Strategic Innovation Fund (SIF)

Cycle 2 Innovation Challenges – Alpha and Beta Phases

Funding Decision and Summary of Recommendations from Expert Assessors

Date: 28 May 2025

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Introduction

Innovation will prepare the regulated energy network companies to deliver Net Zero greenhouse gas emissions at the lowest cost to consumers, while maintaining world-class levels of system reliability and customer service.

The SIF was introduced as a part of the RIIO-2 price control by Ofgem, the Office of the Gas and Electricity Markets Authority, to support network innovations that contribute to reaching Net Zero while delivering real benefits to network consumers. The SIF is delivered in partnership with Innovate UK (part of UKRI), which administers the SIF and works to coordinate innovation activities funded by network consumers with other innovation funded programmes.

New Innovation Challenges are launched annually which focus on strategic issues currently facing gas and electricity networks.

The SIF adopts a three Phase Project approach to mitigate the risk associated with innovation: Discovery Phase, Alpha Phase and Beta Phase. The Discovery Phase focuses on feasibility, the Alpha Phase on experimental development, and the Beta Phase on deployment and demonstration.

As set out in the SIF Governance Document[1], the SIF is open to the Electricity System Operator, Electricity Transmission and Distribution, Gas Transmission and Gas Distribution licensees.

In September 2024, the Application and assessment process for the SIF changed. Instead of each Phase opening once a year, applicants can now apply for Discovery, Alpha and Beta funding three times a year.

This provides more opportunities to apply. At the same time, for the Discovery and Alpha Phases, the process of assessment for SIF funding has been shortened, and flexible Project start dates have been introduced.

[1] The SIF Governance Document can be found here: https://www.ofgem.gov.uk/sites/default/files/2025-04/SIF%20governance%20document%20version%203.1.pdf

The new Application process has been designed to allow for more flexibility depending on Project needs. The Application window opens every four months, for around four weeks at a time – opening at the end of January, end of May, and end of September. Applicants are able to apply across all Phases of the SIF (Discovery, Alpha, and Beta) during each Cycle, where eligible.

This report is for the Cycle 2 Alpha and Beta Phase Project Applications. It sets out the Funding Decision from Ofgem alongside the recommendations from independent Expert Assessors. Each Project Application was scored in accordance with eight Eligibility Criteria in accordance with the relevant Innovation Challenges and the SIF Governance Document.

The eligible Innovation Challenges for this Cycle are as follows.

Round 4 Alpha Phase[2] of the SIF was launched in September 2024 and focuses on four Innovation Challenges:

1. Faster network development
2. Greater heat flexibility
3. Embedding resilience
4. Accelerating toward Net Zero energy networks

Round 3 Beta Phase[3] of the SIF was also launched in September 2024 and focuses on four Innovation Challenges:

1. Whole system network planning and utilisation to facilitate faster and cheaper network transformation and asset rollout
2. Novel technical, process and market approaches to deliver an equitable and secure Net Zero power system

[2] Find the four Innovation Challenges launched for Alpha Round 4 here: https://www.ofgem.gov.uk/decision/strategic-innovation-fund-round-four-innovation-challenges

[3] Find the four Innovation Challenges launched for Beta Round 3 here: https://www.ofgem.gov.uk/decision/strategic-innovation-fund-round-three-innovation-challenges

3. Unlocking energy system flexibility to accelerate electrification of heat
4. Enabling power-to-gas (P2G) to provide system flexibility and energy network optimisation

Round 4 Beta Phase[4] of the SIF was also launched in September 2024 and focuses on four Innovation Challenges:

1. Faster network development
2. Greater heat flexibility
3. Embedding resilience
4. Accelerating toward Net Zero energy networks

These Innovation Challenges were developed through extensive collaboration and consultation with a wide range of stakeholders and interested bodies, including energy network companies, other innovators and entrepreneurs, government and academia.

In prioritising these challenges, the key underlying principles established are that they should be:

- Strategic - innovations are required to meet national and devolved Net Zero targets effectively.
- Network relevant - they involve innovation needs and solutions that can be taken forward or materially supported by energy networks.
- Timely - the challenge should focus on problem areas where solutions can be scaled up to meet the requisite Net Zero targets and commitments. 2035 was used as a target year for identifying challenges.

[4] Find the four Innovation Challenges launched for Beta Round 4 here: https://www.ofgem.gov.uk/decision/strategic-innovation-fund-round-four-innovation-challenges

- Appropriate in scope - the scope of the Innovation Challenge complements and does not duplicate other UK innovation programmes (including other network innovation funding mechanisms).

1 Cycle 2 Summary

Within each of the Innovation Challenges are specific requirements on scope and Project Partner requirements. Projects submitted to the SIF must meet these specific requirements and must follow the SIF Governance Document.

For this Alpha Phase, Applications were received by 27 January 2025 and must start no earlier than 1 June 2025. They must last up to 8 months in total and must not request funding of more than £500,000, exclusive of VAT.

For this Beta Phase, Applications were received by 27 January 2025 and must start no earlier than 1 June 2025, can last up to five years, and can request SIF Funding greater than £500,000. Prospective Beta applicants seeking more than £10,000,000 were required to provide justification to Innovate UK and Ofgem prior to the Beta Phase Application close.

Applications submitted to the Cycle 2 Alpha and Beta Phases by the 27th of January 2025 deadline, and which met the Innovation Challenge-specific requirements, were assessed by Expert Assessors. The Expert Assessors are independent external appointees whose recommendations inform Ofgem's decision-making on the selection of Projects for SIF Funding. The Expert Assessors have relevant expertise and knowledge on the respective Innovation Challenges and/or the energy sector, including for example in policy, regulatory, commercial, financial and technical areas. Consistent with the requirements of the SIF Governance Document, the Expert Assessors have assessed each Application (a) concerning its compatibility with the Eligibility Criteria in Chapter 2, and (b) taking into consideration any additional and relevant information available to the Expert Assessors.

As part of each Application assessment, the Expert Assessors also considered whether Projects should receive all the SIF Funding requested for the Alpha or Beta Phase, or no funding at all.

