

Climate Change Briefing

A Supplement to Brunel's Climate Change Policy

Purpose

This briefing has been written to support Brunel's Climate Change Policy by providing further detail on the science of climate change, the policy response at international and national levels, and on the relationship and impacts of climate change to investors.

The Science

Climate change is the defining issue for our world. It is global in scope, with impacts that will, and already are, affecting the natural and human systems of all aspects of our society, environment, and economy. The Intergovernmental Panel on Climate Change's (IPCC) sixth assessment report¹ warns that we will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all, should we further delay global action to slow climate change and its impacts². Scientific evidence³ suggests that our climate is being altered faster than at almost any point in geological history with atmospheric concentrations of greenhouse gases higher than any time in the last 800,000 years. This has caused unprecedented warming of the climate system that can be observed through atmospheric warming, sea level rise and reducing ice levels, along with more frequent and more extreme weather events.

Continued increases in warming will amplify existing risks and create new risks with potential irreversible and catastrophic impacts on society and the environment. The pathway of global warming is also significant. The IPCC suggests that future climate risk is much larger if global warming exceeds 1.5°C before returning to that level by 2100 than if global warming gradually stabilizes at 1.5°C, especially if the peak temperature is high (2°C or higher)³. Many human and natural systems will face additional severe and irreversible risks, compared to remaining below 1.5°C². With no or limited overshoot of 1.5°C warming this century, global net CO₂ emissions are modelled to need to decline by about 43% from 2019 levels by 2030, reaching net zero around 2050².

The IPCC sixth assessment report mentioned that warming is likely to reach or exceed 1.5°C between 2021 and 2040 if emissions continue at the current rate². Human activities are estimated to have already caused approximately 1.1°C of global warming, as mentioned at the recent COP27 in Egypt. Further, if net-zero CO₂ emissions are not achieved and current emission rates remain, warming is currently anticipated to reach 2.9-3.4°C³ by 2100 with further warming in the next century.

The IPCC sixth assessment report² also had a focus on climate change impacts, adaptation

¹ This is the Sixth Assessment Report (AR6), the latest in a set of reports to assess scientific knowledge on past, present and future climate change, the impact of climate change and future risks options for adaptation and mitigation.

² IPCC (2022) Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegria, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.

³ IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, 616 pp. <https://doi.org/10.1017/9781009157940>.

and vulnerability. This is due to an increasing need for adaptation to climate change impacts to be addressed along with the mitigation strategies (which have so far been more of a prioritised focus of international actors) to tackle global warming. The report provided adaptation options for the specific topics of terrestrial and freshwater ecosystems, ocean and coastal ecosystems, water, food and other ecosystems, cities and infrastructure, health and wellbeing and poverty and sustainable development. The report covered barriers and options for adaptation in all continents, and specifically small island nations as well.

In terms of mitigation, the IPCC P1, P2 and P3 scenarios are common, realistic scenarios used for scenario analysis within the finance industry, as these are the three climate scenarios that limit warming to 1.5°C with no or limited overshoot. The scenarios' primary differences are in their different use of Carbon Dioxide Removal (CDR), Bioenergy with Carbon Capture and Storage (BECCS) and removal through Agriculture, Forestry and Other Land Use (AFOLU).

- The P1 scenario⁴ is a scenario in which social, business, and technological innovations result in lower energy demand up to 2050 while living standards rise, especially in the global South. This then results in rapid decarbonisation of the energy supply, with afforestation being the only carbon dioxide removal option.
- The P2 scenario⁴ is a scenario with a broad focus on sustainability including energy intensity, human development, economic convergence and international cooperation, as well as shifts towards sustainable and healthy consumption patterns, low-carbon technology innovation, and well-managed land systems with limited societal acceptability for bioenergy with carbon capture and storage.
- The P3 scenario⁴ is a scenario in which societal as well as technological development follows historical patterns. Emissions reductions are mainly achieved by changing the way in which energy and products are produced, and to a lesser degree by reductions in demand.

