Gas Networks Ireland

PC4 Gas Innovation Fund

Annual Report: 2017/18 and 2018/19

Part of ERVIA group

Contents

CRU Commentary

The Commission for Regulation of Utilities (CRU) welcomes the publication of Gas Networks Ireland's (GNI) first report on the PC4 Gas Innovation Fund. The PC4 Gas Innovation Fund is a portion of GNI's allowed revenues for the PC4 Period (October 2017-September 2022) and provides funding to innovative projects related to gas with the potential to:

- deliver significant carbon savings;
- increase throughput in the gas system;
- assist in the transition to a low carbon economy;
- provide measurable value to all gas customers.

The value of the PC4 Gas Innovation Fund is €20 million and, as a part of GNI's allowed revenues, it is ultimately financed by gas customers through network tariffs. The PC4 Gas Innovation Fund is managed by GNI and, after receiving guidance from an advisory group containing representatives from a range of leading Irish research centres, GNI chooses what projects ultimately receive funding. As such, it is Gas Networks Ireland's primary responsibility to ensure that the funding achieves the ultimate goals of the fund and, in doing such, delivers for the gas customer. The CRU nonetheless recognises that, due to the uncertainty inherent in innovation, it is likely that not all innovation projects will be successful - indeed the positive learnings from a project could be that a particular practice or technology is not viable. However, where innovation projects do demonstrate beneficial options for integration into 'business as usual' activities, it is important to ensure that is actually done.

Of the aforementioned €20m, the CRU initially awarded GNI €17.5m, with a further €2.5m potentially available. The CRU has yet to make a decision on whether to grant the additional €2.5m to GNI. In coming to such a decision, the CRU will consider the value generated by the fund with a particular focus on delivering value to the customer and integrating lessons learnt into GNI's 'business as usual'. In order to ensure that the CRU is in possession of the information required to make such a decision, the CRU set out an Innovation Reporting Framework (the 'Framework'). This report has been submitted to the CRU under the framework and describes the progress of the PC4 Innovation Fund from October 2017 to September 2019 (the first two years of fund).

In the first two years of the Fund, the CRU notes the emphasis GNI has placed on incorporating learnings from its management of a similar scheme under PC3 (the previous price control period that ran from 2012 to 2017).

The CRU notes that in the first two years, GNI has allocated €954,975 of funding to innovation projects, most of which were related to biogas. The CRU recognises the potential of biogas to reduce the carbon intensity of the gas network, which is important as Ireland transitions to a low-carbon economy.

The CRU welcomes GNI leveraging the innovation fund to secure additional funding from other sources, such as the European Union's Connecting Europe Facility (Transport) Fund and the Irish Government's Climate Action Fund. This should further strengthen the innovation activities undertaken by GNI (allowing them to do more without exposing the gas customer to greater costs). The CRU considers it is critical that GNI continues to work to ensure that the funded projects contribute strongly to as many of the aims of the PC4 Innovation Fund as possible. The CRU further

considers that GNI should carefully monitor and record the results of projects in order to maximise learnings and allow for the expansion of those technologies and practices that are successful, both within GNI's own business and in the broader industry. This successful incorporation into 'business as usual' practices is key to delivering customer benefits. The CRU considers that a key theme of the next innovation report should be how they have achieved such.

Executive Summary

The Commission for Regulation of Utilities (CRU) first granted Gas Networks Ireland (GNI) an allowance for a Gas Innovation Fund as part of its third Price Control[1] (PC3). During PC3, GNI employed the innovation fund to grow demand and start decarbonising the gas network. Projects were undertaken to expand the role of natural gas in transport and develop the renewable gas sector in Ireland. GNI carried out several compressed natural gas (CNG) trials with industry to prove the concept of using gas in transport. This enabled GNI to develop a number of project to install fast fill CNG refuelling stations. As a result of these initial projects GNI was able to apply for funding from the Connecting Europe Facility (CEF) Transport and succeeded in securing €6.5m from that fund for the Causeway Study. This project is establishing a pilot CNG refuelling network along the core TEN-T[2] road network in Ireland, a renewable gas injection facility and a grant scheme to help fleet operators deploy CNG vehicles.

The first private and public CNG stations in Ireland have been built in Shannon and Dublin and both are operational. GNI is in the process of rolling out further public and private CNG stations across Ireland. In addition, GNI has created greater awareness about renewable gas and has built the first facility for injecting renewable gas directly into the Irish gas network. GNI, through the innovation fund, has also supported several decarbonisation research projects such as projects for gas quality, renewable gas feedstocks and the potential for power-to-gas. The work that GNI carried out under the PC3 Gas Innovation Fund laid the foundation for GNI to produce its Vision 2050[3] document. This document sets out GNI's vision for how the gas network will become carbon neutral by 2050. This is an important document as it shows the significant contribution to decarbonisation that the gas network can make in Ireland.

The Gas Innovation Fund that GNI set up during PC3 was a new endeavour and GNI learnt a number of key lessons while managing the fund and the associated projects. GNI learnt that programme management, governance and administrative support are essential to the successful running of the Gas Innovation Fund. As a result, GNI has put more focus and resources on these areas to ensure that the objectives of the PC4 Gas Innovation Fund are achieved. For example, input from the Gas Innovation Advisory Group (GIAG) is an important part of the evaluations process. In order to ensure that GIAG members are able to fully participate in the quarterly meetings, GNI has focused additional administrative support on arranging meetings well in advance and ensuring that agendas, minutes and documents are sent to GIAG members in a timely manner. This gives the GIAG members time to review the documentation and allows for good discussions and more effective meetings overall. In addition, the Innovation Reporting Framework that the CRU put in place in 2018 has helped the management and governance of the fund with regular reporting requirements such as initial innovation project forms, annual reports and completed innovation project forms.

Another learning from PC3 is that each innovation project may require continued engagement, contract negotiation and project teams to be formed both in GNI and in the applicant company. It is important to have continuous and clear communication to ensure that projects progress in a

[1] The Price Control is the process through which the CRU provides allowances for GNI to maintain and operate the network and sets GNI regulated revenue for a five year period. The third price control period took place from October 2012 to September 2017.

[2] The Trans-European Transport Network (TEN-T) Core Network includes the most important connections, linking the most important nodes. https://ec.europa.eu/transport/themes/infrastructure/ten-t_en

[3] https://www.gasnetworks.ie/vision-2050/future-of-gas/GNI_Vision_2050_Report_Final.pdf

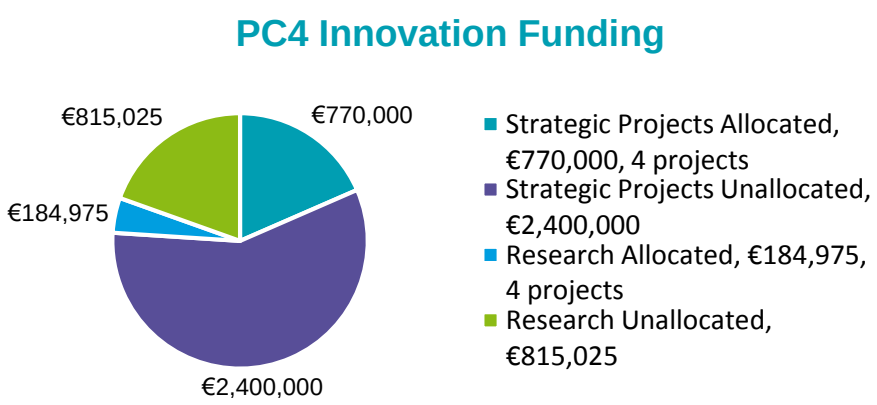
timely manner. During PC3, the management of innovation projects was varied and often included areas such as licensing, policy supports, reporting and dissemination. The projects were overseen to ensure that progress was being made in line with the agreements and that obstacles were overcome as they arose.

An important learning, with regard to CNG, is that the gas industry is new to the transport operators and therefore education and awareness about how the gas industry operates was a necessary element of GNI's interactions with external stakeholders. In essence, GNI is acting as a bridge between the gas and transport industries, to ensure that there is a workable framework for all stakeholders to operate within. A key learning for GNI was the additional work required to support innovation both within GNI and with external stakeholders. GNI built good links to industry and other key stakeholders during PC3 and is continuing to strengthen these links with the PC4 Gas Innovation Fund.

Having a regulatory approved Gas Innovation Fund is a signal to the market, to the government and to EU funds that gas innovation is welcome and encouraged. In PC4, GNI built on the success that it had with the Causeway project and applied for funding again from the CEF Transport Fund under their Blending Call. GNI was successful and secured EU funding of €11.6m for the Green Connect project. This aim of this project is to deliver 21 additional CNG refuelling stations along the core TEN-T road network in Ireland, four renewable gas injection facilities, four mobile CNG refuelling units and a vehicle grant scheme to help vehicle operators to purchase circa 400 CNG vehicles. In addition, the PC4 Gas Innovation Fund helped GNI's application to the Climate Action Fund because it had funded a Front End Engineering Design project which fed into this application. The application was for the GRAZE Gas project and GNI has been shortlisted for just over €8m of funding. GNI is currently going through the project validation phase for this project. This project aims to build a transmission connected CGI facility with associated logistics, two CNG refuelling stations and a small CNG vehicle grant scheme.

