



SEAI National Energy Research, Development & Demonstration (RD&D) Funding Programme

2024 Call Document

Call for Submission of Applications

Key Dates	
Call Open Date	Friday 19 th April 2024
Deadline for Application Submission	12 noon (Irish Standard Time) Thursday 13 th June 2024

It is the responsibility of each applicant to SEAI's National Energy Research Development and Demonstration (RD&D) Funding Programme Call to ensure that they have read and fully understand all Documentation associated with this Call before making a submission, including: this Call Document (pdf); [Privacy Notice](#); Application Form Template (word doc); SEAI RD&D Budget Policy (pdf); and the SEAI RD&D Budget Template (xls).

SEAI is funded by the Government of Ireland through the Department of the Environment, Climate and Communications. SEAI is pleased to announce that the 2024 SEAI National Energy RD&D Call involves co-funding partnerships on particular topics, with the following organisations: the Department of Agriculture, Food and the Marine, the Marine Institute, Geological Survey Ireland, the National Parks and Wildlife Service.

SEAI National Energy RD&D Funding Programme 2024 Call Document

April 2024

Sustainable Energy Authority of Ireland

SEAI is Ireland's national energy authority investing in, and delivering, appropriate, effective and sustainable solutions to help Ireland's transition to a clean energy future. We work with the public, businesses, communities and the Government to achieve this, through expertise, funding, educational programmes, policy advice, research and the development of new technologies.

SEAI is funded by the Government of Ireland through the Department of the Environment, Climate and Communications.

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1. Programme Description and Objectives

SEAI will be central to bringing about a low carbon economy through measures and activities focused on the transition to a smarter and more sustainable energy future. To achieve this mission, SEAI will continue to build an environment for positive change through our analysis, modelling, and support for policymaking. SEAI will catalyse direct action through our design and delivery of grant and incentive programmes and through our capacity-building processes with citizens, communities, and private and public sector organisations.

The overarching objectives of the SEAI National Energy Research Development and Demonstration (RD&D) Funding Programme are as follows:

- Accelerate the development and deployment in the Irish marketplace of competitive energy-related products, processes and systems;
- Support solutions that enable technical and other barriers to energy market uptake to be overcome;
- Grow Ireland's national capacity to access, develop and apply international class energy RD&D;
- Provide guidance and support to policy makers and public bodies through results, outcomes and learning from supported projects.

SEAI's National Energy RD&D Funding Programme supports innovative and targeted actions which assist in delivery of the [Climate Action Plan](#), the [Programme for Government](#), the [2030 Climate and Energy Framework](#), [Project 2040 Ireland](#), [Impact 2030: Ireland's Ireland Research and Innovation Strategy](#), [Project Ireland 2040](#), the [2015 Department of the Environment, Climate and Communications Energy White Paper](#), [Ireland's National Energy & Climate Plan](#) (NECP), and [the Climate Action and Low Carbon Development Bill](#) (2021) such as it pertains to SEAI's remit.

Accelerating transformative research to deliver Ireland's clean energy and climate ambitions will require enhanced collaboration across a wide range of stakeholders and actors. Diverse approaches and engaged research methods will be required. The SEAI National Energy RD&D Funding Programme welcomes research proposals from all research disciplines, as well as collaborative projects involving multiple organisations, and multidisciplinary, transdisciplinary or interdisciplinary approaches, subject to alignment with the overall programme objectives.

The programme provides the opportunity for applicants to submit proposals to either an Open Strand or a Topic Strand (see Annex 1 of this Call Document for further details). The Open Strand provides an opportunity for applicants to pitch ideas for research proposals that are within SEAI's remit and that meet the above outlined programme objectives. The Topic Strand (Annex 1) includes 20 Topic areas which have been identified as priority areas for research. Applications to both the Topic and Open Strand compete with each other for funding.

2. Who Can Avail of the Programme

The SEAI National Energy RD&D Funding Programme is open to public and private sector organisations based in the Republic of Ireland (including Irish subsidiaries of overseas companies) who wish to carry out projects in Ireland. Applications will be accepted from companies, 3rd level educational bodies, public sector bodies and semi-state bodies who are based in the Republic of Ireland and such organisations may apply to the Programme individually or as part of a consortium. Proposals from individuals applying in their own right will not be accepted.

In some circumstances, the programme may support Irish entities/researchers to carry out work undertaken in other jurisdictions, where this is necessary for the completion of the project. Researchers based in other jurisdictions will not be funded by the programme and should partake in proposals in the role of (non-funded) collaborators.

In exceptional cases, funding of work in other jurisdictions (e.g., where it is not possible for a component of work to be carried out in Ireland) may be supported where there is a demonstrable contribution to resolving issues directly relevant to Irish requirements.

3. Definition of Project Roles

Lead Applicant: The Lead Applicant is a budget holder and will hold responsibility and accountability for management of the proposed project. They will be responsible for the technical direction, progress monitoring, budgeting, reporting, dissemination and other management duties associated with the proposed project in-line with SEAI policies. The Lead Applicant is responsible for ensuring that all project partners and stakeholders are kept fully informed on all matters relating to the project. The Lead Applicant will act as the primary contact point for SEAI. Each application may list only one Lead Applicant. The Lead Applicant must hold a contract covering at least the duration of the proposed project or agreement from their employer that their employment will be extended to cover at least the period of the proposed project.

Please note, for 3rd level Educational Bodies, the named Lead Applicant must be a core funded member of academic staff or a member of academic staff with a fixed-term contract and is therefore ineligible to receive salary funding through the SEAI National Energy RD&D Funding Programme. Postdoctoral Researchers or Research Fellows may not be listed as the Lead Applicant (except for Fellowship applications).

Partner Applicant(s): Partner Applicants may form part of the proposed funded project team, along with the Lead Applicant and are responsible for supporting the Lead Applicant to achieve the goals of the proposed project. The role of the Partner Applicant(s) should be well-defined within the application.

Collaborators: Collaborators are organisations who are committed to providing a valuable intellectual, technical or financial contribution to the proposed project. Collaborators are not funded by SEAI in a proposed project.

End-Users: A research end-user is defined as an individual, community, or organisation, that will directly use or directly benefit from the output, outcome or results of the proposed research.

4. Levels of Funding Available – Project Scale/Type

The SEAI National Energy RD&D Funding Programme provides funding under the following categories. Details of the typical duration and typical maximum SEAI funding associated with each scale/type are provided in the table below:

Scale/Type	Typical Duration	Maximum SEAI Funding Available*
Small scale projects	Up to 12 months	Up to €250,000
Medium scale projects	12 to 36 months	Up to €750,000
Large scale projects	36 to 48 months	Up to €1,250,000
Academic fellowships	12 to 36 months	Up to €300,000

****Inclusive of Overheads, please see SEAI RD&D Budget Policy for further details***

Classification of a small, medium, or large-scale project is based on the duration of the proposed project. Please refer to Annex 1 for details of the Project Scale/Type defined for each thematic Topic. Note that for some particular Topics, the maximum funding amount may differ from the figures in the above table – please refer to each Topic description (Annex 1) for details of Topic-related maximum funding amounts available.

Academic Fellowships:

Applications are welcome to the 'Academic Fellowship' category from postdoctoral researchers applying to Topics or the Open Strand, with support from a host 3rd level educational body (see section above). Academic fellows can request up to a maximum of €300k in support over a maximum of three years' duration. It may be possible for PhD students to apply when in the latter PhD stages, however award of a Fellowship is contingent upon PhD completion. Where applicable, applicants should clearly detail expected PhD completion and graduation dates within their application.

The Academic Fellowship category aims to build capacity in the energy sector, providing opportunities for early-stage postdoctoral researchers to lead projects in support of Ireland's clean energy transition. Fellowship applications must be submitted by the individual intending to take up the proposed Fellowship. Fellowship applications will be accepted from 3rd level educational bodies only, based in the Republic of Ireland. A mentor/supervisor should be identified as part of the project team and should be listed as a Partner Applicant. Please note that the mentor/supervisor is not eligible for funding, please see the SEAI RD&D Budget Policy for further details.

Academic Fellowship applications should include an additional Letter of Motivation, uploaded as a supporting document along with the application. The Letter of Motivation should include a statement to demonstrate the Fellowship applicant's interest in and suitability for the proposed Fellowship. This may include an outline of their professional experience, how the Fellowship will enhance their career development and personal motivation for the submitted Fellowship proposal.

Academic fellowship applications should include the following Letters of Support: (1) Lead Applicant (confirming that the information provided in the application is correct to the best of their knowledge and that the proposed projects has not been/is not the subject of grant aid from any other source); (2) Partner Applicant (mentor/supervisor); (3) An authorised staff member in the lead institution (e.g. the Vice President for Research or equivalent); (4) Letter of Motivation – Fellowship.

5. Funding Rate

European Union (EU) state aid rules stipulate what types of research activities are eligible for support, which costs relating to these activities may be covered in part or in full (ranging from 25% up to 100%), and the maximum aid intensity that may be granted for the various activities. Applicants should refer to the SEAI RD&D Budget Policy for additional information in relation to which category their project falls under.

The Categories below represent the maximum level of support that are available within the 2024 SEAI National Energy RD&D Call. Additional information is provided in the SEAI RD&D Budget Policy.

RD&D activities subject to EU State Aid Regulations					
Research Category	Base Level	Type of Company		Effective Collaboration	Maximum Support
		Small Enterprise	Medium Enterprise		
Industrial Research	50% of approved itemised eligible costs	+20%	+10%	+15%	80%
Experimental Development	25% of approved itemised eligible costs	+20%	+10%	+15%	60%
RD&D activities not subject to State Aid Regulations					
Non-economic Public Good Research					100%

6. What Projects are Eligible

Eligible project proposals include projects that address the overarching programme objectives (see Section 1), that are submitted by eligible organisations (see Section 2), with full complete applications (see Checklist in Annex 3), submitted in advance the call deadline of **12 noon (Irish Standard Time) Thursday 13th June 2024**. The 2024 SEAI National Energy RD&D Funding Programme provides the opportunity for applicants to submit proposals to either a topic strand or an open strand.

Open Strand - The open strand of the call provides an opportunity for applicants to propose projects within SEAI's remit which directly address the aims and objectives of the SEAI National Energy RD&D Funding Programme Call.

Topic Strand - The topic strand of the call provides an opportunity for applicants to submit proposals that address the requirements of the topics outlined in Annex 1. These topics have been developed by SEAI and relevant stakeholder organisations. In some cases, successful proposals to the topic strand of the call will be partially funded by co-funding partners. The table below provides an overview of the topics which form part of this call. Please refer to Annex 1 of this document for full topic details.

Each topic description in Annex 1 outlines suggested project objectives and expected outputs. Please note that proposals submitted to these topics are not necessarily expected to address every objective and output listed in all cases. Applicants should clearly outline which of the suggested objectives and expected outputs they intend to address/deliver as part of their proposed project and may propose additional objectives/outputs. All proposals should build upon existing research and information available.

