

EPSRC Centre for Doctoral Training in Green Industrial Futures

Research, innovation and talent to realise the green industrial revolution

Prospectus 2026/27

Funded by:



Engineering and
Physical Sciences
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Led by:



In partnership with:

IMPERIAL



UNIVERSITY OF
BATH



University of
Sheffield

Who we are?

The CDT-GIF is a doctoral training centre that supports PhD students to undertake pioneering research projects that will drive forward research and innovation in industrial decarbonisation. The centre supports a skills & talent pipeline that will develop the next generation of global leaders. The CDT-GIF integrates £18m of UKRI, university and industry investment. Research projects are co-created with our industry partners to address pressing industry and policy challenges.

Our university partners

The CDT-GIF brings together four universities with global standing, enabling the centre to have cross-disciplinary expertise across many aspects of industrial decarbonisation. The centre brings together world-leading academic researchers and access to world-class facilities, including Energy Innovation Centre (EIC) and Imperial Carbon Capture Pilot Plant.



IMPERIAL



Our model

The CDT-GIF provides a 4-year taught and research programme to develop future leaders:

1



4-year innovative industry-led research projects starting from Day 1 of the studentship.



2



Students receive advanced training to embed cross-disciplinary thinking to enable all aspects of industrial decarbonisation to be considered.



3



Developing talent pipelines through professional opportunities and building business skills.

Our project partners

The CDT-GIF works alongside industry partners to provide research solutions to specific engineering and non-engineering challenges. There are two ways to become partners:

Co-sponsorship of project. Over £75k government funding per project to support your company's research and innovation needs.

1

Host a student placement. Host a CDT-GIF student within your organisation to work on a discrete shorter project (1-3 months) and support their development.

2

The CDT-GIF research and training programme is centred on five themes. Within these themes, students will undertake challenging & original research projects that will be co-created with industrial collaborators to discover transformative, responsible and integrated solutions to achieve net zero.



Carbon capture, utilisation & storage

- Advanced materials and technologies for CO₂ capture & utilisation from industrial sources.
- Resolving engineering & geological issues required to achieve the scaleup of the UK's CO₂ storage capacity.
- Developing sensors & metrology methods to monitor and model CO₂ transport and storage.
- Advanced digital platforms to integrate & optimise CCUS into technologies.



Green hydrogen & sustainable fuels

- Scaling up & integration of H₂ into large energy systems.
- Development and optimisation of novel materials and devices (e.g. electrolyte membranes, multifunction catalyst, heat driven solid oxide co-electrolysis cells).
- Address challenges that arise from curtailed renewable energy.
- Develop novel designs for the use of sustainable fuels.



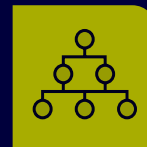
Systems integration & resource efficiency

- Integrate solutions considering site-specific industrial symbiosis, energy & resource efficiency and techno-economic and life cycle analysis (LCA) studies.
- Integrating process modelling to support the net-zero production of base/platform chemicals and fuels.
- Novel advanced optimisation and value to design energy-materials-technology pathways to achieve net-zero manufacturing at minimum cost.



CO₂ removal technologies

- Develop next generation CDR solutions (DAC, BECCS, Biomass Carbon Removal and Storage).
- Developing state of the art methods for materials characterisation.
- Fit-for-purpose model development combining first principles and empirical modelling with machine learning.
- Systems architecting approach to technology design.