Funding from the PC4 Gas Innovation Fund has been allocated to a mix of research and strategic projects during 2017/18 and 2018/19. The expected benefits of these projects are circular economy benefits related to the production of bio-fertiliser and the broader benefits of anaerobic digestion (AD), supporting communities with energy research projects, dissemination benefits for renewable gas from a demonstration AD plant and better knowledge about home heating fuel choices from a research project. More information about the benefits of the PC4 Gas Innovation Fund can be found in Section 5 of this report.

Figure 1. Allocated and non-allocated PC4 Gas Innovation Funding for Strategic and Research Projects up to September 2019.



1 Introduction

The Commission for Regulation of Utilities (CRU) published its decision on GNI's fourth price control (PC4) at the end of August 2017 which provided allowances for a gas innovation fund for the period October 2017 to September 2022. This report sets out the activities that Gas Networks Ireland (GNI) has undertaken with regard to the Gas Innovation Fund between October 2017 and September 2019.

1.1 Background

In 2015, the Irish Government published its White Paper on energy policy entitled "Ireland's Transition to a Low Carbon Energy Future". The White Paper acknowledged that a transformation of Ireland's energy systems is required to meet climate policy objectives and will gradually need to reduce its dependence on fossil fuels but that there will continue to be a need for gas to meet Ireland's energy needs for the foreseeable future. On average, gas fired power generation accounts for 50% of Ireland's electricity production annually. As the share of renewables in the electricity mix increases, gas fired power generation will still be needed to back up intermittent renewable sources but it is also likely that this will mean less utilisation of the gas network by the power generation sector. GNI is concentrating on proactively decarbonising the gas network and increasing utilisation of the network, to ensure that network tariffs remain competitive.

As part of PC3, the CRU approved an innovation fund of €8m to maximise utilisation of the gas network. One of the key objectives of the innovation fund was to encourage innovation in the gas industry by engaging with key stakeholders to share knowledge and discuss ideas for maximising utilisation of the gas network. GNI focussed on innovative research and pilot projects to increase utilisation of the gas network. Increasing utilisation is important because it means that there are more customers to share the costs of running and maintaining the network, thereby making it cheaper for everyone to use the gas network. In the long term the gas network is facing declining gas demand and therefore it is essential to invest in innovation now to maximise utilisation of the gas network. It is important to generate alternative sources of demand to mitigate against the decline in traditional sources of gas demand.

The PC3 Gas Innovation Fund allowed GNI to carry out compressed natural gas (CNG) trials and proved the concept of using gas in transport. Overall, the support that the PC3 Gas Innovation Fund provided for the rollout of CNG and renewable gas injection has facilitated the installation of three CNG refuelling facilities and one renewable gas injection facility. The deployment of these demonstrates to industry and external stakeholders that these technologies work and they set the standards for future developments.

1.2 PC4 Innovation Funding Discussion

GNI had a number of internal meetings after the PC4 Decision document was published to discuss the PC4 Innovation Funding and how it would be managed. GNI reviewed what had been done with regard to the PC3 Innovation Fund, explored potential changes to the way of working and discussed possible governance structures for the innovation fund. The reason for these discussions was to make sure that the structuring and running of the PC4 Gas Innovation Fund would be fit for purpose. These discussions concluded in December 2017 and then GNI started transitioning from

the PC3 Innovation Fund to the PC4 Innovation Fund. For additional information about this transition, refer to Appendix 1 at the end of this report.

A number of changes were made with regard to how the meetings and applications would be managed under the PC4 Gas Innovation Fund. All meetings for the year are organised in advance with meeting calendar invites sent at the start of the year. In addition, GNI moved away from a word based application form to an online application form to make it easier for applicants to apply and for the experts to review the applications. While the word based application form gave applicants the freedom to include whatever information they wanted to, it sometimes led to an abundance of information in the applications which made it difficult for reviewers to decipher the most pertinent points. There is a balance that needs to be struck between having too much information and too little information. The online application form aims to strike this balance by having a focused application form with character limits to encourage succinct responses and by allowing for supplemental information to be uploaded when the application form is being submitted. However, the online application form highlights that the application will be evaluated on the basis of the responses to the questions in the application and not on the supplementary information provided. The purpose of the supplemental information could be that it provides background information on, or further explanations about, a particular technology that couldn't be accommodated within the character limits in the form.

A high level check is carried out on each application that is submitted to ensure that it is eligible and a company check is also carried out, where relevant. Previously some applicants had presented their applications at the advisory meetings but this process was changed and now an internal advisor from GNI is assigned to each application and they present the projects to the advisory group. The internal advisor liaises with the applicant to request additional information and/or look for clarifications, if necessary, prior to the GIAG meetings. Appointing an internal advisor eliminates the need for applicants to travel to the meetings.

In Q1 2019, GNI published submission deadline dates on the Gas Innovation Fund page of its website. The submission deadline dates were set for every quarter a number of weeks prior to the scheduled GIAG meetings. Prior to publishing submission dates, applications could be submitted at any time. This was quite ad hoc and meant that there may or may not be applications available for each GIAG meeting. By having submission deadlines it has meant that applications are submitted by a particular date which gives GNI time to assess the applications and send them to GIAG members for discussion at the next GIAG meeting. In addition, the online application form was changed so that applicants would fill it out in five stages and the form could be saved and completed on a return visit using the reference key allocated to each applicant.

The five stages of the online application form are

1. Contact Details
2. Project Summary
3. Project Relevance,
4. Project Budget and
5. Project Timeline[4].

The introduction of the submission deadlines and the staged online application form has improved the application process.

[4] Screenshots of the staged online application form are shown in Appendix 5.

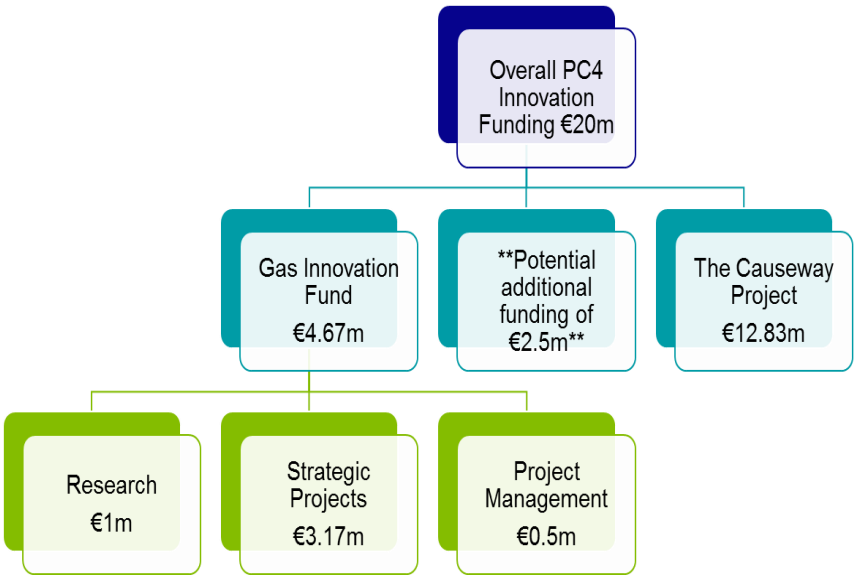
1.3 PC4 Gas Innovation Advisory Group Membership and Meetings

All the members that had participated in the PC3 Gas Innovation Group confirmed that they were interested in participating in the PC4 GIAG. The GIAG is made up of members of the leading research centres in Ireland, key policy advisory groups, government agencies and government departments. The GIAG acts as an advisory group to provide GNI with information and guidance. The GIAG plays a constructive role in advising GNI as it allocates the innovation funding. A table of the current GIAG members is contained in Appendix 2. GNI sent a list of potential meeting dates for the year to the GIAG members in early 2018 and again in early 2019. A schedule of meetings was put together based on members' responses. It was agreed that there would be one GIAG meeting per quarter but additional meetings could be scheduled if needed. A table of the quarterly GIAG meetings for 2018 and 2019 can be found in Appendix 3. The purpose of the GIAG meetings is to discuss the applications that have been received with the various experts providing feedback on the projects. The feedback from the GIAG members is collated and presented at the Gas Innovation Steering Committee meetings to help the steering committee members to decide whether to approve the funding for a project or not.

2 Innovation Fund Structure and Governance

The aims of the PC4 Gas Innovation Fund are to increase throughput through the gas system, assist in the transition to a low carbon economy, deliver significant carbon savings and provide measurable value to all gas customers. Increasing throughput through the gas system is an important aim of the innovation fund because the more the gas network is used, the cheaper it is for everyone to use it. The use of gas in transport is a new source of demand and can increase throughput through the network. An example of assisting in the transition to a low carbon economy would be the production of biomethane and its injection into the gas network. When an energy customer switches from burning coal or oil to using gas this delivers carbon savings. Innovation projects that reduce the operating costs for running the network can deliver value for all gas customers. GNI has been provided with an allowance of €1m for research, €3.17m for strategic projects, €0.5m for project management[5] and €12.83m for the Causeway Project to meet the aims of the PC4 Gas Innovation Fund. There is the potential for an extra €2.5m of funding for gas innovation if the innovation funding is being spent efficiently and effectively.