The overall funding recommendation summarised in this report is based upon a balance of considerations to take into account whether a Project has met each of the SIF Eligibility Criteria, the suitability of the Project for SIF funding, any Project-

specific conditions recommended by Expert Assessors, and wider concerns or opportunities identified by the Expert Assessors. For more information on how Projects are assessed by the Expert Assessors, please see Section 2, Assessment Process, below.

This report is a consolidation of the Applications assessed by the Expert Assessors and sets out recommendations from the Expert Assessors to Ofgem on which Projects have met the Eligibility Criteria and should be considered for SIF Funding in the Cycle 2 Alpha and Beta Phases of the SIF. Ofgem, taking into the account the Expert Assessors' assessment and recommendations, performs its own internal review of each Project to reach a decision. Ofgem is the sole decision-maker for the SIF.

2 Assessment Process

For the Alpha Phase there is a maximum of five stages to assess eligible submitted Applications:

- Initial sift - completed by Innovate UK to confirm whether an Application complies with the Innovation Challenge-specific requirements.
- Expert Assessor evaluation – Each Expert Assessor assesses and provides a score for each Application and its accompanying appendices, against the questions stipulated in the SIF Governance. These questions tie directly to the Eligibility Criteria outlined in chapter 2 of the SIF Governance Document. Each Expert Assessor includes their assessment of how and why an Application has met or not met each Eligibility Criterion and an overall comment for each Application assessed.
- Expert Assessors' overall recommendations – As part of their assessment, each Expert Assessor provides an overall recommendation on whether the Project should be considered for SIF Funding in the Alpha Phase. This decision is made based on an assessment on whether the majority of Expert Assessors consider that each of the Eligibility Criteria has been met and a consideration of any serious risk or opportunity in respect of an Application. A Project will be recommended for SIF Funding if it has a majority of Expert Assessors recommending it (two of the three Expert Assessors who assessed the Application), if no significant risks are identified which could prevent the Project from progressing, and if the majority of Expert Assessors on each Project consider it to have met each of the Eligibility Criteria outlined in chapter 2 of the SIF Governance Document.
- Recommended Project-specific conditions – Should an Expert Assessor identify an area for additional consideration or clarity for a Project recommended for SIF Funding during the Alpha Phase, the Expert Assessor may recommend a Project-specific condition be included. In many cases these have been offered as ways of strengthening the Project outcomes and their inclusion does not necessarily reflect a weakness in the Application. The recommended Project-specific conditions are then considered by Ofgem and finalised with any modifications in the Project Direction for each of the successful Projects.
- Final decision – The consolidated recommendations report is provided to Ofgem for consideration on which of the Projects for which Applications have been

made should be considered for SIF Funding. Having taken into account the Expert Assessors' report, the Authority decides which Projects should receive SIF Funding and provide brief commentary on its reasoning for each decision.

2.1 Meeting the SIF Eligibility Criteria

Projects submitted must meet all the Eligibility Criteria outlined in chapter 2 of the SIF Governance Document in order to be considered for SIF Funding. There are eight Eligibility Criteria which must be evidenced within an Application. The following table outlines how the scored questions tie with the Eligibility Criteria outlined in the SIF Governance Document.

Question number	Application question	Eligibility Criteria (chapter 2 of the SIF Governance Document)
1	Lead network	(not scored)
2	Animal testing	(not scored)
3	Solution statement and solution focus	Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.
4	Innovation justification	Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem. Eligibility Criterion 3: Projects must involve network innovation. Eligibility Criterion 5: Projects must be innovative, novel or risky.
5	Impacts and benefits selection	Eligibility Criterion 2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers (whomever is paying for the innovation).
6	Impacts and benefits description	Eligibility Criterion 2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers (whomever is paying for the innovation).

7	Team and resources	Eligibility Criterion 6: Projects must include participation from a range of stakeholders.
8	Project management and delivery	Eligibility Criterion 8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.
9	Key outputs and dissemination	Eligibility Criterion 4: Projects must not undermine the development of competitive markets.
10	Intellectual property rights (IPR), procurement and contracting	(not scored)
11	Commercialisation, route to market and business as usual	Eligibility Criterion 4: Projects must not undermine the development of competitive markets.
12	Policy, standards and regulations	(not scored)
13	Consumer impact and engagement	Eligibility Criterion 7: Projects must provide value for money and be costed competitively.
14	Value for money	Eligibility Criterion 7: Projects must provide value for money and be costed competitively.
15	Associated network innovation project(s)	(not scored)

3 Alpha Phase

3.1 Summary

In the Cycle approach, applicants have multiple opportunities throughout the year to apply to each Phase (Discovery, Alpha and Beta). Therefore, we anticipate times when some Phases and Innovation Challenges will not receive any Applications.

For the Cycle 2 Alpha Phase, one Project submitted an Application into Innovation Challenge 1, 'Faster network development'. Two Projects submitted Applications into Innovation Challenge 3, 'Embedding resilience'.

No Applications were received for the other two Innovation Challenges covered by the Cycle 2 Alpha Phase.

Innovation Challenge	No. of Applications received
Faster network development	1
Greater heat flexibility	0
Embedding resilience	2
Accelerating toward Net Zero energy networks	0

This section covers the assessment of the Cycle 2 Alpha Phase Applications received into the 'Faster network development' and 'Embedding resilience' Innovation Challenges.

3.2 Alpha Phase - Innovation Challenge: Faster network development - Overview of Projects

For the Alpha Phase under this Innovation Challenge, one Application was submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 27 January 2025 and is listed below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Decision by Ofgem for funding (Yes/No)
10157301	Data to Insights (D2I)	Scottish Hydro Electric Power Distribution PLC	565,356	65,536	499,820	Yes	Yes

3.3 Alpha Phase - Innovation Challenge: Faster network development - Expert Assessors' recommendations on Projects

3.3.1 Project 10157301 – Data to Insights (D2I)

Submitted Project description
The Data-2-Insights Project (D2I) aims to improve the value and insight customers gain from our Open Data. It will build and test use cases to trigger a step change in the engagement with present and future Energy data. D2I will also use technology to add value by improving data quality and consistency internally and externally and reduce the cost of providing digital solutions. It will push the value of data to new levels helping realize our vision of a valuable, efficient, consistent and economically sustainable data ecosystem, delivering a curated service to the end user regardless of their energy data skills.

