

Opportunities for a Green Recovery: UK¹

The economic impact of COVID-19 on the UK was severe: GDP contracted by 10% in 2020, which marks the largest fall recorded. As of July 2021, the IMF was predicting a strong recovery (projected annual growth of 7% in 2021), but there are risks that remain and the UK is not expected to regain all of its lost potential growth from the pandemic.²

The UK has implemented many fiscal stimulus measures, with some emphasis on green spending. The release of a plan for a 'Green Industrial Revolution' shows the UK Government has recognized the opportunity created by COVID-19 to implement policies which provide short-term economic benefits while also promoting the transition to a net zero economy. However, the UK could go further in investing in green policies – this would strengthen the economy and also accelerate the shift to environmentally sustainable development.

Policies the UK could pursue to deliver immediate benefits as well as a greener future can be grouped into three core areas.



Clean energy and technologies: Investing in renewable energy will advance the UK energy sector's shift to a greener energy mix at the same time as providing economic benefits, particularly in employment. Solar photovoltaic (PV) energy and onshore wind investments create an estimated 13 and 18 job years per million USD respectively, compared to 9 job years from traditional energy investment. Providing support for clean technologies, such as electric vehicles (EV), would increase innovation and deployment in this sector. The Government could invest in charging infrastructure, building on investments announced in the 2020 budget, as well as low and zero-carbon public transport, including electric buses.



Natural capital: Natural capital investment is already an important feature of UK policy, as represented by the 25 Year Environment Plan and new Agriculture Bill. Nonetheless, there is scope to go further in implementing policies like enhancing green spaces, supporting tree planting and incentivizing climate-friendly agriculture. These investments deliver high economic returns, both in the short- and long-term. Investments in agroforestry, reforestation or ecosystem restoration are projected to generate 18-24 job years per million USD, compared to 9 job years from traditional water investments. They also generate \$1.15-\$1.25 per \$1 invested, over a 20-year horizon, relative to \$1.1 from traditional water investment.



Green buildings investment: Energy efficiency retrofits are shovel-ready projects which would drive economic recovery while enabling significant progress towards the UK goal of net-zero emissions by 2050. These investments have high job creation potential - window and roof replacement and residential rooftop solar projects create between 19 and 27 job years per million USD, versus 12 job years generated by traditional residential expenditure.

¹ This policy briefing was written in June 2021, using information and analysis up to this date

² Sky News (2021). IMF predicts UK economic bounce-back this year to match resurgent US. Available at: <https://news.sky.com/story/imf-predicts-uk-economic-bounce-back-this-year-to-match-resurgent-us-12364919>

1 Introduction

The United Kingdom (UK) economy contracted by 10 percent during 2020, making it the largest annual fall in UK Gross Domestic Product (GDP) on record. Despite the changes resulting from the UK leaving the European Union (EU) in January 2020, and with a series of lockdowns during the past year, the UK economy seems to be showing some signs of recovery. To secure a sustainable, long-lasting economic recovery, the UK could bank on a series of green measures that bolster both demand and supply. For the UK, this would be an opportunity to become a global leader in the green innovations that are set to form the foundation of tomorrow's global economy.

