Strategic Innovation Fund (SIF)

Cycle 4 Innovation Challenges – Alpha Phases

Funding Decision and Summary of Recommendations from Expert Assessors

Date: 05 February 2026

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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.

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

Within each Round, The SIF adopts a three Phase Project approach for Projects 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.

This report is for the Cycle 4 Alpha Phase Project Applications. It sets out the Funding Decisions 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.

[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

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 5 Alpha Phase[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
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.

[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 seven Innovation Challenges launched for Alpha Round 5 here: https://www.ofgem.gov.uk/publications/strategic-innovation-fund-round-5-challenges

- 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 4 Alpha Phase 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 had to be received by 22 October 2025 and each Project's start date was to be no earlier than 02 February 2026. Projects must last up to 8 months in total and must not request funding of more than £500,000.

Applications submitted to the Cycle 4 Alpha Phase by the 22 October 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) 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 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 4 Alpha 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	International Collaboration	(not scored)
4	Export Licence	(not scored)
5	Trusted Research and Innovation	(not scored)
6	Problem Statement	Eligibility Criterion 1: Projects must address the Innovation Challenge set by Ofgem.
7	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.
8	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).

9	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).
10	Team and resources	Eligibility Criterion 6: Projects must include participation from a range of stakeholders.
11	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.
12	Key outputs and dissemination	Eligibility Criterion 4: Projects must not undermine the development of competitive markets.
13	Intellectual property rights (IPR), procurement and contracting	(not scored)
14	Commercialisation, route to market and business as usual	Eligibility Criterion 4: Projects must not undermine the development of competitive markets.
15	Policy, standards and regulations	(not scored)
16	Value for money	Eligibility Criterion 7: Projects must provide value for money and be costed competitively.
17	Associated network innovation Project(s)	(not scored)

3 Summary of Alpha Projects submitted for Cycle 4

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 4, for the Round 4 Innovation Challenges the following numbers of Applications were received.

One of the three Applications submitted under the 'Faster Network Development' Innovation Challenge was withdrawn by the applicant after the Application deadline so has not been assessed and is not included in this Recommendations Report.

Innovation Challenge	No. of Applications received
Faster network development	3
Greater heat flexibility	1
Embedding resilience	4
Accelerating toward net zero energy networks	1

In Cycle 4, for the Round 5 Innovation Challenges the following numbers of Applications were received.

Innovation Challenge	No. of Applications received
Advanced energy transmission and networks	0
Dynamic modelling	0
High-Energy demand point integration	1
Consumer-centric grid expansion	2
Enhanced system visibility and control	0
Green gas	1
Whole system optimisation	0

This section covers the assessment of the Cycle 4 Alpha Applications received into the Round 4 and 5 Challenges as shown above.

4 Innovation Challenge: Faster network development

4.1 Overview of Projects

For the Alpha Phase under this Innovation Challenge, three Applications were submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 22 October 2025. One was then withdrawn by the applicant; the remaining two 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)
10179184	Project COLLABORATE	Cadent Gas Limited	530,922	60,123	470,799	No	No
10179071	Project VOLT	Northern Powergrid (Northeast) Limited	551,251	55,128	496,123	Yes	Yes
10179071	Neighbourhood Watts	UK Power Networks (Operations) Limited	Withdrawn	Withdrawn	Withdrawn	N/A	N/A

4.2 Expert Assessors' recommendations on Projects

4.2.1 Project 10179184 – Project COLLABORATE

Submitted Project description
Project Collaborate will develop a national digital solution that enables highway authorities and utilities to coordinate streetworks proactively. The Alpha Phase will deliver a functional prototype that automates the identification and notification of overlapping works, enhances data sharing, and supports early, cross-sector collaboration. By integrating common data standards, scalable architecture, and stakeholder-driven design, the Project will establish the technical and organisational foundations for national rollout. Working with a wide stakeholder group, the Alpha Phase will demonstrate how digital innovation can embed collaborative streetworks as standard Business as Usual (BaU) practice across the UK's utility sector.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**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 more coordinated streetworks can reduce delays to gas and electricity network development and maintenance, and this is a difficult capability to develop across different regions of the country. Whilst the Project has potential operational benefits to other utilities, the Expert Assessors agreed that the Project was appropriate for SIF funding due to the key role of electricity and gas networks in such roadworks and the operational process improvements which the Project could deliver.

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 by improving coordination of streetworks between gas networks, electricity networks and other utilities which can overall deliver process improvement efficiency and savings. Whilst the majority of Expert Assessors agreed the Project met this Eligibility Criterion, they stressed that the anticipated operational improvements will only be fully realised if the Project adequately addresses the associated governance risks and the process and behavioural change required across participating organisations, including clarity of roles, decision-making responsibilities, and accountability for delivery.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it is working to deliver operational improvements for gas and electricity networks through a collaborative approach to streetworks.
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's findings would become available to all utilities should they wish to adopt it. The interview responses also provided clarity on how the Project COLLABORATE builds upon and differentiates from streetworks visibility and coordination platforms currently used by utilities. Interview responses provided reassurance that the proposed technology solution is unlikely to create market product lock-in. While some

		Expert Assessors questioned the extent to which the digital tool alone would warrant innovation funding given the presence of existing market solutions, this did not outweigh the Project's strategic focus on delivering operational process improvements for electricity and gas networks. As a result, these considerations were not viewed as a reason to prevent progression of the Project.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be novel and risky because collaborative streetworks outside of the GLA (Greater London Authority) is novel and there is significant risk in finding a unified approach. Interview responses provided further assurance to the Expert Assessors that the GLA approach could not just be expanded, and that there was clear rationale for exploring Project COLLABORATE's approach in finding a solution that could potentially be applied across the rest of Great Britain. The Expert Assessors stressed that the primary innovation and delivery risk lie in the required changes to collaboration, governance, and ways of working across organisations, rather than in the digital tool itself.
6: Projects must include participation from a range of stakeholders.	Not Met	The Expert Assessors did not consider the Project to include participation from a sufficient range of stakeholders because the scale of stakeholder engagement and the capacity to drive regional authority process change are insufficient to support the level of organisational and behavioural change required. The Expert Assessors noted that the success of collaborative streetworks depends on alignment and

		adoption across a wide range of actors, yet the Project, as currently structured, does not demonstrate sufficient breadth of engagement or influence to support wider process or standard change beyond the immediate consortium. As acknowledged at interview, cultural and process change represent the primary sources of risk and uncertainty for the Project. The Expert Assessors considered that the Alpha Phase does not provide sufficient focus or resource to address these challenges at an organisational level, relying instead on the enthusiasm and willingness of individual participants. While this approach may enable local progress, the Expert Assessors considered that greater emphasis is required on embedding new ways of working within organisations, including consideration of infrastructure service transformation and how the approach could scale beyond the geographies covered by the Project Partners to deliver more consistent change across regions.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered the Project to be costed competitively because costs appear reasonable and fair, including day rates being in line with expectations for the work set out and the outputs being sufficiently substantive for the Alpha Phase.. The Expert Assessors acknowledged the significant benefits that collaborative street works could deliver, but considered that the Alpha Project, as currently structured, does not demonstrate value for money. In particular, they noted an over-emphasis

		on digital tool development and insufficient focus on the more innovative and higher-risk process change activities required to realise these benefits..
8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Not Met	The Expert Assessors considered the Project's methodology to not be robust or capable at progressing in a timely manner because the Project failed to provide confidence that there is enough focus on the process and operational change strands of the Project, which are seen as critical to realise the vision for more collaborative approach to streetworks. The Expert Assessors' view was that the Project would be strengthened with a different Project plan to tackle the primary risks and enabling factors that are critical to thoroughly digitalising and enabling better collaboration among streetworks.

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
DO NOT FUND
The Project addresses the Innovation Challenge because improved coordination of streetworks has the potential to reduce delays to gas and electricity network development and maintenance, and this capability is recognised as difficult to deliver consistently across different regions of Great Britain. Expert Assessors agreed that the Project responds directly to the Challenge by focusing on operational process improvements for gas and electricity networks, where these networks play a central role in streetworks activity. While the Project may also deliver benefits to other utilities, this does not undermine its suitability for SIF funding. The Project has a clearly identified potential to deliver a net benefit to gas and electricity consumers by improving coordination of streetworks between gas networks, electricity networks, and other utilities, which could deliver efficiency improvements and cost savings. The majority of Expert Assessors considered

these benefits to be credible and aligned with sector needs. However, they stressed that the anticipated operational improvements will only be fully realised if the Project adequately addresses the associated governance risks and delivers the necessary process and behavioural change across participating organisations, including clear roles, decision-making responsibilities, and accountability for delivery. Despite these dependencies, the majority view was that the Project has met this Eligibility Criterion. The Project is considered to involve network innovation because it seeks to deliver operational improvements for gas and electricity networks through a collaborative approach to streetworks. Expert Assessors agreed that the Project brings together digital enablers with process and organisational change to improve coordination and ways of working across network operators, and that this goes beyond business-as-usual approaches currently adopted within the sector.

The Project is not considered to undermine the development of competitive markets because the proposed solution would be available to all utilities should they wish to adopt it. Expert Assessors noted that the Project builds upon and differentiates from existing streetworks visibility and coordination platforms, rather than duplicating them. While one Expert Assessor questioned whether the proposed digital tool alone would warrant innovation funding given existing market offerings, this was not considered sufficient to undermine the overall assessment against this Eligibility Criterion.

The Expert Assessors considered the Project to be innovative, novel, and risky because collaborative streetworks outside of the Greater London Authority (GLA) are not well established and involve significant delivery risk. They noted that there is no straightforward or proven way to deliver a unified approach across regions and that interview responses provided assurance that the GLA model could not simply be expanded nationally. The Expert Assessors therefore agreed that there is clear rationale for exploring Project COLLABORATE's approach as a potential solution that could be applied across Great Britain. They stressed that the primary innovation and delivery risk lie in the required changes to collaboration, governance, and ways of working across organisations, rather than in the development of the digital tool itself.

The Expert Assessors did not consider the Project to include participation from a sufficient range of stakeholders. They noted that the scale of engagement and capacity to drive regional authority process change are insufficient to support the organisational and behavioural change required for collaborative streetworks. The Project relies heavily on the enthusiasm of individual participants and does not demonstrate sufficient breadth of influence to embed new ways of working or support scalable change beyond the immediate consortium. On this basis, the Expert Assessors considered this Eligibility Criterion to be not met.

The Expert Assessors considered the Project to be costed competitively, with reasonable costs and credible Project Partners. However, they did not consider that the Alpha Project, as currently structured, demonstrates value for money. In particular, they noted an over-emphasis on digital tool development and insufficient focus on the more innovative and higher-risk process change activities required to realise the Project's potential benefits. As a result, the Expert Assessors considered this Eligibility Criterion to be not met. The Project does not have a sufficiently robust methodology to give confidence that it will be capable of progressing its intended outcomes in a timely manner because insufficient emphasis is placed on process and operational change, which Expert Assessors viewed as critical to enabling a genuinely collaborative approach to streetworks. Expert Assessors recommended that the Application could have been enhanced by focussing on the process and methodology of the innovation rather than the tool being used. They also noted the importance of demonstrating how the Project could scale beyond the initial participating authorities.

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

DO NOT FUND

Ofgem agrees with the Expert Assessors that the Project does not meet Eligibility Criteria 6 or 8.

The Project does not meet Eligibility Criterion 6 because it fails to demonstrate participation from a sufficient and appropriate range of stakeholders to enable the organisational, behavioural and regional process change required for collaborative streetworks. Ofgem agrees with the Expert Assessors that delivery of the Project's stated outcomes depends on alignment, adoption and sustained

commitment across a broad set of organisations, including local authorities, multiple utilities and regional actors. However, the Project relies heavily on the engagement and enthusiasm of individual participants and does not provide confidence that new ways of working would be embedded at an organisational level or capable of scaling beyond the immediate consortium. On this basis, Ofgem is not satisfied that the stakeholder arrangements are adequate to support the intended outcomes.

The Project does not meet Eligibility Criterion 8 because the proposed methodology does not provide sufficient confidence that the Project could deliver its intended outcomes in a timely, effective or scalable manner. Ofgem agrees with the Expert Assessors that the Application places disproportionate emphasis on digital tool development, despite the primary risks and uncertainties relating to governance, accountability and process change. The Project does not set out a clear theory of change, nor does it demonstrate how the required organisational and behavioural changes would be delivered, managed or sustained. As a result, Ofgem is not satisfied that the methodology is sufficiently robust to support successful delivery.