Eligibility Criteria Expert Assessors' evaluation	**Met or not met**	**Additional justification**
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors considered this Project to have addressed the Innovation Challenge because it is seeking to apply novel digital approaches such as Machine Learning (ML) and Natural Language Processing (NLP) to manage complex user needs and connection requests, which is aligned to the aims of the challenges. It uses NLP to analyse past and current network's data and metadata, streamlining users' experience in discovering and exploring open data, ultimately optimising network performance.

2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met	The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to electricity consumers by aiming to reduce the cost and delay of the connections process. This efficiency could lower costs for both the DNO and network customers by managing large quantities of network data effectively and enabling meaningful exploration of open data.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because of its advanced use of Machine Learning and the development of an energy-specific Natural Language Processing model. These technologies will optimise data management and enhance how networks share information with stakeholders compared to current front-end solutions for open data. The Expert Assessors noted that the Project effectively articulated during the interview how AI/ML can reduce the volume of customer queries and address the skills shortage in DNOs and among network customers, compared to conventional methods.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors did not consider this Project to be undermining the development of competitive markets because currently, energy-specific NLP models do not exist in the market, and relying on the market to develop such solutions may be too ambitious and lead to no progress. This Project can create a valuable data management framework and a baseline, enabling the market to

		replicate the solution and potentially fostering more competitive markets.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because of its complex use cases involving technical issues like ML and NLP models, as well as user interactions with the connections process and open data. The Expert Assessors also noted that the risk register submitted by the Project lacks a significant weighting on user experience risk, which needs to be addressed. Additionally, there is a risk that other networks may not engage with the solution, or that vendors of data portals used by other networks may not adopt it without early engagement and buy-in from other networks.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders for this Eligibility Criteria to be met because the Project team is constituted to understand and engage with a wide range of stakeholder needs and has identified the need to build on data from preceding Projects. However, the Expert Assessors raised concerns that the Project plan did not clearly articulate how the inclusion of Roadnight Taylor would ensure participation from a range of stakeholders, although this was partly addressed during the interview through Roadnight Taylor explaining their role in user groups and how their experience complemented the Catapult's knowledge. They nevertheless suggested that the Project should aim for

		direct engagement with stakeholders, proactively engage with other networks, and secure formal support from other networks.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered the Project to be delivering value for money and be costed competitively because the majority of Project Partners' costs seem reasonable, and the overall budget is proportionate for a Project addressing various user types. Additionally, the prototype to be delivered is deemed a worthy creation for the investment. The Expert Assessors noted Roadnight Taylor's higher day rate but they were satisfied with the Project's explanation during the interview that Roadnight Taylor's inputs were justified by the multiple engagements and connections to customers they will bring.
8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met	The Expert Assessors considered the Project to have a robust methodology which gives confidence to the Expert Assessors that it will be capable of progressing in a timely manner because the overall Project plan is well thought out, the anticipated outcomes are realistic within the timescale, and the deliverables and risk mitigations are well planned. The Expert Assessors noted that Energy System Catapult's staff allocations could be improved with a more detailed user engagement plan, and additional risks and mitigations regarding adoption by other networks need to be included in Project plan.

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that the Project has met all the Eligibility Criteria and recommends this Project for funding. The Expert Assessors consider this Project to meet the Innovation Challenge due to its innovative approach in applying Machine Learning (ML) and Natural Language Processing (NLP) to manage complex user needs and connection requests. By leveraging NLP to analyse past data and network metadata, the Project aims to streamline user experiences in discovering and exploring open data, ultimately optimising network performance. The Project has the potential to deliver significant benefits to electricity consumers by reducing the cost and delay of the connections process. This efficiency could lower costs for both Distribution Network Operators (DNOs) and network customers by effectively managing large quantities of network data and enabling meaningful exploration of open data. The Project stands out for its advanced use of ML and the development of an energy-specific NLP model, which will optimise data management and enhance how networks share information with stakeholders. This innovative approach is expected to reduce the volume of customer queries and address the skills shortage in DNOs and among network customers, compared to conventional methods. The Project does not undermine the development of competitive markets, as energy-specific NLP models currently do not exist in the market. By creating a valuable data management framework and a baseline, the Project can enable the market to replicate the solution and potentially foster more competitive markets. The Project is considered innovative, novel, and/or risky as it has identified and addressed potential risks through the involvement in complex use cases and technical issues. However, the risk register needs to include a significant weighting on user experience risk, and there is a need for early engagement and buy-in from other networks to ensure adoption.

The Project includes participation from a sufficient range of stakeholders, although the Project plan should clearly articulate how the inclusion of Roadnight Taylor ensures stakeholder participation. Direct engagement with stakeholders and securing formal support from other networks before applying for the Beta Phase is recommended.

The Project is considered to deliver value for money, with reasonable costs for major Project Partners and a proportionate overall budget. The prototype to be delivered is deemed a worthy creation for the investment, with justified inputs from Roadnight Taylor.

The Project's robust methodology gives confidence that it will progress in a timely manner. The overall Project plan is well thought out, with realistic anticipated outcomes, well-planned deliverables, and risk mitigations. However, Energy System Catapult's staff allocations could be improved with a more detailed user engagement plan, and additional risks and mitigations regarding adoption by other networks need to be included in the Project plan.

Decision from the Office of Gas and Electricity Markets (Ofgem)
FUND
Ofgem agrees with the Expert Assessors and approves this Project for funding.

Recommended Project-specific conditions
Prior to the End of Phase meeting, the Funding Party must present to the Monitoring Officer a framework and specification for the National Language Processing which will be made publicly available. Prior to the kick-off meeting, the Funding Party must present to the Monitoring Officer a clear stakeholder engagement plan that outlines direct engagement with other Networks and other key stakeholder with the aim of determining the scalability of the Project outside of the Funding Party’s network.

At the kick-off meeting, the Funding Party must present to the Monitoring Officer a summary of the approach to user engagement including assessing user experience requirements, along with any identified risks, proposed mitigation strategies and an updated risk register.

