



Sustainable Energy Authority of Ireland

2023 SEAI Fellowship Programme

Call for Submission of Applications

Key Dates	
Call Open Date	Tuesday December 12th, 2023
Deadline for Application Submission	Monday, February 12th, 2024, 3PM IST

It is the responsibility of each applicant to SEAI's Fellowship 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); **Application Form Template** (word doc); the **SEAI RD&D Budget Policy** (where applicable) and the SEAI National Energy Research Development and Demonstration Funding Programme [Privacy Notice](#).

The Sustainable Energy Authority of Ireland (SEAI) works with the public, businesses, government and communities to achieve a cleaner energy future. SEAI is funded by the Government of Ireland through the Department of the Environment, Climate and Communications.



Rialtas na hÉireann
Government of Ireland

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1. Programme Description and Objectives

Sustainable Energy Authority of Ireland (SEAI) will be central to the national energy revolution, 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 policy-making. SEAI will catalyse direct action through our design and delivery of grant and incentive programmes and through capacity-building processes with citizens, communities and private and public sector organisations.

As part of the SEAI National Energy Research, Development and Demonstration Programme (RD&D), SEAI operate an annual SEAI Fellowship Call. The SEAI National Energy RD&D Funding Programme supports innovative energy projects which contribute to Ireland's transition to a clean and secure energy future. The 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](#), the 2015 Department of the Environment, Climate and Communications [Energy White Paper](#), Ireland's [National Energy & Climate Plan](#) (NECP), The Strategic Energy Technology Plan, Project Ireland 2040: Building Ireland's Future, Impact 2030: Ireland's Research and Innovation Strategy and the [Climate Action and Low Carbon Development Bill \(2021\)](#) such as it pertains to SEAI's remit. In addition, the funding Programme aims to support emerging EU Directives, such as [Renewable Energy Directive III](#), and emerging policy, such as [Fit for 55](#).

SEAI is now calling for applications to the SEAI Fellowship Programme for 2023. This programme provides the opportunity for postdoctoral or experienced researchers to apply for **fellowship positions based within SEAI**.

The SEAI Fellowship Programme aims to provide successful applicants with career development opportunities through researching areas of Irish energy policy priority, while immersed in the diverse activities carried out by SEAI, Ireland's sustainable energy authority. SEAI aims to provide an enabling mechanism for researchers to secure diverse career opportunities in the energy sector, whilst also aiming to further develop and enhance national capabilities and capacities of relevance to the energy industry, public administration and government affairs. The SEAI Fellowship Programme will support Fellows to develop key skills that may open up further opportunities at the energy research-policy interface.

The primary objectives of the SEAI Fellowship Programme are to:

- Build capacity in the sustainable energy sector.
- Enhance national capabilities and capacities at the energy-policy interface.
- Build capacity in bridging the gap between policy and research.
- Strengthen knowledge to support the clean energy transition.
- Provide career development opportunities for participating fellows.
- Provide researchers considering a transition from academia to the private or public sector with relevant experience and skills.
- Provide researchers with funding in their own name to advance academic career progression, while rounding out professional experience during the fellowship.
- Provide a development opportunity for experience in energy policy and strategic development and implementation.

2. Who Can Avail of the Programme

Fellowship applications will be accepted from 3rd Level Educational Bodies only, based in the Republic of Ireland. The SEAI Fellowship Programme is open to researchers who:

- Hold a relevant PhD or equivalent* relevant research experience
- Have the support of a 3rd Level Educational Body for their application

** SEAI defines PhD equivalent as 4 years' full time research experience after primary degree*

Applications must be submitted by the individual intending to take up the proposed Fellowship. An Academic Sponsor should be identified within the application form and should be listed as such in line with Organisation Sponsor rules. Please note that the Academic Sponsor is not eligible for funding.

The Programme also welcomes applicants wishing to return to research after a career break for any reason.

3. Definition of Project Roles

Fellowship Applicant: The Fellowship Applicant will be responsible for the research activities, reporting, dissemination and other duties associated with the proposed fellowship in-line with SEAI policies.

