GBC: Engagement and RRI Strategy

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Introduction

The Great British Chemicals programme is a flagship investment funded by the Engineering and Physical Sciences Research Council (EPSRC) and Natural Environment Research Council (NERC). The Centre will support the transition of UK industrial manufacturing processes and operations to net zero and drive a sustainable industrial future.

Great British Chemicals (GBC) will make, collate and translate knowledge from research on defossilising the chemicals value chain across technologies, policy, energy and industrial systems, to deliver impact in partnership with industry, civic bodies, national government and the third sector ensuring a strong economy, and an improved environment, which is fair, and creates inclusive opportunities.

As a collaborative effort among a UK-wide consortium of 10 universities (led by Sheffield, Newcastle and Nottingham) and partners, GBC will develop scalable, low-emission technologies and advance sustainable practices through collaborative research and stakeholder engagement. GBC will work collaboratively with target industries to harness captured CO_2, recycled carbon, and resources from renewable waste, leveraging existing partnerships for co-created research. In the long-term GBC will create a paradigm shift by facilitating a pipeline of high-impact technologies, industrial symbiosis, fostering public value and leadership in sustainable industries.

Delivery of the Hub‘s vision will be through four collaborative Streams: (1) "The Moonshot" – digitally accelerating innovation cycles of emerging technology, (2) The Work Streams - scaling technologies (Carbon Capture, Use, and Process Intensification), (3) Function Streams - validating sustainability (Planet, Prosperity, People), and (4) the FlexFund for agile innovation.

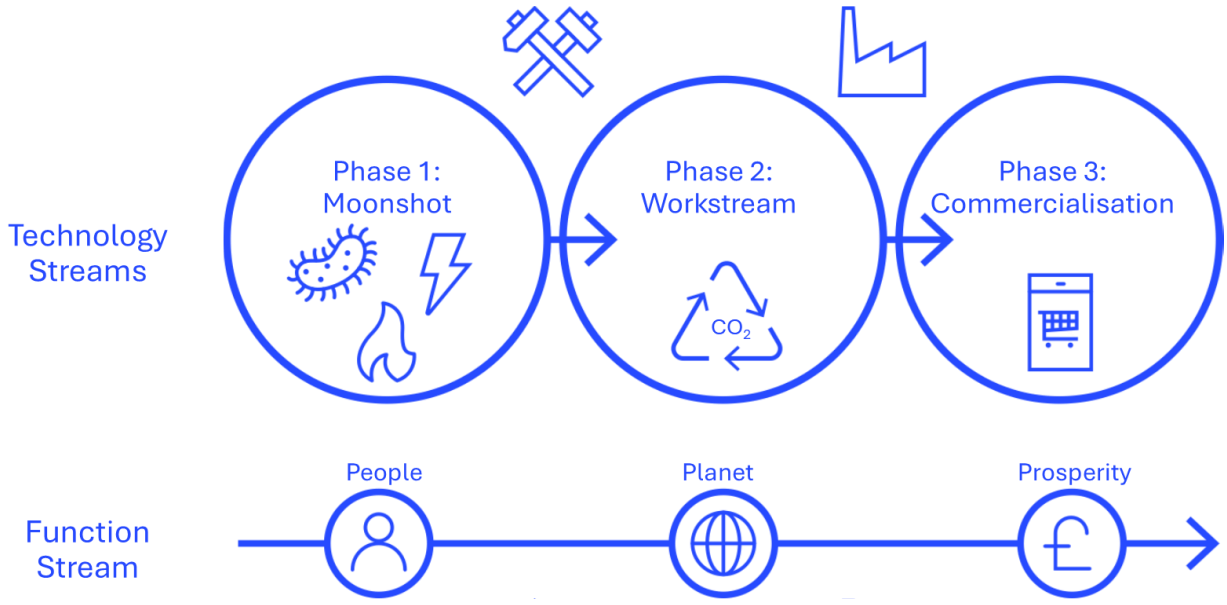

Figure 1 GBC Structure

Our ambition is to create opportunities for economic growth from the challenge of reducing emissions and securing critical minerals and carbon, vital to the UK manufacturing sector, and the citizens who rely on their jobs and products. Continually engaging Stakeholders and interested parties (95% of chemical companies are SMEs) throughout the innovation cycles will ensure a Just Transition. The involvement of partners in GBC projects programme is key to ensuring research is embedded with stakeholders by involving businesses, policymakers, consumers and society, the third sector and other affected groups and communities at every part of the programme. In order to

achieve these objectives, this engagement plan has been developed to outline a set of activities which will deliver a highly effective Centre and to transfer discoveries from the lab to commercial applications. This plan will offer a framework to manage and coordinate the wide variety of communication and engagement that will take place.

