

## A net-zero emissions economic recovery from COVID-19

### Key messages

- Economic growth will be a high priority for all countries in the months and years following COVID-19. The transition to net-zero emissions can significantly contribute to the recovery.
- Lessons can be learnt from the recovery packages introduced following the 2008 financial crisis, but the COVID-19 crisis is structurally different on the demand and supply side.
- In the lead up to COP26, the UK could provide guidance and methodologies to evaluate proposed recovery packages for consistency with the Paris Agreement and net-zero emissions.
- The UK could lead by example with a recovery package including components on net-zero buildings, energy storage, clean industry, transport and greenhouse gas removal.
- Institutionally, this could be supported by establishing a ministerial Climate Change Emergency Committee along with a Net Zero Delivery Body to implement a coherent response.
- Financially, a new National Investment Bank and focus on green financial instruments could enable the process.
- Building on these domestic efforts, as COP26 President, the UK could coordinate a global response through a new flexible intergovernmental Sustainable Recovery Alliance.

### Introduction

As the world emerges from the crisis of COVID-19, governments will introduce recovery packages to boost economic growth, including in the UK. These will have a highly significant impact on the UK's future prosperity, including its potential to meet its legally mandated net-zero emissions obligation. Collectively, the packages will strongly influence whether the global Paris Agreement targets are met.

This briefing identifies ten fiscal recovery policies (see Table 1) which promise to bring both short-term high economic impact, and long-term structural change through decoupling greenhouse gas (GHG) emissions from economic growth. These policies would support the UK in meeting its legally binding commitment to net-zero emissions by 2050 while achieving wider social equality by 'levelling up' and addressing regional and intergenerational disparities, as affected workers are retrained, and physical infrastructure and environmental assets are improved.

Similar policies also received a high level of support

from G20 senior central bank and finance officials during an April 2020 global survey, with results published in a companion research paper and reproduced in Figure 1.<sup>1</sup> A background working paper to this briefing is also available.<sup>2</sup>

### The economic benefits of sustainable recovery

Sustainable recovery policies offer several advantages in spurring growth during economic downturn. In comparison to traditional fiscal stimulus, which maintains business-as-usual GHG emissions, green projects can create more jobs, deliver higher short-run fiscal multipliers and lead to higher long-run cost savings.

During and following the 2008 global financial crisis (GFC), expansionary policies were effective at restarting economic activity. Recent studies from NBER<sup>3</sup> and the IMF<sup>4</sup> show that fiscal multipliers<sup>5</sup> associated with government spending can fluctuate from near zero when the economy is operating close to capacity (implying government spending or investment wastes money), to about 2.5 during recessions (implying that every £1 spent or invested

by government increases national income by £2.5).<sup>i</sup>

Green stimulus policies performed particularly well during the GFC. US modelling during the GFC indicated that for every US\$1bn invested in a set of potential green stimulus policies, 30,100 jobs could be created over the project lifetime, representing a 20% greater return than traditional fiscal measures. This US\$1bn could also bring a \$450m reduction in annual energy costs.<sup>6</sup>

Renewable energy has appealing short- and long-run characteristics in a recession. High labour intensity yields multipliers above one in the short run, because it stimulates demand and crowds in spare resources. In the long run, high labour intensity yields multipliers less than one, because it one-for-one crowds out more productive activities (since more labour is required per unit output). In the short run, clean energy infrastructure is particularly labour intensive as it is built and installed, creating twice as many jobs per dollar as fossil fuel investments.<sup>7</sup>

Similarly, construction projects, like insulation retrofits and building wind turbines, are less susceptible to offshoring than traditional stimulus measures<sup>8</sup>. In the long term, as the operation and maintenance of more productive renewable technologies makes them less labour intensive, they generate higher long-run multipliers arising from energy cost savings; with obvious flow-on effects to the wider economy.<sup>9</sup>

## **An institutional framework for recovery in the UK**

We propose a set of institutional and financial interventions to design and deliver an evidence-driven and world-leading sustainable recovery plan. Firstly, the existing Cabinet Committee on Climate Change, announced in October 2019 but which has only met once, in March 2020, would be renamed the Climate Change Emergency Committee (CCEC).