Academic Sponsor: The Academic Sponsor is based within the Sponsor Organisation and will take administrative responsibility for the Fellow if the applicant is successful. Academic Sponsors must be core-funded members of academic staff with an employment contract that covers the entire duration of the fellowship. The sponsor will have the responsibility of liaising with the HR dept of the 3rd level body in relation to any contractual and employment requirements, leave entitlements and other administrative duties for the Fellow with the 3rd Level Educational Body while the Fellow is participating in the Fellowship Programme.

Organisation Sponsor: The confirmed 3rd Level Educational Body supporting the fellowship application.

SEAI Supervisor: Fellows will be assigned an SEAI supervisor who will provide support, guidance and study oversight for the duration of their Fellowship.

4. Fellowship Durations and Funding Available

The SEAI Fellowship Programme provides funding for fellowship projects of up to 24 months in duration. Longer durations will be considered on an exceptional basis where justified. Fellowship projects will be offered on a full-time, continuous period basis, located in SEAI Dublin office.

Eligible requested costs include Staff Costs (and associated overheads) only. The indicative maximum SEAI contribution to a Fellowship award is for two years' salary plus overheads except where a longer duration has been well-justified. Please refer to the SEAI RD&D Budget Policy and IUA salary scales. Deviations from IUA scales will be considered where well justified. Applicants should liaise with their organisation's HR department to determine the correct salary level. Please refer to the SEAI RD&D Budget Policy for further details. Eligible staff costs comprise actual salary plus social security contributions and other statutory costs included in the remuneration, provided

that these costs are in line with the Organisation Sponsor's usual policy and processes. The salary costs should not exceed the rates corresponding to the Organisation Sponsor's usual policy on remuneration.

SEAI expect that for fellowship applications requesting salaries on the IUA Research Fellow Scale, a Research Fellow would:

- Have at least 4 years' post-doctoral or equivalent experience
- Demonstrate the capacity for independent research.
- Have a strong track record of high-quality publications.
- Could have experience of research leadership and management within a research group or laboratory.
- Could have demonstrable experience of engaged research and working with stakeholders.
- May have secured independent research funding whilst remaining associated with a PI who would act as their mentor.

Applicants should outline relevant experience within the Application Form (Section 2). Applicants at an earlier career stage should apply for the appropriate point on the IUA PD scales, commensurate with experience. Please refer to <https://www.iua.ie/for-researchers/researcher-salary-scales-career-framework/> for further details.

Successful Fellows will be recognised as an employee of their supportive host 3rd Level Educational Body for the duration of the Fellowship. The application must therefore be supported by the Organisation Sponsor's Vice President for Research (or equivalent). Successful applicants will have a Specific Purpose Contract/Research Funded Contract with their Organisation Sponsor and will be paid by their Organisation Sponsor in accordance with their contract. All terms and conditions associated with the Fellow's Contract of Employment with their Research Body will apply.

Fellows will be assigned an SEAI supervisor who will provide support and guidance for the duration of their Fellowship. Fellows shall comply with all relevant SEAI workplace policies, as notified by SEAI. Fellows will be provided with an appropriate workspace and the necessary IT equipment to fulfil their duties. Currently SEAI is operating a hybrid working model and it is expected that fellows would be in the office at least two days per week in 2024, however this is subject to change.

5. Fellowship Topics









Within this 2023 Call, applications can be submitted to 7 defined topics.

Each topic description in the Annex 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. All proposals should build upon existing research and information available.

Fellows will be involved in research work undertaken across the programmatic or directorate teams they join, which will likely be broader than the topic proposal they submit.

As this is a competitive call, SEAI cannot provide feedback on draft proposals, or provide additional information on the fellowship topics, other than the detail included within this Call Document. Full Topic descriptions can be reviewed within the Annex (linked in the Table below). Each application can apply to only one topic.

Please note the actual work programme of a fellow may be subject to modification following award, in alignment with relevant emerging national energy policy priorities related to the fellow's specific area of research.

