



Rialtas na hÉireann
Government of Ireland



EPA Research - 2018 Call

EPA Research – Climate Research Call 2018

Technical Description

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

Environmental Protection Agency Research Call 2018: Climate

This document provides the **Technical Description** for the Environmental Protection Agency (EPA) **Climate Research Call 2018**. Applicants should read the following carefully and consult the other documentation provided (i.e. Guide for Applicants, Guide for Grantees, EPA Terms and Conditions for Support of Grant Awards).

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1. Introduction

The EPA's Research Programme 2014-2020 is designed to identify pressures, inform policy and develop solutions to environmental challenges through the provision of strong evidence-based scientific knowledge:

- **Identifying Pressures:** Providing assessments of current environmental status and future trends to identify pressures on our environment.
- **Informing Policy:** Generating evidence, reviewing practices and building models to inform policy development and implementation.
- **Developing Solutions:** Using novel technologies and methods that address environmental challenges and provide green economy opportunities.

Ireland's Climate & Air Quality

Ireland's State of the Environment Report 2016 states that responding effectively to climate change is both urgent and long term. It is urgent in that our global actions and responses in the next 5–15 years may effectively lock in large-scale and irreversible planetary changes over this and subsequent centuries. While the 2015 Paris Agreement sets the international agenda, Ireland's actions for addressing climate change need to occur at national and sub-national levels and within and between communities. The Climate Action and Low Carbon Development Act 2015, National Mitigation Plan (DCCA, 2017) and National Adaptation Framework (DCCA, 2018) provide the policy framework for these actions.

These in combination with EU-level emissions targets for 2020 and 2030 will inform and specify the short-term actions and longer term strategies to advance mitigation and adaptation actions (EPA, 2016). Similarly, the UNECE Air Convention, the EU Clean Air Package and the resulting European and national legislation set the agenda and policy framework for addressing air quality issues.

EPA Climate Research

A sustained Climate Research Programme is an essential component of Ireland's role in meeting its requirements under The Paris Agreement 2015, the Climate Action and Low Carbon Development Act (2015), the UNECE Air Convention, the EU Clean Air Package and the United Nation's Sustainable Development Goals (UN SDGs) and is committed to aligning our research to assist in the delivery of these goals. The Environmental Protection Agency Climate Research priorities include:

- Supporting the transition to a low carbon, climate resilient and environmentally sustainable economy by the end of the year 2050. This will be done through developing the public, policy makers and the research community understanding of what this objective means in an Irish context and how it might be achieved.
- Developing integrated approaches and growth opportunities through management of the challenges that arise from climate change, air quality and other environmental issues.

The EPA Climate Research Pillar is structured into four thematic areas of research as follows:

- Theme 1:** Carbon Stocks, GHG Emissions, Sinks and Management Options;
- Theme 2:** Ireland's Future Climate, its Impacts, and Adaptation Options;
- Theme 3:** Climate Solutions, Transition Management and Opportunities; and
- Theme 4:** Air Science.

The EPA Research Programme has allocated funding of approximately € 2.8m for new commitments for this 2018 Climate research call.

Multi- and inter-disciplinary research is required on these themes, with expected social, economic, technological, environmental and policy impacts.

Funding Structure

The EPA invites research proposals under the specific topics listed in **Table 1**.

Proposals can be Desk-Studies, Medium-Scale, or Large-Scale Projects and Research Fellowships:

- **Desk-Study** will typically last from 9 to 12 months with an **indicative** cost of up to €100,000;
- **Medium-Scale Project** will typically last from 24 to 36 months with an **indicative** cost of up to €350,000;
- **Large-Scale Project** will typically last from 36 to 48 months with an **indicative** cost of up to €500,000;
- **Research Fellowship** will typically last from 24 to 36 months with an **indicative** cost of up to €250,000.

Co-funding and Partnerships

Co-funding will be provided by the following organisations:



In carrying out its mandate, the **Department of Agriculture, Food and the Marine (DAFM)** undertakes a variety of functions including

- Policy advice and development on all areas of Departmental responsibility.
- Representation in international especially EU and national negotiations.
- Development and implementation of national and EU schemes in support of Agriculture, Food, Fisheries, Forestry and Rural Environment.
- Monitoring and controlling aspects of Food Safety.
- Control and audit of public expenditure under its control.
- Regulation of the agriculture, fisheries, and food industries through national and EU legislation.
- Monitoring and controlling animal and plant health and animal welfare.
- Monitoring and direction of State Bodies engaged in the following areas - research training and advice - market development and promotion- industry regulation and development- commercial activities.
- Direct provision of support services to Agriculture, Fisheries, Food and Forestry.

DAFM operates three 'public good' competitive research funding programmes for agriculture, food and forestry to support innovation and economic success across the bioeconomy. DAFM also provides support for Irish involvement in the EU Horizon 2020 research funding programme.

The **Marine Institute (MI)** manages competitive marine research funding programmes. Its competitive research awards have supported more than 260 researchers in the period 2007-2013. It also provides information on marine research funding opportunities from national and EU programmes.





Met Éireann, Ireland's National Meteorological Service, is the leading provider of weather information and related services in the State. Its mission is to monitor, analyse and predict Ireland's weather and climate and to provide a range of high quality meteorological and related information to the public and to specific customers in, for example, the aviation and agricultural sectors. As a scientific and technical organisation, it strives to utilise the latest technological and scientific advances to improve the efficiency, effectiveness and accuracy of its forecasts.



Sustainable Energy Authority of Ireland (SEAI) aims to improve the coherence of Irish energy research and development. This will build a cleaner and more secure energy future, while enhancing our knowledge economy.



As a central Government Department, serving the Government and the people of Ireland, the **Department of Transport, Tourism and Sport** (DTTAS)'s mission is to shape the safe and sustainable development of transport, tourism, and sport, to support economic growth and social progress.

Value for Money

All research proposals must **build on findings and recommendations** from past and current research¹ projects (where relevant) and **demonstrate value for money**. Applicants **MUST clearly demonstrate the value for money of their proposal and that the amount requested as the project budget will allow the proposed research to be addressed appropriately**.

Open Access and Open Data

All projects must comply with the EPA's **Open Data** and **Open Access** rules, which are aligned with Horizon 2020 for the 2014-2020 EPA Research Programme.

