Strategic Innovation Fund (SIF)

Cycle 5 Project Applications – Discovery Phase

Funding Decision and Summary of Recommendations from Expert Assessors

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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 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, the SIF is open to the National Energy System Operator (NESO), Electricity Transmission and Distribution, Gas Transmission and Distribution licensees. Noting that a new Governance document for RIIO-3 has subsequently been issued for NESO, Electricity Transmission, and Gas Transmission and Distribution licensees, references to governance documents should be understood as relating to the relevant version for each licensee, with Project Directions issued against the applicable version depending on the licensee.

The Application process has been revised to allow for more flexibility depending on Project needs. The Application window now opens every four months, for around four weeks at a time – opening at the end of January, end of May, and end of September. Each of these open periods is termed a cycle. Applicants are able to

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

This report covers the Discovery Phase Project Applications submitted in Cycle 5, which ran from 26 January 2026 to 25 February 2026. 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 Innovation Challenges covered by this Cycle are those launched in March 2025, under Round 5 of the SIF. There are seven Round 5 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.
- 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 5 Summary

Within each of the Innovation Challenges are specific requirements on scope and Project Partner requirements. Projects submitted to the SIF must meet these specific requirements and must follow the SIF Governance Document. For this Discovery Phase, Applications had to be received by 25 February 2026 and each Project's start date had to be no earlier than 1 May 2026. Projects must last up to 5 months, and must not request funding of more than £150,000, exclusive of VAT.

Applications submitted to the Cycle 5 Discovery Phase by the 25 February 2026 deadline, and which met the Innovation Challenge-specific requirements, were assessed by Expert Assessors. The Expert Assessors are independent external appointees whose recommendations inform Ofgem's decision-making on the selection of Projects for SIF Funding. The Expert Assessors have relevant expertise and knowledge on the respective Innovation Challenges and/or the energy sector, including for example policy, regulatory, commercial, financial and technical areas. Consistent with the requirements of the SIF Governance Document, the Expert Assessors have assessed each Application (a) with reference to its compatibility with the Eligibility Criteria in chapter 2, and (b) taking into consideration any additional and relevant information available to the Expert Assessors.

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

The overall funding recommendation summarised in this report is based upon a balance of considerations taking into account whether a Project has met each of the SIF Eligibility Criteria, suitability of the Project for SIF Funding, any Project-specific conditions recommended by Expert Assessors, and wider concerns or opportunities identified by the Expert Assessors. For more information on how Projects are assessed by the Expert Assessors, please see Section 2, Assessment Process, below.

This report is a consolidation of the Applications assessed by the Expert Assessors and sets out recommendations from the Expert Assessors to Ofgem on which Projects have met the Eligibility Criteria and should be considered for SIF Funding

in the Cycle 5 Discovery Phase of the SIF. Ofgem, taking into account the Expert Assessors' assessment and recommendations, performs its own internal review of each Project to reach a decision. Ofgem is the sole decision-maker for the SIF.

1 Assessment Process

For the Discovery Phase there is a maximum of 5 stages in assessing eligible submitted Applications:

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

Expert Assessors' report, the Authority decides which Projects should receive SIF Funding and provides brief commentary on its reasoning for each decision.

1.1 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)
5	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	Benefits Part 1	Eligibility Criterion 2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers (whomever is paying for the innovation).
9	Benefits Part 2	Eligibility Criterion 2: Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers (whomever is paying for the innovation).
10	Team and resource	Eligibility Criterion 6: Projects must include participation from a range of stakeholders.
11	Project Plan and milestones	Eligibility Criterion 8: Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.

12	Key outputs and dissemination	Eligibility Criterion 4: Projects must not undermine the development of competitive markets.
15	Value for Money	Eligibility Criterion 7: Projects must provide value for money and be costed competitively.

2 Summary of Discovery Projects submitted in Cycle 5

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 5, the following Discovery Phase Projects Applications were submitted for the Round 5 challenges:

Innovation Challenge	No. of Applications received
Advanced energy transmission and networks	0
Dynamic modelling	1
High-energy demand point integration	3
Consumer-centric grid expansion	4
Enhanced system visibility and control	1
Green gas	0
Whole system optimisation	1

3 Innovation Challenge: Dynamic modelling

3.1 Overview of Projects

This sub-section covers the assessment of Discovery Phase Applications received into the 'Dynamic modelling' Innovation Challenge in Cycle 5.

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

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Decision by Ofgem for funding (Yes/No)
10191773	PROMUPS – PRObabilistic Methods for Uncertainty in Power Systems	National Grid Electricity Transmission plc (NGET)	154,440	15,766	138,674	Yes	Yes

3.2 Expert Assessors' recommendations on Projects

3.2.1 Project 10191773 - PROMUPS – PRObabilistic Methods for Uncertainty in Power Systems

Submitted Project description
Our Project addresses the challenges of increased uncertainty within the electricity transmission network due to increased renewable energy connections, rapid decarbonisation, and evolving demand patterns. We propose using probabilistic modelling methods instead of the currently used deterministic methods to provide a comprehensive insight into these uncertainties and allow the acquisition of reliability indicators that reflect a more realistic likelihood of an array of scenarios. This will enable less conservative headroom, allow Projects to advance faster under fairer conditions via evidence-based capacity allocation, and lower costs through factors like reduced re-work due to mitigations targeted in the design process.

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

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by investigating the use of probabilistic modelling methods for power network design. The majority of Expert Assessors noted that increasing renewable generation, energy storage and changing demand patterns introduce greater uncertainty into electricity networks, which is not fully captured by existing deterministic modelling approaches used by NGET. The proposed modelling framework aims to better account for these uncertainties and support more effective system planning. One Expert Assessor did not consider the Project to have met the Innovation Challenge as it focuses primarily on probabilistic modelling to inform long-term system planning, rather than real-time network models and dynamic constraint management. However, the majority of Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met. The Project has identified potential to deliver a net benefit to electricity consumers by developing risk-indexed processes that enable NGET to better understand and manage uncertainties associated with demand and generation variability. The Expert Assessors noted that the approach could support improved system planning decisions, reduce operating costs, enable faster and fairer network connections, and improve the integration and utilisation of renewable energy sources. The Project is considered to involve network innovation by developing probabilistic modelling methods for power network design and transmission network planning. The Expert Assessors noted that the proposed framework will assess uncertainties in load and generation forecasts and evaluate their impact on contingency analysis and network planning.

The Project is not considered to undermine the development of competitive markets, because the modelling approaches developed through the Project could be applied more widely across the electricity sector and may benefit other GB transmission owners and distribution network operators. The Project does not restrict other network companies from procuring similar services and intends to disseminate its findings across the industry.

