

Evidence from UCL Public Policy

Collated by Dr George Dibb, Head of Industrial Strategy & Policy Engagement, UCL Public Policy

This response was coordinated by [UCL Public Policy](#). UCL Public Policy builds engagement between researchers at London's Global University and policy professionals. Our activities include convening academic-policy roundtables, publishing Research Insights briefings, managing a Policy Fellowships programme, supporting internal capacity to engage with public policy and holding public events to help bridge the gap between new research and policy.

Questions:

- What can the government do to continue tackling the climate emergency whilst it fights COVID-19 and contributes to re-building our economy and society in the aftermath?
- What is the role of public and private finance, investors and businesses in tackling climate change?
- What can the UK Government do to drive action from those sectors?
- How can the UK Government continue to drive action whilst it tackles COVID-19 and the impact on our economy, the global economy and society?

Responses:

Prof Chris Rapley, Professor of Climate Science, UCL Earth Sciences. Chair of the UCL Policy Commission on the Communication of Climate Science, Chair of the London Climate Change Partnership

The world is not on track to meet the climate targets agreed at COP21 in Paris^{1 2 3 4}. A warming of 3°C or more will occur unless the nations of the world increase ambition and action very substantially. Beyond a warming of 1.5°C the likelihood increases of loss of control of the climatic outcomes and consequences.

The delay in COP26 due to the COVID-19 crisis offers two opportunities: One is to re-assess what societal transformations are achievable, given that the lock down and its repercussions would have been unthinkable even a few months ago. The other is to rebuild the global economy in a manner which achieves a balance between treading more lightly on the planet, whilst delivering a high quality of life to humanity. The UK has the chance to use its diplomatic influence and soft power to draw together the COP26 participants to grasp this unprecedented and unanticipated circumstance and to agree the necessary policy commitments and actions to honour the COP21 aspirations. To fail to do so would be an historic blemish on the Nation's international standing and reputation.

¹ <https://www.carbonbrief.org/unep-limiting-warming-to-1-5c-requires-fivefold-increase-in-climate-commitments>

² <https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESEN.pdf?sequence=13>

³ <https://www.un.org/sustainabledevelopment/blog/2019/09/unite-in-science-report/>

⁴ https://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmocms/s3fs-public/ckeditor/files/United_in_Science_ReportFINAL_0.pdf?XqiG0yszsU_sx2vOehOWpCOkm9RdC_gN

Prof Mariana Mazzucato, Professor in the Economics of Innovation & Public Value and Founding Director at UCL Institute for Innovation and Public Purpose and Martha McPherson, Head of Green Economy and Sustainable Growth, UCL Institute for Innovation and Public Purpose

Market shaping and mission-oriented approaches to COVID19

In the COVID19 pandemic, government has the upper hand for the first time in a generation⁵. It should use this to design a fair and equitably dispersed recovery package, that is focused on a ‘Green New Deal’-style strategy⁶ of lowering carbon emissions while also investing in workers. This must take place across the innovation chain in a portfolio approach; from overhauling basic research investment through to infrastructure, procurement and deployment strategies.⁷ Whilst technical healthcare innovation is urgently needed, the government must also focus on social innovation to build a proper safety net for people who have been left jobless; especially those working in the gig economy, or self-employed, with little social protection⁸.

The [UCL Institute of Innovation and Public Purpose](#) works with governments and public institutions around the world to move the role of government away from ‘market-fixing’, to ‘market-shaping’ activity, in support of innovation geared towards big societal challenges. Market-shaping is not what the UK government has been used to in recent decades: since the 1980s, the public sector has been told to take a back seat and let business steer and create wealth, intervening only for the purpose of fixing problems when they arise; such a role means that governments are not prepared to deal with crises such as COVID-19 or the climate emergency⁹. Currently, IIPP is working with governments and partners from multiple countries on economic recovery responses to COVID19, including in Italy, South Africa, the UK and the Vatican, and at a regional level too in Emilia-Romagna, Camden and Manchester.

Innovation policies should be mission-oriented, designed to take on societal challenges, and transform them into ambitious, long-term, concrete and cross-sectoral missions, which bring together green transition needs with COVID recovery, ranging from the urgent need for a vaccine, to online learning innovation for schoolchildren.¹⁰ Through a market-shaping and co-creating role, governments provide economic directionality and confidence to other investors. Our research shows that public investment significantly mobilises private investment at a sectoral level, meaning that the public sector can actively set the direction needed¹¹. In the UK this means a reversal of the cuts to key sectors, such as the NHS, which has seen cuts to public health totalling £1bn since 2015.¹²

Defining and sharing risks

⁵ Mazzucato, M. (2020). The Covid-19 crisis is a chance to do things differently. *The Guardian*. Accessible at <https://www.theguardian.com/commentisfree/2020/mar/18/the-covid-19-crisis-is-a-chance-to-do-capitalism-differently> ⁶ Mazzucato, M and McPherson, M. (2018). The Green New Deal: A bold mission-oriented approach. UCL Institute for Innovation and Public Purpose, Policy Brief series (IIPP PB 04).

