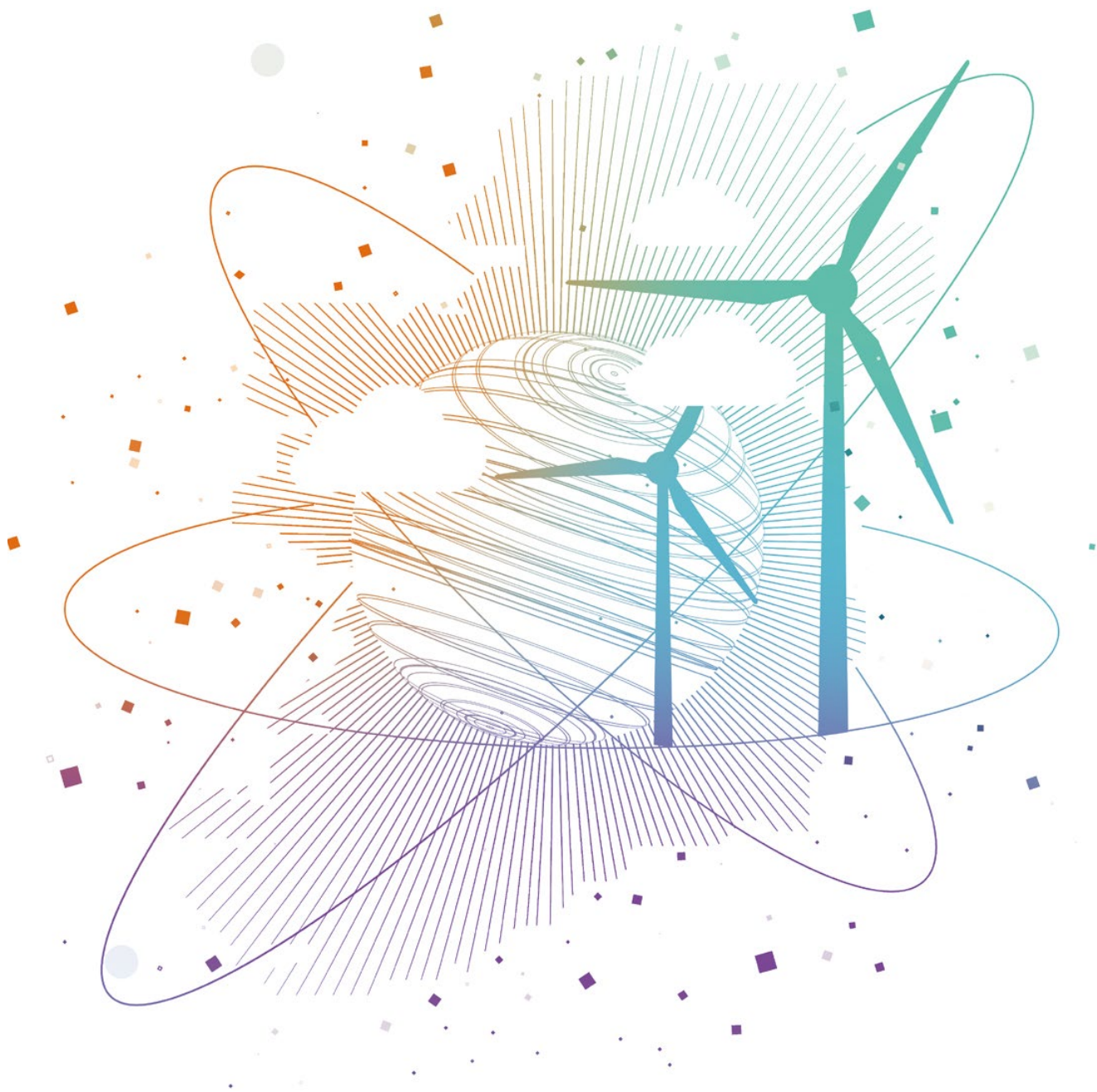


Climate Action Strategy 2024-2027



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Foreword

Science Foundation Ireland (SFI) presents a strategy committing to climate action and sustainability within our community. SFI's goal is to support a collective effort towards tackling the challenges of climate change and creating a more sustainable future for all.

SFI can, and should, play a critical role in driving change and finding innovative solutions to enable humans to thrive within planetary boundaries. This strategy outlines SFI's approach to integrating climate action and sustainability into all our functions - the grants SFI awards, the accessibility of the new knowledge and talent developed, SFI's collaborations and SFI's support of research practices.

SFI will embed sustainability in every aspect of our work in the future. Our strategy outlines objectives and initiatives that will help SFI support a low-carbon and climate-resilient society. By aligning SFI's efforts with national and international policies, we will ensure that SFI plays its part in contributing to the achievement of Ireland's climate targets and our transition to a sustainable future.