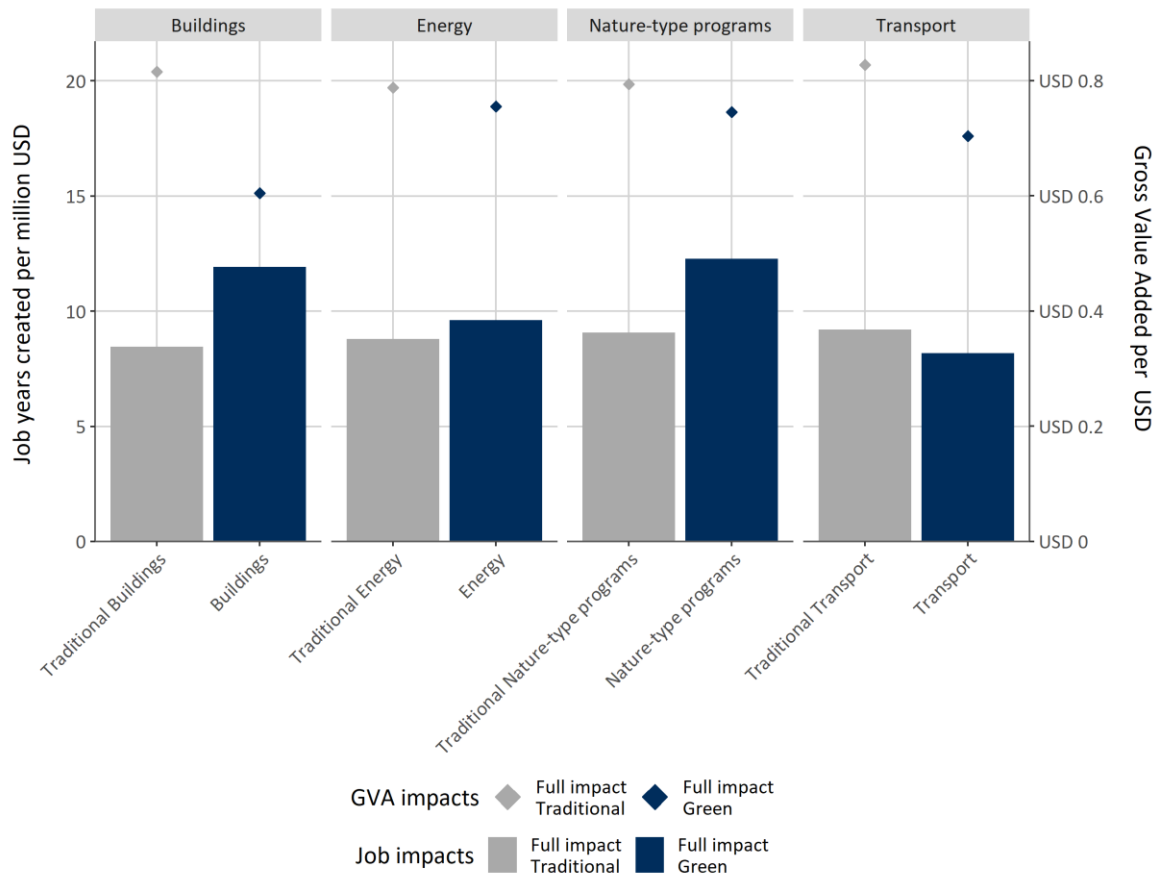
To recover from the economic impact of COVID-19, the UK has announced a series of green stimulus measures that are aligned to its climate targets and can also provide both short term economic gains and build national wealth in the long-term. To meet its climate targets, the UK announced a number of measures at the domestic and international scale. Internally, the UK set a legally binding target to cut its greenhouse gas (GHG) emissions to net-zero by 2050,³ whereas at the global level it committed to reduce emissions by 68 percent by the end of 2030, as part of the Paris Agreement.⁴ Implementing green stimulus measures aligned to these targets could bring the UK Government a hat-trick of wins: capturing economic stimulus effects in the short term, securing new growth pathways in the medium term, and mitigating environmental degradation in the long term. Indeed, Vivid Economics modelling (see Figure 1) highlights the strengths of such spending over traditional alternatives in recovery in the UK. In particular, it shows generally higher economic returns and employment impacts of investments in green sectors such as buildings, energy, and nature based solutions, relative to traditional investments.

This briefing outlines three priority policy areas that are likely to stimulate economic growth in both the short and long-term, whilst advancing the UK in its climate targets with a sustainable approach. These include Renewable Energy, Natural capital Investments and Green Building Investments, and are elaborated in Section Error! Reference source not found..