The Communication and Engagement Plan will describe:
- Our objectives - what we want to accomplish
- Our audiences - to whom our activities will be addressed
- Tools and timetables - how we will accomplish our objectives
- Metrics and evaluation - how we will measure the results of our program
- Stakeholder Expectations - define the principles and rules of engagement

Background

GBC seeks a fundamental shift in innovation culture, re-setting relationships in the chemicals and chemicals-using sectors to increase collaboration and inward investment. To deliver a prosperous transition to net-zero and maximise its opportunities, significant technical, scientific, and economic barriers must be addressed. *Great British Chemicals* conducts **holistic multi-disciplinary research** that addresses the complexity of the challenge in both integrating renewable feedstock into the value chain and **the diversity of Stakeholders.**

Our approach is to create a symbiotic relationship between net-zero activities and chemical manufacturing. The key to success will be to make net-zero economically desirable along the whole length of the supply chain, addressing all three pillars of sustainable development: social, environmental and economic.

Via workshops and one-to-one meetings, a large number of key stakeholders have been involved in the co-creation of this Centre proposal. A **stakeholder-based participatory approach** will be adopted to ensure close cooperation with key sectors and consider the global context of the Centre activities, to maximise the impact of GBC across technology, social and economic perspectives. As the Centre develops, we will review this strategy together with users, industry, government, EPSRC and NERC. Feedback from the Strategic Advisory Board (SAB) will provide a high-level steer by industrial leaders to ensure that the engagement strategy is inclusive and effective beyond the chemical and process sectors. **The ten founding institutions of GBC represent a wide geographical distribution across the UK** (from different regions of England, Scotland and Wales), **enabling us to deliver truly nationwide impact** and providing unique opportunities to engage with both the Central and Devolved Authorities, regional circular economy initiatives (e.g. Zero Waste Scotland), UKRI funded manufacturing programmes (e.g. Schema), and local stakeholders (e.g. Teesside and Humberside Cluster).

Engagement Team

GBC Engagement is led by the Principal Centre Leads, Peter Styring (Sheffield), Libby Gibson (Newcastle) and Mike George (Nottingham), coordinated by the Partnership Manager (Deblina Majumder) and supported by the Project Manager, Tom Franklin (Sheffield) and the Centre Administrator (tbc, Sheffield).