SEAI Fellowship Topics		
1	Investigating ecological conservation management while maximising Ireland's clean energy transition	
2	Applying an innovation to impact framework to achieve Ireland's clean energy transition	
3	Research informing model methodology and functionality to enhance comprehensive energy modelling capability Note: Topic Removed	
4	A just decarbonisation of Ireland's passenger vehicle fleet	
5	Behavioural science approaches to understanding and changing energy-related behaviours	
6	Barriers and opportunities in the uptake of low carbon heating technologies in industry	
7	Bioenergy opportunities for Ireland	
8	Understanding the impacts of Irish policies on the successful development of a community energy sector in Ireland.	

6. Submitting Your Application

Applications to the 2023 SEAI Fellowship Programme should be made through SEAI's online application platform, PEP (Project Evaluation Platform).

The PEP Application Portal will be available from January 2024 and information and guidance on how to submit your application will be provided at the following link:

www.seai.ie/grants/research-funding/research-fellowship/

Applications must include a complete Application Form (Word doc), which must be submitted to SEAI via PEP. The Application Form template is available to download at the link above.

Applications should also include Letters of Support from the following: (1) An authorised staff member in the Organisation Sponsor (e.g., the Vice President for Research or equivalent); (2) An Academic Sponsor in the Organisation Sponsor institution; confirming their support for the proposed fellowship application. Any additional unsolicited Letters of Support will not be accepted.

Application Checklist

Application Form	<input type="checkbox"/>
Letter of Support - Vice President for Research or Similar	<input type="checkbox"/>
Letter of Support – Academic Sponsor	<input type="checkbox"/>
Declaration of 3 rd level educational body – Non-Economic Public Good (NEPG)	<input type="checkbox"/>

7. Evaluation Process and Criteria

Only fully complete applications received prior to the application deadline will be considered for evaluation. The evaluation process consists of three stages:

Stage 1 – Eligibility Assessment: Applications will be assessed to ensure administrative compliance with programme requirements and objectives.

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

Stage 3 – Interview: Following technical evaluation, highly ranked applicants will be invited to participate in an online interview.

Successful applicants will be based in SEAI's Dublin office for the entire duration of the Fellowship.

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

Fellowship Suitability (30%)

- Relevance of qualifications and experience
- Motivation to undertake fellowship
- Scientific outputs appropriate to career stage
- Other communications and public engagement
- Overall suitability for proposed project

Excellence and Innovation (30%)

- Familiarity with relevant RD&D activities/knowledge of the area
- Quality of the proposed approach and ambition related to state of the art in Ireland and beyond
- The validity and reliability of the prospective approach

Relevance and Impact (20%)

- Relevance to the needs of the Irish energy sector with particular reference to national policy such as it pertains to SEAI's remit
- Builds and/or maintains national capacity, capability and critical mass to carry out internationally leading research activities underpinning the energy sector
- Relevance of enterprise, scientific, policy and social impact of project outputs
- Strength of communication/dissemination and exploitation plans and approach to data management

Quality and Efficiency of Implementation (20%)

- Coherence and effectiveness of the proposed fellowship project work plan
- Quality of project framework, clarity of deliverables and milestones with a credible breakdown of activities

ANNEX – FELLOWSHIP TOPIC DESCRIPTIONS

Fellowship Topic 1	Investigating ecological conservation management while maximising Ireland's clean energy transition
SEAI-based Department	Research and Technology Department

Background:

It is recognised that the development of renewable energy sources is crucial for achieving Ireland's and the EU's energy and climate targets. However, exploitation of renewable energy resources may also lead to certain environmental problems or risks regarding human health. Ireland, through the Climate Action Plan (2021), established an increased 80% renewable energy target for the electricity sector by 2030. Accelerated deployment and delivery of Ireland's clean energy ambitions need to be conducted in adherence with EU biodiversity goals, in particular EU protected habitats and species.