Where project outputs include data and/or technical solutions (websites, developed software, database solutions etc.), the format of same **must be agreed with the EPA** to ensure that they are **compatible with EPA IT infrastructure, transferred to EPA systems and can be maintained by the EPA** after the completion of the project.

In addition, **where relevant**, any occurrence data collected as part of the research project must be lodged/archived with the National Biodiversity Data Centre².

¹ including EPA-funded, other Irish and EU and international research projects and initiatives/activities

² <http://www.biodiversityireland.ie/>

2. List of Topics

Table 1: List of topics included in the EPA Research Call 2018: Climate

Call Topic Ref.	Thematic Areas and Project Titles	Indicative Budget (€) per project	Expected N. of awards	Co-funding
Theme 1: Carbon Stocks, GHG Emissions, Sinks and Management Options				
Climate 2018 Call – Project 1	Greenhouse gas emissions neutrality, scenarios for balancing national emissions and removals	€350,000	Up to 1	DAFM
Theme 2: Ireland's Future Climate, its Impacts, and Adaptation Options				
Climate 2018 Call – Project 2	Sharing of damage risk associated with climate change	€85,000	Up to 1	n/a
Climate 2018 Call – Project 3	Methodologies for financing and costing of climate impacts and future adaptation actions	€85,000	Up to 1	n/a
Climate 2018 Call – Project 4	Achieving resilience in the marine and coastal environment	€250,000	Up to 1	Marine Institute
Climate 2018 Call – Project 5	Next generation global and regional climate model projections for Ireland	€350,000	Up to 1	Marine Institute and Met Éireann
Climate 2018 Call – Project 6	Policy coherence adaptation studies	€100,000	Up to 4	n/a
Climate 2018 Call – Project 7	Impact of climate change on flora and fauna phenology	€200,000	Up to 1	n/a
Theme 3: Climate Solutions, Transition Management and Opportunities				
Climate 2018 Call – Project 8	The role of public sector innovation in supporting the low carbon climate-resilient transition in Ireland	€200,000	Up to 2	n/a
Climate 2018 Call – Project 9	Enabling a just transition to a low carbon, climate resilient Ireland	€250,000	Up to 1	n/a
Climate 2018 Call – Project 10	Case study on public engagement and dialogue on climate change	€75,000	Up to 1	n/a
Climate 2018 Call – Project 11	Climate Mitigation Transition Pathway Scenarios	€85,000	Up to 1	n/a

Call Topic Ref.	Thematic Areas and Project Titles	Indicative Budget (€) per project	Expected N. of awards	Co-funding
Theme 4: Air science				
Climate 2018 Call – Project 12	Impact of shipping emissions on air quality in Dublin	€250,000	Up to 1	n/a
Climate 2018 Call – Project 13	Assessment of residential solid fuel use in Ireland and the promotion of a transition away from solid fuels	€250,000	Up to 1	SEAI
Climate 2018 Call – Project 14	Emissions from off-road mobile equipment	€85,000	Up to 1	n/a
Climate 2018 Call – Project 15	Eco-driving techniques (technical & behavioural) for limiting emissions from heavy duty vehicles (HDVs)	€100,000	Up to 1	DTTAS
OPEN Call				
Climate Call 2018 – OPEN Project 1; Climate Call 2018 – OPEN Project 2; Climate Call 2018 – OPEN Project 3	OPEN Topic		1 or more	

3. Application Process

Making an application online:

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

Guide to the EPA online application system:

The guide to the EPA online application system, 'Quick Guide to making an application' is available for download at <http://www.epa.ie/pubs/reports/research/opencalls/currentcalldocuments/>.

What to include in the application form:

To make the best application possible, it is recommended that you read the '2018 EPA Research Guide for Applicants' before drafting and submitting an application, available at: <http://www.epa.ie/pubs/reports/research/opencalls/currentcalldocuments/>.

To make an application under any of the topic areas:

Applicants must choose the correct Call Topic Reference, as indicated in this Document from the list under the OPEN Calls heading on the homepage of SmartSimple the EPA's Grant Application and Project Management system.

It is the responsibility of the **Applicants** to ensure that proposals are submitted before the **call deadline**, and of the relevant **Grant Authoriser** (i.e. Research Offices / Managing Directors for companies) to ensure that the proposals are authorised before the **organisation approval deadline**.

FAILURE TO MEET EITHER OF THE ABOVE DEADLINES MEANS YOUR PROPOSAL WILL NOT BE CONSIDERED FOR FUNDING

4. Call Content

Theme 1: Carbon Stocks, GHG Emissions, Sinks and Management Options

Research undertaken under this thematic area aims to improve understanding of greenhouse gas emissions and sinks thereby providing better information to support actions to mitigate emissions and enhance sinks. Research in this area contributes to improving inventory and projections methodologies for estimation of emissions and sinks of Greenhouse Gases (GHGs), and verification of these by independent analysis.

The estimation of emissions and sinks of GHGs from agriculture and land-use remains a key uncertainty within Land-Use, Land-Use Change and Forestry (LULUCF). The dynamic of land-use within Ireland is not fully understood, particularly the impact of management of land within agriculture. Analysis is required to assess the potential of this activity on a national scale. The potential for greenhouse gas emissions and removals from peatland due to the impact of human activities, are also a cause of on-going concern.

One topic is included in this 2018 EPA Climate Call under Theme 1: Carbon Stocks, GHG Emissions, Sinks and Management Options:

Climate 2018 Call – Project 1	Greenhouse Gas Emissions Neutrality, Scenarios for balancing national Emissions and Removals
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Project Title: Greenhouse Gas Emissions Neutrality, Scenarios for balancing national Emissions and Removals

Project Type: Medium-Scale Project

*To make an application under this topic area, you must use the following **Call Topic Reference:***

Climate 2018 Call – Project 1

This topic is co-funded with the Department of Agriculture, Food and the Marine.

Background

The National Mitigation Plan (DCCA, 2017) has set out that national policy development will be guided by a long-term vision that includes an approach to carbon neutrality in the agriculture, forest and other land-use sectors and which does not compromise Ireland's capacity for sustainable food production. Ireland is unusual in the EU with a high proportion of emissions from agriculture sector. The challenge of reducing agriculture emissions and the opportunities to enhance sinks are recognised in EU policy, with provision for Member States like Ireland to account for the Land-use, Land-Use Change and Forest sector in 2030 emissions reduction targets under the Effort Sharing Regulation. This creates the incentive to implement policy to maintain and enhance carbon stocks and sinks within the Irish landscape. The international scientific and policy communities adopted the concept of balance in the Paris Agreement, but did not agree on a definition of balance with respect to anthropogenic greenhouse gas emissions and removals. It is important to consolidate what National, European and International policy objectives mean in real terms, and to explore development pathways to achieve these objectives in an Irish context. This will require strategic engagement with stakeholders.