The Project is considered innovative, novel and risky by proposing the development of probabilistic modelling techniques capable of incorporating uncertainties associated with renewable generation, network capacity and demand variation. The Expert Assessors noted that existing deterministic modelling approaches used by NGET do not quantify the likelihood of events occurring and are therefore limited in their ability to support comprehensive risk assessment. The proposed work will develop and test new modelling approaches to address these uncertainties using real transmission network data.

The Project is considered to include participation from a range of stakeholders. The Expert Assessors noted that NGET are the primary user of the Project outputs, while WSP will provide engineering expertise and the University of Edinburgh will contribute specialist knowledge in probabilistic modelling and energy system analysis. The academic expertise provided by the University of Edinburgh will be applied to real transmission network data supplied by NGET.

The Project is considered to represent value for money and be costed competitively because costs have been allocated between Project Partners in line with their responsibilities. The use of the University of Edinburgh's facilities and expertise represents an efficient use of resources relative to the potential benefits of the proposed work. However, one Expert Assessor noted that the cost allocation to Work Package 1 appears relatively high when compared with the other technical work packages. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered to have a robust methodology capable of progressing in a timely manner because it includes a clearly defined workplan with five structured work packages and identified responsibilities. A risk register has also been developed to identify key risks, including data availability and governance

barriers that could affect progression to later SIF Phases, with mitigation measures proposed to address these risks.

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 further clarification on how the proposed probabilistic modelling approach will align with the Innovation Challenge requirements, including how the outputs may support the development of real-time or operational network modelling capabilities where relevant. Prior to the kick-off meeting, the Funding Party must provide additional justification for the allocation of costs to Work Package 1 to demonstrate that the costs remain proportionate to the activities being delivered.

4 Innovation Challenge: High-energy demand point integration

4.1 Overview of Projects

This sub-section covers the assessment of Discovery Phase Applications received into the 'High-energy demand point integration' Innovation Challenge in Cycle 5.

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

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Decision by Ofgem for funding (Yes/No)
10194238	Flexibility for Large Assets to Rapidly Energise (FLARE)	National Grid Electricity Transmission plc	138,212	13,821	124,391	Yes	Yes
10191629	Power Lines	Scottish and Southern Electricity Networks Distribution (SSEN Distribution)	106,469	10,647	95,822	Yes	Yes
10194428	Unified Connections Portal	SGN	168,972.00	19,892.00	149,080.00	Yes	No

4.2 Expert Assessors' recommendations on Projects

4.2.1 Project 10194238 - Flexibility for Large Assets to Rapidly Energise (FLARE)

Submitted Project description
Project FLARE is a SIF Discovery Project to accelerate Great Britain (GB) transmission connections for large loads (e.g., data centres) by using flexible demand as a condition for earlier access, helping address connection delays and queue management challenges. Building on EPRI's DCFlex framework, FLARE tests standardised flexibility classes (bounded by depth, duration, frequency/availability, and response) so obligations are transparent and system value is predictable across locations. Discovery will combine headroom modelling (hosting capacity/queue impacts) with stakeholder alignment on valuation plus measurement and verification at transmission level, producing a headroom analysis and agreed principles to progress into SIF Alpha and Beta.

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

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by developing a standardised framework for flexible transmission-level connections that aims to accelerate grid connection processes for large demand customers. The Expert Assessors noted that the proposed methodology seeks to better assess demand profiles for large loads connecting to the transmission network and could enable more efficient use of network capacity by reducing the safety margins currently applied to connection requests. The Project focuses on using demand flexibility to improve the integration of high-demand sites, which could reduce connection times and improve the utilisation of existing network assets. The Project has identified potential to deliver a net benefit to electricity consumers by enabling reduced reinforcement requirements and faster connection timelines for large loads. The Expert Assessors noted that the proposed framework could support reduced waiting times for large consumers seeking transmission connections and may enable the development of new flexibility services that support more efficient operation of the transmission network. Improved utilisation of network capacity could also support more efficient use of existing infrastructure. The Project is considered to involve network innovation by developing a framework to quantify the flexibility of large loads and incorporate this into transmission connection planning and queue management processes. The Expert Assessors noted that no standardised framework currently exists in Great Britain to incorporate large-load demand flexibility into transmission-level connection offers. The proposed work seeks to assess the headroom that could be unlocked through flexible demand and map the characteristics of demand flexibility onto

the operational needs of the transmission network, which could change how connection offers are made and how existing network capacity is utilised.

The Project is not considered likely to undermine the development of competitive markets because it focuses on developing open, technology-agnostic frameworks based on generic requirements and principles rather than promoting any specific technology, provider or service solution. The Project will disseminate its outputs which may support the development of competitive market solutions by enabling multiple providers to develop services aligned with the framework.

The Project is considered innovative and novel by proposing the development of a transmission-level framework for incorporating large-load demand flexibility into connection planning and queue management processes. The Expert Assessors noted that such frameworks have not previously been applied in a well-defined way to transmission-level demand connections in Great Britain. The proposed approach therefore introduces a degree of risk, particularly as it may be challenging to integrate standardised classes of large-load flexibility within existing transmission access and queue management processes and because the perspectives of high-demand site operators and network operators may not always align.

The Project is considered to include participation from a range of stakeholders because it brings together NGET as the GB transmission network owner and the Electric Power Research Institute (EPRI) as an established international research organisation with recognised expertise in power systems and large-load flexibility. The Project team has also indicated early engagement with data centre operators, including hyperscalers and national neocloud providers, to inform the work through stakeholder engagement activities. However, the Expert Assessors noted that the formal consortium is limited to two Project Partners and that the Project could be strengthened in future Phases by securing confirmed participation from large-load customers to support the development and validation of the proposed framework. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered to represent value for money and be costed competitively because Expert Assessors noted that the total cost is modest for a

Discovery Project and that the proposed work builds on existing outputs from EPRI's DCFlex and NIA's DCConnect to avoid duplication. The Project leverages international experience and existing research to inform the proposed work. However, the Expert Assessors noted that the cost allocation is heavily weighted towards one Project Partner, with the Funding Party contributing a comparatively smaller contribution towards the Project. In addition, the day rates were considered to be at the upper end for a desk-based study with limited field activity. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered to have a robust methodology capable of progressing in a timely manner because it follows a clear three-Phase structure with defined quality assurance gates, a structured workplan supported by a clear Gantt chart and appropriate allocation of resources prioritising technical delivery. The Project also includes defined deliverables, a risk register and an appropriate governance structure, which together provide confidence that the Project will be delivered to time, cost and quality.

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 further detail on how engagement with large-load customers, including data centre operators and other high-demand sites, will be incorporated into the Project. This must include confirmation of the source(s) of data used to inform the proposed framework and how this data reflects real-world demand flexibility characteristics. Prior to the Project kick-off meeting, the Funding Party must provide further justification for the allocation of Project costs between Project Partners, including clarification of the activities associated with work packages and the basis for the proposed day rates.

