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

[redacted]

* Please enter your email address

[redacted]

* Please enter your occupation

[redacted]

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

200 character(s) maximum

Marine Renewables Industry Association

Job Title (if applicable)

[redacted]

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

Ireland has a magnificent wave resource – quantified by OREDP 2 at almost 24GW 'Gross Technical Resource Capacity' - with a further c8GW of tidal capacity potentially available. Wave energy and tidal energy are collectively referred to as Ocean Energy. Lying alongside the energy and enterprise resources in Ocean Energy is the intellectual stockpile and capability represented by the R&D facilities at the Líir National Ocean Test Facility, the MaREI programme, the test facilities at Galway Bay (to reopen this year)/ Belmullet (planned)/ Strangford Lough (active with tidal device testing) and the expertise at Queens University Belfast e.g., the Bryden Centre

Generation of electricity from wave and tidal devices, however, does not necessarily lead to the national grid or export via interconnectors as being the sole 'routes to market', although Ocean Energy has major benefits to offer in the 'grid balancing' field alone. Other, alternate markets, include aquaculture (where two Irish Ocean Energy supply chain firms – Exceedence and TFI Marine are currently active), remote communities (ORPC and GKinetic are both involved in projects in this area), desalination (three out of ten winners of the US Department of Energy's 'Waves to Water' competition used Irish developed wave technology), ocean observation, hydrogen production etc

The principal instrument to support the sector in the past was the SEAI Prototype Development Fund which closed in 2018 and de facto there has been no support for Ocean Energy since apart from some very modest funding towards e.g., access to the LíR facilities and modest support from SEAI's broad RDD fund which generally is not appropriate to Ocean Energy R&D support.

MRIA believe Ireland's ambition should be to become (again?) a leader (but not the exclusive leader – international engagement is vital) in Ocean Energy. We will expound our views in a submission to the Department planned for this Autumn.

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

2000 character(s) maximum

MRIA focuses in this submission on Ocean Energy but, of course, the Association also represents interests in more mature areas of Offshore Renewable Energy (ORE) technology including Bottom Fixed and Floating Offshore Wind which have R&D needs which could be teased out at the R&D Advisory Group suggested below.

The principal ways that industry identifies future trends in ORE include attendance at scientific conferences (e.g., the global OCEANS 2023 conference hosted at University of Limerick in June of this year) and trade conferences (such as the Ocean Energy Europe annual event scheduled for The Hague in October). The other key source, of course, is participation in collaborative international research projects such as those under Horizon Europe where Irish institutions including those in renewable energy have a sterling record. Participation in these fora is open to the Department. However, we also recommend that the Department establish an R&D Technical Advisory Group for Offshore Renewable Energy which would facilitate regular briefings and discussions between Departmental (including agencies) officials and experts, academic researchers and industry experts on scientific and technical issues. A somewhat similar approach was utilized by SEAI in the past in this area and in policy in regard to Ocean Energy which worked quite well.

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

We have outlined the case for support for Ocean Energy in our response to Q1 above. Our wave and tidal resource, our historic leadership position in Ocean Energy R&D, the opportunities to develop a supply chain for global as well as local markets and the role which Ocean Energy could play in balancing the Irish grid (including reducing carbon emissions and reducing the price of electricity) all point to the need for the Department to establish urgently a support regime for the Ocean Energy thematic area.

Floating Offshore Wind is a maturing new ORE technology which is a key to developing Ireland's Atlantic and Celtic Sea resources. It would be important too to establish with the industry – device developers and project developers – their R&D needs to support the evolution of Floating Wind technology to Irish requirements and, in regard to Bottom Fixed Wind, to establish the extent to which local R&D support is needed to enable this technology to be deployed at water depths up to 80m and beyond.

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

In general terms, the disruptive technologies will have a positive impact on the efficiency of ORE. For example, the identification and survey of sites for ORE takes years and depends on inter alia expensive ships which are in increasingly short supply. An Irish company, XOCEAN (employs 200 people and Enterprise Ireland announced a further 300 jobs recently) has developed a remotely operated unmanned vehicle which can do the same job effectively and at a much lower cost. This approach is now being employed for XOCEAN's industry- leading customers throughout the world. Equally, advances in technology should allow better remote diagnosis of maintenance issues on offshore turbines and, in time, it should lead to lower downtime for maintenance and repair. Overall, the disruptive technologies should lead, in the case of the Department's area of responsibility at least, to greater efficiency and lower electricity prices.

The potential for Ireland to develop as a world-class centre of excellence for the development of these technologies will be enhanced if the disruptive technologies sector has access to a clean and secure supply electricity, so its development should be considered in parallel with the harnessing of Ireland's offshore renewable energy resources.

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

2000 character(s) maximum

The Department generally does well at formal communication e.g., formal consultations on policy matters. It scores less well at 'listening' to the advice rendered! For example, the recent concerns over the draft Offshore Renewable Energy Development Plan 2 could have been avoided if the Department had used its Industry Advisory Group to discuss tentative plans in advance of publication.
It is recommended that the Department consider establishing an R&D Policy Advisory Group which could meet regularly to discuss issues, new technologies, industry needs etc. We envisage that this would be a separate group to that suggested at 2. above for an R&D Technical Advisory Group for ORE.

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

The approaches advocated at 2. (technical advice) and 5. (policy advice) above should apply.

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

Generally, the MRIA has satisfactory opportunities to engage with the Department but believes that a R&D Technical Advisory Group for ORE, as advocated at 2., and an R&D Policy Advisory Group as outlined at 6. would expedite R&D policy formation and implementation.

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 core issue in the ORE R&D area is to establish a new and comprehensive system to support industry and appropriate research institutions. We do not believe that direct research work by the Department should be undertaken but are in favour of the Department identifying research topics with the advice of the proposed R&D Technical and Policy Advisory Groups and putting them out to tender for execution by industry and research institutions. This 'top-down' approach must be matched by a 'bottom up' research and development support system as outlined in 1. above.

If the Department does see value in increasing its capacity to carry out in-house research, it should consider offering secondments to industry/academic experts to support these projects.

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

The Department should consider the application of alternative funding mechanisms beyond grants that may be more effective at various stages of the research, demonstration, and commercialisation process for new technologies, such as:

- Pre-commercial accelerators to align research and development activites with market and commercial needs, e.g., the Free Electrons programme which involves eight utilities (including ESB) mentoring energy start-ups and identifying potential pilot projects
- Prize-based competition to address specific challenges, which have been demonstrated as enabling low-risk, easy entry points for many entrepreneurs and innovators with experience from other industries – e. g., the US Dept. of Energy Wave Energy-Powered Desalination Prize Competition https://www.energy.gov /eere/articles/doe-announces-winners-wave-energy-powered-desalination-prize-competition
- Pre-commercial procurement programmes, a competitive process of R&D that supports the design, development and testing of new products or services to meet the specific needs of public bodies, e.g., the EU-funded EuropeWave programme https://www.europewave.eu/

A detailed outline of the merits and potential structure of alternative funding mechanisms specific to the Ocean Energy sector can be found in the SEAI-funded MRIA report Funding the Development of the Ocean Energy Industry in Ireland (2016), available at https://www.mria.ie/publications/

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

2000 character(s) maximum

No

Contact

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