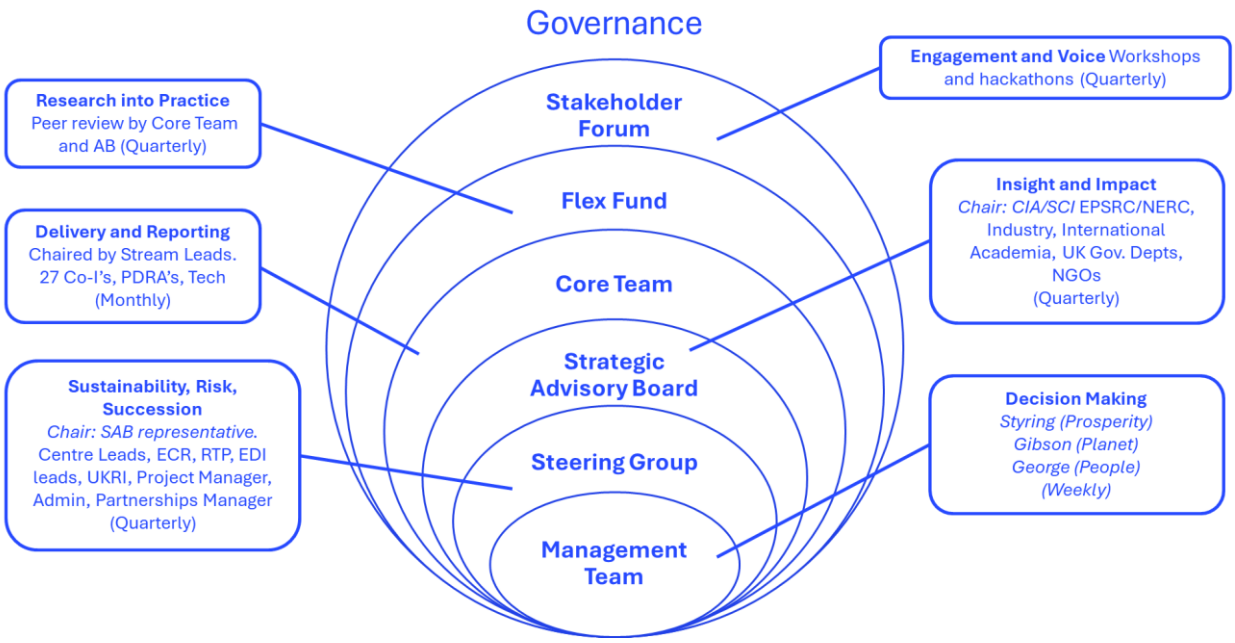

Figure 2 GBC Management and Engagement

Strategic Advisory Board

The Strategic Advisory Board (SAB) consists of leaders from UKRI, major industrial sectors, such as oil and gas (Shell), chemical and process engineering (CPI), consumer goods (Unilever), Industrial initiatives, trade associations, policy makers (DEFRA) and local authorities to advise the Centre, steer its direction and identify joint opportunities between partners and GBC for knowledge transfer, commercialisation and further training and education. The SAB will have an annual meeting to review GBC's research programme and engagement activities and monitor progress against project objectives. There will also be virtual meetings every six months. Project partners on the SAB will benefit from mutually convenient networking opportunities and sharing best practices in organisations.

Following SAB feedback, GBC recognises gaps in stakeholder representation across the value chain, including SMEs, spin-outs and start-ups, FMCG buyers (e.g. retailers), NHS procurement, EPC companies, regulators and standards bodies, feedstock suppliers, young talent and early-career researchers (ECRs), apprenticeships, and community voices near chemical plants, as well as a lack of next-generation CCS/CCU expertise on the SAB. GBC is addressing this through: broadening SAB membership to include next-generation CCS/CCU expertise; targeted outreach to the ECR community via the C-DICE network; a planned training/workshop opportunity with the RSC Change Makers programme; grassroots-level community reach-out activity; and continued FlexFund and Stakeholder Forum outreach to SMEs and spin-outs.

Objectives

These are GBC's engagement objectives (aims). The specific activities that deliver them are set out in the Summary of Activities section below.

(1) To establish a world leading centre delivering research excellence for the UK to remain internationally competitive in the circular chemical economy;

(2) To develop and advance the enabling technologies required to transform captured CO2, biomass and end-use waste into olefins and their complementary feedstocks;

(3) To perform full industrial scale process integration and optimisation, whole system and value chain analysis, sustainability analysis and risk quantification and mitigation of the proposed circular economy processes, in order to identify optimal circular olefins resources flow;

(4) To propose effective financial systems and policy instruments that ensure social justice and promote public awareness and knowledge, contributing to social acceptance of the circular chemical economy;

(5) To listen and respond to the needs of stakeholders;

(6) To ensure academic work is well understood by, and co-created where appropriate with, Industrial, Governmental and Societal communities both nationally and internationally;

(7) To help build trust and long-lasting relationships with the Hub's stakeholders across the length of the project and beyond;

(8) To recognise tensions, synergies and diversity in stakeholders.

Audience

The interactions range from close interactions with sectors directly linked to the Centre and broader interactions with wider communities (Figure 3), and will be facilitated by a programme of virtual and physical activities *e.g.* webinars, workshops, conferences, school visits, interviews, online questionnaires, newsletters and publications (see Workplan). The activities will engage key stakeholders, the National Circular Economy Hub (the Hub thereafter) and other Centres under this UKRI programme, businesses, financers, policy makers, third sector and consumers, to use the evidence from the research activities to provide a convincing argument that the circular economy of chemicals is feasible and a must.