SFI and the talented individuals and organisations SFI supports have the capacity to create meaningful impact through research, collaboration, knowledge-exchange, and the adoption of sustainable practices. Responding to the climate crisis cannot be the preserve of any single entity, but demands that we all take responsibility. SFI will proactively engage and collaborate with other funders and stakeholders to create a cohesive response to the challenges of climate change and environmental degradation. By fostering partnerships and engaging with stakeholders, we can use our collective expertise to drive innovation and influence national policies that support climate action and environmental sustainability. SFI can make a lasting difference in addressing the climate crisis through the knowledge and talent we support, informing evidence-based decision-making, providing top talent for industry and government, and inspiring societal change.

Background

SFI is committed to funding excellent and impactful research that supports climate action and environmental sustainability, which will be central to addressing the climate crisis we face.



The investments made by the agency on behalf of Government will respond to, and deliver against, several important national and international strategies, including:

Impact 2030, Ireland’s Research and Innovation Strategy¹

Climate Action Plan²

National Strategy on Education for Sustainable Development (ESD)³

Long-term Strategy on Greenhouse Gas Emissions Reductions⁴

United Nations Sustainable Development Goals⁵

Concern about climate change and the need for climate action were also clear priorities for the Irish public, as described in the findings of *Creating Our Future*⁶.

In addition to SFI’s priorities and actions in relation to sustainable research, SFI also welcomes the *Public Sector Climate Action Mandate*⁷, a government-led initiative aimed at reducing Ireland’s greenhouse gas emissions.

SFI has established two climate action working groups; one internally-focused and the other focused on the ecosystem we support. The Internal Climate Action Team will focus on reducing total energy use and fossil fuel related emissions from SFI’s operations (staff, building, vehicles and procurement).

1 gov.ie - Impact 2030: Ireland’s Research and Innovation Strategy (www.gov.ie)

2 gov.ie - Climate Action Plan 2023 (www.gov.ie)

3 gov.ie - National Strategy on Education for Sustainable Development in Ireland (www.gov.ie)

4 gov.ie - Long-term Strategy on Greenhouse Gas Emissions Reductions (www.gov.ie)

5 THE 17 GOALS | Sustainable Development (un.org)

6 Creating Our Future (www.creatingourfuture.ie)

7 gov.ie - Public Sector Climate Action (www.gov.ie)

SFI’s Internal Green Team will ensure the delivery of a climate action roadmap that responds to the actions set out within the Public Sector Climate Action Mandate. SFI actions include:

- Staff engagement initiatives to reduce energy use and explore wider climate issues and sustainability.
- Climate action training to be incorporated into ongoing staff learning and development plans.
- Continuous monitoring of the sustainability and well-being benefits of hybrid working.
- Determine the carbon impact of operations procedures such as programme processes, events, paper use, catering etc.
- Undertake an energy audit of the SFI office space and take appropriate actions.
- Create a bicycle-friendly environment at our building.
- Inclusion of Green Procurement within SFI procurement processes.

While the Climate Action Mandate focuses more on what SFI can do directly, we recognise that the broader research ecosystem has a key role to play in supporting a just transition to a green and sustainable society. The External Green Team will support the national research system to facilitate Ireland’s transition. This strategy will coordinate these external facing climate activities and is structured into three Pillars.

At SFI, we have always believed in the power of research to create a better future for all. As humanity faces a collective climate crisis, research and the talent it develops are more important than ever. With this strategy, we commit to redoubling our efforts to help unlock the full potential of Irish research to play a key role in creating a sustainable and prosperous future.

Strategic Pillars:

1	<p>Funding excellent research that will shape a sustainable future and build related knowledge and talent.</p>	
2	<p>Moving knowledge and talent through our society and economy to support informed decision-making.</p>	
3	<p>Conducting research and related activities sustainably.</p>	



Vision

The Irish public and private sectors are leaders in sustainable and environmentally sound practices because they are research-enabled in their decision-making.

Mission

SFI will innovate, partner, collaborate and lead on funding excellent research and developing engaged and mobile talent that shapes a sustainable future.

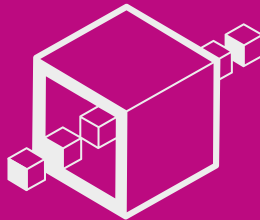
Pillar 1

Funding Excellent Research that will Shape a Sustainable Future



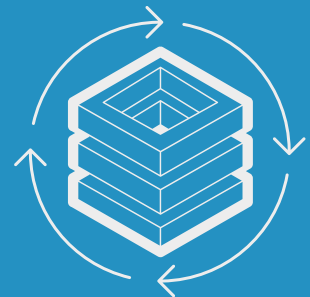
Pillar 2

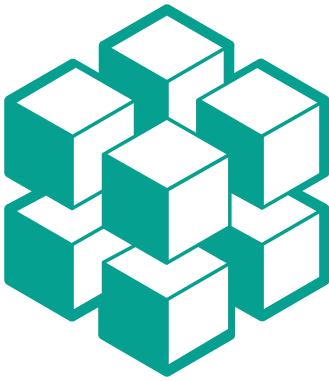
Moving Knowledge and Talent through our Society and Economy



Pillar 3

Conducting Research and Related Activities Sustainably





Pillar 1

Funding Excellent Research that will Shape a Sustainable Future

Ensuring that SFI funds excellent and impactful research, at scale, in research areas relevant to sustainability, climate change and biodiversity, generating new knowledge and training top talent.