Figure 2. PC4 Gas Innovation Funding Structure



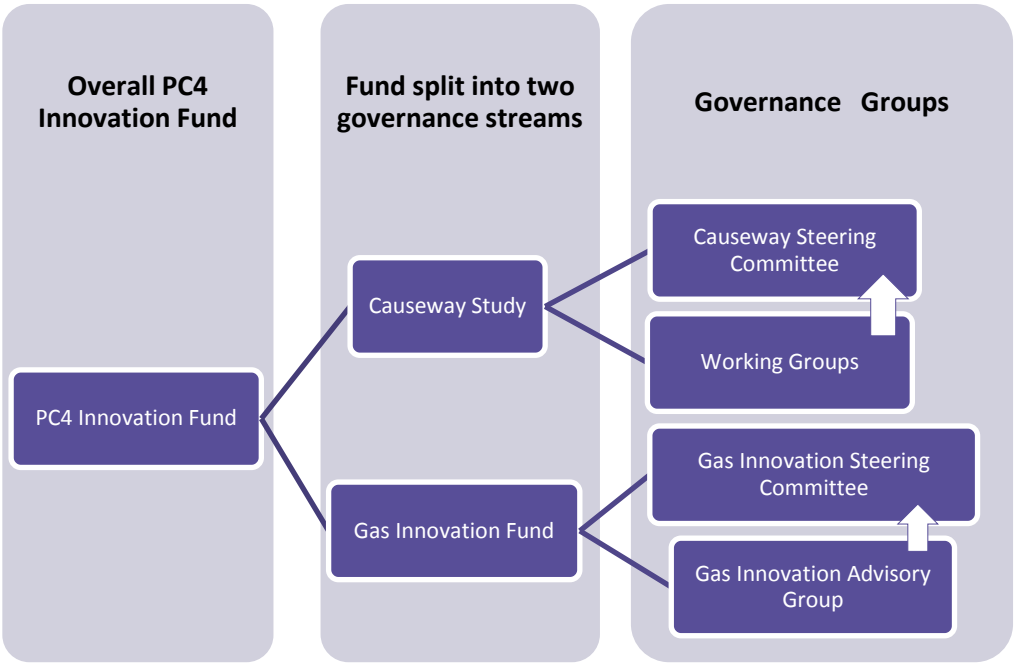
2.1 Governance for the overall PC4 Gas Innovation Fund

The overall fund of up to €20m allowed for under PC4 is made up of two separate governance streams. One governance stream is for the Causeway Study as this is a project that is funded by both the CRU and the CEF Transport Fund as administered by the Innovation and Networks Executive Agency (INEA). The other governance stream relates to that part of the Gas Innovation Fund which can be accessed by GNI for project management and by the public and/or GNI for research or strategic projects through the online application form which can be found on GNI's

[5] Project management refers to the management of the Gas Innovation Advisory Group and support for GNI to submit applications for additional funding from e.g. the EU or national funds.

website[6]. There is a total of €4.17m available for research or strategic projects under the PC4 Gas Innovation Fund. Applications for this funding can be made via the online application form.

Figure 3. Illustration of the governance streams for the Overall PC4 Innovation Fund.



2.1.1 Causeway Study Governance

The Causeway Project received approval for EU funding from the CEF Transport Fund in 2016 and the CRU subsequently ring-fenced €12.83m of the overall PC4 Gas Innovation Fund to complete the Causeway Study. The Causeway Study is governed by the Causeway Steering Committee with various working groups feeding into this committee. The Causeway Steering Committee approves work packages for the project and financial approval is provided by the Head of Commercial or by the Managing Director of GNI, if required. The Causeway project is subject to audit by both the INEA and the CRU.

2.1.2 PC4 Gas Innovation Fund Governance

The Gas Innovation Fund covers the balance of the PC4 innovation funding i.e. funding not related to the Causeway Study. The Gas Innovation Fund is governed by the Gas Innovation Steering Committee. The GIAG reviews the applications and then provides feedback and recommendations to the Gas Innovation Steering Committee on funding applications that are submitted to the group. The Gas Innovation Steering Committee approves funding applications that are aligned to the priorities and meet the relevant criteria. The financial approval for the funding applications is provided by the Head of Commercial or by the Managing Director of GNI, if required. The Gas Innovation Fund is subject to audit by the CRU.

[6] https://www.gasnetworks.ie/business/renewable-gas/innovation-fund/online-application-form/1-contact-details.xml

3 Gas Innovation Fund Projects

3.1 Overview

Between October 2017 and September 2019, the PC4 Gas Innovation Fund received 47 applications, 36 of these were categorised as strategic projects and 11 were categorised as research projects. Of the 47 applications, three were withdrawn by the applicants and were not reviewed by the GIAG or the GISC. Up to the end of September 2019, ten applications were approved for funding by the gas innovation steering committee. Unfortunately, the applicants for two of the approved projects were unable to progress their projects. However, no money was spent on these projects and the funding that had been approved for them is available for future gas innovation projects.

3.2 Innovation Projects Approved for Funding

An overview of each of the currently approved projects is provided in the sections below. These projects were all reviewed by the GIAG and approved by the Gas Innovation Steering Committee before the end of September 2019.

Figure 4. Strategic projects approved for gas innovation funding.

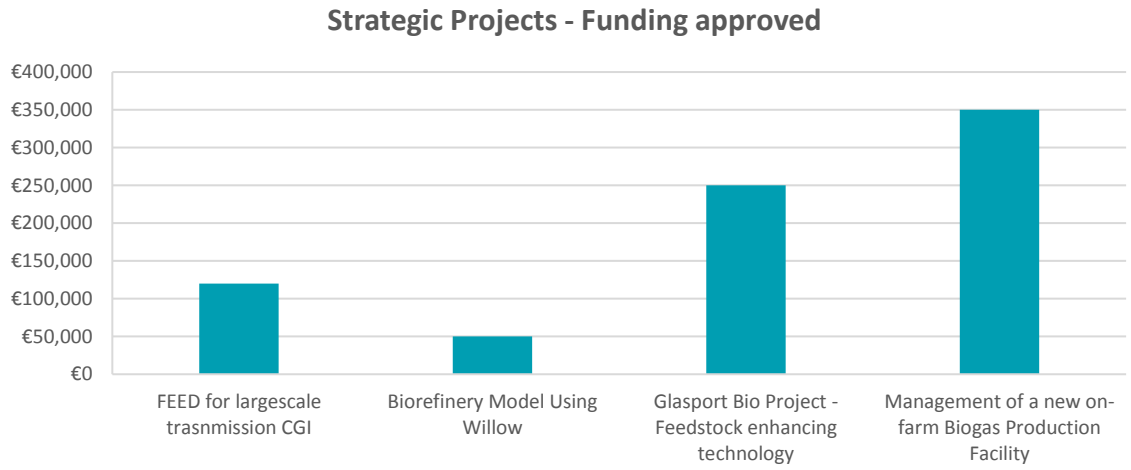
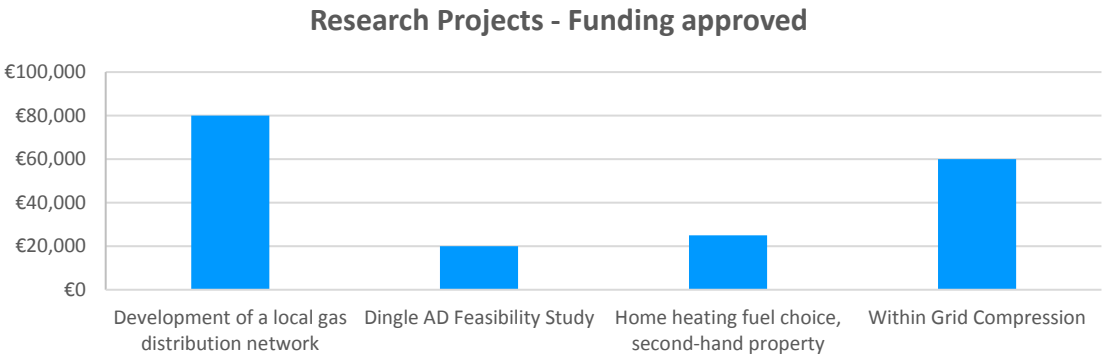


Figure 5. Research projects approved for gas innovation funding.