Prior to the Project kick-off meeting, the Funding Party must provide further detail demonstrating how the Project delivers additionality relative to the March 2026 *Power-Flexible AI Factories* report. This must include:

(i) a defined plan and specification quantified, location-specific GB headroom scenarios, including confirmation of the source(s) of data used and how this data has been validated; and

(ii) a defined outline and drafting approach for a flexible connection construct, including metering and validation (M&V) requirements and customer obligations.

The Funding Party must clearly set out what elements are new compared to the existing report and how these will be taken forward through the Project.

4.2.2 Project 10191629 - Power Lines

Submitted Project description
Power Lines brings together Network Rail, SSEN and Mott MacDonald to explore a coordinated approach to developing Britain's electricity and rail infrastructure. Currently, these systems are planned independently, leading to duplicated construction, higher costs, and greater disruption. Power Lines will investigate the feasibility, technical requirements and regulatory landscape of combining three-Phase power distribution with rail electrification along existing railway corridors. This integrated model aims to accelerate network capacity, reduce environmental and community impacts, lower long-term system costs, and support decarbonisation.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by exploring the potential to combine electricity infrastructure for grid and rail systems through the coordinated use of existing corridors. The Expert Assessors noted that the Project investigates the feasibility of deploying three-phase electricity infrastructure alongside rail electrification assets, enabling more coordinated planning between rail and electricity networks. By examining how existing infrastructure could be used more efficiently, the Project has the potential to support faster development of connections and more coordinated expansion of network capacity. The Project has identified potential to deliver a net benefit to electricity consumers by exploring approaches that could increase network capacity, reduce infrastructure duplication and enable more efficient deployment of electricity and rail infrastructure. The Expert Assessors noted that the proposed approach could support more efficient use of existing infrastructure and accelerate connection timelines for new demand. While many of the anticipated benefits remain

qualitative at this stage, the Discovery Phase is appropriate for developing the evidence base required to assess these potential outcomes.

The Project is considered to involve network innovation by exploring a new approach to coordinating electricity distribution infrastructure with rail electrification systems. The Expert Assessors noted that the proposed work examines how three-phase connections could be integrated with rail infrastructure and how regulatory and operational constraints might be addressed. This represents a novel approach to infrastructure planning that could influence how network capacity is developed and utilised.

The Project is not considered likely to undermine the development of competitive markets because the proposed work focuses on feasibility analysis and system-level learning rather than the development of proprietary technologies or exclusive commercial arrangements. The outputs are intended to be disseminated to the wider industry, which may enable other network operators to explore similar approaches and support collaboration across infrastructure sectors. However, one Expert Assessor noted that engagement with a broader range of network operators could strengthen the proposal. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered innovative and novel because it explores a cross-sector infrastructure coordination model between electricity and rail networks seeking to apply a more integrated and structured approach. The Expert Assessors noted that the concept introduces a number of technical, regulatory and commercial uncertainties, including challenges associated with standards alignment, asset ownership, safety considerations and planning permissions. These uncertainties indicate that the work carries a degree of risk and that the proposed feasibility study is appropriate to test the viability of the concept.

The Project is considered to include participation from a suitable range of stakeholders because it brings together organisations with relevant expertise in electricity networks, rail infrastructure and engineering consultancy, providing the technical and operational capability required for Discovery Phase work. However, one Expert Assessor noted that the proposal could be strengthened through

broader engagement with other distribution network operators and industry stakeholders to support knowledge sharing and potential future adoption. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered to provide value for money and be costed appropriately for the Discovery Phase. The Expert Assessors noted that the proposed costs are proportionate to the exploratory nature of the work, with clear focus on resolved key uncertainties prior to any larger investment decisions. The budget is appropriately structured across Project Partners in line with their roles. The Project is also expected to generate valuable insights that could inform more efficient infrastructure planning. However, one Expert Assessor suggested that additional resource could have been allocated to deeper research and stakeholder engagement to strengthen the analysis. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered to have a methodology capable of progressing in a timely manner because it includes a defined work plan, deliverables and governance arrangements aligned with the objectives of the Discovery Phase. However, one Expert Assessor expressed concern that the level of technical detail in the methodology is limited and that additional clarity would strengthen confidence in the proposed approach. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

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

Recommended Project-specific conditions
Prior to the end of phase meeting, the Funding Party must provide additional detail on the technical methodology that will be used to assess the feasibility of

integrating electricity distribution infrastructure with rail electrification systems, including any key assumptions and analytical approaches.

Prior to the Project end of phase meeting, the Funding Party must provide further detail on how the Project will actively coordinate with relevant SIF Projects and sector stakeholders to support learning and replication. As a minimum, this must include consideration of other SIF Projects, such as Conductor and Flexible Railway Energy Hubs, as well as any other relevant innovation projects from NIA, NIC, or equivalent innovation funds, clearly setting out how the Project will build on existing learning and avoid duplication.

4.2.3 Project 10194428 - Unified Connections Portal

Submitted Project description
The Unified Connections Portal will redefine how the customer connects to the energy network. Instead of today's slow, fragmented and paper-heavy processes, it envisions a single intelligent front door where major demand customers and complex buildings can access real-time capacity insight, streamlined workflows and transparent progress tracking. The Project will unlock faster, fairer and more efficient connections, strengthen support for MOBs and vulnerable consumers. This will lay the foundations for whole-system, cross-vector planning to enable GB customers to smoothly transition to a resilient, low-carbon energy system.

Eligibility Criteria met or not met – Expert Assessors' evaluation	
1. Projects must address the Innovation Challenge set by Ofgem.	Met
2. Projects must have clearly identified potential to deliver a net benefit to gas or electricity consumers	Met
3. Projects must involve network innovation.	Met
4. Projects must not undermine the development of competitive markets.	Met

5. Projects must be innovative, novel and/or risky.	Met
6. Projects must include participation from a range of stakeholders.	Met
7. Projects must provide value for money and be costed competitively.	Met
8. Projects must be well thought through and have a robust methodology so that they are capable of progressing in a timely manner.	Met

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The majority of Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by exploring the creation of a unified portal for gas connections that has the potential to accelerate connection processes for major demand customers such as data centres, industrial sites, heat networks and multiple occupancy buildings. The Expert Assessors noted that the proposed approach aims to improve the efficiency of the connections process through the use of AI-enabled document handling, rule-based workflows and improved user interface design. PhasePhase The Project has identified potential to deliver a net benefit to gas consumers by enabling more efficient connections processes and reducing delays associated with the current fragmented application process. The Expert Assessors noted that quicker and more streamlined connection processes could support more efficient network development and improve the experience of users seeking gas connections. However, the Expert Assessors identified that the Application provides limited quantification of the expected benefits and does not clearly demonstrate the scale of improvements that could be delivered through the proposed approach. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met. The Project is considered to involve network innovation by examining how a unified digital portal could be developed to support gas connection applications.