Renewable energy developments, such as wind, solar, ocean, geothermal and bioenergy, all require a planning authority to grant permission for the activity. As part of this application process, environmental screening is required for any likely impacts of the project on the environment and in particular, on protected habitats or species. Environmental assessments, including Strategic Environmental Assessment, Appropriate Assessment and Environmental Impact Assessment, are tools which help to maximise environmental and social benefits resulting from renewable energy development, while avoiding or minimising potential adverse effects. Increased demand of renewable energy in turn is increasing demand for ecological participation.

Topic Objectives and Expected Outputs:

SEAI wishes to examine ecological conservation management and its role in Ireland's clean energy transition.

Proposals to this topic should aim to enhance national ecological capacity and suggest approaches, in line with EU Directives and ambitions, that could mitigate potential risk and streamline project level development, while capturing implications for stakeholders, including landowners and citizens.

The following is a non-exhaustive list of potential outputs that could be expected from this fellowship:

- Review policies in place in European member states, identify measures that may support the mitigation of negative impacts to the Irish context, and track any unintended consequences.
- Literature review of evidence-based research into effective mitigation and compensation measures that have contributed to planning confidence.
- Habitat Management - review the efficacy of existing management plans and analyse how adaptive management could be put in place based on current best evidence.
- Consider how ecology legal requirements fit in to the planning regime, including suggesting a best practice review process for local authorities to follow.
- Conduct additional research activities relating to ecology in the energy sector which may be required to support SEAI in delivery of relevant activities.

Fellowship Topic 2	Applying an innovation to impact framework to achieve Ireland's clean energy transition
SEAI-based Department	Research and Policy Insights Directorate

Background:

To meet Ireland's climate targets, strategic innovation in the energy sector must develop and expand rapidly. The role of innovation in the establishment, survival and growth of organisations is understood. However, innovation must be embedded in current management practices to support agile decision making and resource allocation in the context of changing opportunities, as well as time and resource constraints.

To achieve breakthroughs, research outcomes must be scaled for population-level clean energy transition impact in Ireland, with a structured but flexible transformative approach that can support innovators in the context of their own organisation and industry. A flexible framework for the Irish energy sector would facilitate development, implementation, testing, evaluation, and fast-cycle iteration. The framework can also guide the development of strategic innovation capabilities in Irish organisations over time.

Fellowship Topic Objectives and Expected Outputs:

The key outcome of this fellowship would be a framework, to be adapted by SEAI, which can address innovation challenges effectively within different SEAI Departments. It is intended to support SEAI in translating outputs from the Research and Technology and Data and Insights teams into continuously evolving sustainable innovative programmes that identify and support high impact business opportunities. This in turn will transform the programme outputs into purposeful innovations that create significant value for all stakeholders. A concise framework sharing the language of core concepts of innovation and value proposition would be beneficial to SEAI to quantify its potential impacts as part of the Clean Energy Transition.

The following is a non-exhaustive list of the outputs that could be expected from this fellowship:

- An extensive literature review and assessment of:
 - Different innovation to impact frameworks.
 - Innovation models and management approaches.
- Identify issues and challenges to the Irish energy sector in innovation
- Design an Irish Innovation to Impact Framework for SEAI including:
 - Adaptable process template
 - Core tool template and toolkits
 - Common language and definitions
- Trial of the framework with several different departments of SEAI, supports and guidelines on how to use the framework.
- Conduct additional research activities relating to “innovation to impact” in the energy sector which may be required to support SEAI in relevant activity delivery.

Fellowship Topic 3	Research informing model methodology and functionality to enhance comprehensive energy modelling capability
SEAI-based Department	

Due to unforeseen circumstances, SEAI are no longer in a position to offer a fellowship on this topic.

Fellowship Topic 4	A just decarbonisation of Ireland's passenger vehicle fleet
SEAI-based Department	Data and Insight Department

Background

To meet its carbon abatement targets, Ireland's Climate Action Plan 2023 sets out several KPIs such as 175,000 of Ireland's passenger fleet to be EVs by 2025, as an interim step toward 845,000 EVs in 2030 representing 30% of the total passenger fleet, with EVs representing 100% of new registrations by 2030.