3.2.1 A Front End Engineering Design (FEED) for the first largescale transmission Central Grid Injection (CGI)

REF / APPLICANT: 2018-006 / Gas Networks Ireland

The objective of this project is to produce a Front End Engineering Design (FEED) for the first largescale transmission Central Grid Injection (CGI) facility in Ireland. This project is linked to the innovation fund's goals of assisting in the transition to a low carbon economy, increasing throughput through the gas system and delivering significant carbon savings. This is done by facilitating the building of a CGI which will deliver biomethane to the gas network. It is estimated that this CGI will be roughly 8 times greater in capacity than the Cush injection point. The CGI model enables large scale roll out of renewable gas as a CGI can generally accommodate renewable gas from circa 20 AD plants in the area. The funding for this project will enable GNI to procure the competent personnel to undertake a FEED for this project, producing a minimum functional specification template for those looking to develop large scale CGIs on the transmission network. Additionally, the completion of a FEED represents a key milestone for development of a first transmission scale CGI in Ireland and will be a key enabler in supporting industry with access to this preliminary design document. The creation of a FEED for this CGI facility will help to progress this project so that a CGI facility can be built. A CGI facility will enable biomethane producers to inject biomethane into the gas network and reach different sectors of the economy and provide more renewable energy choices. This project started in 2018 and was completed in 2019.

The outputs and outcomes from the project are as follows:

- The output from this project is a Front End Engineering Design for the first transmission connected CGI facility in Ireland. This FEED answers a number of technical and commercial unknowns for the project. As this project is a first of its kind, the findings of this FEED will set the template for future CGI developments and act as an enabler to the large scale roll out of Renewable Gas in Ireland more generally.
- The FEED provided valuable information for inputting into a submission for an application for funding to develop the first large scale CGI facility (transmission connected).
- This FEED has provided a design and costings for a CGI. This will help the development of CGI facilities in Ireland by comparing the economics of direct versus central grid injection facilities. GNI can assess the distance at which an AD developer would be better off economically to use a CGI facility as opposed to having a direct injection facility. CGI facilities also have a role in ensuring that access to Ireland's agri feedstock resources can be optimised. .

3.2.2 Biorefinery Model Using Willow

REF / APPLICANT: 2018-009 / University of Limerick

The objective of this project, which is part of a larger Interreg application, is to deliver a bio-refinery model using willow and produce high value salicylates for medical application from the bark. This project is linked to the innovation fund's goals of assisting in the transition to a low carbon economy and delivering significant carbon savings. The bark residue will be used as a feedstock in innovative bio-energy AD systems producing biogas suitable for grid injection. Advanced pre-treatment will be used to maximise the release of C5 and C6 sugars for AD and production of high-demand bio-chemicals D, L- lactic acid. Technology demonstrations will validate how technology integration can increase efficiency, qualifying as best available practice. Intensive market, regulatory, financial, technical and environmental analysis will produce a toolkit of Life Cycle Assessments, business

models, etc. for dissemination to all market actors via an extensive communications programme. The aim of this project is to enable a zero waste bio-refinery and provide a detailed plan for a sustainable circular low carbon economy. The full approval for this project was contingent on co-funding and this is now in place. A contract for this project was signed in October 2019 and the project is expected to take three years to complete.

The expected outputs and outcomes from the project are as follows:

- Generation of a business model to support the global market for alternative natural compounds such as extracted Salicin which forms Salicylic Acid from willow. Additional extracted components, including multiple C6 and C5 sugars present within willow for the bioplastics market.
- Pre-treatment technology will be trialled at pilot scale to produce a suitable substrates for biogas production.
- Optimisation of materials production from a wide genetic collection and environmental applications, crop partitioning for downstream processing and separation and emission trials of various process by-products.
- Optimisation of AD technologies utilising willow substrates for the production of biomethane (which meets the natural gas specification) and a food grade carbon dioxide gas products as well as a nutrient rich bio-fertiliser enabling a sustainable circular low carbon economy.

3.2.3 Glasport Bio Project

REF / APPLICANT: 2019-001 / National University of Ireland Galway (NUIG)

The objective of this project is to develop ManureMate by scaling-up the technology, engaging in large-scale on-farm tests and by using the treated material in a full-scale AD facility. ManureMate is a simple-to-use product applicable to all farmers to enhance the attractiveness and biogas yields from AD, while dramatically reducing Irish GHG emissions. This project is linked to the innovation fund's goals of assisting in the transition to a low carbon economy and delivering carbon savings. Using ManureMate to enhance biogas yields will help to deliver carbon savings and transition to a low carbon economy. Animal wastes are a potential feedstock for the generation of renewable gas, via biogas production by AD. Using animal waste in AD produces relatively modest biogas yields and so alternative feedstocks e.g. grass are co-digested with slurries and manures to produce more biogas. Using ManureMate can increase yields of biogas and increase the economic viability of farm-based AD as a source of renewable biomethane because less alternative feedstocks are needed. Microbial degradation converts organic animal wastes, like cow/pig slurry, to methane and other greenhouse gases (GHG) and thus reduces the energy potential of the feedstock. NUIG is developing a manure additive, ManureMate, which prevents the production of methane and ammonia gases by stored slurries and manures. In laboratory tests, GHG emissions have been reduced by >98%. Such treated material then delivers >40% increase in biogas methane produced from cow slurry, during AD, compared to untreated material. The full approval for this project was contingent on co-funding and this is now in place. The duration of the project is expected to be 2 years and this project is at the contract discussion stage.

The expected outputs and outcomes from the project are as follows:

- Large-scale (1,000 tonne) manufacture of manure additive
- Report detailing extent of gaseous emission mitigation from an Irish dairy farm over a 12-week period, and analysis of animal waste post-treatment.
- Report detailing performance of treated waste following AD at full-scale

- Report detailing agronomic performance of bio-digestate following AD
- Life cycle analysis report describing environmental and economic savings through use of manure additive from storage through to AD and onward fertiliser usage

3.2.4 Commissioning and optimising the management of a new on-farm Biogas Production Facility with the addition of a novel farm scale gas upgrading plant

REF / APPLICANT: 2019-015 / Teagasc

The objective of this project is to use novel farm scale gas upgrading equipment to produce biomethane at the Teagasc biogas production facility. This project is linked to the innovation fund's goals of assisting in the transition to a low carbon economy and delivering significant carbon savings through the production of biomethane for injection into the gas network. Teagasc is currently constructing a Biogas facility at the Grange Animal and Grassland Research Centre in Co. Meath. The facility will use cattle slurry and grass silage as feed stocks and has initial capacity to produce 70m^3 per hour of biogas. This biogas will be upgraded to biomethane using a novel small scale gas upgrading plant and then compressed for onward transport to a central gas grid injection facility. While equipment for upgrading of biogas on a large scale is readily available there is a need for upgrading equipment suitable for farm scale facilities to be developed. One of the tasks that will be undertaken by Teagasc is the development of the facility at Teagasc Grange as a centre of excellence for dissemination of information pertaining to the production of biogas and biomethane in Ireland. This project is at pre-contract stage and is expected to take up to four years to complete.

The expected outputs and outcomes from the project are as follows:

- The facility will be a stepping stone in realising the SEAI goals for 900 biogas plants to be constructed in Ireland over the next 30 years.
- Upgrading the biogas produced at the Grange facility to biomethane for use in the natural gas grid can facilitate the development of a biomethane industry in Ireland and thus ensure Ireland can meet future renewable energy targets.
- Practical experience will be acquired under Irish conditions of producing biogas from grass silage and slurry on a commercial scale.
- Blueprints will be developed for producing grass silage as a biogas feedstock in an environmentally sustainable way using digestate as the principal nutrient source.
- Data collected on the agronomic and environmental benefits studied will be published in peer reviewed scientific literature.
- Demonstration site of the technology at the Teagasc Grange Research Centre will be available for interested parties to visit (including policy makers, potential biogas plant investors, farmers interested in biogas production and renewable gas customers).

3.2.5 Sligo Local Gas Network

REF / APPLICANT: 2018-015 / Sligo Institute of Technology

The objective of this project by Sligo Local Gas Network (SLGN) is to develop a local gas distribution network, remote from the national network but to the same engineering standards. This project is linked to the innovation fund's goals of assisting in the transition to a low carbon economy and delivering significant carbon savings. This network will be fed with CNG delivered by road to a decompression station. SLGN will include a Network Entry Facility (NEF) to the similar specification as injection facility at Cush. Natural gas will be supplied from the national network but in future

could also be provided by locally produced renewable gas. The proposed network covers existing energy users in north and west Sligo and services IDA lands scheduled for future development at Oakfield in south Sligo. Estimated costs of ca. €9.6m are based on industry standard data and includes pipelines and installation costs, gas injection, gas transport vehicles, all consents and contingencies. The project started in September 2019 and the business case is due to take up to 12 months to complete.

The expected outputs and outcomes from the overall project are infrastructure investment of circa €9.6m serving industrial enterprises, generating energy cost savings in excess of 20% from fuel switching, reducing transport related cost and emissions, improving air quality and providing a marketplace for locally generated biomethane. GNI approved funding for a business case for the development of this network. This is the first step in realising the broader benefits of the overall project.

3.2.6 Dingle Anaerobic Digestion Feasibility Study

REF / APPLICANT: 2018-016 / Mol Teic Daingean Uí Chúis

The objective of this project is to harness biomass resources within the Dingle Peninsula to contribute to the transition to sustainable energy. This project is linked to the innovation fund's goal of assisting in the transition to a low carbon economy. The proposed project aims to deliver a comprehensive feasibility study on the development of AD on the Dingle Peninsula and to inform a strategic plan to support its deployment. Biogas can be used in a number of ways such as being upgraded to biomethane and used for heating or in transport as an alternative to diesel. There are a number of ways of transporting biogas and biomethane that could also be considered. There is a signed contract in place for this project which started in September 2019 and is expected to take one year to complete.