No.	Title
Small Scale Topics	
1	Review of Electric Vehicle charging technologies, beyond the traditional methods.
2	Investigating the feasibility of using grid-enhancing technologies in the Irish electricity grid.
3	Measuring the societal impacts of sustainable energy communities
4	Demonstration of Grid Forming Inverters
Small / Medium Scale	
5	Solutions for Decarbonising Industrial Heat
6	Unlocking the potential of efficient and renewable district heating-cooling systems
7	Insights into attitudes on use of Bioenergy and related installations (co-funded by the Dept of Agriculture, Food and the Marine)
8	Economic Viability and Market Development of Anaerobic Digestion derived products (co-funded by the Dept of Agriculture, Food and the Marine)
9	Geological/subsurface storage for energy decarbonisation (co-funded by the Geological Survey Ireland)
10	Addressing sustainable supply and demand for critical raw materials in the renewable energy sector (co-funded by the Geological Survey Ireland)

	Medium Scale Topics
11	Electrifying farm machinery and transport
12	Demonstration of Local Flexibility
13	Optimising Grid Connections for charging infrastructure
14	Energy Consumption and Thermal Comfort in Traditional Buildings
15	Innovative solutions to migration of components from fixed to floating offshore wind
	Medium / Large Scale Topics
16	Measuring the impact of behaviour change interventions on changing energy and transport related behaviours in Ireland
17	Investigating the public's understanding, acceptance and engagement with new energy technologies, services and infrastructure
	Large Scale Topics
18	Wind Farm Monitoring and Performance Optimisation
19	Underwater noise monitoring baseline assessment for the roll-out of offshore renewable energy (co-funded by the Marine Institute)
	Academic fellowship Topics
20	Bat migration and offshore wind energy (co-funded by the National Parks and Wildlife Service)

Co-funding Partner Profiles

SEAI is pleased to announce that the 2024 SEAI National Energy RD&D Funding Programme Call involves co-funding partnerships with the organisations outlined below:

<p>Department of Agriculture, Food and the Marine (DAFM)</p> <p>DAFM's mission is to serve the government and people of Ireland by leading, developing and regulating the agri-food sector, protecting public health and optimising social, economic and environmental benefits.</p> <p>Strategic Goals:</p> <ul style="list-style-type: none"> • to promote and safeguard public, animal and plant health and animal welfare for the benefit of consumers producers and wider society • provide income and market supports to underpin the rural economy and the environment • provide the optimum policy framework for the sustainable development of the agri-food sector • deliver a sustainable, growth driven sector focused on competitiveness and innovation driven by a skilled workforce delivering value added products in line with market demands • maintain and develop strategic, operational, regulatory and technical capacity to achieve operational excellence <p>DAFM operates '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.</p>	 <p>An Roinn Talmhaíochta, Bia agus Mara Department of Agriculture, Food and the Marine</p>
<p>Geological Survey Ireland (GSI)</p> <p>Founded in 1845, Geological Survey Ireland is Ireland's public earth science knowledge centre and is a division of the Department of the Environment, Climate and Communications. GSI is committed to providing free, open and accurate data and maps on Ireland's subsurface to landowners, the public, industry, and all other stakeholders.</p> <p>GSI also acts as a project partner in leading international projects providing expertise, data and developing models and viewers in a diverse array of topics including geological mapping, geothermal energy, groundwater, seabed mapping, natural hazards, and public health risks.</p>	 <p>Geological Survey Suirbhéireacht Gheolaíochta Ireland Éireann</p>
<p>The Marine Institute (MI)</p> <p>The Marine Institute is the national agency responsible for marine research, technology, development and innovation (RTDI). The Marine Institute seeks to assess and realise the economic potential of Ireland's 220-million-acre marine resource; promote the sustainable development of marine industry through strategic funding programmes and scientific services; and safeguard the marine environment through research and environmental monitoring. The Institute works in conjunction with the Department of Agriculture, Food and Marine (DAFM) and a</p>	 <p><i>Foras na Mara</i> Marine Institute</p>

<p>network of other Government Departments, semi-state agencies, national and international marine partners.</p>	
<p>The National Parks and Wildlife Service (NPWS)</p> <p>The NPWS is the Executive Agency with primary responsibility for nature conservation, wildlife protection and the presentation and preservation of our National Parks and Nature Reserves. Across six directorates it current employs approximately 450 staff members.</p> <p>The Programme for Government committed to an independent, multi-phase Review of NPWS and this was completed in Spring 2022. It culminated in a Strategic Action Plan with fifteen key recommendations to renew the NPWS, establish it as an Executive Agency within a Government Department, and make it a more resilient, more effective organisation, fit to meet the challenges of the twenty first century. This Action Plan was accepted by Government and is now being implemented.</p> <p>The Scientific Advice and Research (SAR) Directorate of the NPWS provides scientific advice to the Minister to underpin the interpretation and implementation of legislation and policies in relation to biodiversity and nature. As part of this, the Directorate undertakes scientific surveys to provide quality baseline and monitoring data to underpin the Department's strategic direction, policy, designations, and the protection and management of habitats and species. The Directorate sets conservation objectives for designated sites, and provides scientific advice to the wider NPWS, and to governmental, sectoral and non-governmental bodies, on matters relating to nature conservation.</p>	

SEAI may enter further co-funding arrangements with other funders, who may have an interest in certain Call topics. If deemed appropriate, SEAI may approach other potential funders, at any stage during the Call process, up to and including during the contract negotiation stage.

7. Submitting your application

Applications to the 2024 SEAI National Energy RD&D Funding Programme should be made through SEAI's online application platform, PEP (Project Evaluation Platform).

The PEP Application Portal is available at the following link: <https://pepportal.seai.ie/>

Further detailed PEP application guidance can be found within the PEP Application Guidelines Document available to download at:

<https://www.seai.ie/grants/research-funding/research-development-and-demonstration-fund/>

Following the Call deadline all applicants will receive the following email correspondence with respect to their application:

- Confirmation that their application was received before the Call deadline.
- Confirmation that their application has passed/not passed eligibility assessment.
- Confirmation of technical evaluation outcome and feedback.

Please refer to the [RDD webpage](#) for indicative timelines or contact energyresearch@seai.ie.

8. Evaluation process and criteria

Only fully complete applications received prior to the application deadline will be considered for evaluation. The evaluation consists of a two-stage process:

Stage 1 – Eligibility Assessment: Applications will be assessed to ensure administrative compliance with programme requirements and objectives. Please remember that **incomplete applications will not proceed to Stage 2**. Prior to submitting your application, please ensure to refer to the Application Checklist outlined in Annex 3 to ensure all required application details and supporting documentation are included and submitted in advance of the call deadline.

Stage 2 – Technical Evaluation: Applications passing the eligibility assessment will be technically evaluated under the evaluation criteria outlined below.

Following the above evaluation process, highly evaluated proposals will be recommended for funding, subject to budget availability. A Reserve List of highly evaluated proposals may also be formed. Reserve List projects may be funded at a later stage, should sufficient additional budget become available.

Projects selected for funding will be issued with a Grant Agreement which will detail the approved itemised eligible costs. SEAI may require applicants to clarify aspects of their proposal prior to issuing a Grant Agreement.

The evaluation criteria under which applications will be assessed, and the proportion of marks awarded to each criterion are provided below:

Excellence and Innovation (35%)

- The validity and reliability of the prospective technology/concept and approach – including transdisciplinary considerations, where relevant.

- Quality of the innovation and ambition related to state of the art in Ireland and beyond.
- Familiarity with relevant RD&D activities/knowledge of the area.
- Track record of participation or potential to perform in previous/future RD&D activities.
- Qualifications of the key personnel/organisations.

Relevance and Impact (35%)

- Relevance to the needs of the Irish energy sector, with particular reference to national policy including: Ireland's Climate Action Plans, Programme for Government, Ireland's National Energy & Climate Plan (NECP), and the Climate Action and Low Carbon Development Bill (2021) such as it pertains to SEAI's remit.
- Stimulates & accelerates the development & deployment of energy related products, processes & systems in the Irish marketplace and/or facilitates guidance to policy makers on practical, regulatory, technological and/or market opportunities.
- Builds and/or maintains national capacity, capability and critical mass to carry out internationally leading RD&D activities underpinning the energy sector.
- Capacity of the project to strengthen the competitiveness and development of their relevant industrial sectors.
- Relevance of enterprise, scientific, policy and social impacts of project outputs.
- Strength of communication/dissemination and exploitation plans (including management of data).
- Replicability of the project outputs/case study across Ireland and at an international level.
- Evidence of the added value of transdisciplinary collaboration and/or the active engagement and involvement of key relevant stakeholders, including, for example, end-users and industry.

Quality and Efficiency of Implementation (including value for money) (30%)

(i) Project Delivery & Management (20%)

- Coherence and effectiveness of the project work plan.
- Quality of project framework, clarity of deliverables and milestones with a credible breakdown of activities and associated budget allocation.
- Credibility of timing-related project management factors, including project scheduling, dependency identification/monitoring and calculation of critical paths with a particular focus on realistic timelines, availability of data, concession, permits and regulatory approvals (where relevant). Data acquisition requirements should be identified in advance and appropriate agreements should be in place with third parties.
- Strength of the management and oversight arrangements including risk management and gender equality.

(ii) Budget & Value for Money (10%)

- Economic (spending less) – are the appropriate quantity and quality of resources/costs requested at the lowest cost possible to support project delivery?
- Efficiency (spending well) – is the requested budget maximising value for money and delivering project objectives as efficiently as possible.
- Effectiveness (spending wisely) – are the requested resources maximising the potential impact of the project outputs?
- Is the overall budget appropriate to a project of this size?

Note:

For applications to be considered eligible for funding, proposals must achieve a minimum average score of 60% in each evaluation criteria.

When differentiating between projects that are scored equally, the availability of sufficient budget will be the first criterion considered. The second criterion considered will be the close alignment of the proposed research with national policy ambitions and targets.

An intensifier may be applied to applications to co-funded topics. An intensifier may also be applied to Fellowship applications, to further support leadership and career development opportunities, providing enhanced capacity to the energy sector.

9. Award Management

All SEAI RD&D grantees are required to report on outputs and impacts arising from their research at regular reporting periods throughout their research projects. Grantees are required to submit Annual Technical Report(s) as well as a Final Technical Report upon completion of their project. Annual and Final Technical Reports are used to monitor the progress of each project against the overall objectives of the SEAI National Energy RDD Funding Programme and associated Key Performance Indicators (KPIs). Each of the SEAI RDD Programme objectives is discussed below:

Objective: Accelerate the development and deployment in the Irish marketplace of competitive energy-related products, processes and systems;

Expected outcomes: The capacity of funded research to accelerate the development and deployment of new competitive energy-related products, processes and systems, will be assessed through the reporting of key outcomes including: the number of spin-off companies created or planned as a direct result of the project; new technology license agreements; EI commercialisation awards; along with the number of patent applications developed or submitted. Awardees are asked to update on these outcomes at annual and final reporting stage.

Objective: Support solutions that enable technical and other barriers to energy market uptake to be overcome;

Expected outcomes: Projects supported under the SEAI National Energy RDD Funding Programme may enable technical or other barriers to energy market uptake to be overcome, such as social, environmental, political or economic factors. This capacity will be assessed through the reporting of key project achievements at annual and final reporting stage, clearly highlighting how the project has furthered current state-of-the-art, current knowledge or current practice to overcome identified barriers, along with highlighting the degree of novelty, innovation and collaboration demonstrated.

Objective: Grow Ireland's national capacity to access, develop and apply international class energy RD&D;

Expected outcomes: National research capacity will be assessed through the reporting of the number of team members involved in each project, as well as the associated level of training received and research outputs of each team member. SEAI's expectation is that SEAI RDD awards will provide support necessary for awardees to build capacity, expertise, networks and relationships to a point where they can compete successfully for funding in Europe and to engage with international networks and collaborations including the International Energy Agency Technology Collaboration Programmes (TCPs). Equality, Diversity and inclusion considerations, including any gender dimensions within research projects, will form an important part of the reporting process. In their final report, awardees are asked to report on funding opportunities that they have pursued and won.

Objective: Provide guidance and support to policy makers and public bodies through results, outcomes and learning from supported projects.

Expected outcomes: Dissemination of research outcomes and results will be assessed through the reporting of all project-related dissemination activities at annual and final reporting stage. This includes reporting on all scientific publications as well as all other dissemination activities including publications, conferences, workshops, websites/applications, press releases etc. Engagement with policy makers and civil society will also be assessed. Awardees are asked to respond to an engagement questionnaire, to provide details of the levels of engagement throughout the research project with a range of stakeholders, including government, public bodies or policy makers, citizens or organised societal groups, and societal actors beyond the research and industrial community. Awardees are also asked to clearly outline if the project outputs could be used by policy makers, and if so, at what level, for example at local, national, European or international level.