Scope

Innovative research proposals are invited to develop the concept of and approaches to carbon neutrality in an Irish context. In doing so, the research would establish the parameters for a definition of carbon neutrality in the agriculture, forest and other land-use sectors that is consistent with EU and international climate objectives. It is expected that the research would explore the different pathways or approaches to carbon neutrality and how and when it might be achieved in an Irish context. Consideration must be given to the long-term impacts on climate of contemporary emissions and removals of greenhouse gases. The research would advance the analysis of historical emissions and removals of greenhouse gases associated with agriculture and all land-use and management practices in Ireland, and consider potential scenarios for future development of these sectors.

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Following an early Stakeholder engagement, an interim report including definitions and possible approaches to carbon neutrality from an Irish agriculture, forestry and other land-use perspective is to be **submitted by Month 12 of the Research.**

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.



Project Structure and Funding

The EPA considers that proposals for a **36-month** Medium-Scale Project, with an **indicative** budget of **€350,000** (which includes a 5% provision for communication costs³) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. This project will be co-funded by the **Department of Agriculture, Food and the Marine (DAFM)**. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

³ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Theme 2: Ireland's Future Climate, its Impacts, and Adaptation Options

Research under this thematic area aims to provide information on future climate conditions in Ireland and their impacts. This information will create the basis for better informed decision making on adaptation in the years to come and make key economic and policy sectors more resilient to the effects of climate change.

The research focus of this thematic area is to improve climate observations and projections, identify risk and vulnerability and inform adaptation responses. In recent years, research has progressed on climate modelling, climate analysis, development of observation systems and indicators. This information has been used in impact analysis, risk and vulnerability assessment. The outputs from these assessments have been designed to support national, sectoral and local level planning and decision making in the context of climate change such as the National Adaptation Framework (DCCAE, 2018). At a broader scale, it also develops a basis for provision of future Climate Services as identified by Joint Programme Initiative- Climate and Horizon 2020.

Six topics are included in this 2018 EPA Climate Call under Theme 2: Ireland's Future Climate, its Impacts, and Adaptation Options

Climate 2018 Call – Project 2	Sharing of Damage Risk associated with Climate Change
Climate 2018 Call – Project 3	Methodologies for Financing and Costing of Climate Impacts and Future Adaptation Actions
Climate 2018 Call – Project 4	Achieving Resilience in the Marine and Coastal Environment
Climate 2018 Call – Project 5	Next Generation Global and Regional Climate Model Projections for Ireland
Climate 2018 Call – Project 6	Policy Coherence Adaption Studies
Climate 2018 Call – Project 7	Impact of Climate Change on Flora and Fauna Phenology

Project Title: Sharing of Damage Risk associated with Climate Change

Project Type: Desk-Study

*To make an application under this topic area, you must use the following **Call Topic Reference***
Climate 2018 Call – Project 2

Background

Climate change means not only changes in the average climate such as temperature, but also changes in the frequency and intensity of extreme weather and climate events. The National Mitigation Plan (DCCA, 2017) and National Adaptation Framework (NAF) (DCCA, 2018) recognise that extreme events, such as severe flooding, droughts and heat and cold waves, can have important socio-economic consequences. Changes in their frequency and intensity are therefore of interest to policymakers and stakeholders; public, private and individuals. In response, public, private sector and individual's investment choices will likely include adaptation measures designed to reduce impacts, for example local authority investment in flood defences. Sharing the risks and costs associated with adaptation to climate change across all the stakeholders, public, private and individuals is critical to our transition to a low carbon and climate resilient society. There is a need to better understand the mechanisms and options for the sharing of the damage risks associated with climate change between the government, the insurance and financial sectors, business, communities and individuals in an Irish context, including the resources for recovery and implementation of adaptation measures.

Scope

Innovative research proposals are invited to identify the mechanisms and relationships for sharing the damage risk associated with climate change. The research could identify what are the expected market responses to investment in adaptation measures, public acceptance and risk sharing. The research would assess how Irish policy being developed could ensure appropriate sharing of the risks, and what are the best international practices and if they are relevant to the Irish context.

Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **12-month** Desk-Study, with an **indicative** budget of **€85,000** (which includes a 5% provision for communication costs⁴) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

⁴ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Methodologies for Financing and Costing of Climate Impacts and Future Adaptation Actions

Project Type: Desk-Study

*To make an application under this topic area, you must use the following **Call Topic Reference**:*

Climate 2018 Call – Project 3

Background

The [National Adaptation Framework](#) (DCCA, 2018) identifies a need for a greater understanding of the potential costs of climate impacts and also how Ireland intends to finance its future adaptation actions. While direct costs of extreme weather events are regularly quantified using the value of insurance claims associated with these events, yet insured losses generally represent a fraction of total (public and private) asset losses. To inform adaptation policies, investments and broader adaptation strategies, more needs to be known about the potential costs and benefits of adaptation, in terms of future avoided damages and about how specific climate risks translate into costs for society. The effective and efficient implementation of adaptation actions requires further research on potential financing options, costing studies and methodologies to provide key sectors identified in national adaptation policy and society in general with the information to transition to a climate resilient economy and society. The OECD's [Future Flood Losses in Major Coastal Cities](#) developed a methodology that could form the initial basis of this study.

Scope

Innovative research proposals are invited to further our understanding of the potential costs of climate impacts, as well as of existing methodologies to assess future adaptation actions and how Ireland might finance its future adaptation needs. The research could consider a full cross-sectoral costing of the current projected impacts of climate change and future adaptation costs. This could include an assessment of a 'business as usual' approach in comparison to a proactive adaptive approach (win-win), and account for the potential role of the insurance sector. The research could explore methodologies to compare outcomes where adaptation actions have been implemented against counterfactual 'business as usual' (cost of inaction) situations.

Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **12-month** Desk-Study, with an **indicative** budget of **€85,000** (which includes a 5% provision for communication costs⁵) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

⁵ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Achieving Resilience in the Marine and Coastal Environment

Project Type: Medium-Scale Project

*To make an application under this topic area, you must use the following **Call Topic Reference**:*

Climate 2018 Call – Project 4

This topic is co-funded with the Marine Institute.