³ UK Government (2021). UK enshrines new target in law to slash emissions by 78 percent by 2035. Available at: <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>

⁴ Carbon Brief (2020). Daily briefing – the UK aims to cut emissions by 68 percent by the end of 2030. Available at: <https://www.carbonbrief.org/daily-brief/uk-aims-to-cut-emissions-by-68-by-end-of-2030>

Figure 1 Potential economic impacts of green vs traditional capital investments



Note: Job year and Gross Value Added (GVA) impacts of green spending policies compared to traditional spending in Indonesia. The chart displays impacts per USD of capital expenditure, and includes direct, indirect and induced spending over the full construction period. Additional impacts will be felt through the operational phase of projects, however these depend on continued funding or a market for the technology. Traditional investments include improvements to the road network, housing development, water treatment facilities, and coal energy generation. Modelling is based on current sector dynamics, using the I3M input-output model; These are average figures; the full policy set is available in Figure 2.

Source: Vivid Economics

2 COVID-19 impact on the UK's economy and society

The COVID-19 pandemic and the UK's withdrawal from the EU both constitute major economic shocks, with the short-term impact of COVID-19 significantly larger. A free trade agreement between the UK and EU was reached on 24 December 2020 providing direction on how the UK and the EU – its closest and largest trading partner – will live, work and trade together in the future. Sectors that rely on cross-border trade with the EU are expected to be the most affected, both in the short-term (as evidenced by port disruption in January 2021), and in the longer-term.⁵ Meanwhile, COVID-19 has most affected non-tradeable services, meaning those that rely on face-to-face contact. Hence, it is estimated that 69 percent of the economy will be affected by at least one of coronavirus and Brexit.⁶

The magnitude of the recession caused by the COVID-19 pandemic is the largest annual fall in UK GDP on record. The economic impact of the pandemic, and the measures taken to close down economic activity to prevent contagion, is estimated to have contracted GDP by 9.9 percent in 2020, but the economy is projected to rebound strongly in 2021.⁷ Although the economy showed some signs of recovery by December 2020, output remained 10 percent below pre-pandemic levels, with recovery further delayed by a winter resurgence of the virus.⁸ This is reflected in part by the number of weekly hours worked in the UK,⁹ which decreased by 10.3 percent in 2020 as the lockdown measures to control the spread of the virus impacted the labour market. Similarly, the unemployment rate increased from 4 percent in January 2020 to 5.1 percent in December 2020, in spite of the furlough scheme implemented to protect the labour market.¹⁰

Recovering from the pandemic requires government action to simultaneously restore demand and bolster supply. The impact of the pandemic is being felt directly right across the economy by households, businesses, and consumers alike.

⁵ Tetlow, G., and Pope, .T. (2020). Brexit and coronavirus – economic impacts and policy response. Available at: <https://www.instituteforgovernment.org.uk/sites/default/files/publications/brexit-coronavirus-economic-impact.pdf>

⁶ *ibid*

⁷ Office for National Statistics (2021). Understanding the UK economy. Available at: <https://www.ons.gov.uk/economy/nationalaccounts/articles/dashboardunderstandingtheukeconomy/2017-02-22>

⁸ Tetlow, G., and Pope, .T. (2020). Brexit and coronavirus – economic impacts and policy response. Available at: <https://www.instituteforgovernment.org.uk/sites/default/files/publications/brexit-coronavirus-economic-impact.pdf>

⁹ Office for National Statistics (2021). Labour market overview, UK: April 2021. Available at <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/april2021#redundancies>

¹⁰ Office for National Statistics (2021). Unemployment rate (aged 16 and over, seasonally adjusted). Available at <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/mgsx/lms>

3 Policy responses during the pandemic

The UK Government has implemented a number of fiscal measures to stimulate the economy, with a particular focus on employment-related measures. In response to the pandemic, the UK announced USD 758 billion in fiscal measures that target different groups and sectors, but the vast majority aims to stimulate the economy through the labour market.¹¹ Examples of this include the JRS, which was introduced to help employers who cannot maintain their current workforce by receiving a grant on the employment costs of individuals who are temporarily not working, or working reduced part time hours, due to the pandemic¹² – this scheme was initially scheduled to end on 31 October but has been extended until September 2021. Similarly, the UK launched a ‘Kickstart Scheme’ to prevent unemployment among those aged 16-24. This was underpinned by an Apprentice Program, where firms hiring young individuals received additional income.¹³ In addition, the UK launched different loan schemes for businesses depending on their size and nature – for instance, SMEs focusing on R&D, whose support was accompanied by Innovate UK – the national innovation agency.¹⁴