The proposed work also provides the opportunity to develop reusable workflows that could potentially be extended to other network operators or energy vectors in future Phases.

The Project is not considered to undermine the development of competitive markets because the work is focused on feasibility assessment during the Discovery Phase and does not involve the development of a proprietary product or any procurement activity. The proposed portal is intended to streamline the administrative aspects of the connections process and improve transparency for users seeking connections, without introducing bias or favouring particular suppliers or delivery models.

The Project is considered innovative and risky because it explores a new approach to managing connections through more automated digital workflows. The Expert Assessors noted that the proposed use of AI for document capture and data handling goes beyond business-as-usual and introduces technical and organisational risks, particularly in relation to stakeholder adoption and regulatory compliance. However, one Expert Assessor noted that further justification was needed to demonstrate how the proposal differs from similar initiatives being explored by other network companies.On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered to include participation from a range of stakeholders as it proposes to engage with a range of stakeholders, including large-load customers, green gas customers, social housing groups, non-profit consumer groups and local authorities, to test the proposed approach. Outputs are also expected to be disseminated through the Future Energy Networks and ENA groups. The Expert Assessors noted that the proposal would have been strengthened through confirmation of participation from specific users or user groups, particularly those who have experienced delays in the connections process, or a work package. focused on understanding the wider landscape of connections portals across other gas and electricity networks. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The majority of Expert Assessors considered the Project to represent value for money and be costed competitively for the Discovery Phase. The Expert Assessors noted that the overall level of spend is proportionate to the scope of the proposed activities and that costs are appropriately distributed across Project Partners in line with their roles and contributions. However, one Expert Assessor raised concerns regarding the inclusion of a "contribution in kind" line item as a Project cost and noted that the financial benefits of the Project, and the rationale for funding, could be more clearly articulated. Despite these concerns, the majority of Expert Assessors considered that the Project demonstrates value for money and meets this Eligibility Criterion.

The Project is considered to have a robust methodology capable of progressing in a timely manner because it includes a comprehensive Project plan with clearly defined work packages, delivery milestones and success criteria, supported by a risk register and governance through a Steering Group.

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

DO NOT FUND

Ofgem disagrees with the Expert Assessors and considers that the Project has not met Eligibility Criteria 6 and 7.

Ofgem does not consider that the Project adequately demonstrates participation from a sufficient range of stakeholders. While the consortium includes relevant expertise, the Project lacks clear, evidenced engagement with key end users, particularly those directly impacted by connections processes. The proposed engagement activities are largely prospective and are not supported by confirmed participation or structured plans to capture user needs. In addition, the Project does not sufficiently demonstrate how the proposed solution has been informed by, or aligns with, the wider connections ecosystem. As a result, Ofgem is not satisfied that the Project has established a credible basis for stakeholder input or sector-wide applicability.

Ofgem does not consider that the Project sufficiently demonstrates value for money. The Project does not provide a robust justification of how the proposed

activities will deliver value relative to the requested funding. In particular, there is limited evidence linking the scope of work to clearly defined, measurable outcomes. The focus on gas network applications, without clear consideration of wider whole system applicability, further constrains the potential for broader value to be realised. As a result, Ofgem is not satisfied that the Project represents an efficient or well-justified use of SIF funding.

Recommended Project-specific conditions
N/A

5 Innovation Challenge: Consumer-centric grid expansion

5.1 Overview of Projects

This section covers the assessment of Cycle 5 Discovery Phase Applications received into the 'Consumer-centric grid expansion' Innovation Challenge.

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

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Decision by Ofgem for funding (Yes/No)
10193858	Matchmaker	National Grid Electricity Distribution	167,720	17,860	149,860	Yes	Yes
10192918	Powering Ohms	Scottish and Southern Electricity Networks Distribution (SSEN Distribution)	151,361	17,835	133,526	Yes	Yes
10193298	RISE - Robotics Integration for Sustainable Energy	Scottish and Southern Electricity Networks Distribution (SSEN Distribution)	161,985	16,198	145,787	Yes	Yes

10191600	PLACE - Participation Led by communities, Anchored in trust, Co-created with social value and digital tools, Enabling lasting legacy	Scottish and Southern Electricity Networks Transmission	168,997.00	18,997.00	150,000.00	No	No

5.2 Expert Assessors' recommendations on Projects

5.2.1 Project 10193858 - Matchmaker

Submitted Project description
Opposition to renewables and new grid infrastructure is growing. People can see turbines and pylons in the landscape, but they don't see the benefits flowing back to their community. What's more, securing a grid connection for new generation can be especially challenging for communities - and shared ownership Projects are few and far between. That's why we're developing Matchmaker. It's a service that connects developers with communities to explore shared ownership of new generation. This Project will test whether better coordination could help unlock shared ownership at scale, build local support and reduce risk for the networks.

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

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by exploring how shared ownership models for new generation can improve public engagement and acceptance of renewable energy developments and new grid infrastructure. The Expert Assessors noted that the proposal aligns with the Innovation Challenge on community engagement and public acceptance strategies. By developing a digital matchmaking platform to connect communities, developers and network operators, the Project has the potential to address barriers associated with local opposition and support more effective delivery of infrastructure. The problem statement is clearly articulated and reflects a timely and relevant challenge across the GB energy system. The Project has identified potential to deliver a net benefit to electricity consumers by supporting more efficient deployment of renewable energy and associated infrastructure. The Expert Assessors noted that improved community engagement could reduce delays in Project development, support more efficient network expansion and enhance overall system performance. The Project may also enable new opportunities for community participation and value sharing. While some assumptions underpinning these benefits remain high-level, the Discovery Phase is appropriate for developing the supporting evidence base. The Project is considered to involve network innovation by introducing a new engagement model that connects communities, developers and network operators through shared ownership arrangements. The Expert Assessors noted that this represents a novel approach within the GB energy system, moving beyond traditional stakeholder engagement and creating new mechanisms for collaboration and participation in infrastructure development.

The Project is not considered likely to undermine the development of competitive markets because the work is focused on feasibility and service design, with outputs intended to be openly shared across the sector. The proposed approach does not introduce barriers to entry and may support the development of new services and opportunities for a range of market participants.

The Project is considered innovative, novel and risky because it explores the application of digital matchmaking approaches, including the use of data analytics and artificial intelligence, to enable shared ownership models in energy infrastructure. The Expert Assessors noted that this represents a departure from business-as-usual engagement practices and introduces both technical and delivery risks, including the challenge of aligning the interests of multiple stakeholders and demonstrating practical uptake.