The expected outputs and outcomes from the project are as follows:

- Create vision for AD development on the peninsula and define concept of effective solutions to be investigated.
- Create a GIS database of all AD feedstocks investigated and produce maps for spatial planning and stakeholder consultation.
- Comparative analysis of selected AD technological pathways to facilitate shortlisting of preferred pathway.
- Recommendations to remove non-technical barriers and capitalise on opportunities.
- Multi-criteria analysis to support spatial planning and potential AD sites shortlisting.
- Report on technical and financial feasibility of proposed AD project.
- Report on recommended business model and community participation to the steering committee.
- Develop a 5-year action plan for the AD project implementation.

3.2.7 Home heating fuel choice, second-hand property

REF / APPLICANT: 2019-004 / Economic and Social Research Institute (ESRI)

The purpose of this research project is to identify the drivers associated with home heating system (fuel) choice when a family first moves into a second-hand property. This project aims to address the key priorities of assisting in the transition to a low carbon economy and delivering significant carbon savings by providing insights on home heating system choices. This research uses Census

data to examine a sub-set of these families (i.e. those that moved into second-hand properties between the years 2011 and 2016) showing the decisions they made (e.g. switched from oil to gas, coal to electric, etc.) and how those decisions are impacted by spatial, building, and socio-demographic factors, as well as proximity to the gas network. The research is intended to fill a knowledge gap in the policy arena related to the transition to a low carbon economy. Only in understanding how families make decisions with respect to heating system choice can new policy measures and incentives be designed to encourage households to select low carbon options, as well as target schemes at cohorts that are not transitioning to low carbon alternatives. This will be done by focusing on informing industry and policymakers on the key drivers and barriers to low carbon transitions in the residential sector. Knowing what decisions are currently being taken about domestic heating facilitates, the design of more effective policy measures and incentives to encourage low-carbon transition is very important. This project is at pre-contract stage and is due to start in January 2020, with an expected duration of six months to project completion.

The expected outputs and outcomes from the project are as follows:

- The output of the research is a peer-reviewed journal article describing the key drivers and barriers (as identified by socio-demographic characteristics and property attributes) associated with home heating fuel switching when a family first moves into a second-hand property.
- An interim report (i.e. working paper) will be published via the ESRI's website within 4 months of the project start date, which will also be submitted to a journal for peer-review and publication.
- Research results will also be disseminated to stakeholders via conferences/ seminars/ briefings.

3.2.8 Within Grid Compression

REF / APPLICANT: 2019-014 / CNG Services Ltd (CSL)

The rationale for this project is to establish the feasibility and benefits from "Within Grid Compression". Within grid compression relates to taking gas that has been injected into the distribution network and exporting it to the transmission network thus creating capacity where there may be a constraint. This project aims to address the innovation fund's goals of assisting in the transition to a low carbon economy and delivering carbon savings by providing a potentially more efficient way of transporting biomethane. The feasibility study will be based on two potential sites where there is a summer capacity constraint and will identify the costs and feasibility of the Within Grid Compression option and the location of the compression plant for these 2 projects. The project is currently going through the contract discussion stage and the duration of the project is expected to be less than a year.

The expected outputs and outcomes from the project are as follows:

- The main output is a detailed feasibility study setting out the technical solution for each of the two sites with details of the compression plant, the mode of operation and the safety systems. The capex, opex and GHG savings will be established in a financial model that is part of the deliverables.
- The output will also include a proposed funding and ownership model.

4 Gas Innovation Funding Allocations and Expenditure

The allocation of funding during the first gas year, October 2017 – September 2018, of the PC4 Gas Innovation Funding was minimal due to the low level of projects approved. Two projects were approved for funding but one of the projects was not progressed by the applicants. The Mitchelstown Centralised Grid Injection FEED project received approval for funding in August 2018 and an amount of €120,000 was allocated to this project. In the second gas year, October 2018 – September 2019, there were more applications and funding was allocated to four strategic projects and four research projects. Of these, one of the strategic projects did not go ahead and so to date a total of eight projects have been approved for funding and are being progressed.

The tables below outlines the allocation of funding to the strategic projects and the research projects for 2017/18 and 2018/19.

Table 1. Gas Innovation Fund – Allocation of Funding for Strategic Projects 2017/18 and 2018/19.

Category	Applications	Funding Approved	Balance (out of a total of €3.17m)
Strategic Projects - Renewable Gas	FEED for Mitchelstown CGI	€120,000	
Strategic Projects - Renewable Gas	Biorefinery Model Using Willow	€50,000	
Strategic Projects - Renewable Gas	Glasport Bio Project - Feedstock enhancing technology	€250,000	
Strategic Projects - Renewable Gas	Management of a new on-farm Biogas Production Facility	€350,000	
Total Strategic Projects		**€770,000**	**€2,400,000**

Table 2. Gas Innovation Fund – Allocation of Funding for Research Projects 2017/18 and 2018/19.

Category	Applications	Funding Approved	Balance (Out of a total of €1m)
Research Projects - Renewable Gas	Development of a local gas distribution network	€80,000	
Research Projects – feasibility study	Dingle AD Feasibility Study	€20,000	
Research Projects – heating study	Home heating fuel choice, second-hand property	€24,975	
Research Projects – feasibility study	Within Grid Compression	€60,000	
Total Research Projects		**€184,975**	**€815,025**

Table 3. Gas Innovation Fund expenditure on project management for 2017/18 and 2018/19.

Category	Applications	Funding Approved	Balance (Out of a total of €0.5m)
Gas Innovation Fund - Programme Management	Consultancy for EU / National Funding Applications	€30,000	
Gas Innovation Fund - Programme Management	Expenses – travel, digital, legal	€47,000	
Total Programme Management		**€77,000**	**€423,000**

There are a number of costs that come under the programme management category i.e. the costs associated with maintaining the innovation framework developed for the PC3 Gas Innovation Fund and supporting funding for GNI to obtain grants and other sources of funding for supporting innovation initiatives during PC4, e.g. energy research funding at EU level.

GNI applied for EU funding from the Connecting Europe Facility (CEF) Transport Fund in April 2018. As part of the application process, GNI was required to fill out five application forms and complete a Cost Benefit Analysis. GNI employed some consultancy expertise to help complete the application forms with circa €30,000 being spent on consultancy. This funding application was successful and GNI was approved for grant funding of €11.6m for the Green Connect project[7]. In addition, GNI also applied for funding from the Climate Action Fund and was shortlisted for funding for the GRAZE Gas project[8].

Other expenditure under the project management category relates to costs associated with organising the GIAG meetings which are held in Cork and Dublin. In general, two meetings are held in Cork each year and two are held in Dublin to facilitate all members of the group. In addition, there are travel costs associated with attending meetings related to funding opportunities which are usually held in Brussels or elsewhere in the EU. There are legal costs associated with reviewing grant agreements, reviewing contracts and attending to legal queries. GNI has tried to reduce the legal costs associated with the PC4 Gas Innovation Fund by creating a standard template contract for successful applicants. This is used where possible but there are situations where other contracts are used, for example, where the Gas Innovation Fund is a co-funder but contributing a lower amount of funding to the project, then the contract provided by the majority funder may be used. There are also digital costs associated with maintaining and improving the online application form and the webpages associated with the PC4 Gas Innovation Fund.

[7] This is a works project which will see the deployment of 21 CNG stations, 4 renewable gas injection facilities, 4 mobile CNG refuelling units and a vehicle grant scheme to provide partial support to circa 400 vehicle.

[8] The Green Renewable Agricultural Zero Emissions (GRAZE) Gas Project.

5 Benefits of the Gas Innovation Fund

5.1 Overview of Benefits

There are many benefits associated with the PC4 Gas Innovation Fund. Having this fund has allowed GNI to continue, and build on, the work that was done with the PC3 Gas Innovation Fund. The fund has already brought benefits in terms of the role that it has played in enabling GNI to apply for both European and National funding. Having financial support from the CRU has given these funding applications more credibility and has provided GNI with external expertise to strengthen the applications, in particular the European funding applications. In addition, funding has been allocated to eight projects up to the end of September 2019 and these will bring expected benefits in the form of supporting community energy studies, opening up dissemination opportunities for renewable gas, contributing to the circular economy with bio-fertiliser and learning more about home heating fuel choices which could help policy decisions. There are also broader benefits in the form of collaboration and building new partnerships or relationships with external parties. The PC4 Gas Innovation Fund has afforded GNI the opportunity to fund innovation projects with a higher risk profile and to encourage innovation related to gas. The gas network is operating in an ever changing environment and it is important to foster innovation within GNI to meet the upcoming opportunities and challenges.

