Strategic Innovation Fund (SIF)

Cycle 3 Innovation Challenges – Discovery Phase

Funding Decision and Summary of Recommendations from Expert Assessors

Date: 22 September 2025

Contents

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.

As the SIF transitions towards RIIO-3, Round 5 Innovation Challenges will span a two-year period. Under the established approach, Innovation Challenges are typically launched annually to address the strategic issues facing the gas and electricity networks.

The SIF adopts a three Phase Project approach within each Round 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 Distribution licensees.

The 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. Each of these open periods is termed a cycle. Applicants are able to

[1] The SIF Governance Document can be found here: https://www.ofgem.gov.uk/decision/updates-strategic-innovation-fund-governance-document

apply across all three phases of the SIF (Discovery, Alpha, and Beta) during each Application cycle, where eligible.

This report covers the Discovery Phase Project Applications submitted in Cycle 3, which ran from 26 May 2025 to 25 June 2025. 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 Innovation Challenges covered by this Cycle are as follows.

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

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

Round 5[3] of the SIF was launched in March 2025 and focuses on seven Innovation Challenges:

1. Advanced energy transmission and networks
2. Dynamic modelling
3. High-energy demand point integration
4. Consumer-centric grid expansion
5. Enhanced system visibility and control

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

[3] Find more information on the Innovation Challenges for Round 5 here: https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-5-challenges

6. Green gas

7. Whole system optimisation

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.
- 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 3 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 Discovery Phase, Applications were received by 25 June 2025 and must start no earlier than 1 September 2025. They must last up to 5 months, and must not request funding of more than £150,000, exclusive of VAT.

Applications submitted to the Cycle 3 Discovery Phase by the 25 June 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 policy, regulatory, commercial, financial and technical areas. Consistent with the requirements of the SIF Governance Document, the Expert Assessors have assessed each Application (a) with reference to 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 Discovery Phase, or no funding at all.

The overall funding recommendation summarised in this report is based upon a balance of considerations taking into account whether a Project has met each of the SIF Eligibility Criteria, 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 3 Discovery Phase of the SIF. Ofgem, taking into 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 Discovery Phase there is a maximum of 5 stages in assessing eligible submitted Applications:

- Initial sift - completed by Innovate UK to confirm whether an Application complies with the Innovation Challenge-specific requirements.
- Expert Assessor evaluation – An 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 Discovery Phase. This decision is made based on an assessment of 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 regarding 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 Discovery 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 successful Project.

- 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 provides 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)
2	Problem statement	Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.
3	Innovation justification	Eligibility Criterion 3: Projects must involve network innovation. Eligibility Criterion 5: Projects must be innovative, novel or risky.
4	Benefits Part 1	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).
5	Benefits Part 2	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	Team and resource	Eligibility Criterion 6: Projects must include participation from a range of stakeholders.

7	Project Plan and milestones	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.
8	Key outputs and dissemination	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	Route to market	Eligibility Criterion 4: Projects must not undermine the development of competitive markets.
10	Value for Money	Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

3 Projects submitted for Round 4 Innovation Challenges

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.

In Cycle 3, for the Round 4 challenges, three Projects submitted a Discovery Phase Application into Innovation Challenge 1, 'Faster network development' and one Project submitted an Application into Innovation Challenge 3, 'Accelerating toward Net Zero energy networks'.

No Discovery Phase Applications were received for the other two Round 4 Innovation Challenges covered by Cycle 3.

Innovation Challenge	No. of Applications received
Faster network development	3
Greater heat flexibility	0
Embedding resilience	0
Accelerating toward Net Zero energy networks	1

This section covers the assessment of the Discovery Phase Applications received in Cycle 3 into the 'Faster network development' and 'Accelerating toward Net Zero energy networks' Innovation Challenges.

3.2 Innovation Challenge: Faster network development - Overview of Projects

This sub-section covers the assessment of Discovery Phase Applications received into the 'Faster network development' Innovation Challenge in Cycle 3.

In order to protect intellectual property rights (IPR), unsuccessful Projects have been redacted from the final published version.

