



An Roinn Comhshaoil,
Aeráide agus Cumarsáide
Department of the Environment,
Climate and Communications

The Department of Environment, Climate and Communications Research and Innovation Survey — Public Consultation

Fields marked with * are mandatory.



**An Roinn Comhshaoil,
Aeráide agus Cumarsáide**
Department of the Environment,
Climate and Communications

Department of the Environment, Climate and Communications Research and Innovation Strategy — Public Consultation

The Department of the Environment, Climate and Communications has set out a vision of a climate neutral, sustainable, and digitally connected Ireland. This will involve leading ambitious climate and environment action across Government and society together with a fundamental shift in sustainable resource use and a transformation of our energy system while at the same time delivering world-class connectivity and cyber security. The Department has identified research and innovation as important enablers of its goals, and is one of a group of five Government Departments which invest significantly in research and innovation. Impact 2030, the national research and innovation strategy, outlines a strong role for the Department in delivering on Strategic Objectives in Climate, Environment and Sustainability (including Energy), and in Digital Transformation (including cyber security). During 2023, the Department is now developing its inaugural Research and Innovation Strategy.

Please complete this survey by 5:30 pm on Friday 11th August.

Note 1: There are no mandatory consultation questions. Fields can be left blank if you do not wish to answer a particular question.

Note 2: Responses to each of the consultation questions is limited to 2000 characters.

Note 3: Copying and pasting text into the boxes directly from Microsoft Word may cause user experience issues. To avoid this, it is recommended to 'paste as plain text'.

Note 4: You can download a PDF copy of your completed survey after you have submitted it.

* Please enter your name

Text of 5 to 200 characters will be accepted

* Please enter your email address

* Please enter your occupation

If you are responding on behalf of an organisation, please enter the name of that organisation.

200 character(s) maximum

Job Title (if applicable)

What gaps do you see in the Department's current research and innovation activities? How should we address those gaps in the Department Research and Innovation Strategy?

2000 character(s) maximum

The Department's R&I activities are comprehensive and well described in the consultation document across the 5 major activity areas. The development of a Departmental R&I strategy in itself is an important step to help guide and prioritise future actions and this is welcomed by the Marine Institute.

In respect of international collaboration, while it is noted that the Department coordinates Ireland's participation in two of the five Horizon Europe missions (Climate and Neutral and Smart Cities), its greater engagement and participation in the mission, Restore Our Ocean and Waters by 2030, would be extremely valuable as many of the goals of this mission are in line with the Department's own competences and statement of strategy (note this mission addresses both marine and inland waters). The Marine Institute would be happy to engage with the Department on how it might contribute to this mission.

In respect of area 5 (Supporting the National R&I System) the consultation document lists a number of R&I forums in which it participates mainly associated with its own agencies (EPA and SEAI). The Department is also member of the Marine Research Funders' Forum managed by the Marine Institute and is encouraged to utilise this platform as a means of contributing to greater strategic alignment and support for ocean and climate research.

One gap which is evident is that there is no reference to or intention to utilise structured science advisory mechanisms to address critical technical or policy questions. This is perhaps managed through the Department's agencies or alternatively, it may be that the establishment of new national science advisory structures under Impact 2030 will be sufficient to address this need. These mechanisms are important to ensure a more rapid provision of scientific advice where the commissioning of research, while critically important for addressing knowledge gaps, can require multi-annual time-frames before useful results are delivered.

What actions can the Department take to identify future trends in the areas under our remit?

2000 character(s) maximum

The EPA, as one of the Department's agencies, promotes national contributions to the regular peer-reviewed horizon scanning publications led by [REDACTED], which identify emerging and future global trends in the areas of conservation and biodiversity.

There is scope for a national initiative that identifies emerging and future issues for Ireland in the areas linked to the Department's remit, albeit that this should be wholly interdisciplinary and perhaps also extend beyond the Department's remit.

Some specific suggestions from an internal MI consultation include:

Maintain an open feedback online survey offering input on key Areas of DECC R&I Activities, and future recommendations on related opportunities or focus areas for R&I focus and investment.

Collate as standard the views and foresight opinions of retiring Department staff, and/or try to adopt retirees into a mentoring scheme to give future oversight through advisory group participation or otherwise, on key programmes and initiatives on which they are experts.

Research Activity area 1 in the consultation document, Performing & Commissioning R&I to inform policy & practice, doesn't include assessing and prioritisation of strategic research requirements, or monitoring the socioeconomic impact or benefit of DECC wide R&I undertaken or commissioned.

Are there specific thematic areas relevant to the Department's remit which you would like to see more research and innovation activity in? How can this be achieved?

2000 character(s) maximum

Ireland's environment includes all parts of our physical territory and its living and non-living resources. Our maritime area is seven times that of our landmass and provides a range of critical ecosystem goods and services that benefit society and economy, including climate regulation.

While marine projects are supported through the research funding programmes of e.g. EPA, SEAI and GSI, there is an opportunity for DECC to support a much greater level of marine R&I that will be critical for meeting the Departments strategic objectives in the areas of climate, environment and energy and for implementing key national and EU policy objectives e.g. in the areas of Marine Protected Areas (30x30) and Nature Restoration.

The Marine Institute is keen to work with the Department and its agencies to advance key national research & innovation goals in respect of coastal and ocean research.

The Marine Institute has collaborated very effectively with GSI for many years on the INFOMAR seabed mapping programme, a key flagship national programme where Ireland is a world-leader. Leveraging the benefits of INFOMAR datasets and ensuring a longer-term strategy and value-added programme beyond the lifetime for the current programme that concludes in 2026 has clear benefits nationally.