Project Reviews:

All SEAI National Energy RDD Funding Programme Awards of more than three years' duration will be subject to a progress review in the form of an online or in-person site visit. Project reviews can be conducted internally (exclusively by SEAI staff) or can be conducted with participation of national or international expert reviewers and/or representatives from co-funding partner organisations. These project reviews are typically held at the midway point on the award. The outcome of any type of review may be taken into consideration in the assessment of future applications made to SEAI. As further clarified within the SEAI RD&D Grant Agreement Terms and Conditions, SEAI reserves the right to terminate a grant if, in the reasonable opinion of SEAI, progress is not deemed to be satisfactory. Further clarity on this is outlined in the Grant Agreement.

Annex 1: Topic Strand

Topic 1	Review of Electric Vehicle charging technologies, beyond the traditional methods.
Indicative Duration	Up to 1 year
Project Scale	Small Scale
Indicative Funding	Up to €250k

Background:

The [Climate Action Plan 2024](#) aims to reduce total vehicle kilometres travelled by 20% and achieve a 50% abatement in transport emissions by 2030. In addition to modal shift and sustainable transport targets, the CAP outlines a target of 845k passenger electric vehicles (EVs) and 95k electric light goods vehicles (LGVs) by 2030. To support this, an extensive charging infrastructure will be required along with behavioural changes around its use. When compared to traditional filling stations, a change in mindset and behaviour is required to ensure an EV is always adequately charged. New and emerging charging technologies may mitigate the required behavioural changes such as wireless charging negating the need to plug in. This may help accelerate the uptake of electric vehicles and the move away from fossil fuels. A review of EV charging technologies is required to understand the maturity of alternative charging methods such as induction, conduction, electrified roads, bi-directional charging etc., in relation to standardisation and Original Equipment Manufacturer (OEM) adoption. Additionally, these technologies may be best suited to specific use cases. These cases need to be explored and the advantages or disadvantages of this technology outlined for those cases.

Topic Objective:

Project(s) proposed under this topic could consider addressing the following objectives:

An in-depth assessment of novel EV charging technology and its barriers to mass adoption, with a particular view towards on-street residential charging solutions. Such as:

- kerbside charging,
- battery charge delivery services,
- Bi-directional charging
- wireless charging

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 2	Investigating the feasibility of using grid-enhancing technologies in the Irish electricity grid.
Indicative Duration	Up to 1 year
Project Scale	Small Scale
Indicative Funding	Up to € 250k;

Background:

Grid-enhancing technologies (GETs) include dynamic line ratings that use sensors to monitor transmission lines as well as power-flow control devices and analytical tools. These tools and devices can be used to streamline planning and increase the capacity of regional and national grids. [Case studies](#) have shown that installing GETs, instead of rebuilding or reconductoring, has saved significant capital expenditure costs as well as annual congestion costs. Capacity ratings have also seen increases.

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives:

- Conduct a review of GETs implemented internationally and their success rates.
- Investigate the practicality and cost effectiveness of using GETs in Ireland to provide a shorter-term solution to increase grid capacity.
- Identify any financial incentives for rates of return on grid-enhancing technologies and capital projects.

Potential Outputs:

- Recommendations for potential pilot projects and regulatory reforms (if required).

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 3	Measuring the societal impacts of sustainable energy communities
Indicative Duration	Up to 1 year
Project Scale	Small Scale
Indicative Funding	Up to €250k

Background:

It is important to recognise the role of local actors, citizens in particular, in the energy transition process. Energy communities are one of the key elements for achieving the EU's energy transition: by 2050. Communities can take ownership of the energy transition through the concept of energy communities.

[The Climate Action Plan 2024](#) (BE/24/4) sets out the action to increase the number of sustainable energy communities and the [Climate Action Plan 2021](#) (Action 212) calls out the action to utilise sustainable energy communities to drive community activation.

This topic aims to gather a better understanding of the possible impacts of energy communities on the energy system, the local economy, their communities, and the environment. The EU Commission provides some [impact indicators](#) there is less information available on the social and soft impacts of engaging in an energy community. These may include energy literacy, health impacts, social wellbeing, community empowerment etc. Outputs from this project could inform wider local authority programmes and local development networks.

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives/outputs:

- Literature review on EU (or International) best practice:
- Identify the societal indicators, methodologies or tools for measurement.
- Understand national awareness of and engagement levels with sustainable energy communities.

Potential Outputs:

- Report on international best practices.
- Framework or strategy with recommendations on methodologies for measuring impact and defining KPIs.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 4	Demonstration of Grid Forming Inverters
Indicative Duration	Up to 1 year
Project Scale	Small scale
Indicative Funding	Up to €250,000

Project Background:

In the [Climate Action Plan 2024](#), the Government has an ambitious 80% renewable electricity target for 2030 and targets for significant electrification of both the heat and transport sectors. Implementing these targets require inverters to integration (e.g., wind turbines, PVs, and BSS). Consequently, conventional synchronous generators, such as thermal units, are being displaced by inverter-based renewable generation (IBRG).

A grid forming inverter (GFMI) is a promising solution for the challenges introduced to the electrical grid by the high penetration of the IBRG, where they create and sustain the grid frequency and voltage. An Ireland-specific, holistic study and demonstration of GFMI controls retrofitted to the existing doubly fed induction generator (DFIG) wind turbine may therefore be merited.

The project(s) proposed under this topic could consider addressing the following using data/insights collected on operational wind power plants:

- Evaluation of the operational issues associated with the connection of GFMI to the low voltage grid; such as voltage control and load flow modification.
- Interference of internal turbine modifications (or software upgrades, etc.), with existing operation & maintenance (O&M) contracts.
- Practical challenges of operating a GFMI-based RES.
- Field demonstration of grid-forming (GFM) controllers and associated practices to yield qualify renewable energy sources (RES) interface for system services. Assessment of the possibility and demonstration of an isolated industrial site fed with GFM controlled wind turbine(s) to demonstrate islanded operation enabled by GFM controls.

Project Objectives & Expected Outputs:

The output should include a comprehensive system response study on the GFMI retrofitted wind turbine(s). The demonstration should qualify the upgraded wind power plant for supporting the grid during unplanned events/faults particularly in respect of:

- limiting the rate of change of system frequency following the loss of a generating unit or load.
- injecting instantaneous active power into the system at the time of a fault as a result of the corresponding phase change.
- injecting instantaneous Fast Fault Current into the system at the time of a fault as a result of the corresponding voltage change.
- Contributing to damping power.
- Limiting vector shift.
- Contributing to synchronising torque.
- Contributing to the maintenance of an improved voltage profile during a fault.

The demonstration should be carried out at a currently grid connected wind power plant. The targeted wind power plant should be currently grid connected and in operation and have all necessary authorisations to operate as a grid connected power plant. Agreement and cooperation of the wind power plant owner, the operation and maintenance provider and, where applicable, the warranty provider must be evident.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 5	Solutions for Decarbonising Industrial Heat
Indicative Duration	Up to 1 year(small)/ Up to 3 years(medium)
Project Scale	Small or Medium
Indicative Funding	Up to €250k (small)/up to €750k (medium)

Background:

Decarbonising industrial heat is vital in achieving industry's [sectoral emission ceiling](#) and for Ireland to achieve its [Net Zero objective](#). The combustion of fossil fuels currently generates the vast majority of industrial heat and associated carbon dioxide (CO₂) emissions used directly or indirectly to drive numerous processes. A significant proportion (4.6 Mt CO₂) of emissions in industry arise from fossil fuel combustion for heat requirements during manufacturing combustion at high-grade, medium-grade and medium/low-grades of heat. For example, manufacturing combustion and industrial processes account for approximately 11.5% of the state's emissions as measured by the [EPA Inventory of Emissions 2022](#). The [National Heat Study](#) found uptake of renewable heating in the industrial sector is lower than the services sector with non-financial factors called out as particular barriers facing organisations, such as lack of awareness, split incentives between landlords and tenants, the low proportion of energy charges in total business operating costs and centralised corporate decision-making on energy investments. This study also outlines over 75% of industrial processes can be decarbonised through technology changes and fuel switching.

However, for some industrial archetypes the unit costs of low carbon and renewable fuels will likely be higher than the fossil fuel options they currently use out to 2050. To achieve cost parity, research is needed across three key areas: low-carbon fuels, low-carbon heat sources and the electrification of heat. This will require new business models such as interacting more dynamically with energy markets that could allow consumption of more renewable energy during lower price periods.

Research which facilitates the uptake of renewable heating technologies in the industrial sector across archetypes could be on one or more of the following technologies:

- Low carbon heat (Solar thermal, geothermal)
- Electrification of heat via heat Pump technologies (e.g. industrial scale utilising ambient or waste heat sources)
- Biomass (Solid or gaseous) or waste technologies
- Direct Electricity
- Renewable Fuels of Non-Biological Origin (RFNBO) including Hydrogen
- Renewable fuels in conjunction with Carbon Capture and Storage (CCS)

Furthermore, research is needed which address crosscutting issues, such as transfer, materials, storage, upscaling of lab proven technologies.

Objectives:

Project(s) proposed under this topic could consider addressing a selection of the following objectives:

- Technical, cost-benefit analysis (CBA) and/or financial analysis
- Case studies illustrating uptake of innovative renewable efficient heating solutions.
- Identification of barriers
- Archetype specific guidance
- National or localised Modelling
- Development of an evaluation tool

- Collaboration with industry and/or demonstration of a technology
- Proof of concept within the Irish landscapes
- Raising awareness of renewable heating in the industrial settings through engagement, collaboration, or development of guidance.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 6	Unlocking the potential of efficient and renewable district heating and cooling systems
Indicative Duration	Up to 1 year (small) or Up to 3 years (medium)
Project Scale	Small or Medium
Indicative Funding	Up to €250k (small)/ Up to €750k (medium)

Background:

In a district heating network, heat is generated at centralised locations, and distributed via insulated pipes to each building connected to the network. As an infrastructure technology, it is extremely flexible, enabling other technologies such as combined heat and power, waste heat recovery and renewable thermal sources to realise their potential. Ireland has one of the lowest shares of district heating in Europe, providing less than 1% of Ireland's heat market.

The [Climate Action Plan 2023](#) and the [National Heat Study](#) found low-carbon heat sources, supplied via district heating networks, could meet up to 50% of building heat demand.

The District Heating Steering Group [Report](#) (DHSG) identified that further research is needed across the spectrum of technology, implementation, planning, finance and business models. Certain actions as identified in the DHSG Report are underway and do not need to be addressed (e.g. technology roadmap, DH roadmap to 2030). District Heating is a nascent heat distribution technology in Ireland, and as such, country specific detailed research is needed across a number of key areas. Applicants are encouraged to make reference to the Steering Group Report, Climate Action Plan (CAP) and relevant European Directives as well as current international research and invited to propose a unique research solution to further develop the sector. Please consider the potential objectives/ outputs below as suggestions. A multi/interdisciplinary research approach is encouraged.

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives/outputs:

- Evidence-based guidance to support strategic spatial planning for the design and location of residential and commercial areas to enable the future development of district heating.
- Granular analysis of heat source(s) for potential district heating systems in Ireland (e.g. ambient such as geothermal, waste heat or biomass).
- Evaluation tool for heat sources for district heating.
- Applicability of innovative district heating design in meeting Ireland CAP targets such as 5th generation district heating.
- Review funding, financing, business and insurance models for district heat and develop best practice guidance.
- Optimal practices for retrofitting existing buildings with new district heating systems in an Irish context. This could look at building side or district system side analysis and guidance.
- Integration of thermal energy flexibility.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 7	Insights into attitudes on the use of Bioenergy and related installations
Indicative Duration	Up to 1 year (small) or Up to 3 years (medium)
Project Scale	Small Scale /Medium Scale
Indicative Funding	Up to €250k (small)/ Up to €750k (medium) Co-funded by DAFM
Co-funding	The Department of Agriculture, Food and the Marine

Background:

The [Climate Action Plan 2023](#) sets a target of 5.7 TWh of biomethane production which may require as many as 200 Anaerobic Digestion (AD) plants to be built by 2030 and the [National Heat Study](#) found a key role for bioenergy in reaching net-zero by 2050, with all available domestic solid and gaseous biomass fuels used in all scenarios.