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)
	[REDACTED]					No	No
10168072	Project COLLABORATE	Cadent Gas Limited	159,646	15,964	143,682	Yes	Yes
10168330	Foundation Source Model (FoSMo)	National Grid Electricity Transmission	139,562	13,956	125,606	Yes	Yes

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

3.3.1 [REDACTED]

3.3.2 Project 10168072 - Project COLLABORATE

Submitted Project description
This Project will explore how utility companies and highway authorities can better coordinate roadworks to reduce disruption, cut carbon emissions, and improve efficiency. Through stakeholder engagement, data analysis, and lessons from existing schemes, the Discovery Phase will assess the need and value of a new approach to identifying and enabling collaborative works. The aim is to reduce repeated excavations, shorten road closures, and improve public experience. While led by Cadent and NGED, the Project is intended to benefit all utilities, local authorities, and the wider public by supporting a more joined-up, transparent, and environmentally responsible approach to essential infrastructure delivery.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met

7. Projects must provide value for money and be costed competitively.	Met
8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by developing the requirements for a novel, cross-utility digital planning platform to coordinate street works across energy, transport, utilities, and highways sectors. It builds on the success of a manual system used in London and aims to scale this approach nationally. The Project seeks to increase confidence in regional energy models and improve the efficiency of connection methods, ultimately supporting better planning and reduced disruption across infrastructure sectors. The Project has a clearly identified potential to deliver a net benefit to gas and electricity consumers, through significant efficiency savings, emission reductions and quality of life. Coordinated "dig-once" street works can reduce duplication of effort, lower emissions, and minimise public disruption. The Project references the Greater London Authority's model, which saved £4 million and avoided 100,000 journey time hours across 27 sites—demonstrating the potential for significant consumer and societal benefits if scaled nationally. The Expert Assessors concluded that the Project involves network innovation by proposing the development of a digital platform and new cross-sector ways of working. The Project's ambition to move from a manual, localised system to a scalable, automated national solution introduces both technical and organisational innovation. One Expert Assessor questioned the innovativeness of the Project, which appeared to be more of a management planning, legal and coordination activity.

Ultimately, the Expert Assessors considered the Project to meet the Eligibility Criterion.

The Project does not undermine the development of competitive markets because it is designed as a coordination and planning tool to deliver shared benefits across sectors. The Project commits to publishing all findings openly, with no exclusive intellectual property rights or preferential commercial positions granted.

The majority of Expert Assessors considered the Project to be innovative, novel, and risky. The Project addresses a real and present challenge, poor coordination of street works, by developing a new digital platform and cross-sector agreements. The risks lie in the technical development of the platform, stakeholder engagement, and overcoming entrenched siloed planning practices. One Expert Assessor queried the novelty and riskiness of the Project, as they did not consider the solution to meet the minimum threshold for SIF Funding and considered that the Project appears to be a database and a data-sharing platform which is not transformative innovation. Ultimately, the Expert Assessors considered the Project to meet the Eligibility Criterion, and this will be addressed through a specific condition.

The Project Partners are sufficient for the Project because the consortium includes Cadent Gas, NGED, and EA Technology, representing both gas and electricity systems. The Project also includes engagement with local authorities, utilities, and highways organisations through targeted workshops. Plans to disseminate findings to other network operators via the Energy Networks Association further strengthen the stakeholder engagement strategy.

The Project is delivering value for money and is costed competitively because the overall budget is reasonable for a Discovery Phase, and the matched funding supports the case for investment. One Expert Assessor noted a lack of detailed cost breakdown and questioned the relatively low financial contribution from Cadent and NGED, given the potential benefits to them. Ultimately, the Expert Assessors considered the Project to meet the Eligibility Criterion, and this will be addressed through a specific condition.

The Project has a robust methodology which gives confidence that it will be delivered on time and within budget because the plan includes defined work packages, resource allocations, and a risk register. One Expert Assessor noted that more detail on the internal structure of work packages and a broader consideration of risks, particularly those related to stakeholder engagement where engagement will require a large amount of time and resource at no apparent cost to the Project, would strengthen the proposal.

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 the Discovery Phase, the Funding Party must provide to the Monitoring Officer a detailed breakdown of how the Project will address additional risks around stakeholder engagement. Prior to the end of the Discovery Phase, the Funding Party must provide to the Monitoring Officer evidence of engagement with telecoms and water networks to ensure their views and feedback are included within the Project. Prior to the end of the Discovery Phase, the Funding Party must provide a statement confirming the financial contributions to be provided by Cadent Gas Ltd. and National Grid Electricity Distribution, with an explanation of how those contributions are proportionate to the benefits of each organisation expects to derive from the Project.