While there has been productive work occurring in the background, putting this Cabinet Committee on an emergency footing would act to ensure the appropriate degree of speed, visibility and authoritative decision-making which is necessary to coordinate an effective use of government resources. The CCEC would continue to be chaired by the Prime Minister, be composed of relevant Cabinet Ministers and would oversee the Net Zero

<sup>i</sup> Fiscal multipliers measure the impact on activity of each additional pound of spending/tax cut funded by borrowing. A multiplier of 1 means £1 extra spending or investment boosts final production and income by £1. A multiplier of 3 implies £1 spending or investment boosts final output and income by £3.

Delivery Plan (NZDP) and Net Zero Delivery Board (NZDB).

The NZDB, coordinated by BEIS, would include representatives from local authorities, the industrial sector, Ofgem, financial institutions, and the national infrastructure commission. The NZDB would be responsible for formulating and delivering the Net Zero Delivery Plan based on economic inputs, and with enabling legislation delivered by the relevant government departments.

In terms of finance-side support, a new National Investment Bank, introduction of sovereign green bonds and use of unconventional financial instruments are all promising endeavours. While other environmental issues are outside the scope of this briefing note, we observe that a net-zero emissions recovery is one key element of a broader sustainable recovery plan.

## **A global alliance on sustainable recovery in the lead up to COP26**

As host of the upcoming COP26, once the UK has its own sustainable recovery plan in place, it could credibly provide leadership on sustainable recovery packages to the rest of the world. The global nature of the climate emergency means that, much like the COVID-19 emergency, an internationally coordinated response is crucial.

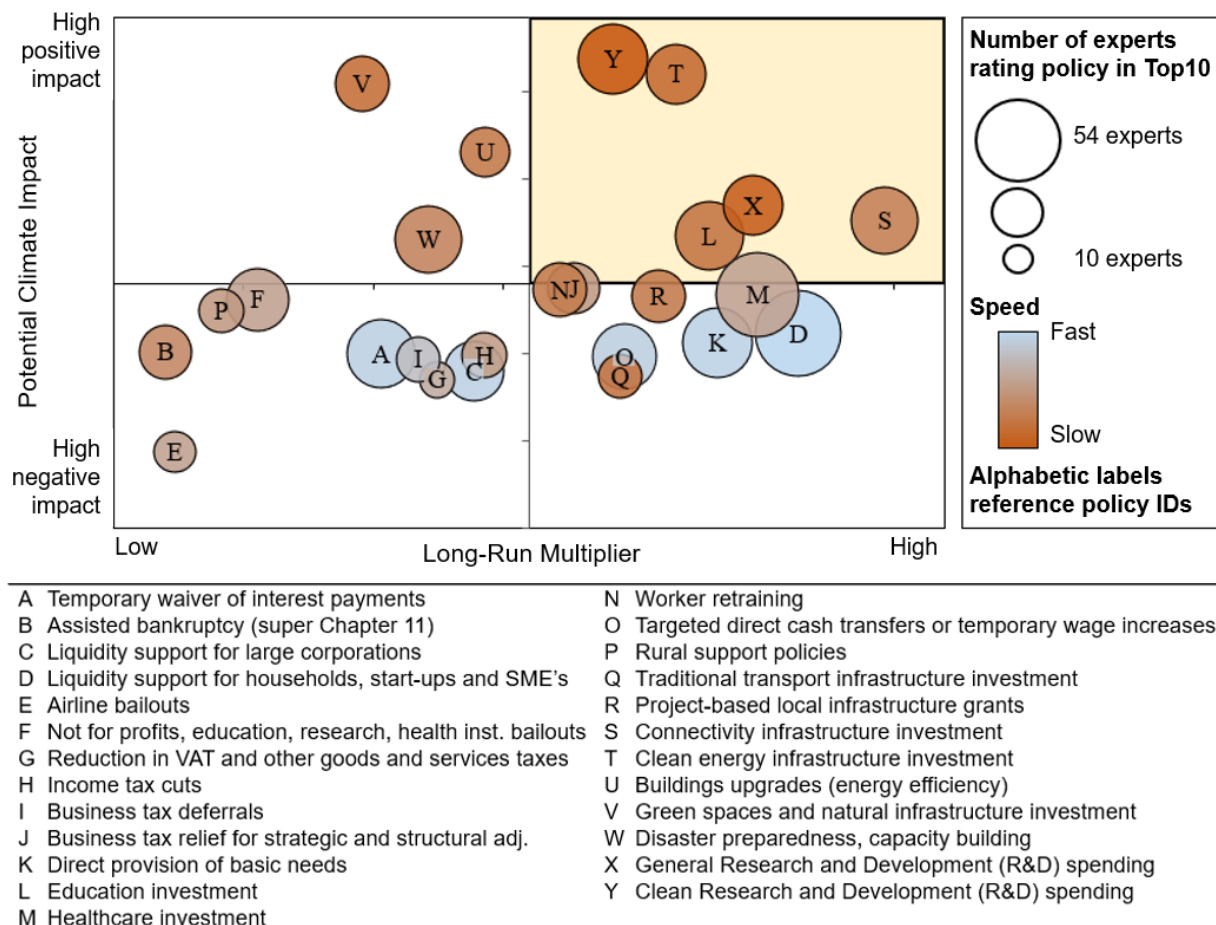
There is an opportunity for the UK to use its position as COP26 President to inform other nations of the benefits to their economies, and globally, of adopting sustainable recovery packages, and to share best practices as they pursue unprecedented levels of stimulus spending. The introduction of a Sustainable Recovery Alliance (SRA), with the UK as co-chair, could facilitate this leadership. The SRA could work alongside the Coalition of Finance Ministers,<sup>10</sup> which includes more than 50 countries and is designed to promote cohesion between domestic and global action on climate change, boost ambitions, reaffirm commitments, and accelerate actions to implement the Paris Agreement.