Policy Response

The major development in the global policy response to climate change was the 2015 Paris Agreement, a global consensus to combat the threat of climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. World governments committed to keep global temperature rise this century to well below 2°C compared to pre-industrial levels and aim to limit the increase even further to 1.5°C, through the implementation of Nationally Determined Contributions (NDCs) that set out the targets and actions countries would take to reduce greenhouse gas emissions. The Paris Agreement is important as the establishment of globally agreed targets provided a consensus for global policymakers and other actors on the future we want to achieve. The declared NDCs provide transparency on what nations are doing and how they are progressing to meet the goals, and achieve the future, of the Paris Agreement. Updated NDCs are submitted every 5 years to the UNFCCC secretariat by countries.

Current new and updated global NDCs project emissions increase of 10.6% by 2030, compared to 2010 levels⁵. This is a step in the right direction, as it represents a decrease of 3.1% in projected emissions from last year, but is still a far cry from the need to decline emissions by 43% from 2019 levels by 2030, reaching net zero around 2050². The IPCC have recently switched to a 2019 baseline level in their sixth assessment report instead of the 2010 baseline level used before.

The first Global Stocktake (GST) is an assessment on global collective progress to meet the Paris Agreement goals. The outcomes of which will inform countries on updating and ratcheting up

⁴ IPCC (2018) Characteristics of four illustrative model pathways. IPCC. Available at: https://archive.ipcc.ch/pdf/special-reports/sr15/sr15_spm_fig3b.pdf

⁵ UNFCCC Secretariat (2022) Nationally determined contributions under the Paris Agreement. Synthesis report by the secretariat. UNFCCC. Available at: <https://unfccc.int/documents/619180>

NDCs and increasing ambition of their climate actions. The first GST began in 2021 and is due to be completed in 2023 in advance of COP28.

At COP27, loss-and-damage finance was a key discussion topic and outcome, resulting in the agreement to a loss-and-damage fund for developing countries, supporting adaptation strategies⁶. Traditional climate finance for cutting emissions and helping people adapt to climate change was also a major issue. Calls for reforming financial systems and more private involvement to scale up low-carbon investments were being made during the negotiations. Developed countries also reiterated an intention to meet their missed \$100bn promise by 2020 target by 2023. There is a general consensus that COP27 failed to continue moving countries towards the goal of 1.5°C.

Nature is increasingly forming part of the climate conversation and is likely to see policy and commitment overlaps. December 2022 was COP15 for biodiversity, the headline target that came out of the talks was the ambition to conserve 30% of the world's land and 30% of the ocean by 2030. A second goal that also formed part of the final outcomes was developed countries agreeing to mobilise \$30 billion for developing countries by 2030.

The UK's current NDC, updated September 2022, targets reducing greenhouse gas emissions to 68% below 1990 levels by 2030, as well as net-zero emissions by 2050⁷. The UK's NDC update did not increase the ambition of greenhouse gas targets, instead it provided clarity on how the UK will deliver the 2030 commitment, how its achievement will be assessed, and more information on how it relates to broader national goals on just transition, health, biodiversity and others⁷ through the publication of the UK's Net Zero Strategy. This strategy was recently deemed inadequate by the UK High Court for not sufficiently detailing how the UK will meet its net-zero targets and the UK government was given until March 2023 to review and amend their strategy⁸. Therefore, the regulatory landscape could look different and become more ambitious as a result of this revision.

In the UK mandatory disclosure of climate-related financial information, in line with the Taskforce on Climate-related Financial Disclosures (TCFD) recommendations for large businesses, recently came into force in April 2022⁹, signalling the increasing relevance of TCFD to government climate strategy and in turn the financial sector. There are also several upcoming UK climate regulations such as the UK Sustainability Disclosure requirements (SDR) and the UK Green Taxonomy. The UK SDR introduces labelling and disclosure requirements for products and funds that are marketed as sustainable¹⁰. The UK Green Taxonomy will define environmentally sustainable criteria for specific economic activities. This is being modelled after the EU Green Taxonomy.

