

A UK INVESTMENT STRATEGY:

BUILDING BACK A RESILIENT AND SUSTAINABLE ECONOMY

June 2020

Vivid Economics Report prepared for WWF UK



**FOR
YOUR
WORLD**

This document is an insert to the recent Vivid Economics report *Keeping us competitive: A UK Investment Strategy for Net Zero*. Subsequent to the completion of that report but prior to publication, the economic context changed radically and suddenly as a result of the Covid-19 pandemic.

This new context strengthens the case for the recommendations of the report, in terms of investment that can support regional jobs, reduce air pollution, and stimulate growth, which are even more vital to keeping the UK competitive. This insert sits above, rather than replacing, the current executive summary and foreword.

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COMPANY PROFILE

Vivid Economics is a leading strategic economics consultancy with global reach. We strive to create lasting value for our clients, both in government and the private sector, and for society at large.

We are a premier consultant in the policy-commerce interface and resource- and environment-intensive sectors, where we advise on the most critical and complex policy and commercial questions facing clients around the world. The success we bring to our clients reflects a strong partnership culture, solid foundation of skills and analytical assets, and close cooperation with a large network of contacts across key organisations.

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A STRONG POLICY RESPONSE WILL BE ESSENTIAL TO MINIMISE THE WELFARE IMPACT OF THE COVID-19 RECESSION.

In its Covid-19 reference scenario, the Office of Budget Responsibility (OBR) estimates real GDP falling by 35% in the second quarter of 2020, and the Bank of England suggests the fall across the year could be 14%¹. The economy will not simply bounce back from such large falls. An economic stimulus will be required to increase demand and economic activity.

STRIKING SETS OF POLICY RESPONSES HAVE ALREADY BEEN SEEN AROUND THE WORLD, ALTHOUGH THE VAST MAJORITY OF THESE ARE NOT IN CLIMATE-FRIENDLY OR BIODIVERSE AREAS.

In the UK as elsewhere, government is responding by increasing spending on public services (especially health), paying employers to retain employees, providing grants and tax breaks to businesses, and facilitating credit to businesses primarily through financial institutions. A weekly update by Vivid Economics tracks the responses of governments around the world and the extent to which these responses support environmental outcomes. At the time of publishing, only 11% of government spending is going towards businesses with a track record of positive environmental performance and programs that pursue environmental goals².

THE CASE FOR A STIMULUS THAT FOCUSES ON ACHIEVING NET ZERO EMISSIONS AND BIODIVERSITY GOALS IS STRONG.

A targeted 'green stimulus' can be more resilient in supporting recovery in the long-run than 'brown' alternatives and will also improve quality of life. A green stimulus may be more effective than a traditional stimulus in supporting economic recovery and building resilience. For example, investment in low-carbon infrastructure can boost long-term productivity and high returns, as every pound spent on low-carbon investment options returns 3-8 times the initial investment.³ In addition to economic recovery, a green stimulus can bring wider social and environmental co-benefits, such as improved air quality, less congestion, and improved indoor living conditions. Finally, a green stimulus can help rebalance already existing regional inequities, through investment in areas of the UK where there is underemployment and where there is also a substantial case for new low-carbon infrastructure. For example, Hull and Humber are seen as a prime location for the UK's offshore wind sector, which could bring many direct and indirect jobs to the region. The alternative would be a very short-sighted approach to the stimulus which funded industries which are incompatible with commitments to net zero greenhouse gas (GHG) emissions and net gains to biodiversity. It would expose the UK to ongoing fossil fuel price fluctuations. In doing so, this alternative path could sow the seeds for the next environmental or economic crisis.

£1
EVERY POUND
SPENT ON
LOW-CARBON
INVESTMENT
OPTIONS RETURNS
3-8 TIMES
THE INITIAL
INVESTMENT

¹ <https://obr.uk/coronavirus-reference-scenario/>; <https://www.bankofengland.co.uk/report/2020/monetary-policy-report-financial-stability-report-may-2020>

² <https://www.vivateconomics.com/casestudy/greenness-for-stimulus-index/>

³ IRENA (2020), "Global Renewables Outlook", https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_Global_Renewables_Outlook_2020.pdf

FIVE GREEN INVESTMENTS FOR ECONOMIC RECOVERY

TO IDENTIFY SPECIFIC AREAS OF INVESTMENT, VIVID ECONOMICS HAS CONSIDERED THEIR POTENTIAL TO BUILD ENVIRONMENTAL RESILIENCE IN THE AFTERMATH OF THE COVID-19 PANDEMIC, ADDRESS THE CLIMATE CRISIS, AND IMPROVE QUALITY OF LIFE.