3.4 Alpha Phase - Innovation Challenge: Embedding resilience - Overview of Projects

For the Alpha Phase under this Innovation Challenge, two Applications were submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 27 January 2025 and are listed below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Decision by Ofgem for funding (Yes/No)
10157588	B-Linepack+	National Gas Transmission PLC	596,286	97,905	498,381	Yes	Yes
10157596	Future Operability of Gas for System Integration (FOGSI)	National Gas Transmission PLC	508,603	72,993	435,610	Yes	Yes

3.5 Alpha Phase - Innovation Challenge: Embedding resilience - Expert Assessors' recommendations on Projects

3.5.1 Project 10157588 – B-Linepack+

Submitted Project description
Linepack flexibility is key for gas transmission to provide system resilience by management of swings within operational limits. In a hydrogen world, we know our energy content per km of linepack will decrease by up to 76%. Therefore, embedded resilience systems in the form of lined rock shafts are being investigated to supplement loss in linepack capability. We envision systems if implemented for hydrogen transmission to act similar to how now decommissioned natural gas holders were utilised for operational flexibility, pressure regulation, supply/demand mismatch management, load balancing, emergency backup and production buffering.

Eligibility Criteria Expert Assessors' evaluation	Met or not met	Additional justification
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors considered this Project to have addressed the Innovation Challenge because it considers the practical requirements to have short term storage that is not dependent on geological location constraints. It offers a way to explore new alternatives to above ground scenarios.
2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met	The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to gas and electricity consumers because it improves the resilience of the hydrogen network, primarily to be used by industrial customers who need a reliable

		supply of hydrogen into their business and into their industrial processes. The Expert Assessors considered that the main benefit will be to the electricity system and consumers with better utilisation of electrolysers and providing supply for Hydrogen to Power (H2P) plants when peaking power is needed. The Expert Assessors were of the view that storage opportunities help to improve some of the cost which may be passed onto consumers in the event of supply disruption.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it focuses on storage which is a nascent market where technologies and business models are emergent. The Project involves network innovation because it improves both the technology and commercial readiness of rock-lined shafts as a hydrogen storage method.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors did not consider this Project to be undermining the development of competitive markets because proving the potential of rock-lined shafts should open the market for other entrants for commercialisation. The future hydrogen network could accommodate multiple providers of rock-lined storage technology as plans develop for Project Union (the National Gas programme to develop a new hydrogen network alongside the existing gas transmission system). The Expert Assessors considered that the Project would help to develop the market for storage by improving the technology

		readiness levels to a point that the market can commercialise it.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because this is a first-of-a-kind technology for National Gas with only limited demonstration of rock-lined caverns or shafts elsewhere. The Project risk is not just in the technological innovation but also understanding if the capability can be deployed at a feasible cost and scale to the network. There are both uncertainties around how the innovation would scale and how the site in question would work in isolation.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders. National Gas has the engineering and infrastructure knowledge, planning expertise and access to customer stakeholders and modelling of power to gas and hydrogen networks, in addition to the close connection with Project Union. There is participation by subject matter experts, direct stakeholders (GDN), system architects and engineering companies.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered the Project to be delivering value for money and be costed competitively because deliverables address all the potential barriers to exploiting this technology. The costs are overall reasonable for the nature of the work and the level of innovation. There is a question as to whether the Project could proceed without a whole GB energy system

		model and how the Project will tackle this during the Alpha Phase.
8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met	The Project has a robust methodology which gives confidence that it will be capable of progressing in a timely manner because deliverables are clearly articulated, and responsibilities assigned to Project Partners.

Recommendation to the Office of Gas and Electricity Markets
FUND
The Expert Assessors agree that the Project has met all the Eligibility Criteria and recommends this Project for funding. The Expert Assessors considers the Project to have met the Innovation Challenge as it looks to tackle the practical requirements for short-term storage that is not dependent on geological location constraints, offering new alternatives to above-ground scenarios. The Project has clearly identified potential to deliver a net benefit to gas and electricity consumers by improving the resilience of the hydrogen network. It aims to provide a reliable hydrogen supply for industrial customers and better utilisation of electrolysers for Hydrogen to Power plants during peak power needs. Storage opportunities can help mitigate costs passed onto consumers during supply disruptions. The Project involves network innovation by focusing on storage, a nascent market with emerging technologies and business models. It aims to improve both the technology and commercial readiness of rock-lined shafts as a hydrogen storage method. The Project does not undermine the development of competitive markets. By proving the potential of rock-lined shafts, it can open the market for other entrants

and accommodate storage technology providers as Project Union develops. This primes the market for storage commercialisation.

The Project is considered innovative and risky due to its first-of-a-kind technology for National Gas, with limited demonstration of rock-lined caverns or shafts elsewhere. The risks involve technological innovation and feasibility of deployment at scale.

The Project includes participation from a sufficient range of stakeholders, including National Gas, subject matter experts, direct stakeholders (GDN), system architects, and engineering companies. This ensures robust stakeholder engagement.

The Project is delivering value for money and is costed competitively. The deliverables address potential barriers to exploiting the technology, with reasonable costs for the nature of the work and innovation level. During the Alpha Phase., further investigation is needed to determine if the Project can proceed without a comprehensive GB energy system model

The Project has a robust methodology ensuring timely progression. Deliverables are clearly articulated, responsibilities assigned, and timelines and dependencies are transparent. Recent changes to the work programme have streamlined the approach to deliverables.

Decision from the Office of Gas and Electricity Markets
FUND
Ofgem agrees with the Expert Assessors and approves this Project for funding.

Recommended Project-specific conditions
Before the end of Phase meeting, the Funding Party must present a plan to the Monitoring Officer on how the Project will overcome scalability and be capable of operating in isolation Prior to the end of Phase meeting, the Funding Party must

present to the Monitoring Officer a report on how the Project would proceed without a comprehensive GB energy system model.

3.5.2 Project 10157596 – Future Operability of Gas for System Integration (FOGSI)

Submitted Project description
The Project will develop an integrated hierarchical network modelling framework for simulating the operation of future GB energy system scenarios with highly interconnected gas and power networks. The realistic modelling of power-to-gas and storage operators' behaviour will be emphasised. The integrated models will be demonstrated on a simulation platform as real-time digital twins for future system scenarios. Considerable novelty will lie in the combination of modelling scale and granularity; representation of many autonomous decentralised agents making sub-optimal decisions; and the optimal resolution of dilemmas arising from the finite energy budgets constraining primarily weather-driven low to zero carbon scenarios.