Presently, Brunel falls under the scope of the UK Financial Conduct Authority (FCA) and the expected UK Department for Levelling Up, Housing and Communities (DLUHC) climate

⁶ Carbon Brief (2022) COP27: Key outcomes agreed at the UN climate talks in Sharm el-Sheikh. Carbon Brief. Available at: <https://www.carbonbrief.org/cop27-key-outcomes-agreed-at-the-un-climate-talks-in-sharm-el-sheikh/>

⁷ UK Government (2022) United Kingdom of Great Britain and Northern Ireland's Nationally Determined Contribution. UK Government. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1109429/uk-nationally-determined-contribution.pdf

⁸ Friends of the Earth (2022) Govt not appealing ruling that Net Zero Strategy is unlawful. Friends of the Earth UK. Available at: <https://friendsoftheearth.uk/climate/govt-not-appealing-ruling-net-zero-strategy-unlawful>

⁹ UK Department for Business, Energy and Industrial Strategy (2021) UK to enshrine mandatory climate disclosures for largest companies in law. UK Government. Available at: <https://www.gov.uk/government/news/uk-to-enshrine-mandatory-climate-disclosures-for-largest-companies-in-law>

¹⁰ FCA UK (2022) CP22/20: Sustainability Disclosure Requirements (SDR) and investment labels. FCA UK. Available at: <https://www.fca.org.uk/publications/consultation-papers/cp22-20-sustainability-disclosure-requirements-sdr-investment-labels>

requirements. The FCA requirements are for asset managers and certain asset owners to make disclosures consistent with the TCFD's recommendations¹¹. The DLUHC recently ran a consultation regarding proposals to require Local Government Pension Scheme (LGPS) administering authorities in England and Wales to assess, manage and report on climate-related risks, in line with the recommendations of the TCFD¹².

Financial Sector

The financial sector is acutely impacted by the risks and opportunities presented by climate change adaptation and mitigation. It has a crucial role to play in enabling progress on NDCs and the viability of achieving the ultimate goals of the Paris Agreement. The various pathways that could be taken to achieve net-zero CO₂ emissions will have diverse implications on investment risks and opportunities in sectors and mitigation and adaptation financial needs. In addition to the pathway taken, the level of warming that occurs will affect impacts and requirements, for example whether warming is limited to 2°C versus 1.5°C.

Investors are crucial in influencing and supporting policymakers and company practices, and in the provision and shifting of capital for mitigation and adaptation needed to ensure a smooth transition to a low carbon economy. Climate mitigation efforts may require capital to be withdrawn from certain sectors and reallocated to others. Climate change presents an immediate systemic and material risk to the ecological, societal and financial stability of every economy and country on the planet. It has direct implications for investors and needs to be a strategic priority for all. Climate change should be considered as part of core fiduciary duty¹³.

The investment community has been responding to the risks of climate change and policy developments through tools to manage climate change such as the Transition Pathway Initiative (TPI), a global, asset-owner led initiative which assesses companies' preparedness for the transition to a low carbon economy. Climate Action 100+ is a key initiative for stewardship and engagement and has global investor support in engaging with the world's largest corporate emitters. The Glasgow Financial Alliance for Net Zero (GFANZ) is a more recent development, where 500+ financial institutions have formed a coalition committed to accelerating the decarbonisation of the economy.

Financial system regulators and supervisors are mobilising to manage the risks posed by climate change to financial stability. The Network for Greening the Financial System (NGFS) is a network of central banks and regulators from around the world to share best practices and contribute to the development of a more robust financial sector and mobilise finance to support the net-zero transition¹⁴.

In the UK, as mentioned above, regulators have introduced climate-related disclosure requirements for financial entities. The Bank of England is seeking to build resilience of UK banks and insurers to the risks that emerge from the move to net zero¹⁵, including through stress testing and scenario analysis. The latest climate stress test results published in May 2022 stated that forecasted levels of climate losses are uncertain, but that UK banks and insurers are likely to be able to absorb the costs of transition to net zero. However, the results also suggest that climate

¹¹ FCA UK (2022) Climate-related reporting requirements. FCA UK. Available at: <https://www.fca.org.uk/firms/climate-change-sustainable-finance/reporting-requirements>

¹² UK Department for Levelling Up, Housing and Communities (2022) Local Government Pension Scheme (England and Wales): Governance and reporting of climate change risks. UK Government. Available at: <https://www.gov.uk/government/consultations/local-government-pension-scheme-england-and-wales-governance-and-reporting-of-climate-change-risks>