Background

The impacts of climate change on marine and coastal environments are a key concern for Ireland. The [National Adaptation Framework](#) (NAF) (DCCA, 2018) acknowledges this and identifies the need for research to address knowledge gaps in this area. Ireland's marine and coastal zones face challenges in terms of governance and fragmentation of responsibilities at national level. This reflects the large number of stakeholders and sectoral interests operating in this space often with varied and conflicting interests, for example tourism and cultural interests (archaeological and built heritage), fishing and aquaculture, resource harvesting and extraction and coastal communities. A cross-sectoral vision of climate resilience⁶ in the marine and coastal sector is required, which includes a description of the impacts facing the sector, as well as potential actions that could be taken to increase resilience.

Scope

Innovative research proposals are invited to respond to the need for a vision of climate resilience in the marine and coastal environment. Such vision would describe the impacts, as well as potential actions that could be taken to increase resilience. The research and any recommendations arising from it should fully reflect existing governance arrangements at national and local level in this area and the significant challenges in ensuring a coherent response to climate change within it. The research could consider the impact on sectors identified in the NAF. It will be essential that the research outputs and recommendations have the support from the relevant national bodies, the local authorities, communities and from the Marine Spatial Planning process. Significant levels of consultation and engagement with these groups will be required.

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Outputs from this project **MUST** build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

⁶ For the purposes of the [National Adaptation Framework](#), climate resilience is defined as: 'the capacity of a system, whether physical, social or ecological, to absorb and respond to climate change and by implementing effective adaptation planning and sustainable development (including governance and institutional design) to reduce the negative climate impacts while also taking advantage of any positive outcomes. This will allow the system to either return to its previous state or to adapt to a new state as quickly as possible.'

Project Structure and Funding

The EPA considers that proposals for a **36-month** Medium-Scale Project, with an **indicative** budget of **€250,000** (which includes a 5% provision for communication costs⁷) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. This project will be co-funded by **the Marine Institute**. Please refer to the **2018 Guide for Applicants** for further details. It is expected that **no more than one project** will be funded under this topic

⁷ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).



Project Title: Next Generation Global and Regional Climate Model Projections for Ireland

Project Type: Medium-Scale Project

*To make an application under this topic area, you must use the following **Call Topic Reference:***

Climate 2018 Call – Project 5

This topic is co-funded with the Marine Institute and Met Éireann.

Background

Adaptation planning requires long-term, high-resolution Regional Climate Model (RCM) simulations utilising the most up-to-date global climate models based on Representative Concentration Pathways (RCP) scenarios and an ever-improving high performance computing infrastructure. Such simulations would also represent Ireland's contribution to international climate science and the Intergovernmental Panel on Climate Change (IPCC) reports and the [Coordinated Regional Climate Downscaling Experiment \(CORDEX\) project](#).

Scope

Innovative research proposals are invited to provide policy makers and planners with high-resolution RCM simulations utilising the most up-to-date global and regional climate models based on RCP scenarios to generate robust projections, enabling them to plan for the impacts of climate change. The resulting large database of climate projections for Ireland would greatly enhance climate change research in Ireland, support risk and vulnerability analysis and adaptation actions in Ireland and inform the transition to a climate resilient Ireland, and would provide a framework for maintaining and developing national research capacity and expertise in regional climate modelling and data hosting/sharing.

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Outputs from this project **MUST** build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **36-month** Medium-Scale Project, with an **indicative** budget of **€350,000** (which includes a 5% provision for communication costs⁸) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. This project will be co-funded by **the Marine Institute and Met Éireann**. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

⁸ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Policy Coherence in Adaptation Studies

Project Type: Desk-Study

*To make an application under this topic area, you must use the following **Call Topic Reference**:*

Climate 2018 Call – Project 6

Background

Ireland is committed to making the transition to a low carbon and climate resilient society. Work at sectoral level is currently being undertaken, in line with the National Adaptation Framework (DCCA, 2018), to identify potential adaptation policies and actions in this regard. To ensure a coherent national response to the climate challenge, it will be important to ensure that these policies and actions are aligned. It will also be important that these policies and responses optimise synergies and minimise conflicts and trade-offs with one another where possible. This project will identify areas in national adaptation policy that are of common interest to most adaptation stakeholders, and where a need for further research has been identified in national adaptation policy.

Scope

Innovative research proposals are invited to assist the development of improved adaptation responses at local and national level; and how policy makers can optimise synergies and minimise conflicts when considering policy options for **at least one** of the following:

- a. Selecting and using indicators of climate resilience⁹ as tools for assessing progress on adaptation.
- b. Determining policy options and potential co-benefits of mitigation and adaptation action in Ireland.
- c. Identifying and assessing the cost-effectiveness of green adaptation options (e.g. eco-system based adaptation) for improving resilience of communities, localities and the environment in an Irish or local context.
- d. Analysing the evidence of climate vulnerability and/or resilience in the private sector in Ireland and potential efforts by the private sector to adapt.

Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

⁹ For the purposes of the [National Adaptation Framework](#), climate resilience is defined as: *'the capacity of a system, whether physical, social or ecological, to absorb and respond to climate change and by implementing effective adaptation planning and sustainable development (including governance and institutional design) to reduce the negative climate impacts while also taking advantage of any positive outcomes. This will allow the system to either return to its previous state or to adapt to a new state as quickly as possible.'*

Project Structure and Funding

The EPA considers that proposals for a **12-month** Desk-Study, with an **indicative** budget of **€100,000** (which includes a 5% provision for communication costs¹⁰) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **up to four projects** will be funded under this topic.