Recommended Project-specific conditions
N/A

4.2.2 Project 10179071 – Project VOLT

Submitted Project description
Project VOLT Alpha builds on earlier work to develop and validate how multi-vector microgrids can help industrial and commercial sites decarbonise, improve resilience, and provide flexibility. With support from Newcastle Airport, Port of Tyne, Nissan, Pulsant, and Severfield, it targets high-emission zones like ports, airports, and data centres. The Alpha Phase will deliver scalable microgrid blueprints and operational processes aligned with national and regional strategies. Backed by NECA, NESO, NGET, and new Project Partners EDF and Wales & West Utilities, VOLT supports the Clean Flexibility Roadmap by unlocking

I&C flexibility and accelerating GB's transition to a low-carbon, resilient energy system.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**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 focuses on developing replicable, regional, multi-vector energy system models that support faster network deployment. The Project aligns with aims of the Innovation Challenge by exploring microgrid-based whole-system solutions for Industrial & Commercial sites, enabling low-carbon technologies (including hydrogen, biogas, and storage) and supporting scalability across regions.
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 identified a clear potential net benefit to gas and electricity consumers. The Project demonstrates how multi-vector microgrids could defer or avoid network reinforcement, improve network resilience, and lower CO_2 emissions. While some benefits are not fully quantified, the Expert Assessors agreed there is a credible pathway to consumer benefit through cost savings, efficiency gains, and decarbonisation suitable for the Alpha Phase.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve clear network innovation because it applies a whole-system, cross-network approach,

		integrating electricity, gas, hydrogen and storage through multi-vector microgrids. By examining bespoke solutions for specific industrial contexts, it seeks to unlock new operational models that could reduce network costs, improve efficiency, and enhance the services networks provide to consumers.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors considered this Project not to undermine the development of competitive markets because it commits to open dissemination of findings, with outputs made publicly available through reports and industry engagement, enabling replication by other regions and stakeholders. Its focus on load balancing and system efficiency does not restrict supplier choice or market participation, and therefore supports, rather than distorts, competitive market development.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered this Project to be innovative, novel and risky because it explores multi-vector microgrids rather than single-vector solutions, integrating electricity, gas, hydrogen and storage. This whole-system, location-specific approach is not business as usual for the consortium and involves significant technical, regulatory and coordination complexity. The bespoke nature of the solutions and the number of stakeholders involved introduce delivery and integration risks, while generating new learning beyond current practice.

6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered this Project to include participation from a sufficient and appropriate range of stakeholders. The consortium brings together electricity and gas networks, alongside industrial and commercial users, supported by a wider group of partner organisations. This breadth of expertise, combined with cross-regional representation, provides the capabilities needed to deliver the Project and supports the replicability of the outcomes beyond the initial sites.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered this Project to be delivering value for money and costed competitively. Project Partner contributions meet SIF requirements, with additional in-kind support from industrial participants. Costs and labour rates were assessed as reasonable, resources are appropriately allocated to defined work packages, and the planned dissemination of findings supports wider system value beyond the Project itself.
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 this Project to be well thought through with a robust methodology, giving confidence it can progress in a timely manner. The Application presents a clear project plan with defined objectives, milestones, costs, outputs and partner responsibilities, supported by a comprehensive risk register. Discovery Phase learning and detailed work-package planning provide confidence in the Project's ability to scale data capture and analysis and deliver the intended outputs.

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 Expert Assessors considered the Project to have addressed the Innovation Challenge because it focuses on developing replicable, regional, multi-vector energy system models to support faster network deployment. The Expert Assessors considered that the Project's focus on enabling low-carbon technologies, including hydrogen, biogas, and storage, alongside its emphasis on regional scalability, represents a clear and appropriate response to the Innovation Challenge. The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to gas and electricity consumers. They noted that the Project demonstrates how multi-vector microgrids could defer or avoid network reinforcement, improve network resilience, and lower carbon emissions. While some benefits are not fully quantified at this stage, the Expert Assessors agreed that there is a credible pathway to consumer benefit through cost savings, efficiency improvements, and decarbonisation. The Expert Assessors considered the Project to involve network innovation because it applies a whole-system, cross-network approach that integrates electricity, gas, hydrogen, and storage through multi-vector microgrids. They noted that by examining bespoke solutions tailored to specific industrial contexts, the Project seeks to unlock new operational models that could reduce network costs, improve efficiency, and enhance the services provided by networks to consumers. The Expert Assessors did not consider the Project to undermine the development of competitive markets. They noted the Project's commitment to open dissemination of findings, with outputs to be made publicly available through reports and industry engagement. The Expert Assessors considered that the Project's focus on load balancing and system efficiency does not restrict supplier

choice or market participation and instead supports wider replication and competitive market development.

The Expert Assessors considered the Project to be innovative, novel, and risky because it explores multi-vector microgrids rather than single-vector solutions, integrating electricity, gas, hydrogen, and storage within a whole-system, location-specific framework. They noted that this approach is not business as usual for the consortium and involves significant technical, regulatory, and coordination complexity. The bespoke nature of the solutions and the number of stakeholders involved were considered to introduce delivery and integration risks, while also generating new learning beyond current practice.

The Expert Assessors considered the Project to include participation from a sufficient and appropriate range of stakeholders. They noted that the consortium brings together electricity and gas networks alongside industrial and commercial users, supported by a wider group of partner organisations. The Expert Assessors considered that this breadth of expertise, combined with cross-regional representation, provides the capability required to deliver the Project and supports the replicability of outcomes beyond the initial sites.

The Expert Assessors considered the Project to be delivering value for money and to be costed competitively. They noted that Project Partner contributions meet SIF requirements, with additional in-kind support from industrial participants. Costs and labour rates were assessed as reasonable, resources are appropriately allocated to defined work packages, and the planned dissemination of findings supports wider system value beyond the Project itself.

The Expert Assessors considered the Project to be well thought through and to have a robust methodology, giving confidence that it can progress in a timely manner. They noted the presence of a clear project plan with defined objectives, milestones, costs, outputs, and Project Partner responsibilities, supported by a comprehensive risk register. The Expert Assessors also highlighted the value of Discovery Phase learning and detailed work-package planning in providing confidence that the Project can scale data capture and analysis and deliver the intended outputs.

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

5 Innovation Challenge: Greater heat flexibility

5.1 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 22 October 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)
10179089	Flex-Store	Northern Powergrid (Northeast) Limited	473,152	52,261	420,891	No	No

5.2 Expert Assessors' recommendations on Projects

5.2.1 Project 10179089 – Flex-Store

Submitted Project description
The FLEX-STORE Alpha Project will demonstrate how electrified thermochemical energy storage (ETES) can enhance grid resilience and support vulnerable customers. It aims to reduce heat-led peaks, enable flexibility market participation, and lower electricity bills, while ensuring heat supply during outages. A focused Discovery Phase reviewed ETES technologies, assessed user needs, and conducted a cost-benefit analysis, revealing strong potential for thermochemical energy storage to benefit both networks and consumers. The Alpha Phase will validate a prototype through lab testing and deliver a trial plan, including engineering design, commercial framework, and detailed cost-benefit analysis to inform future deployment.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**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 aligns with the aims of greater heat flexibility, which seeks to enable more flexible use of heat to support system balancing and reduce peak demand. The Project proposes the use of electrified thermochemical energy storage (ETES) ensure that energy from other sources such as renewables (solar, wind, hydro, fuel cells etc) are stored and released when required. This capability supports greater flexibility in heat demand, particularly during peak periods, helping to improve security of supply and reduce system costs.. While the network flexibility integration elements could have been more integrated, on balance the Expert Assessors

		considered this Eligibility Criterion to be met.
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 because there is alignment with the DESNZ Clean Flexibility Roadmap and potentially heat-as-a-service options. There could be reduction in future cost of operating the system - as ETES will release energy efficiently during peak demand periods, thus helping to defer costly network upgrades - as well as carbon savings. The Expert Assessors however considered the cost-benefit analysis to be lacking in clarity, and noted that while high-density energy storage is a valid ambition, the reality of its suitability requires a detailed understanding of the trade-offs between its cost, practicalities for the resident, and service suitability when heating / providing electricity. Overall, despite concerns raised the Expert Assessors considered this to be met for this Phase.
3: Projects must involve network innovation.	Not Met	The Project was not considered by the Expert Assessors to involve network innovation because it has too great a focus on the testing of an unproven storage technology and there was insufficient evidence to say how the Project would benefit distribution system operator flex market development. The Expert Assessors found that the interview did not provide enough information about the commercial process for practical participation. Additionally, it was not clear why the strategy was to use social housing and vulnerable consumers for

		testing this unproven technology without consideration of other options. Furthermore, the Expert Assessors found that Northern Powergrid's representation and commitment to network integration in the Application was not sufficiently robust. They considered that testing and developing the technology should be done via other funding channels as there was a lack of network integration elements at this stage of development.
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 no operations or activities in this Application that will prevent other GB DNOs from procuring similar services, if required. Additionally, the key Project outputs will be made available to all DNOs so it does not undermine competitive markets. Finally, it is anticipated that the Project outcome will create new services not available within the GB electricity sector hence this could be replicated and scaled across other DNOs.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative, novel, and risky because the application of electrified thermochemical energy storage (ETES) to energy flexibility is technically novel and involves significant uncertainty. They noted that the requirement for extensive real-world trials across different Northern Powergrid scenarios introduces technical and delivery risk, particularly given uncertainties around system performance, consumer behaviour, and service suitability. Additional risks were

		identified in relation to engagement with vulnerable consumers, the development of new metrics to quantify heating resilience, and the practical challenges associated with deploying and operating trials at scale. While the replication of the approach across the GB electricity system could be novel, the Expert Assessors considered that this primarily increases delivery risk rather than demonstrating network innovation at this stage.
6: Projects must include participation from a range of stakeholders.	Not Met	The Expert Assessors did not consider the Project Partners to be sufficient for the Project because there was insufficient justification for the use of vulnerable customers as trial participants for the technology. Additionally, the Expert Assessors considered that other DNOs should be involved at Alpha. The consumer focus and eventual consumer adoption of flexibility markets was not clearly articulated in this section. Overall, the Expert Assessors did not consider this Eligibility Criterion to be met.
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 it proposes to use existing research and laboratory facilities at the University of Birmingham for assessment and tests. The Expert Assessors were satisfied that the Project was costed competitively with costs and day rates considered reasonable for the work proposed. While some issues were noted regarding the clarity of the cost-benefit analysis, these did not materially undermine confidence that the Project represents value for money.

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 because the Project Plan, milestones and the risk register have been communicated clearly thus demonstrating ability to deliver in a timely manner. The Expert Assessors considered the six work packages to be sufficiently communicated with Project risks identified and mitigating factors addressed.

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
DO NOT FUND
The Expert Assessors agree that the Project has not met all the Eligibility Criteria and do not recommend this Project for funding. The Project addresses the Innovation Challenge because energy storage systems such as electrified thermochemical energy storage (ETES) can enable energy from renewable sources to be stored and released during periods of peak demand, supporting security of supply and potentially reducing costs to electricity consumers. This capability supports greater flexibility in heat demand, particularly during peak periods, helping to improve security of supply and reduce system costs. Expert Assessors agreed that the Project aligns with the intent of the Innovation Challenge, although they noted that network flexibility integration elements could have been more strongly developed. On balance, the Expert Assessors considered that the Project meets this Eligibility Criterion. The Project has a clearly identified potential to deliver a net benefit to electricity consumers because it aligns with the DESNZ Clean Flexibility Roadmap and could support heat-as-a-service models, reduce system operating costs, defer network reinforcement, and deliver carbon savings by releasing stored energy efficiently during peak demand periods. Expert Assessors noted, however, the Application did not sufficiently articulate the trade-offs between cost, practical implementation for residents, and the suitability of the proposed service model.

Despite these weaknesses, the Expert Assessors considered that, on balance, the Project meets this Eligibility Criterion.

The Project is not considered to involve network innovation because it places a strong focus on testing an unproven storage technology, with insufficient evidence of how the Project would contribute to distribution system operator flexibility market development. Expert Assessors found that the commercial processes for participation were not clearly articulated and that the rationale for trialling the technology with social housing and vulnerable consumers was not sufficiently justified. They also noted that network integration elements and DNO commitment, including representation from Northern Powergrid, were not sufficiently robust at this stage. Overall, the Expert Assessors considered that this Eligibility Criterion is not met.

The Project is not considered to undermine the development of competitive markets because it does not include activities that would prevent other GB DNOs from procuring similar services. Expert Assessors noted that key Project outputs would be made available to other DNOs and that the Project could enable the development of new services not currently available within the GB electricity sector, supporting future replication and scale.