3.3.3 Project 10168330 - Foundation Source Model (FoSMo)

Submitted Project description

The UK electricity network stands to gain significant advantages from deep learning-based computer vision models for asset management; reduced analysis and data collection costs, improved output quality, lower lifecycle costs from consistent assessments and better predictive models.

Independent development of these models by individual networks is costly, inefficient and yields inferior results. Networks lack sufficient data for rare defects and components. A "foundational model" is proposed: a central model or models continuously updated with shared industry-wide datasets. This collaborative approach would lead to more reliable and robust models, be more cost-effective for consumers, and free networks to focus on value-adding activities.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met
8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)

FUND

The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding.

The Project addresses the Innovation Challenge by proposing the development of a novel, shared machine learning (ML) and artificial intelligence (AI) foundational model for asset management across the UK electricity network. This approach aims to improve real-time monitoring and optimisation of network assets, aligning with Innovation Challenge. The Project also seeks to establish a new collaborative framework for model development and deployment across Transmission Operators (TOs) and Distribution Network Operators (DNOs), which currently does not exist.

The Project has a clearly identified potential to deliver a net benefit to electricity consumers. By avoiding duplicated model development and enabling more efficient asset management, the Project is expected to generate industry-wide cost savings. These savings, along with improved network reliability and reduced operational costs, are expected to flow through to consumers in the form of fewer service interruptions.

The Project is considered to involve network innovation by proposing a novel methodology for developing a foundational ML model that can be shared across the electricity system. This represents a significant departure from current practices, where individual networks develop models in isolation. The Project also introduces new approaches to data sharing and collaborative model training, which are essential for system-wide optimisation.

The Project does not undermine the development of competitive markets because it proposes open access to the foundational model through open-source licensing or contributory access, ensuring that all network operators can benefit from the outputs.

The Project is considered innovative, novel, and risky. It is the first attempt to develop a shared ML model across all UK networks, introducing technical, regulatory, and commercial challenges. The risks include the complexity of data integration, the

need for cross-industry collaboration, and the development of governance frameworks for shared model use.

The Project Partners are sufficient for the Project. National Grid Electricity Transmission leads the consortium, with Keen AI providing technical expertise. The Project also includes plans for engagement with additional network operators and industry bodies. While the current consortium is strong, Expert Assessors noted the absence of academic Project Partners, particularly given the relevance of ongoing academic work in system data management.

The Project is delivering value for money and is costed competitively. The staff costs are well specified and reasonable, and the potential cost savings are clearly evidenced. The Discovery Phase budget has been managed appropriately. However, legal costs are less well detailed and could benefit from further clarification.

The Project has a robust methodology which gives confidence that it will be delivered on time and within budget. The Project plan is detailed, with clearly defined roles, responsibilities, and a Project management framework. Risks are well articulated for this Phase, though Expert Assessors recommended further consideration of future and external risks, particularly those related to long-term governance and stakeholder alignment.

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 start of the Discovery Phase, the Funding Party must provide to the Monitoring Officer an expanded risk register that identifies material future-orientated and external risks, and assess the potential impact and likelihood of each such risk.

3.4 Innovation Challenge: Accelerating toward Net Zero energy networks - Overview of Projects

This sub-section covers the assessment of Discovery Phase Applications received into the 'Accelerating toward Net Zero energy networks' Innovation Challenge in Cycle 3.

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)
10167733	Knapton H2 Storage for H2P	Northern Gas Networks Limited	181,313	31,612	149,701	Yes	Yes

3.5 Innovation Challenge: Embedding Resilience - Expert Assessors' recommendations on Projects

3.5.1 Project 10167733 - Knapton H2 Storage for H2P

Submitted Project description
This Project will investigate options for medium and large-scale storage of hydrogen to enable Centrica's H2P Project at Knapton via energy asset re-purposing, the flexible use of hydrogen in the region for industrial decarbonisation, and infrastructure scale up opportunities to provide resilience for the proposed East Coast Hydrogen core H2 network in North Yorkshire.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met
8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by investigating long-term electricity and hydrogen storage solutions, which are critical to the decarbonisation of the energy system. It explores the potential for repurposing existing gas network assets and deploying novel hydrogen storage technologies at a local scale. This aligns with the transition away from natural gas and supports the development of a more flexible, resilient, and low-carbon energy infrastructure. The Project has a clearly identified potential to deliver a net benefit to both gas and electricity consumers. By enabling the use of surplus electricity to generate and store hydrogen, and by potentially reducing the costs of transitioning from natural gas, the Project could lower network balancing costs and support intraseasonal energy demands. These outcomes would contribute to more affordable and sustainable energy services for consumers. The Project is considered to involve network innovation by addressing a long-standing, multidisciplinary challenge, hydrogen storage. It proposes the use of geographically appropriate, localised storage solutions that could be deployed across the network. The Project also aims to identify and compare multiple storage technologies, including those not currently viable in the region, to inform future development pathways. The Project does not undermine the development of competitive markets. It is structured as a desk-based study with open dissemination of findings. Multiple technical solutions are being considered and evaluated transparently, ensuring that no single supplier or technology is favoured. This approach supports fair competition and broad industry engagement. The Project is considered innovative, novel, and risky. It explores under-researched areas of energy storage and takes a regional whole-system approach to hydrogen