Some specific suggestions from an internal MI consultation include:

There is scope for Principle Investigators & funded programmes (& infrastructure where appropriate) in the specific areas of:

- (a) seabed and benthic habitat mapping to leverage value from INFOMAR data resources for sustainable resource management and habitat restoration
- (b) Offshore Renewable Energy-specific R&I to incorporate marine geophysics (in particular seismic interpretation and processing) and marine geotechnical engineering (foundation & anchoring design / seabed scouring).
- (c) ICT relating to above (machine learning, AI, data visualisation & analytics, engineering simulation modelling etc.).

Have you views on the impact of disruptive technologies such as AI, Quantum and 6G as part of the digital transformation agenda and the implications of these technologies for the Department?

2000 character(s) maximum

Some specific points and suggestions from an internal MI consultation include:

- Machine learning has huge potential in leveraging knowledge from data investments by DECC, as evidenced by recent geomorphology mapping published through analytics of INFOMAR data.
- Continuation and expansion of such R&I activity in a strategic manner to incorporate automated benthic habitat identification and monitoring of airborne and subsea acquired imagery and video data has massive potential economic savings and commercialisation opportunity for Ireland.
- The increasing adoption of 5G, and the future development of 6G, will lead to the connectivity of many more sensing devices in our environment, including our coastal and marine environment, which will be important for managing climate adaption and for ocean renewable energy development.
- Enhanced computational capabilities (cloud, AI and quantum) provide an opportunity for enhanced environmental modelling and management. New developments in the area of environmental Digital Twins (including the EU's Destination Earth programme) are examples of how this may support allow enhanced decision support for climate adaption and ocean renewable development.
- The maritime industry, which includes the activities of our ports and shipping sector, has been slow to adopt digital technologies. Increasing the pace of the transition to digital solutions in the maritime industry has the potential to increase efficiency, reduce energy consumption, lower carbon emissions and improve air quality in the vicinity of our ports.

How can the Department better communicate its research and innovation needs?

2000 character(s) maximum

Some specific suggestions from an internal MI consultation include:

- Engage directly and routinely with the Marine Institute on R&I issues at a programme manager level on to discuss areas of opportunity for collaboration (e.g. co-funding, commissioning, etc.)
- Contribute to the development of the next Marine Research & Innovation Strategy, Ocean Knowledge 2030 (MI has engaged directly with the Department and its agencies on this and will revert for consultation on an advance draft in Q3 2023).
- Participate actively in the Marine Research Funders' Forum
- Engage relevant steering and advisory individuals and/or groups beyond the Department to steer/guide /oversee and share relevant R&I activity and investment.
- Engage directly with the Marine Institute in efforts to communicate the implications of the transition to ORE, from an economic, environmental and regional development perspective, with the objective of improving the knowledge base of industry stakeholders and citizens.

How can the Department work more effectively to source evidence from the national research and innovation community to support its work in policy development, policy implementation, and the uptake of new technologies?

2000 character(s) maximum

Some specific suggestions from an internal MI consultation include:

- Develop, improve, streamline and apply the Enterprise Ireland style Small Business Innovation research funding approach.
- Have wider input to proposal and selection of funding themes and/or topics that are proposed for DECC R&I investment.
- Support or participate in the development of a national marine data hub, building on existing national programmes and activities (e.g. Ireland's Marine Atlas), would provide an evidence base for marine-related policy development.
- Development in the areas of data integration, visualisation and analysis capabilities can help to understand and communicate environmental data and scenarios e.g. Digital Twins of the Ocean.

How can the Department engage more effectively with all stakeholders in the national research and innovation system? If you are responding on behalf of an organisation, please state how the Department could more effectively engage with your organisation.

2000 character(s) maximum

Continue to utilise existing national structures (Impact 2030 plus national sectoral R&I forums), ensuring that internal resources are available to participate actively across the system. This requires substantial time commitment but can be very effective in communicating R&I needs, identifying synergies and leveraging funding and R&I resources.

See also response to Question 5.

Should the Department seek to grow its capacity to carry out in-house research? If yes, how can this be achieved?

2000 character(s) maximum

The Department should ensure that capacity exists to meet the growing need for evidence to support policy decisions, while at the same time taking account of capacity in the system that may exist outside the Department.

Are there examples internationally of Government strategies on research and innovation in climate, communications / digital, circular economy, cyber security, energy or environment that we should examine? If so, can you provide details?

2000 character(s) maximum

Nil Response

Are there any other matters you wish to raise in relation to the development of the research and innovation strategy?

2000 character(s) maximum

Some additional points that could not be included in previous questions owing to the character limit:

- Identify and align policy, academic, and industry R&I requirements & implementation (i.e. leverage synergies), to deliver max impact to Ireland
- Cross sectoral oversight of (i) current R&I impact measurement / results assessments, and (ii) prioritisation approaches for future investment should be considered.
- Build on initiatives such as 'Creating Our Future', ensure the use of citizen-focused language to ensure no-one is left behind in the transition to a digital society.
- The Department is also encouraged to consider contributing to relevant Horizon Europe Partnerships, including the A climate-neutral, sustainable Blue Economy Partnership (www.bluepartnership.eu).

From the Irish Maritime Development Office in relation to Maritime Transport:

In terms of reducing carbon emissions in the maritime transport sector, research is needed into how the transition to alternative fuels can be made without destabilising the Irish shipping industry, on which our economy is so reliant. Alternative fuels require significant investment in our port infrastructure, for storage and manufacturing. The questions that need to be addressed are based in economics, engineering, finance and logistics.

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