



Environmental Protection Agency  
An Ghníomhaireacht um Chaomhnú Comhshaoil



# EPA Research Programme 2021-2030

The EPA Research Programme is a Government of Ireland initiative funded by the Department of the Environment, Climate and Communications.



# EPA Nitrous Oxide from Peatlands Research Call 2022– Technical Description Document

May 2022 – Version 1 (09/05/2022)

## Summary of Changes

n/a

# EPA Nitrous Oxide from Peatlands Research Call 2022

This document provides the Technical Description for the Environmental Protection Agency (EPA) Nitrous Oxide from Peatlands Research Call 2022. Applicants should read the following carefully and consult the other documentation provided (e.g. 2021 - 2030 Guidelines and Terms & Conditions).

## Contents

Introduction .....	1
<b>Thematic Research Approach</b> .....	1
Addressing Climate Change Evidence Needs.....	1
Facilitating a Green and Circular Economy.....	1
Delivering a Healthy Environment.....	2
Protecting and Restoring our Natural Environment .....	2
Funding Structure.....	2
<b>Co-funding and Partnerships</b> .....	2
Application Process .....	3
List of Topics.....	3
Call Content.....	4
<b>Addressing Climate Change Evidence Needs</b> .....	4
Analysis of terrestrial GHG emissions and removals and wider impacts of land management and peatland restoration on Ireland’s Nitrogen cycle - Nitrous Oxide .....	4
Expected Outputs.....	6
Timeframe .....	6
Further Information .....	7

## Introduction

EPA Research 2030<sup>1</sup> is the ten-year high-level framework for the EPA's research programme (2021-2030), designed to be agile, responsive and flexible. EPA-funded research is essential to:

- Supporting the monitoring, assessment, reporting and regulatory activities of the EPA.
- Generating evidence crucial in assisting Ireland in meeting its commitments and requirements under the various international, EU and national policies and strategies.
- Generating the evidence base that supports decision making, behaviour change and policy development.
- Addressing knowledge gaps, providing the evidence-base and responding to priority challenges.
- Supporting multi-disciplinary, cross-sectoral and multi-stakeholder partnership projects.
- Developing environmental research capacity in Ireland, recognising the importance of not only sustaining the research-base but also of building and training the researchers in specific areas.

Environmental policies must be underpinned by an in-depth level of knowledge that needs to be delivered through a systematic programme of environmental research and assessment. Research can play an important role by generating evidence that will support the design and implementation of effective and robust policy, evaluate its outcomes, and demonstrate its value. EPA Research 2030 will further our understanding of our environmental and natural systems. It will enable the outcomes from research to be put in action to protect and improve our natural and built environment.

## Thematic Research Approach

EPA Research 2030 thematic structure comprises four interconnected hubs that bring an integrated and cross-sectoral approach, enabling holistic management and protection of our environment.

### **Addressing Climate Change Evidence Needs**

Climate change is already having an impact in Ireland, and strong mitigation and adaptation measures are needed. Research is essential in providing the evidence necessary to improve our knowledge systems and inform policy decisions that will advance our ambitions to be carbon neutral and resilient to climate disruption.

### **Facilitating a Green and Circular Economy**

Environmental and sustainability challenges are inextricably linked to economic activities and lifestyles. Research under this hub will contribute to the mainstreaming of sustainable management of natural resources and waste, unlocking the potential of the circular and bio-economies, and boosting competitiveness, through resource efficiency and deployment of innovative technologies and solutions.

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<sup>1</sup> <https://www.epa.ie/our-services/research/epa-research-2030/>

## Delivering a Healthy Environment

A clean, vibrant and safe environment is a prerequisite for good health and wellbeing. Environmental degradation, pollution, as well as known and emerging substances of concern threaten our health and that of our supporting ecosystems. Research under this hub will contribute to understanding the risks and benefits, and to identifying appropriate policy and behavioural responses.