deployment. The inclusion of multiple technologies at varying levels of maturity introduces technical and commercial uncertainties, but also offers the potential for significant breakthroughs in energy system design and operation.

The Project Partners are sufficient for the Project, comprising a strong consortium of stakeholders from industry, academia, and government. This includes energy companies, technology suppliers, the British Geological Survey (BGS), and other experienced organisations. The Project Partners bring the necessary expertise and have a track record of successful collaboration on similar Projects.

The Project is delivering value for money and is costed competitively. The budget is considered appropriate for the scope of work, with typical day rates and a balanced distribution of funding across partners. The financial support from partners and the potential for significant long-term benefits further strengthen the value proposition.

The Project has a robust methodology that gives confidence that it will be delivered on time and within budget. The Project plan includes clearly defined tasks, responsibilities, and a suitable risk register. The timeline is appropriate, and the Project Partners' prior experience with similar Projects supports confidence in successful delivery.

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
None

4 Projects submitted for Round 5 Innovation Challenges

4.1 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.

In Cycle 3, for the Round 5 challenges:

- Three Projects submitted a Discovery Phase Project Application into Innovation Challenge 3, 'High-Energy Demand Point Integration'.
- One Project submitted an Application into Innovation Challenge 3, 'Consumer-Centric Grid Expansion'.
- One Project submitted an Application into Innovation Challenge 4, 'System Visibility and Control'.
- Six Projects submitted Applications into Innovation Challenge 6, 'Green Gas'.

No Applications were received for the other three Innovation Challenges covered by the Cycle 3 Round 5 Discovery Phase.

Innovation Challenge	No. of Applications received
Advanced Energy Transmission and Networks	0
Dynamic Modelling	0
High-Energy Demand Point Integration	3
Consumer-Centric Grid Expansion	1
System Visibility and Control	1
Green Gas	6

Whole System Optimisation	0

This section covers the assessment of the Cycle 3 Round 5 Discovery Phase Applications received into the 'High-Energy Demand Point Integration', 'Consumer-Centric Grid Expansion', 'System Visibility and Control', and 'Green Gas' Innovation Challenges.

4.2 Innovation Challenge: High-Energy Demand Point Integration - Overview of Projects

This sub-section covers the assessment of Discovery Phase Applications received into the 'High-energy demand point integration' Innovation Challenge in Cycle 3.

In order to protect intellectual property rights (IPR), unsuccessful Projects have been redacted from the final published version.

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)
	[REDACTED]					No	No
10168321	Non Data Centres Large Demand Mapping	Southern Gas Networks PLC	166,278	17,816	148,462	Yes	Yes
10168356	Solving the energy bottleneck for UK data centres	Southern Gas Networks PLC	150,478	15,729	134,749	Yes	No

4.3 Innovation Challenge: High-Energy Demand Point Integration - Expert Assessors' recommendations on Projects

4.3.1 [REDACTED]

4.3.2 Project 10168321 - Non Data Centres Large Demand Mapping

Submitted Project description
New high energy demand sites in the UK can face grid connection delays of over 10 years due to overloaded electricity networks which are struggling to keep up with growing demand. Gas networks could help bridge this gap by supplying gas-to-power solutions to support critical areas sooner. Knowing where and when demand will arise will help gas networks target investment, support electricity networks in offering alternatives, and allow energy users faster access to power. In this way, gas networks can play a key role in getting large energy users the power they need, when they need it.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met

