions and Incentives for a Green Recovery

A robust, self-perpetuating green recovery will need the right supporting structures. The conditions and incentives necessary for the adoption of sustainable practices need a strong institutional and regulatory framework. Investments in new technologies need to be complemented by programmes to accelerate their adoption and deployment. More broadly, a comprehensive public investment strategy focused around the mutually reinforcing physical, social, natural, and human assets that underpin prosperity is needed. Priorities to deliver this include:

- **Attach clear, measurable environmental sustainability conditions to all COVID-19 recovery spending.** Potential 'green strings' could vary by industry and may include conditioning interest rates on loans to emissions reductions targets consistent with net zero, air and water quality improvements, biodiversity targets, or other environmental outcomes.
- **Expedite the development and use of new economic metrics that capture social and environmental impacts** – including along the supply chain – by investing in the statistical infrastructure for measuring natural, social, and human capital and mandating strict climate and environmental reporting standards for companies.
- **Implement requirements that foster behavioural change in business** – including tightening and mandating reporting standards and requiring supply chain transparency (as in the UK Modern Slavery Act) for social and environmental impacts.
- **Support challenge-oriented research and development**, adopting and adapting the ARPA model, to address the UK Net Zero 2050 target and broader environmental objectives set out in

UK Government commitments under the 25-Year Environment Plan.

- **Provide government leadership to remove the barriers to green innovation and adoption**, for instance by supporting brokering organisations to connect businesses in the circular economy, based on cutting-edge scientific research.

Chapter 2: Supporting Society in the Zero-Carbon Transformation

The COVID-19 crisis has exacerbated underlying societal stresses in the UK including those of social inequalities and regional and intergenerational disparities. There is an opportunity to build a post-pandemic economy that supports climate action and enhances our natural environment through a fairer distribution of resources and consumption. By contrast, recovery measures that fail to acknowledge the climate, nature, and social crises would neither be sustainable, nor a success. Green investment can create new jobs, support new industries, and lead to improved health, wellbeing, and quality of life for all citizens. Our recommendations associated with this include:

- **Establish a Net Zero Delivery Board** to drive through the policy and regulatory changes required across the whole of the economy, to promote greater democratic engagement in policy formation, and to ensure the costs and benefits of a net-zero transition are fairly shared.
- **Facilitate the creation of green jobs** to address rising unemployment, to transform the economy for a zero-carbon future and to restore nature, prioritising areas of high unemployment, labour market exclusion, and regions with the highest proportion of jobs that could be at risk in the transition to a net-zero economy.
- **Review and overhaul the entire lifelong learning portfolio**, including education, training, and re-skilling, to boost societal knowledge and understanding of sustainability and to underpin the employment opportunities of the future.
- **Create a Net Zero Fund** to support a just transition to a net zero economy, locally, regionally and nationally.

Chapter 3: Investing in Zero-Carbon Technology and a Zero-Carbon Industrial Transition

The actions the UK takes to rebuild can simultaneously accelerate the zero-carbon transition and put the UK on track to meet its legally binding target of net-zero emissions by 2050. Sectors in which significant advances and improvements can be made include: energy generation and storage; construction and operation of buildings; transport; and industry. Opportunities also exist for greenhouse gas removal via nature-based and engineering-based approaches. A comprehensive technology-based transition strategy should focus on the following elements:

- **Initiate a focused national research and development programme on zero-carbon energy generation and storage technologies** to target improving performance, efficiency, reliability, and cost, and to underpin the competitiveness of the UK zero-carbon industry by building on existing UK strengths. An example is solar, where the UK has led developments of lead halide perovskite solar cells which could transform the photovoltaics industry if combined with other UK strengths in providing key component technologies such as solar glass.
- **Transform construction regulations and practices.** This requires engagement with all relevant stakeholders to enable the widespread deployment of resource-efficient building design and natural construction materials. Heat pumps should be mandated on new buildings and energy-efficiency improvements to existing buildings incentivised to render heat pumps a viable option.
- **Pursue electrification for all possible vehicles**, reserving biofuels for aircraft and long-haul shipping. Hydrogen may be necessary for some applications, but these should be minimised.
- **Invest in research and development, governance, and public engagement on greenhouse gas removal technologies** since engineering and/or nature-based options will be needed in order to reach a position of net zero by 2050.