5.2 Realised Benefits

The PC4 Gas Innovation Fund has many benefits in terms of supporting strategic projects and research to meet the key priorities of the fund such as increasing throughput on the gas network, assisting in Ireland's transition to a low carbon economy, delivering carbon savings and providing value to gas customers. The Gas Innovation Fund has supported GNI in applying for funding to the EU and at a national level. GNI has been successful in gaining approval for an EU grant for €11.6m to support the Green Connect project. The Green Connect project aims to build on the work being done on the Causeway Study and to increase the number of CNG refuelling stations available along the core road network in Ireland. The project will also provide some support for renewable gas injection facilities and a vehicle grant scheme. This project will play a role in decarbonising the transport sector in Ireland, particularly with regard to Heavy Goods Vehicles (HGVs).

The Gas Innovation Fund also supported the completion of a Front End Engineering Design for a transmission connected CGI facility. Supporting this FEED also helped GNI to apply for funding from the national Climate Action Fund and the application was shortlisted for up to €8.5m of funding for the GRAZE Gas project. This project aims to build a transmission connected CGI facility with associated logistics, two CNG refuelling stations and a small vehicle grant scheme. This project is currently going through a validation process with DCCAE[9], the administrator of the Climate Action Fund. In addition to the GRAZE Gas project, GNI is planning on developing a further five CGI facilities in a project collectively called 'The Renewable Gas Central Grid Injection Project'. These facilities will be geographically spread along the gas network and provide centralised locations for renewable gas producers from local AD plants (within a 50 km radius) to inject into GNI's transmission system. This will help enable the rollout of renewable gas on a national basis. While

[9] Department of Communications Climate Action and Environment (DCCAE)

this project is at the very early stages of development, the funding of the FEED project has helped with the ground work for this larger project.

5.3 Expected Benefits

The Gas Innovation Fund is currently supporting two community based projects i.e. the Dingle Feasibility Study and the Development of a local gas distribution network in Sligo. It is important that communities are engaged and involved in shaping the energy transition in their areas. Community owned energy projects or community participation in energy projects both have the potential to transform Ireland's energy system. In particular, there is great scope for community led energy projects within rural and farming communities. With regard to the production of renewable gas via AD, the cooperative model could be used as this is a structure that farmers know and trust for the collection of feedstocks and the development of AD plants.

The Teagasc Grange project is important because this project provides a demonstration site for biogas/biomethane technology at the Teagasc Grange Research Centre. This site will be available for interested parties such as policy makers, potential biogas plant investors, farmers interested in biogas production and renewable gas customers to visit and learn about the technology. Teagasc is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities[10]. Therefore Teagasc is well placed to realise the significant dissemination opportunities that this project affords. This project could be a useful tool to help broaden awareness about biogas and biomethane in Ireland.

The Biorefinery Model Using Willow is a project that will produce high value salicylates for medical application from the bark. The bark residue will be used as a feedstock in innovative bio-energy AD systems producing renewable gas suitable for grid injection. In addition, the Glasport Bio Project which is related to feedstock enhancing technology will develop a manure additive called ManureMate. This project aims to develop a simple-to-use product applicable to all farmers to enhance the attractiveness and biogas yields from AD, while reducing Irish GHG emissions. Both of these projects will contribute to the circular economy which is an economic system that aims to eliminate waste and promotes the continual use of resources i.e. make, use, reuse, remake and recycle. The circular economy is becoming more important as communities recognise the negative impacts of continual consumption. These projects will also make positive contributions to the production of renewable gas from AD plants and will demonstrate the broader benefits of AD.

There is one project related to the home heating sector i.e. the Home heating fuel choice project which is a research project. This project will help us to understand more about the heating choices of households and could help to inform policy. There is more scope for innovative heating projects in the future. Decarbonising the existing housing stock in Ireland is a challenge and Ireland will need innovative solutions to do this in a cost effective and efficient way.

[10] https://www.teagasc.ie/about/

6 Dissemination

GNI has increased its focus on raising awareness about the PC4 Gas Innovation Fund through its website, social media and other platforms such as podcasts.

6.1 Social Media

Since introducing the submission deadlines for applications on the PC4 Gas Innovation Fund page on GNI's website, the digital team have been putting out regular tweets to raise awareness about the fund and the submission deadlines. In addition, the digital team have also used LinkedIn to highlight the PC4 Gas Innovation Fund and to direct people to the PC4 Gas Innovation Fund pages on the GNI website to apply to the fund. The figures below show examples of tweets and LinkedIn posts that were sent from the GNI twitter account

Figure 6. An example of Tweets promoting the Gas Innovation Fund

Figure 7. An example of LinkedIn posts promoting the Gas Innovation Fund

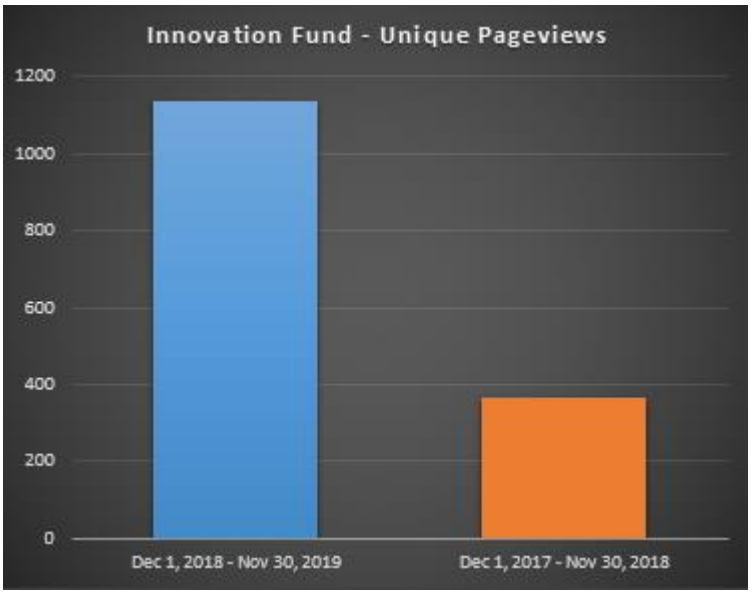
6.2 Podcasts

In the middle of 2019, GNI was contacted by Juran Benchmarking[11] and offered the opportunity to take part in their "Operationally Excellent" podcast. Juran Benchmarking describes the Operationally Excellent™ podcast as a way to "share ideas, innovations, and projects from the world of natural gas that are leading the way in improving the industry and its impact on society". The podcast episodes are shared through Juran's website and LinkedIn page. GNI recorded an episode of Operationally Excellent™ and talked about establishing a Gas Innovation Fund. The majority of the podcast focuses on how a gas innovation fund could be governed and managed to ensure that it delivers value to the gas users. The podcast that GNI recorded with Juran is the fourth episode in their podcast series and can be found on their website[12]. This page also provide a link to GNI's website for anyone wanting to learn more about the PC4 Gas Innovation Fund.

6.3 Digital Statistics

The GNI digital team has captured some statistics with regard to the PC4 Gas Innovation Fund webpages and the level of engagement. Website traffic to the PC4 Gas Innovation Fund page has grown 208% Year on Year as interest in the fund has grown, as shown in Figure 8 below.

Figure 8. Growth in unique page views for the Gas Innovation Fund webpage between Dec 2017 to Nov 2018 and Dec 2018 to Nov 2019.



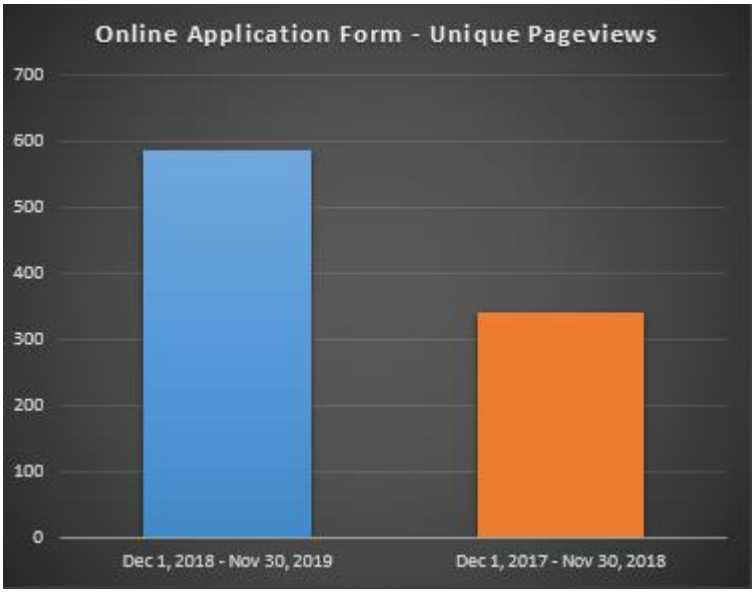
In addition, there has been growth in the unique page views for the online application form as shown below in Figure 9. Unique page views are the number of times a page has been visited but

[11] Juran Benchmarking has been providing benchmarking services to the oil and gas industry since 1995. During this time it has compiled an extensive database of performance data from thousands of assets operated by NOCs, IOCs and independent oil and gas companies worldwide.
https://juranbenchmarking.com/#

[12] Operationally Excellent™ – Episode 4 – Gas Networks Ireland – Gas Innovation Fund
https://juranbenchmarking.com/operationally-excellenttm-episode-4-gas-networks-ireland-gas-innovation-fund/