Integrated theme: Social change, policy & net zero economics

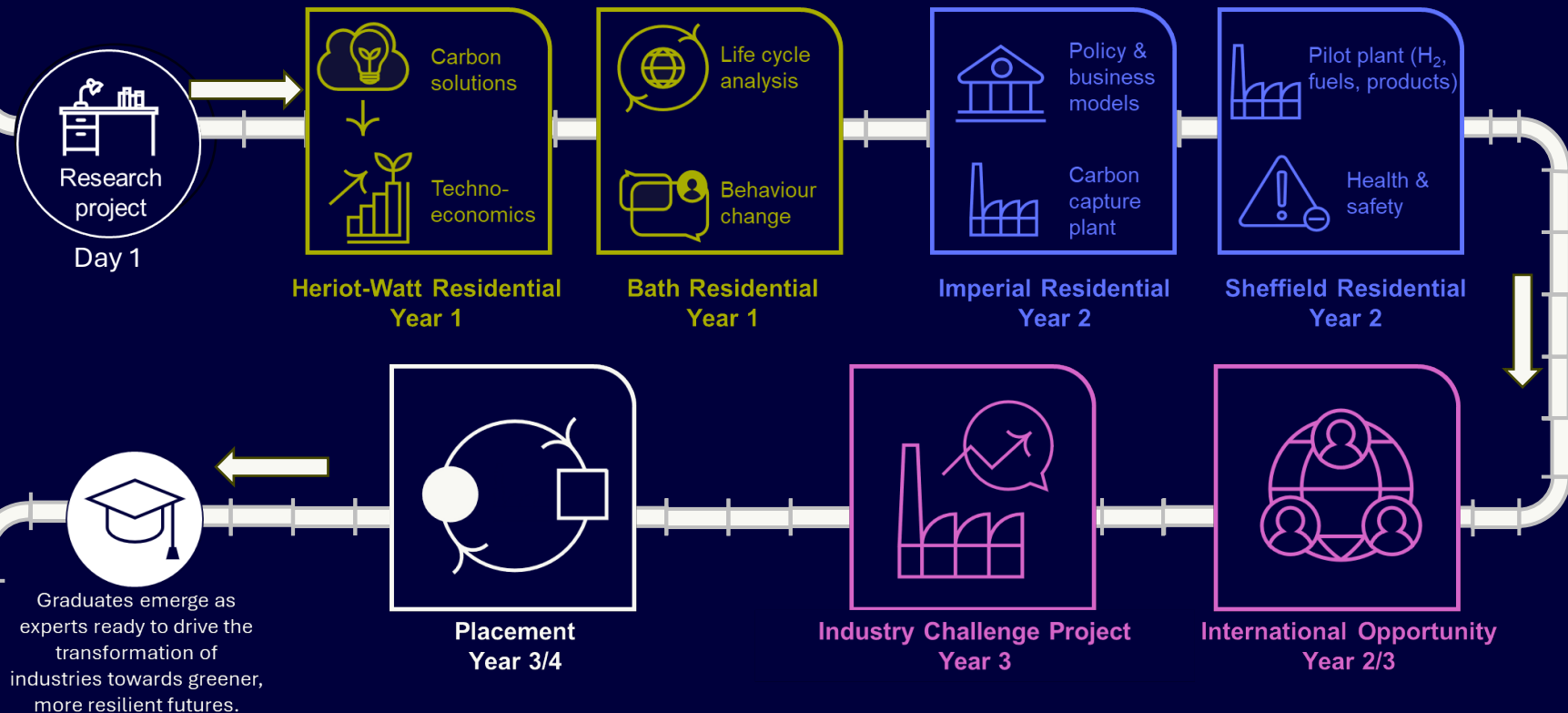
- Apply cutting-edge social science and behavioural insights to ensure net zero-consistent behaviour change in industry and society.
- Assess underpinning policy and regulatory frameworks linked with systems integration.
- Mechanisms for leveraging ESG finance and development of value chains.



Whole system training programme

The CDT-GIF training programme runs concurrently with the research project to maximise research time from Day 1 and provide flexibility for students. Alongside their research projects, students undertake a whole system training programme that contextualises technologies within the real-world industrial system, understanding the key drivers and barriers to scaling technologies and supply chains. These courses are delivered at a series of residentials.

In addition, students take part in exciting opportunities for professional development that include business skills training; national and international facility visits; work placements and cohort building activities to develop peer-to-peer networks.



Solutions to emerging challenges

“The emphasis on interdisciplinarity was a real draw to see not only the technological side but the social & behavioural side, coming together to work on the challenge of net zero”



Jainaba Conteh

Advancing low carbon fuel infrastructure: A quantitative whole system approach to enable sustainable energy solutions and mobility

Sponsored by Centrica

Michal Ciesielka

Developing non-critical raw materials-based electrocatalysts for green hydrogen generation from wastewater

Sponsored by EPSRC

Michael Ownsworth

Post-combustion CO₂ capture solvents: addressing the knowledge gap with long-term testing

Sponsored by SSE Thermal



“A really interesting, valuable and fulfilling residential that covered lots of different perspectives. I enjoyed it immensely!”



Iliana Dimitrova

Flashback in hydrogen-fuelled gas turbine combustors

Sponsored by Siemens



Partnership Opportunities

Help us to shape the development and deployment of industrial decarbonisation by supporting talent pipelines to drive innovation.

Why work with CDT-GIF?

Access to a highly skilled pool of talent that has expertise across the industrial system and an interdisciplinary awareness of industrial decarbonisation.

Access to world-leading academic experts and state-of-the-art facilities to develop practical solutions to decarbonisation challenges.

Direct input into the direction of the centre to steer our programme to meet your talent & research needs.

Engage and network with other project partners via the CDT-GIF annual conferences and other events/webinars.

Engage with our students via site visits and/or our Frontiers Forum, a fortnightly online session where we discuss topical issues in the net zero space.

Partner Option 1

Co-sponsoring a four-year studentship (~£17k per year)*

*50% of studentship cost matched by UKRI. SMEs have reduced rates.

Scope and shape a PhD research project that addresses your organisation's R&D needs, as well as supporting the talent pipeline. Including hosting a work placement.

Partner Option 2

Host a work placement

Access to the best students for placements or internships. Host a CDT-GIF student working on a discrete shorter project (1-3 months) to develop ideas and support their development.

Want to join CDT-GIF?

Contact cdtgreenindustrialfutures@hw.ac.uk to arrange an introductory meeting with the team to discuss potential collaboration pathways.