Announced fiscal stimulus has included substantial support for green infrastructure in the transport sector. In November 2020, the UK released a ‘Ten Point Plan for a Green Industrial Revolution’ which increased clean stimulus by nearly USD 12 billion across a number of sectors, transport included.¹⁵ To further stimulate it, the UK added a USD 2 billion bailout for London’s transport authority (Transport for London, TfL), a USD 6.1 billion investment in transport infrastructure, and support for airlines – these accounted for USD 2.2 billion granted in bailouts, despite having no green conditions attached. In addition, the latest annual budget announced on early March 2021 include measures to help retail investors develop green saving bonds, by requiring them to invest in EVs and active transport. However, the 2021 budget did not increase fuel duties for the 12th consecutive year, despite being the UK’s highest-emitting sector since 2016.¹⁶ The UK currently occupies the fourth place out of 30 countries on the overall Greenness of Stimulus Index (GSI), after Denmark, the European Commission and Canada.¹⁷

3.1 Green stimulus to catalyse future prosperity

Green economic recovery packages can be designed to both bring short-term economic dividends and accelerate progress towards national climate goals. The COVID-19 recession requires relief and recovery measures implemented through different timeframes – it is crucial that current spending is targeted at initiatives which can both stimulate the economy in the short-term and achieve productive long-term objectives. Various analyses show that green spending is one of the best ways to do this.¹⁸ Alongside short-term recovery, and long-term prosperity, green spending has a third added benefit – accelerating the UK’s path to reducing GHG emissions and reaching its target of net-zero carbon emissions by 2050.

Clean fiscal stimulus policies have advantageous economic and climate attributes, and can benefit an economy like the UK, which faces both an immediate recession and an immediate climate crisis. The UK may be able to benefit from implementing shovel-ready projects, like a backlog of natural capital projects and energy efficiency retrofitting, where training requirements are low and job growth potential is high.

¹¹ Vivid Economics (2021). Greenness of Stimulus Index. Available at: <https://www.vivideconomics.com/wp-content/uploads/2021/02/Greennes-of-Stimulus-Index-5th-Edition-FINAL-VERSION-09.02.21.pdf>

¹² 80 percent of a furloughed employee’s wage is paid by the UK Government – subject to a cap of GBP 2,500 per month.

¹³ This payment is in addition to the existing GBP 1,000 incentive the government already provides for new 16-18 year-old apprentices.

¹⁴ IMF (2021). Policy responses to COVID-19. Available at: <https://www.imf.org/en/Topics/imf-and-COVID19/Policy-Responses-to-COVID-19#U>

¹⁵ Vivid Economics (2021). Greenness of Stimulus Index. Available at: <https://www.vivideconomics.com/wp-content/uploads/2021/02/Greennes-of-Stimulus-Index-5th-Edition-FINAL-VERSION-09.02.21.pdf>

¹⁶ BEIS (2021). 2019 UK Greenhouse Gas Emissions, Final Figures. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957887/2019_Final_greenhouse_gas_emissions_statistical_release.pdf

¹⁷ Vivid Economics/Finance for Biodiversity Initiative (2021) Greenness of Stimulus Index - July 2021. Available from: https://a1be08a4-d8fb-4c22-9e4a-2b2f4cb7e41d.filesusr.com/ugd/643e85_f712aba98f0b4786b54c455fc9207575.pdf

¹⁸ Submission to COVID recovery commission advisory group.