The success of those KPIs to deliver the targeted carbon attainment depends on the extent to which several complicating scenarios might arise, among which (but not limited to) the extent to which:

- Newly registered EVs represent a replacement of Internal Combustion Engine Vehicles (ICEVs) vs. a net increase in automobile ownership.
- The intensity of use of replaced ICEVs are representative of ICEV intensities of use at a national level vs. biased toward narrower ranges of usage intensities among certain sub-populations.
- Newly registered EVs simply replace travel activities by ICEV vs. bring about an increase in travel activity compared to the travel activities of ICEVs they replace.
- Newly registered EVs, in the long run, remain in the Irish fleet and deliver a progressive decarbonisation of the Irish second-hand vehicle market vs. being exported from Ireland upon eventual replacement.

A parallel concern to the decarbonisation of the vehicle fleet is that it fulfils requirements for a just energy transition, whereby the interventions intended to accelerate this decarbonisation also deliver equitable outcomes for society both for potential grant recipients and for those indirectly affected by grants, such as other road users.

In this context, the Energy Policy & Programme Evaluation unit is seeking a qualified research fellow to explore this topic area, to identify promising avenues of inquiry, and to execute and disseminate the research for both popular and scientific audiences. The research should be evidence-based and focused on providing specific guidance for future policy design.

Fellowship Topic Objectives and Expected Outputs

The following is a non-exhaustive list of the outputs that could be produced from this fellowship:

- Review available literature on private fleet decarbonisation including strategies, incentives, and regulations.
- Assemble, review, and assess the potential of existing databases to support analyses.
- Design and implement data collection strategies to support the intended analyses, with the possibility of quantitative, qualitative, or mixed approaches.
- Carry out appropriate analysis techniques, and to the extent necessary apply new techniques, to draw insights from data material.
- Make recommendations about how future policies and interventions could be designed to contribute to the carbon abatement target more effectively.
- Make recommendations about how just transitions aspects better be addressed in fleet decarbonisation policies and interventions.
- Communicate findings in scholarly conferences journal articles, stakeholder presentations, and public-facing release materials.
- Conduct additional research activities relating to programme evaluation in the energy sector which may be required to support SEAI in delivery of relevant activities.

Researcher Profile

The researcher should have an appropriate mix of scientific competencies in areas such as transport systems, policy analysis, energy efficiency, and micro-economics, as demonstrated in a doctoral degree and demonstrated expertise that may be found in a wide array of scientific fields including but not limited to engineering, economics, and statistics. The researcher should have a firm capability to independently scope, carry out, and report on scientific studies.

Fellowship Topic 5	Behavioural science approaches to understanding and changing energy-related behaviours
SEAI-based Department	Data and Insights Department

Background:

The Behavioural Economics Unit (BEU) is an established team within SEAI's Data and Insights department, comprising of staff with expertise in behavioural science, psychology and quantitative methods. The BEU is a research-focused team that uses a rigorous behavioural science approach to understand and change the behaviour of energy consumers (citizens and businesses). This work complements strong technology, engineering, data science and marketing competencies within the organisation.

The BEU uses a range of research methods (literature reviews, data analysis, surveys, qualitative methods, online experiments, field trials & RCTs) to identify barriers and enablers of a range of energy-related behaviours and to test interventions designed to address these. Behaviours of interest include both once-off behaviours such as the uptake of energy efficiency measures (e.g. home energy upgrades, heat pumps, electric vehicles) as well as ongoing behaviours such as travel behaviour, home energy use and demand flexibility (e.g. shifting electricity use away from peak times). There is also an increasing interest in understanding public attitudes/acceptance of new energy policies and technologies (e.g. district heating).

Current projects include an RCT to evaluate community-based marketing approaches to promote home energy upgrade, a mixed methods project looking at how to promote heat pump uptake in oil-heated homes, the design of a decision tool to help consumers make optimal energy investments, and an ongoing online survey (the Behavioural Energy and Travel Tracker) that uses the Day Reconstruction Method to gather thorough, accurate and granular data about the energy behaviours of Irish citizens over time. This survey has been running monthly since December 2022 (likely to become quarterly in 2024) and has generated a rich dataset that could be used to address a number of research questions.