Scientists have been warning about the impact global warming will have on the habitability of our planet for many decades. However, it is only more recently that large swathes of our global societies have seen these impacts first hand and are now turning to science for solutions. Indeed, as former US President Barack Obama, crediting a U.S. governor, said:

We are the first generation to feel the effect of climate change and the last generation who can do something about it.

There is now a substantial and rapidly growing demand for the tools, technologies and talent that only world-class research can provide. Ireland, like all other nations, has a role to play in contributing to global solutions, as well as providing bespoke solutions for our unique needs.

A key aspect of SFI's climate action strategy is to ensure we are funding world-class research in climate change and environmental sustainability, including: renewable energy, the circular economy, greenhouse gas emissions, just transition, waste reduction, bioeconomy and biodiversity. This research must be done in close collaboration with other stakeholders nationally and build on cutting-edge research conducted in Ireland and abroad. In parallel, we need to rapidly increase the talent pool of sustainability experts to meet the demands of civil society and enterprise.

SFI will engage with relevant external working groups such as the National Environmental Research Co-ordination Group, the National Climate Research Co-ordination Group and the Bioeconomy Implementation Group, to optimise national investment, prevent duplication of effort and identify any knowledge or talent gaps in the broader Irish ecosystem that need to be addressed. We will work closely with the Department of Further and Higher Education, Research, Innovation and Science (DFHERIS) Evidence for Policy Unit and other Government departments and agencies to continually identify opportunities for collaboration and joint funding externally and to inform SFI activities.

Our goal is to fund excellent research that will provide the knowledge and talent that Ireland will need to tackle climate change and environmental sustainability domestically, and to contribute to global solutions.



Pillar 1 Objectives

1.1 Portfolio Analysis and Investment

Working closely with key stakeholders and our academic community we will develop an understanding of the national portfolio of climate and environment-related research, such that any unintended gaps in knowledge, skills, or research infrastructure are discovered and the funding required to resolve these gaps is identified.

- Work closely with coordinating bodies to develop a consolidated view of funding supply and demand.
- Identify critical research infrastructure, knowledge or skills gaps.
- Work with industry and government bodies to assess future skills needs.
- Support the development of a roadmap for investment in research and development to meet Ireland's needs.
- Mobilise appropriate additional investment.

1.2 Research Mechanisms

As part of a broader understanding of SFI's portfolio of programmes, we will identify the appropriate funding schemes for climate and environment-related research.

- Continue SFI's successful use of thematic areas to focus research on climate action research.
- Build on programmes such as the Co-Centres, individual-led research and the National Challenge Fund, to provide new solutions, talent and sources of funding.
- Invest in critical infrastructure.
- Develop inter and transdisciplinary research programmes that cross traditional research boundaries and sectors.
- Support programmes in citizen science and deliver and fund engagement activities that will empower, inspire and reflect the views of the public in these areas.

1.3 National Strategy

A just transition to a more sustainable society requires coordination across a wide set of stakeholders. Within the arena of research, it is incumbent on SFI to align closely with national strategies and objectives for optimum impact.

- Collaborate and engage with relevant national groups to ensure that SFI's position feeds into the development of relevant national strategies (Climate Action Plan, long-term strategy on Greenhouse Gas (GHG) emission reduction, Department of the Environment, Climate and Communications (DECC) Research and Innovation Strategy etc.).
- Modify SFI's strategy and implementation plans based on input from other groups.
- Support tracking and monitoring of implementation and adapt strategies accordingly.

1.4 Open Research

The climate crisis is a global challenge that requires broad collaboration and a transdisciplinary approach. Researchers from different geographies and disciplines will be required to create holistic solutions that will deliver real change.

- As part of broader open research activities, we will progress and develop processes and mechanisms for researchers to collaborate and share relevant data.
- We will ensure best practice in climate research and research findings are being shared widely, enabling researchers to build on each other's work and help Ireland's researchers to maximise their collective impact for the benefit of climate action.

1.5 Engagement on Climate and Environmental Research

Through the Creating Our Future dialogue, administered by SFI, on behalf of the Department of Further and Higher Education, Research, Innovation and Science, it was established that the Irish public views research that will enable a sustainable future as a key priority. The Science in Ireland Barometer confirms that they are also interested in knowing more about current research.

- Through our Education and Public Engagement activities – directly managed and funded – we will endeavour to engage the public in constructive and informative dialogue related to climate and environmental sustainability – empowering them to discuss the role of research in dealing with the current crises.

1.6 Partnerships

Most research funding agencies, nationally and internationally, are investing in climate change mitigation research. Ireland is fortunate to have an enviable list of world-leading research funders as existing partners. We will lean into this list and grow it further for mutual benefit.

- Identify opportunities for partnership and co-funding.
- Establish new funding mechanisms with existing partnerships, for example, co-funded doctoral training programmes in relevant areas.
- Develop co-funding opportunities with new global partners who are also focusing on climate action research.
- Launch co-investments and co-funding collaborations of scale, potentially including industry partners, that support high-impact RD&I investments which address climate, sustainability, and biodiversity goals.