## Protecting and Restoring our Natural Environment

Our natural environment provides us with clean air and water, food and the raw materials to sustain us and our economy. Research is required to inform and support a cross-sectoral approach to managing our natural environment and for the development of policies relating to the regulation of emissions and activities, and the protection of our water, land, and ecosystems.

## Funding Structure

Proposals can be Medium Scale Projects:

which will typically last from 24 to 48 months, with an indicative cost of up to €500,000.

## Co-funding and Partnerships

The EPA is pleased to announce that this Call involves co-funding partnerships with the following organisations:



**An Roinn Talmhaíochta,  
Bia agus Mara**  
Department of Agriculture,  
Food and the Marine

The **Department of Agriculture, Food and the Marine (DAFM)** mission is to lead the sustainable development of a competitive, consumer focused agri-food-forest sectors and to contribute to a vibrant rural economy and society. The Department undertakes a variety of functions, including: to promote and safeguard public, animal and plant health and animal welfare for the benefit of consumers, producers and wider society; provide income and market supports to underpin the rural economy; and to provide the optimum policy framework for the sustainable development of the agri-food-forest sectors in order to deliver a sustainable, growth-driven sector focused on competitiveness and innovation, driven by a skilled workforce delivering value added products in line with market demands maintain, and to develop the strategic, operational, regulatory and technical capacity of the sectors to achieve operational excellence .

# Application Process

## Making an Application

Applications **must** be made online at <https://epa.smartsimple.ie>

For more information, please refer to the following documentation, which is available to download from the EPA's Online Grant Management and Application Portal or from the EPA website<sup>2</sup>:

1. EPA Research Programme 2021 - 2030 Guidelines and Terms & Conditions; and
2. EPA Online Grant Management and Application Portal System User Guides.

## List of Topics

The EPA invites research proposals under the topics listed in Table 1 for the EPA Nitrous Oxide from Peatlands Research Call 2022.

Up to one award is expected for this topic.

**Table 1.** Topic included in the EPA Nitrous Oxide from Peatlands Research Call 2022

Call Topic Reference	Research Hub and Call Topic Titles	Max Budget (€) Per Project	Co-funded by
<b>Addressing climate change evidence needs</b>			
Addressing Climate Change Evidence Needs 2022 Call Topic 17	<a href="#">Analysis of terrestrial GHG emissions and removals and wider impacts of land management and peatland restoration on Ireland's Nitrogen cycle - Nitrous Oxide</a>	€ 400,000	DAFM

<sup>2</sup> <http://www.epa.ie/our-services/research/>

## Call Content

### Addressing Climate Change Evidence Needs

Analysis of terrestrial GHG emissions and removals and wider impacts of land management and peatland restoration on Ireland's Nitrogen cycle - Nitrous Oxide

<b>Call Topic Reference:</b>	Addressing Climate Change Evidence Needs 2022 Call Topic 17		
<b>Project Type:</b>	Medium Scale Project		
<b>Maximum Budget:</b>	€ 400,000	<b>Maximum Duration:</b>	36 months
<b>Co-funded by:</b> Department of Agriculture, Food and the Marine			

#### Background

The state is investing over €127 million in a large-scale peatlands' restoration projects overseen by the National Parks & Wildlife Service (NPWS) and Bord na Mona (BnM). The NPWS Peatlands Restoration Programme<sup>3</sup> and the BnM Enhanced Decommissioning Restoration and Rehabilitation Scheme (EDRRS, aka PCAS)<sup>4</sup> give effect to the commitments in the Climate Action Plan 2021, specifically Actions 21, 22, 362 and 368<sup>5</sup>. Additionally, BnM and other state bodies have been awarded €9.9 million under the EU LIFE Programme Peatlands & People project (<https://peatlandsandpeople.ie/>) in support of transitioning from peat harvesting.

It is expected that these investments help Ireland towards meeting our national 2030 targets under the Climate and Energy Framework<sup>6</sup> and the EU LULUCF Regulations<sup>7</sup>.