⁷ Mazzucato, M and McPherson, M. (2019). The green entrepreneurial state: What the Green New Deal can learn from the IT revolution. UCL Institute for Innovation and Public Purpose, Policy Brief series (IIPP PB 08).

⁸ Mazzucato, M. (2020). The Covid-19 crisis is a chance to do things differently. *The Guardian*. Accessible at <https://www.theguardian.com/commentisfree/2020/mar/18/the-covid-19-crisis-is-a-chance-to-do-capitalism-differently> ⁹ Ibid.

¹⁰ Mission-oriented approaches have been taken on by the European Commission to steer the Horizon Europe research and innovation programme and are gaining recognition around the world; IIPP work on the topic available at <https://www.ucl.ac.uk/bartlett/public-purpose/research/mission-oriented-innovation-policy>

¹¹ Mazzucato, M and Semieniuk, S. (2018). Financing renewable energy: Who is financing what and why it matters. *Technological Forecasting and Social Change*, Volume 127, February 2018, Pages 8-22

¹² Mazzucato, M. (2020). The Covid-19 crisis is a chance to do things differently. *The Guardian*. Accessible at <https://www.theguardian.com/commentisfree/2020/mar/18/the-covid-19-crisis-is-a-chance-to-do-capitalism-differently>

Risks must be better shared between public and private sector actors to ensure that citizens genuinely benefit from public spend on innovation and government assistance. Conditionalities can be designed to foster more inclusive and sustainable growth post-COVID. International practices are differing greatly, with some countries like Denmark preventing companies making use of tax havens to receive assistance. When conditionalities are done well, they align corporate behaviour with the needs of society. In the short term, this should focus on preserving employment relations during the crisis and maintaining the productive capacity of the economy, whilst avoiding extraction of funds to financial markets and executive compensation. In the long-run, it is about ensuring that business models lead to more inclusive and sustainable growth; moving towards a 'stakeholder capitalism' model. Conditionalities on emissions targets, green R&D investment and worker treatment could be attached to high-carbon sectors.

Finally, it is time to ensure that climate risk is seen as a risk that has been equally overlooked as pandemic risk; and is equally as dangerous. The uncertainty of the climate crisis must be reflected in the financial stability mandates of central banks ahead of a time of crisis, not during; and climate-related financial risks should be fully integrated into monetary policy, which should itself be co-ordinated alongside industrial and innovation policy¹³.

Prof Francesca Medda, Professor of Applied Economics and Finance. Director of UCL Institute Of Finance & Technology

What can the government do to continue tackling the climate emergency whilst it fights COVID-19 and contributes to re-building our economy and society in the aftermath?

This crisis can be an opportunity to re-examine investment and national economic and financial approaches, particular on natural capital assets thus tackling climate change. We have demonstrated in several works that natural assets may outperform investments in traditional asset classes such as equities, bonds, real estate, and non-traditional ones, namely infrastructure. And in particular, in view of the present crisis, investments in natural assets provide hedging against unexpected inflation, reduce downside risk and lower the exposure to liquidity shocks in financial markets. The reasons for this performance is that major challenges of natural capital investments include their long investment horizon and low liquidity, as compared with equities or bonds.

What is the role of public and private finance, investors and businesses in tackling climate change?

Investments in natural assets require private investors with long investment horizons, long holding periods and low liquidity constraints.

What the UK Government can do to drive action from those sectors? and How the UK Government can continue that drive whilst it tackles COVID-19 and the impact on our economy, the global economy and society?

Two tools are presented below which can drive private sector and government investments which may have a transformational impact on the UK economy and society.

Investment model for natural capital assets. This tool consists of an investment portfolio model to assess the performance when investing in natural capital assets and green investments (green bonds). This tool is able to identify, in the first place, what are the financial benefits and risks associated with natural capital investments and compared them with those of other traditional asset classes such as government bonds and real estate. And on the second place, which natural capital investments are more attractive for institutional investors who want to adopt green approaches. Both, private and public investors aiming at adopting green investments can use this tool to support their investment decisions considering factors such as expected returns, volatility, inflation proof, and liquidity risk.