¹³ PRI (2023) Fiduciary Duty. UNPRI. Available at: <https://www.unpri.org/policy/fiduciary-duty>

¹⁴ NGFS (2019) Origin and Purpose. NGFS. Available at: <https://www.ngfs.net/en/about-us/governance/origin-and-purpose>

¹⁵ Bank of England (2022) How is the Bank of England responding to climate change. Bank of England. Available at: <https://www.bankofengland.co.uk/knowledgebank/how-is-the-bank-of-england-responding-to-climate-change>

change risks could reduce profits by an average of 10-15%¹⁶.

The topic of net-zero has rapidly evolved and increased in significance within the finance sector in recent years. The uptake of net-zero commitments across the finance sector has exponentially increased, illustrated by an increase in commitments in the global economy from about one-sixth (16%) in 2019 to nine-tenths (91%) by 2022¹⁷. Investors are making net-zero commitments to decarbonise portfolios in accordance with various frameworks that are all broadly linked in terms of purpose, including the Paris-Aligned Investment Initiative's (PAII) Net Zero Investment Framework (NZIF) implementation guide, which provides a set of recommended actions, metrics and methodologies for investors to follow when setting net-zero targets¹⁸. Most of the frameworks have published progress reports and case studies covering these investor targets. For example, 40 out of the PAII's 57 signatories have already disclosed initial net-zero targets.

Investors are looking to decarbonise their portfolios across different asset classes. There has been most progress with listed equity target setting, followed by corporate fixed income, as there are methodologies, guidance and data more readily available. Real estate appears to be maturing and IIGCC recently published guidance for net zero infrastructure portfolios¹⁹. An anticipated development is the Assessing Sovereign Climate-related Opportunities and Risks (ASCOR) project run by TPI²⁰ which aims to create a tool giving investors a common understanding of sovereign exposure to climate risk and of how governments plan to transition to a low-carbon economy.

The banking sector plays a key role in the transition to a net-zero economy as project financiers as well as lenders. Net-zero in this sector is important to minimise the risk of climate change to the stability of the financial system as well as the macroeconomy, as well as to ensure that net-zero government policies can be effectively implemented²¹. The UN-convened Net-Zero Banking Alliance is an alliance made up of over 40% of global banking assets that are committed to aligning their lending and investment portfolios with net-zero emissions by 2050.

¹⁶ PwC (2022) BoE reveals results from inaugural climate stress test. PwC UK. Available at: <https://www.pwc.co.uk/financial-services/assets/pdf/boe-reveals-results-from-inaugural-climate-stress-test.pdf>

¹⁷ NewClimate Institute, Oxford Net Zero, Energy & Climate Intelligence Unit and Data-Driven EnviroLab (2022) Net Zero Stocktake Report 2022. NewClimate. Available at: <https://newclimate.org/resources/publications/net-zero-stocktake-2022>.

¹⁸ IIGCC (2021) Net Zero Investment Framework Implementation Guide. IIGCC. Available at: <https://www.iigcc.org/resource/net-zero-investment-framework-implementation-guide/>

¹⁹ IIGCC (2022) Net zero guidance for infrastructure asset class launched by IIGCC. IIGCC. Available at: <https://www.iigcc.org/news/net-zero-guidance-for-infrastructure-asset-class-launched-by-iigcc/>

²⁰ TPI (2022) ASCOR Progress Report. TPI. Available at: <https://www.transitionpathwayinitiative.org/publications/105.pdf?type=Publication>.

²¹ Robins, N., Dikau, S., Volz, U. (2021) Net zero success demands a whole of financial system response. LSE Grantham Research Institute on Climate Change and the Environment. Available at: <https://www.lse.ac.uk/granthaminstitute/news/net-zero-success-demands-a-whole-of-financial-system-response/>.

Getting in touch

If you have any questions or comments about this policy, please email Faith Ward, Chief Responsible Investment Officer, at RI.Brunel@brunelpp.org.

Fund managers with general enquiries, meeting requests and other materials (updates, newsletters, brochures and so on), should contact us at info@brunelpp.org

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