Eligibility Criteria Expert Assessors' evaluation	**Met or not met**	**Additional justification**
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors considered this Project to have addressed the Innovation Challenge because it can help clarify the role of GB gas networks in a Net Zero energy system by developing an operational model for highly interconnected gas and power networks, supporting whole-system integration.

2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met	The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to gas consumers because it aims to drive a more effective use of energy system assets and expenditure through increased operational efficiency at a high level in significant hydrogen rollout scenario. The Expert Assessors noted that while the Project has clear benefits, these are not well defined. Therefore, they recommended that net present value in the original Application needs to be revised, and the Project should implement a process to maintain it as pathways become clearer.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it aims to develop integrated, cost-effective system planning models for hydrogen and electricity to enable efficient operation at the future interface between the gas system and the electricity system, which are currently optimised independently.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors did not consider this Project to be undermining the development of competitive markets because there are limited opportunities for markets to play a role at early stage due to technology and policy uncertainties. The Project's aim is to develop specifications for an operational modelling solution; this could also inform the development of hydrogen production and storage, potentially benefiting the

		market for hydrogen peaking plants for electricity.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because it aims to use modelling to develop detailed operational responses to the demand and supply needs of a future energy system where the hydrogen/gas system is integrated with the electricity system. Although the proposed modelling is no more complex than other system planning models, it is a new topic area and is therefore considered innovative.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered the Project Partners to be sufficient for the Project because National Gas and NGET are collaborating, the five Project Partner organisations involved have links with a wide range of stakeholders and the proposal indicates support from academics, researchers, NESO, hydrogen developers, and network operators. However, the Expert Assessors noted that engagement with key stakeholders is planned indirectly through Energy Systems Catapult, and individuals in the Project steering group are not clearly identified in the proposal. Therefore, it is recommended that the Project identify key senior sponsors from NGET, NESO, DESNZ, and National Gas, and set out details on the arrangement for giving the steering group an appropriate level of ownership.
7: Projects must provide value for money and	Met	The Expert Assessors considered the Project to be delivering value for money

be costed competitively.		because the costs and contributions between Project Partners seem reasonable, and the overall contribution exceeds the minimum required 10% threshold. However, the Expert Assessors noted that the proposal lacks a detailed breakdown of costs, and the benefits appear to be overestimated, which the Project acknowledged during the interview. Therefore, it is recommended that the Project should revisit their cost-benefit analysis and present more realistic benefit.
8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met	The Expert Assessors considered the Project to have a robust methodology, which gives confidence to the Expert Assessors that it will be capable of progressing in a timely manner because the Project plan is well-considered, with aligned resourcing and clear milestones for each work package, there is continuity of the expert team from the Discovery Phase, and the risk register covers key risks and mitigation measures.

Recommendation to the Office of Gas and Electricity Markets
FUND
The Expert Assessors agree that the Project has met all the Eligibility Criteria and recommends this Project for funding. The Project is considered to meet the Innovation Challenge as it aims to clarify the role of GB gas networks in a Net Zero energy system by developing an operational

model for highly interconnected gas and power networks, supporting whole-system integration.

The Project has identified potential to deliver a net benefit to gas consumers by driving more effective use of energy system assets and expenditure through increased operational efficiency in significant hydrogen rollout scenarios. However, the Expert Assessors recommend revising the net present value in the original Application and implementing a process to maintain it as pathways become clearer.

The Project involves network innovation by developing integrated, cost-effective system planning models for hydrogen and electricity. This will enable efficient operation at the future interface between the gas system and the electricity system, which are currently optimised independently.

The Project does not undermine the development of competitive markets due to limited opportunities for markets to play a role at early stages because of technology and policy uncertainties. Developing specifications for an operational modelling solution could inform hydrogen production and storage, benefiting the market for hydrogen peaking plants for electricity.

The Project is considered innovative and risky because it aims to use modelling to develop detailed operational responses to the demand and supply needs of a future energy system where the hydrogen/gas system is integrated with the electricity system. Although the proposed modelling is no more complex than other system planning models, it is a new topic area and thus considered innovative.

The Project Partners are deemed sufficient, with collaboration between National Gas and NGET and support from academics, researchers, NESO, hydrogen developers, and network operators. However, the Expert Assessors recommend identifying key senior sponsors from NGET, NESO, DESNZ, and National Gas, and setting out details on the arrangement for giving the steering group an appropriate level of ownership.

The Project is delivering value for money, with reasonable costs and contributions between Project Partners exceeding the minimum required 10% threshold.

However, the Expert Assessors recommend revisiting the cost-benefit analysis to present more realistic benefits.

The Project has a robust methodology, with a well-considered Project plan, aligned resourcing, clear milestones for each work package, continuity of the expert team from the Discovery Phase, and a risk register covering key risks and mitigation measures.

Decision from the Office of Gas and Electricity Markets
FUND
Ofgem agrees with the Expert Assessors and approves this Project for funding.

Recommended Project-specific conditions
Prior to kick-off meeting, the Project should identify specific key senior sponsors from NGET, NESO, DESNZ, and National Gas, and set out details on the arrangement for giving the steering group an appropriate level of ownership to ensure that the Project delivers in alignment to and efficiently for the sector's priorities and decisions. Prior to the end of Phase meeting, the Funding Party must present to the Monitoring Officer how the Project has maintained/continued engagement with SIF Projects Powering Wales Renewably (PWR) and Gas Network Evolution Simulator (GNES). Prior to the kick-off meeting, the Project should provide a clear articulation of the expected technical output. Prior to the kick-off, the net present value in the original Application is revised to reflect the most recent policy developments. Prior to the end of Phase meeting, the Funding Party must provide to the Monitoring Officer, an implemented process to maintain the cost-benefit analysis as hydrogen pathways become clearer.

4 Beta Phase

4.1 Summary

As mentioned earlier, in the Cycle approach applicants have multiple opportunities throughout the year to apply to each Phase (Discovery, Alpha and Beta). Therefore, we anticipate times when some Phases and Innovation Challenges will not receive any Applications.

This section covers Cycle 2, Round 3 and 4 Beta Phase Applications.