Anaerobic Digestion, biorefinery facilities and other bioenergy installations can be significant constructions, with impacts on the environment, biospheres, and the local communities in the area which they are located.

Topic Objective and Outputs:

This topic should aim to better understand the ways in which community engagement and knowledge and understanding at local authority level concerning bioenergy and biorefinery can be improved to better facilitate a transition to decarbonisation of energy systems in Ireland.

Project(s) proposed under this topic could consider addressing the following objectives:

- Review of international and national research and foresight.
- Spatial analysis of bioenergy and biorefinery current and potential use and/or installations.
- National or localised surveys on bioenergy use and/or installations across a range of technologies including biorefinery.
- Implement a systematic approach to ascertain people's perceptions about bioenergy and deployment of bioenergy technologies.
- Identify the key concerns of the public, planners and local authorities and actions to deal with these concerns.
- Develop recommendations for local and national policymakers and how to integrate such recommendations into policy.
- Collaboration with industry and NGO partners.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 8	Economic Viability and Market Development of Anaerobic Digestion derived products
Indicative Duration	Up to 1year(small) or Up to 3 years (medium)
Project Scale	Small Scale /Medium Scale
Indicative Funding	Up to €250k (small)/ Up to €750k (medium)
Co-funding	The Department of Agriculture, Food and the Marine

Background

The [Climate Action Plan 2024](#) sets a target of 5.7 TWh of biomethane production which may require as many as 200 Anaerobic Digestion (AD) plants to be built by 2030. Large quantities of digestate and biogenic CO₂ will be produced as a byproduct. Digestate can be used as a fertiliser or in other applications in the wider bioeconomy and deliver revenues for AD plants once markets are developed. CAP Action AG/24/21 aims to identify and address knowledge gaps around feedstocks, the role of biobased products including digestate and the sequestration potential regarding biomethane production. Digestate presents management and logistics challenges, and the value chain must be compliant with the Nitrates and Animal Byproduct regulations. Maximising the utilisation of nutrients through dewatering and other post-treatment solutions are gaining popularity as a means of valorising digestate. Demonstrating the benefits of both whole digestate and its liquid and solid fractions in the tillage and grassland sectors to meet crop needs will help to foster awareness and disseminate best practice for digestate use in the agricultural sector where fertiliser prices have increased in recent years.

Biogenic CO₂ may be recovered from the biogas upgrading process and liquefied for numerous industrial uses or for long term storage, potentially delivering negative emissions from the AD process.

Responses to this topic should facilitate protocols that: 1. Best utilise digestate in terms of fertiliser or other uses within the wider bioeconomy and 2. Evaluates the climate impact of biogenic CO₂ use or storage, the main utilisation avenues and prospective market opportunities in Ireland including the need to develop standardisation approaches considering best practice from other jurisdictions.

Topic Objective and Outputs

Responses to this topic should facilitate protocols that optimise biomethane side streams in terms of fertiliser, CO₂ or other uses within the bioeconomy.

- Demonstrate optimal nutrient utilisation through post processing, e.g., nutrient partitioning, drying, pelletising, struvite precipitation, conversion to a range of value-add products, potentially enhancing the economic viability of anaerobic digestion.
- Cost reduction strategies: Identify and develop strategies to reduce the costs associated with biomethane production, such as improving feedstock supply chains or enhancing conversion efficiencies.
- Market Analysis: Study the market potential for various AD byproducts in Ireland and beyond, including identifying potential industrial and agricultural off-takers or export opportunities.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 9	Geological/subsurface storage for energy decarbonisation
Indicative Duration	up to 1year (small) or up to 3 years (medium)
Project Scale	Small or Medium
Indicative Funding	Up to €250k (small) or Up to €750k (medium)
Co-funding	Geological Survey Ireland

Background:

Under the [Climate Action Plan 2024](#) (CAP24), the [National Energy and Climate Plan](#) and [Energy Security to 2030](#), Ireland is assessing alternatives for both energy storage (hydrogen) and geological storage of carbon in subsurface reservoirs. Although there have been a limited number of local studies completed to date, there has not been comprehensive research on the feasibility of geological storage of (i) Hydrogen and/or (ii) Carbon in Ireland.

This project aims to assess the geological conditions, necessary technologies and overall cost benefits and risks associated with offshore or onshore subsurface storage in Ireland (other than salt caverns). Outputs and products from this project should aim to support Geological Survey Ireland (GSI) programmes and inform relevant policy and regulatory divisions within the Department of Environment, Climate and Communications (DECC) as well as being of interest to industry.

Objectives and Outputs:

Project(s) proposed under this topic should consider addressing the following objectives and outcomes:

- Assess the potential for geological storage of energy resources (Hydrogen) or by-products (Carbon) to support Ireland's transition to clean energy and reduced carbon emissions. This should include estimates for the medium to long-term impact on Ireland's emissions.
- Explore geological storage options (other than offshore salt caverns) for (a) Hydrogen and/or (b) Carbon storage. Reports of feasibility for Carbon/Hydrogen Storage where possible, should include a cost benefit analysis and risk assessment of potential storage solutions and related technologies.
- Maps and data for storage locations. This may utilise any available industry/Government data & subsurface geological studies.

Medium-scale projects are expected to report progress and results at suitable interim stages.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 10	Addressing sustainable supply and demand for critical raw materials in the renewable energy sector
Indicative Duration	Up to 3 years
Project Scale	Small Scale – Medium Scale
Indicative Funding	Up to €250k; Up to €750k
Co-funding	Geological Survey Ireland

Background:

Minerals are increasingly in demand as critical raw materials for components in renewable energy systems. Achieving Ireland’s ambitious national climate and energy targets, such as 70% electricity production from renewable energy sources and one million electric vehicles by 2030, requires raw materials for Wind and Solar PV, energy storage and implementing other system changes to support the existing electricity grid infrastructure.

Demand generated by energy and transport sectoral targets up to 2030 have been estimated in the [Green Metals Report 2023](#) produced by Geological Survey Ireland (GSI) of the Department of Environment, Climate and Communications. Research, innovation and recycling will impact demand and the metals and materials that are highlighted as being critical in supply for Ireland include Rare Earth Elements (REE) and battery critical materials such as lithium and cobalt. The report highlights that demand is likely to outstrip supply considering their use in other technologies and processes as well as increasing global demand. This poses a security threat for Ireland’s ability to deliver on Climate Action Plan targets.

Topic Objectives and Outputs:

Applications to this topic would aim to address potential sustainable solutions and pathways for adequate and reliable access to raw materials and REE for Ireland, linked to the [European Critical Raw Materials Act 2024](#), which could include:

- Building sustainability and circularity of demand
- Creating solutions for resource efficiency and the development of substitutes
- Ensuring sustainable sourcing and due diligence in supply chains for raw materials
- Increasing and diversifying the supply of critical raw materials in Ireland
- Evaluating the potential for discovery of critical raw materials (CRMs) in Ireland
- Prospectivity assessments for CRMs
- Mineral Prospectivity Mapping
- Identifying metallogenic provinces for CRMs

All outputs, including databases, should be made available through open access repositories. Where required GSI can provide data hosting facilities and may be contacted at research@gsi.ie, in advance of submission for further details.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 11	Electrifying farm machinery and transport
Indicative Duration	Up to 3 years
Project Scale	Medium Scale
Indicative Funding	Up to €750k

Background:

[Agriculture contributes 38%](#) of Ireland's total greenhouse gas (GHG) emissions and the [Climate Action Plan 2024](#) has ambitious targets for the Agricultural sector. These targets are mainly aimed at nitrogen reduction, livestock farming practices, feed additives and land use change. However, around [2.8% of emissions](#) from farms is derived from fuel combustion. This fuel is primarily used in farm machinery and transport. The agricultural sector is impacted by a carbon tax on fuels for transport and equipment operation however, few emissions free alternatives have been demonstrated in a farm setting. Research into available technologies and demonstration of these technologies in practice on farms could inform future policy direction.

Topic Objectives and expected outputs:

This research topic could examine electrified agricultural technologies integrated on an Irish farm.

Project(s) proposed under this topic could consider addressing the following:

- A review of existing electrified agricultural technologies
- Demonstration of electrified machinery and transport on one or more farms.
- Analysis of how technology integrates with various farming systems for example how an assessment of connection requirements and charging schedules would be beneficial in identifying optimal management approaches.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 12	Demonstration of Local Flexibility
Indicative Duration	Up to 3 years
Project Scale	Medium
Indicative Funding	Up to €750k

Background:

The [Climate Action Plan 2023](#) (CAP23) reflects the need for a renewed, accelerated and concerted effort by all stakeholders to enable a flexible system for renewables integration and electricity demand management, to meet carbon emissions targets for the energy sector. The CAP23 establishes an interim target of 15-20% demand flexibility by 2025, building on the existing target of 20-30% by 2030.

As outlined in the CRU's recently published [Energy Demand Strategy Call for Evidence](#) (CRU/202356), the CRU is developing and implementing Ireland's [National Energy Demand Strategy](#) (EDS) with the aim of delivering demand flexibility and demand response initiatives.

Research is required to investigate how demand flexibility of the electricity system can be achieved on a local scale while addressing the following areas, including:

- Testing demand flexibility and response initiatives.
- Demand flexibility options feasible to provide to the grid.

In Ireland there are over 800 Sustainable Energy Communities (SECs) and around one-third have Energy Master Plans, which could be utilised to trial local demand flexibility in real life surroundings.

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives:

- Test flexibility in a demonstration environment.
- Install smart devices to enable existing energy technologies (e.g. heat pumps, electric vehicle chargers, batteries and immersion heaters) to provide flexibility (i.e. respond to electricity grid signals to shift the electricity demand to different times of the day when required).
- Data collection (load profiles) and developing baseline methodologies for offering flexibility to the grid on a Demand System Operator (DSO)/Transmission System Operator (TSO) scale.
- Platform to optimise an aggregated portfolio.
- Ability to test how data flows from grid data/Smart Tariffs/DSO/TSO can be handled, optimised and responded to.
- Defining the best service/volume/scheduling requirements for providing demand flexibility (stackable opportunities).
- Investigate how local flexibility can be optimised through training, awareness raising and/or prompts on Smart Tariffs – time-of-use (TOU), Dynamic Pricing and Innovation.
- Fostering participatory “flexumer-centric” applications.

Investigation into the risks associated with data privacy, cybersecurity and the risks associated with sharing data across different platforms.

Outputs:

The desired output of this project is to develop a set of tools or blueprint for other communities in Ireland to enable greater local flexibility. Communities have a 500MW renewables CAP target by 2030 and flexibility is a way of optimising renewables on the grid. Pilot community projects are needed to unlock the potential within.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 13	Optimising grid connections for charging infrastructure
Indicative Duration	Up to 3 years
Project Scale	Medium scale
Indicative Funding	Up to €750k

Background:

The [Climate Action Plan 2024](#) targets an increase in the number of passenger EVs to over 845k and a rise in electric LGVs to 95k by 2030. To support this charging infrastructure will be required in houses, apartments, workplaces, on road networks and at popular destinations. In many of these settings, Maximum Import Capacity (MIC) upgrades are carried out by Electricity Supply Board Networks (ESBN) at a significant cost to the installer and require ESBN resources for the duration of the upgrade planning and works. In specific settings and with the right technology these upgrades may not be necessary. Thereby reducing the cost of installation and standing charges for the installer and reducing the considerable burden on ESBN. Additionally, large quantities of stored energy spread across the country are required to meet challenging demand response and flexibility targets for the country's electrical grid, as evident in the [Energy Security in Ireland to 2030](#) Report.

At present, costly MIC upgrade work is often undertaken when installing EV charging infrastructure in Multi-Unit Dwelling (MUD) car parks and businesses. However, these connections are often under-utilised outside of peak times. Therefore, suitable solutions may be available which can fully utilise the existing MIC and combine it with storage technologies to ensure peak demands are met, without the requirement of an upgrade. Research is required in this area to identify suitable energy storage technologies and to map them to the typical use patterns of a MUD and different workplace use cases.

