



SEAI ENERGISE FELLOWSHIP PROGRAMME

2025 Call Document

Call for Submission of Applications

Key Dates	
Call Open Date	Tuesday 18 th March 2025
Deadline for Application Submission	12 noon (Irish Standard Time) Wednesday 14 th May 2025

It is the responsibility of each applicant to SEAI's ENERGISE Fellowship 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 ENERGISE FELLOWSHIP Funding Programme

2025 Call Document

March 2025

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.

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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.

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.

SEAI is now calling for applications to the new Energise Fellowship Programme for 2025. This programme provides the opportunity for postdoctoral or experienced researchers to apply for **two categories of fellowship awards:**

- **Academic Fellowships**
- **SEAI-Based Fellowships**

The Energise Fellowship Programme aims to provide successful applicants with career development opportunities through researching areas of Irish energy policy priority. SEAI aims to provide an enabling mechanism for researchers to secure diverse career opportunities in academia and 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 Energise 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 Energise 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.

Academic Fellowships

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.

These awards will fund individual researchers in Irish level third level educational bodies. It is an open call with a bottom-up approach to research topics, i.e. applicants are free to propose their own research idea, as long as projects are aligned with the objectives of the [SEAI Research Development and Demonstration programme](#). These are:

- 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.

Who Can Avail of the Programme – Academic Fellowships

Applications for Academic fellowships will be accepted from individuals with the support of a 3rd Level Educational Body based in the Republic of Ireland. The Academic 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 Mentor should be identified within the application form and should be listed as such in line with Organisation Sponsor rules. Please note that the Academic Mentor is not eligible for funding.

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

Definition of Project Roles – Academic Fellowships

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 Mentor: The Academic Mentor is based within the Sponsor Organisation and will take administrative responsibility for the Fellow if the applicant is successful. Academic Mentors must be core-funded members of academic staff with an employment contract that covers the entire duration of the fellowship. The Mentor 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. For academic fellowships the sponsor will also take on an academic mentoring role.

Organisation Sponsor: The 3rd Level Educational Body based in Republic of Ireland supporting the fellowship application.

Academic Fellowships – Duration and Funding Available

The Energise 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. Academic fellowship projects will be offered on a full-time, continuous period basis. The Academic Fellow will be based in the Organisation Sponsor third level educational body.

Academic Fellowship projects may request travel costs, materials, equipment in accordance with the RDD budget policy in addition to salary and overheads. The maximum allowable budget is €300,000.

Please refer to the [SEAI RD&D Budget Policy](#) and [IUA salary scales](#) when creating a budget. 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. Deviations from IUA scales will be considered where well justified.

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 Post-Doctoral scales, commensurate with experience. Please refer to <https://www.iua.ie/for-researchers/researcher-salary-scales-career-framework/> for further details.

SEAI expect that for academic 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.

Successful Fellows will be recognised as an employee of their organisation sponsor 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 Organisation Sponsor will apply.

Evaluation Process and Criteria-- Academic Fellowships

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.

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
- Research Excellence in career to date
- Communications and public engagement record
- Academic supervisor expertise
- Overall suitability for proposed project

Excellence and Innovation (30%)

- Understanding of the state of the art and the challenge to be addressed
- Quality of the research idea
- Validity and reliability of the proposed approach
- Ambition in relation to the state of the art in Ireland and beyond
- Relevance of the project objectives

Relevance and Impact (20%)

- Relevance to the needs of the Irish energy sector with 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

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
- Strength of communication/dissemination and exploitation plans and approach to data management
- Effective mentoring and supervision arrangements
- Appropriate facilities and access to infrastructure and data

SEAI-BASED Fellowships

These awards will support fellows to conduct research on a specified topic, within SEAI. Fellows will typically be based in the SEAI head office in Dublin for the duration of the award.

Who Can Avail of the Programme- SEAI-based fellowships

The SEAI-based Fellowship opportunity is open to researchers who:

- Hold a relevant PhD or equivalent* relevant research experience
- Have the support of a 3rd Level Educational Body based in the Republic of Ireland 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.

Definition of Project Roles – SEAI-Based Fellowships

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

Fellowship Durations and Funding Available- SEAI-based fellowships

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. SEAI-based fellowship projects will be offered on a full-time, continuous period basis, located in SEAI Dublin office.

For SEAI-based fellowships, eligible requested costs include Staff Costs (and associated overheads) only.

The indicative maximum contribution to a SEAI-based 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](#) for further details and to the [IUA salary scales](#). Applicants should liaise with their organisation's HR department to determine the correct salary level. 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.

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

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.

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 Organisation Sponsor will apply.

SEAI-based 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 2025, however this is subject to change.

Evaluation Process and Criteria- SEAI-based fellowships

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 SEAI-based fellowships: Following technical evaluation, highly ranked applicants for SEAI-based fellowships will be invited to participate in an online interview.