Round 3 Beta

The Round 3 Beta Innovation Challenges are:

Innovation Challenge 1 - Whole system network planning and utilisation to facilitate faster and cheaper network transformation and asset rollout

Innovation Challenge 2 - Novel technical, process and market approaches to deliver an equitable and secure Net Zero power system

Innovation Challenge 3 - Unlocking energy system flexibility to accelerate electrification of heat

Innovation Challenge 4 - Enabling power-to-gas (P2G) to provide system flexibility and energy network optimisation

Round 4 Beta

The Round 4 Beta Innovation Challenges are:

Innovation Challenge 1 – Faster network development

Innovation Challenge 2 – Greater heat flexibility

Innovation Challenge 3 – Embedding resilience

Innovation Challenge 4 – Accelerating toward Net Zero energy networks

One Project submitted an Application into Round 3 Beta Innovation Challenge 2, 'Novel technical, process and market approaches to deliver an equitable and secure Net Zero power system'.

One Project submitted an Application into Round 4 Beta Innovation Challenge 1, 'Faster network development'.

Innovation Challenge	No. of Applications received
Whole system network planning and utilisation to facilitate faster and cheaper network transformation and asset rollout	0
Novel technical, process and market approaches to deliver an equitable and secure Net Zero power system	1
Unlocking energy system flexibility to accelerate electrification of heat	0
Enabling power-to-gas (P2G) to provide system flexibility and energy network optimisation	0

Innovation Challenge	No. of Applications received
Faster network development	1
Greater heat flexibility	0
Embedding resilience	0
Accelerating toward Net Zero energy networks	0

This section covers the assessment of the Cycle 2 Beta Phase Applications received into the 'Novel technical, process and market approaches to deliver an equitable

and secure Net Zero power system' and 'Faster network development' Innovation Challenges.

4.2 Beta Phase - Innovation Challenge: Novel technical, process and market approaches to deliver an equitable and secure Net Zero power system - Overview of Projects

For the Beta Phase under this Innovation Challenge, one Application was submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 27 January 2025 and is shown below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Ofgem Decision for funding (Yes/No)
10157283	VERIFY - Vulnerability Evaluation for Resilience Investment and Flexibility	Scottish Hydro Electric Power Distribution PLC	5,972,922	641,353	5,331,569	Yes	Yes

4.3 Beta Phase - Innovation Challenge: Novel technical, process and market approaches to deliver an equitable and secure Net Zero power system - Expert Assessors' recommendations on Projects

4.3.1 Project 10157283 - VERIFY - Vulnerability Evaluation for Resilience Investment and Flexibility

Submitted Project description
As society moves towards Net Zero, some people will easily participate in the energy transition, while others, either by choice or factors outside their control, will not. To ensure an equitable transition, energy networks need to cater for all consumers. For the first time, VERIFY will combine data on networks, properties, consumer demographics and smart meters to ensure DNOs are able to better tailor network investments to match the needs of local consumers. Collaborating with local authorities, charities, and powerful computing technologies, VERIFY will evaluate the most cost efficient and beneficial solutions for energy networks and consumers alike.

Eligibility Criteria Expert Assessors' evaluation	**Met or not met**	**Additional justification**
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors considered this Project to have addressed the Innovation Challenge because it has potential to allow a greater number of vulnerable consumers to access benefits from the energy transition as well as ensuring real-world consumer needs are more effectively aligned with low-voltage network investment planning.

2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met	The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to electricity and gas consumers because the solution will support more effective network investment planning, in turn saving costs for electricity network consumers. Additionally, the solution will enable increased access to flexibility participation and allow a more tailored engagement approach to energy efficiency. The articulation at interview of the street-by-street approach that this solution will enable helped provide assurance to the Expert Assessors of the more granular targeting and benefits to consumers that would be delivered. The interview also provided clarification regarding the gas network consumer benefits by supporting more effective transition planning for the gas distribution network. The Expert Assessors commended the significant ambition shown by the Project team in delivering benefits for consumers, electricity networks, and gas networks.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it explores a more data driven approach to LV network planning, incorporating network data alongside other data domains such as consumer demographics and property information.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors did not consider this Project to be undermining the development of competitive markets because the Project will develop new and useful knowledge and insights which can

		both create and improve markets especially for the benefit of disadvantaged customers. The Expert Assessors stressed the need for a strategic, targeted and detailed engagement plan to allow these insights to be more effectively exploited by the wider market. This includes ensuring continued alignment with other relevant initiatives and Projects (such as services offered by other energy retailers or flex providers).
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because this is the first instance of bringing such a diverse range of datasets together at scale to drive network investment planning. The Project will generate new learning regarding driving energy sector engagement from those that ordinarily miss out on participating, and therefore on the benefits - for instance in flexibility. Additionally, the Expert Assessors noted the significant risk associated with the large number of stakeholders, both from the perspective of the number of Project Partners, and also with particular respect to the coordination and clear engagement needed with external stakeholders and other relevant initiatives.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders because it brings together a range of complimentary Project Partners who are all important for maximising the impact of such an initiative. This includes the involvement of local government, the third sector, an

		energy supplier, the DCC and a gas distribution network. The Expert Assessors noted the strong networks and stakeholder engagement experience of the range of Project Partners, but reiterated the importance that targeted and strategic stakeholder coordination and management will have in allowing wider deployment of the VERIFY solution.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered the Project to be delivering value for money and be costed competitively because the funding requested is proportional for the proposed activity, and there is significant scope for benefits to vulnerable customers as well as to network customers more broadly through improved network planning. The responses at interview gave assurance of the distinction between VERIFY and other relevant initiatives (such as ECO and the Warm Homes Plan) so as to avoid risk of duplication. All three Expert Assessors stressed the importance of continued awareness and coordination across relevant initiatives so that VERIFY can be synergistic with these. Additionally, the Expert Assessors received clarity on the specific roles of Project Partners within the Project and how each will bring value to the Project, as well as the underpinning structure and assumptions of the cost-benefit analysis. The Expert Assessors did note that earlier testing and evaluation of the VERIFY solution with another DNO could significantly increase the evidence base for wider deployment, scale-up and

		improved value for money. In particular, for instance, they recommended a rural use case and have recommended a Project specific condition tied to Stage Gate 2 to prompt consideration of this.
8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met	The Expert Assessors considered the Project to have a robust methodology which gives confidence that it will be capable of progressing in a timely manner. The methodology and other documentation are logical and clear. As well, the clear governance structures of steering and delivery groups provided confidence that the large number of consortium members could robustly deliver the planned activity. The Expert Assessors did raise the particular importance of a detailed and well-maintained risk register for such a Project. They highlighted the need for strong mitigations against key risks, such as awareness of other vulnerable customer support initiatives that emerge and the importance of clear ownership of the customer recruitment and engagement.