Research is also required on optimising the use of existing electrical connections and their MIC to avoid a costly, time consuming and resource draining upgrades to power additional loads such as Electric Vehicle Charging and Heat Pumps.

Topic Objectives and expected outputs:

Project(s) proposed under this topic could consider addressing the following areas:

- ESBN modelling (worst case scenario – strategy) 95%
- Optimisation/Innovation of MIC with the goal of limiting upgrade requests
- Battery Storage for fast EV charging and grid integration
- Typical use cases
- Optimising use of local renewables
- EV charging in MUDs

The Proposed research could highlight the technical and financial feasibility of such technologies while exploring the potential for such systems to redirect their stored capacity towards the grid in times of capacity constraints across the grid network.

The project could review small scale storage technologies (100kWh to 1000kWh) and model them onto specific use cases, such as EV charging in an apartment development or a 9-5 workplace carpark. When one or more technologies have been identified as leading candidates, a Charge Point Operator (CPO) could be engaged to help deploy the technology in one of more real environments for further learning and testing. The outcome may be an enduring model that could be adapted and augmented over time.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 14	Energy Consumption and Thermal Comfort in Traditional Buildings
Indicative Duration	up to 3yrs
Project Scale	Medium Scale
Indicative Funding	Up to €750k

Background:

This topic aims to analyse the actual energy use in traditional buildings and examine how thermal comfort for the occupants of these buildings might be achieved with low-energy/low-carbon solutions.

Traditional construction is not well-served by the existing methodologies for assessing energy ratings and specifying retrofitting works. It is likely the actual use of operational energy by traditional buildings is considerably lower than the notional usage indicated by standard modelling systems. This may be linked to the observed 'pre-bound' effect where retrofitting projects often achieve little or no reduction in either energy bills or GHG emissions. Some [recent studies](#) in the UK and [elsewhere](#) in the EU examined the behaviour of residents of heritage buildings and suggested they often make positive decisions to reduce their heating demand, using traditional thermal comfort practices instead. This includes 'soft retrofitting' [measures](#) such as use of curtains, shutters, carpets, draught excluders, etc. It may also be the case that they are not heating their homes to the same internal temperatures as more modern (post 1945) constructions. These behavioural differences can have a significant impact on energy consumption and CO2 emissions from this housing stock and studies are needed for the Irish context.

Supporting documents include [Climate Action Plan](#), [Climate Change Sectoral Adaptation Plan for Built and Archaeological Heritage](#), National Heritage Plan – [Heritage Ireland 2030](#), [Improving Energy Efficiency in Traditional Buildings' DHLGH guidance document](#)

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives:

- Investigate why existing methodologies for assessing energy rating underestimate the true thermal performance of the building fabric of traditional construction.
- Investigate the potential of traditional buildings to provide thermal comfort by means other than solely standard fabric upgrades thus avoiding the unintended consequence of over-specification of fabric upgrades that may have a negative impact on the building fabric.
- Understand thermal comfort in traditional buildings and effective measures to improve when considering the ca. 250,000 traditional homes in Ireland.
- Investigate the impact of/develop a more accurate model for accounting for thermal mass.
- Inform changes to currently used assumptions for building typologies. The assumptions currently made in the methodologies regarding the use of heat sources may not be appropriate to models typically used ((e.g. Dwelling Energy Assessment Procedures (DEAP) assumes that the primary space heating source accounts for 90% of space heat and the secondary space heating sources only accounts for 10% of space heating)).
- Capture the actual (typical) quantity of ALL fuels (including solid fuel use, cooking stoves used as space heaters etc.) that would be necessary when comparing actual vs calculated. It is a critical unknown and the impact of this on the actual use is unclear.

Proposals to this topic should identify traditional buildings with a focus on residential. They should specify the proposed strategy to recruit buildings for analysis within the project, detailing how many buildings will be monitored, and whether the applicants have already initiated contact with potential participants (if so, please provide supporting documents).

Outputs from proposed research could include:

- the development of new methodologies or new assumptions to current methodologies.
- develop case studies, technical reports and/or peer reviewed articles.
- presentations of the research findings to a variety of stakeholders.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 15	Innovative solutions to migration of components from fixed to floating offshore wind
Indicative Duration	Up to 3 years
Project Scale	Medium scale
Indicative Funding	Up to €750k

Background:

Ireland has significant potential for the development of floating offshore wind energy (FOW) and wave energy due to its extensive maritime area, deep-water conditions, and abundant wind resources. The objectives of successive Government Climate Action Plans and Offshore Renewable Energy (ORE) policy statements confirm long-term plans for the development of at least 30GW of floating offshore wind energy off the Atlantic coast, first raised in the [2020-2025 Programme for Government](#).

Harnessing Ireland's significant offshore renewable energy development will require floating offshore wind projects off the Celtic and Atlantic coasts. Floating offshore renewable energy developments in these harsh metocean environments will require components to contend with a lifetime of constant motion as well as withstanding stresses from wind, waves and currents. Such conditions can cause significant wear and tear on components and increase the likelihood of failure or malfunction. As turbines are moved to more dynamic environments on flexible platforms, there is a growing need to acquire knowledge about the sub-system components behaviour, protection, and management. A small angular displacement at the FOW platform level translates into a large linear movement at the structure's highest point, which, if not managed, can damage and diminish the lifetime of the mechanical components located in the nacelle.

Proposals to this topic should build upon prior research and information, for example including outputs from earlier projects and prior research, and applicants will be expected to demonstrate in their proposals how they plan to do this.

Projects should aim to model, develop and demonstrate improvements to the performance and reliability of sub-system components, e.g. gearboxes.

Topic Objectives and Outputs:

Project(s) proposed under this topic could consider addressing some of the following research areas:

- Impact of accelerations on the individual mechanical components of a FOW turbine nacelle such as gearboxes, bearings hydrolytic or auxillary systems.
- Modelling of the 6 degrees of freedom of a FOW platform impact on the rotor-nacelle assembly

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 16	Measuring the impact of behaviour change interventions on changing energy and transport related behaviours in Ireland
Indicative Duration	Up to 3 years (medium) / Up to 4 years (large)
Project Scale	Medium or large scale
Indicative Funding	Up to €750k (medium scale) / Up to €1.25m (large scale)

Background:

There is a need to encourage more sustainable energy behaviours across society to meet Ireland's climate targets (e.g. home energy upgrades, modal shift, adoption of sustainable energy technologies etc.). While background research into barriers and motivators of these behaviours is an important first step, there is now an urgent need to translate these insights into scalable interventions in the field that deliver real energy/emissions savings.

We are seeking to build research capacity and appetite in Ireland for conducting large scale counterfactual impact evaluations of energy and transport related behaviour change interventions. For this reason, we are looking to fund research into interventions that might lead to reduced energy-related emissions through any number of mechanisms, including but not limited to installation of energy efficiency measures and low-carbon technologies, reducing/shifting energy consumption, modal shift and changing driver habits.

Topic Objectives & Expected Outputs:

Proposed research would aim to provide robust evidence of behaviour change interventions that work (or do not work) for changing energy-related behaviours that could be brought to scale to achieve significant reductions in energy emissions. A transdisciplinary approach would be required to engage a wide number of stakeholders and encourage collaboration between interdependent actors. Interventions could seek to address issues in urban environments, rural communities or compare impacts for both.

Objectives:

- Design and execution of trial(s) aimed at changing energy or transport behaviour in the field;
- Quantitative measurement of trial outcomes using robust, objective data (i.e. not relying on self-reported data where possible);
- Impact assessed using robust methods, ideally taking an experimental (randomised) or quasi-experimental approach;
- Assessment made of generalisability and persistence of results and potential for scalability.

Proposed project(s) should aim to result in, among others:

- Robust evidence of behaviour change interventions that work (or do not work) for changing energy-related behaviours that can be brought to scale to achieve significant reductions in energy emissions;
- Increased capacity for running large-scale counterfactual impact evaluations of behaviour change interventions in Ireland.

A project advisory group should be formed by the Project Team with relevant stakeholders.

Further Considerations:

The project team will be encouraged to liaise with the SEAI Behavioural Economics Unit during project implementation stage. Each applicant should choose behaviours which are well balanced in terms of the likely impact of changing the behaviour, the current penetration of the behaviour, and the probability of changing the behaviour.

Topic 17	Investigating the public's understanding, acceptance and engagement with new energy technologies, services, and infrastructure.
Indicative Duration	Up to 3 years (medium)/ Up to 4 years (large)
Project Scale	Medium or Large Scale
Indicative Funding	Up to €750K (medium)/Up to €1.25M (large)

Background:

The future of Ireland's energy system will require the public to accept and effectively engage with a range of new technologies (e.g. heat pumps, electric vehicles), services (e.g. time-of-use tariffs, demand response programmes) and infrastructure (e.g. district heating, transmission systems).

It is important that citizens are adequately supported in a switch to smart technologies and services so that less technologically aware citizens are not left behind. While a reasonable amount of evidence is available regarding consumers' attitudes to some existing technologies (e.g. electric vehicles), less is known about attitudes to a move towards a smart grid which integrates a range of technologies and demand response programmes. Trust in the potential automation this entails, and consumers' ability to engage with the system in a way that benefits both themselves and the environment also needs consideration.

It is also important we learn more about the public's understanding and acceptance of different type of infrastructural projects to enable effective public engagement takes place so that these are designed and delivered in a time efficient and fair manner.

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing some of the following objectives:

- New insights regarding any aspect of people's understanding, acceptance and/or engagement with new energy technologies and/or systems that have clear recommendations for policy in Ireland.
- Analysis of factors influencing attitudes, perceptions and behaviours towards renewable energy infrastructure particularly from individuals directly impacted or who will be impacted in the future by new, planned renewable infrastructure.
- Identification of psychological factors that affect perceptions of infrastructure projects and the conditions under which these factors are more or less influential.
- Identification of different communication and engagement strategies and their efficacy.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 18	Wind Farm Structural Monitoring and Performance Optimisation
Indicative Duration	Up to 4 years
Project Scale	Large scale
Indicative Funding	Up to €1.25 M

Background:

In Ireland, the first wind farm was completed in Bellacorrick, Mayo in 1992 and there are now over 300 wind farms with an installed capacity of [4,332.5 MW](#). Wind turbines can have over 8000 components and require regular maintenance to maximise their operational lifespan. In Ireland, exploration of advanced techniques wind turbine structural monitoring and performance optimisation is required to determine the Remaining Useful Life (RUL) of wind turbines. The RUL is particularly important to monitor in terms of health and safety, the environment, asset management and to maximise a turbine's useful life from the perspective of national energy security.