This report draws together evidence assembled over a wide range of studies for the UK Government and a range of other organisations (e.g. the Energy Innovation Needs Assessment for the Department for Business, Energy and Industrial Strategy (BEIS), 2019⁴ and “Keeping it Cool: How the UK can end its contribution to climate change” for WWF, 2018⁵). This current report follows from the earlier work for WWF, where “Keeping it Cool” sets out two feasible pathways towards net-zero by 2045 or 2050. This report builds on that analysis and looks at the scale of the investment required within each sector, as well as the co-benefits of these investments, before detailing the implications for how this transition is funded. These interventions will also have a direct impact on addressing the current economic crisis.

THIS REPORT SHOWS THAT THE CO-BENEFITS FAR OUTWEIGH ADDITIONAL IMMEDIATE SPENDING, THE GROWTH OPPORTUNITIES AND, INDEED, THE COSTS OF INACTION.

The net zero transition could yield over £90bn of annual benefits to the UK. This is the result of wider improvements to human health and the natural environment alongside unlocking substantial business opportunities for the UK – all key in building a more resilient and better economy. These benefits need to be considered alongside the upfront costs as they will have a quantifiable impact on the economy. Moreover, these co-benefits may also lead to direct savings for the exchequer on key spending priorities, such as the National Health Service or public infrastructure projects. One obvious example is in buildings: eliminating cold homes with energy efficiency upgrades would not only decrease emissions but could also improve the ability of UK homes to provide adequate and affordable heat and cooling, having the potential to save the NHS billions of pounds annually.

+£90bn

OF ANNUAL BENEFITS TO THE UK FROM THE NET ZERO TRANSITION

4 UK Government (2019), “Energy Innovation Needs Assessments”, <https://www.gov.uk/government/publications/energy-innovation-needs-assessments>

5 WWF (2018), “Keeping it cool: How the UK can end its contribution to climate change”, <https://www.wwf.org.uk/sites/default/files/2018-11/NetZeroReportART.pdf>

THE GOVERNMENT SHOULD IDENTIFY THOSE INVESTMENT OPPORTUNITIES THAT CAN BOOST THE ECONOMIC RECOVERY OF UNDERPERFORMING REGIONS

TO IDENTIFY THE MOST PROMISING AND RESILIENCE-BUILDING GREEN INVESTMENTS FOR ECONOMIC RECOVERY, WE RECOMMEND INVESTORS CAN APPLY A ‘SUSTAINABILITY CHECKLIST’ TO RANK DIFFERENT INVESTMENT OPPORTUNITIES.⁶

Over the short term, they should assess the number and types of decent and lasting jobs supported, the boost to overall economic activity and impact on the trade balance, and whether the investment generates durable employment benefits over the very short term (taking into account possible future quarantine measures). Over the longer term, projects should have a long-term growth potential (assessed for its impact on human, natural, and physical capital), address current market failures, and be resilient to future shocks. It is also crucial to identify those projects with the largest decarbonisation potential and sustainable growth trajectory, and to avoid the risk of stranded asset costs by investing in technologies with positive life cycle forecasts.

FOR THE UK CONTEXT, IT IS ALSO IMPORTANT TO CONSIDER THE INVESTMENT IMPACT ON THE LEVELLING UP OF REGIONS AS WELL AS OVERALL ECONOMIC RESILIENCE.

The government should identify those investment opportunities that can boost the economic recovery of underperforming regions, such as by creating decent green jobs in those areas. Green investments should also contribute to the overall economic and environmental resilience. For example, investing in energy efficient homes lowers energy usage, reducing overall energy demand in the economy. This will make individual households and the UK as a whole more resilient to global fuel price increases and fluctuations. Other examples are the development of employment in rural communities, the government’s Environmental Land Management proposals involving remuneration for public goods on the land, such as carbon storage and biodiversity.

THE REPORT IDENTIFIES AN ADDITIONAL £30BN+ INVESTMENTS ANNUALLY (COMBINED PUBLIC AND PRIVATE) IN THE SHORT-TERM TO PUT THE UK ON A NET ZERO PATHWAY.