8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by aiming to reduce the risk of stranded capacity through improved forecasting and planning for high energy demand centres. By exploring a gas-to-power solution as a faster, cost-effective alternative to grid reinforcement, the Project supports more agile and efficient infrastructure planning. The Project has a clearly identified potential to deliver a net benefit to gas and electricity consumers. It proposes to accelerate connections for large energy users by improving forecasting and enabling alternative supply routes, potentially reducing the need for costly grid reinforcements. These benefits could translate into lower system costs, faster access to energy for businesses, and improved coordination between gas and electricity networks—delivering value across the whole system. The Project is considered to involve network innovation because it introduces a new service model in which GDNs collaborate with DNOs to provide gas-to-power solutions for large electricity users. This represents a novel role for GDNs and requires new forms of whole-system coordination, commercial arrangements, and technical integration. The Project does not undermine the development of competitive markets as it commits to sharing findings openly through industry channels and social platforms, and no proprietary technologies are being developed at this stage. While the commercialisation strategy for the proposed tool will need careful consideration in future Phases, the current approach supports transparency and sector-wide benefit.

The Project is considered innovative, novel, and risky. It explores a new model of service provision by GDNs, targeting an underexplored customer segment and requiring new operational and commercial frameworks. The concept is not currently in use, and the Project carries appropriate technical and institutional risk for early-stage innovation funding.

The Project includes participation from a range of stakeholders. The team brings relevant expertise in forecasting, planning, and stakeholder engagement. The Project also includes plans to engage a broader range of stakeholders, including local authorities, planners, market experts, and DNOs, during the research phase. This is appropriate for the scope and stage of the work.

The Project is delivering value for money and is costed competitively. The budget is proportionate to the scope, with reasonable day rates and a 10% in-kind contribution from Project Partners. The use of existing facilities and assets, combined with a focused research and engagement programme, supports a strong value proposition. While the ultimate value depends on the feasibility of gas-to-power solutions, the Discovery Phase is well positioned to assess this.

The Project has a robust methodology which gives confidence that it will be delivered on time and within budget. The Project plan is clearly structured, with defined roles, milestones, and a detailed risk register. The governance model and division of responsibilities between SGN and White Space are appropriate, and the delivery framework is well suited to the scale and ambition of the Discovery Phase.

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 the Discovery Phase, the Funding Party must include a summary of stakeholder engagement conducted during the Phase, including engagement with Distribution Network Operators, to Monitoring Officer.

Prior to the end of the Discovery Phase, the Funding Party will evidence to the Monitoring Officer engagement with other SIF Projects, such as, but not limited to, FARM, RIDES, SeaChange, and Electric Thames to ensure lessons can be learned from these Projects and to avoid duplication.

Prior to the end of the Discovery Phase, the Funding Party will evidence to the Monitoring Officer, the process the Project will undertake to ensure the appropriate the gas-to-power technologies are selected.

4.3.3 Project 10168356 - Solving the energy bottleneck for UK data centres

Submitted Project description
The UK faces soaring electricity demand from AI clusters, data centres, and industrial decarbonisation, straining the electricity grid and causing delays for critical Projects. This Project explores using the existing gas network to supply energy near high-demand sites, converting gas to electricity via innovative fuel cell technology. This decentralised approach reduces grid reliance, accelerates Project delivery, and supports net zero goals by integrating renewable gases. Through case studies, system modelling, environmental and economic analysis, and collaboration with Gas Distribution Networks, the Project will assess feasibility, optimise solutions, and identify broader societal benefits to inform future scalable deployment.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met

3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met
8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has fully met the Eligibility Criteria and recommend this Application for funding. The Project aims to address the Innovation Challenge by exploring the use of gas-connected fuel cells to support data centre energy needs and reduce reliance on electricity grid reinforcement. While the proposal aligns with the Innovation Challenge's theme of accelerating access to power for large energy users. Expert Assessors were divided on whether the Project truly addresses the core objective of delivering greater system flexibility. Some viewed it as an alternative energy supply model rather than a flexibility solution. The Project has demonstrated a net benefit to gas or electricity consumers. It outlines potential benefits such as faster connections, reduced infrastructure costs, and improved resilience which are primarily expected to accrue to data centres. One Expert Assessor noted, the case for long-term system cost reduction through alternative gas network utilisation remains speculative.

The Project is considered to involve sufficient network innovation. The Project builds on NIA-funded work and focuses on integrating fuel cells with gas networks for a novel use case (data centre power). The use of gas infrastructure to deliver system coordinated decentralised electricity is a network innovation beyond business as usual.