Pillar 1

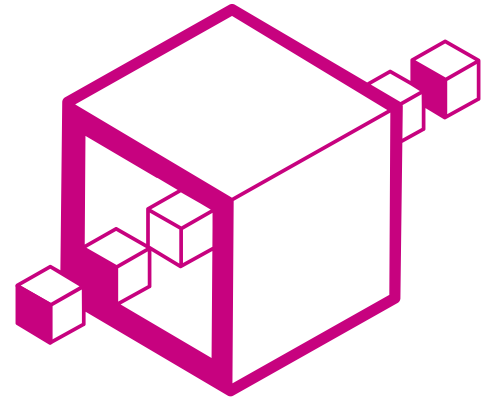
Key Measures of Success



- Increased investment in excellent and impactful climate action research.
- Substantial increase in the number of climate and environment researchers trained.
- Increase in the number of advanced climate and environment researchers working in Ireland.
- Increased data and evidence resulting from SFI-funded climate and climate-related innovation and research.
- Increase in the number of publications attributed to SFI's investment in climate action and environmental sustainability research that are openly available.
- Increased partnerships and co-funding programmes nationally and internationally.
- Increase in the number of new trans-disciplinary programmes and mechanisms.
- Increase in the prominence of climate and environmental topics in SFI Education and Public Engagement activities.

Pillar 2

Moving Knowledge and Talent through our Society and Economy



Supporting the movement of climate and environment knowledge and talent through our society and economy to enable research-led decision-making.

Climate change is widely acknowledged as the greatest challenge facing humanity today. Globally governments are introducing new policies regularly to keep ahead of changing conditions. Enterprises report that a significant amount of time and money is spent transforming their organisations for a sustainable future. While there are many challenges ahead due to climate change, there are also opportunities for positive, systemic change. In the words of Ban Ki-Moon, the former Secretary-General of the UN:

Climate change is the single greatest threat to a sustainable future but, at the same time, addressing the climate challenge presents a golden opportunity to promote prosperity, security and a brighter future for all.

In Pillar 1, the focus was on developing new knowledge and the talented individuals we need to address the climate crisis. Now, in Pillar 2, the focus is on how we ensure this knowledge, and the highly-skilled people trained in our universities, are moving through our society and economy so that government and industry leaders can make informed decisions based on the latest research. Enabling and informing sustainable practices in industry will also present new business opportunities.

Ireland wants to be a global leader in innovation. The Programme for Government: Our Shared Future⁸, aims for “research based in Ireland to be at the forefront of the next phase of disruptive technologies, leading rather than following the technological revolution while also being a centre for foundational research”.

Positioning Ireland as a leader in a research-informed response to the climate emergency and using this position to attract and retain a talented workforce and Foreign Direct Investment (FDI) are key objectives of this Pillar.

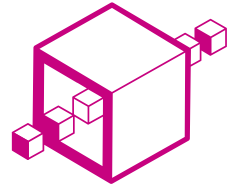
SFI is recognised as an agency that champions collaboration and partnership. We do this through all aspects of our work – from collaborative funding programmes and national policy development, through to joint communication campaigns. In recent years, we have built strong alliances that have increased the understanding of the research ecosystem and the benefit that can be derived from public investment in research.

We will build on these collaborations across the public and private sectors, to create direct links between the demand (enterprise and government) and supply (universities) sides of climate action knowledge and skills.

Central to this Pillar is the importance of knowledge exchange between SFI-funded activities in universities and the private and public sectors. It is vital to ensure that SFI-funded researchers are connected with national policy makers and industry leaders.

⁸ gov.ie - Programme for Government: Our Shared Future (www.gov.ie)

Pillar 2 Objectives



2.1 Stakeholder Engagement and Cohesion

The first step in moving knowledge and talent through our society and economy is to understand who the consumers of this knowledge and talent are, and then to engage with them effectively.

- Identify key stakeholder groups in the public and private sectors.
- Engage directly with stakeholders to understand their interests and needs.
- Establish appropriate communications channels.
- Update planned actions based on stakeholder feedback.

2.2 Showcasing

Stakeholders sometimes describe the Irish research ecosystem as complex to navigate. The concept of a research showcase has been raised previously in the context of research centres. We propose to simplify access to climate research and talent by showcasing directly to key stakeholders.

- Identify opportunities (at home and abroad) for thought leadership events that showcase the work of the Irish research and innovation system in driving excellence and co-operation in climate action research and innovation.
- Establish communications channels and platforms to showcase case studies of relevant research undertaken in Ireland.
- Further supporting consortia of partnerships between academics and industry focusing on sustainability research, enabling true collaboration and knowledge exchange.
- Ensure Team Ireland stakeholders (e.g., Enterprise Ireland, IDA, Department of Foreign Affairs), are kept abreast of sustainability research and talent availability in Ireland.

2.3 Knowledge Transfer, Evidence and Advocacy

Make access to knowledge easy for industry and government stakeholders, and encourage researchers to communicate their results and engage directly in policy and leadership fora.