To maximise the synergies between achieving net zero and boosting economic recovery, investments in the short run need to prioritise areas where substantial number of decent green jobs are supported. The following list highlights selected investment needs identified in the report, which could help support substantial numbers of jobs, while simultaneously triggering economic recovery, emissions reductions, and improvements to nature. These investments align with the ones identified by other parties as being crucial for economic recovery.^{7,8}

6 World Bank (2020), “Planning for the economic recovery from COVID-19: A sustainability checklist for policymakers”, <https://blogs.worldbank.org/climatechange/planning-economic-recovery-covid-19-coronavirus-sustainability-checklist-policymakers>

7 CCC (2020), “Building a resilient recovery from the COVID-19 crisis”, <https://www.theccc.org.uk/wp-content/uploads/2020/05/CCC-to-Prime-Minister-Boris-Johnson-Covid-19-recovery-002.pdf>

8 Energy Transitions Commission (2020), “7 priorities to help the global economy recover”, <http://www.energy-transitions.org/sites/default/files/COVID-Recovery-Response.pdf>

1.

INVESTMENT IN GREEN BUILDINGS CAN SUPPORT THE MOST JOBS IN THE SHORT RUN AND PROVIDES SOCIETAL AND RESILIENCE BENEFITS.

The green building sector has a total annual investment need of £12bn and this will support at least 85,000 direct jobs in green retrofitting by 2030, with installing heating and cooling supporting an additional 7,000 jobs, given the small size of the sector currently. This is a conservative estimate of the overall economic effect, as indirectly other companies will benefit by savings on energy and water. Investing in green buildings will boost this sector's growth as well as transform it to align with future demand. For building retrofits there is a skill overlap with current construction jobs, but low-carbon heating requires maintenance and installation engineers to upskill from gas boilers to heat pumps. Investments should be used for large-scale training programmes. The jobs in this sector will be distributed proportionally, as building improvements follow the distribution of the building stock. These investments should be complemented by more stringent building standards and low-carbon requirements, which will leverage private investment. Such investments will deliver significant social co-benefits, such as improved living conditions and health, mainly through reduced fuel poverty. As decarbonisation will be underway, fuel prices will increase, seeing further risk of a rise in households in fuel poverty. Investing in green buildings will make these households resilient to future price shocks.

2.

INVESTMENT IN NATURE AND BIODIVERSITY IS A VITAL PART OF THE UK RECOVERY, INCLUDING INVESTING IN RURAL EMPLOYMENT AND ADAPTING TO ADVERSE CLIMATE EFFECTS AND IMPACTS⁹.

Nature-based climate solutions contribute to carbon sequestration and biodiversity, and have a large impact on air pollution and quality of life. Investment in this area also supports employment in rural sectors, such as in flood management, contributing to the government's levelling up strategy. Nature in itself is a productive good and ecological damages undermines all forms of growth. Natural capital is a valuable input for production and welfare. Research conducted by Vivid Economics shows that investments in parks will reduce health costs, reduce air pollution, and improve many other aspects of urban life¹⁰.

3.

INVESTING IN CLEAN ENERGY INFRASTRUCTURE, ESPECIALLY IN OFFSHORE WIND AND ELECTRICITY GRIDS, CAN SUPPORT GREEN JOBS.

Currently the UK offshore capacity is 8.5GW and the government has committed to increasing this to 40GW by 2030, which could support 28,000 jobs, including in manufacturing.¹¹ The sector is already market-driven, but current contracts for difference (CfDs) can be widened. Government can play a key role in redistributing the co-benefits, by strategically choosing production locations in underdeveloped regions. To support this larger power

system and extend the grid, investment in transmission and distribution is also required, which has its own potential to support jobs and economic activity. Investing in over-capacity of electricity grids is a smart strategy for future grid development, as past Vivid Economics analysis has shown¹².

4.

ANOTHER INVESTMENT OPPORTUNITY IS CARBON CAPTURE AND STORAGE (CCS), WITH THE POTENTIAL OF SUPPORTING AROUND 30,000 JOBS.