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

Fellowship Suitability (30%)

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

Excellence and Innovation (20%)

- Understanding of the state of the art and the challenge to be addressed
- 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 of the project objectives

Relevance and Impact (30%)

- 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

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
- Strength of communication/dissemination and exploitation plans and approach to data management

SEAI-Based Fellowship Topics






For the SEAI-Based Fellowship category, applications can be submitted to defined topics.

Each topic description below 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 in the next section (linked in the Table below). Each application can apply to only one topic.

Please note the actual work programme of an SEAI-based 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 – Based Fellowship Topics		
1	Applying an innovation to impact framework to achieve Ireland's clean energy transition	
2	Measuring the incidence and distribution of energy programmes' costs and benefits	
3	Evaluating energy programme outcomes using mixed and qualitative approaches	
4	Behavioural science approaches to understanding and changing energy-related behaviours	
5	Investigating the opportunity to future proof households from fossil fuel price fluctuations (with a focus on low income and vulnerable households) through utilisation of storage devices and other technologies	

SEAI-based Fellowship Topic Descriptions

Fellowship Topic 1	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 2	Measuring the incidence and distribution of energy programmes' costs and benefits
SEAI-Based Department	Data and Insight Department

Background

SEAI manages a broad portfolio of funding and support programmes aimed at accelerating the transformation of Ireland's energy system, focusing on demand reduction, energy efficiency, and decarbonisation. With those primary objectives in mind, SEAI also has a responsibility to support a just transition, by measuring and assessing the incidence of programmes' costs and benefits across Ireland's population, and their distribution across key dimensions including geography, socio-economics, and demographics – for example, examining issues if urban/rural divide and prevalence of energy poverty.

Fellowship Topic Objectives and Expected Outputs

This research fellowship is centred on utilising SEAI datasets, as well as progressing efforts to obtain new datasets, in order to better understand how programmes' positive, as well as potentially negative, impacts are distributed.

The applicant will be expected to detail an appropriate research approach, including central research question formulation. However, some themes that may be appropriate include:

- How do SEAI's private grant programmes interact with private consumer choice to realise consumer surpluses, and how are those consumer surpluses distributed?
- What is the degree of complementarity vs. intersectionality in SEAI's private grant programmes, and what consequences do these have for the distribution of overall effects of the programmes? This includes research into underserved demographics.
- Are there key interactions between SEAI programmes and other government policies and programmes that either undermine or enhance the impacts of those programmes?
- What key barriers exist to directly accessing SEAI programmes, and how are these distributed across Ireland's geographic, demographic, and socio-economic dimensions? What second-hand effects may exist for those behind barriers, and is there any potential to detect or measure these?
- How are commercial and industrial programmes' benefits distributed, and what evidence does this produce for any distributional patterns of economic development?

Outputs of the research topic will be expected to include both scientific outputs in the form of peer-reviewed publication and conference presentation, and policy outputs such as briefs on main findings, with key stakeholders such as relevant government departments as an audience. The aim is for the research to lead to actionable recommendations for current and future energy programmes.

Researcher Profile

Given the wide range of sectors addressed by SEAI programmes, an applicant may come from any of a variety of scientific backgrounds, such as in engineering, geography, public policy, statistics, or economics. However, the applicant should have an adequate competency in quantitative economic analysis with a focus on distributional questions to be able to identify and prepare appropriate datasets and to select apply the appropriate methods to analyse them.

Capability to act as an independent researcher should be demonstrated through a completed doctoral degree and the production of scholarly outputs commensurate with their level of experience.

Fellowship Topic 3	Evaluating energy programme outcomes using mixed and qualitative approaches
SEAI-Based Department	Data and Insights Department

Background

SEAI manages a broad portfolio of funding and support programmes aimed at accelerating the transformation of Ireland's energy system, focusing on demand reduction, energy efficiency, and decarbonisation. In addition to grant programmes and other supports leading to measurable energy savings, many of SEAI's programmes act as supports to increase knowledge, awareness, and capabilities among target groups, in order to build capacity to participate in other programmes. For those programmes, key impacts are often difficult to measure systematically, let alone quantitatively.

Fellowship Topic Objectives and Expected Outputs

This research fellowship is focused on developing and applying qualitative and mixed approaches to the assessment of key objectives of SEAI's.

The applicant will be expected to detail an appropriate research approach, including central research question formulation. However, some themes that may be appropriate include:

- Exploring the multi-dimensional benefits of retrofitting energy-poor homes: examining the lived experiences of households benefitting from energy poverty interventions. For example, exploring perceived changes in health, financial resilience, home comfort, and social inclusion.
- Examining barriers and enablers in accessing these programmes, providing insights for more equitable and impactful policy design.
- Identifying and measuring the qualitative impacts of SEAI's capacity building programmes, i.e. for communities, education or business.
- Attitudes and satisfaction toward new technology after using grants, including user experiences, long-term engagement, and potential spillover effects on wider adoption.