¹⁰ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Impact of Climate Change on Flora and Fauna Phenology

Project Type: Medium-Scale Project

*To make an application under this topic area, you must use the following **Call Topic Reference**:*

Climate 2018 Call – Project 7

Background

Climate change will impact the phenology of Irish flora and fauna. These changes, in turn, will impact on several key socio, economic and environmental sectors in different ways which will require appropriate and relevant sectoral responses within the context of the National Adaptation Framework, (DCCAE, 2018). A [phenology network](#) has been established in Ireland as far back as the late 1960's with an expansion in the late 2000's to enable monitoring and assessment of phenological changes in the context of climate change. However, more recently there has been limited analysis of Irish phenology data and further research into the impact of climate change on Ireland's flora and fauna phenology is required. Phenological studies have been very successful in engaging the public on issues of climate change. Plant phenology, ecosystem productivity and the carbon cycle are very closely linked. For instance, carbon sequestration through afforestation and land management is likely to become an important tool to enable Ireland to meet Greenhouse Gas (GHG) Emissions reduction targets. The importance of plant species and provenance (known origins, non-invasive etc.) if being chosen to act as sustainable carbon sinks in a future climate while also providing other ecosystem services, needs to be addressed. Animal phenology can be important indicator of changes in the relationships between plants and animals, interspecies relationships and maintaining robust ecosystems and biodiversity. It is important that there be scientific understanding of the impacts of climate change on phenology to ensure that investment in all the land sectors, including forestry, delivers on the projected levels of carbon sequestration while also delivering as sustainable environment.

Scope

Innovative research proposals are invited to address the impacts of climate change on Ireland's flora and fauna phenology. The research would investigate how this may inform policies for climate change mitigation through afforestation and other land-use. The research could develop recommendations for management to optimise species and provenances, so as to future-proof Irish lands. Finally, the research could consider how we could optimise carbon sequestration while providing sustainable ecosystem services.

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Outputs from this project **MUST** build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **24-month** Medium-Scale Project, with an **indicative** budget of **€200,000** (which includes a 5% provision for communication costs¹¹) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹¹ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Theme 3: Climate Solutions, Transition Management and Opportunities

Research priorities are informed by our vision under this theme of ‘a carbon neutral Ireland by 2050, with a thriving green economy and society’ and the new national policy position on climate change aiming ‘to achieve transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050’ and mandating low carbon roadmaps. Research under this call is planned to build on existing Irish climate research and policy analysis such as National Adaptation Framework (DCCA, 2018) and National Mitigation Plan (DCCA, 2017).

The following research objectives have been identified under this theme;

1. To advance socioeconomic modelling of cross sectoral greenhouse gas emissions to 2050.
2. To promote cross disciplinary analysis of effective options for behavioural change in businesses and households and to identify and assess current and future mitigation options including technologies.
3. To bring together diverse research outputs to form a coherent picture of analysis for Ireland and in so doing, to identify green economy and other opportunities from international trends in policy and economics.

Significant progress has already been achieved in building cross-sectoral modelling capacity. This call aims to engage a broad range of academic disciplines in examining the core questions and sectoral challenges behind transition management and identification of climate solutions and opportunities.

Four topics are included in this 2018 EPA Climate Call under Theme 3: Climate Solutions, Transition Management and Opportunities:

Climate 2018 Call – Project 8	The Role of Public Sector Innovation in Supporting the Low Carbon Climate-Resilient Transition in Ireland
Climate 2018 Call – Project 9	Enabling a just Transition to a Low Carbon, Climate Resilient Ireland
Climate 2018 Call – Project 10	Case Study on Public Engagement and Dialogue on Climate Change
Climate 2018 Call – Project 11	Climate Mitigation Transition Pathway Scenarios

Project Title: The Role of Public Sector Innovation in Supporting the Low Carbon Climate-Resilient Transition in Ireland

Project Type: Medium-Scale Project

*To make an application under this topic area, you must use the following **Call Topic Reference:***

Climate 2018 Call – Project 8

Background

Ireland is committed to making the transition to a low carbon and climate resilient society. While there has been a significant amount of research to date on defining, modelling, identifying pressures, informing policy and developing solutions, there has been less of a focus on transformative institutional innovations. These can have great potential to bring about changes in Irish society in the context of climate change.

Scope

Innovative research proposals are invited to identify appropriate institutional innovations required to support the transition towards a low carbon Ireland. The research could combine lab and field experiments and/or ethnographic research. While public sector innovation is a very broad topic, the research could focus on **one or more** of the following:

- What new institutional arrangements (partnerships, policy labs, multi-stakeholder models) and joint incentives for climate policy and service delivery could support transition?
- What role could co-creation (e.g. Policy Makers and Regulators working with Stakeholders) and co-production of non-regulatory interventions and support services for low-carbon, resilient living (focus on 'mainstream' or marginalised communities) have?
- How can behavioural insights in intervention and service design inform innovation? The focus could be on any aspect of the behavioural or social sciences.
- What are the possibilities for technical and digital innovation in climate policy intervention design?
- Is there a role for innovative practices in climate policy intervention design, for example, experimental methods, futures and foresight methods, design thinking, systems approach?

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Outputs from this project **MUST** build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **24-month** Medium-Scale Project, with an **indicative** budget of **€200,000** (which includes a 5% provision for communication costs¹²) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **up to two projects** will be funded under this topic.

¹² For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Enabling a just Transition to a Low Carbon, Climate Resilient Ireland

Project Type: Medium-Scale Project

*To make an application under this topic area, you must use the following **Call Topic Reference**:*

Climate 2018 Call – Project 9

Background

Ireland is committed to making the transition to a low carbon, climate resilient society. This transition should ensure that social justice informs climate policy and action. As Ireland embarks on developing the pathways to this transition, it is imperative to engage different social groups, communities and citizens, so that the benefits and costs of the transition are shared fairly.

Scope

Research proposals are invited to assess the risks of an ‘unjust’ transition and identify vulnerable communities and groups. The research would identify mitigation and adaptation options to support this transition and make recommendations to inform policy and practice. The recommendations can draw on international best practice guidelines such as the [International Labour Organisation guidelines](#) for a just transition.

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA’s policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **36-month** Medium-Scale Project, with an **indicative** budget of **€250,000** (which includes a 5% provision for communication costs¹³) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹³ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Case Study on Public Engagement and Dialogue on Climate Change

Project Type: Desk Study

*To make an application under this topic area, you must use the following **Call Topic Reference**:*

Climate 2018 Call – Project 10

Background

In 2018, the Citizen’s Assembly considered the issue of climate change. Specifically, they considered the question of how the State can make Ireland a leader in tackling climate change. The Citizen’s Assembly process is a model in openness and transparency and this is reflected in the tone and content of the material now available on the [Assembly’s website](#). This includes the 1,185 submissions from the public, citizen’s groups and representative organisations; a ‘sign-post’ document prepared for the members of the Assembly to assist them with their consideration of the submissions; video recordings of the presentations and proceedings; and the 13 recommendations made by the Assembly following its deliberations. The Citizen’s Assembly is an experimental form of governance, in particular the participative engagement of citizens in decision making - ninety-nine citizens drawn from all walks of life, provided with background and expert information about a complex topic such as climate change and the time, space and structure to consider the issues in a comprehensive and deliberative way. Both the process and the outputs (submissions, discussions, recommendations etc.) are now a rich a fertile ground for research and learning.