- Support climate and environment researchers to spend a portion of their time providing thought leadership to key decision-makers in public and private sectors.
- SFI to play a role in brokering connections between researchers and those who need access to the latest thinking.
- Promote Irish research and innovation at relevant national and international fora to inform policy and keep Ireland central to the international debate.
- Encourage researchers, and provide training where required, to engage in public discourse on climate change mitigation and related topics.

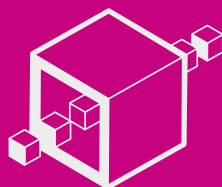
2.4 Movement of Talent

Knowledge, packaged in a person, moving through our society and economy is central to our response to the climate crisis. We will put the mechanisms in place to enable talented PhD graduates and researchers to work directly in the public and private sectors.

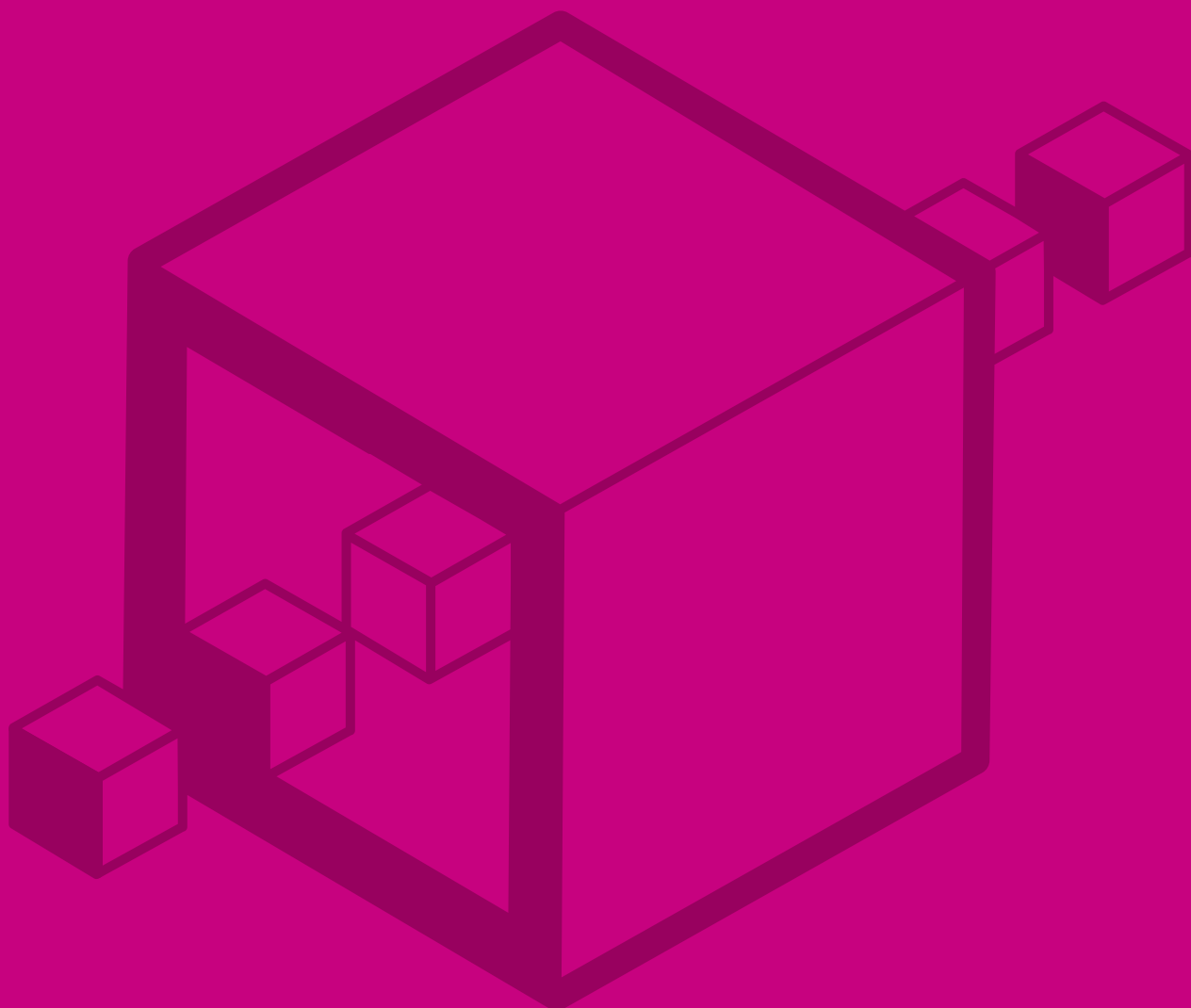
- Fund additional Public Service Fellowships to meet growing demand for climate expertise to inform policy makers.
- Co-fund with industry PhD training programmes in climate and environment studies to break down barriers between industry and academia.
- Fund additional Industry Research and Development Fellowships to support the transition to sustainable enterprises.
- Support networking and engagement activities to connect talented individuals with employers in industry and public service.