Figure 3 User and stakeholder engagement map

Approach

The Centre's **User Engagement** stream will run through the life of the Centre. Many of the aspects of this activity are ongoing, but others are focused on discrete events. The overview of the workplan is shown in Figure 4.

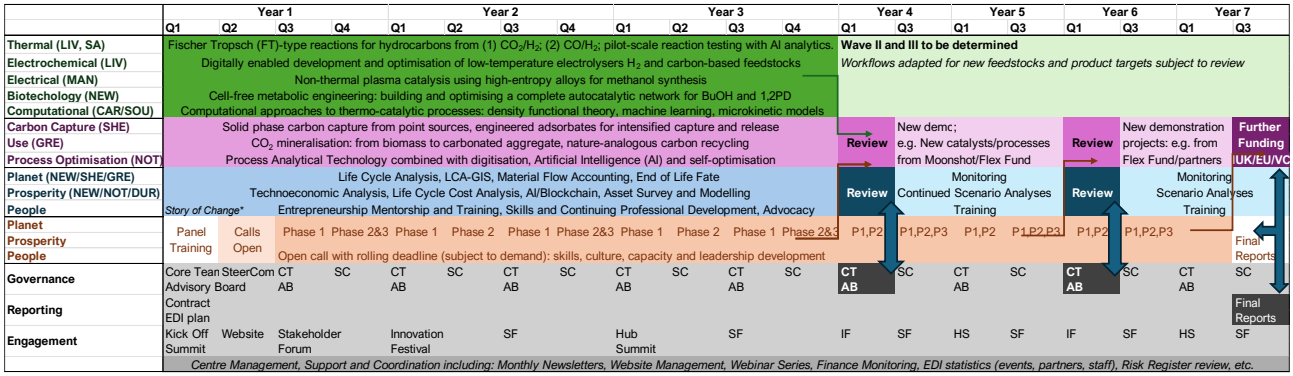

Figure 4 GBC Workplan

Summary of Activities:
Ongoing engagement activities

● Engage with businesses across sectors, policy makers, general publics and third sector to accelerate real-life impact throughout the project

● Disseminate information regarding the Centre and its research in a timely and efficient manner

● Feed engagement and communication activity into GBC's Annual Reports

● Regularly analyse data to monitor impact and reach of the Centre

● Develop bespoke communication techniques responsive to stakeholder tensions, synergies and diversity

Delivered / scheduled events

Kick-off Meeting – delivered 19 September 2025 (Sheffield United Stadium)

SAB – annual in-person meeting, plus virtual meetings every six months

Stakeholder Forum – delivered 23 January 2026 (Industry & Policy, Grangemouth) and 29 June 2026 (Academic, SCI London); further Forums to be themed around specific industry challenges and solutions

Policy briefing meetings – monthly with DESNZ (currently on hold pending Civil Service staffing changes; links being reinstated and expanded to DEFRA/DBT)

Summer School – September [date tbc]

Annual Assembly *(dates tbc)*

Public Lecture/STEM (need to identify what to target)

Conference x 2 (dates tbc); GBC exhibited at ChemUK 2026 with an exhibitor booth and keynote, with a further exhibition planned for 2027

Industrial exhibitions and trade shows – ChemUK 2026 delivered; FlexFund Round 1 (internal call, 7 projects funded) and Round 2 (open call, Planet theme) delivered

Summary of Outputs

Policy papers
Journal Special Issue
Questionnaire/citizen survey *(Years 2 and 4)*

Project Partner engagement, including plans for leveraging support

Funding Type	Hub Functions	Low TRL Activities	Mid TRL Activities	High TRL Activities
Core Funding £16.6 million	Coordinating research strategy, managing core facilities, and building capacity for fundamental research.	Fundamental research, capacity building, and developing foundational tools.	Proof-of-concept studies, interdisciplinary collaboration, and building prototype systems.	Technology validation in controlled environments, scaling core capabilities.
Wave Funding £3.1 million	Driving focused initiatives on high-impact challenges, fostering innovation culture.	High-risk, transformative research and innovation.	Targeted challenge-based projects, agile response to emerging needs.	Pioneering advancements, demonstrating new technologies in test environments.
Flexible Funding £7.8 million	Supporting agile operations, enabling pilot programmes, and fostering collaboration across disciplines.	Pilot projects, exploratory studies, and ideation workshops.	Bridging research gaps, iterative development of technologies, and stakeholder engagement.	Demonstration projects, refinement of innovations based on feedback.
Industry Match (~£3.5 million) Current & future	Partner engagement, co-creation of research roadmaps, and aligning academic and industry objectives.	Co-investment in exploratory research with industry partners.	Joint R&D projects, co-development of near-market technologies.	Market-entry activities, product validation, and deployment.