The Expert Assessors considered the Project to be innovative, novel, and risky because the application of electrified thermochemical energy storage (ETES) to energy flexibility is technically novel and involves significant uncertainty. They noted material risks associated with real-world trials, including system performance, consumer behaviour, engagement with vulnerable consumers, and the development of new metrics to quantify heating resilience. While the approach could be novel if replicated at scale, this was also considered to introduce further delivery risk rather than network innovation at this stage. The Project does not include participation from a sufficient range of Project Partners to meet the Eligibility Criterion on stakeholder participation. Expert Assessors identified insufficient justification for the use of vulnerable consumers as trial participants and considered the absence of additional DNO involvement at the Alpha Phase to be a weakness. They also noted that the consumer journey and the pathway to consumer adoption of flexibility markets were not clearly

articulated. Overall, the Expert Assessors considered that this Eligibility Criterion is not met.

The Project is considered to be delivering value for money and costed competitively because Project Partner contributions are credible. While Expert Assessors raised concerns regarding the clarity of the cost-benefit analysis, they were satisfied that costs were competitive overall.

The Project has a robust methodology which gives confidence that it would be capable of progressing in a timely manner because the Project plan, milestones, and risk register are clearly articulated. Expert Assessors considered the six work packages to be sufficiently defined and noted that key risks had been identified alongside appropriate mitigation measures.

Decision from the Office of Gas and Electricity Markets (Ofgem)
DO NOT FUND
Ofgem agrees with the Expert Assessors that the Project does not involve network innovation and does not meet Eligibility Criterion 3. While the Project focuses on the testing of an electrified thermochemical energy storage technology, Ofgem considers that insufficient evidence has been provided to demonstrate how the Project would deliver meaningful network innovation or contribute to the development of distribution system operator flexibility markets. The Application places significant emphasis on technology testing, without clearly articulating how the outcomes would integrate with network operations or address identified system-level challenges. Ofgem also notes that the rationale for trialling the technology with social housing and vulnerable consumers is not sufficiently justified at this stage, and that network integration elements and DNO commitment, including representation from Northern Powergrid, are not sufficiently robust Projects must demonstrate network innovation and integration with system-level challenges under the published Eligibility Criterion. This Application does not meet those requirements, reducing confidence in its ability to deliver scalable, system-beneficial outcomes aligned with Ofgem's objectives. Ofgem also agrees with the Expert Assessors that the Project does not include participation from a sufficient range of Project Partners and does not meet Eligibility Criterion 6. The Application does not provide adequate justification for

the involvement of vulnerable consumers as trial participants, nor does it clearly articulate how consumer engagement would support future adoption of flexibility markets. Ofgem notes the absence of additional DNO involvement at the Alpha stage and considers that this limits confidence in the Project's ability to deliver learning that is transferable and scalable across the GB electricity system. Without broader DNO involvement and clear consumer engagement strategies, Ofgem cannot be assured that the Project would deliver scalable, transferable learning and meet Eligibility Criterion 6.

Recommended Project-specific conditions
N/A

6 Innovation Challenge: Embedding resilience

6.1 Overview of Projects

For the Alpha Phase under this Innovation Challenge, four Applications were submitted to Innovate UK through the Innovation Funding Service (IFS) portal by the closing deadline of 22 October 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)
10179010	SHARED (Smart Hydrogen and Resilient Energy Decarbonisation)	UK Power Networks (Operations) Limited	562,562	63,036	499,526	Yes	Yes
10179007	UK Hydrogen Pipeline Repurposing Methodology	Northern Gas Networks Limited	566,259	66,533	499,726	Yes	No
10179006	Digital Decommissioning	National Gas Transmission plc	517,803	51,780	466,023	No	No
10179002	AIASM - Autonomous Intelligent Asset Surveillance and Monitoring	National Gas Transmission plc	552,435	55,343	497,092	No	No

6.2 Expert Assessors' recommendations on Projects

6.2.1 Project 10179010 – SHARED (Smart Hydrogen and Resilient Energy Decarbonisation)

Submitted Project description
Due to network topology, rural communities are more likely to contain customers who qualify under Ofgem's Worst Served Customer (WSC) scheme. Decarbonising these areas could increase electricity demand, exacerbating resilience issues, especially for WSC. Strengthening the electricity network in these areas would be expensive and take time, so alternative solutions are needed which are more efficient. SHARED will explore the potential of low-cost hydrogen production and storage as a solution to improve the resilience of these communities. The Project will assess how effective this approach could be and identify the specific needs of rural communities.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**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 provides a novel approach to improving and decarbonising resilience in rural communities. The Project demonstrates an innovative, cross vector, and modular use of electrolytically generated hydrogen and metal hydrides, with storage to minimise rural supply interruptions. This offers potential to develop a viable alternative solution to diesel generators or battery storage for providing rural resilience.
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

net benefit to gas or electricity consumers		electricity consumers by improving rural community resilience and provide alternatives to reinforcement particularly where it would be comparatively expensive for DNOs. The Project also has clear potential to deliver environmental and societal benefits to sites such as noise pollution reduction and improved air quality compared to back-up diesel generators.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it is exploring the use of an as-yet untested, modular local hydrogen generation solution using metal hydrides for long duration storage. This includes the use of novel materials alongside relevant safety and remote monitoring systems. The Alpha Phase will work to assess viability of the solution against a range of network conditions in the context of technical and commercial uncertainty.
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 it is exploring open, standardised, and vendor-neutral protocols in an emerging and nascent technology area. There is also a strong dissemination and communication plan outlined, with answers at interview confirming to the Expert Assessors that the Project team is committed to pursuing the Project in the open to widen options to support rural and worst served customers.

5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because the Project is exploring a novel technology of modular, electrolytic hydrogen storage using metal hydrides in a novel application to support back-up power generation. Additionally, the Project demonstrated a strong understanding of the riskiest elements impacting on solution viability, for instance by robustly examining affordability of solution deployment during the Alpha Phase. Other risky and novel elements being explored in the Alpha Phase also include materials selection, potential investment routes, ownership and operation models, as well as regulatory compliance.
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 to be met because the consortium brings together the necessary expertise across technology, simulation, modelling, Project management and safety to conduct the Alpha Phase. The Expert Assessors were particularly impressed by the quality and depth of interview answers, as well as the effective ways of working demonstrated between the Project Partners in responding to questions. The Expert Assessors stressed the importance of effective consumer engagement, including the need to take appropriate learnings from other hydrogen Projects and trials, such as H100 Fife.
7: Projects must provide value for money and	Met	The Expert Assessors considered the Project to be delivering value for

be costed competitively.		money and be costed competitively because the Project costs are in line with the effort and the work proposed during the Alpha Phase is appropriately shared across the partners. There is a strong benefits case if the technology is successful, and day rates proposed are reasonable.
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 detailed and divided into appropriate workstreams and with clear allocation across each partner. There are clear milestones, deliverables and interdependencies presented.

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 addresses the Innovation Challenge because it provides a novel approach to improving and decarbonising resilience in rural communities. The Expert Assessors considered that the Project demonstrates an innovative, cross-vector, and modular application of electrolytically generated hydrogen and metal hydrides, with storage designed to minimise rural supply interruptions. They agreed that this approach has the potential to provide a viable alternative to diesel generators or battery storage for delivering rural resilience. The Project has clearly identified potential to deliver a net benefit to electricity consumers because it seeks to improve resilience in rural communities and provide alternatives to network reinforcement, particularly in locations where reinforcement would be comparatively expensive for DNOs. The Expert Assessors

also noted the Project's potential to deliver wider environmental and societal benefits, including reduced noise pollution, improved air quality compared to back-up diesel generators, and improved security of supply.

The Project is considered to involve network innovation because it is exploring an as-yet untested, modular local hydrogen generation and storage solution using metal hydrides for long-duration energy storage. The Expert Assessors highlighted the use of novel materials alongside safety systems and remote monitoring, and noted that the Alpha Phase will assess the viability of the solution across a range of network conditions in the context of both technical and commercial uncertainty.

The Project is not considered to undermine the development of competitive markets because it is exploring open, standardised, and vendor-neutral protocols in an emerging technology area. The Expert Assessors also noted the strong dissemination and communication plans, and were reassured through interview responses that the Project team intends to pursue its work openly to widen options for supporting rural and worst served customers.

The Project is considered innovative, novel, and risky because it explores the use of modular, electrolytic hydrogen storage using metal hydrides in a novel application to support back-up power generation. The Expert Assessors considered that the Project demonstrates a strong understanding of the key risks affecting solution viability, including affordability, materials selection, investment routes, ownership and operational models, and regulatory compliance. They agreed that replication and scalability could be novel but would also introduce additional risk.

The Project is considered to include participation from a sufficient range of stakeholders because the consortium brings together the necessary expertise across technology development, simulation and modelling, Project management, and safety to deliver the Alpha Phase. The Expert Assessors were particularly impressed by the quality and depth of responses provided at interview and the effective ways of working demonstrated between the Project Partners. They also

stressed the importance of effective consumer engagement and the need to draw on learning from other hydrogen Projects and trials, such as H100 Fife.

The Project is considered to be delivering value for money and to be costed competitively because Project costs are aligned with the effort required and the work proposed for the Alpha Phase is appropriately distributed across the Project Partners. The Expert Assessors also noted a strong benefits case if the technology proves successful and considered the proposed day rates to be reasonable.

The Project has a robust methodology which gives confidence to the Expert Assessors that it will be capable of progressing in a timely manner. The Project plan is detailed, structured across appropriate workstreams, and includes clear allocation of responsibilities across Project Partners. The Expert Assessors noted the presence of clear milestones, deliverables, and interdependencies.

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 the Kick-off meeting, the Funding Party must provide to the Monitoring Officer a consumer engagement plan. This must include justification for site and participant selection, arrangements to protect participating communities, and a clear approach to capturing and incorporating consumer experience and behavioural insights. The plan must also set out how learning from relevant hydrogen trials, including H100 Fife, has been considered. Prior to the mid Phase review meeting, the Funding Party must provide to the Monitoring Officer a summary of the proposed safety assurance, monitoring arrangements, and emergency response protocols for future trial activities. Prior to the end of Phase meeting, the Funding Party must provide to the Monitoring Officer:

- a summary of the key outputs, findings, and lessons learned from the Project, together with a plan outlining how these will be disseminated openly to support replication and learning across GB electricity networks, as is required in the end of phase report;
- a statement setting out how learning from the Alpha Phase informs future scalability and application of the solution, including applicability to different rural network conditions and integration into business-as-usual resilience planning;
- a summary demonstrating where the SHARED solution is cost competitive when compared to alternative options, including diesel generators, battery storage, and network reinforcement.

6.2.2 Project 10179007 – UK Hydrogen Pipeline Repurposing Methodology

Submitted Project description
The UK Government has identified that low-carbon hydrogen is essential to enable a low-carbon and renewables-based energy system. Hydrogen will enhance energy security, provide inter-seasonal and diurnal flexibility, cleaner generation, and help to decarbonise UK industry. Transportation via repurposed gas assets is the most cost-effective means of connecting hydrogen production to consumers. The HSE has stated that the gas industry must define the detailed methodologies needed for pipeline repurposing, specify the work areas required, and define how repurposed pipelines will be verified and certified for safe operation. This Project will address all of these challenges.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**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 develops a standardised methodology to assess the repurposing of existing gas transmission pipelines for hydrogen. This directly aligns with the

		Innovation Challenge on novel and cost-effective alternative uses of gas infrastructure.
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 identified a potential net benefit to gas consumers by reducing or avoiding the need for new hydrogen pipeline infrastructure through repurposing existing assets. The Expert Assessors viewed the scale of benefit was initially uncertain and is likely to have been overstated in early assumptions, the Expert Assessors agreed that the existence of a material consumer benefit at sufficient scale was clear.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it explores the repurposing of existing gas transmission infrastructure for hydrogen, an activity outside current business-as-usual. The Project is innovative in a GB context by seeking to standardise an emerging and non-routine process, building on earlier work, though some Expert Assessors noted the level of novelty is incremental rather than transformational.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors considered this Project not to undermine the development of competitive markets because it develops an industry-wide methodology and standards without prescribing specific technologies or suppliers.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to meet this Eligibility Criterion because it develops a first-of-a-kind methodology in Great Britain for

		assessing the repurposing of gas pipelines for hydrogen, in an area where no agreed industry standard currently exists. While the underlying engineering techniques are relatively well understood and the overall technical risk is therefore considered low, the Project is novel in its purpose and innovative in how mitigation measures are identified, tested, and systematically incorporated into a standardised assessment framework.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered the Project to meet this Eligibility Criterion following interview. Initial concerns were raised regarding the absence of a clear leading role for National Gas Transmission and the lack of direct involvement from the Health and Safety Executive, given their relevance to pipeline repurposing. However, these concerns were satisfactorily addressed through clarification of the Project's focus on the Local Transmission System and a commitment to structured and ongoing engagement with both National Gas Transmission and the Health and Safety Executive. On this basis, the Expert Assessors considered that the consortium includes a sufficient and appropriate range of stakeholders to deliver the Project.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered the Project to meet this Eligibility Criterion. Initial concerns were raised regarding labour justification and optimistic assumptions underpinning the assessment of benefits. While these issues were only partially addressed at interview, the Expert Assessors judged that the overall

		costs are reasonable for the scope of work proposed and proportionate to the potential system value. On this basis, they concluded that the Project represents acceptable value for money for an 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 Expert Assessors considered the Project to meet this Eligibility Criterion. While the written Application initially included some generic elements and limited detail on specific risks, particularly in relation to Health and Safety Executive acceptance, these points were clarified during the interview. Following this clarification, the Expert Assessors were satisfied that the Project's methodology, risk management approach, and delivery plan are appropriate and that the Project is capable of progressing in a timely manner.