Chapter 4: Investing in Resilient and Sustainable Infrastructure

Our built environment is a complex system-of-systems, interlinked within our cities and towns, and which underpins our society and enables it to flourish. Together this accounts for over 40% of the UK's greenhouse gas emissions. It comprises: economic infrastructure which supports the operation of our cities and buildings; social infrastructure largely consisting of buildings which are owned and operated for the public good; and commercial and domestic buildings. Approaches to decarbonising construction and use across these categories typically require different incentive mechanisms and support. Our recommendations include:

- **Adopt a whole-system, whole-life view** of infrastructure and the built environment.
- **Require all new infrastructure assets to quantify their embodied and lifetime emissions, and develop a sustainable construction protocol** to calculate and optimise carbon in design; calibrate design models against real performance; control processes on construction sites; develop and apply sustainability standards for all major building materials and require 3rd party certification; assess, declare, and manage/reduce waste, embodied carbon, and carbon fuel use; and invest in innovation.
- **Incentivise retrofitting of existing homes** through programmes such as a 'Help to Fix' interest-free loan scheme and similar support for housing associations.
- **Reconsider renewable energy proposals such as the Swansea Tidal Lagoon** as part of a broader strategy to fully decarbonise the power sector and effect the full electrification of transport and heating.
- **Accelerate the decarbonisation of transport** through a combination of measures including demand reduction, shared and integrated transport modes, electrification or use of carbon-free fuels, and policy instruments such as road pricing.

Chapter 5: Investing in Nature-based Solutions and Supporting Agriculture and Rural Affairs

Nature-based solutions are those that harness the power of nature to remove greenhouse gases and help people adapt to the impacts of climate change. If designed appropriately, these approaches provide an opportunity to simultaneously respond to the climate, nature, and social inequality crises. Also central to this response is the development of agriculture and land management policies that help deliver nature-friendly farming and increase food security, while offering enhanced environmental protections and support for rural communities. Our recommendations in this context include:

- **Deploy carefully designed nature-based solutions to climate change.** These approaches have strong public support, provide employment and recreational space, and have benefits for physical and mental health. Options to remove greenhouse gases and avoid further emissions include better management, protection, and restoration of peatlands, wetlands, forests, and some types of grasslands, and other measures can provide resilience to climate change impacts such as flooding; the creation of monoculture plantations of fast-growing tree species should be avoided.
- **Create a new National Nature Service** to employ many tens of thousands of people and restore our land, coastlines, oceans, and economy for a greener, more prosperous future.
- **Overhaul policies and incentives in agriculture and rural development,** including subsidies and taxation schemes to reward landowners for benefits provided to society, and tailored support and training to help farmers adopt sustainable practices and invest in innovation.
- **Support sustainable food production, reduce food-system waste and promote healthier diets.** This can help to cut costs in agriculture, public health, and the food industry, as well as bringing down consumer expenses.

Chapter 6: Global Leadership Opportunities for the UK

A green recovery provides a multiplicity of opportunities for the UK to assume an international leadership role. Many of the challenges discussed here are fundamentally global ones requiring enhanced global cooperation and for countries to take steps which can inspire others to follow. The UK is in a unique position – taking the Presidency of the G7 in 2021, holding a leadership position in the upcoming climate negotiations, and embarking on the formulation of new economic relationships with trading partners – to leverage past experiences, forge new alliances, and galvanise the breadth of actors underpinning an effective post-pandemic recovery. Opportunities include:

- **Demonstrate UK international leadership, building on key global events to respond to the climate, biodiversity, and health crises.** Through the upcoming UN Framework Convention on Climate Change COP26, the Convention on Biodiversity COP, and collaborations in the World Health Organization, mobilise diplomatic channels and all stakeholders to advance a green, just recovery.
- **Help coordinate and deliver a global response to the need for education, awareness, and capacity on climate change and biodiversity conservation** among all stakeholders and at all levels, from global to local, supporting new career and employment opportunities.
- **Leverage pandemic recovery investments to implement the Paris Agreement and the global Sustainable Development Goals.** Promote new investments, economic stimulus finance, and innovative solutions which align with climate change, species extinction, extreme poverty, and other agreed SDG targets, also fulfilling binding treaty obligations.
- **Promote international green recovery cooperation through new economic agreements.** Shape and implement sustainable development commitments from existing and new trade, investment, scientific cooperation, and technology transfer treaties, and leverage economic relationships to more effectively enable a green future.

Download the full report:

www.zero.cam.ac.uk/green-recovery-report

Front cover: Children from the University of Cambridge Primary School took part in a climate-themed art project with the support of Cambridge Zero. [‘Agents for Change’](#) highlighted the importance of addressing climate change and the role that each of us plays in effecting outcomes based on change.

Image credit: Cambridge University Primary School