Further information and publications are available on the BEU webpage <https://www.seai.ie/data-and-insights/behavioural-insights/>

Fellowship Topic Objectives and Expected Outputs:

This fellowship topic has been kept deliberately broad so that applicants can propose their own research projects based on their own skills and experience. However, any proposal should seek to understand and/or change energy-related behaviours relevant to SEAI's remit using a rigorous approach based on behavioural science principles. The expected outputs would include both academic publications as well as briefs/presentations for relevant policy audiences.

The ideal applicant would have a PhD in a field related to behavioural science or economics, with a keen interest in understanding and developing solutions to address the behavioural drivers of climate change. We would also welcome applicants with an energy engineering or climate background interested in pursuing behavioural research.

Fellowship Topic 6	Barriers and opportunities in the uptake of low carbon heating technologies in industry
SEAI-based Department	Research and Technology Dept.

Background:

Ireland's statutory climate objective is a 51% reduction in emissions by 2030 (relative to 2018 levels) and net-zero emissions no later than 2050. Currently industry accounts for 37% of all heat demand in Ireland and 33% share of total heat related emissions (4.6 MtCO₂). A significant proportion of emissions in industry arise from fossil fuel use in combustion for manufacturing processes.

The [2023 Climate Action Plan](#) aims to accelerate the uptake of carbon neutral heating in industry, with greater electrification of low-to-medium temperature heating, utilising high efficiency heat pumps, increased supply and use of biomass and green hydrogen for high temperature heat demand.

The Climate Action Plan has specific targets for the sector:

- 50-55% share of carbon neutral heating in total fuel demand by 2025, made up of 35% of low/medium grade heat to be electrified, 12% of low/medium grade heat to be supplied by sustainable biomass and 64% of high-grade heat to be converted to direct/hybrid electrification technology.
- 70-75% share of carbon neutral heating in total fuel demand by 2030, with 55% of low/medium heat to be electrified, 20% of low/medium grade heat to be supplied by sustainable biomass and 88% of high-grade heat to be converted to direct/hybrid electrification technology.

SEAI's National Heat Study (2022) found that most of industrial heat demand in Ireland could be decarbonised through technology changes or fuel switching. The IPCC has also highlighted electrification as a key decarbonisation option for industry but noted the lack of research in this area to evaluate feasibility. An assessment of the barriers that exist in Ireland is needed, drawing on experience in other countries and research to date to decarbonise industrial heat demand through technology changes/fuel switching, building on the findings of SEAI's National Heat Study and complementing the targets and actions identified in 2023 Climate Action Plan

Fellowship Topic Objectives and Expected Outputs:

Proposals to this topic should aim to build on findings from the SEAI's National Heat Study

- Examine current use and application of heat demand across industry archetypes in Ireland utilising SEAI's National Heat Study.
- Undertake an international literature review and assessment of Industrial decarbonisation pathways and policy.
- Review low carbon heating solutions for Industry (non-exhaustive) ie High and medium temperature heat pumps, electric technologies, solid biomass, biomethane, hydrogen, carbon capture and storage.
- Undertake a review of barriers and opportunities to the uptake of low carbon heating technologies across industry in an Irish context i.e. policy framework, planning, market development, technology, infrastructure, economic, behavioural and organisational.
- Assess new business models and policy that enables industrial decarbonisation and deployment at scale aimed at CAP 2030 targets and net zero 2050.
- Technoeconomic assessment of a specific industry archetypes transition to low carbon heating.