Figure 5 Funding structure for GBC

The importance of GBC has been widely recognised by industrial partners such as BASF, Shell, Procter and Gamble, Johnson Matthey, Volkswagen AG and Unilever — see Appendix 2 for the full, categorised partner list. These partners have committed to £1.4m direct and indirect contributions.

Our **Stakeholder Forum** and the **Flexible Fund** are specifically designed to ensure the UKRI funds will be substantially enhanced by industry matching. We will leverage direct financial contributions for researcher time and/or specialist equipment, to focus on partners' specific issues and research questions. Industrial partners are encouraged to engage with the Centre to investigate the opportunities through fully or partially funded PhD studentships to focus on specific aspects of collaborative research. GBC will also provide a service to industrial partners through consultancy work for dedicated research projects, whilst we will explore opportunities for technology commercialisation via Knowledge Transfer Partnership (KTP) projects.

One of the key challenges of realising potential applications is the effective transfer of knowledge gained to organisations that have the ability and expertise to translate these into working applications. Meaningful dialogue and buy-in to the research will be ensured by inviting input from all industrial partners through correspondence through e-mail, SAB membership, newsletters, the annual events and report, participation in project meetings, and theme-specific workshops. We will develop multi-company Co-Creative Case Studies between different sectors where, for example, CO_2 capture is combined with a waste treatment facility and powered by renewable electricity. The breadth of expertise of the industrial partners provides a pathway from the lab-scale demonstrations through to application and exploitation across the value chain.

Stakeholder Engagement

A **User and Stakeholder Forum** will be established to achieve the widest reach across the partners, including SMEs. Meetings will be twice a year to discuss collaborations and news will be disseminated via dedicated space on the Centre website, newsletters, and annual reports. The

Centre will also host quarterly webinar to our members by inviting leading academics and industrial speakers. Our inclusive **Flexible Fund** is specially designed for co-creation with various users and stakeholders, enabling them to shape the technology innovation, and co-develop technology and share IP. SME members will further benefit from the relationships they build through the Forum to strengthen their applications for Innovate UK funds. More importantly, our members will have first-hand access to novel technologies and analysis tools from our **Core Programme** with the aim to improve the circularity and sustainability of their processes and systems. Furthermore, our members can participate in **Co-Creative Case Studies** to identify their key areas for yielding the most significant impact to achieve long-term sustainability of production and foresee potential unintended consequences. The members will also benefit from government lobbying and access to expert meetings organized by the Centre and assisted by our subcontractor SCI.

External-facing events ensuring close cooperation with the wider academic community to progress research on both technology and social economics perspectives are also planned. GBC will host Annual Assemblies including workshops (rotationally hosted by team members) and 2 **International Conferences**, to present project findings and develop collaborations. The international conferences will enable us to share knowledge with international centres of excellence and thinktanks (e.g. the Global CCS institute, CO_2 Value Europe) to build international partnerships, increase impact and enhance the UK's global reputation. Visiting international researchers will be invited to participate in GBC's activities to add value to the programme.

The FlexFund – for agile innovation

Figure 5. GBC Sustainability Themes

People theme: This theme prioritises skills, culture, capacity and leadership development and will respond to new ideas in a way which is inclusive, collaborative, and ethically motivated. Activities will be designed to deliver sustainable impact at pace by putting people at the heart of the transition to defossilisation. Early career researcher and technical staff will be prioritised.

Planet theme: This stream integrates quantitative supply chain data with qualitative inputs to identify efficiency opportunities and environmental challenges that may hinder sustainability. Activities will accelerate the translation of research innovation ideas into economic, environmental, regulatory and societally relevant actions at different points on the Technological Readiness Level (TRL), Societal Readiness Level (SRL) and Adoption Readiness Level (ARL) pathways. Life-cycle assessment (LCA) and techno-economic assessment (TEA) feature heavily within this stream.