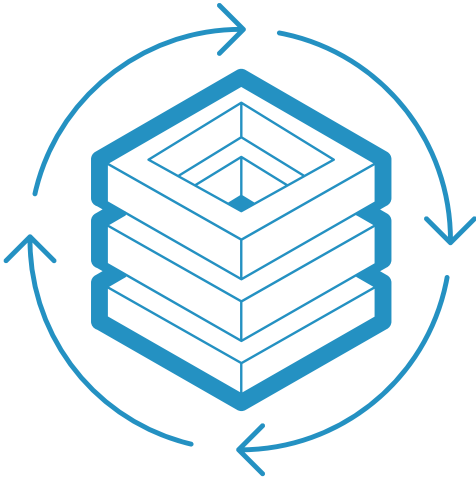
Pillar 2

Key Measures of Success



- Increased uptake of SFI climate fellowship programmes in public service and industry.
- Irish research experts consulted regularly on related policy changes.
- Successful showcasing and networking events hosted.
- Increase in Irish research outputs being utilised by Team Ireland.
- Number of new channels and platforms identified to deliver messaging.
- Increase in the number of climate and environment researchers employed in the public and private sectors.





Pillar 3

Conducting Research and Related Activities Sustainably

Ensuring SFI's funded programmes are undertaken in a manner that supports sustainable practices.

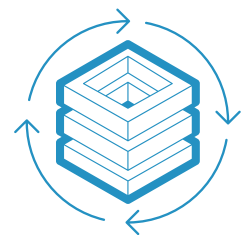
There is a growing recognition globally that science's carbon footprint needs to be reduced. Laboratory-based research has a particularly large footprint, with high levels of energy use, as well as chemicals, plastics and other consumables. Other aspects of research such as field work, high-intensity data processing and international travel also contribute significantly to the impact research has on our climate. While research is a key tool in mitigating climate change, it's important the research leads by example and is conducted in the most sustainable manner possible.

SFI will empower and support researchers across our funded projects, to make well-informed choices and to take actions to reduce the environmental impact of their work. This will also extend to work we fund in education and public engagement.

We will work with the research community and other stakeholders, to develop clear, evidence-based policy and guidance on best practice for awardees of SFI grants.

Our goal is to become the first country to adopt a holistic, proven and widely supported approach to sustainable research at a national level.

Pillar 3 Objectives



3.1 Sustainable Lab Certification Pilot

We aim to develop a sustainable lab certification process that has broad buy in and robust international standing. Furthermore, we aim to engage in broad consultation with relevant stakeholders and gather evidence of sustainable practices already in place.

- Pilot a Sustainable Lab certification process in partnership with a defined cohort of SFI-funded laboratories and an independent provider.
- Implement a framework for continuous consultation to ensure the outcome is founded on collaboration and can robustly inform the possibility of adopting a national certification in the future.
- Independently assess the outcome of the pilot to ensure there are meaningful improvements.

3.2 National Certification Rollout

Assuming a successful certification pilot, we will proceed to a national rollout of sustainable lab certification and promote Ireland's commitment to green lab practices nationally and internationally.

- Scope a national certification process informed by the outcomes and independent evaluation of the pilot.
- Assess the costs associated with the certification process: replacing/upgrading equipment, infrastructure and resourcing, and work with key stakeholders to map a way forward in addressing these costs.
- Review how behavioural and cultural barriers to adoption can be overcome.
- Roll out a national certification process.
- Create a communications and awareness campaign nationally and internationally to promote the Scope 3⁹ benefits of conducting research in Ireland.

3.3 Policy Development and Advocacy

Develop a suite of policies, beyond lab-based certification, to support the implementation of sustainable research practices more broadly.

- Stay abreast of developing international best practices in sustainable research standards and policies.
- Develop and advocate for evidence-based policies that support the implementation of sustainable research practices and climate action awareness.
- Fund policy research to obtain expert insights that will inform decision-making within the research system.
- Support researchers, education and public engagement practitioners, and research bodies in adopting such policies through interdisciplinary collaboration, with an initial focus on Do No Significant Harm (DNSH)¹⁰, travel and procurement.

3.4 Collaboration and Knowledge-Sharing

One of Ireland's strategic advantages is the interconnectedness of our island. Leveraging this interconnectedness will enable us to rapidly develop and share best practices in sustainable research across a broad range of stakeholders.

- Foster capacity-building and knowledge-sharing within the research community through the creation of content which enhances the awareness and understanding of sustainable research practices, climate mitigation strategies and relevant policy frameworks.
- Support researchers to exploit expertise and share resources, developing a collective approach to policy development and implementation, thereby maximising our collective impact.

3.5 Monitoring and Evaluation

What gets measured, gets done, so it will be important to establish the appropriate mechanisms to measure and track progress across the broader gamut of sustainable research practices.

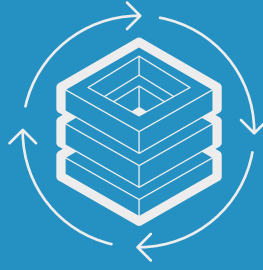
- Establish a monitoring and evaluation framework to determine the effectiveness of collective efforts in sustainable research.
- Develop an appropriate set of key performance indicators (KPIs) that can be used to track and measure progress.
- Deploy the KPIs to assess the progress and impact of policies and initiatives.
- Through ongoing monitoring and evaluation, identify areas for improvement, track the adoption of sustainable practices, and gauge the broader benefits attributed to the community's efforts.