#### Scope

Innovative research proposals are invited to:

- Review approaches to measurement, reporting and verification of terrestrial greenhouse gas (GHG) emissions and removals from land with a focus on carbon rich soils, such as peatlands, in the context of systems in place in Ireland, Europe and globally, as well as the guidance provided by the Intergovernmental Panel on Climate Change and emerging policies and actions to restore peatlands and wider enhancement of carbon sequestration and emission reduction.
- Evaluate the development and application of terrestrial system models and the integration of advanced observational data streams, including in-situ and remote data, in providing independent analysis of GHG emissions and removals which can complement and improve current analysis and improve on the methodologies used in national emission and removal estimates for peatlands and reported in the National Inventory Report and support quality assurance/quality control (QA/QC) of emission and removal estimates as appropriate.
- Establish links between analysis of GHG emissions and removals in Ireland at a range of scales including through working with and contributing to relevant planned activities under the Global Carbon Project (GCP)<sup>8</sup> as part of the Joint Programming Initiative (JPI) Climate<sup>9</sup> in this area. Use these links to compare related analysis of emissions and removals in similar European countries and internationally to ensure that work in Ireland is comparable with these analyses.

<sup>3</sup> <https://www.npws.ie/peatlands-and-turf-cutting/management-plans>

<sup>4</sup> <https://www.bnmpcas.ie/#>

<sup>5</sup> See Sections 7.3.2; 17.2; and 17.3.3 here: <https://www.gov.ie/en/publication/6223e-climate-action-plan-2021/>

<sup>6</sup> [2030 climate & energy framework \(europa.eu\)](https://ec.europa.eu/clima/eu-action/forests-and-agriculture/land-use-and-forestry-regulation-2021-2030_en)

<sup>7</sup> [https://ec.europa.eu/clima/eu-action/forests-and-agriculture/land-use-and-forestry-regulation-2021-2030\\_en](https://ec.europa.eu/clima/eu-action/forests-and-agriculture/land-use-and-forestry-regulation-2021-2030_en)

<sup>8</sup> <https://www.globalcarbonproject.org/>

<sup>9</sup> <http://www.jpi-climate.eu/home>

- Provide a critique of the measurement techniques and protocols and data assessment and modelling techniques that will support scientific quantification of GHG emissions and removals through enhanced restoration of 50,000ha of candidate cut-over and cut-away peatland included in the EU LIFE IP Peatlands & People project, the NPWS Peatlands Restoration Programme, and the BnM EDRRS activities. Examine the applicability of these efforts in the context of the wider LULUCF ambitions under the Climate Action Plan 2021<sup>10</sup>, (ref. Actions 373 and 378). In the design of a methodology, proposals must fully assess the relevant GHGs across a spectrum of habitat types (using chambers or other suitable method).

Proposals will need to outline how the activity data needs of the national emission inventory will be met as well as how the outputs of modelling can be included in the national emission inventory (this should include identification of datasets and activity data that will be used in modelling).

Proposals will need to demonstrate experience of and expertise in the quantification of GHG emissions and removals of cut-over and cut-away peatlands and contiguous peaty grasslands in Ireland, as well as an understanding of the link between GHG emissions and removals and restoration strategies. Linkages to the agricultural sector should also be developed in disseminating research related to contiguous peaty grasslands.

The project will need to work closely with the EPA's Emission Statistics team – including sharing data and expertise – who compiles the National Greenhouse Gas Inventory and proposals should demonstrate an understanding of the needs of the EPA Emission Statistics team in compiling this Inventory.

Proposals should identify how they will work with/support the Peatlands and People LIFE project, the NPWS restoration programme, and the BnM EDRRS/PCAS work in terms of demonstrating the impact of the enhanced restoration activities on emissions.

It is expected that the project will have full access to data and flux instrumentation already in place / or to be put in place by BnM and NPWS. Proposals should demonstrate an understanding of what data is available and needed, and accordingly recommend what (if any) supplementary field-based monitoring campaign is to be pursued for the different restoration/rehabilitation options advanced or as determined by emerging science or bio-physical characteristics. Proposals should explore how this project and the National Agricultural Soil Carbon Observatory<sup>11</sup> can be mutually beneficial.