The Project is considered to include participation from a range of stakeholders. The Expert Assessors noted that the consortium includes a distribution network operator and an organisation with experience in community energy and engagement, supported by plans for an Advisory Board including representatives from government, regulators, industry and community groups. This approach is expected to provide access to a broad range of perspectives and support the development of a solution that reflects stakeholder needs.

The Project is considered to represent value for money and be costed competitively as costs are proportionate to the scope of the Discovery Phase and are aligned with the activities proposed, which are focused on addressing key uncertainties and generating actionable insights. The Project builds on previous work in community energy and leverages existing knowledge and relationships, supporting efficient delivery. The anticipated outputs are expected to provide a valuable evidence base to inform future decision making and potential wider application across the sector, supporting longer-term system benefits relative to the upfront investment. While one Expert Assessor suggested that further justification could be provided in relation to how the work differs from existing initiatives, on balance the costs were considered reasonable.

The Project is considered to have a robust methodology capable of progressing in a timely manner because it includes a clear structure of work packages, defined

milestones and a comprehensive risk register with appropriate mitigation measures. The governance arrangements and prior working relationship between Project Partners provide confidence that the Project can be delivered within the Discovery Phase timeframe.

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 further detail on the evidence base supporting the proposed shared ownership approach, including how the Project will assess its effectiveness in improving community engagement and reducing barriers to infrastructure deployment. Prior to the kick-off meeting, the Funding Party must set out how the Project builds on and differentiates from existing initiatives, for example the Innovate UK's Net Zero Living Programme and SIF's REACH Project, relating to community energy and engagement (including relevant SIF, NIA or other programmes), clearly demonstrating additionality.

5.2.2 Project 10192918 - Powering Ohms

Submitted Project description
Powering Ohms looks at smarter ways to upgrade local electricity networks so they can support more electric vehicles, heat pumps, and other low-carbon technologies. Today, networks are often reinforced by digging up streets to lay new cables or build large substations, which is expensive, slow, and disruptive for communities. Powering Ohms explores alternatives, including smaller pavement-based substations and compact devices that manage voltage at the customer connection

point. By using advanced power-electronics, the Project aims to deliver more network capacity faster, at lower cost, and with much less disruption to customers and communities.

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by developing solutions to manage voltages locally at customer premises through the installation of voltage correction devices, supporting more efficient integration of low carbon technologies on the low-voltage (LV) network. The Expert Assessors noted that the proposed approach aligns with the Innovation Challenge, particularly the focus on scalable technical innovations for grid expansion. By enabling more localised

voltage management and reducing reliance on traditional reinforcement, the Project has the potential to support accelerated grid expansion and improved access for technologies such as Electric Vehicle chargers, heat pumps, Photovoltaic systems and large demand connections.

The Project has identified potential to deliver a net benefit to electricity consumers by supporting more efficient network operation and improved utilisation of existing assets. The Expert Assessors noted that the proposed approach could reduce disruption associated with network works, improve LV voltage profiles through localised control, and enable additional capacity for low carbon technology connections. The Project may also support more efficient network planning by reducing the need for reinforcement and improving overall system performance. In addition, the potential for reduced disruption to communities and improved traffic management during network works was identified as a wider benefit.

The Project is considered to involve network innovation by examining targeted technical solutions to accelerate grid expansion through the use of compact voltage transformation solutions and local voltage control at customer premises. The Expert Assessors noted that the Project proposes the development and application of new approaches to managing voltage at the LV level, including the use of advanced power electronics, which could support more efficient integration of low carbon technologies and improve network performance.

The Project is not considered likely to undermine the development of competitive markets because the outputs of the Discovery Phase Project will be made available to other GB distribution network operators. The Project does not introduce any restrictions that would prevent other operators from procuring similar solutions. The proposed solutions may also enable the development of new services within the electricity sector, supporting wider adoption and collaboration across the industry.

The Project is considered innovative, novel and risky by building on previous work in compact substations and active LV management while proposing new approaches to local voltage control and compact voltage transformation. The Expert Assessors noted that the use of advanced power electronics and the

application of these technologies at customer premises introduces technical uncertainty and implementation challenges. The Project therefore involves a level of risk appropriate for SIF funding, particularly as it explores solutions that are not currently part of business-as-usual approaches in the GB network context.

The Project is considered to include participation from a range of stakeholders. The Expert Assessors noted that the consortium includes a balanced mix of network operators, research organisations and public engagement groups, providing the technical, operational and customer-focused expertise required to deliver the Project. The inclusion of a Distribution Network Operator ensures the outputs are grounded in network requirements and can be applied in practice, while academic expertise in power electronics provides the necessary technical capability to support the proposed work. The involvement of organisations such as the National Housing Federation supports access to end users and facilitates meaningful stakeholder engagement. In addition, the consortium builds on existing working relationships between Project Partners, which supports effective collaboration and delivery. The Project is considered to represent value for money and be costed competitively as the overall level of funding requested is proportionate for a Discovery Phase Project. Costs have been allocated across Project Partners in line with their roles and contributions, and Project Partner contributions, including in-kind support, demonstrate commitment to the Project. The Expert Assessors also noted that the proposed spend is aligned with the defined work packages and is considered sufficient to deliver the intended outputs. The Project builds on previous innovation activity and leverages existing knowledge and capability, supporting efficient use of funding and avoiding unnecessary duplication. Overall, the Project is expected to generate valuable learning to inform future decision making, and the level of investment is considered appropriate relative to the scope and objectives of the work

The Project is considered to have a robust methodology capable of progressing in a timely manner because it includes a well-defined plan with clear milestones, structured work packages and an established governance approach led by SSEN Distribution. A comprehensive risk register has been developed, identifying key

risks such as stakeholder availability, regulatory compliance and resource constraints, with appropriate mitigation measures 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
Prior to the Project kick-off meeting, the Funding Party must provide further detail on how the Project will coordinate with the COLLABORATE Project (led by Cadent Gas and National Grid Electricity Distribution). This summary should set out any opportunities for alignment, any shared insights, and how any relevant learnings have informed the development of the Project's approach.

5.2.3 Project 10193298 - RISE - Robotics Integration for Sustainable Energy

Submitted Project description
DNOs face the dual challenge of expanding network capacity for decarbonisation while maintaining the resilience and reliability customers expect. Without new approaches, they risk higher operational hazards, slower fault response, and rising costs. This Project will explore how robotics can transform network management, maintenance, and operations, identifying where automation can support or replace high-risk, labour-intensive, or disruptive tasks. By enabling faster, safer working practices and more efficient operations, robotics can minimise customer disruption. RISE will define how automation can unlock new capabilities, strengthen resilience, and provide a clear roadmap for meeting future operational, regulatory, and decarbonisation goals.