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 addresses the Innovation Challenge by developing a standardised methodology to assess the repurposing of existing gas transmission pipelines for hydrogen, which the Expert Assessors considered to be a clear and appropriate response to the Innovation Challenge. The Project has identified potential to deliver a net benefit to gas consumers because repurposing existing gas transmission assets for hydrogen could reduce or avoid the need for new hydrogen pipeline infrastructure. The Expert Assessors acknowledged that the scale of benefit was initially uncertain in early

assumptions. However, they agreed that the existence of a material consumer benefit at sufficient scale was clear.

The Project is considered to involve network innovation because it explores the repurposing of existing gas transmission infrastructure for hydrogen, which is outside business-as-usual activities. The Expert Assessors noted that the Project is innovative in a GB context by seeking to standardise an emerging and non-routine process, building on earlier work in this area. Some Expert Assessors observed that the level of novelty is incremental rather than transformational, but this did not undermine the assessment against this criterion.

The Project is not considered to undermine the development of competitive markets because it focuses on developing an industry-wide methodology and standards without prescribing specific technologies or suppliers. The Expert Assessors noted that any future competition would take place through normal procurement processes.

The Project is considered innovative, novel and/or risky because it develops a first-of-a-kind methodology in Great Britain for assessing the repurposing of gas pipelines for hydrogen, in an area where no agreed industry standard currently exists. While the underlying engineering techniques are relatively well understood and the overall technical risk is therefore considered low, the Project is novel in its purpose and innovative in how mitigation measures are identified, tested, and systematically incorporated into a standardised assessment framework.

The Project is considered to include participation from a sufficient range of stakeholders. Initial concerns were raised regarding the absence of a clear leading role for National Gas Transmission and the lack of direct involvement from the Health and Safety Executive, given their relevance to pipeline repurposing. These concerns were satisfactorily addressed through clarification of the Project's focus on the Local Transmission System and a commitment to structured and ongoing engagement with both National Gas Transmission and the Health and Safety Executive. On this basis, the Expert Assessors considered that the consortium includes a sufficient and appropriate range of stakeholders to deliver the Project.

The Project is considered to represent value for money and be costed competitively. While initial concerns were raised regarding labour justification and optimistic assumptions underpinning the assessment of benefits, these issues were only partially addressed at interview. However, the Expert Assessors judged that the overall costs are reasonable for the scope of work proposed and proportionate to the potential system value. On this basis, they concluded that the Project represents acceptable value for money for an Alpha Phase.

The Project is considered to have a robust methodology capable of progressing in a timely manner. Although the written Application initially included some generic elements and limited detail on specific risks, particularly in relation to Health and Safety Executive acceptance, these points were clarified during the interview. Following this clarification, the Expert Assessors were satisfied that the Project's methodology, risk management approach, and delivery plan are appropriate and that the Project is capable of progressing in a timely manner.

Decision from the Office of Gas and Electricity Markets

DO NOT FUND

Ofgem disagrees with the Expert Assessors and considers that the Project does not meet Eligibility Criterion 5 as the Project does not demonstrate sufficient novelty or innovation, as the majority of the proposed activities overlap with existing or planned work and do not introduce new concepts, methodologies, or learning beyond what is already expected to emerge through other routes. In particular, Ofgem notes that a relevant blueprint on repurposing is forthcoming and is intended to address the core elements of the Project's proposed scope. Proceeding with this Project ahead of publication of that blueprint risks duplicating or pre-empting work that is already underway and would limit the additional learning generated through SIF funding.

Ofgem also notes that related activity on gas transmission repurposing has been progressed over several years through the LTS Futures Project. While the Project identifies some narrower areas that may warrant further investigation, such as pipeline coatings and in-line inspection, these aspects do not, in isolation,

constitute a sufficiently novel or innovative proposition at Alpha to justify SIF support. Taken together, the limited novelty, significant overlap with existing and planned activity, and lack of clear additional learning mean that the Project does not represent an appropriate use of SIF funding and does not meet Eligibility Criterion 5.

Recommended Project-specific conditions
N/A

6.2.3 Project 10179006 – Digital Decommissioning

Submitted Project description
The Digital Decommissioning Project is a transformative initiative aimed at redefining how energy infrastructure is retired. At the heart of this effort is the development of the One Decommissioning Tool (1DT) - a bespoke, AI-powered platform. Although the market offers numerous virtual commissioning tools supporting asset creation, there is currently no comprehensive digital solution that covers the entire lifecycle of asset decommissioning. Our 1DT is designed to fill this void by offering an integrated, end-to-end platform tailored specifically for decommissioning. It combines AI-driven analytics, 3D asset visualisation, real-time emissions tracking, circularity monitoring, and regulatory compliance management into a unified solution.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**Additional justification**
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors consider this Project to have met the innovation challenge because it has the potential to improve decommissioning outcomes via better use of connected data. It also includes AI and machine

		learning capabilities in a way that is relevant to the innovation challenge. The Project is well targeted at addressing the challenge of transition planning with an energy system that has reducing natural gas demand. Decommissioning will be a core part of that process as the gas industry evolves.
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 could deliver a more cost-effective decommissioning process. The material benefits proven at the Discovery Phase gave the Expert Assessors confidence that further benefits could be unlocked. Finally, the Expert Assessors would have liked to have seen greater market awareness such as knowledge of the volume of assets likely to be decommissioned and how this would affect the cost-benefit analysis.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it is examining the use of AI and machine learning to improve data intelligence around decommissioning. This involves network innovation because it has the potential to use data as an asset in novel ways for the gas networks. The Expert Assessors also considered that the automation of manual processes could improve the planning of work needed to decommission gas assets. Furthermore, the Project has demonstrated that markets do not offer products or services that meet

		NGT's needs, and thus a development process is complex and would not otherwise be developed as part of business-as-usual activities for NGT.
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 is no commitment to technologies, and the Project team have made it clear that they will be open sourcing many aspects and including modular architecture to make this Project largely accessible for wider use. The Expert Assessors consider that the modularisation of the solution could present opportunities to lower the barriers for followers in the market. However, all Expert Assessors would have liked to have seen references to industry best practice with data sharing such as the Data Best Practice Framework, and if the Project progresses, they would like to see further detail on which specific aspects of the data or modelling will go in the public domain to promote dissemination of learnings.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered this Project to be innovative, novel and risky because most of the technology that helps manage major infrastructure assets focuses on construction and operation phases rather than the decommissioning, so the Project fills a natural gap in the market. Tt is also automating manual processes and applying machine learning to diverse data sets which would otherwise be managed manually by a human. It is also risky because the business factors around analytical techniques represent many

		unknowns and the availability of suitable data that can be engineered to meet the quality requirements for decommissioning is uncertain.
6: Projects must include participation from a range of stakeholders.	Not Met	The Expert Assessors did not consider this Project to have participation from a sufficient range of stakeholders because they did not appear to include sufficient digital technology specialists around the solution architecture, and AI and machine learning technology, which appears to be the most important aspect of this Project. During the interview, the Project team were not able to give a technical response when asked about the specific processes and suboptimal processes currently involved in decommissioning of gas assets, specifically the ones which the Project is trying to improve. The Expert Assessors also noted that there appeared to be a lack of awareness, specifically around other Projects which are looking at similar aspects of digitalisation of the gas network, such as Digital Platform for Leakage Analytics (DPLA). The Expert Assessors would have liked to have seen more low-level detail on gas asset decommissioning processes in the Application, for example how many block valves are expected to be retired in the next 10 years and how this impacts the Project.
7: Projects must provide value for money and be costed competitively.	Not Met	The Expert Assessors did not consider this Project to be delivering value for money and to be costed competitively because proposed approach is labour-intensive and resource-heavy, with insufficient justification that the level of effort and associated costs are

		proportionate. Genesis appeared to have very high day rates for the skill set that they bring to the consortium, which does not give confidence that the Project has been costed competitively. The Expert Assessors also noted that the justification for not using the counterfactual of vendors providing software as a service could have been strengthened, considering the high cost and complexity of this Project. They also considered that Work Package 4, one of the most crucial work packages of the Project, was under-costed when accounting for the complexity and high skill level required to develop AI and ML solutions. The Expert Assessors were surprised that other aspects of the Project were over-costed, such as the spending allocation for the data architecture and Project management aspects of the solution.
8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Not Met	The majority of Expert Assessors did not consider this Project to have met this Eligibility Criterion because the Project does not clearly set out a coherent and proportionate methodology for the Alpha Phase. In particular, it does not sufficiently justify why elements such as full data architecture design, machine learning cost estimation, and weather-related compensation mechanisms need to be developed at this stage, nor how these activities align with a phased and timely progression of the Project. The Expert Assessors consider this Project may be more successful if the scope were narrowed, as that would give them more confidence that it could progress in a timely manner. The

		Expert Assessors were concerned that taking a waterfall approach to digital technology development may increase the risk of the solution not meeting user needs. The Expert Assessors also recommended that the Application could have been strengthened by a clear set of actions that could deliver the outputs described in the Project plan and by including detailed risk management strategies for staff adoption and technology rollout.

Recommendation to the Office of Gas and Electricity Markets
DO NOT FUND
The Expert Assessors agree that the Project has not met all the Eligibility Criteria and do not recommend this Project for funding. The Project addresses the Innovation Challenge because it has the potential to improve decommissioning outcomes through better use of connected data and the Application of AI and machine learning in a way that is relevant to the Challenge. The Expert Assessors considered that the Project is well targeted at the emerging system challenge of transition planning in the context of declining natural gas demand, where decommissioning will form a core part of future gas network activity. The Project has clearly identified potential to deliver a net benefit to gas consumers because a more efficient and data-led approach to decommissioning could reduce costs and deliver consumer savings. The Expert Assessors considered that material benefits demonstrated at the Discovery Phase provided confidence that further benefits could be unlocked through continued development. The Expert Assessors noted the limited market awareness of the scale of future decommissioning activity further would have a detrimental impact on the Project, though still decided the Eligibility Criterion has been met. The Project is considered to involve network innovation because it explores the use of AI and machine learning to improve data intelligence around gas asset

decommissioning. The Expert Assessors noted that this represents network innovation by treating data as a strategic asset in new ways and by automating manual processes to improve decommissioning planning. They also considered it significant that the Project has demonstrated that suitable market products do not currently exist to meet National Gas Transmission's needs, meaning the proposed work would not be delivered through business-as-usual activity.

The Project is not considered to undermine the development of competitive markets because no commitment has been made to specific technologies at this stage, and the Project has committed to open sourcing elements of the solution and adopting a modular architecture. The Expert Assessors noted that this approach could lower barriers to entry for future market participants. However, they would have liked to see stronger reference to industry best practice on data sharing, such as the Data Best Practice Framework, and clearer articulation of which data and modelling outputs would be made publicly available to support dissemination.

The Project is considered innovative, novel, and risky because most existing technologies for managing major infrastructure assets focus on construction and operational Phases rather than decommissioning, leaving a gap in the market. The Expert Assessors also highlighted the risks associated with automating manual processes and applying machine learning to diverse data sets, alongside uncertainty around data availability, data quality, and the business factors associated with deploying advanced analytical techniques in this context.

The Project does not include participation from a sufficient range of stakeholders. The Expert Assessors considered that the consortium lacks sufficient digital technology and AI and machine learning specialists, despite these being central to the Project's objectives. They also identified weaknesses in the Project team's understanding of current decommissioning processes, a lack of detailed process-level evidence at interview, and limited market awareness of related initiatives, such as the Digital Platform for Leakage Analytics. These gaps reduced confidence that the Project is appropriately structured to deliver its proposed outcomes.