Meanwhile, investments in clean energy infrastructure are economically competitive and can create good quality jobs, compared to alternative spending policies: a study by Garret-Peltier (2017) suggests that every USD 1m spent in renewable energy infrastructure generates 7.5 full-time equivalent (FTE) jobs, and 7.7 FTE jobs in energy efficiency retrofitting, the same amount of spending would only create 2.6 FTE jobs in fossil fuel sectors.¹⁹

Targeted clean stimulus spending could play a significant role in accelerating progress towards meeting the UK's existing climate commitments. The Sixth Carbon Budget of the UK's Climate Change Committee (CCC) requires a 78 percent reduction in UK territorial emissions between 1990 and 2035, with the ultimate goal of achieving net-zero emissions by 2050.²⁰ An effective approach would be to align economic recovery packages with climate targets, including in supporting the development and early-stage demonstration of key technologies that are necessary to reach net-zero emissions. Moreover, the UK can build comparative advantage by being a global leader on the green innovations that are set to form the foundation of the global economy of tomorrow.

Fiscal recovery packages could entrench or displace the current fossil-fuel-intensive economic system, and there is a time-sensitive opportunity to 'build back better'. The UK Government could focus on policies that can realise significant short-term economic growth as well as move the country forward to achieve long-term climate goals, including net zero emissions by 2050. Investments into shovel-ready energy efficiency retrofits and natural capital investments offer prospects for high-speed implementation, whereas investments into clean energy are economically competitive and will support the UK energy sector in its well-established shift towards a greener future.

¹⁹ Garret-Peltier, H. (2017). Green versus brown: comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input output model. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S026499931630709X>

²⁰ Climate Change Committee (2020). Sixth Carbon Budget. Available at: <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

4 Priority policy areas for green stimulus

Policymakers will decide which key assets to focus UK investment on, reflecting changing technologies and the need to generate growth and secure competitiveness in the 21st century. In a May 2020 paper for the *Oxford Review of Economic Policy*, the Smith School of Enterprise and the Environment 2017 (SSEE) surveyed 231 leading economists on the climate and economic attributes of fiscal stimulus policies. The results identified a series of green investments that scored highly on climate impact, but also stood out on the economic measures of speed of implementation and long-run economic multiplier. These were, amongst others, clean energy infrastructure, natural capital investments, and building efficiency retrofits.

4.1 Investment in clean energy infrastructure

Investments into clean energy are economically competitive and will support the UK energy sector in its well-established shift towards a greener future. Renewable energy investment is attractive in both the short and the long run. In the former, it generates more jobs when these are scarce in the middle of a recession, which boosts spending and increases short-run GDP multipliers resulting from expanding demand. As shown in Figure 2, investments in solar PV and onshore wind are projected to create 13 and 18 job years per million USD respectively during the first two years, compared to 9 job years from traditional energy. In the long-run, renewable energy conveniently requires less labour for operation and maintenance, freeing up labour as the economy returns to capacity. The more efficient use of labour and the savings on fuel means that renewables are also able to offer higher long-run multipliers resulting from expanding supply. Indeed, over a 20-year horizon, estimated economic returns from solar PV and onshore wind are substantially above traditional investments – capital expenditure on the former is expected to generate \$1.25 GVA per \$1 of investment, compared to \$1.1 GVA per \$1 projected from traditional energy investments. These estimates do not include potential transformational impacts from renewable energy investments and additional job creation during operational periods. Investments in solar PV and carbon capture and storage (CCS) could additionally generate 60 and 27 job years per million USD, respectively, over the operational period, relative to 13 job years from traditional energy. Likewise, investing in transmission and distribution infrastructure would enable higher renewable penetration, which would help to ensure that electricity generation is zero carbon by 2030, contributing to the electrification and further decarbonization of heat and transport.

Investment more broadly in clean technologies, such as electric vehicles, lowers their costs and helps to accelerate deployment and innovation.²¹ The UK could promote the use of EV ownership through fast-charging infrastructure (building on the USD 680m announced in the March 2020 Budget), appropriate bicycle lanes, and greater subsidies for e-bikes and electric car purchases. Likewise, investing in other types of transport, such as low and zero-carbon public transportation (e.g., buses and trains upgraded to electric or hydrogen-powered), could build resiliency against climate change if designed properly. Here, public participation and consultation are essential to ensure implemented infrastructure is fair and sufficient to all.