A net-zero pathway includes approximately 3 MtCO₂ of industrial CO₂ captured per annum, and will also require some form of carbon removal technology such as bioenergy with CCS (BECCS) or Direct Air Capture (DAC). Investment for industrial carbon capture alone will require around £400mn annually for both the capture units and the supporting transmission and storage infrastructure. Investing now will help ensure UK industry is competitive in a low carbon future, as well as helping to develop a competitive advantage for the UK to export CCS technology and services, a key driver of the potential 50,000 jobs supported by a UK CCS industry.

5.

THE UK AUTOMOTIVE SECTOR ALREADY SUPPORTS OVER 100,000 JOBS AND LOW-CARBON INVESTMENT IN ELECTRIC VEHICLES (EVs) AND EV INFRASTRUCTURE COULD HELP SUPPORT FURTHER GROWTH.

Currently, the sector is characterised by job substitution, where workers with skills to produce petrol/diesel vehicles can transfer these to EV assembly, supporting around 11,000 jobs by 2030. New jobs can be supported in complementary sectors: batteries and charging infrastructure, with an investment need of over £1bn annually, can support around 5,500 jobs, and these sub-sectors are especially interesting for creating a competitive advantage internationally. Additionally, creating a viable battery and charging infrastructure sector will have a positive spill over on EV producers to boost production, without having to use subsidies or other incentives. This will unlock even more job creation. Stimulating battery and charging infrastructure, and indirectly EV production, will support EV uptake and thus reduce air pollution. Depending on where these new EV plants are located, it also has the potential to contribute to the levelling up of regions. Beyond passenger vehicles, investing in low-carbon buses will support existing jobs in both the short and the long run. In the short run, investments of around £0.5bn annually in low-carbon buses will support many jobs as the 34,000-strong UK bus fleet will need replacing. In the long run, the UK will be able to export low-carbon buses, and this will support 3,500 bus-manufacturing jobs by 2050.¹³

⁹ We did not undertake an analysis of nature-related job opportunities as it was outside the scope of this report.

¹⁰ <https://www.vivideconomics.com/greenkeeper/>

¹¹ The Queen's Speech, December 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/853886/Queen_s_Speech_December_2019_-_background_briefing_notes.pdf

¹² <https://www.vivideconomics.com/casestudy/accelerated-electrification-and-the-gb-electricity-system/>

¹³ Calculated for the Energy Innovation Needs Assessments (EINA) project.

NOT ALL LOW-CARBON INVESTMENTS WILL BE PART OF THE GOVERNMENT STIMULUS – MANY MAY BE MORE SUITED TO SUPPORT VIA EXISTING MARKET MECHANISMS AND THE PRIVATE SECTOR.

The list above identifies areas of investment where private investment is likely to fall short of the required levels. However, there are low-carbon sectors where private investment can deliver the levels of deployment required. Low-cost onshore wind can proceed through the market, as can industrial energy efficiency. In the case of the latter, the savings on fuel costs can often outweigh the capital cost. The main role for the government will be to enhance energy efficiency regulation and standards, which will incentivise private investment.

MAJOR NEW POLICY INITIATIVES, SUCH AS A CARBON TAX AND AN OBLIGATION SCHEME – IF WELL DESIGNED – ARE WELL SUITED TO RAISING THE REQUIRED FUNDS.

Taxes will need to be raised in the medium term to some degree. A carbon tax of £50 per tonne of CO₂ in 2020, rising to £75 in 2030, would generate sufficient revenue to cover the investments above even after lower income households are compensated. This must be implemented together with low-carbon investments above which contribute to increased wellbeing, such as improved housing and transport. In parallel to a carbon tax, obligations on high emitting sectors can also be an efficient route to raising funds, in particular to fund CCS and negative emissions options. The obligation would be set at a fixed proportion of emissions associated with the obligated party's product, for example a percentage of the carbon content in oil. Both of these policy reforms have been extensively developed in recent Vivid Economics publications such as *Distributional Impacts of a Carbon Tax in the UK*¹⁴ (2020, with London School of Economics) and *Greenhouse Gas Removal Policy Options*¹⁵ (2019). In the long term, if successful, both schemes could form the basis of an emissions trading scheme for an efficient delivery of net zero emissions.

14 <https://www.vivideconomics.com/casestudy/distributional-impacts-of-a-carbon-tax-in-the-uk/>

15 https://www.vivideconomics.com/wp-content/uploads/2019/09/Greenhouse_Report_Gas_Removal_policy_options.pdf



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