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that the Project has met all the Eligibility Criteria and recommends this Project for funding.

The Project meets the Innovation Challenge as it aims to enable a greater number of vulnerable consumers to benefit from the energy transition and align real-world consumer needs with low voltage network investment planning.

The Project has identified potential to deliver a net benefit to electricity and gas consumers by supporting more effective network investment planning, which can save costs for electricity network consumers. It also aims to increase access to flexibility participation and provide a tailored approach to energy efficiency. The street-by-street approach discussed during the interview assured the Expert Assessors of the granular targeting and benefits to consumers.

The Project involves network innovation by exploring a data-driven approach to low-voltage network planning, incorporating network data alongside consumer demographics and property information. This innovative method will generate new and useful knowledge, benefiting disadvantaged customers and improving markets. The Expert Assessors emphasised the need for a stakeholder engagement plan to effectively exploit these insights.

The Project is considered innovative and risky due to the novelty of integrating diverse datasets at scale for network investment planning. The significant ambition of the Project team in delivering benefits for consumers and networks was commended. However, the large number of stakeholders and the need for clear coordination and engagement were noted as significant risks.

The Project includes participation from a sufficient range of stakeholders, including local government, the third sector, an energy supplier, and a gas distribution network. The strong networks and stakeholder engagement experience of the Project Partners were noted, but targeted and strategic coordination is crucial for wider deployment of the VERIFY solution.

The Project is delivering value for money, with proportional funding for the proposed activities and significant benefits for vulnerable customers and network customers through improved network planning. The Expert Assessors recommended earlier

testing and evaluation with another DNO to increase the evidence base for wider deployment and improved value for money.

The Project has a robust methodology, with logical and clear documentation, and strong governance structures. The importance of a detailed and well-maintained risk register was highlighted, with a focus on mitigating key risks and ensuring clear ownership of customer recruitment and engagement.

Decision from the Office of Gas and Electricity Markets (Ofgem)

FUND

Ofgem agrees with the Expert Assessors and approves this Project for funding due to its innovative approach in addressing the Innovation Challenge. The Project aims to enable more vulnerable consumers to benefit from the energy transition and align real-world consumer needs with low-voltage network investment planning.

The Project has significant potential benefits for electricity and gas consumers by supporting more effective network investment planning, which can save costs and increase access to flexibility participation. The street-by-street approach ensures granular targeting and benefits to consumers, enhancing energy efficiency.

The Project involves network innovation by integrating diverse datasets, including network data, consumer demographics, and property information, to drive low-voltage network planning. This innovative method will generate valuable insights, benefiting disadvantaged customers and improving markets.

Despite the risks associated with integrating diverse datasets and coordinating numerous stakeholders, the Project's robust methodology, strong governance structures, and strategic engagement plan provide confidence in its timely progression and successful delivery. The Project is delivering value for money, with proportional funding and significant potential benefits for vulnerable and network customers.

Overall, Ofgem supports this Project for its potential to drive innovation, deliver consumer benefits, and enhance network planning through a data-driven approach.

Recommended Project-specific conditions

The Project must present to the Monitoring Officer, at least at every second Quarterly Review Meeting, an outline plan and updates on activities it is undertaking to ensure the scale up of the Project to other networks, including and beyond the Project Partners. This could be included in the post-Beta roadmap activities.

At each Quarterly Review Meeting, the Funding Party much present to the Monitoring Officer a stakeholder engagement and dissemination plan. Stakeholder engagement should include consideration for other DNOs, GDNs, energy suppliers, and consumer groups.

At each Quarterly Review Meeting, the Funding Party must present it's Dissemination Plan. The Project must include and evidence to the Monitoring Officer the software and analytical outputs of the VERIFY solution that will be published and disseminated throughout the Project.

As part of stage gate 2, the Project must consider the scope for appropriately testing the solution in an area of another DNO licensee. This is to improve the likelihood that scale-up of the solution is achievable across the wider market. Ofgem should be satisfied with the area chosen and how it will be tested so that they can be confident about the appropriateness of future price control updates (increasing expectations on LV network investment efficiency).

4.4 Beta Phase - Innovation Challenge: Faster network development - Overview of Projects

For the Beta Phase under this Innovation Challenge, one Application was submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 27 January 2025 and is shown below.

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Ofgem Decision for funding (Yes/No)
10157622	FutureGrid: CO2	National Gas Transmission PLC	4,566,081	797,255	3,798,826	Yes	Yes

4.5 Beta Phase - Innovation Challenge: Faster network development - Expert Assessors' recommendations on Projects

4.5.1 Project 10157622 – FutureGrid: CO2

Submitted Project description
FutureGrid: CO2 is the final phase of a suite of carbon dioxide Projects, looking at how National Gas can repurpose parts of its network to transport gaseous-phase carbon dioxide safely. What started out as literature reviews and feasibility studies, will turn into, physical testing and demonstration. National Gas will be using its world-leading FutureGrid facility to demonstrate how carbon dioxide will flow through its pipes, delivering on its promise to further use this facility after our successful FutureGrid SIF Beta Projects. We will also be completing underexplored carbon dioxide venting, ruptures and real-time impurity corrosion tests