The Project does not demonstrate value for money or appear to be costed competitively. The Expert Assessors raised concerns that the delivery approach

does not reflect Agile software development or service design principles and instead relies on a lengthy and labour-intensive requirements-gathering Phase. They also noted high day rates for some Project Partners, weaknesses in the justification for not using software-as-a-service alternatives, and inconsistencies in cost allocation across work packages, including under-costing of complex AI and machine learning activities and over-costing of data architecture and Project management. Limited market awareness of the scale of future decommissioning activity further undermined confidence in the cost-benefit analysis.

The majority of Expert Assessors did not consider the Project to have a sufficiently robust methodology to give confidence that it could progress in a timely manner. They noted a lack of clarity around why elements such as full data architecture, machine learning cost estimation, and weather-related compensation need to be addressed at Alpha Phase . The Expert Assessors considered that the Project would be more likely to succeed if the scope were narrowed to focus on the most critical capabilities, with further functionality introduced at later stages. They also raised concerns that a waterfall approach to digital development could increase the risk of the solution not meeting user needs and noted the absence of sufficiently detailed delivery actions and risk management strategies related to staff adoption and technology rollout.

Decision from the Office of Gas and Electricity Markets

DO NOT FUND

Ofgem agrees with the Expert Assessors that the Project does not meet Eligibility Criteria 6, 7, or 8.

The Project does not meet Eligibility Criterion 6 because it does not demonstrate participation from a sufficient and appropriate range of stakeholders to support delivery of the proposed approach. In particular, the Project lacks meaningful involvement from digital technology and AI and machine learning specialists, despite these capabilities being central to the Project's objectives. Ofgem also notes limited evidence of detailed understanding of current gas asset decommissioning processes and insufficient awareness of related digital initiatives already underway in the sector. Taken together, these gaps reduce confidence

that the consortium has the breadth of expertise required to deliver the Project or ensure its relevance within the wider system.

The Project does not meet Eligibility Criterion 7 because it does not demonstrate value for money. Ofgem shares concerns regarding the proposed delivery approach, including high day rates for certain Project Partners, weaknesses in the cost-benefit analysis, and inconsistencies in cost allocation. In particular, Ofgem notes that activities relating to AI and machine learning, which are technically complex and central to the Project, appear under-resourced relative to their importance, further undermining confidence that costs are proportionate to the expected outcomes.

The Project does not meet Eligibility Criterion 8 because the proposed methodology does not provide sufficient confidence that the Project could be delivered in a timely or effective manner. Ofgem considers that the approach is overly broad, with limited detail on sequencing, delivery controls, and risk mitigation. The reliance on a waterfall development model, combined with a lack of clearly articulated user-led testing and iteration, increases the risk that the solution would not meet user needs or achieve its intended outcomes.

On this basis, Ofgem considers that the Project does not meet Eligibility Criteria 6, 7, or 8.

Recommended Project-specific conditions
N/A

6.2.4 Project 10179002 – AIASM - Autonomous Intelligent Asset Surveillance and Monitoring

Submitted Project description
Autonomous Intelligent Asset Surveillance and Monitoring (AIASM) is a smarter, risk-based approach to asset management. AIASM replaces traditional, infrequent, reactive, and costly methods, like helicopter patrols & manual inspections, with a real-time, AI-powered platform that integrates satellite, drone, and ground sensor data to detect threats early and respond faster.

AIASM reduces operational overhead, avoids redundant site visits, and streamlines incident response. Early identification of potential issues protects both, legacy and new, infrastructure.

Aligned to Ofgem's Innovation Challenge 3, Theme 2, AIASM supports the transition to a low-carbon energy system. It ensures the UK's energy networks remain secure, efficient, and future-ready.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**Additional justification**
1: Projects must address the Innovation Challenge set by Ofgem.	Not Met	The Expert Assessors did not consider this Project to have addressed the Innovation Challenge because it does not clearly demonstrate how it would support transition planning for a gas network facing declining demand, including improved strategic decision-making on future network configuration and investment priorities. Instead, the Project is primarily focused on improving asset monitoring and surveillance efficiency through the use of drones and AI, which aligns more closely with operational asset management than with the system-level transition outcomes required by the Innovation Challenge.
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 the successful implementation of the AIASM solution would reduce operational costs for surveillance and data analysis, while

		also improving safety and sustainability outcomes. These improvements would deliver consumer benefit through more efficient network operation and enhanced environmental performance.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it integrates drone footage, satellite imagery, quantum sensors, and AI into a unified tool, offering an alternative, autonomous approach to network surveillance and maintenance planning. However, one Expert Assessor noted that the Application lacked clarity on how the Project builds upon learnings from the specific NIA and SIF Projects identified.
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 it leverages relevant Digital and Energy System Catapult research and engages technology organisations with expertise in scaling deep tech. The approach makes it easier to adopt new surveillance methods in future network processes by integrating diverse technologies and data streams into actionable insights. Additionally, the Project is not tied to a single technology provider. However, the Expert Assessors noted that the Application lacked clarity on what similar solutions currently exist in other sectors that could potentially be adapted for use in the energy sector.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because it steps outside the traditional siloed approach to surveillance data

		and seeks to integrate multiple data sources into one model by leveraging available drone, satellite, AI and quantum technologies.
6: Projects must include participation from a range of stakeholders.	Met	The majority of Expert Assessors considered the Project Partners to be sufficient because they bring expertise in developing integrated tools and providing sensor data, along with representation from customers and users across both gas and electricity distribution systems. However, one Expert Assessor disagreed, noting that the consortium is primarily composed of gas network operators and the Digital Catapult, with the majority of expenditure allocated to the Digital and Energy System Catapults.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered the Project to deliver value for money and to be costed competitively, as it demonstrates significant benefits. The Project is considered as competitively priced because most Project Partners have reasonable day rates and have provided reasonable estimates of the effort required. However, it was noted that the Energy Systems Catapult day rates are significantly higher than those of the Digital Catapult.
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 has clearly outlined workstreams and detailed dissemination plans. T The Project Partners have previously collaborated

		which reinforces confidence in their ability to work efficiently together. However, the Expert Assessors expressed concerns about the limited time allocated to areas where key risks such as data integration are highlighted in the risk register. They also noted that the programme provides little or no time to understand how the solution should be developed for deployment.

Recommendation to the Office of Gas and Electricity Markets
DO NOT FUND
The Expert Assessors agree that the Project has not met all the Eligibility Criteria and do not recommend this Project for funding. The Project does not address the Innovation Challenge because it does not clearly demonstrate how it would support transition planning for a gas network facing declining demand, including improved strategic decision-making on future network configuration and investment priorities. Instead, the Project is primarily focused on improving asset monitoring and surveillance efficiency through the use of drones and AI, which aligns more closely with operational asset management than with the system-level transition outcomes required by the Innovation Challenge. The Project has clearly identified potential to deliver a net benefit to gas consumers because the successful implementation of the proposed AIASM solution could reduce operational costs associated with surveillance and data analysis, while also improving safety and sustainability outcomes. The Expert Assessors considered that these improvements could ultimately benefit consumers through lower energy costs and enhanced sustainability. The Project is considered to involve network innovation because it integrates drone footage, satellite imagery, quantum sensors, and AI into a unified tool,

offering an alternative and more autonomous approach to network surveillance and maintenance planning. One Expert Assessor noted that the Application lacked clarity on how the Project builds on learning from relevant NIA and SIF Projects, although this did not outweigh the overall assessment against this Criterion.

The Project is not considered to undermine the development of competitive markets because it is not tied to a single technology provider and leverages existing Digital and Energy Systems Catapult research alongside engagement with technology organisations experienced in scaling deep-tech solutions. The Expert Assessors noted that this approach could support wider adoption of advanced surveillance methods. However, they also highlighted limited clarity on whether similar solutions already exist in other sectors that could be adapted for use in the energy sector.

The Project is considered innovative, novel, and risky because it seeks to move away from siloed surveillance approaches by integrating multiple data sources into a single model using drone, satellite, AI, and quantum technologies.

The majority of Expert Assessors considered the Project Partners to be sufficient, as the consortium brings expertise in integrated tool development, sensor data provision, and representation from users across gas and electricity distribution systems. However, one Expert Assessor disagreed, noting that the partnership is weighted towards gas network operators and the Digital Catapult, with a significant proportion of expenditure allocated to the Energy System Catapult.

The Project is considered to deliver value for money and to be costed competitively because it demonstrates significant potential benefits relative to the SIF funding requested. The Expert Assessors considered most partner day rates and effort estimates to be reasonable, although they noted that Energy Systems Catapult day rates are higher than those of other Catapults. They also highlighted a lack of clarity on how Project outcomes would be operationalised.

The Project is considered to have a broadly robust methodology, with clearly defined workstreams and detailed dissemination plans, and with prior collaboration between partners providing confidence in delivery capability. However, the Expert Assessors raised concerns that insufficient time is allocated

to key risk areas, particularly data integration, and that limited consideration is given to how the solution would be developed for deployment.

Decision from the Office of Gas and Electricity Markets
DO NOT FUND
Ofgem agrees with the Expert Assessors that the Project does not meet the Innovation Challenge. The Innovation Challenge requires Projects to demonstrate how they would support cross-vector transition planning and improve strategic decision-making for gas networks as natural gas demand declines. Ofgem considers that the Project does not demonstrate how they would support cross-vector transition planning and improve strategic decision-making for gas networks as natural gas demand declines as required by the Innovation Challenge, as the Project does not clearly demonstrate how the proposed activities would inform or improve transition planning, network evolution decisions, or whole-system outcomes. Instead, the Project is primarily focused on gas network asset monitoring and improving the efficiency of surveillance activities through the use of drones and AI. While Ofgem recognises that these activities may deliver operational efficiencies, they are largely aligned with business-as-usual asset management and do not provide clear evidence of contribution to cross-vector planning or strategic transition outcomes. On this basis, Ofgem is not satisfied that the Project addresses the core objectives of the Innovation Challenge.

Recommended Project-specific conditions
N/A

7 Innovation Challenge: Accelerating toward net zero energy networks

7.1 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 22 October 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)
10179178	ODIN – Optimisation and Diagnostics for Innovative Networks	Scottish Hydro Electric Transmission plc	506,056	50,606	455,450	Yes	Yes

7.2 Expert Assessors' recommendations on Projects

7.2.1 Project 10179178– ODIN – Optimisation and Diagnostics for Innovative Networks

Submitted Project description
SSEN Transmission has joined forces with Ross Robotics, a UK leader in advanced robotics, to deliver ODIN - a first-of-its-kind Project applying autonomous inspection and artificial intelligence to optimise high-voltage converter systems. ODIN will continuously capture and analyse live operational data to detect early signs of wear, thermal imbalance, and performance loss. By enabling predictive, data-driven maintenance, ODIN will minimise outages, extend asset life, and enhance overall network reliability. This Project transforms static inspection into predictive intelligence, reducing inefficiency, strengthening resilience, and delivering lasting value for energy consumers while supporting the UK's journey to net zero.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**Additional justification**
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors consider this Project to have addressed the Innovation Challenge because it seeks to apply machine learning algorithms and advanced modelling techniques to assist in the prediction of potential failures. The Project was considered to have the potential to improve condition monitoring of high voltage direct current (HVDC) valve holes, a critical component of the future transmission network as the number of HVDC links within the GB transmission system increases over time. The Expert Assessors consider the Project to have the potential to improve asset reliability as well as the optimisation of maintenance schedules, leading to more efficient electricity networks in the future. In

		addition, the use of robotics in a live operational HVDC converter station to conduct inspections is not a widely used solution, further proving its novelty and innovative nature.
2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met	The Expert Assessors consider that this Project is demonstrating a clear benefit to electricity consumers because it has the potential to reduce unplanned outages, extend HVDC asset lifespans, and lower operational costs through condition-based maintenance. The Project team provided a comprehensive range of benefits and wider positive impacts, which have been described in the Application, as well as some quantitative assessments included where necessary. The Project team also demonstrated reductions in the cost of operating the network by significantly reducing forced outages, lowering maintenance costs, and enhancing system stability. The Application articulated the introduction of new-to-market services in the form of an industry-wide standardised methodology. Additional social benefits related to staff working in HVDC converter halls have the potential to feel safer despite being in a high-EMF environment have been noted. Additionally, the Project outlined opportunities for skills development in robotics and machine learning technologies for the industry.
3: Projects must involve network innovation.	Met	The Expert Assessors consider this Project to involve network innovation because it seeks to apply machine learning algorithms and advanced modelling techniques to assist in

		predicting potential failures. This has the ability to improve asset reliability as well as optimise maintenance schedules, leading to more efficient networks. The Project also involves network innovation through the use of robotics in live operational HVDC converter stations to conduct inspections, which is an approach that has now gained global prominence following its first implementation by SSEN Transmission. The novel approach to condition monitoring of an inaccessible component of the transmission network presents new opportunities for the networks. It also introduces technologies that have only recently reached sufficient maturity, including robotics, AI, and the effective use of large quantities of data.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors agreed that the Project does not undermine competitive markets. It is designed to be open and The Expert Assessors did not consider this Project to be undermining a competitive market because it adopts open data interfaces and non-exclusive dissemination, ensuring that the outputs can be replicated and adopted by other suppliers and transmission owners. There are no activities or Project outputs that the Expert Assessors considered would prevent other transmission operators from procuring similar services, according to the Application. The model is designed to encourage competition.