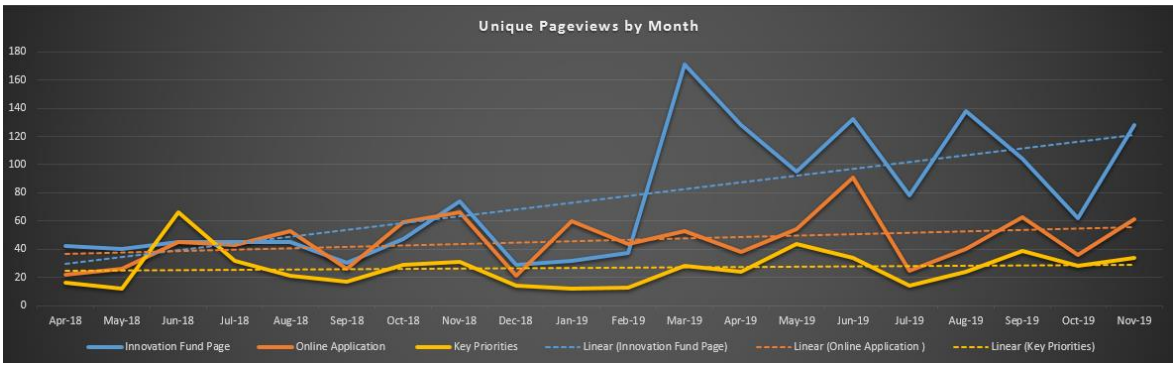
it excludes multiple visits of a page in one 30 minute session. For example, if a user visits the same page twice in two days this is counted, but it is not counted if they refresh the page within 10 minutes of visiting that page.

Figure 9. Growth in unique page views for the Gas Innovation Fund online application form between Dec 2017 to Nov 2018 and Dec 2018 to Nov 2019.



The graph below shows the unique page views by month from April 2018 up to November 2019 for three different pages, (i) the main Gas Innovation Fund page, (ii) the online application form and (iii) the key priorities page. The main Gas Innovation Fund page tends to be the most popular webpage, followed by the online application page and then the key priorities page.

Figure 10. Trajectory of unique page views for three Gas Innovation Fund webpages month by month from Apr 2018 to Nov 2019.



7 Next Steps

The last submission deadline in 2018/19 was the 16th September 2019 and nine applications were submitted for consideration. GNI held a GIAG meeting in early October 2019 to discuss these applications and in addition, a number of applications that had been submitted under the SEAI 2019 RD&D funding programme were discussed. GNI has been working with SEAI as a potential co-funder for a number of research projects. The next step in this process is to finalise the co-funding agreement. This should be completed in early 2020.

It is important that GNI closes out the contract discussions with the applicants that have been approved for innovation funding. There are a number of these discussions currently ongoing and GNI has created a tracker to monitor the progress of the contracts with each successful applicant. In addition, a key next step will be the effective oversight of the projects once the contracts are signed. GNI will need to ensure that the agreed milestones for the projects are completed and that the successful applicants are meeting their reporting requirements. Effective oversight is necessary to ensure that the project objectives are delivered in line with what has been agreed by the applicants.

GNI has started putting together a 'Guide for Applicants' document which will be available in Q1 2020 to help applicants with the application process. GNI will continue to work to raise awareness of the PC4 Gas Innovation Fund and to attract quality projects and applications to the fund. GNI has engaged with the GIAG members and has set up the quarterly GIAG meetings for 2020. The submission deadlines for 2020 have been put up on the Gas Innovation Fund page on the GNI website. The next steps will be to organise the Gas Innovation Steering Committee meetings for 2020 and to engage with the digital team to ensure that there are regular updates on social media throughout the year to raise awareness about the fund in 2020. The outcome of the work that will be carried out in 2019/2020 will be outlined in the next Gas Innovation Fund Annual Report which will be submitted to the CRU on the 20th of November 2020.

Appendices

Appendix 1: Transition from PC3 Innovation Funding to PC4 Innovation Funding

As part of the process of transitioning to the PC4 innovation fund, GNI sent letters to all the members of the PC3 Gas Innovation Group and thanked them for their contributions to the group. In December 2017, as part of the same letter, all members were asked if they would be interested in participating in the PC4 Gas Innovation Advisory Group (GIAG). Members were given instructions about responding to the innovation@gasnetworks.ie email address by the 15th January to indicate their interest in the Group. A sample copy of one of the letters to the members is shown in Appendix 4 below.

The next step in the transition was to update the Gas Innovation Fund page on the GNI website and to develop an online application form. GNI had previously used a Word document based application form and wanted to change to an online form to make it more user friendly for applicants. There are different sections to the online application form such as project summary, relevance, practical application, and maturity and budget details. The online form is designed to give the applicant the opportunity to explain their project in a concise manner with character limits on most sections so that the form isn't too long. An aim of the online application form was to improve the quality of applications by requesting very specific information. GNI presented the online application form to the GIAG for their input and a number of suggestions for improvements were made. The online form will be reviewed regularly to make sure that it is fit for purpose.

GNI carried out some promotional activity to raise awareness about the Gas Innovation Fund. A short 'Questions and Answers' document was drafted to give a high level overview of what the gas innovation fund is about and this was used to promote the fund on LinkedIn, Twitter and in the Engineers Journal. In addition, GNI sent letters to approximately 20 third level institutes informing them of the gas innovation fund and its priorities. The letter also highlighted the amount of funding available and how to apply for funding.

Appendix 2: Current PC4 Gas Innovation Advisory Group Members

Name	Company	Role
Declan O'Sullivan	GNI	Chair
Eva Toal	GNI	Administrative Support
Ann-Marie Colbert	GNI	Governance
Michael J. O'Mahony	CIT	Expert
Carmel Fields	DCCAE	Expert
Faye Carroll	DTTAS	Expert
Paul Butler	Enterprise Ireland	Expert
John Curtis	ESRI	Expert
Ian Kilgallon	GNI	Expert
Larry O'Connell	NESC	Expert
Rory Monaghan	NUIG	Expert
Phil Hemmingway/Lucy Corcoran	SEAI	Expert
Brian Ó Gallachoir	UCC/ERI	Expert
Jerry Murphy	UCC/MaREI	Expert

Appendix 3: Schedule of GIAG meetings for 2018 and 2019

Meeting	Date	Day	Time	Location
2018 GIAG Meeting 1	28th February	Wednesday	10.30 – 13.00	Dublin*
2018 GIAG Meeting 2	23rd May	Wednesday	10.30 – 13.00	Cork
2018 GIAG Meeting 3	22nd August	Wednesday	10.30 – 13.00	Dublin
2018 GIAG Meeting 4	21st November	Wednesday	10.30 – 13.00	Cork
2019 GIAG Meeting 1	5th February	Tuesday	10.30 – 13.00	Dublin
2019 GIAG Meeting 2	17th April	Wednesday	10.30 – 13.00	Cork
2019 GIAG Meeting 3	10th July	Wednesday	10.30 – 13.00	Dublin
2019 GIAG Meeting 4	29th October	Tuesday	10.30 – 13.00	Cork

* The meeting was due to be held in Dublin but it had to be converted to a teleconference due to Storm Emma.

Appendix 4: Sample Letter to PC3 Gas Innovation Group members

Xxxxxxxxxxx,
Xxxxxxxxxxx,
Xxxxxxxxxxx,
Xxxxxxxxxxx,
XXXXX.

21/12/2017

Dear XXXXXXXX,

Gas Networks Ireland would like to thank you for your involvement in, and contribution to, the Gas Innovation Group that was established under the Price Control 3 (PC3) decision CER/12/196. The PC3 regulatory decision provided a fund of €8 million for gas innovation. The PC3 gas innovation fund has supported a number of different projects including several research projects on gas related topics, a number of compressed natural gas (CNG) trials, a mobile renewable gas demonstration unit, three CNG refuelling stations and a renewable gas injection facility.

The Commission for Regulation of Utilities (CRU) published its decision on Gas Networks Ireland's fourth price control at the end of August 2017. As part of this decision (CER/17/259) further support has been provided for innovation for the period October 2017 to September 2022, known as the Price Control 4 (PC4) period. Gas innovation funding has been provided for the following areas:

1. The Causeway Study - €12.83m
2. Research - €1m
3. Strategic Projects - €3.17m
4. Governance and EU funding - €0.5m

In addition, there is the potential for an extra €2.5m of funding for gas innovation if the initial funding is spent efficiently and effectively.