Scope

Innovative research proposals are invited to further analyse and assess the submissions to the Citizen’s Assembly and other material available to the Assembly, its process, deliberations and recommendations, to bring forward recommendations that can assist planning for and delivery of public engagement aspects of the National Mitigation Plan and National Adaptation Framework, including the National Climate Dialogue.

Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.

Outputs

Outputs from this project **MUST** build on existing research and other information. Proposals must comply with the EPA’s policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **9-month** Desk-Study, with an **indicative** budget of **€75,000** (which includes a 5% provision for communication costs¹⁴) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹⁴ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Climate Mitigation Transition Pathway Scenarios

Project Type: Desk-Study

To make an application under this topic area, you must use the following Call Topic Reference:

Climate 2018 Call – Project 11

Background

Ireland's transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050 presents significant challenges for policy-makers and for the wider society. Long-term policy planning and implementation must be guided by robustly developed and articulated alternative scenarios for the evolution of key sectors of the economy, including energy, transport and agriculture and other land-use. Existing decarbonisation pathway studies, which have informed policy development to date, have focused on single scenario outcomes in 2050 for Ireland's energy system, addressing carbon dioxide emissions only. It is desirable that future decarbonisation pathway studies address a range of different scenarios and include all relevant greenhouse gas emissions from all key sources, including agriculture, forestry and other land-uses, as well as other non-energy related emissions from sectors covered by the National Inventory. Research in this area would help inform and support the implementation of Government policy on climate mitigation as articulated in the National Mitigation Plan (DCCA, 2017) and in the National Policy Position on Climate Action and Low Carbon Development.

Scope

Innovative research proposals are invited to undertake a comparative analysis of international studies of economy-wide long-term decarbonisation scenarios, identifying strengths and weaknesses of approaches and relevance in Irish context. It is envisaged that the research would describe options for a variety of different decarbonisation scenarios, taking account of the structure of Ireland's economy, Ireland's geographical endowment and expected demographic changes, in the period to 2050; and address implications of evolution of EU climate policy over period to 2050 and Paris Agreement objectives. Such research would allow for the scoping of a future full-scale decarbonisation pathways scenarios study.

Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **12-month** Desk-Study, with an **indicative** budget of **€85,000** (which includes a 5% provision for communication costs¹⁵) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹⁵ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Theme 4: Air Science

The aim of research under this theme is to provide the analysis necessary for the achievement of clean air and co-benefits for climate, health, environment and society, to inform pathways for achievement of highest air quality standards in Ireland, and to advance integrated assessments of air pollution and wider environmental issues.

In particular, the objectives of this theme are:

- To advance analyses of emissions, transport and removal of air pollutants and increase understanding and awareness of the impacts of air pollutants;
- To improve national inventories and projections of emissions over a wide range of pollutants including heavy metals and persistent organic pollutants (POPs);
- To identify and promote emissions abatement options which can enable Ireland to achieve the highest air quality standards.

Four topics are included in this 2018 EPA Climate Call under Theme 4: Air Science:

Climate 2018 Call – Project 12	Impact of Shipping Emissions on Air Quality in Dublin
Climate 2018 Call – Project 13	Assessment of Residential Solid Fuel Use in Ireland and the Promotion of a Transition Away from Solid Fuels
Climate 2018 Call – Project 14	Emissions from Off-Road Mobile Equipment
Climate 2018 Call – Project 15	Eco-driving Techniques (technical & behavioural) for Limiting Emissions from Heavy Duty Vehicles (HDVs)

Project Title: Impact of Shipping Emissions on Air Quality in Dublin

Project Type: Medium-Scale Project

*To make an application under this topic area, you must use the following **Call Topic Reference**:*

Climate 2018 Call – Project 12

Background

Traffic statistics from Dublin Port indicate that sea freight and cruise numbers visiting Dublin are increasing. Evidence from an earlier air quality study in Cork Harbour ([EPA Strive Report no. 85, 2011](#)) showed that shipping and port activities can be a significant source of local air pollution to residential populations. The absence of shore-side electrical power supplies for cruise and other ships in Dublin means that electricity must be generated by the ship's engine using high sulphur liquid fuel while at berth. Anticipated increases in large cruise ships and sea freight traffic could result in impacts on air quality in Dublin. Much of the recent air quality research conducted in Ireland has looked at contributions from solid fuel and there is a gap in knowledge in terms of the contribution from different forms of traffic including maritime and port traffic. Research in this area would inform the implementation of the [Marpol Convention](#) and support the roll out of the National Ambient Air Quality Monitoring Programme 2017-2022, the implementation of the National Clean Air Strategy and the implementation of the National Climate Mitigation Plan.

Scope

Innovative research proposals are invited to undertake a source apportionment of air pollution in the Dublin port area, attributing pollution loads to different sources, for example road traffic, marine traffic, residential solid fuel use, construction, industrial, etc. The research could highlight mitigation options to reduce levels of pollution in line with international best practice.

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Outputs from this project **MUST** build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **24-month** Medium-Scale Project, with an **indicative** budget of **€250,000** (which includes a 5% provision for communication costs¹⁶) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹⁶ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Assessment of Residential Solid Fuel Use in Ireland and the Promotion of a Transition Away from Solid Fuels

Project Type: Medium-Scale Project

To make an application under this topic area, you must use the following Call Topic Reference:

Climate 2018 Call – Project 13

This topic is co-funded with Sustainable Energy Authority of Ireland.