		However, one Expert Assessor noted that there remains a risk associated with the development of expertise in products within Ross Robotics if this is not implemented appropriately across networks, with governance frameworks developed to ensure fair participation. Outputs is expected to enhance, rather than replace, existing systems, supporting wider adoption and fair market operation.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered this Project to be innovative, novel, and risky because it integrates autonomous robotics with AI-driven analytics to deliver real-time condition monitoring in HVDC converter halls. This represents a step change from manual, outage-based inspections to proactive, data-driven maintenance. The Project team has provided evidence that they are building on learnings from previous successful NIA and SIF innovation Projects, which provides reassurance that this work is not duplicating previous efforts.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors consider this Project to include participation from a sufficient range of stakeholders, including SSEN Transmission, Ross Robotics, specialist consultants, and wider engagement with UK and European transmission owners and Original Equipment Manufacturers. The Project also links with other important stakeholders, including other GB transmission owners and their European counterparts, as well as Hitachi, an HVDC equipment OEM.

7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors consider this Project to be delivering value for money for electricity consumers and to be costed competitively because costs are proportionate to the scope and deliverables, with clear justification for Project Partner allocations. The Cost-Benefit Analysis identifies the benefit this will provide in terms of reduced repair costs. However, it is not clear to what degree the CBA has accounted for reduced constraint costs. Network outages have recently been identified as an important driver of constraints, and if this has not been included already, it could represent a further benefit to the Project, one that would have a direct impact on value for money for consumers. The Expert Assessors also considers this Project to be delivering value for money because it is using an existing autonomous robotic platform at Blackhillock HVDC converter station for testing and has demonstrated that
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 consider this Project to have a robust methodology, which gives confidence that it will be capable of progressing in a timely manner because it sets out a clear approach with six defined work packages, deliverables, governance processes, and risk management strategies. The Project plan, milestones, and risk register have been clearly presented, which gives the Expert Assessors confidence in the timely delivery of the Project.

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 considered the Project to have addressed the Innovation Challenge because it seeks to apply machine learning algorithms and advanced modelling techniques to predict potential failures in HVDC valve halls. They considered that the Project has the potential to improve condition monitoring of a critical component of the future transmission network, particularly as the number of HVDC links within the GB transmission system increases. The Expert Assessors noted that improved asset reliability and optimisation of maintenance schedules could lead to more efficient electricity networks over time. They also highlighted that the use of robotics within live operational HVDC converter stations for inspections is not widely adopted, supporting the Project's novelty and innovative nature. The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to electricity consumers. They noted that the Project could reduce unplanned outages, extend HVDC asset lifespans, and lower operational costs through condition-based maintenance. The Project team provided a comprehensive range of benefits and wider positive impacts, including quantitative assessments where appropriate. The Expert Assessors also highlighted potential improvements in staff safety within high-EMF environments and opportunities for skills development in robotics and machine learning. Overall, they considered that the Project has the potential to reduce operating and maintenance costs of future transmission networks. The Expert Assessors considered the Project to involve network innovation because it applies machine learning and advanced modelling techniques to predict asset failures and optimise maintenance planning. They also noted that the use of robotics to conduct inspections in live HVDC converter stations represents an innovative approach that has not yet gained global prominence. The combination of robotics, AI, and large-scale data analysis applied to an otherwise inaccessible

component of the transmission network was considered to present new opportunities for network operation and asset management.

The Expert Assessors did not consider the Project to be undermining the development of competitive markets. They noted that the Project adopts open data interfaces and non-exclusive dissemination, enabling replication and adoption by other suppliers and transmission owners. The Expert Assessors were satisfied that no activities or outputs would prevent other transmission operators from procuring similar services and that the Project is designed to encourage competition. However, one Expert Assessor noted a potential risk associated with the concentration of expertise within Ross Robotics if not managed appropriately.

The Expert Assessors considered the Project to be innovative, novel, and risky because it integrates autonomous robotics with AI-driven analytics to deliver real-time condition monitoring in HVDC converter halls. They highlighted the risks associated with deploying robots in high-risk, high-EMF environments that are typically inaccessible during live operation, as well as the uncertainty associated with autonomous decision-making during trials. The Expert Assessors were reassured that the Project builds on learning from previous NIA and SIF Projects, reducing the risk of duplication while remaining appropriately ambitious.

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders. They noted that the consortium brings together transmission owner expertise, robotics developers, specialist consultants, and engagement with UK and European transmission owners and original equipment manufacturers (OEMs), including Hitachi Energy. The Expert Assessors highlighted prior collaborative experience between partners, including previous NIA-funded and Discovery Phase work, which provided confidence in delivery capability. One Expert Assessor noted that the Project could have been strengthened by including an OEM as a formal Project Partner rather than solely as a stakeholder.

The Expert Assessors considered the Project to be delivering value for money and to be costed competitively. They noted that costs are proportionate to the scope and deliverables, with clear justification for partner allocations and effective use of existing robotic platforms for testing. The Expert Assessors acknowledged that

while reduced repair costs are captured in the cost-benefit analysis, there may be further benefits related to reduced constraint costs that could be explored. They also considered that ongoing engagement with UK transmission owners, European transmission system operators, and OEMs supports benchmarking against international standards and strengthens value for money.

The Expert Assessors considered the Project to have a robust methodology capable of progressing in a timely manner. They highlighted the clear structure across six work packages, defined deliverables, governance arrangements and risk management strategies. The Project plan, milestones and risk register were considered comprehensive, with appropriate mitigation measures identified. The Expert Assessors noted that the application could have been strengthened by explicitly including the risk of robotic failure within HVDC halls that cannot be accessed until planned outages, given the potential impact on delivery timelines.

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 the end of Phase meeting, the Funding Party must provide to the Monitoring Officer a summary of engagement undertaken with other GB transmission operators. This should include the scope of engagement, key feedback received, and how this feedback has informed the Project's approach, outputs, and potential for wider adoption.

8 Innovation Challenge: High-energy demand point integration

8.1 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 22 October 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)
10179023	Future Fleet	UK Power Networks (Operations) Limited	555,350	55,535	499,815	Yes	Yes

8.2 Expert Assessors' recommendations on Projects

8.2.1 Project 10179023 - Future Fleet

Submitted Project description
The UK logistics sector is rapidly transitioning to electric heavy goods vehicles (e-HGVs) to meet Net Zero targets, mandating all HGV sales to be zero emission by 2040. This shift requires significant changes to operations, depots, and energy infrastructure. High charging demands at depots, hubs, and corridors risk overloading local grids. Future Fleet develops a geospatially-informed framework that combines fleet archetypes, smart energy schemes, and innovative business models such as shared depots and service-based offerings. By doing so, it will reduce costs, accelerate decarbonisation, and provide networks and logistics operators with actionable strategies for scalable, affordable, and grid-friendly freight electrification.

Eligibility Criteria met or not met – Expert Assessors' evaluation		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 working to support integration of a significant, known future demand from charging of battery electric freight fleets. This is an area of significant future energy demand which would benefit from smart business models to help deliver lower system costs.
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 through system reinforcement costs by smarter integration of the infrastructure required as the freight sector is decarbonised. In addition haulage and

		freight customers should see benefits from the solutions explored in the Project; the Expert Assessors stressed the need for effective collaboration between the other networks and end users to maximise benefit from the Project.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it is focused on developing more innovative ways to optimise the use of network assets in the context of fundamental changes in demand from freight decarbonisation. This is through innovation in integrating demand side and networks into a lower cost overall solution in anticipation of significant need.
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 it shows a collaborative and open intent to develop new connection models for electric Heavy Goods Vehicle (e-HGV) charging. Through this, the developed approaches could be replicated by both license and private companies as well as their customers to promote competition in this area. The Expert Assessors stressed the importance of an open approach to key learnings and findings from the Project, with one Expert Assessor raising that the provision, operation, and income distribution of the charging hubs as an area for strong consideration in dissemination activities.

5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because the solutions are highly uncertain and there are no currently proven business models. This includes an innovative approach to siting of e-HGV charging hubs, which additionally require significant and often complex cooperation across industry with network operators. The Expert Assessors praised the Project for being a forward-looking Project, exploring challenges that will become increasingly prevalent as the freight sector decarbonises over the coming years.
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 it brings together the appropriate range of Project Partners from across the energy networks and transport sectors to deliver the Project. This includes Project Partners with expertise and learning from other innovation programmes, mainly the Zero Emission HGV and Infrastructure Demonstrator (ZEHID). The Expert Assessors did note the risk of the solution potentially becoming too niche if wider engagement is not sought as planned during the Alpha Phase. For instance, the Expert Assessors were keen to see the Project leverage any relevant stakeholder groups and forums from the ZEHID programme during the course of the Alpha Phase. One Expert Assessor also stressed the need for robust engagement with local and regional planning expertise, including

		in RESPs (Regional Energy Strategic Plans).
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 it is costed according to market standards and offers value to money given the likely overall investment implication for HGV electrification. The Expert Assessors did note that interview responses regarding how the Project has taken learning from international case studies lacked specific detail, especially with regard to any countries that are developing similar operational models in response to freight electrification.
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 plan and methodology are clear, robust and logical. The Project Partners have a strong track record in delivering innovation Projects in a timely manner. One Expert Assessor did flag the lack of risk mitigation on data inputs, quality and sources, which if they were to materialise, would hamper the Project's ability to deliver the proposed outputs in a timely manner.

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 considered the Project to have addressed the Innovation Challenge because it seeks to support the integration of a significant and well-evidenced future demand arising from the charging of battery electric freight fleets. They noted that freight electrification represents a major source of future electricity demand and considered that the Project's focus on developing smarter business models could help reduce overall system costs.

The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to electricity consumers through system reinforcement costs by enabling smarter integration of the infrastructure required as the freight sector decarbonises. They also noted potential benefits for haulage and freight customers arising from the solutions explored. The Expert Assessors stressed the importance of effective collaboration between networks and end users to ensure that these benefits are fully realised.

The Expert Assessors considered the Project to involve network innovation because it focuses on developing more innovative approaches to optimising network asset utilisation in response to fundamental changes in demand driven by freight decarbonisation. They considered that integrating demand-side requirements with network planning to deliver lower-cost system solutions represents a departure from business-as-usual approaches and is appropriate given the anticipated scale of future need.

The Expert Assessors did not consider the Project to be undermining the development of competitive markets because it demonstrates a collaborative and open intent to develop new connection models for electric HGV charging. They noted that the approaches developed could be replicated by both licensed and private companies, supporting competition in this area. The Expert Assessors stressed the importance of maintaining an open approach to dissemination of learning, with one Expert Assessor highlighting the provision, operation, and income distribution of charging hubs as an area requiring particular attention in dissemination activities.

The Expert Assessors considered the Project to be innovative, novel, and risky because the solutions being explored are highly uncertain and there are currently no proven business models in this area. They highlighted the innovative approach

to the siting of electric HGV charging hubs, which requires significant and often complex coordination across industry and with network operators. The Expert Assessors viewed the Project as appropriately forward-looking, addressing challenges that are expected to become increasingly prevalent as freight decarbonisation accelerates.

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders because the consortium brings together partners from across the energy networks and transport sectors, including those with experience from related innovation programmes such as ZEHID. However, they noted a risk that the solution could become overly niche if wider engagement is not secured during the Alpha Phase. The Expert Assessors were keen to see the Project leverage relevant stakeholder groups and forums from the Zero Emission HGV and Infrastructure Demonstrator programme and highlighted the importance of robust engagement with local and regional planning expertise, including Regional Energy Strategic Planning.

The Expert Assessors considered the Project to be delivering value for money and to be costed competitively, noting that costs are aligned with market standards and proportionate given the likely scale of investment required for HGV electrification. They did, however, observe that interview responses on how international case study learning had informed the Project lacked specific detail, particularly in relation to countries developing similar operational models for freight electrification.