Prosperity theme: This stream emphasizes strong engagement with industries, corporations, and SMEs to analyse business models, supply chains, corporate structures, risks, strategies, and targets. The goal is to bridge research findings with practical applications, addressing key commercial questions and enabling successful translation into business in practice.

A structured pipeline of investments at different TRL/SRL will derisk investment in innovation and impact generation and create an innovation ecosystem that will maximise impact, help address key innovation performance challenges and **provide exemplars of national and global significance. E.g small 30k to large 100k.**

Public Engagement
Public acceptance is one of the greatest barriers to wide-spread commercialisation faced by an emerging technology. Together with our partners, we will continue to expand the reach of the Centre across users to use the evidence from our research to convince manufacturers and the public of the benefits of the circular economy. Our Communication and Information Strategy includes a schedule and describes support for preparing articles for magazines, the website, social media, public surveys, public lectures/webinars, schools' STEM activities and science fairs. The quarterly public lectures/webinars, delivered by members of GBC or external experts, will cover a wide range of topics to influence users and increase public understanding and acceptance of the circular economy. We will update our project progress through our dedicated project website as well as various social medias to develop audience reach and for instant, targeted real-time dissemination of project activity, findings, and outputs. Also, we will explore various media opportunities including radio and TV, to increase the visibility of our Centre. The work will be presented in ways that are thought-provoking for the whole socio-economic demography.

Apart from usual academic disseminations through high impact journals and conferences, with the industrial partners, we will also **participate in industrial exhibitions and trade shows** (such as the ChemUK) and report the results not only in academic journals but also in trade journals (*e.g.* The Chemical Engineer), to disseminate the technology to broader potential users. We will facilitate interaction and knowledge exchange between academic groups and industrial consortia on waste management to inspire new ideas and approaches with common interest on converting waste to valuable resources. These activities, together with the workshops and showcases will disseminate the findings of this project and provide opportunities for users to feed into the research.

Engagement with government and policy makers
The PI Prof Styring has close contacts with the Defra, DESNZ and HM Treasury. Via monthly meetings with DESNZ and UKRI, the expertise and results arising from GBC will be used to respond to inquiries and calls for evidence to support policy making. Activities will include writing post-notes and white papers, attending subject relevant and influential policy discussion forums and participating as expert contributors in panel discussions. To overcome the challenge and promote the future development of circular chemical economy, we will work closely with SCI to engage with policy leads across the UK (e.g. HMT, Defra, Welsh Government, Zero Waste Scotland) to inform and disseminate the work of the Centre to better understand the role which chemical recycling could play in achieving UK Government objectives. Such engagement will take the form of meetings, webinars and policy briefs focused on end-of-waste regulatory reform enabling waste-to-feedstock models, UK-EU regulatory harmonisation, renewable energy priority access for the chemical sector, and streamlined planning and permitting for circular economy facilities — priorities identified directly through GBC's Stakeholder Forums.

Website
A full list of the academics and support staff associated with GBC are on our website (www.greatbritishchemicals.ac.uk). This will be hosted at Newcastle and maintained by the Centre Manager and Partnership Manager.

Information about the team and the project

- Information about the GBC research and networking activities

- Details of GBC industry partners
- GBC news and events
- Information pertaining to the GBC flexible research fund, any open calls, ongoing and completed projects
- The facility for stakeholders to Pose a Research Question, Request a Research Partner, Make a suggestion for a GBC activity

The grammatical and web-integrity quality of the site will be monitored regularly utilising Siteimprove software. The website will also be fully accessible, and mobile device friendly.

Teams
A dedicated Teams site has been created for Co-Investigators, Research Associates and the Project Management Group. GBC members will upload and share all documents through Teams both within individual work streams and on a project wide level. This will help to reduce the volume of email traffic with attachments and help collaborative publications. Access to the Teams site will be managed by the GBC Partnership Manager. GBC Meetings will be held on Teams or Google Meet.

Mailing Lists
There will be the option to subscribe and unsubscribe from the GBC mailing list via its website. All correspondence sent out will include a link to update preferences and will be GDPR compliant. Requests to be added to or removed from the mailing lists will be processed within 8 weeks of receiving the request, however every attempt will be made to do this sooner. The GBC administration team will take responsibility for managing the mailing lists.