Eligibility Criteria Expert Assessors' evaluation	Met or not met	Additional justification
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors considered this Project to have addressed the Innovation Challenge because it is looking at how to repurpose sections of the gas network thus supporting the energy transition both in terms of carbon capture and storage and avoiding the cost of decommissioning the gas network. They considered that the learnings could help play a key role in understanding carbon capture and storage (CCS) deployment costs while potentially avoiding stranded assets.
2: Projects must have clearly identified potential to deliver a	Met	The Expert Assessors considered this Project to have clearly identified potential to deliver a net benefit to gas consumers, mainly through avoiding costs of

net benefit to gas or electricity consumers		decommissioning. The evidence generated will contribute to a future use case for the use of existing assets; this in turn will save on cost of building new infrastructure for CCS. Where there can be a reduction of costs from CCS, this may result in an increase in the uptake of CCS.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it is investigating the repurposing of gas pipes for the purpose of transporting carbon dioxide. The Expert Assessors were not aware of other innovation Projects that were pursuing repurposing gas infrastructure in this way. This Project would help to inform the safety case for using the network for an alternative purpose and therefore the Project was considered to involve network innovation.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors did not consider this Project to be undermining the development of competitive markets because the Project is a testing programme to help build a safety case to open up future markets.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because of the novelty involved with repurposing of the existing infrastructure. The potential to shift the business model was considered by the innovators to be novel and risky, given the complexity associated with repurposing old assets versus building new assets due to unknowns such as asset condition and regulatory requirements. The proposal attempts to

		understand these risks, e.g. corrosion, and how they might be mitigated.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered this Project to include participation from a sufficient range of stakeholders because letters of support from two potential customers are included as well as technical knowledge (DNV, Pipeline Integrity Engineers (PIE)) and operational knowledge (National Gas and Natran). The Expert Assessors noted that the stakeholder engagement plan could be strengthened by addressing public perception and making findings accessible.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered the Project to be delivering value for money and be costed competitively, as repurposing of the asset would save on decommissioning costs sufficiently to make the Project value for money for the consumer; though they noted that industry/commercial would receive greater benefits. The Expert Assessors considered that the Project could have provided a more granular breakdown of the costs associated with DNV and the work to be carried out at Spadeadam. Additionally, the Expert Assessors considered that the additional contribution from DNV seemed low. (Note – following the interview DNV increased their contribution).
8: Projects must be well thought through and have a robust methodology so that they are capable of	Met	The Expert Assessors considered the Project to have a robust methodology which gives confidence to the Expert Assessors that it will be capable of progressing In a timely manner because

progressing in a timely manner.		the Project has presented a Gantt chant in which the Project progresses in a logical way. The Project team is experienced with delivering this type of testing programme.

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that the Project has met all the Eligibility Criteria and recommends this Project for funding. This Project is considered to have met the Innovation Challenge, due to its innovative approach in repurposing sections of the gas network to support the energy transition. This involves carbon capture and storage (CCS) and avoids the cost of decommissioning the gas network. The learnings from this Project will build understanding of CCS deployment costs while potentially avoiding stranded assets. The Project has clearly identified potential to deliver a net benefit to gas consumers by avoiding decommissioning costs. The evidence generated will contribute to future use cases for existing assets, saving on the cost of building new infrastructure for CCS. The Project involves network innovation by investigating the repurposing of gas pipes for transporting carbon dioxide. This approach is unique, as no other innovation Projects are pursuing repurposing gas infrastructure in this way. It will help inform the safety case for using the network for an alternative purpose. The Project does not undermine the development of competitive markets, as it is a testing programme to help build a safety case. The Project is considered innovative and risky due to the novelty of repurposing existing infrastructure. The potential to shift the business model is novel and risky. Given the complexity associated with repurposing old assets versus building new ones. The proposal attempts to understand and mitigate risks such as corrosion.

. The Project includes participation from a sufficient range of stakeholders, letters of support from potential customers, and technical and operational knowledge from DNV, PIE, National Gas, and Natran. Addressing public perception and making findings accessible could strengthen the stakeholder engagement plan.

The Project is delivering value for money and is costed competitively. While a more granular breakdown of costs associated with DNV and work at Spadeadam is needed, the repurposing of assets will save on decommissioning costs, making the Project value for money for consumers.

The Project has a robust methodology, with a logical progression outlined in a Gantt chart. The experienced Project team gives confidence in timely progression.

Decision from the Office of Gas and Electricity Markets (Ofgem)

FUND

Ofgem agrees with the Expert Assessors' recommendation to fund this Project due to its innovative approach in repurposing sections of the gas network for carbon capture and storage (CCS). This strategy supports the energy transition and avoids decommissioning costs, potentially playing a key role in understanding CCS deployment costs and avoiding stranded assets.

The Project promises significant benefits for gas consumers by avoiding decommissioning costs and utilising existing assets for CCS, which could reduce costs and increase CCS uptake. The unique approach of repurposing gas pipes for transporting carbon dioxide will inform the safety case for using the network for alternative purposes.

The Project does not hinder the development of competitive markets, as it is focused on building a safety case through testing. Despite its innovative and risky nature, the Project includes participation from a sufficient range of stakeholders and is delivering value for money. The robust methodology and experienced Project team ensure timely progression and effective risk mitigation.

Recommended Project-specific conditions
Prior to kick-off meeting, the Funding Party must provide to the Monitoring Officer a detailed breakdown of accurate costs associated with the work being carried out at DNV Spadeadam. The costs should be itemised and linked back to the applicable Work Packages. The Project must demonstrate meaningful engagement with other carbon capture, utilisation and storage Projects such as those funded by DESNZ, Scottish Government and or other Ofgem mechanisms. Prior to the second Quarterly Review Meeting, the Funding Party must provide to the Monitoring Officer a stakeholder engagement plan which addresses how the Project will engage with Acorn and the Scottish cluster and identify opportunities for collaboration and knowledge sharing. The stakeholder engagement plan should be updated periodically and reviewed, thereafter, at each Quarterly Review Meeting. Prior to the second Quarterly Review Meeting, the Funding Party must provide to the Monitoring Officer a Knowledge Dissemination plan which includes how findings will be shared with the wider CCUS industry, such as the DESNZ CO_2 Working Group, including where learnings will be shared internationally, what can be learned from international projects, such as the Alberta Carbon Trunk Line (ACTL) Project, and where learnings will be incorporated into safety standards. This document should be updated periodically and reviewed, thereafter, at each Quarterly Review Meeting. The Project must demonstrate how learnings from this Project are being incorporated into the wider safety case for CCUS. The Project must at each Quarterly Review Meeting report to the Monitoring Officer on how learnings from this Project are being utilised by and shared with the Health and Safety Executive.