

## Atmospheric Restoration Accelerator Summary

**Working in collaboration with industry, policymakers and the public to realise and scale greenhouse gas removal technologies in a socially and environmentally positive way to address the impacts of climate change.**

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**Key Words:** Net Zero, Greenhouse Gas Removal technologies (GGR), Policies, Economics, Innovation.

The ultimate objective of the project is to rebalance the composition of the atmosphere to one that is compatible with a stable climate and healthy oceans. It proposes a unique and critical intervention to avoid planetary warming by creating an internationally sourced incubator for new technologies to develop through a full cycle: from inception to testing, application and upscaling. It will accelerate the development of safe, viable and scalable techniques for Greenhouse Gas Removal (GGR), engaging the most promising inventions from across the world, focusing project resources on the best technologies and preparing them for growth investment.

This means an accelerated development of safe, viable and scalable techniques for GHG removal from the atmosphere. We will engage teams with the most promising inventions from across the world in an innovation process designed to focus project resources on the best technologies and prepare them for growth investment.

The project also constitutes a market catalyst developing a commercial market for GGR where one does not presently exist, helping to achieve the 1.5°C limit and contributing solutions to the climate crisis. If business-as-usual continues, the relevant technology will take 10 years at a minimum to be market-ready for the private sector to invest. This project will create a GGR industry through the following means:

- Incubation: Technology testing and scaling.
- Acceleration: Developing a dedicated market through business and investment assistance to emerging technology start-ups.
- Governance: Setting up a global coordination system through a dedicated body managing the application of GGR value chains in different geographical contexts and working with governments to ensure market incentives, policy formulation, governance, socio-legitimacy and legislation are appropriately applied.
- Communications: Research and training programmes, public education, dialogues and awareness campaigns.

The project is working along-side proposals being developed in the UK's £31.5 M Strategic Priorities Research Fund GGR Programme which starts in May 2021 and seeks to work with international organisations such as the United Nations, OECD, IEA and World Economic Forum to ensure international reach. It will seek to harness the proliferating corporate adoption of net zero targets and subsequent engagement with carbon removal<sup>1</sup>.

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<sup>1</sup> See [Science Based Targets Initiative](#), The [Carbon Removal Corporate Action Tracker](#) and the [Transform to Net Zero Initiative](#) and the [Carbon Removal Guide/Playbook](#)

Plurality and diversity in all aspects of the accelerator's operational structure and processes will be representative of the bioregions in which the projects are undertaken. Lessons will be shared internationally.

The **primary market failure**<sup>2</sup> that the accelerator will address will be *policy, governance and shared value*. These will include but be not limited to issues pertaining to issues of **socio-ecological, socio-political, socio-legitimacy, socio-economic, participatory consent, funding models, incentive frameworks - monitoring metrics and financial, governance and legal frameworks and social co-production** around GGR technologies.

It is assumed that these are priority issues essential to develop industry confidence in the future scaling of the GGR sector. There is an appetite to experiment with different models / methods of approaches to each of these aspects of GGR development. A bottom up approach will be favoured as appropriate to the experimental construct and hypothesis being tested. In this regard the following is relevant:

- A co-evolutionary approach of experimenting with different ways of creating shared value in parallel with technology development will deliver the plurality of GGR technologies, business models and value chains to allow scale up and application to different global contextual jurisdictions;
- The accelerator will be a networked organisation which will build on existing initiatives that are related to GGR value chains and shared value development; and
- Bottom up approaches can create resilience in the new GGR value chains by being stakeholder led, sharing equity and utilising local knowledge for MRV

In line with the intention to focus on addressing policy, governance and shared value market failure the Accelerator will focus on the following Challenge Areas<sup>3</sup>:

- **Challenge Area 1: *Development of Political Constituency and a Shared Vision for Greenhouse Gas Removal Development***. Working with societal audiences to co-create shared understandings and public visions of what role GGR technologies play in a net zero world. This will allow audience tailored narratives regarding the role of GGR to be generated via an ongoing dialectic in tandem with Challenge Area 2.
- **Challenge Area 2: *Socio-Legitimacy, Participatory Consent and Social Co-production***. Identify the aspects of socio-legitimacy and participatory consent by exploring the GGR options with local communities and societal audiences. This will allow broader participation in the co-evolution and integration across audiences within the social footprints of value chains.
- **Challenge Area 3: *Incentive frameworks and Monitoring, Reporting and Verification (MRV) for Greenhouse Gas Removal technologies***. The trialling of carbon removal incentive frameworks, monitoring metrics (MRV) and data synthesis, assessment of attributional and consequential life cycle analysis to accommodate leakage effects. This will allow the cross-comparison and provide GGR participants with insights as to what to prioritise when developing and scaling projects.

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<sup>2</sup> GGR market failures are arbitrarily categorised as: (1) Policy, Governance and Shared Value Risks, (2) Technology Risks and (3) Start-Up Teams Competency/Business Model Risk. Though not mutually exclusive they provide a useful framework to allow prioritisation of the problem space for the Accelerator to focus which is likely to appeal to the investment community frame of reference.

<sup>3</sup> This structure is based on the Carbon Trusts [Offshore Wind Accelerator](#).

- **Challenge Area 4: *Market Architectures - Policy, Regulatory Framework and Funding Mechanisms***. Insights as to the needs of GGR actors to enable establishment and scaling of GGR by trialling commercial incentives and funding mechanisms for business model development. This will allow greater understanding of the technology push and market pull ecology of policy and regulatory needs across the multiple policy arenas of the different GGR technologies.
- **Challenge Area 5: *Technological innovation and diffusion of different GGR technologies and their associated value chains***. Development and scale testing of technologies, value chains and products. Coaching of start-ups will also take place analogous to the processes involved in Climate KIC. This will encourage the proliferation of technologies which might be developed to realise carbon removal at scale and in different global jurisdictions.