Fellowship Topic 7	Bioenergy opportunities for Ireland
SEAI-based Department	Research and Technology Dept

Background:

The SEAI's mission is to drive Ireland's sustainable energy transformation for the benefit of society. SEAI has a key role in driving Ireland's energy transition and will play a significant part in helping Ireland to achieve the targets that have been set in legislation and the Climate Action Plan. The Decarbonised Heat Team operates within SEAI's Research & Technology Department. This team provides the evidence base for energy policy decisions related to heat. It also aids Ireland's energy research priorities, fosters market growth in the energy/heat sector, and contributes to public awareness about sustainable energy. The Decarbonised Heat Team currently focuses on research aspects of heat pumps, district heating, biomass fuels (not biofuels), biomethane, Anaerobic Digestion and related areas.

In relation to bioenergy, the Team is dedicated to advancing sustainable bioenergy for heat usage as a component of the future energy landscape. Recent activities of the team include:

- Conducting bioenergy scenarios for the SEAI National Heat Study 2022.
- Providing management support to International Bioenergy Research Projects within the International Energy Agency (IEA) Bioenergy TCP.
- Assisting in the formulation of national policies in Ireland for Bioenergy development, including the implementation of the Renewable Heat Obligation Scheme, support to the development of an Irish Biomethane Implementation Strategy or the development of a Verification Procedure for users of biomass fuels in Ireland to use Certified Sustainable biomass fuels.

Fellowship Topic Objectives and Expected Outputs:

This fellowship explores bioenergy's role in decarbonizing heat (as a priority) and electricity in Ireland. The fellowship could address some of the following objectives:

- **Literature Review:** Conduct a review of existing and near to market bioenergy technologies and their applications in heating/electricity generation for a range of scales and fuel types.
- **Resource Analysis:** Progress the analyses undertaken in the SEAI National Heat study 2022 to validate the availability and types of bioenergy resources in Ireland, to encompass biomass resource evaluation, production capacity, applicability per end-use sector, and sustainability.
- **Technology Feasibility:** Evaluate the practicality and efficiency of using bioenergy for heat and electricity production in Ireland to include technological and policy readiness, scalability, and integration with existing energy systems.
- **Model Development:** Contribute to the development of predictive models for bioenergy's performance in heating and electricity sectors with the goal of optimizing system design and predicting energy outputs.
- **Policy Impact:** Evaluate how current and proposed national & EU policies influence the role of bioenergy in heating and electricity.
- **Comparative Study:** Compare Ireland's use of bioenergy in heating (and electricity) with high performing European countries to identify best practices and innovative approaches.
- **Innovation Exploration:** Identify and explore innovative bioenergy solutions that can be specifically adapted for Irish heat and electricity needs. This could include new bioenergy conversion technologies or hybrid systems.
- **Emission Analysis:** Analyse the impact of bioenergy on greenhouse gas emissions in both heat and electricity sectors to quantify its contribution to Ireland's emission reduction targets.
- **Market Assessment:** Assess the market potential and economic viability of bioenergy in heating and electricity taking into account market demand, cost competitiveness, and potential barriers to adoption.
- **Sustainability Evaluation:** Evaluate the long-term sustainability impacts of bioenergy solutions, considering environmental, economic, **and social factors** to ensure it contributes positively to Ireland's sustainable energy future.

The successful fellow will be based in SEAI and will be able to develop collaborative linkages with the broader academic and energy policy system.

Fellowship Topic 8	Understanding the impacts of Irish policies on the successful development of a community energy sector in Ireland.
SEAI-based Department	Research and Technology Dept

Background:

Under the government’s Renewable Electricity Support Scheme (RESS), several policy measures are aimed at increasing the number of community-led projects and the share of such projects in the national electricity mix. This aid is estimated to cost Irish electricity consumers approximately €111 million over the duration of RESS. It consists of

- a. a preference category for community-led projects in the RESS auctions,
- b. the easing of requirements to post bid bonds and performance security to participate in auctions,
- c. A Community Enabling Framework (administered by SEAI) to support communities in the project development process (e.g. providing grant support and information guides as well as Expert Trusted Advisors).

The above three policy measures are applied in different ways across the multiple RESS auction rounds. For instance, in RESS1 projects required at least 51% community ownership to qualify for the measures, whereas in RESS2, 100% community ownership is required to qualify as a Renewable Energy Community (REC) and compete in the community preference category of RESS. These changes offer valuable field experiments for transdisciplinary research to investigate the variable impact of measures.