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives/outputs:

- Determine and test approaches to identify sources of wind turbine underperformance and structural stress and fatigue, such as mass imbalance, aerodynamic imbalance, excess vibration, foundation movement, and yaw and blade pitch misalignments via the utilisation of structural testing methods, non-destructive testing methods, and the installation of sensors on existing wind turbine assets in the field.
- Propose practical approaches that are industry focused to identify these sources of structural fatigue and power generation underperformance and identify mitigation measures to maximise the remaining useful life of the wind farm.
- Test emerging approaches to maximise energy yield from wind turbines, such as wake steering, using both physical sensors installed on wind turbines and remote sensing technologies, with a view to quantifying the validity of modelling for these approaches. Investigate the impact of emerging approaches on RUL.
- Engage with wind farm owners and OEMs to facilitate the demonstration of approaches on wind farms.
- Provide a Best Practice Approach to Wind Farm Asset Owners in the public domain to reduce the loss of remaining life due to excess fatigue loading and provide guidance on practical approaches that can lead to wind turbine performance improvement.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Topic 19	Underwater noise monitoring baseline assessment for the roll-out of offshore renewable energy
Indicative Duration	Up to 4yrs
Project Scale	Large scale (Up to €1.25M & up to 4yrs duration).
Indicative Funding	Up to €1.25 M
Co-funding	The Marine Institute

Background:

Successive Climate Action Plans and the policy statements on Offshore Renewable Energy Ireland have set out objectives for the roll-out of offshore renewable energy at scale. Driven by ambitious and essential decarbonisation targets, and in the context of [Climate Action and Low Carbon Development \(Amendment\) Act, 2021](#) Ireland is now in the initial stages of a major expansion in offshore renewable energy generation to achieve targets of 7 GW by 2030 and 37 GW by 2050. The scale and duration of development operations required to establish fixed and floating wind turbines and their associated moorings and infrastructure are greater than any previously seen in Irish waters. The distribution and extent of development zones and consents involve a significant proportion of Ireland's maritime area. This will result in an increasing number of sources of both impulsive and continuous underwater noise within the national maritime territory. Obligations for the regulation and management of underwater noise arise both from the [EU Habitats Directive](#) and the [Marine Strategy Framework Directive](#). Many of the activities envisaged under the Offshore Renewable Energy Development Plan (OREDPP) will have the potential to negatively affect marine ecosystems by generating underwater noise pollution, which is now broadly recognised as matter of global concern [([Hildebrand, 2009](#) and ([Duarte et al. 2021](#)). [Marine Strategy Framework Directive](#). Many of the activities envisaged under the OREDPP will have the potential to negatively affect marine ecosystems by generating underwater noise pollution, which is now broadly recognised as matter of global concern [([Hildebrand, 2009](#) and ([Duarte et al. 2021](#)).

Anthropogenic underwater radiated noise (URN) is scientifically recognised as a potentially harmful pollutant that poses a quantifiable risk to marine ecosystems and sensitive species. Existing and evolving regulatory and permitting requirements mandate that URN levels be measured, and effectively managed, where necessary through avoidance or mitigation. A comprehensive framework and accompanying systematic acoustic monitoring programme are essential to ensure that the full potential of renewable offshore power can be realised sustainably, i.e. by minimising the risks posed by the deleterious effects of URN that can negatively impact on sensitive marine ecosystems and species.

The topic should build on the existing body of knowledge, including the risk retirement database published by the US Pacific Northwest National Laboratory available at <https://tethys.pnnl.gov/>

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives/outputs:

- The establishment of a national acoustic baseline.
 - Dedicated and well-structured monitoring programme with short-, medium- and long-term hydrophone deployments.
 - Synergistic supports e.g. including high resolution predictive modelling and state-of-the art processing and interpretive facilities.
- Create a platform that would enable quality controlled acoustic field-data and derivative products to be properly curated and managed as a reliable and accessible online database.
- Allow end-users to access a range of processing tools, ancillary data and data products, with a primary focus on providing the full suite of standardised and consistent acoustic metrics at temporal/spatial

scales and resolutions necessary to reliably identify, quantify (and where necessary mitigate) the “excess” or additional acoustic pressure that is attributable to ORE development-related activities.

Objectives and Outputs:

- Strategically address trans-sectoral ORE permitting requirements by instigating and operating a national baseline sound monitoring programme.
- Establish a national marine acoustics platform as a distributed “centre” to lead and coordinate the monitoring programme, as well as developing and operating all necessary ancillary services and supports.

Key activities could include:

- Inventory of existing equipment in the national pool and identify new equipment needed to meet requirements.
- Build national technical capacity and expertise through strategic partnerships, collaboration, technology transfer, targeted training and pilot programmes.
- Conduct various classes of hydrophone deployments to agreed international standards based an agreed prioritisation regime co-designed in collaboration with government and industry. Equipment and deployment configuration parameters to be optimised where feasible to fulfil multiple objectives including capture, ID and quantification of signals from anthropogenic, biogenic and natural (geophonic) origin.
- Realise and optimise synergies with existing acoustics focussed and closely related bioacoustics and marine ecological projects and programmes in Ireland (e.g. MI funded Cullen PhD on Acoustic and agent-based modelling, SEAI funded CETUS project), UK, EU and globally.
- Create a digital platform and directory providing controlled/ unified (FAIR) access to digital assets and resources, online functions, virtual laboratory, decision support, user management and verification, documentation, codes, workflows, maps, statistical and synthetic data products.
- Catalyse and stimulate interdisciplinary integration/collaboration both within the acoustics domain and transversally across optical physics, marine biology, offshore engineering, and oceanography to address broader scientific, industrial and societal challenges.
- Establish a national marine acoustics stakeholder group to maximise cross-sectoral engagement, participation and dissemination.
- Provide a focal point for novel research initiatives, prototype testing, service offerings, pilots, and demonstrations at localised, regional, national, and international scales.

A project advisory group should be formed by the Project Team and other relevant stakeholders.

Topic 20	Bat migration and offshore wind energy in Ireland
Indicative Duration	Up to 3 years
Project Scale	Academic Fellowships
Indicative Funding	Up to €300k
Co-funding	The National Parks and Wildlife Service

Background:

Offshore renewable energy (ORE) projects need to be based on comprehensive ecological assessments of impacts. The scarcity of data on offshore bat movements between UK and Ireland and potentially France and Southeast Ireland is compromising such assessments. As bats are protected under EU and Irish legislation, a comprehensive understanding of their migratory patterns and the potential impact of offshore wind farm developments is crucial. This is a difficult field of study with significant technical challenges. This research will underpin ORE development as well as addressing issues under the [National Biodiversity Plan](#) and the [Habitats Directive](#). We do not know to what extent bats migrate across the Irish sea and what species, seasons and weather conditions are relevant.

Further studies can be found at: <https://tethys.pnnl.gov/receptor/bats>

Topic Objective and Outputs:

Project(s) proposed under this topic could consider addressing the following objectives/outputs:

- Objectives for the project would include establishing the species of bats migrating across Irish sea and identifying migration routes, seasons, time periods and weather conditions.
- Outputs could include a comprehensive understanding of bat migrations and how they might interact with ORE development, thereby informing mitigation measures and ultimately ensuring full compliance with EU legislation on bat protection while fulfilling ORE, de-carbonisation and climate change targets.

A project advisory group should be formed by the Project Team with other relevant stakeholders.

Annex 2: Application Form Template Instructions

This section provides guidance on how to complete the Application Form.

Please note:

- Only fully complete applications received prior to the application deadline will be considered for evaluation.
- Do not exceed the maximum page limits defined for the following Application Sections:
 - Section 2 – Max 8 Pages
 - Section 3 – Max 8 Pages
 - Section 4 – Max 10 Pages
- Please ensure all sources are appropriately referenced including use of any generative AI or AI assisted tools. Please refer to the [European Commission Guidelines](#) for further guidelines on the use of generative AI in research.
- The above page limits are exclusive of references. Please include a list of references/bibliography as an appendix as required.
- Font size must be a minimum of 10 pts.
- Please submit the final Application Form in PDF Format.
- Please use the following naming structure for submitting documentation
Organisation name (Lead surname) document type, for example 'SEAI (Bloggs) Application Form' and 'SEAI (Bloggs) Letter of Support 1', etc.

Section 1: Project Details

1. Project Title (max. 30 words)

The project title should clearly convey the nature of the project to be undertaken. Please include a project acronym, if applicable.

2. Topic Number (if applicable)

If you are applying to the Topic Strand detailed in Annex 1, please enter the topic number you are applying to here. If you are applying to the Open Strand, please type 'open strand'.

3. Lead Applicant, Partner Applicant & Collaborators

Provide the requested details relating to the Lead Applicant, Partner Applicant(s) and Collaborator(s). See Section 3 of the Call Document for definitions of project roles.

4. Project Scale/Type

From the drop-down list please indicate the project scale/type (Small Scale, Medium Scale, Large Scale, or Academic Fellowship) of your application. See Section 4 of the Call Document for definitions of each. Please provide a justification for the requested project scale/type.

5. Requested Duration, SEAI-Requested Costs and Total Project Costs

Indicate the requested project duration (months), the costs requested from SEAI and the total cost of the project. Please ensure that these figures align with those provided within the Budget Template (excel spreadsheet).

In-kind contributions are valued by SEAI and should be detailed in the 'in-kind contributions' table (only) within Section 5.3 of the Application form. In-kind contributions should not be included within the Total Project Costs table or within the Budget Template spreadsheet.

6. Abstract (max 250 words)

This should be a succinct and accurate summary of the proposed work.

7. Non-technical Summary (200 words)

Provide a brief, easy-to-understand description of your project. This should be written in simple language, aimed at helping the public understand the reasons and methods behind the work.

8. Keywords (max 5 words)

These should be descriptors that best characterise the proposed research.

9. Energy Research Classification

From the drop-down list, please select the energy research category that best aligns with the proposed research.

10. Specific Policies and Targets addressed

List the national and international energy and climate targets and/or policies addressed through your project. Where relevant, please specify the specific policy target, and e.g., the number of the action(s) from the Climate Action Plan which your project aims to contribute to.

11. End-users targeted

Provide details of the research end-users targeted. A research end-user is defined as an individual, community, or organisation, that will directly use or directly benefit from the output, outcome or results of the proposed research.

12. Readiness level

Identify the readiness level by which your project can be measured. E.g., [Technical Readiness Level](#) (TRL), [Societal Readiness Level](#) (SRL), Market Readiness Level (MRL), Policy Readiness Level (PRL), Acceptance Readiness Level (ARL), Organisational Readiness Level (ORL) etc. Identify the current readiness level of your proposal and the targeted readiness level at project completion. More than one type of readiness level may be selected as appropriate. Please provide a reference to the scale used.

13. SEAI and RD&D Funding Programme Remit (max 250 words)

Describe how the proposed project aligns with SEAI's remit and the overarching objectives of SEAI's National Energy RD&D Funding Programme. The overarching programme objectives are to:

- Accelerate the development and deployment in the Irish marketplace of competitive energy-related products, processes and systems;
- Support solutions that enable technical and other barriers to energy market uptake to be overcome;

- Grow Ireland's national capacity to access, develop and apply international class energy RD&D;
- Provide guidance and support to policy makers and public bodies through results, outcomes and learning from supported projects.

This statement will be reviewed by SEAI when determining the eligibility of the application.

Section 2: Excellence and Innovation (max 8 pages)

1. State-of the-Art/Literature Review

Describe the current state-of-the-art, current knowledge or current best practice in this area, and particularly in the Irish context. Please ensure to use references where appropriate.

2. Innovation/Novelty - Beyond State-of-the-Art

Describe the concept of the proposed project and provide details of how the proposed project will further the current state-of-the-art, current knowledge or current practice. The degree of novelty and innovation associated with the proposed project should be clearly demonstrated. Describe clearly how this project would advance the state of the art in the research area/field, and within Ireland.

3. Project Objectives

Provide details of the objectives of the project and the associated timelines for delivery of these objectives.

4. Project Team & Collaborator Profile

Provide details of the Project Team (Lead Applicant and Partner Applicants) and Collaborators involved in the proposed project, including details of relevant qualifications and key achievements. Please refer to project members by surname.

Provide an outline of previous relevant involvement in research, innovation and/or commercialisation activities performed by the project team. For the Lead and Partner Applicants only, outline their track record in obtaining research/innovation funding from exchequer, industry, European or other funding sources.

*For applications submitted under the **Academic Fellowship** Category, a mentor/supervisor should be identified as part of the project team and should be listed as a Partner Applicant. For Fellowship applications, a Letter of Motivation should also be submitted as a separate document. The Letter of Motivation should include a statement to demonstrate the Fellowship applicant's interest in and suitability for the proposed Fellowship. This may include an outline of their professional experience, how the Fellowship will enhance their career development and personal motivation for the submitted Fellowship proposal.*

Please note: this section should refer only to the Lead and Partner Applicants and Collaborators and should not provide details of individuals or organisations who may be engaged as external consultants. Whilst requests for the funding of external consultants is permitted, please note that applications will not receive additional marks for such consultants at the evaluation stage.