The Project does not undermine the development of competitive markets because it commits to a technology-agnostic approach and outlines a vendor-neutral selection process. However, one Expert Assessor raised concerns about the potential for GDNs to operate generation assets, which could distort electricity markets. This risk should be carefully explored and mitigated during any future development. Ultimately, the Expert Assessors considered the Project to meet the Eligibility Criterion and recommend a condition to monitor.

The Project is considered innovative and novel because while fuel cell technology itself is mature, the integration into data centre energy strategies via gas networks is novel in a UK context. The project carries process innovation and system integration risks.

The Project Partners are considered to represent a sufficiently broad stakeholder base. The consortium includes two GDNs, a technology provider, and an engineering consultancy. The Expert Assessors did note that the Project would benefit from naming the Data Centres Providers and DNOs that will provide further input.

The Project is considered to be delivering value for money. The Project is delivering value for money because the Project's costs appear proportionate, with Project Partner contributions, discounted rates, and free technical inputs from Bloom supporting value for money.

The Project has a detailed methodology and delivery plan, but the scale of ambition, particularly the economic assessment of grid impacts, may be unrealistic within the five-month Discovery Phase. The Project management costs are high relative to the

scope, and the reliance on a single consultancy for delivery raises concerns about capacity and independence.

Decision from the Office of Gas and Electricity Markets (Ofgem)
DO NOT FUND
Ofgem does not agree with the Expert Assessors' recommendation to fund this Project, as it does not meet Eligibility Criteria 3, 4 or 5. The Project is not considered to involve sufficient network innovation, as its primary focus is on an alternative use case of the gas network, with the proposed innovation located mainly on the demand side, where there are already strong market incentives to innovate. The Project is considered to undermine competitive markets, while it sets a technology-agnostic approach and a vendor-neutral selection process, we consider the potential for GDNs to operate network assets a material risk of distorting electricity markets. Furthermore, while the Project may exhibit some elements of novelty, it does not provide evidence of a truly innovative or high-risk approach that would deliver clear benefits to the gas or electricity networks.

Recommended Project-specific conditions
N/A

4.4 Innovation Challenge: Consumer-Centric Grid Expansion - Overview of Projects

This section covers the assessment of Cycle 3 Discovery Phase Applications received into the 'Consumer-centric grid expansion' Innovation Challenge.

In order to protect intellectual property rights (IPR), unsuccessful Projects have been redacted from the final published version.

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)
10167276	AI Opportunities for consumer centric engagement	National Gas Transmission PLC	166,485	16,648	149,837	Yes	Yes

4.5 Innovation Challenge: Consumer-Centric Grid Expansion - Expert Assessors' recommendations on Projects

4.5.1 Project 10167276 - AI Opportunities for consumer centric engagement

Submitted Project description
Our Project tackles a key barrier to expanding the UK's net zero gas and power networks: how to engage the public inclusively, effectively, at scale, reducing opposition and construction delays. Traditional methods are too slow and resource-intensive. In this phase, we will identify consumer needs and explore novel AI-driven engagement solutions, such as multilingual chatbots, gamified education, and sentiment analysis. Based on these insights, we will define a roadmap for adopting or developing AI solutions, in case unavailable off-the-shelf, tailored to strategic, large-scale engagement. In partnership with communities we aim to build trust, transparency, and public support for future infrastructure.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met

8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by proposing the use of artificial intelligence (AI) to enhance community engagement in energy infrastructure planning. It aims to develop digital tools that improve public understanding and acceptance of gas and electricity network developments. This approach is aligned with the goal of accelerating infrastructure deployment by reducing delays caused by public opposition and judicial reviews, and it represents a novel application of AI in the energy sector. The Project has a clearly identified potential to deliver a net benefit to gas and electricity consumers. By improving engagement processes, the Project could reduce planning delays, lower associated costs, and enable more mutually beneficial infrastructure outcomes. While the direct consumer value could be more clearly evidenced, the potential for improved transparency, reduced disruption, and greater community influence on infrastructure decisions is considered a positive outcome. The Project is considered to involve network innovation by applying AI to a domain—public engagement—where such technologies are underutilised in the energy sector. The use of AI to streamline and personalise engagement processes represents a step change in how networks interact with communities, with the potential to influence planning and decision-making in a more inclusive and efficient manner. The Project does not undermine the development of competitive markets. It explicitly avoids proprietary development in this Phase and commits to sharing outputs openly. The intention is to assess technologies and use cases in a way that

encourages broader sector innovation and allows other vendors to build on the findings.