Project Objectives & Expected Outputs:

The research objective is to examine if specific enablers for Irish communities to develop their own solar PV or wind projects have:

- 1. Led to an increase in community investment to deliver on the objectives of the RESS?
- 2. Increased the number of community owned renewable generation plants?
- 3. Had economic and/or social impacts on the community energy sector?

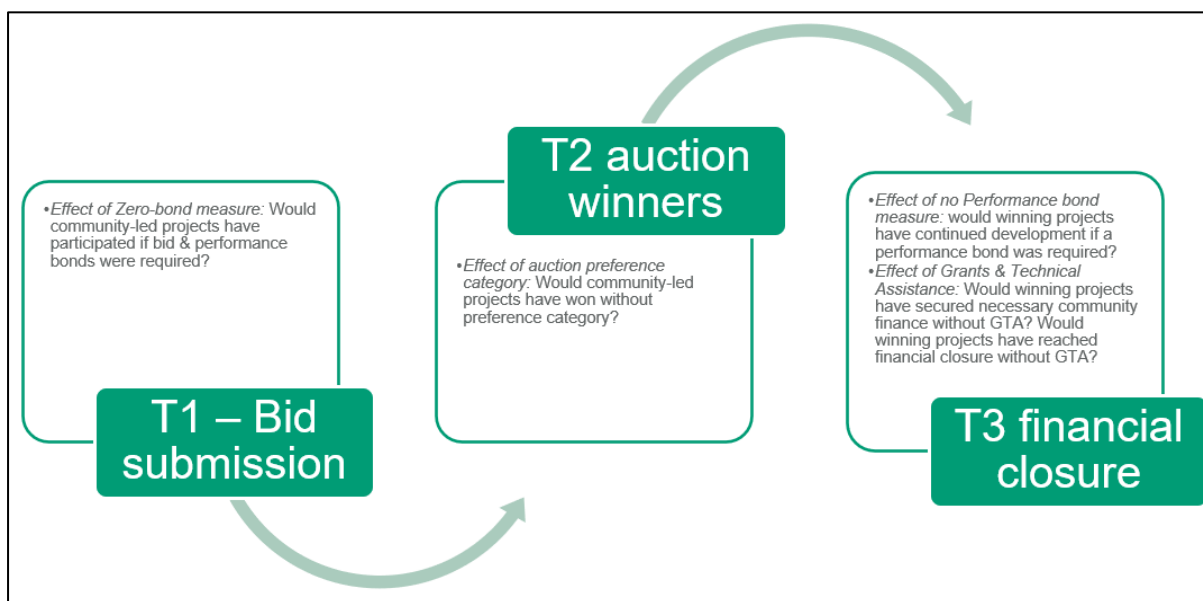


Diagram 1: Research Questions to understand the effect of RESS measures on community-led projects

Diagram 1 above lists four research questions aligned with the RESS measures to support community-led projects.

The findings can be compared to related measures in other EU Member States, to offer Ireland practical guidance on the future of RESS and the most effective policy measures and tools to support increased community participation in the Irish energy transition.

It is envisaged that researchers would study the enablers and barriers to communities and developers participating in the RESS-1, RESS-2, and potentially RESS-3 community-led auctions, particularly the members of the sustainable energy network who either may have considered developing a community-led RESS project or did participate in the auction but failed to achieve financial closure after winning.

The proposed project should result in, among others:

- a. A series of robust, mixed methods studies to analyse the effect of each of the policy measures in question and their interactions in changing attitudes and enabling (or inhibiting) an increase in community investment and community owned renewable energy plant in Ireland.
- b. A desk-based study that compares the findings from (a) to the outcome of similar measures in other EU Member States and offers practical policy recommendations for improving Irish support for community energy with the eye on the national net-zero target.

The successful fellow will report to the independent Steering Group for the RESS Evaluation consisting of SEAI, academic and other state agency representatives with an interest in community energy in Ireland and the RESS.