An SRA would be a flexible “coalition of the willing” outside the legal structure of the UNFCCC. The group would promote a shared vision of a sustainable recovery and practical collaboration in decoupling GHG emissions from economic growth and prosperity. China, as it works toward its own recovery plan and shows a desire to help other countries respond to the COVID-19 outbreak, might be a suitable co-chair in leading such an alliance.

**Table 1: Summary of policy item recommendations**

Policy Items	Description
Energy generation, storage, and distribution	Invest in low carbon energy production and storage infrastructure, extend and modernise the grid to enable higher renewable penetration as well as electrification of heat and transport
Reducing industrial emissions	Introduce financial incentives (e.g. wider carbon price floor) for industrial companies to reduce net carbon emissions and increase efficiency in production
Research and development	Invest in high impact sustainability technology research and development that includes start-ups, small and medium-sized enterprises, and large companies
Building climate-smart infrastructure	Investment in low and zero-carbon infrastructure projects, such as public transport infrastructure, that are also resilient to the impacts of climate change, such as flooding
Broadband connectivity investment	Investment in broadband infrastructure to increase full fibre coverage beyond the current set of <10% of UK homes
Nature-based solutions investment	Investment in ecosystem resilience and regeneration by enhancing green spaces, planting trees, and encouraging climate-friendly agriculture and restoring carbon-rich habitats
Electric vehicle conversion	Incentivise uptake of electric cars through financial incentives and fast-charging infrastructure and improve bike lanes to encourage wider uptake of e-bikes
Home renovations and retrofits	Higher carbon standards for new-build homes; financial support for households installing insulation and other energy efficient improvements
Education and training	Funding skills and retraining initiatives, such as through digital further education, to address structural unemployment effects resulting from decarbonisation measures
Conditional bailouts	Bailouts for struggling firms, conditional on improvements against climate-positive criteria, especially for fossil fuel intensive companies such as airlines
<b>Supporting structures</b>	
Climate Change Emergency Committee (CCEC)	Rename the Cabinet Committee on Climate Change to the CCEC to ensure that COVID-19 economic recovery is achieved alongside net zero by 2050, through higher visibility and authoritative allocation of government resources
Net Zero Delivery Body (NZDB)	Establish a new NZDB to formulate and deliver a Net Zero Delivery Plan based on independent advice from the Committee on Climate Change
Green sovereign bonds	Issue national green recovery bonds to focus funding on sustainable investment
National Investment Bank	Establish a National Investment Bank to manage and reduce risk in infrastructure projects, and leverage private finance towards a green delivery pathway
Mobilised savers and investors	Direct capital towards green projects through 'recovery plan' ISAs; reducing regulatory frictions in insurance (Solvency II) and retail investment (MiFiD)
Financial instruments	Introduce new financial instruments to reduce risks involved in climate-friendly investments, such as contract-for-differences or a regulatory asset-based finance model
<b>Global leadership</b>	
Sustainable Recovery Alliance	Establish an informal global alliance at COP 26 to promote global coherence among recovery packages, build resilience to shocks, and interface with existing initiatives such as Mission Innovation, the Carbon Pricing Leadership Coalition, and the NAP Global Network.