9 Indirect emissions not produced by the organisation itself

10 https://knowledge4policy.ec.europa.eu/glossary-item/do-no-significant-harm_en

Pillar 3

Key Measures of Success



- Successful pilot of a Sustainable Lab certification process.
- National rollout of Sustainable Lab certification process.
- The level of adoption of certification in SFI grant recipients' labs within a given reporting year.
- Securing the budget required to support the costs of transitioning to sustainable research.
- Acceptance and integration of related policies at national level across the research ecosystem.
- Tangible evidence of projects and initiatives that successfully incorporate sustainability criteria, green procurement, sustainable infrastructures and the DNSH principle, as outlined in grant applications.
- Ability to measure and demonstrate the impact of system changes on reducing the carbon footprint of research.

Conclusion

SFI is committed to playing our part to combat the climate crisis by changing our own behaviour and by facilitating and enabling our community to take an active role in helping to respond to our planet's greatest threat.

By leaning into the full potential of Irish researchers, we can help develop the new ideas and the talented individuals we need now and over the coming decades. While Ireland may be a small country, our interconnected nature will allow us to move the knowledge effectively through our economy and society to have the greatest impact and help us live within planetary boundaries.

To ensure that we deliver on our ambitions, an implementation plan will underpin this strategy. That plan will encompass actions to support the objectives presented within the strategy. The climate crisis is an evolving threat, so this plan will be designed to allow flexibility and facilitate ongoing consultation to ensure an ability to adopt new initiatives and pivot as we navigate the uncertainty ahead.



Climate Case Study

Taking the heat out of data centre consumption

Dr Tim Persoons, Associate Professor in the Department of Mechanical, Manufacturing & Biomedical Engineering at Trinity College Dublin and Funded Researcher, CONNECT, the Science Foundation Ireland Research Centre for Future Networks and Communication.

“For the last two decades, we have seen a consistent growth in the energy use of data centres and large-scale electronics facilities in general. We see this all over the world, but it is very pronounced in Ireland, as we have a high concentration of data centres here,” says Dr Persoons. “This is now reaching a level that is unseen anywhere else in the world; at the moment, it is around 14% of the national electricity usage in Ireland and it keeps rising. It is probably unsustainable in its current form, so we have to look for other ways of dealing with this. There are existing commercial solutions that could be used to improve cooling and waste heat recuperation, but none of them are used widely at the moment and none are perfectly adequate, so my research is focused on effective ways to extract and re-use the energy.”

Part of that research is looking at how to extract heat energy from data centres and, for this, Dr Persoons and colleagues are getting right to the heart of it. “We are developing new technologies to capture the heat directly from the CPUs or processors in the data centres, rather than capturing the heat that has dissipated into a room,” he explains.

“We are also looking at how to take the low-grade heat that comes from processors, memory, storage drives and other components, and convert it into more useful forms of energy.”

In the Science Foundation Ireland Strategic Partnership, NexSys, Dr Persoons is also looking at how to link a new data centre campus with an urban renewal centre in Derry. “As part of that transformation project, there will be new buildings, historical houses and greenhouses that need to be heated, so we are looking at this as a demonstrator project for new technologies,” he explains.

While it will be several years before any such technologies are fully developed and in use, the research itself will provide insights into technical solutions and sustainable models for the future of data centres in Ireland, and Dr Persoons expects this will help to inform decision-makers. “Along the way, we are seeking to create impact in the form of policy documents and white papers,” he says. “We want to draw attention to possible solutions, while continuing the development of our own novel, cooling technologies.”



Climate Case Study

Terrain AI

Figuring out 'where' and 'how' of tackling greenhouse gas emissions

Professor Rowan Fealy and Professor Tim McCarthy, Maynooth University

'Think global, act local' is one of the enduring slogans of the environmental movement. It also raises important questions – where exactly should we target measures to tackle the climate emergency? And how do we measure those emissions to ensure the interventions are working?

SFI research is looking at how to capture and use information smartly from different land types in Ireland, in a bid to better measure and, ultimately, manage carbon management and greenhouse gas emissions.

Professor Rowan Fealy is a co-leader of the Terrain AI project, which is focusing on more than 20 benchmark sites around Ireland, including agricultural grassland, forests, peatlands, wetlands and urban sites.

Jointly funded by Microsoft Ireland and Science Foundation Ireland, Terrain AI is a collaboration with Teagasc, Trinity College Dublin, University College Dublin, Dublin City University, and University of Limerick, and the project is particularly interested in how human activities at different land types impact emissions.

"You need to understand the geography of where the emissions are coming from, and the potential sequestration of carbon," says Professor Fealy, who is based at Maynooth University's Geography Department. "Then you understand where to intervene to achieve the most efficient and effective reductions. It makes difficult decisions simpler."