5. Previous SEAI or other RD&D Funding (if applicable)

- If applicable, describe any previous SEAI funded research projects and clearly outline how this proposed project builds upon previously funded work.*

- b. *If applicable, describe any previous funded research projects and clearly outline how this proposed project builds upon previously funded work.*

Section 3: Relevance and Impact (Max 8 pages)

This section should be as specific as possible and provide information that reviewers will find helpful in assessing the relevance and potential impact of the proposed research activity.

1. Relevance to the needs of the Irish Energy Sector and to SEAI

Clearly demonstrate the relevance of the proposed project to the needs of the Irish energy sector with particular reference to Ireland's Climate Action Plan, the Programme for Government, the National Mitigation Plan, Energy White Paper and/or Ireland's National Energy & Climate Plan (NECP), Climate Action and Low Carbon Development Bill (2021). Refer to other relevant policy documents as appropriate.

2. Impact - Expected Impact

Describe the expected impacts of the proposed project in terms of both a) academic impacts and b) research impacts. Furthermore, describe indicators of both qualitative and quantitative evidence of expected impacts.

In terms of academic impact, please describe how this research would contribute to your field of study within academia (if applicable). As part of your description, where relevant, please refer to how the proposed project would enhance the applicant/organisation's potential for involvement in, for example, Horizon Europe collaborative projects and/or other non-exchequer funded RD&D activities in the future. Where relevant, also outline how the proposed project would enhance collaboration with Industry or other business opportunities.

In terms of research impact, consider the contribution that this research would make in categories such as: economic (e.g. jobs, exports, turnover growth); societal (e.g. benefit to consumers/end users); policy-oriented (e.g. contribution to evidence-based policy formation and/or the legislative/regulatory framework); or scientific (enhancement of Irish scientific capacity and capability).

Provide details of expected impacts of engaged research¹; working with rather than for the potential research end users (e.g., businesses in the energy/low-carbon technology sector, energy consumers, local authorities, regulators, policy makers, communities etc.) and indicate the timeframe over which the anticipated impacts will be realised.

3. Impact – Communication and Dissemination Plans

Communication and Dissemination Plans: Describe the strategy for communication, dissemination and implementation (if applicable), and what activities will be undertaken to promote the proposed project and engage the relevant audiences/end-users throughout the project. Please provide evidence of tailored, multifaceted communication strategies for varying end-users including public participation or consultation. SEAI expects that outputs/findings from SEAI supported projects will be widely disseminated and made publicly available.

Please note that project outcomes (i.e., generated knowledge/scientific output/research results/lessons learned) must be made available, among others, in the form of a short, publishable project report/case study (allowing for IP or commercial sensitivity restrictions on any sensitive data). These outcomes may be disseminated via the SEAI website and further publication as required.

¹ IUA Engaged Research Planning for Impact <https://www.campusengage.ie/wp-content/uploads/2022/03/Updated-Final-PBS10581-IUA-Engaged-Research-Planning-for-Impact-Framework-2022-Update V5.pdf>

4. Impact – Data Management and Open Access Strategy

Data Management Strategy: Project participants are asked to consider in advance how they will acquire and subsequently manage the data the project will generate, and to plan which data will be preserved, made publicly available and where. Where possible, use of existing available data is encouraged, and data acquisition agreements should be in place with data holders in advance. A data management plan will demonstrate how the data will be managed effectively and securely. Please describe (500 words max):

- *What new data will be collected or produced;*
- *What existing data will be re-used and evidence of preliminary data-sharing agreements (if relevant);*
- *How the data will be safely stored and managed both during and after the project.*

Open Access Strategy: Project teams are encouraged to work with open access tools and to make project outputs/models/assumptions available to interested stakeholders to facilitate follow-on studies and reduce duplication of research. Associated metadata and clear descriptions of data, acquisition, organisation, analysis and interpretation should be included. Planned open access locations for the data should also be included. Projects should aim to follow the FAIR principles, making research data findable, accessible, interoperable and re-usable. Please describe your open access strategy (500 words max).

*Please complete the **Data Management Plan** Form (Annex 1 of the Application Form) and submit along with your application. This should outline details of all data to be collected, processed and/or generated by the proposed project.*

5. Impact - Intellectual Property Management & Exploitation

Exploitation Plan: describe how results and outcomes from the proposed project will be exploited during and after the project, such that the project will result in tangible impacts.

Describe how background and foreground Intellectual Property (IP) will be managed.

Describe how any discoveries, inventions or processes resulting from the proposed project will be exploited. Where relevant/available, provide details of potential end users/markets.

Where there is a reasonable potential for commercial exploitation of research outputs, applicants should apply the principles of the National IP Protocol² 2019 – Ireland’s framework for research commercialisation.

Where relevant, applicants should discuss expected project outputs and intellectual property with their Technology Transfer Office and/or consult with Knowledge Transfer Ireland for information on how to fulfil Intellectual Property obligations, and for support in relation to developing consortium agreements where required.

Successful applicants are required to take necessary steps to preserve and protect such intellectual property rights including, where appropriate, applying for patent registration; and actively exploiting any discoveries, inventions or processes resulting from the research, by means of commercial licensing arrangements or otherwise.

² <https://www.knowledgetransferireland.com/ManagingIP/National-IP-Protocol/>

Where appropriate and whenever possible, IP should be managed for the benefit of enterprise development in Ireland.

For collaborative projects, please confirm (by ticking the relevant box in the application form) that should the proposed application be successful, the project consortium (Lead Applicant, Partner Applicant(s) and Collaborator(s)) will put a formal agreement in place to agree on Intellectual Property Rights and other relevant issues associated with the responsibilities within the project and exploitation of results.

6. Engagement with research end-users and key stakeholders ³

Please describe any engagement with research end-users, or other stakeholders, in the formation of the research proposal and in setting priorities for the proposed research. Please describe planned engagements with research end-users, including participatory processes, both during and after the project, that could involve multiple disciplines, sectors and stakeholders.

7. Gender Considerations*

Complete the 'gender considerations' table in the application form template with further details on gender balance and any potential gender dimension within the proposed research activities.

Description of how gender balance will be fostered within the project team:	
Please describe how gender balance will be fostered within the proposed project team.	
Please list concrete actions demonstrating how gender balance will be fostered.	
<ul style="list-style-type: none"> For 3rd level educational bodies, please comment on the Athena Swan⁴ Institutional award status or award commitment for your organisation/department. 	
Action title (add as many lines as appropriate)	Description
Action 1:	
Action 2:	
Action 3:	
Description of any potential gender dimension of the proposed research activity:	

³ https://www.campusengage.ie/wp-content/uploads/2019/01/FINAL-JAN-16_ER-Report-2016-Jan-v2.pdf

⁴ <https://www.advance-he.ac.uk/equality-charters/international-charters/athena-swan-ireland>

Please consider any potential gender dimension of the proposed research activity. Gender considerations in research mean that gender is part of the research design and systematically controlled for throughout the research process, without necessarily being the primary focus of analysis. Research that takes gender considerations into account is found in most scientific disciplines and in energy research, with empirical evidence researchers have studied the gender dimension in areas such as energy consumption in households, energy saving and decision-making in the production of energy. Energy research that takes the gender dimension into account has potential for further development e.g., does the underrepresentation of women in the energy sector, in terms of both production and decision-making, have any impact on the transition to more sustainable energy systems?^{5 6}

The following video may be helpful in outlining the gender dimension in research:

[Gender dimension in research video - YouTube](#)

*Note - there will be no discrimination due to gender in the evaluation of projects.

8. Sustainable Research

SEAI's mission is to drive the reduction and replacement of fossil fuel usage, and our role is to help all of society be more energy efficient. Research has a major role in the design of new practices and products, education, policy formation and information exchange to realise both mission and goal. However, research activities themselves can be resource intensive. SEAI funded researchers are required to describe their research design that will minimise waste and environmental footprint without adversely impacting the validity and reliability of the research outputs.

Here you can identify and describe how you have considered sustainable practices in your research activities. You could refer to:

- Fieldwork considerations.
- Travel to place of work, conferences and meetings.
- Reproducibility of scientific work, enabling factorial design.
- Sustainable initiatives.
- Reporting and promoting your results.
- Evaluating the impact of your research practices, using targets and indicators.
- Materials life cycle costing.
- Regulate disposal.
- Training on environmental issues related to energy, climate and biodiversity that will facilitate their consideration in laboratory operations and scientific work.

Wet laboratories, in particular, consume more energy and water than office space as well as producing more waste. Make references to any organisational policies, certifications etc. for example International Organization for Standardization (ISO) or <https://www.sfi.ie/sustainable-lab-cert/>

⁵ [what is the gender dimension roggkorsvik kilden genderresearch.no .pdf \(kjonnsforskning.no\)](#)

⁶ [A Review of Energy and Gender Research in the Global North.pdf \(geecco-project.eu\)](#)

Section 4: Workplan (Max 10 pages)

1. Work Plan

Complete the 'summary of work packages' table in the application form template which provides details of the number and title of each work package.

WP No.	Title
1	Xxx
Etc.	Xxx

For each work package, replicate and complete the table below in the application form template.

WP No. & Title	Provide the number and title of the work package.		
Start Month No.	e.g., 1	Finish Month No.	e.g., 6
WP Lead	Indicate the role and organisation of the project team member who will lead the work package.		
WP Contributors	Indicate the role and organisation of other contributors to the work package and briefly describe their role.		
Objective(s)	Describe the primary objectives of the work package.		
Description	Provide an outline of the work to be undertaken as part of the work package, including the methodology to be followed, specialised equipment to be used and analysis to be performed.		
Milestones (Specify the month each milestone will be reached)	Define and number each milestone (add as many lines as milestones)	Specify the month number each will be achieved	
	e.g., WP1-M1: Literature review	e.g., Month 3	
Deliverables (Specify the month the deliverable will be provided)	Define and number each deliverable (add as many lines as deliverables)	Specify the month number each will be achieved.	
	e.g., WP1-D1: Literature review paper submitted to a peer-reviewed journal	e.g., Month 3	
Data Required (if applicable)	WP1- Dataset 1: WP1: Dataset 2: (Add as many lines as datasets) Please provide a brief description of data required for this work package ⁷ .		
Est. resource allocation per WP (est. cost and FTE)	Provide an estimation of resourcing allocation per work package, e.g., total associated staffing budget requested, and approx. staffing allocation (FTE)		

⁷ As per the data management strategy, (Section 3.4) projects are encouraged to outline good consideration of existing datasets and encouraged to reuse and repurpose existing datasets. Risks to data access/acquisition should be detailed in Section 4.2; Project Management and Risk.

2. Project Management & Risk (max 3 pages)

Clearly describe the proposed project management structure for the project and provide details of reporting lines and responsibilities. Please also provide a high-level Gantt chart (or similar) indicating timelines and dependencies for the work packages and tasks.

Please include details highlighting the capacity of the Lead Applicant to lead this project, e.g. consideration to number of current awards and other activities underway, and associated full time equivalency (FTE), along with FTE expectations on this project. Similarly, please include details highlighting the capacity of the wider project leadership team, across both Lead/Partner Applicants, to deliver the project.

Please ensure to include your high-level Gantt chart within the Application Form (Word Document template). Please do not submit a Gantt chart as a separate file.

Using the table provided in the application form template, describe the primary risks associated with the proposed project, their likelihood (low, medium or high) and outline the measures which will be undertaken to avoid or mitigate these risks.

If your research requires the acquisition of a licence (e.g., foreshore licence), permits or planning permission, please consider this in your risk assessment and provide details of the estimation of acquisition timelines and mitigation measures/alternative options. Similarly, please identify risks associated with data acquisition/ access and mitigation measures to reduce impacts.

Section 5: Budget

Please complete the following:

1. Budget Justification (see below)
2. Budget Template (MS Excel spreadsheet)
3. Provide the requested 'financial documentation/declarations' (as PDF documents)

Applicants should refer to the SEAI RD&D Budget Policy Document when completing the budget sections of their application.

1. Research Category Justification (max 250 words)

Please select a Research Category from the list and provide a justifying narrative for your selection. Before selecting, please review and refer to the SEAI RD&D Budget Policy document for detailed definitions of each research category listed.