**Figure 1: Preliminary results of policy survey of G20 finance and central bank officials**



**Figure 1.** Preliminary results of an April 2020 survey of G20 finance and central bank officials, testing 25 fiscal policy types. Bubbles represent policy items A through Y. Policies with higher long-run economic multipliers have greater economic impact per dollar spent. Faster policies achieve their desired economic impact more quickly. Policies with positive climate impact are likely to support efforts to achieve net-zero emissions. Figure reproduced from Hepburn et al. (2020)<sup>1</sup>.

## References

<sup>1</sup>Hepburn, C., O’Callaghan, B., Stern, N., Stiglitz, J., and Zenghelis, D. 2020. “Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?” *Oxford Review of Economic Policy*, 36(S1), forthcoming.

<sup>2</sup>Allan, J., Donovan, C., Ekins, P., Gambhir, A., Hepburn, C., Reay, D., Robins, N., Shuckburgh E., and Zenghelis, D. .2020. A net-zero emissions economic recovery from COVID-19. Working Paper 20-01. Smith School of Enterprise and the Environment, University of Oxford. <https://www.smithschool.ox.ac.uk/publications/wpapers/workingpaper20-01.pdf>

<sup>3</sup>Auerbach A. J., & Gorodnichenko, Y., 2012. "Fiscal Multipliers in Recession and Expansion," NBER. Available at: <https://ideas.repec.org/h/nbr/nberch/12634.html>

<sup>4</sup>Olivier Blanchard and Daniel Leigh (2013) “Growth Forecast Errors and Fiscal Multipliers” IMF WP1301 <http://www.imf.org/external/pubs/ft/wp/2013/wp1301.pdf>

<sup>5</sup>Lawrence Christiano, Martin Eichenbaum and Sergio Rebelo (2009) “When is the Government Spending Multiplier Large?” LSE Available at: <http://cep.lse.ac.uk/seminarpapers/09-06-09-EIC.pdf>

<sup>6</sup>Houser, T. et al (2009). A Green Global Recovery? Assessing US Economic Stimulus and the Prospects for International Coordination. Peterson Institute for International Economics, Policy Brief 09-3

<sup>7</sup>Pollin, R. et al (2008). Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy. Political Economy Research Institute, University of Massachusetts Amherst

<sup>8</sup>UKERC Technology & Policy Assessment Function, (2014). Low carbon jobs: The evidence for net job creation from policy support for energy efficiency and renewable energy. <http://www.ukerc.ac.uk/publications/low-carbon-jobs-the-evidence-for-net-job-creation-from-policy-support-for-energy-efficiency-and-renewable-energy.html>

<sup>9</sup>Jacobs, M. (2012). Green Growth: Economic Theory and Political Discourse. Grantham Research Institute on Climate Change and the Environment, The London School of Economics and Political Science, Working Paper 92

<sup>10</sup> See launch declaration: <https://www.worldbank.org/en/news/press-release/2019/04/13/coalition-of-finance-ministers-for-climate-action>

## The COP26 Universities Network

This briefing is produced in association with the COP26 Universities Network, a growing group of more than 30 UK-based universities working together to help deliver an ambitious outcome at the UN Climate Summit in Glasgow and beyond.

The briefing represents the views of its authors as listed on page one and not necessarily that of every University participating in the network. For more information about the COP26 Universities Network, please contact [r.samra@imperial.ac.uk](mailto:r.samra@imperial.ac.uk).