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by exploring how robotics and autonomous systems can be applied within electricity distribution field operations to enhance safety, efficiency and resilience. The Expert Assessors noted that the Project focuses on reducing manual labour requirements and improving how networks are inspected, maintained and expanded through the adoption of contemporary technologies. This aligns with the aims of the Innovation Challenge by supporting more efficient network operation and facilitating improved delivery of maintenance and reinforcement activities. The Project has identified potential to deliver a net benefit to electricity consumers by enabling improvements in operational efficiency, including reduced fault-response times, fewer interruptions and more efficient maintenance processes.

The Expert Assessors noted that the application of robotics could support more efficient network operations and improved service reliability, contributing to enhanced performance of electricity distribution networks.

The Project is considered to involve network innovation by examining how robotics and autonomous systems can be integrated into electricity distribution operations. The Expert Assessors noted that this represents a novel approach to transforming how networks are inspected, maintained and operated, moving beyond current business-as-usual practices. The proposed work could influence how network infrastructure is developed and maintained through the adoption of new technologies.

The Project is not considered likely to undermine the development of competitive markets because it focuses on developing a framework for assessing and supporting the adoption of robotics rather than promoting specific technologies or suppliers. The outputs are intended to be disseminated to the wider sector, supporting collaboration and enabling competition in the development of new solutions.

The Project is considered innovative and novel because it explores the application of robotics and autonomous systems across electricity distribution field operations, an area where adoption remains at an early stage . The Expert Assessors noted that there is currently no equivalent framework within the sector for systematically assessing the use of robotics in this context. The Project also introduces a degree of risk associated with the adoption of advanced technologies and their integration into existing operational practices. The Project is also considered innovative in that it explores the application of state-of-the-art technologies to core network activities such as inspection, maintenance and live line working, with the potential to fundamentally change how these activities are delivered. This represents a departure from existing business-as-usual practices and introduces technical, operational and organisational uncertainties, particularly in relation to integration with existing processes and workforce adoption. These uncertainties demonstrate that the work carries a level of risk appropriate to SIF funding and would be unlikely to progress without support through the programme.

The Project is considered to include participation from a range of stakeholders. The Expert Assessors noted that the consortium brings together SSEN Distribution as the lead DNO with operational expertise, the National Robotarium providing specialist research and engineering capability, and Collaborative Enterpiris Engagement and Development (CeeD) contributing cross-industry automation knowledge and access to a broad network of manufacturing and engineering organisations. This combination ensures that the Project benefits from operational, technical and industry perspectives, with planned engagement with end users and wider stakeholders. The involvement of an operational DNO grounds the work in real network requirements and use cases, while academic expertise supports the development and assessment of advanced technologies. Access to a wider industrial network through CeeD also enables engagement with technology providers and end users, supporting practical insights into deployment and scalability.

The Project is considered to represent value for money and be costed competitively as the proposed costs are aligned with industry norms for a Discovery Phase Project and are proportionate to the scope of work , with activities focused on generating targeted outputs and addressing key uncertainties. The Project is expected to generate outputs and learnings that will be made available to other network operators and innovators, supporting wider application across the sector. The Expert Assessors also noted that the Project has the potential to enable operational efficiency improvements within electricity distribution activities, which supports the overall value proposition of the work. Taken together, the alignment of costs to scope, the focus on transferable outputs, and the potential for broader sector benefit provide a clear justification for value for money at the Discovery Phase.

The Project is considered to have a robust methodology capable of progressing in a timely manner because it follows a structured four work-package approach, progressing from readiness review through use-case prioritisation to cost-benefit analysis and industry engagement. The Application includes clear roles and responsibilities for Project Partners, supported by regular Project meetings, defined quality gates aligned with milestones and a comprehensive risk register

with mitigation measures. This provides confidence that the Project can be delivered within the Discovery Phase timeframe.

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 set out how the Project will leverage relevant learning from existing Projects exploring the use of robotics in electricity networks, including Projects undertaken by transmission owners (for example, Optimisation and Diagnostics for Innovative Networks (ODIN) and other Live Line Working robotics initiatives), to ensure that the proposed approach builds on existing knowledge and avoids duplication. At the end of Phase, the Project should report on where applicable learnings were incorporated into the Project. Prior to the end of Phase meeting, the Funding Party must provide a defined and prioritised set of robotics and autonomous system use cases for electricity distribution operations, including: (i) clear selection criteria used to identify and rank use cases, (ii) justification of alignment with specific network operational needs (e.g. inspection, maintenance, fault response), (iii) expected operational benefits and constraints for each use case.

5.2.4 Project 10191600 – PLACE - Participation Led by communities, Anchored in trust, Co-created with social value and digital tools, Enabling lasting legacy

Submitted Project description
With the scale and pace of grid expansion accelerating, PLACE explores how Transmission Owners can evolve engagement approaches alongside infrastructure

planning and delivery. By working early and collaboratively with community anchor groups as trusted connectors, with the reach and capability to engage a broader and more diverse range of stakeholders, the Project examines innovative ways of engaging communities and capturing local priorities and social value outcomes. It also explores how digital platforms with AI capabilities can help communities articulate local needs and match their priorities with opportunities created by network investment to support trust, clarity, and consumer value.

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
DO NOT FUND
The Expert Assessors agree that this Project has not met the Eligibility Criteria and do not recommend this Application for funding. The Project addresses the Innovation Challenge by exploring how a digital platform could improve communication transparency between transmission

owners and local stakeholders. The Expert Assessors noted that the proposal aligns with the intent of the Innovation Challenge, particularly in relation to improving engagement and coordination. However, the majority of Expert Assessors considered that the Application lacks sufficient specificity and does not clearly articulate the novel approach being proposed, particularly in relation to the use of digital and AI-enabled solutions. On balance, the Expert Assessors consider that the evidence provided does demonstrate that this Eligibility Criterion is met.

The Project has not identified a clear potential to deliver a net benefit to electricity consumers. While a range of potential benefits is described, the majority of Expert Assessors noted that the Application does not clearly explain how the proposed improvements in communication would translate into tangible system or network outcomes. In particular, the link between the proposed approach and how it would influence decision-making, planning processes or delivery timelines is not sufficiently articulated. As a result, the rationale for consumer benefit remains high-level and lacks a clear line of sight to impact.

The Project is not considered to involve network innovation because the majority of Expert Assessors noted that the proposal appears to rely on the application and configuration of existing digital tools and best practice approaches, rather than the development of new or novel solutions. Insufficient detail is provided on how AI or digital components would deliver a step change from current practices, and the stated level of innovation is not clearly substantiated.