This project will be expected to work in parallel ensuring synergies and added value with three other EPA-funded research fellowships/projects, namely:

- Research Fellowship on methane (awarded as part of the EPA Research Call 2021 and starting during the first quarter of 2022);
- Research Fellowship on carbon dioxide (to be awarded as part of the EPA Research Fellowships Call 2021 and starting during the second quarter of 2022);
- Research project on water quality improvements arising from the enhanced restoration (awarded as part of the EPA Research Call 2021 and starting during the first quarter of 2022).

Proposals should advance the development of an Ireland's nitrogen cycle platform which integrates and communicates high resolution and near real-time data on Ireland's GHG emissions and removals from land including seasonal variations and where feasible land management interventions. This activity should be cross-fellowship/project to consider all the land-based GHGs but focus on N<sub>2</sub>O.

<sup>10</sup> See Sections 17.1; 17.2 and 17.3 here: <https://www.gov.ie/en/publication/6223e-climate-action-plan-2021/>

<sup>11</sup> <https://www.teagasc.ie/environment/climate-change--air-quality/soil-carbon/?msclkid=6a97efd7cf7511ecb8c109b9e9f90b30#observatory>

## Expected Outputs

Please consult the **2021-2030 Guidelines and Terms & Conditions** for the full list of expected outputs and interim/final reporting requirements.

**Outputs from ALL projects must build on recently completed and existing research and other relevant information.**

**Where project outputs include data and/or technical solutions** (websites, developed software, database solutions etc.) then the format of same must be agreed with the EPA to ensure that they can be installed on EPA infrastructure and maintained by EPA staff after the completion of the project. The EPA can supply a current list of approved data formats and technology on request and the exact format of all outputs must be agreed with the EPA before development of same commences. All data outputs must have a comprehensive set of metadata and all technical solutions must be fully documented according to EPA requirements.

It is essential that, in their proposal, applicants clearly demonstrate the policy-relevance of the outputs of their proposed research; the applicability of their findings; and how these outputs address a knowledge -gap and can be efficiently transferred/applied to the implementation of policies and the protection of the environment. Applicants **must** clearly demonstrate how their proposed research will provide the evidence to support environmental policy in Ireland, in terms of identifying pressures, informing policy and developing solutions.

## Timeframe

Wednesday 11 <sup>th</sup> May 2022 at 11:00 GMT	Call opening
Wednesday 25 <sup>th</sup> May 2022 at 17:00 GMT	Deadline for queries relating to the technical contents of this call
Wednesday 1st June 2022 at 17:00 GMT	Submission deadline
Wednesday 8 <sup>th</sup> June 2022 at 17:00 GMT	Approval deadline
June 2022	Evaluation process
July 2022	Negotiation <sup>12</sup>
July/August 2022	Grant award of successful projects
By 31 <sup>st</sup> August 2022	Start of successful projects

<sup>12</sup> The EPA may consider calling the shortlisted applicants for interview at this stage.

## Further Information

Information on current research projects being supported by the programme is available in the Research section of the EPA website: <http://www.epa.ie/our-services/research/>.

The following additional documents are available from the EPA website:  
<http://www.epa.ie/publications/research/current-call-documents/>

- EPA Research Programme 2021 - 2030 Guidelines and Terms & Conditions.
- EPA Research Programme 2021 – 2030 –Communicating Research.

Other relevant EPA Research Programme Strategies and Policies are also available from the EPA website: <http://www.epa.ie/our-services/research/epa-research-2030/strategies-and-policies/>.

### For updates on EPA Funding Opportunities:

1. Subscribe to [EPA Research Newsletters](#)
2. Follow us on Twitter [@EPAResearchNews](#)
3. Visit the [EPA Funding web pages](#)
4. Check the [Research Call Frequently Asked Questions web page](#)

Any queries that are not covered in the call documentation or on the FAQs web page must be submitted to [research@epa.ie](mailto:research@epa.ie).