Evaluation

The Centre will deliver high impact outputs in both academic and industry domains associated with sustainable chemicals.

KPIs
Our KPIs will be appropriately set against baselines (reference to existing national research centre establishments with similar size and nature, together with the expectations from the UKRI and the government). The engagement KPIs are listed below and reporting will start from month 7 and then every 3 months.

KPIs (e.g. new products, IP, spinouts, jobs created, publications and invited talks, databases and open-access tools, EDI statistics, leveraged funding, membership & reach (including attendance at events), and new collaborations) will be approved by the Advisory Board and UKRI.

1. Number of events organised
    a. Industry engagement
    b. Public engagement
    c. Policy engagement
2. Attendance at events (numbers, job role, EDI representation)
3. Publications (white papers, policy documents)
4. Hits on website
5. New collaborations
6. Invited talks (conference, public lecture)
7. Training
8. Knowledge to industrial partners
9. Number of industry contacts

10. Value of industry contacts & match funding
11. Number of commercialised technology deployed by company partners
12. Value of commercialised innovations
13. Number of new products/systems

Research Fish

In order to standardise, simplify and measure research and engagement activities GBC will utilise the EPSRC preferred method of recording outputs, research, impact and engagement, in 'Research Fish'. The information collected will feed into the GBC Annual Reports.

Equality Diversity and Inclusion

Equality Diversity and Inclusion is a fundamental principle of the GBC. GBC shall promote and enable an EDI consciousness throughout the management, research process and participation of stakeholders. The Hub understands, values and welcomes the contribution of everyone irrespective of age, disability, gender reassignment, marital status, pregnancy and maternity, race, religious beliefs, sex and sexual orientation.

GBC will be mindful of EDI in everything it does to ensure that as diverse of a group of stakeholders is communicated and engaged with.

Appendix 1: GBC opportunities for SMEs

Given that 95% of UK chemical businesses are SMEs, GBC has designed multiple routes for SME engagement and support:

- FlexFund open calls – co-funded R&D projects (Round 1: internal call, 7 projects funded; Round 2: open call, Planet theme, awards of £30k–£100k at 80% FEC)
- Stakeholder Forums – direct access to industry, policy and academic networks, and a route to help shape GBC's priorities
- Industry Partner Handbook – guidance on how to engage with and benefit from GBC (updated following SAB feedback)
- Letters of Support template – supporting SME funding applications (e.g. Innovate UK)
- Asset Map – visibility of shared infrastructure and equipment access across the consortium, reducing capital barriers to scale-up
- People Fund – funding for community-proposed events, training and engagement activities
- Match-funding support – signposting to Innovate UK and other co-investment routes

Appendix 2: Industry Partners

GBC's partners span academia, industry, innovation and scale-up infrastructure, regional/public-sector networks, learned societies and trade associations, and international collaborators, as set out below.

Academic Partners	Current Industry Partners	Innovation and Scale-up	Regional Networks, Public Sector and Hubs	Learned Societies and Trade Associations	International Collaborators
University of Sheffield	BASF	CPI	Net Zero North West	CIA	Universidad de Alicante
Newcastle University	Shell	KCMC	EMCCA	SCI	Yale Green Chemistry Center
University of Liverpool	Procter and Gamble	Faraday Institution	Global CO2 Initiative	IChemE	
University of Nottingham	Johnson and Matthey	IBioIC	SCHEMA Hub	RSC	CO2 Value Europe
University of Manchester	Volkswagen AG	Sunderland Software City	UK Catalysis Hub		
University of St Andrews	Victrex		Northstar Ventures		
Durham University	Ceres Power				
Cardiff University	Lanzatech				
University of Southampton	Mitsubishi Chemical				
University of Greenwich	CCM Technologies				
	CCU International				
	Thomas Swan				
	Croda				
	Unilever				
	Luxfer MEL Technologies				
	SUEZ				

GBC is currently backed by a strong portfolio of partners, bringing complementary expertise on process scale up across TRLs 4-7 and policy, business and public engagement, respectively. Our partnership with users and stakeholders covers all necessary sectors helping us to achieve a wider global impact and establish a world leading position in circular chemical economy.