Background

The [EPA 2017 Air Quality Report](#) notes that maintaining our standard of air quality in Ireland is a growing challenge. The European Environment Agency (EEA) has estimated a figure of over 1,500 premature deaths in Ireland in 2014 ([EEA, 2017](#)) directly attributable to air pollution, with the predominant source being fine particulate matter (PM_{2.5}) from the use of residential solid fuels, such as coal, peat and wood for home heating. In addition, solid fuels are the least efficient and most carbon intensive form of home heating and can have a significant ecological footprint in rural Ireland. The [EPA Research Report 212: Climate and Air Policy in Ireland: Synergies and Tensions](#), published in 2017, concludes that the continued promotion of the shift from solid fuels as a method of home heating to cleaner alternatives is the key issue regarding particulate matter levels in Ireland, and the area where there is the greatest scope for improvements in air quality. The Department of Communications, Climate Action and Environment (DCCAE) has announced a nationwide ban on smoky coal and has introduced grant funding for residential renewable heating systems to support this shift. To support the continued transition away from solid fuels, it is important to continue to develop a better understanding of this sector. Evidence of the factors driving residential solid fuel use will be needed to bring about this shift to cleaner, low carbon alternatives. This will be supported by improved data regarding residential solid fuel use (including non-traded fuels) and the technologies used for solid fuel home heating in the new and existing housing stock. It will also require consideration of the factors that could drive the transition to cleaner alternatives for home heating. The National Clean Air Strategy (publication of final version by DCCAE is imminent) has synergies with other national policies, plans and programmes including the National Mitigation Plan and Sustainable Energy Authority of Ireland's (SEAI) [Better Energy Warmer Homes. Scheme](#).

Scope

Innovative research proposals are invited to provide the quantification of the solid fuel residential heating market by fuel type, technology, and location, with a strong focus on resolving quantification of the use of non-traded fuels. The research could encompass the factors that influence choices regarding residential heating and the barriers to transitioning from solid fuels. The research could also consider the alternatives to the use of solid fuel and the policy instruments that could be used to promote the transition away from solid fuels in a way that supports the National Clean Air Strategy, the National Mitigation Plan and wider environmental policy.

Where possible, a **trans-disciplinary and multi-institutional approach** should be considered. **Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.**

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **24-month** Medium-Scale Project, with an **indicative** budget of **€250,000** (which includes a 5% provision for communication costs¹⁷) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. **This project will be co-funded by Sustainable Energy Authority of Ireland.** Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹⁷ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Emissions from Off-Road Vehicles and Other Machinery

Project Type: Desk-Study

*To make an application under this topic area, you must use the following **Call Topic Reference: Call Topic Reference: Climate 2018 Call – Project 14***

Background

Ireland must report emission inventories of air pollutants and greenhouse gases under the [UNECE Convention on Long Range Transboundary Air Pollution](#) (CLRTAP), [National Emissions Ceilings Directive](#) and the UN [Framework Convention on Climate Change](#) (UNFCCC). Currently, the available data does not allow accurate and complete estimation of emissions and energy use by off-road vehicles and other machinery, and this is a knowledge gap in the national emission inventories. To target measures aimed at reducing air pollutant and greenhouse gas emissions it is necessary to be able to accurately estimate where those emissions are arising.

Scope

Innovative research proposals are invited to develop of a methodology to accurately estimate the fuel use, air pollutant and greenhouse gas emissions from off-road vehicles and other machinery in accordance with the guidance for reporting of emissions to the Convention on Long Range Transboundary Air Pollution (CLRTAP), the EU and the UNFCCC. To analyse the types of vehicles and machinery, fuel use and associated emissions in Ireland, provide a projection of future trends, develop an approach to back casting fuel use historically to 1990 and outline the potential policy implications of the research. A workshop, or other effective format, to discuss the findings of the research with the relevant stakeholders should be part of the communications plan.

Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **12-month** Desk-Study, with an **indicative** budget of **€85,000** (which includes a 5% provision for communication costs¹⁸) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹⁸ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Project Title: Eco-driving Techniques (technical & behavioural) in Limiting Emissions from heavy Duty Vehicles (HDVs)

Project Type: Desk-Study

*To make an application under this topic area, you must use the following **Call Topic Reference:***

Climate 2018 Call – Project 15

This topic is co-funded with the Department of Transport, Tourism and Sport.

Background

Continuing economic growth is expected to generate an increase in road transport and freight traffic, with negative implications for CO₂ emissions and ambient air quality. There is a strong relationship between economic growth and emissions relating to the freight sector; freight emissions currently represent 24% of road transport emissions in Ireland and are expected to rise further by 2030 as economic activity increases, particularly within the construction industry. It is imperative that measures to reduce the impact from this sector are implemented if Ireland is to decarbonise the transport sector by 2050 and meet air pollutant emission targets under the revised National Emission Ceilings (NEC) Directive (2016/2284/EU). Ireland is faced with a significant challenge in identifying solutions to address CO₂ and air pollutant emission reductions from the aging freight fleet without impeding social progress or economic recovery. Eco-driving techniques potentially represent a feasible *medium-term* freight emissions mitigation strategy; however, research into their efficacy in emissions reduction and the corresponding impact on local air quality standards, if any, will be required to evaluate the benefits of introducing eco-driving initiatives in Ireland. The National Mitigation Plan (2017) sets out a proposal to consider the introduction of a grant scheme to encourage eco-driving for heavy duty vehicles (including freight) that would reduce greenhouse gas emissions, but the research is also relevant to the objectives of the forthcoming *National Clean Air Strategy* to be published imminently by the Department of Communications, Climate Action and Environment (DCCA). The research will provide policy makers such as the Department of Transport, Tourism and Sport (DTTAS) with the evidence to inform potential policy decisions regarding the introduction of incentive schemes for freight eco-driving initiatives.

Scope

Innovative research proposals are invited to investigate the extent to which eco-driving techniques and strategies could effectively abate CO₂ and other air pollutant exhaust emissions from the freight sector. The investigation could include comparative analysis of typical exhaust emissions from HDVs before and after undertaking eco-driving programmes; as well as examine the long-term efficiencies of different eco-driving techniques, including on-board telemetry only; classroom-based training; on-road training; combined on-board telemetry and eco-driver training, and any other methodologies known to the researchers.

Proposals should demonstrate added-value for money as well as how the outputs from the proposed research will inform policy.

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

The EPA considers that proposals for a **12-month** Desk-Study, with an **indicative** budget of **€100,000** (which includes a 5% provision for communication costs¹⁹) would allow this specific topic to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. **This project will be co-funded by the Department of Transport, Tourism and Sport.** Please refer to the *2018 Guide for Applicants* for further details. It is expected that **no more than one project** will be funded under this topic.

¹⁹ For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

Open Topic

Project Type: OPEN

*To make an application under this topic area, you must use one of the following **Call Topic References**:*

Climate Call 2018 – OPEN Project 1

Climate Call 2018 – OPEN Project 2

Climate Call 2018 – OPEN Project 3

Background

Under each of the 2018 EPA Research Calls, a section of the calls is targeted to an OPEN Call.