The Expert Assessors considered the Project to have a robust methodology that gives confidence it will be capable of progressing in a timely manner. They noted that the plan and methodology are clear, logical, and supported by Project Partners with a strong track record in delivering innovation Projects. One Expert Assessor raised concerns regarding the absence of clearly articulated risk mitigation relating to data inputs, data quality, and data sources, which could impact the Project's ability to deliver its outputs if not adequately managed.

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 kick-off meeting, the Funding Party must provide to the Monitoring Officer a stakeholder engagement plan setting out how the Project will engage with a wider range of relevant stakeholders beyond the core consortium. This must include planned engagement with stakeholders from the Zero Emission HGV and Infrastructure Demonstrator (ZEHID) programme and with local and regional planning bodies, including Regional Energy Strategic Plans (RESPs).

Prior to the kick-off meeting, the Funding Party must provide to the Monitoring Officer an updated risk management summary addressing risks associated with data inputs, data quality, and data sources. This should set out mitigation measures and explain how data-related risks will be managed to ensure the Project can deliver its intended outputs in a timely manner.

Prior to the end of Phase meeting, the Funding Party must provide to the Monitoring Officer:

- a summary of how learning from relevant international case studies has informed the Project's approach. This should include specific examples of comparable freight electrification or charging hub operational models and a clear explanation of how this learning has influenced the Project's proposed solutions;
- a dissemination summary setting out how key learning from the Project will be shared openly. This should include consideration of issues related to the provision, operation, and income distribution of electric HGV charging hubs, to support wider replication and competition.

9 Innovation Challenge: Consumer-centric grid expansion

9.1 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 22 October 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)
10179590	Power Wheels	Northern Powergrid (Northeast) Limited	584,810	94,480	490,330	Yes	Yes
10179104	HVDC Wind Connect	Scottish Hydro Electric Transmission plc	499,957	49,996	449,961	Yes	Yes

9.2 Expert Assessors' recommendations on Projects

9.2.1 Project 10179590 - Power Wheels

Submitted Project description
Power Wheels has the potential to unlock the largest Virtual Power Plant (VPP) in the UK, by harnessing over 10 GW of flexibility from Motability's growing electric vehicle fleet. This Alpha Phase will explore two tracks: smart charging - for immediate bill savings and flexibility services, and bidirectional charging - to create the VPP and safeguard households reliant on medical equipment during outages. Power Wheels puts disabled consumers at the heart of the transition, providing them with savings and life-saving resilience benefits whilst turning EVs into an accessible national asset to enhance system reliability, affordability and decarbonisation.

Eligibility Criteria met or not met – Expert Assessors' evaluation		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 will conduct small-scale trials to demonstrate technical feasibility, consumer acceptance and commercial models for delivering flexibility and improved household resilience from Motability's growing electric vehicle (EV) fleet. Interview responses strongly demonstrated the commitment and passion of the consortium members to help deliver consumer-centric and innovative solutions as road transport is electrified, especially for vulnerable consumers.

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 delivering V2G (vehicle to grid) benefits to a wider range of consumers, in particular those that are part of the Motability fleet. The Expert Assessors particularly appreciated clarification at the interview of the high potential for the Motability fleet in providing the necessary scale to support delivery on the Project's proposed innovation and benefits.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it is exploring network benefits and potential solutions to support the scaling of vehicle-to-home and vehicle-to-grid technologies especially for vulnerable network customers. This also includes innovation in smarter software services and new control systems to allow these network services to build public support for their technologies, for instance through novel social business models.
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 no planned activities that will prevent other parties from procuring similar services and the Application makes clear that it will work to enhance the participation of disabled and vulnerable households in the benefits of transport electrification. Additionally, further clarification on the role of Motability within the consortium at the interview helped the Expert Assessors

		understand that there is no direct alternative to them as a Project Partner. The Expert Assessors also noted the significant value that Motability therefore brings to the Project by using the scale of their fleet to accelerate V2G and potentially stimulate and unlock new markets.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered the Project to be innovative and risky because it plans to explore a number of technical challenges within EV flexibility in the context of a stakeholder mix which presents a novel and risky interplay between DNO operations, EV systems, and vulnerable consumers. Technical innovations and associated risks include laboratory testing to validate islanding capability, and exploration of the potential role of electric vehicles in maintaining power supply to vulnerable consumers during network outages. Additionally, the Expert Assessors praised the strong focus of the Project on exploring novel consumer acceptance and commercial models to drive enhanced value to vulnerable consumers. In the view of the Expert Assessors, the dedication to driving greater participation, scale and benefit for vulnerable consumers in V2G development clearly differentiates the Project from other V2G innovation Projects. The Expert Assessors did comment that the vehicle-to-home element of the Project could have been more clearly articulated and emphasised for being innovative in nature.

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 Criterion to be met because convenes the necessary mix of Project Partners to successfully deliver the intended work. This includes expertise across vulnerable consumer engagement, transport electrification, and network flexibility, with each Project Partner having clear roles and responsibilities. In particular, clarifications at the interview on the trusted role and strong consumer representation that Motability brings to the consortium gave the Expert Assessors confidence that the Project could deliver strong potential benefits. One Expert Assessor did flag that the Project could potentially benefit from V2H charge technology Project Partner and whilst they noted that the Project Partner CEE uses a range of technology and lab partners, the key partners are not identified, and the timescales are very short for this especially in V2H technology.
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 rates are reasonable, and the budget is appropriately apportioned across ProjectPartners. The Expert Assessors recognised that there is a strong case for the Project to unlock significant value and benefits to consumers. There is also strong commitment to leverage existing assets and facilities for the benefits of

		the Project, in particular from Motability and Northern Powergrid.
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 there is a clear and detailed plan alongside a robust risk register with clear mitigations. The Expert Assessors also noted the significant experience and track record of the consortium, which was confirmed at the interview where the Expert Assessors noted that they demonstrated excellent collaboration and ways of working. The Expert Assessors did stress the importance of achieving strong trial participation, onboarding and engagement to deliver value from the Project, with one Expert Assessor noting that the plan for home trials seemed ambitious in Work Package 4.

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 Expert Assessors considered the Project to have addressed the Innovation Challenge because it proposes small-scale trials to demonstrate technical feasibility, consumer acceptance, and commercial models for delivering flexibility and improved household resilience from Motability's growing electric vehicle fleet. The Expert Assessors noted that interview responses strongly demonstrated the commitment and consumer-centric focus of the consortium, particularly in seeking to deliver innovative solutions that support vulnerable consumers as road transport is electrified.

The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to electricity consumers through enabling vehicle-to-grid (V2G) services for a wider range of consumers, particularly those within the Motability fleet. They welcomed clarification at interview of the scale of the Motability fleet and considered this scale to be critical in supporting the delivery of the Project's proposed innovation and in unlocking meaningful consumer and system benefits.

The Expert Assessors considered the Project to involve network innovation because it explores network benefits and enabling solutions to support the scaling of vehicle-to-home and vehicle-to-grid technologies, particularly for vulnerable network customers. This includes the development of smarter software services and new control systems to enable network services and to improve public confidence and acceptance, for example through novel social and commercial business models.

The Expert Assessors did not consider the Project to undermine the development of competitive markets. They noted that no activities are proposed that would prevent other parties from procuring similar services and that the Project is designed to enhance participation of disabled and vulnerable households in the benefits of transport electrification. Further clarification at interview regarding the role of Motability within the consortium provided reassurance that Motability brings unique value through the scale of its fleet, rather than limiting competition, and could help accelerate V2G adoption and stimulate new markets.

The Expert Assessors considered the Project to be innovative, novel, and risky because it explores multiple technical challenges associated with EV flexibility within a complex stakeholder context involving DNO operations, EV systems, and vulnerable consumers. They highlighted technical risks associated with laboratory testing for islanding capability and the use of EVs to improve resilience during power outages. The Expert Assessors also praised the strong emphasis on consumer acceptance and commercial model development, noting that the focus on delivering scalable benefits for vulnerable consumers clearly differentiates the Project from other V2G initiatives. However, they observed that the vehicle-to-

home element could have been more clearly articulated as an innovative component.

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders because it brings together the necessary mix of partners across vulnerable consumer engagement, transport electrification, and network flexibility. The Expert Assessors were reassured by clarifications at interview regarding the trusted role and strong consumer representation provided by Motability. One Expert Assessor noted that the Project could benefit from clearer identification of vehicle-to-home charging technology partners, given the ambitious timescales associated with this aspect of the Project.

The Expert Assessors considered the Project to be delivering value for money and to be costed competitively. They noted that rates are reasonable, the budget is appropriately apportioned across Project Partners, and there is a strong case for the Project to unlock significant consumer and system value. The Expert Assessors also welcomed the commitment to leverage existing assets and facilities, particularly those provided by Motability and Northern Powergrid.

The Expert Assessors considered the Project to have a robust methodology that gives confidence it will be capable of progressing in a timely manner. They noted the presence of a clear and detailed plan, supported by a robust risk register with defined mitigations, and highlighted the strong experience and track record of the consortium. The Expert Assessors stressed the importance of achieving effective trial participation, onboarding, and engagement to realise value from the Project, with one Expert Assessor noting that the proposed home trials in Work Package 4 appear ambitious.

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 kick-off meeting, the Funding Party must provide to the Monitoring Officer:

- a trial recruitment and engagement plan setting out how sufficient participation from Motability customers will be secured. This should include arrangements for onboarding, ongoing engagement, and mitigation measures where recruitment or retention risks arise, given the importance of trial participation to delivery of Project benefits;
- clarification of the vehicle-to-home (V2H) element of the Project. This should include confirmation of how V2H capability will be delivered within the proposed timescales, and how this element contributes to the Project's innovation objectives.

Prior to the Mid-Point Review meeting, the Funding Party must provide to the Monitoring Officer an update on trial participation, onboarding, and engagement planning. This should include evidence of progress against recruitment assumptions, identification of any emerging risks to achieving sufficient participation (particularly in relation to home trials under Work Package 4), and a summary of mitigation measures to ensure the Project can deliver its intended learning and value.

Prior to the end of Phase meeting, the Funding Party must provide to the Monitoring Officer:

- a summary of learning from the Alpha Phase relating to consumer acceptance and commercial models for Vehicle-to-Grid and Vehicle-to-Home services. This should include how these models support participation by vulnerable consumers and how learning could be applied at scale in future Phases;
- an updated risk summary addressing delivery risks associated with home trials, including technical readiness, customer experience, and dependency on third-party technologies, and setting out any mitigation measures implemented during the Alpha Phase.

9.2.2 Project 10179104 - HVDC Wind Connect

Submitted Project description
The HVDC Wind Connect Project will enhance the integration of offshore wind into the energy system by developing and demonstrating novel "rigid" and "hybrid" meshed HVDC systems. These next-generation systems offer major cost and efficiency benefits over traditional high voltage direct current (HVDC) systems. However, there are key technical challenges to address in operation, particularly in system operation. The key innovations that will unlock rigid and hybrid HVDC systems are system control and protection strategies, modular offshore platform designs, and dynamic rating approaches for cables. HVDC Wind Connect will develop these key innovations.

Eligibility Criteria met or not met – Expert Assessors' evaluation		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 explores scalable, cost-effective HVDC solutions to support offshore wind integration and grid expansion, by focusing on multi-terminal HVDC systems and cable configurations without a dedicated metallic return (DMR).
2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met	The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to electricity consumers because it could enable more cost-effective development of offshore HVDC networks. They noted that the technical assessment demonstrates how alternative HVDC configurations, including the use of non-Dedicated Metallic Return (non-DMR) cables, could improve grid integration and reliability while reducing the need for

		excessive cabling and converter infrastructure. The Expert Assessors considered that these efficiencies could reduce future network operating costs and network investment requirements, with savings ultimately passed through to consumers via lower contributions to network costs. They also noted wider benefits, including increased renewable energy capacity, improved environmental sustainability, and positive economic impacts such as job creation. While some of these benefits were not fully articulated in the Application narrative, the Expert Assessors agreed that there is a clear and credible pathway to consumer benefit, supported by the underlying technical analysis.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it explores novel HVDC system configurations and offshore grid arrangements that are not currently deployed at scale. The Project focuses on improving how transmission networks are designed and operated, particularly for offshore wind integration, with the potential to reduce future network costs and improve system performance for consumers.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors considered this Project not to undermine the development of competitive markets because its outputs will be transparent and shared openly, with no restriction on other parties procuring similar services. At the interview the

		assessors noted that the potential risk that WindGrid could gain know-how advantages was judged manageable through appropriate documentation, dissemination, and engagement with Ofgem and Innovate UK to ensure learning is placed in the public domain, and the Project team's answers were deemed satisfactory.
5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered this Project to be innovative, novel and risky because it explores new HVDC system configurations for offshore wind integration, including multiterminal and non-DMR approaches, which are not business as usual. While some elements relate to standardisation, assessors agreed the core focus on applying and testing novel HVDC designs meet this criterion.
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 it brings together a GB transmission owner and specialist HVDC expertise, supported by links to wider industry stakeholders. While the Expert Assessors discussed at interview the absence of original equipment manufacturers, the Project team provided satisfactory reassurance that all findings will be openly shared, reducing the risk of exclusion or competitive distortion and supporting sector-wide applicability.
7: Projects must provide value for money and be costed competitively.	Met	The Expert Assessors considered this Project to be delivering value for money and to be costed competitively because the costs are proportionate to the scope, appropriately allocated

		across Project Partners, and make effective use of existing National HVDC Centre facilities. The potential system benefits were judged to outweigh the Project costs, meeting this 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.	Met	The Expert Assessors considered this Project to be well thought through and to have a robust methodology because it has a clear Project plan, defined work packages and a comprehensive risk register supported by a detailed Gantt chart. The team demonstrated awareness of the technical and regulatory complexities and proposed appropriate mitigations.