Using technology such as drones, air quality sensors and instruments to measure biological activity, the research is gathering measurements from soil to sky at the benchmark sites around Ireland. But it's not just about the technology – a major aspect of the project is to bring together the people and organisations involved in land use, such as Teagasc, EPA, National Parks and Wildlife Services and Bord na Mona, and in measurement, analysis and policy development, explains Professor Tim McCarthy, who co-leads Terrain AI with Professor Fealy.

"We are bringing those communities together, and that is really important," says Professor McCarthy, who is a Professor at Maynooth University's Department of Computer Science.



Climate Case Study

Corca Dhuibhne (Dingle Peninsula) 2030

Transitioning to a sustainable, low-carbon future

While delivering the sustainable development of the Dingle Peninsula, to address and mitigate the climate crisis, society must transition to a more sustainable, low-carbon way of living. To do so means adopting sustainable energy practices and actively engaging in climate action.

The Corca Dhuibhne (Dingle Peninsula) 2030 initiative is based on the United Nations Sustainable Development Goals. Its aim is not only to transition the Dingle Peninsula to a low-carbon society, through a strong focus on community engagement, but also to act as a case study and a living lab for the development of both individual and collective sustainable practices, new technologies and learning/policy briefs. These could then be upscaled from the local level to the national.

Launched in 2018, this is an innovative, multi-stakeholder initiative that brings together academic researchers, industry and the Dingle Peninsula community to enable sustainable practices in energy transition and climate action. The consortium behind the initiative is funded by Science Foundation Ireland, ESB Networks and the US-Ireland R&D Partnership Programme, and includes the Dingle Creativity and Innovation Hub (Mol Teic) and NEW KD (North East West Kerry Development), the local community-development organisation. The research component of the initiative is coordinated by MaREI, the SFI Research Centre for Energy, Climate and Marine, hosted by University College Cork (UCC).

The consortium has a wide range of expertise, with projects that span energy, agriculture, marine, transport and tourism. Projects include:

- Establishing the actual energy usage and greenhouse gas emissions (GHG) on the Dingle Peninsula.
- Researching how to reduce GHG emissions across the Peninsula.
- Understanding and promoting the societal role in managing the reduction of the GHGs.
- Applying new technologies to create a more resilient and sustainable electricity network, including retrofitting homes and businesses with energy-efficient measures and trialling the use of electric vehicles.
- Conducting a feasibility study on using an anaerobic digester to produce biogas from feedstocks in the local area.
- Developing actions, such as the Farm Ambassador Programme, to trial innovative technologies that improve carbon efficiency management within agriculture.
- Establishing the West Kerry Dairy Farmers Sustainable Energy Community.
- Improving the sustainability of mobility and travel around the Dingle Peninsula.
- Tracking progress, analysing the diffusion of sustainability, evaluating and disseminating the learning outcomes to enable broader societal changes required for a sustainable low-carbon transition.

A photograph of three large white offshore wind turbines in the ocean under a clear blue sky. The turbines are spaced out across the horizon, with the largest one on the right side of the frame. The water is a deep blue, and the sky is a lighter blue with some light clouds.

Climate Case Study

MaREI, SFI Research Centre for Energy, Climate and Marine and Éirecomposites - novel powder epoxy for offshore renewable energy application

ÉireComposites was established in 1998 in Galway, as a spin-out from University of Galway, and has grown since then to over sixty employees. The company specialises in the design, manufacture and testing of lightweight, high-performance, fibre-reinforced composite materials, and has an international customer base in the space, aerospace, marine, renewable energy and industrial-composites industries.

MaREI is the SFI Research Centre for Energy, Climate and Marine, coordinated by the Environmental Research Institute at University College Cork.

Harnessing and optimising renewable energy are integral to addressing climate change, with the challenge being to develop renewable wind and tidal energy solutions that are sustainable. ÉireComposites and MaREI are collaborating on the project 'Novel Powder Epoxy for Offshore Renewable Energy Applications,' which involves designing and creating a composite material that is resistant and durable and that can be used for wind-energy devices, both floating offshore or onshore, and for tidal-wave devices.


The project includes a comparison of materials and manufacturing methods to those commercially available on the market, leading to an improved understanding of ÉireComposites' powder epoxy Technology.

This co-funding collaboration started with a single engagement in University of Galway and has now grown to three separate projects. An example of the growth of the collaboration – to also include other partners – is *MI DRONE Advanced Manufacturing Technologies to enable Intelligent DRONE delivery*. Funded through the Disruptive Technology Innovation Fund (DTIF) and involving additional partners Manna and I-FORM, the SFI Research Centre for Advanced Manufacturing, the project will address consumer demand for fast, reliable, last-mile delivery. At full-scale deployment, the MIDRONE technology targets a delivery-cost reduction of 80% and a cost-per-delivery of €1, coupled with a three-minute delivery time within a 2km radius. The project will also achieve significant positive impacts in terms of industry/Irish competitiveness, scalable company growth in revenue and jobs, and a wide array of performance and environmental benefits, including avoiding the emission of 7,400,000kgs of CO₂.



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