The Project is considered innovative, novel, and risky. It explores the untested application of AI in a sensitive and complex area—community engagement with energy infrastructure. The innovation lies not only in the technology but in its potential to address rising tensions between infrastructure providers and local communities. The risk is acknowledged in the uncertainty of public response and the challenge of translating engagement into tangible planning outcomes.

The Project Partners are sufficient for the Discovery Phase. The consortium includes network operators, AI and digital specialists, and the Centre for Energy Equality, ensuring a strong mix of technical, operational, and consumer-focused expertise. While future Phases may benefit from deeper engagement with community or advocacy groups, the current partnership is appropriate for the scope of this Phase.

The Project is considered to be delivering value for money. The budget is reasonable for the Discovery phase, and the day rates, while high, are justified by the specialist nature of the AI expertise. The Project Lead is encouraged to ensure that the AI experts are used effectively to maximise value for consumers.

The Project has a robust methodology which gives confidence that it will be delivered on time and within budget. It follows an Agile approach with clearly defined work packages, milestones, and a comprehensive risk register. The Project plan is coherent and well-structured, with appropriate resource allocation and Project management tools in place.

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 start of the Discovery Phase, the Funding Party must provide to the Monitoring Officer a written Consumer Value Plan which explores more specific direct value for end consumers.

Prior to the end of the Discovery Phase, the Funding Party must provide to the Monitoring Officer how the Project has engaged with community of advocacy groups.

4.6 Innovation Challenge: System Visibility and Control - Overview of Projects

This section covers the assessment of Cycle 3 Discovery Phase Applications received into the 'System visibility and control' Innovation Challenge.

In order to protect intellectual property rights (IPR), unsuccessful Projects have been redacted from the final published version.

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)
	[REDACTED]					Yes	No

4.7 Innovation Challenge: System Visibility and Control - Expert Assessors' recommendations on Projects

4.7.1 [REDACTED]

4.8 Innovation Challenge: Green Gas - Overview of Projects

This sub-section covers the assessment of Discovery Phase Applications received into the 'Gren Gas' Innovation Challenge in Cycle 3.

In order to protect intellectual property rights (IPR), unsuccessful Projects have been redacted from the final published version.

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)
10167285	Project RemO2val	National Gas Transmission PLC	147,265	14,956	132,309	Yes	Yes
	[REDACTED]					Yes	No
	[REDACTED]					Yes	No
	[REDACTED]					No	No
	[REDACTED]					Yes	No
10168466	Green Gas Access	Southern Gas Networks PLC	164,858	17,153	147,705	Yes	Yes

4.9 Innovation Challenge: Green Gas - Expert Assessors' Recommendations on Projects

4.9.1 Project 10167088 - Project RemO2val

Submitted Project description
The use of greener gases such as biomethane are an important part of the UK's transition to net zero. Underground storage sites for biomethane are critical for balancing seasonal supply and demands for energy. However, increased levels of oxygen in biomethane can lead to corrosion of assets in wet gas conditions, compromising the integrity of storage facilities. This Project will assess in a comparative analysis the technical and economic viability of advanced catalytic and adsorption technologies to reduce oxygen levels in biomethane with corrosion inhibitors to ensure the integrity and longevity of critical storage infrastructure.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met

8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by seeking to enable the safe and scalable introduction of higher oxygen concentrations in biomethane into the gas network, including underground storage. This would support the decarbonisation of the gas system by reducing barriers to green gas integration and enhancing system flexibility. The Project focuses on developing and testing oxygen removal technologies that could allow for more cost-effective and widespread biomethane deployment. The Project has a clearly identified potential to deliver a net benefit to gas consumers by reducing corrosion-related failures and extending asset life, it could lower infrastructure maintenance and replacement costs. However, Expert Assessors noted that the financial benefits presented in the Application were inconsistently quantified, with varying figures and unclear assumptions. Clarifying the number of sites and the nature of the cost-benefit relationship—particularly where internal ownership structures (e.g., Premtech and National Gas) are involved—would strengthen the consumer value case. The Project is considered to involve network innovation. It addresses a previously untested challenge in the GB gas system: managing wet, oxygen-rich biogas streams in underground storage. The integration of catalytic oxidation and adsorption technologies, combined with real-time monitoring and corrosion mitigation strategies, represents a novel approach. While the drying of gas streams was not explicitly considered as an alternative, the focus on wet gas treatment is technically relevant and underexplored.