The same proposal should NOT be submitted more than once. Applicants must ensure that they select the most relevant Open Topic (i.e. under the 2018 Water, Sustainability or Climate Calls).

Applicants can submit up to three proposals under this Climate Call 2018 Open Topic:

- To make one application under this topic area: you must use Call topic Reference **Climate Call 2018 – OPEN Project 1**;
- To make a second application under this topic area: you must use Call topic Reference **Climate Call 2018 – OPEN Project 2**;
- To make a third application under this topic area: you must use Call topic Reference **Climate Call 2018 – OPEN Project 3**.

Scope

Proposals for innovative research are invited to provide the evidence to support environmental policy in Ireland. It is critical that applicants clearly demonstrate the relevance of their proposed research to:

- EPA Research Strategy 2014-2020; and
- National environmental policy context, e.g. Goals of the Paris Agreement 2015, National Mitigation Plan (DCCA, 2017), National Adaptation Framework (NAF) (DCCA, 2018), National Clean Air Strategy (publication of final version by DCCA is imminent) and State of the Environment Report; and
- Implementation of the UN Sustainable Development Goals.

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. It is strongly recommended that the applicants familiarise themselves with and utilise the tools provided in the EPA Bridging the Gap Resource Kit:

- [EPA Research Report 131](#): BRIDGE: Tools for science-policy communication;
- [EPA Research Report 132](#): Good Practice Guide for science-policy communication; and
- [EPA Research Report 133](#): A Knowledge Transfer Guide for Researchers.

Where appropriate, applicants are being encouraged to consider the use of Earth Observation (e.g. COPERNICUS) to address their selected research question.

All research proposals must **build on findings and recommendations** from past and ongoing research^[1] projects (where relevant), and should consider linkages and synergies with projects to be funded under the other topics included in this current call - **clearly demonstrating that there will be no duplication**.

Outputs

Outputs from this project MUST build on existing research and other information. Proposals must comply with the EPA's policy on [Open Access and Open Data](#). Please refer to [Section 5](#) for more information regarding EPA-funded expected outputs.

Project Structure and Funding

These proposals can be for Desk-Studies, Medium-Scale or Large-Scale Projects (See [Section 2](#) for indicative budget (which includes a 5% provision for communication costs^[2]) and duration). **Applicants must clearly demonstrate the value for money of their proposal and that the amount requested for the project budget as well as the type of project selected (i.e. Desk-Studies, Medium-Scale, or Large-Scale Projects) will allow the proposed research to be addressed appropriately.** Please refer to the *2018 Guide for Applicants* for further details. It is expected that **one or more projects** will be funded in 2018 under this Open topic and a Reserve List will be established for consideration in 2019.

^[1] including EPA-funded, other Irish and EU and international research projects and initiatives/activities

^[2] For example, a €100,000 grant award is made up of €95,000 for project costs, and €5,000 for communication costs (€3,000 of which relates to communication activities and events which take place over the lifetime of the project and €2,000 which relates to post completion dissemination costs).

5. Expected Outputs

For all projects, expected outputs include, but are not limited to:

- **Final Report**, which should provide a clear and detailed account of all the steps and methodologies used during the project and ensure that the objectives, set out above, are met – including recommendations.
- **Synthesis Report** (20-30pp), which provide a clear non-technical summary of the research and of the recommendations.
- **Infographics** including but not limited to one on inception of the project describing the project aims & objectives; and one on completion of the project summarizing the main findings.
- **Policy Briefs and Dissemination 2-pager**, which will be used to disseminate the findings of the research to the key stakeholders.
- **Workshop/Dissemination event(s)** to all stakeholders in the relevant arena (e.g. Policy, monitoring, regulatory, NGOs, media, public, etc.).

The list provided above is indicative and relevant alternatives will be considered. Please consult the *2018 Guide for Applicants*, *2018 Guide for Grantees* and the *EPA Terms and Conditions of award* for the **full list** of interim and final reporting requirements.

A **dedicated website/webpage/Twitter account** should be created and maintained, presenting the project and work carried to-date. It is also expected that several **dissemination outputs**, such as posters, leaflets, newsletters, policy briefs, peer-reviewed publications and presentations, will arise from the projects.

It is essential that applicants clearly demonstrate, in their proposal, 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 our 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.**

It is strongly recommended that the applicants familiarise themselves with and utilise the tools provided in the EPA Bridging the Gap Resource Kit:

- [EPA Research Report 131](#): BRIDGE: Tools for science-policy communication;
- [EPA Research Report 132](#): Good Practice Guide for science-policy communication; and
- [EPA Research Report 133](#): A Knowledge Transfer Guide for Researchers.

6. Indicative Timeframe

23 rd April 2018:	Call Opening
18 th June 2018 (5.00pm):	Deadline for queries relating to the technical contents of this call
27 th June 2018 (5.00pm):	Deadline for submission of applications by applicants
6 th July 2018 (5.00pm):	Organisation Approval Deadline for authorisation by Research Offices
July/September 2018:	Evaluation Process
September/October 2018:	Negotiation ²⁰
November 2018:	Grant Award of Successful Projects
By 31 st March 2019:	Start of Successful Projects

²⁰ The EPA may consider calling the shortlisted applicants for interview at this stage.

7. Further Information

Information on current research projects being supported by the programme is available in the Research Section of the EPA web site (www.epa.ie/researchandeducation/research).

Alternatively, for further information on this call, please contact research@epa.ie. Follow us on Twitter [@EPAResearchNews](https://twitter.com/EPAResearchNews) to keep up-to-date with all our activities

The following additional documents are available from the EPA website:
<http://www.epa.ie/pubs/reports/research/opencalls/currentcalldocuments/>

- 2018 EPA Research Guide for Applicants;
- 2018 EPA Research Guide for Grantees;
- 2018 EPA Research Terms & Conditions for Support of Grant Awards;
- Quick Guide to making an application;
- User Guide for Applicants
- Guidelines to Open Access Research Publications and Data in Horizon 2020;
- Open access to publications and data in Horizon 2020: Frequently Asked Questions (FAQ) – Fact Sheet;
- EPA Research Programme Policy on Maternity, Paternity and Adoptive Leave;
- Communications Plan Template;
- Work Packages Template

All queries MUST be submitted to research@epa.ie

**All queries, other than on the submission process, should be submitted by the
18th June 2018, 5.00pm at the latest.**