Programs for worker retraining will enable the labour market to satisfy the skills requirements of newly created jobs, facilitate national levelling up and supplement already announced training schemes. To ensure a just energy transition across the population, the UK could invest in digital education and retraining initiatives to redirect workers from fields that will be most impacted by decarbonisation efforts and to provide green economy employment opportunities for new school, college and university graduates. Furthermore, any new recovery initiative will also require training of new staff and, where necessary, retooling and reskilling those whose livelihoods are threatened by the shift away from carbon-intensive production.

²¹ SSEE (2020). A net-zero emissions economic recovery from COVID-19. Available at: <https://www.smithschool.ox.ac.uk/publications/wpapers/workingpaper20-01.pdf>

4.2 Natural capital investment

Investing in natural capital would enable the UK to improve its environmental and physical infrastructure assets. Natural capital spending is considered to be fast-acting because worker training requirements are low, and many projects have minimal planning and procurement requirements. On top of that, most of its facets meet the social distancing norms requirements. Investing in ecosystem resilience and regeneration by enhancing green spaces, planting trees, and encouraging climate-friendly agriculture and restoring carbon-rich habitats (such as by implementing soil management practices that enhance carbon storage, biodiversity, and food production efficiency), would build upon the 25 Year Environment Plan and new Agriculture Bill, whilst contributing to the mitigation of climate-related natural disasters.²²

Nature based investments are expected to generate higher economic returns than traditional nature-type expenditure, both in the short and long term. Investments in agroforestry, reforestation or ecosystem restoration show particularly high job creation potential - in the short term, employment generation is estimated at 18-24 job years per million USD, compared to 9 job years from traditional water investments. Longer term economic returns are also higher across all nature based programs relative to traditional investments – expenditure on the former is estimated to generate up to \$1.25 GVA per \$1, relative to \$1.1 from traditional nature-type expenditure. Furthermore, these estimates do not include potential transformational impacts from sustainable nature based investments and additional job creation during operational periods. Operational job generation from green investments is again projected to be higher relative to traditional nature investments – investment in reforestation is estimated to generate 16 job years per million USD, compared to 4 job years from traditional investments-, although it would be key that the Government provides continued support for delivering nature based programs for this opportunity to realise.