List of sectors covered: chemicals and chemicals-using industries, biotechnology, food & drink, glass manufacturing, agriculture, industrial carbon capture and utilisation, waste management and recycling (including textiles), renewable energy, and process/plant engineering.

Appendix 3: Theory of Change / Logic Model

GBC's September 2025 kick-off workshop included an extensive Theory of Change / Logic Model exercise, mapping how GBC's inputs and activities are expected to lead to short-, medium- and long-term impact.

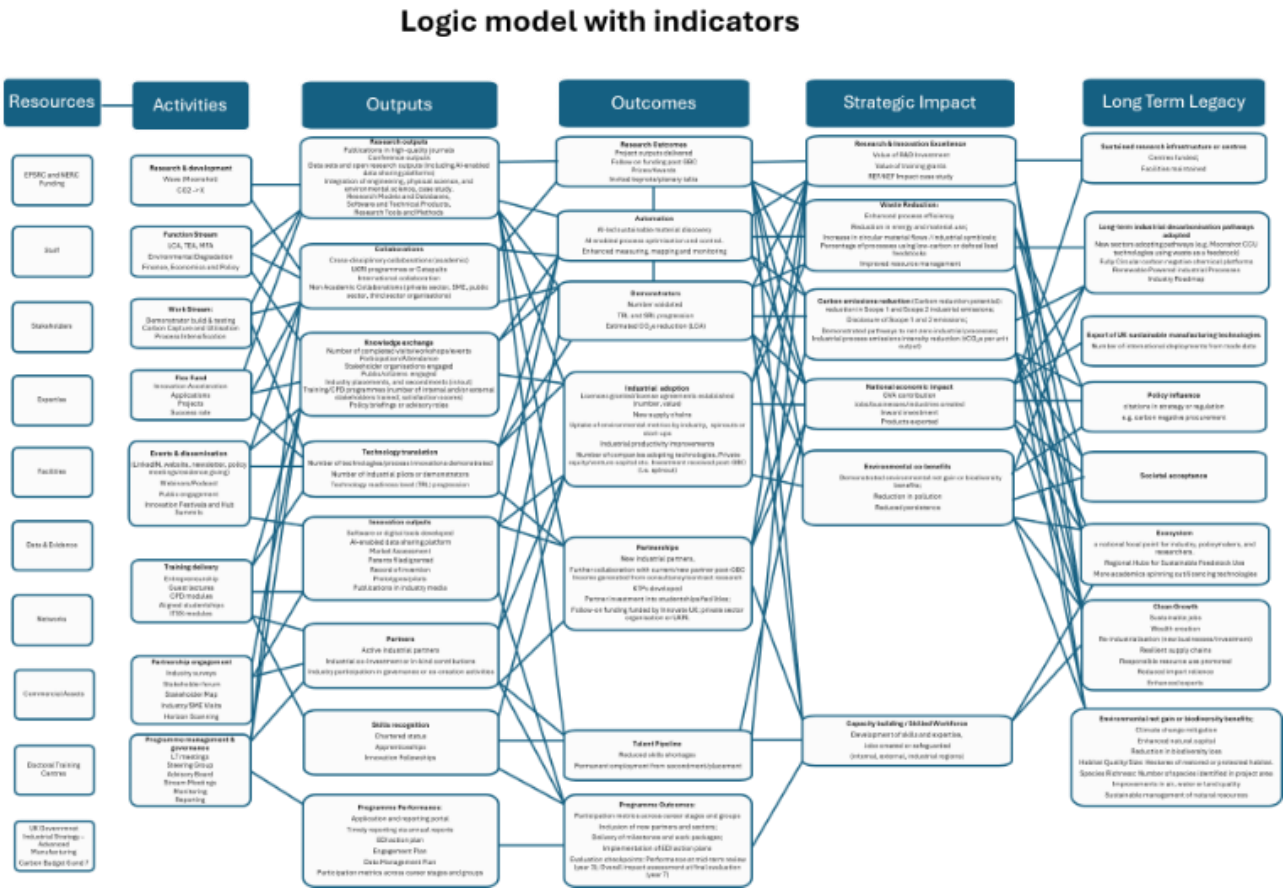

Figure A3.1. Logic Model and KPIs