The Project is not considered to undermine the development of competitive markets because the proposal is focused on early-stage exploration and does not involve the development of proprietary solutions or introduce any barriers to competition. The outputs are intended to inform future approaches and would be subject to transparent and competitive processes if progressed.

The Project is not considered innovative, novel or risky because the majority of Expert Assessors noted that the Application does not clearly articulate how the proposed approach differs from existing practices or introduces meaningful technical or commercial risk. The reliance on established methods and existing

digital platforms suggests that the proposal reflects adoption of current approaches rather than the development of new solutions.

The Project is considered to include participation from a range of stakeholders because the consortium brings together a transmission owner, a technology platform, a community hub and organisations with expertise in community engagement, providing access to relevant stakeholders and insights required for the proposed work.

The Project is considered to represent value for money and be costed competitively. as the overall cost profile is broadly aligned with market expectations for a Discovery Phase Project and costs are clearly presented across Project Partners. The majority of Expert Assessors considered that the level of funding requested is proportionate to the scope of exploratory and feasibility-focused activities. However, one Expert Assessor raised concerns regarding the proportionality of spend within specific work packages, particularly where a relatively high level of resource is allocated to preparatory or desk-based activities compared to direct engagement or delivery. Despite these reservations, the majority view was that, taken as a whole, the cost structure is appropriate, and the Project represents value for money for the Discovery Phase.

The Project is considered to have a methodology capable of progressing in a timely manner because the Project plan, governance arrangements and risk management approach are clearly defined and provide confidence that the proposed activities could be delivered within the Discovery Phase timeframe.

Decision from the Office of Gas and Electricity Markets (Ofgem)
DO NOT FUND
Ofgem does not approve this Project for funding. While the Expert Assessors also did not recommend the Project for funding, Ofgem's decision does not align fully with the Expert Assessors' reasoning. Specifically, Ofgem considers that the Project has not met Eligibility Criteria 2 and 3.The Project has not demonstrated a clear potential to deliver a net benefit to electricity consumers. While the Application sets out a number of potential benefits associated with improved communication and engagement, these are described at a high level and lack

sufficient clarity. In particular, the Application does not clearly demonstrate how the proposed solution would translate into measurable improvements in network performance or system outcomes.

The Project does not sufficiently demonstrate network innovation. The Application lacks clarity on the specific innovative aspects of the proposed digital and AI-enabled solution, and it is not evident how the approach differs materially from existing tools or established practices. The level of detail provided is insufficient to demonstrate a clear step change beyond current business-as-usual activities.

Recommended Project-specific conditions
N/A

6 Innovation Challenge: Enhanced system visibility and control

6.1 Overview of Projects

This section covers the assessment of Cycle 5 Discovery Phase Applications received into the 'Enhanced system visibility and control' Innovation Challenge.

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

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Decision by Ofgem for funding (Yes/No)
10192006	HF-PQ Net (High Frequency Power Quality for LCT networks)	Scottish and Southern Electricity Networks Distribution	115,694	11,570	104,124	Yes	Yes

6.2 Expert Assessors' recommendations on Projects

6.2.1 Project 10192006 – HF-PQ Net (High Frequency Power Quality for LCT networks)

Submitted Project description
High-frequency distortion from low-carbon technologies (LCTs) such as EV chargers and heat pumps may fall outside current UK grid codes, and network operators have no consistent method for identifying or monitoring these emissions, with limited experience mitigating them. If unmanaged, this distortion could hinder decarbonisation by undermining network reliability and limiting further LCT deployment. Project HF-PQ Net will review existing practice, assess high-frequency distortion impacts on system assets, and define requirements for monitoring beyond the present accessible range. The Project aims to improve power quality, support planning, and mitigate risks that could undermine grid resilience as LCT adoption increases.

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

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by improving power quality, planning capability and operational visibility through enhanced monitoring of high-frequency voltage distortions associated with increasing Low Carbon Technology deployment. The Expert Assessors noted that the proposal aligns with the Innovation Challenge, particularly the focus on advanced monitoring and automated grid control. By exploring sensing approaches and analytical methods to identify and manage high-frequency distortions, the Project has the potential to support more proactive decision-making and improved system resilience. The Project has identified potential to deliver a net benefit to electricity consumers by enabling more efficient network operation and improved planning capability. The Expert Assessors noted that enhanced monitoring of high-frequency distortions could reduce equipment failure risks, improve voltage control and support more efficient utilisation of existing network assets. The Project may also reduce uncertainty associated with the integration of low-carbon technologies and support improved network performance and reliability. The Project is considered to involve network innovation by exploring new approaches to monitoring and managing high-frequency voltage distortions in LV networks. The Expert Assessors noted that this represents a step change beyond current business-as-usual practices, particularly in relation to monitoring beyond existing regulatory requirements. The proposed work aims to develop methodologies to identify when and where monitoring is required and to inform future operational standards and planning processes. The Project is not considered to undermine the development of competitive markets because the work focuses on feasibility and learning generation, with

outputs intended to be disseminated across the sector. The Project does not introduce proprietary solutions or restrict market access and may support the development of new services and standards that benefit the electricity industry.

The Project is considered innovative, novel and risky because it addresses a monitoring challenge that is not currently managed within existing network processes. The Expert Assessors noted that the work involves technical uncertainty, particularly in relation to measurement techniques, data interpretation and integration into planning processes. The potential requirement to inform or influence future standards further increases the level of risk, making the Project appropriate for SIF funding.

The Project is considered to include participation from a range of stakeholders. The Expert Assessors noted that the collaboration between SSEN Distribution and NPL Management Ltd. provides a strong combination of operational expertise and specialist measurement capability. SSEN Distribution provides direct operational insight from a network experiencing rapid uptake of low carbon technologies, ensuring that the problem being addressed is grounded in real system needs and constraints. NPL Management Ltd. contributes world-leading expertise in high-accuracy grid measurement, providing the technical capability required to investigate high-frequency phenomena that are not currently well understood within distribution networks. The Project is considered to represent value for money and be costed competitively as costs are proportionate to the scope of the Discovery Phase and have been allocated across Project Partners in line with their roles and expertise. The Project builds on previous work and leverages existing knowledge, which supports efficient delivery. The potential to improve planning and avoid inefficient network interventions suggests that the Project could deliver value relative to its cost. The Discovery Phase is appropriately focused on addressing key uncertainties before any larger investment decisions are made, limiting upfront cost exposure while enabling informed future decision-making. If successful, the Project has the potential to improve planning and operational visibility, reduce the risk of equipment failure, and avoid unnecessary or inefficient network interventions. This indicates a credible pathway to longer-term efficiency gains and cost avoidance across the network, suggesting that the

Project could deliver value that is proportionate to, and exceeds, the initial investment.