Risk analysis tool. The tool has been developed to quantitatively estimate the risk of a region (a country or a city) to miss trajectories of sustained development given the management of its natural capital assets. The tool has been created within the framework of Comprehensive Wealth theory, and it uses the Natural capital valuation methodologies currently adopted in the UK. Therefore, the tool

¹³ Ryan-Collins, J. (2020). Coronavirus and the UK economy: why this pandemic needs a bolder macroeconomic response. UCL Institute for Innovation and Public Purpose, Blog series. Accessible at <https://medium.com/iipp-blog/coronavirus-and-the-uk-economy-why-this-pandemic-needs-a-bolder-macroeconomic-response-7c288ca99a58>

tracks changes on the monetary value of the capital assets (i.e. produced capital, human capital, and natural capital) found in a region taking into account some of the most relevant interactions existing with key economic variables (e.g. GDP growth, employment, labour income, etc). This tool allows identifying which capital assets are more significant in affecting future trajectories of sustained growth and provide guidance on what natural assets should receive priority for their recovery. Hence, the tool can be employed by policymakers and authorities to support their decisions in defining effective strategies for the recovery of natural capital value and delivering sustainable growth.

References

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3. Medda, F. R., Partridge, C., & Carbonaro, G. (2018). [Energy investment in smart cities unlocking financial instruments in Europe](#). *E-Planning and Collaboration: Concepts, Methodologies, Tools, and Applications* (pp. 818-842). doi:10.4018/978-1-5225-5646-6.ch040
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5. Partridge, C., & Medda, F. (2017). [Fuzzy Real Options Analysis Applied to Renewable Energy Investments](#). *International Journal of Latest Research in Engineering and Technology*.
6. https://liveablecities.org.uk/sites/default/files/outcome_downloads/littlebookofnaturalcapitalaccountingfinance.pdf

Professor Paul Ekins, Professor of Resources and Environmental Policy, Director of the UCL Institute for Sustainable Resources

Please note, a submission on this topic has also been submitted to the House of Commons BEIS Select Committee [‘My BEIS’ Inquiry](#).

The UK Government has a legally binding commitment to reduce Greenhouse Gas (GHG) emissions to net zero by 2050. It is essential for UK credibility that we are seen to be on track to achieving this target as it is critical for bringing countries together for COP26 meeting. Therefore, to be taken seriously, the UK needs a clear institute or body with accountability for achieving this goal and alignment across government. Currently these institutional arrangements are not clear.

What might be the implication, both domestically and globally, should the UK fail to achieve net zero by 2050? Or to achieve the fourth carbon budget (2023-2027) or the fifth carbon budget (2028-2032), which were formulated for an 80% GHG reduction target by 2050?

The UK is at risk of not being taken seriously in its target-setting, which will make it much harder to persuade other countries to strengthen their Nationally Determined Contributions (NDCs) to global emissions reduction, but more vitally there are potential legal, moral and scientific consequences of failing to meet the UK net zero target. The ramifications of missing the target, I believe, warrant scrutiny into the institutional arrangements currently in place.

Achieving net zero will require action across all government policy areas when it comes to consideration of all GHG-emitting sectors: power generation, industry, transport, buildings and agriculture. At present government is not institutionally aligned on this legally binding commitment.

Key questions that the committee may consider:

- What current institutional arrangements exist and how they operate.
- What is currently missing and if an alternative arrangement, for example a Delivery Body analogously to the bodies set up for the Olympic Games in 2012, would be more appropriate.
- How to develop and operate an alternative delivery body.
- The roles of and implementation measures offered by various Government departments, for example:
 - BEIS’ leadership on decarbonisation and engagement with key energy-intensive industrial sectors through and beyond the Industrial Strategy
 - The Treasury’s implementation of an escalating carbon tax
 - DfT’s commitment to supporting the switch to electrified vehicles
- Who to engage as suitable stakeholder and expert advisory bodies to feed into the institutional process and to set out a route map to net zero carbon emissions in 2050.
- How to foster and capitalise on public behaviour change, for example with regard to flying, meat consumption and green public spaces.
- How the progress of any institutional arrangements should be monitored and evaluated.

Of course, achieving the scientific, technological, and societal transformation needed to hit net zero is different to planning for the Olympics, but scrutiny from the committee of what form of institution could achieve this would be a worthwhile inquiry. This is not only a topic of national and international significance, particularly as the UK prepares to host the COP 26 summit, but will also play a critical role in the development of the post-COVID economy and decarbonised industrial strategy.

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