4.3 Green buildings investment

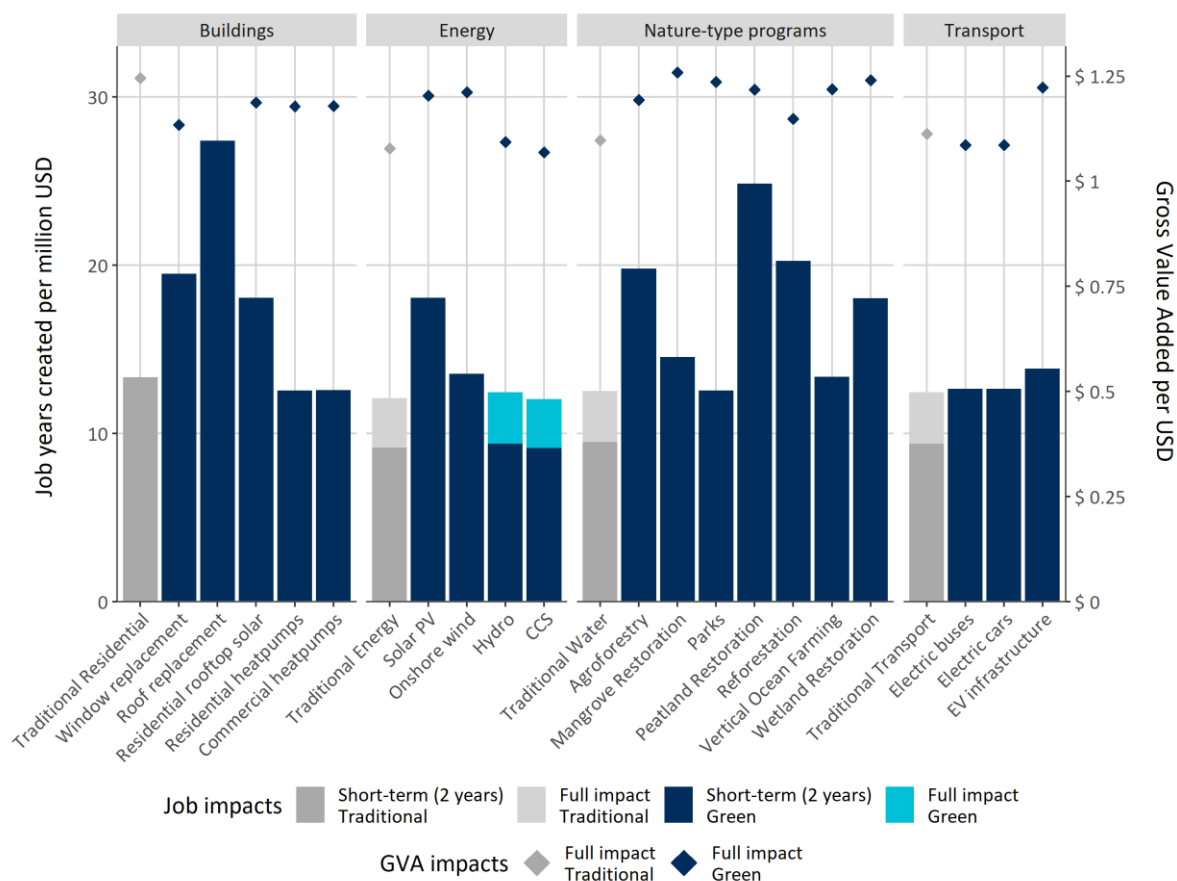
Investing in residential and commercial energy efficiency retrofits as early action would drive economic recovery and support UK goals on achieving net-zero emissions by 2050. Energy efficiency retrofits could be the most sensible option for a shovel-ready, local green investment, as insulation retrofits can deliver jobs in the short-term and additional benefits (including cost-savings and energy efficiency) in the longer-term. As shown in Figure 2, in the short term, investments in window and roof replacement and residential rooftop solar are projected to create between 19 to 27 job years per million USD, compared to 12 job years generated by traditional expenditure. Over a 20-year horizon, estimated economic returns from such green investments are marginally below traditional investments. However, these estimates do not include potential transformational impacts from green building investments and additional job creation during operational periods. Investments in window and roof replacement, for instance, could additionally generate beyond 11 job years per million USD over the operational period, relative to 5 job years from traditional residential building investments.

Improving homes energy efficiency could also bring through substantial socioeconomic benefits. Employment and economic benefits could also be realised by preparing households and commercial buildings in the UK for conversion from natural gas to heat pumps, hydrogen, or district heating by 2050, supplementing the Government's Low Carbon Heat scheme. Improving home energy efficiency could be supported by introducing financial incentives for households installing insulation and other energy efficient improvements – such as through the Green Homes Grant. Where appropriate, policy design could target co-benefits which address inequalities – whether associated with wealth, education, health or others. For instance, energy efficiency retrofits could be targeted towards lower income households that have a higher likelihood of forgoing heating in the winter due to cost. Examples of this include the new Green Homes Grant program which will be administered by local authorities and will be exclusively targeted at lower income households. However,

²² Net zero emissions economic recovery from COVID 19

limiting the access to a particular segment of the population may jeopardise the UK's green recovery and further climate targets.²³

Figure 2 Potential Job and GVA impacts of green policies compared to traditional stimulus spending



Note: Job year and Gross Value Added (GVA) impacts of green spending policies compared to traditional spending in the UK. The chart displays impacts per USD of capital expenditure, and includes direct, indirect and induced spending, within a two year horizon and over the full construction period (when this is longer than two years). Additional impacts will be felt through the operational phase of projects, however these depend on continued funding or a market for the technology. Traditional investments include improvements to the road network, housing development, water treatment facilities, and coal energy generation. Modelling is based on current sector dynamics, using the I3M input-output model.

Source: Vivid Economics

²³ E3G (2021). Green Homes Grant letter. Available at: <https://www.e3g.org/publications/green-homes-grant-letter/>