The Project is considered to have a robust methodology capable of progressing in a timely manner because it includes a structured work plan with clearly defined deliverables, aligned milestones and a comprehensive risk register with appropriate mitigation measures. The governance arrangements and Project management approach provide confidence that the Project can be delivered within the Discovery Phase timeframe.

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 further detail on how the Project will engage with relevant standards bodies and regulatory frameworks to ensure that the outputs can inform future industry standards where appropriate. Prior to the kick-off meeting, the Funding Party must provide further detail on how the Project will engage with other Distribution Network Operators and relevant stakeholders to support dissemination of learning and alignment with existing and emerging monitoring approaches. Prior to the kick-off meeting, the Funding Party must provide further detail on how the Project will build on and differentiate from relevant existing SIF and NIA Projects (for example, LV Power Quality, LCT Harmonic Limits, D-Suite and High Frequency Earthing), including how previous learning has informed the proposed approach and how the Project will deliver additionality beyond existing work.

7 Innovation Challenge: Whole system optimisation

7.1 Overview of Projects

This sub-section covers the assessment of Discovery Phase Applications received into the 'Whole system optimisation' Innovation Challenge in Cycle 5.

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

Project reference number	Project name	Funding licensee	Total Project costs (£)	Total Project contribution (£)	Total SIF Funding requested (£)	Recommended by Expert Assessors for funding (Yes/No)	Decision by Ofgem for funding (Yes/No)
10192945	The Green Molecule Project	SGN	189,266	41,009	148,257	Yes	Yes

7.2 Expert Assessors' Recommendations on Projects

7.2.1 Project 10192945 - The Green Molecule Project

Submitted Project description
The Green Molecule Project is a Power-to-Gas initiative that aims to decarbonise the GB gas network and inter-seasonal energy storage for electricity generation by producing synthetic methane (SM) using curtailed wind power, direct ocean carbon capture, and biological methanation. This approach converts curtailed renewable electricity and naturally absorbed oceanic CO_2 into SM which is flexible, storable, low carbon fuel compatible with the existing gas infrastructure. The Discovery Phase will assess the technoeconomic feasibility and energy system opportunities of this integrated pathway, building evidence for a scalable whole system solution that enhances resilience, supports storage needs, and enables future system optimisation.

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

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

Recommendation to the Office of Gas and Electricity Markets (Ofgem)
FUND
The Expert Assessors agree that this Project has met the Eligibility Criteria and recommend this Application for funding. The Project addresses the Innovation Challenge by developing and assessing future synthetic methane production pathways, including whole system integration considerations. The Expert Assessors noted that the problem statement is clearly articulated and aligns with the Innovation Challenge, particularly in relation to exploring alternative low carbon fuels and system-level solutions. The proposed modelling approach is appropriate for a Discovery Phase and is expected to provide valuable insights into the feasibility and economics of these pathways. The Project has identified potential to deliver a net benefit to energy consumers by exploring alternative production pathways for synthetic methane and assessing their cost base relative to existing approaches. The Expert Assessors noted that the Project could support more efficient system planning and reduce the need for wider system interventions. While some assumptions underpinning the analysis are high-level at this stage, the Discovery Phase is appropriate for developing a more robust techno-economic evidence base. The Project is considered to involve network innovation by exploring novel production pathways that have not yet been deployed and assessing their potential role within the existing gas transmission system. The Expert Assessors noted that the work supports innovative approaches to managing renewable energy curtailment and enabling greater flexibility between supply and demand through the development of new energy vectors. The Project is not considered likely to undermine the development of competitive markets because it will not result in the direct deployment of a commercial product and that outputs will be disseminated to the wider industry. This supports

transparency, knowledge sharing and the potential for multiple parties to build on the findings.

The Project is considered innovative, novel and risky because it explores the integration of renewable hydrogen production, direct ocean carbon capture and methanation processes to produce synthetic methane. The Expert Assessors noted that these approaches are at an early stage of development and involve technical and commercial uncertainty, making the Project appropriate for SIF funding.

The Project is considered to include participation from a range of stakeholders because the consortium brings together system operators, SMEs, international Project Partners and leading academic institutions, including strong technical expertise in relevant areas. While one Expert Assessor suggested that further engagement with stakeholders in green hydrogen production would strengthen the Project, on balance the consortium was considered appropriate for the Discovery Phase.

The Project is considered to represent value for money and be costed competitively as the overall budget is proportionate to the scope of the Discovery Phase and costs are broadly aligned with the contributions of Project Partners. The Project is focused on investigating novel pathways for alternative fuels, which, if proven viable, could be deployed more widely across the energy system. This creates a credible pathway to broader system benefits, including more efficient use of existing infrastructure and support for decarbonisation objectives. The Discovery Phase approach appropriately limits upfront costs while enabling the resolution of key uncertainties before further investment is considered, supporting a proportionate risk-to-reward balance. While some concerns were raised regarding the distribution of costs, the majority view was that the Project offers value in exploring novel pathways that could be deployed more widely across the energy system. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

The Project is considered to have a methodology capable of progressing in a timely manner because it includes a structured approach with defined work packages and appropriate Project management arrangements. While one Expert Assessor raised concerns regarding the level of detail in including the treatment of

electrolysis modelling and reliance on specific expertise, the majority considered that the Project is deliverable within the Discovery Phase timeframe, subject to appropriate Project management and resource planning. On balance, the Expert Assessors consider that the evidence provided demonstrates that this Eligibility Criterion is met.

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 further detail on how the electrolysis component of the synthetic methane production pathway will be modelled, including confirmation of relevant expertise within the Project team or how this capability will be secured. Prior to the kick-off meeting, the Funding Party must provide further detail on the scope and assumptions underpinning the techno-economic assessment, including how key cost drivers and uncertainties will be captured and evaluated. Prior to the End of Phase meeting, the Funding Party must provide a transparent and reproducible techno-economic and energy efficiency model for the integrated pathway (curtailed-power electrolysis, Direct On-site Carbon Capture (DOCC) and bio-methanation). This must include full CAPEX and OPEX breakdowns, clearly stated assumptions, sensitivity analysis, and benchmarking against defined counterfactuals, including as a minimum: green hydrogen use, synthetic methane from Direct Air Capture or alternative CO_2 sources, and alternative long-duration energy storage vectors. Prior to the End of Phase meeting, the Funding Party must provide Phase: (i) evidences the cost and efficiency of hydrogen and synthetic methane under realistic utilisation and curtailment conditions; (ii) identifies a credible niche market entry case, including siting and co-location constraints; and

(iii)	sets out clear next steps for testing, including a defined test plan grounded in empirical baselines, covering relevant data sources (e.g. SeaCURE/DOCC), justified electrolyser performance assumptions, and methanation interface requirements.si