Outputs of the research topic will be expected to include both scientific outputs in the form of peer-reviewed publication and conference presentation, and policy outputs such as briefs on main findings, with key stakeholders such as relevant government departments as an audience. The aim is for the research to lead to actionable recommendations for current and future energy programmes.

Researcher Profile

Applicants to this fellowship topic should have a strong background in qualitative and/or mixed methods, and preferably experience working with topics in the energy sector and with impact evaluation of public programmes. Applicants may come from a wide variety of scientific backgrounds, e.g. sociology, geography, behavioural science, public policy, or economics. Other fields may also come into question if the applicant has demonstrated expertise in mixed and/or qualitative methods.

Capability to act as an independent researcher should be demonstrated through a completed doctoral degree and the production of scholarly outputs commensurate with their level of experience.

Fellowship Topic 4	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 and technologies, 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 perception of energy policy and participation in the energy transition.

Further information about research 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 and attitudes relevant to SEAI's remit using a rigorous approach based on principles from behavioural science. Candidates should be clear in their proposal why they think they would benefit from being based in SEAI as opposed to an academic institution. The expected outputs would include reports and 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 5	Investigating the opportunity to future proof households from forthcoming fossil fuel price fluctuations through storage devices and demand side flexibility.
SEAI-Based Department	Mobility & Smart Networks in partnership with International Energy Research Programme

Background:

Ireland is experiencing a significant period of fluctuation and change in the energy sector with an ambitious target of 80% renewable electricity by 2030. This target and these changes bring challenges due to the intermittent nature of renewables and the current predictable, consistent nature of demand. To meet these challenges energy demand will need to become more flexible, and citizens will need to become smarter with how they use energy. Storage has the potential, in the domestic sector, to store energy generated when renewables are at their highest, carbon intensity is low or almost zero in some situations, and energy prices are at their lowest. This energy can be stored and discharged into the residence at times of low renewable generation or high energy prices. There is potential for storage to unlock and accelerate renewable energy penetration on the grid but also to possibly enable more control over energy prices that can be provided to citizens, particularly those who are vulnerable or on low incomes, and this must be understood in its entirety.

Utilising existing assets or low-cost installations such as domestic storage options may provide a robust solution to the grid without the need for significant and large-scale investment in grid infrastructure. Over 50% of peak demand is from the residential sector. There is also a need to identify low carbon heating solutions for vulnerable homes and to ensure that these solutions are cost optimal for the lifetime of their operations. Furthermore, there is a need to fully understand the storage landscape and the benefits, gaps, barriers and opportunities within.

Fellowship Topic Objectives and Expected Outputs

Project Objectives would include some of the following:

- To better understand how storage can support residential participation in grid services.
- To understand the potential existing assets that support demand flexibility.
- To provide projections of how residential flexibility can support Climate Action Plan targets.
- To investigate the opportunity to facilitate a just transition through utilising storage.
- To understand all forms of storage available to residential customers.
- To understand the barriers and gaps for storage to provide grid services.
- International comparison of residential storage activities with Ireland.
- To understand the limitations of residential storage including inverter controls and grid connection constraints.
- To document the value proposition for citizens regarding storage and grid services participation, including a separate value proposition for low income and vulnerable households.
- To investigate the coupling of storage with other low carbon technologies and the benefits and challenges of such.
- A cost benefit analysis for residential storage.
- Examine the potential of storage versus other low carbon technologies.
- To understand how flexibility and storage can support cost effective operational costs for low carbon heating solutions.

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

- Review available literature on storage, multiple types, including supports, regulations and incentives.
- To investigate the benefits, barriers, gaps, opportunities and challenges around storage and domestic storage providing grid services including providing protection for vulnerable households and households on low incomes.
- To determine the lifecycle impact of storage.
- To perform a cost benefit analysis of domestic storage.
- Provide recommendations for future policies, incentives and interventions based on the research undertaken.
- Quantify the impact of domestic storage and the capacity of grid services that could be offered.

- To determine if storage may be an appropriate solution for vulnerable households and households on low incomes through schemes such as the warmer homes scheme and other schemes.
- Provide well evidenced analysis on whether there is a possibility of grid scale storage de-valuing the potential of domestic storage.

Submitting Your Application

Applications to the 2025 SEAI Fellowship Programme should be made through SEAI's online application platform, PEP (Project Evaluation Platform) <https://pepportal.seai.ie/>.

The PEP Application Portal will be available from late March 2025 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/Academic Mentor	<input type="checkbox"/>

Sustainable Energy Authority of Ireland

w: www.seai.ie

e: energyresearch@seai.ie



Rialtas na hÉireann
Government of Ireland