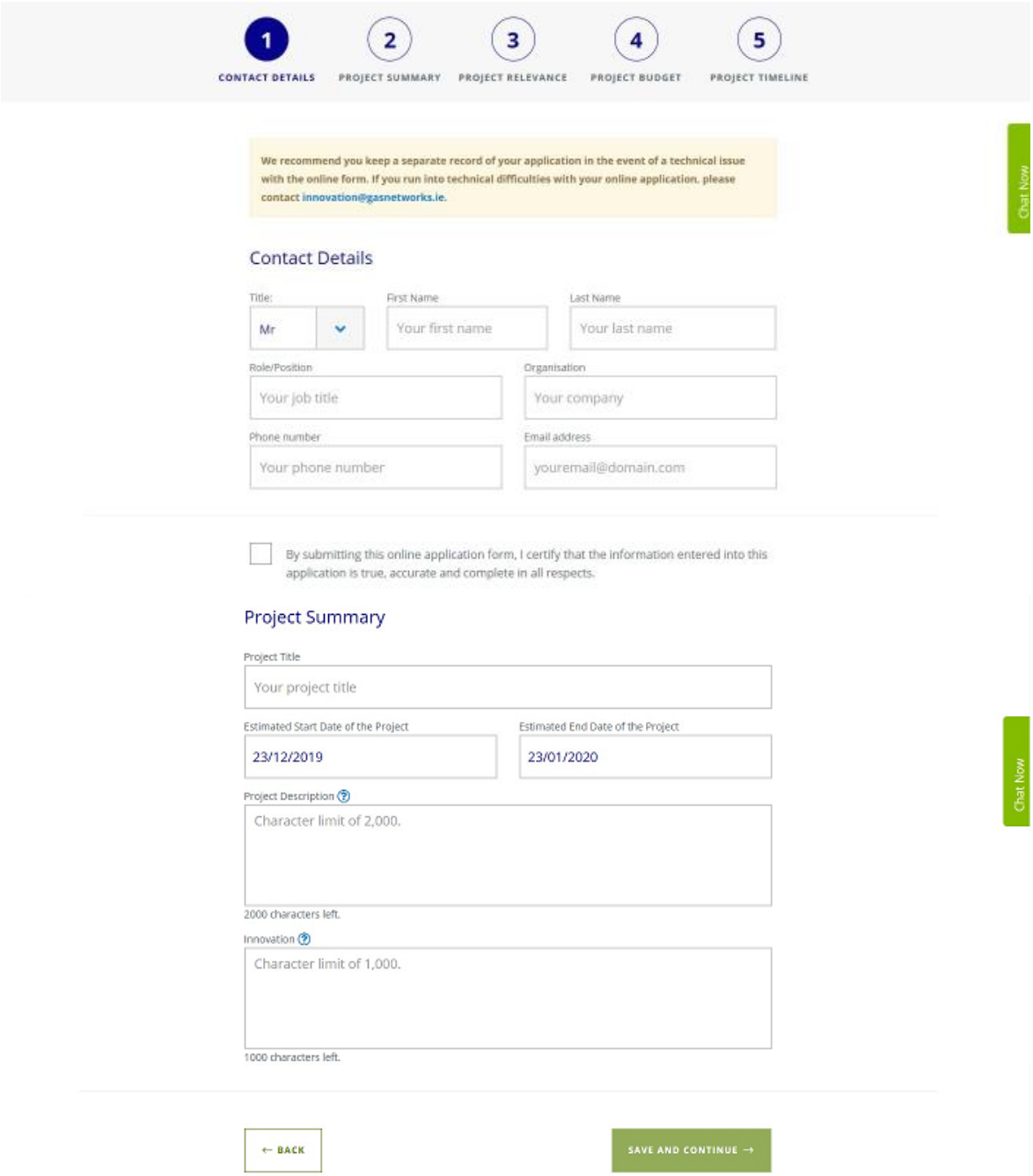
If you are interested in participating in the PC4 Advisory Gas Innovation Group, please email Gas Networks Ireland at innovation@gasnetworks.ie by January 15th 2018 to confirm your participation. If you have any queries about the Innovation Group please contact Dan Fitzpatrick (021 4534954) or Ann-Marie Colbert (021 4534137).

Yours sincerely,

_____

Denis O'Sullivan
Head of Commercial

Appendix 5: Screenshots of the Gas Innovation Fund Online Application Form



Which of the following priorities will the project address? Please tick more than one box if applicable. A description of the priorities for the Gas Innovation Fund can be found here.

- [x] Increase throughput through the gas system
- [ ] Assist in the transition to a low carbon economy e.g. increase production of renewable gas
- [ ] Deliver significant carbon savings e.g. reduce annual greenhouse gas emissions
- [ ] Provide measurable value to all gas customers

Addressing Priorities

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Project Impact

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Project Maturity

xxxxxxxxxxxxxxxx

Project Budget

Please provide a clear budget for the lifetime of the project. Each activity or budget item should be on a separate line with the associated cost in the year that it is expected to be incurred.

Activity	Year 1	Year 2	Year 3	Year 4
Please enter activity description	€	€	€	€
Please enter activity description	€	€	€	€
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Total	€ 0	€ 0	€ 0	€ 0

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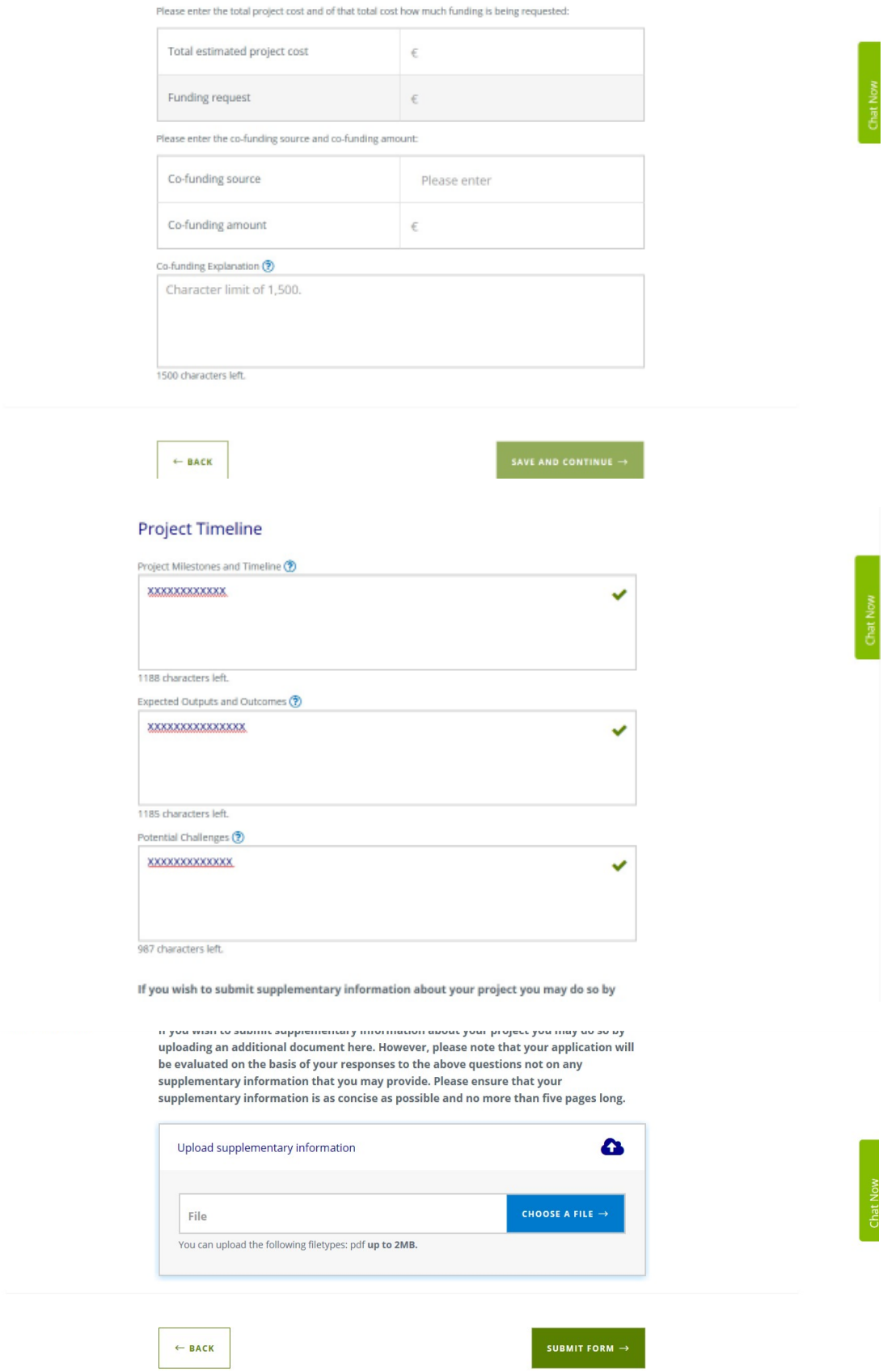
Budget Justification

Character limit of 1,500.

Chat Now


Please enter the total project cost and of that total cost how much funding is being requested:
Total estimated project cost
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Funding request
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Please enter the co-funding source and co-funding amount:
Co-funding source
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← BACK
SAVE AND CONTINUE →
Project Timeline
Project Milestones and Timeline
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Expected Outputs and Outcomes
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Potential Challenges
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If you wish to submit supplementary information about your project you may do so by
uploading an additional document here. However, please note that your application will be evaluated on the basis of your responses to the above questions not on any supplementary information that you may provide. Please ensure that your supplementary information is as concise as possible and no more than five pages long.
Upload supplementary information
File
CHOOSE A FILE →
You can upload the following filetypes: pdf up to 2MB.
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SUBMIT FORM →
Chat Now
Chat Now
Chat Now