The Project does not undermine the development of competitive markets. It commits to producing an open technical standard for oxygen removal, ensuring that no single vendor or technology is locked into the solution. Contractual commitments to share technical data and performance results further support transparency and sector-wide benefit.

The Project is considered innovative, novel and risky. It introduces unproven technologies into a new application context, with uncertainties around technical performance, scalability, and long-term durability. These risks are appropriate for a Discovery Phase. However, future Phases should consider whether alternative approaches (e.g., gas drying) have been sufficiently evaluated.

The Project includes participation from a range of stakeholders. The consortium includes a network operator, underground gas storage operators, technology developers, and monitoring specialists. While the current stakeholder mix is appropriate, assessors recommended that future Phases include more direct engagement with biogas producers to ensure the solution is aligned with upstream operational realities.

The Project is delivering value for money and is costed competitively. The budget is appropriate for the scope of the Discovery Phase and is supported by a clear technical work programme. However, the Application would benefit from clearer articulation of how the proposed savings are calculated and how they translate into consumer benefit, particularly in light of internal cost transfers between affiliated entities.

The Project has a robust methodology which gives confidence that it will be delivered on time and within budget. It includes a well-structured Project plan, defined work packages, milestones, and a comprehensive risk management strategy. The Project team appears to have the necessary skills and resources to deliver the proposed work, and the governance model is appropriate for the scale and complexity of the challenge.

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
None

4.9.2 [REDACTED]

4.9.3 [REDACTED]

4.9.4 [REDACTED]

4.9.5 [REDACTED]

4.9.6 Project 10168466 - Green Gas Access

Submitted Project description
Green Gas Access will define tools to improve how green gas is managed across UK distribution networks, supporting net-zero goals. With fossil fuels still expected to dominate the energy mix by 2050, we must ensure resilient supply and avoid capacity loss as we integrate decentralised sources like biomethane. The solution is to enable real-time network operation, including dynamic supply modelling, scenario planning, and technology deployment. Key outcomes include: improved green gas injection control, better asset use, onboarding new suppliers efficiently, and supporting the transition to low-carbon systems through coordinated green gas, storage, and power-to-gas operation.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met
5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met
8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by exploring how to manage a gas network with increasing volumes of decentralised, low-pressure green gas. It aims to assess the feasibility and value of real-time operational coordination of biomethane flows, which would support a more dynamic and flexible gas distribution system. This aligns with the challenge's goal of preparing the network for a decarbonised future and improving system management for green gas. The Project has a clearly identified potential to deliver a net benefit to gas consumers. By enabling more efficient integration of green gas, the Project could reduce reliance on fossil fuels, improve supply security, and lower long-term system

costs. While the consumer benefits are more clearly articulated for producers than end users, the overall direction of travel supports affordability and sustainability.

The Project is considered to involve network innovation. It proposes a novel approach to dynamically coordinating decentralised biomethane supplies using real-time data and smart algorithms. This represents a significant departure from current operational practices and addresses a mode of network operation that has not previously been implemented in the GB gas system.

The Project does not undermine the development of competitive markets. It commits to open data principles and transparent dissemination of findings. The Project team has clearly stated that no proprietary technologies will be developed during the Discovery Phase, ensuring that the outputs can benefit the wider sector.

The Project is considered innovative, novel, and risky. It seeks to enable real-time operational capabilities that are not currently available in the sector. While the baseline and limitations of current systems are well described, the Application would benefit from clearer articulation of the specific innovation and novelty of the proposed solution. Nonetheless, the ambition and complexity of the challenge justify the risk at this stage.

The Project has participation from a range of stakeholders. The team includes SGN and a delivery Project Partner with a strong track record of collaboration. The Project also plans to engage a range of stakeholders, including biomethane producers, system planners, and industry bodies such as the Green Gas Taskforce.

The Project is delivering value for money and is costed competitively. The budget is within expected ranges, and day rates appear to reflect market norms. While a more detailed breakdown of cost allocation would be helpful, the scope and ambition of the work are appropriate for the investment. The Project's potential to inform future Alpha development further supports its value proposition.

The Project has a robust methodology which gives confidence that it will be delivered within a timely manner. The work packages are well structured, and the Gantt chart,

governance model, and deliverables are clearly described. While a critical appendix (innovation justification) was missing, the overall plan is coherent and supported by a capable team with a history of effective collaboration.

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
None