The onus is on the Applicant organisations to select a research category which appropriately reflects the proposed project activities. Please select the appropriate Research Category.

Repeat the table as required for each partner applicant.

2. Grant Aid Intensifier Justification (max 250 words)

If applying for the grant aid intensifier, please select the relevant intensifier and provide a justification in the table provided. Please refer to the SEAI RD&D Budget Policy document for eligibility details and requirements of this grant intensifier.

Repeat the table as required for each partner applicant.

3. Budget Summary

Provide an overview of costs by completing the budget summary table. Add additional columns for each additional project partner if applicable. **Please ensure that these figures align with those provided in the budget template** (Excel spreadsheet).

Please also complete the Summary Table – In-kind Contributions.

In-kind contributions are valued by SEAI and should be detailed within the 'In-kind Contributions' table (only) within Section 5.3 of the Application form. In-kind contributions should not be included within the Total Project Costs table or within the Budget Template spreadsheet

4. Budget Justification

Provide a justification to support proposed total project costs included in the application under the headings of: staff, equipment, materials, travel and external consultants.

Staff: Justify the role and need for each staff member who would be funded by the proposed project by completing the table below for each person. Repeat the table as required for each proposed staff member to be funded.

Position Title	Please detail the requested position title (e.g. Research Engineer or Postdoctoral Researcher to be Recruited).
Organisation name	Indicate the name of the organisation which this staff post will be associated with.
Total cost of staff member	Indicate the total cost (€) associated with this role.
WP/task alignment	Provide details of the work packages/tasks which this person will work on.
Justification for the level of this position	Describe how the costs associated with this position have been calculated.
Justification for this position	Describe why this position is required on the project.

Equipment: Justify the need for each piece of equipment which will be funded by the proposed project by completing the table below for each piece of equipment. Repeat the table as required for each piece of equipment.

Equipment & quantity	Indicate the equipment required and the quantity.
Organisation name	Indicate the name of the organisation who will own the equipment and where it will be based.
WP/task alignment	Provide details of the work packages/tasks which the equipment is required for.
Cost requested (€)	Indicate the cost (€) associated with the equipment.
Justification for cost	Provide a justification/rationale for the quoted cost.

Materials: Justify the need for each material which will be funded by the proposed project by completing the table below. Repeat the table as required.

Materials & quantities	Indicate the materials required and the quantity.
Organisation name	Indicate the name of the organisation who will own the materials.
WP/task alignment	Provide details of the work packages/tasks which the materials are required for.
Cost requested (€)	Indicate the cost associated with the materials.
Justification for cost	Provide a justification/rationale for the quoted cost.

Travel: Justify the need for travel costs requested as part of the proposal. Where possible, online meetings/events are encouraged.

Travel	Indicate the travel required and the quantity.
Organisation name	Indicate the name of the organisation who the requested costs are associated.
WP/task alignment	Provide details of the work packages/tasks which the travel is required for.
Total cost (€)	Indicate the total cost associated with the travel.
Justification for cost	Provide a justification/rationale for the quoted cost.

External Consultants: (max ½ page): Justify the need for and value of external consultants costs requested as part of the proposal. As noted in the SEAI RDD Budget Policy, every possible effort must be made, in the first instance, to build a project team capable of completing all tasks proposed in the project without the need for external consultants.

Section 6: Letters of Support

Letters of Support (max 1 page each)

The following letters of support should be submitted as part of an application to the Call. Letters of support may be uploaded individually or may be merged into a single PDF file.

Please also complete the summary Letters of Support checklist Table within the Application Form.

- ✓ **The Lead Applicant**, confirming that the information provided in the application is correct to the best of their knowledge, that all sources including generative AI have been correctly acknowledged in the application, and that the proposed project has not been/is not the subject of grant aid from any other source. By submitting a proposal, the Lead Applicant confirms that they hold a contract covering at least the duration of the proposed project or agreement from their employer that their employment will be extended to cover at least the period of the proposed project.
- ✓ **An authorised staff member in the lead institution/organisation** (e.g., company CEO/CFO/Director, University/Research Institution Vice President for Research/Director of Research or equivalent) confirming their endorsement of the proposal and confirming their commitment to hosting and facilitating the proposed project should it be successful.

- ✓ **Each Partner Applicant Organisation (if any)** confirming their role in the proposed project and indicating the level of any financial support (cash or in-kind) being provided by their organisation to the proposed project.
- ✓ **Each Collaborator Organisation (if any)** included in the application, providing details to confirm their role in the project, and details of any proposed support (e.g., data access, technology trial/demonstrator, in-kind support, or other).
- ✓ **Fellowship Applications (Fellow)**
 - 1) **Lead Applicant (Fellow)** – as per above Lead Applicant Letter of Support;
 - 2) **Partner Applicant (Academic Mentor/Supervisor)**. Please note the Academic Mentor/Supervisor must be a core-funded member of academic staff or a member of academic staff with a fixed-term contract covering at least the duration of the proposed fellowship);
 - 3) **An authorised staff member within the 3rd level educational body** (e.g., University/Research Institution Vice President for Research/Director of Research or equivalent) confirming their endorsement of the proposal and confirming their commitment to hosting and facilitating the proposed fellowship should it be successful.) and;
 - 4) **Letter of Motivation** - providing a statement to demonstrate interest in and suitability for the proposed Fellowship. This may include an outline of professional experience, how the Fellowship will enhance their career development and personal motivation for the submitted Fellowship proposal.

Please note that unsolicited letters of support are not permitted.

Annex 3: Application Checklists

****PLEASE NOTE - THE BELOW DOCUMENTATION IS MANDATORY AND FAILURE TO SUBMIT ANY DOCUMENTATION (IF APPLICABLE) WILL DEEM YOUR APPLICATION INELIGIBLE****

Companies

Application form	
Budget template	
Declaration of Financial Resources	
Declaration of Solvency	
Most recent annual financial statements (if applicable)	
For Newly Incorporated Companies - Management Accounts or 1 year Cash Flow Projection prepared by Qualified Accountant (if applicable)	
Declaration of SME Status (<i>if applicable</i>)	
Proof of funds (<i>if applicable</i>)	
A letter from the Revenue Commissioners (<i>if applicable</i>)	
Letters of Support	
Data Management Plan	

3rd Level Educational Bodies

Application form	
Budget template	
Declaration of 3 rd level educational body – Non-Economic Public Good (NEPG) (<i>if applicable</i>)	
Letters of Support	
Data Management Plan	

Public or Semi State Bodies

Application form	
Budget template	
Declaration of Financial Resources	
Declaration of Non-Economic Public Good (NEPG) (<i>if applicable</i>)	
A letter from the Revenue Commissioners (<i>if applicable</i>)	
Letters of Support	
Data Management Plan	

Academic Fellowships

Application form	
Budget template	
Declaration of 3 rd level educational body – Non-Economic Public Good (NEPG) (<i>if applicable</i>)	
Letters of Support	
Letter of Motivation	
Data Management Plan	

Annex 4: Budget template Instructions

Please find details in Appendix 1 of the SEAI RD&D Budget Policy document, available to download from the Programme Documents section of the SEAI RD&D Webpage:

<https://www.seai.ie/grants/research-funding/research-development-and-demonstration-fund/>

Annex 5: General Terms and Conditions

1. Failure to fully adhere to the provisions of the Call may result in application refusal, grant offer revocation or grant claim refusal, depending on the particular status and stage of the application.
2. Please note that SEAI may, if required by law or otherwise and without incurring any liability, vary, revise or supplement Programme Documentation and/or Terms and Conditions of the Programme before or after the applicant's submission of an application and such revised terms will apply to the application unless the applicant chooses to withdraw its application or withdraw from the Grant Agreement.
3. The applicant's agreement with SEAI in the event of a Grant Offer being accepted will comprise the Grant Agreement, Terms and Conditions of the Programme, the Call Document (including its annexes), and other programme documentation provided by SEAI. The applicant having accepted the Grant Offer and communicated his/her acceptance of it to SEAI shall comply with and agree to be bound by the provisions of these documents.
4. The project, in respect of which the grant application is made, must be located in the Republic of Ireland.
5. The Grant Offer only becomes valid upon receipt by SEAI from the applicant of the signed Grant Agreement.
6. The applicant must ensure Grant approval is received before proceeding with any orders, purchases or commencing works. No payments will be made retrospectively for costs incurred prior to approval being granted. Orders placed or invoices dated prior to grant approval will not be eligible for grant support.
7. The total grant amount will not be permitted to escalate above the amount indicated in the grant agreement under any circumstances.

8. The applicant must obtain all necessary insurances, consents and statutory approvals and have authority to implement the project.
9. The SEAI National Energy RD&D Funding Programme is subject to any state aid clearances required from the Commission of the European Union and any consents, clearances or licenses that might be required from any other competent body. The applicant must ensure that compliance is achieved with the relevant principles of Irish and EC law regarding the spending of this funding and, where applicable, the laws and guidelines concerning State Aid and public procurement.
10. The applicant must be prepared to participate in follow-up site visit(s) to verify impacts and achievements and to participate in follow-up research (telephone or questionnaire) as may be commissioned by SEAI to establish the Programme's impacts and achievements. This may also include the acquisition of information and data for the development of case studies for wider dissemination (protecting as appropriate all confidential or commercially sensitive information/ data). The applicant acknowledges that SEAI may have to provide certain contact details to third party contractors in relation to these matters and the applicant hereby consents to SEAI making these disclosures.
11. The timing of payment to approved applicants is subject to the funding allocated by government to the Programme in a particular calendar year, in accordance with public financial procedures. Where all other conditions are met, payment will be made on a "first come, first served" basis. Where funding is exhausted in a particular calendar year, payment to remaining applicants will be deferred until such time as further funds may become available. Deferred payments will receive priority, if and when those funds become available.
12. The applicant shall follow the SEAI complaints procedure in relation to any disputes between the applicant and SEAI concerning any matter in connection with the Programme.
13. Any false, fictitious or fraudulent statements or claims knowingly made on grant applications, or supporting documentation, submitted in respect of previous grant applications / requests for payment or otherwise made to SEAI, its authorised officers, or an SEAI Inspector, or any breach of these Terms and Conditions of the Programme may result in current and future applications being deemed ineligible by SEAI. In respect of applications where the applicant has already received payment pursuant to the Programme.

14. The Applicant acknowledges that SEAI is subject to the requirements of the Freedom of Information Act 2014, as amended ("FOIA"). SEAI undertakes to use its best endeavours to hold confidential any information provided by the applicant subject to its obligations under law, including the FOIA. Should the applicant wish that any of the information supplied by him/her should not be disclosed because of its sensitivity, he/she should, when providing the information, identify the same and specify the reasons for its sensitivity. SEAI will consult with the applicant about such information before making a decision on any Freedom of Information request received.
15. Any personal information which an Applicant volunteers to SEAI will be treated with the highest standards of security and confidentiality, strictly in accordance with the Data Protection Acts, 1988 to 2003, as re-enacted, amended or replaced from time to time, and pursuant to the General Data Protection Regulation (meaning Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC) and any related legislation. SEAI, as data controller, and its agents, will store such information on its database and fully respect the confidentiality of the data provided. The information provided by applicants will be used for evaluation purposes and to facilitate the administration of the grant process. This may require that data be supplied to and discussed, in confidence, with any person or organisation appointed by SEAI to assist in assessing or monitoring this application. These persons will be subject to the same requirements for protection of confidentiality.
16. An applicant must notify SEAI immediately if it decides not to undertake and/or complete its project. If a successful applicant decides not to undertake and/or complete its project, SEAI will not pay it the grant and instead may (but is not obliged to) allocate some or all of the funds provisionally allocated to that applicant to a different applicant.
17. The parties are of the view that there is no supply of goods or services between them and therefore there is no VAT chargeable to SEAI by the grantee in relation to the payment of the grant. In the event that the Revenue Commissioners determine that, in their view, VAT is chargeable then the grant payment shall be regarded as inclusive of any VAT charge.



Rialtas na hÉireann
Government of Ireland

Sustainable Energy Authority of Ireland

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