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 Expert Assessors considered the Project to have addressed the Innovation Challenge because it seeks to develop cost-effective solutions for integrating offshore renewable energy through the application of standardised multiterminal, rigid bipole HVDC systems integrated with offshore wind farms. The Expert Assessors noted that the increasing scale of offshore wind deployment, supported by recent policy changes to incentivise investment, creates a pressing need for more efficient offshore transmission solutions. They considered that moving beyond point-to-point HVDC links towards multiterminal offshore grids could reduce system costs and alleviate onshore network constraints. The proposed focus on non-dedicated-metallic-return (non-DMR) based HVDC cables was considered particularly relevant, as this technology has the potential to reduce costs relative to current standard solutions. The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to electricity consumers. They highlighted the strength of the quantified technical and economic assessment underpinning the application,

noting that the cost-benefit analysis demonstrates how improved HVDC configurations could enhance grid integration, reliability, and operational efficiency. The Expert Assessors considered that reducing the need for excessive cabling and converter infrastructure could lower future network operating costs, with savings ultimately passed through to consumers via lower electricity bills. They also noted wider benefits, including increased renewable energy capacity, environmental sustainability, and positive economic impacts such as job creation. While some benefits were not fully articulated in the application narrative, the Expert Assessors agreed that the potential consumer benefit at scale is clear.

The Expert Assessors considered the Project to involve network innovation because it explores HVDC configurations and offshore grid designs that have not yet been deployed globally. This includes optimisation of offshore wind farm connection layouts and offshore grid substation platforms to support multiterminal HVDC operation. They considered that these innovations go beyond business-as-usual activities and address a core function of GB Transmission Owners, namely the development and operation of offshore transmission networks capable of supporting future system needs.

The Expert Assessors did not consider the Project to undermine the development of competitive markets. They noted that no activities are proposed that would prevent other parties from procuring similar services and that the Project commits to publishing key outputs and sharing knowledge openly. The Expert Assessors considered that transparent models and methodologies could encourage wider replication and support competitive market development. However, they identified a potential risk that one Project Partner could gain a competitive advantage through accumulated know-how if intellectual property arrangements are not managed carefully. They considered that this risk could be mitigated through clear documentation and dissemination of learning into the public domain.

The Expert Assessors considered the Project to be innovative, novel, and risky. They highlighted the technical challenge and uncertainty associated with developing multiterminal rigid bipole HVDC systems, modular offshore platform designs, and non-DMR cable solutions. The Project was considered risky due to early-stage design decisions, integration challenges, and reliance on emerging

technologies, including international collaboration with overseas partners. The Expert Assessors also noted that the Project builds on learning from previous successful NIA and SIF Projects and uses real-world practical case studies, which increases both the relevance and the delivery risk. While some ambiguity was noted between the Project's focus on technology development versus standardisation, the Expert Assessors considered that, on balance, the Project meets this Eligibility Criterion, with the more novel and risky elements relating to the technical evaluation of non-DMR HVDC systems.

The Expert Assessors considered the Project to include participation from a sufficient range of stakeholders. They noted that the consortium brings together a GB transmission owner, HVDC design expertise, offshore grid development experience, and the National HVDC Centre. The Expert Assessors highlighted strong evidence of senior management commitment and prior successful collaboration between partners on NIA and SIF Projects. They also noted the value of WindGrid's experience as a developer and owner of a multiterminal bipole Project. The Expert Assessors emphasised the importance of continued engagement with other GB transmission owners and offshore developers, particularly given the Project's standardisation objectives.

The Expert Assessors considered the Project to be delivering value for money and to be costed competitively. They noted that costs are proportionate to the scope of work, appropriately apportioned across Project Partners, and supported by access to specialist facilities at the National HVDC Centre. The Expert Assessors considered that the potential benefits, including reduced transmission losses, improved system reliability and lower infrastructure costs, significantly outweigh the Project costs. They also noted that partner rates are stated to be without profit and that the scale of potential consumer benefit supports the value-for-money case.

The Expert Assessors considered the Project to have a robust methodology capable of progressing in a timely manner. They highlighted the clarity of the Project plan, milestones, work package structure, and risk register, as well as the strong emphasis placed on the cost-benefit analysis. The Expert Assessors considered that risks have been comprehensively identified and mitigated, with

technical integration remaining the key challenge. They also noted that the Project demonstrates strong awareness of system complexity, including interactions between technical, regulatory, and commercial considerations, and considered that applying a structured approach to managing this complexity will be important as the Project progresses.

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

10 Innovation Challenge: Green gas

10.1 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 22 October 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)
10179029	Hydrogen-Enhanced Biomethane for Energy System Resilience	Wales & West Utilities Limited	412,430	41,244	371,186	Yes	Yes

10.2 Expert Assessors' Recommendations on Projects

10.2.1 Project 10179029 - Hydrogen-Enhanced Biomethane for Energy System Resilience

Submitted Project description
Biomethane from anaerobic digestion (AD) is currently injected into gas distribution networks (GDNs) as a renewable alternative to fossil-fuel based natural gas. AD plants currently supply largely constant flows, whilst gas demand fluctuates daily and seasonally, creating supply-demand imbalances which increase system balancing requirements. Flexible, locally produced biomethane could help GDNs manage system balance by increasing injection during demand peaks or cold spells. This Project will use biomethanisation, injecting hydrogen to convert additional CO_2 within digesters, to boost biomethane output dynamically, supporting network balancing and net zero ambitions. Operational and regulatory frameworks will also be assessed to enable wider adoption of dynamic injection.

Eligibility Criteria met or not met – Expert Assessors' evaluation		**Additional justification**
1: Projects must address the Innovation Challenge set by Ofgem.	Met	The Expert Assessors considered that the Project addresses the Innovation Challenge because enables more flexible and resilient biomethane injection into the gas network. The Project is clearly focused on increasing biomethane yield and allowing production to respond to network demand, supporting decarbonisation and system resilience.

2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met	The Expert Assessors considered that the Project demonstrates a clear potential net benefit to gas consumers by enabling more flexible biomethane injection, improving system resilience and stability, and reducing balancing costs. While the benefits are credible and aligned with decarbonisation objectives, the Expert Assessors noted that the scale of carbon and bill savings should be more clearly quantified to support progression to a future Beta Phase.
3: Projects must involve network innovation.	Met	The Expert Assessors considered this Project to involve network innovation because it explores new ways to make biomethane production more flexible and responsive to gas network demand, improving balancing and resilience. The Project brings together novel production approaches, early-stage technologies and whole-system integration that would not be pursued by producers alone, with clear potential benefits for gas distribution network operation and consumers.
4: Projects must not undermine the development of competitive markets.	Met	The Expert Assessors considered this Project not to undermine the development of competitive markets because it focuses on enabling system flexibility rather than creating exclusive commercial advantage. Outputs will be disseminated to anaerobic digestion plants and gas networks, supporting wider adoption. While the Hydrostar control system is a key enabler, the interview confirmed that IPR arrangements are proportionate and do not restrict access for other GDNs or technology providers.

5: Projects must be innovative, novel and/or risky.	Met	The Expert Assessors considered this Project to be innovative, novel and risky because it explores early-stage process and biological optimisation to enable flexible biomethane injection. Coupling gas networks with multiple AD plants introduces technical, operational and commercial uncertainty, and feasibility at scale is unproven. The work is not business-as-usual and generates new learning with clear potential benefits for GDNs and consumers.
6: Projects must include participation from a range of stakeholders.	Met	The Expert Assessors considered this Project to include an appropriate range of stakeholders because the consortium brings together a gas distribution network, a technology provider, anaerobic digestion plant operators, a water utility, academic partners, and advisory expertise. This combination provides the technical capability, operational experience, and sector insight required to design, test, and assess flexible biomethane production and injection solutions in a real network context. The involvement of asset operators and producers ensures that the Project is grounded in practical delivery considerations, while academic and advisory partners support robust analysis and the generation of transferable learning. Taken together, this breadth of participation supports both the effective delivery of the Project and the relevance and replicability of its outcomes across the wider gas network.
7: Projects must provide value for money and	Met	The Expert Assessors considered this Project to deliver value for money and to be costed competitively because

be costed competitively.		costs are proportionate to the scope and make effective use of existing facilities and assets, with an appropriate balance between hardware, labour and specialist expertise. The budget is considered reasonable for the scale of work.
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 this Project to be well thought through and to have a robust methodology because it sets out clear and logically structured work packages with defined objectives, responsibilities, and outputs. The Project is supported by an appropriate and comprehensive risk register that identifies key technical, operational, and delivery risks, alongside credible mitigation measures. The Expert Assessors also noted the experience of the Project Partners in delivering similar innovation activities and the availability of established facilities to support the proposed work. Taken together, these factors give confidence that the Project is capable of progressing as planned and delivering its intended outputs in a timely manner.

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 Expert Assessors considered the Project to have addressed the Innovation Challenge because it enables more flexible and resilient biomethane injection into the gas network. They noted that the Project is clearly focused on increasing

biomethane yield and enabling production to respond to network demand, supporting both decarbonisation objectives and system resilience.

The Expert Assessors considered the Project to have clearly identified potential to deliver a net benefit to gas consumers by enabling more flexible biomethane injection, improving system resilience and stability, and reducing balancing costs. They considered these benefits to be credible and well aligned with decarbonisation objectives. However, the Expert Assessors noted that the scale of carbon and consumer bill savings would benefit from clearer quantification to support progression to any future Beta Phase.

The Expert Assessors considered the Project to involve network innovation because it explores new approaches to making biomethane production more flexible and responsive to gas network demand. They noted that the Project brings together early-stage technologies, novel production and control approaches, and whole-system integration that would not be pursued by biomethane producers in isolation, with clear potential benefits for gas distribution network operation and consumers.

The Expert Assessors did not consider the Project to undermine the development of competitive markets. They noted that the Project focuses on enabling system flexibility rather than creating exclusive commercial advantage, and that outputs will be disseminated to anaerobic digestion plants and gas networks to support wider adoption. While the Hydrostar control system is a key enabler within the Project, the Expert Assessors were satisfied, following interview, that intellectual property arrangements are proportionate and do not restrict access for other gas distribution networks or technology providers.

The Expert Assessors considered the Project to be innovative, novel, and risky because it explores early-stage process and biological optimisation to enable flexible biomethane injection. They noted that coupling gas networks with multiple anaerobic digestion plants introduces technical, operational, and commercial uncertainty, and that feasibility at scale remains unproven. The Expert Assessors considered that the work is not business-as-usual and will generate new learning with clear potential benefits for gas distribution networks and consumers.

The Expert Assessors considered the Project to include participation from an appropriate range of stakeholders. They noted that the consortium brings together a gas distribution network, technology provider, anaerobic digestion plant operators, a water utility, academia, and advisory expertise. This combination was considered to provide the technical, operational, and sector insight required to deliver the Project and to support relevance and replicability across the wider gas network.

The Expert Assessors considered the Project to deliver value for money and to be costed competitively. They noted that costs are proportionate to the scope of work and make effective use of existing facilities and assets, with an appropriate balance between hardware, labour, and specialist expertise. The overall budget was considered reasonable for the scale of work proposed.

The Expert Assessors considered the Project to be well thought through and to have a robust methodology. They highlighted the presence of clear work packages, an appropriate risk register, experienced Project Partners, and access to established facilities, which together give confidence in the Project's ability to deliver as proposed.

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